ARMED FORCES MEDICINE

2023

Please keep this edition available to share in your facility with confidence.

Each publication is protected 24/7 with the new antimicrobial treated coating that contains an EPA registered antimicrobial agent. Independent laboratory testing demonstrated a 99.99% reduction in microbes after 24 hours. For more details about this process, please visit biomasterusa.com

Get your free subscription at armedforcesmedicine.com/subscribe

CAPITAL PUBLISHING

DOD Welcomes New Assistant Secretary of Defense for Health Affairs

Dr. Lester Martinez-López, Assistant Secretary of Defense for Health Affairs. *Photo courtesy of the U.S. Department of Defense*

Dr. Lester Martinez-López took the Oath of Office on Tuesday, March 21, 2023, as the Department of Defense's new assistant secretary of defense for health affairs. The oath was administered by Undersecretary of Defense for Personnel and Readiness Gilbert R. Cisneros.

"I could not be more pleased to be here today to officially welcome our newly confirmed assistant secretary," Cisneros said. "His arrival has been a long time coming, and we are so grateful that he stuck with us through the nomination, hearing, and confirmation process. We are fortunate, indeed, to welcome this distinguished public servant to our team."

Martinez was joined by his wife, Lydia; their three sons, Lester, Luis and Lucas; daughters-in-law Ragan, Barbara, and Shama; five of their nine grandchildren, and more than 100 friends and supporters. In his speech following the oath, Martinez noted that he believes in the adage that "it takes a village," which in his case, starts with his family.

He also recognized the presence of his long-time mentor, former Assistant Secretary of Defense for Health Affairs Dr. Enrique Mendez, and friends and supporters who filled the Hall of Heroes at the Pentagon for the ceremony.

Dr. Lester Martinez-López is sworn in as the new assistant secretary of defense for health affairs by Gilbert R. Cisneros, the undersecretary of defense for personnel and readiness, at the Pentagon on March 21. Holding the Bible for his oath of office is Martinez-López's wife, Lydia Martinez. *Photo By Robbie Hammer, courtesy of the Defense Visual Information Distribution Service*

Martinez answered a question that he said he's been asked many times: Why, at this point in his life and his career, would he want to take on a job of this magnitude?

"My answer is simple," he said. "It is an opportunity, a calling, to continue my life's work, which has always been about taking care of people. There is no greater duty than to ensure the health of the people who serve our country selflessly and with great sacrifice, and I am truly grateful for this chance to make a difference for them."

Nominated by President Joe Biden in 2022, Martinez was confirmed on Feb. 16, 2023. He is a retired U.S. Army major general and a family medicine physician, who served in leadership positions in the private health care sector after concluding his U.S. Army career. He holds a doctorate of medicine degree from the University of Puerto Rico and a master's degree of public health from Johns Hopkins University.

health.mil

BAVARIAN NORDIC. SPREADING HOPE. PIONEERING VACCINES.

Bavarian Nordic is a fully integrated vaccines company committed to saving and improving lives by unlocking the power of the immune system.

Founded in 1994, Bavarian Nordic is a pioneer in the development and manufacturing of live, non-replicating vaccines, and has a rapidly growing global footprint.

Our fast-moving pipeline of vaccine candidates demonstrates our commitment to the fight against existing and emerging diseases.

Additionally, we're dedicated to increasing disease awareness and education for the prevention and treatment of the diseases we work to combat.

For more information, please visit
BNVaccines.com or Bavarian-Nordic.com

US-RAB-2200004. February 2022

BAVARIAN NORDIC

Armed Forces Medicine 2023

TABLE OF CONTENTS

DoD Health Affairs Active Duty

Armed Forces Medicine 2023

TABLE OF CONTENTS

Department of Veterans Affairs

Armed Forces Medicine 2023

ACCREDITATION

Capital Publishing, Inc.
207 East Fort Dade Avenue, Unit 1563
Brooksville, Florida 34601
Telephone: (813) 286-8444
Facsimile: (813) 286-8883

Publisher & Editor: Thomas S. Adams III

Advertising Executives:
Sonja Homer, John Phillips

Designer: Debi Marsh

Printing: Johnson Press of America

Active Duty

AUDIOLOGY

Report Reveals Military Hearing Loss is Stable

By Larine Barr, Defense Health Agency

The Defense Health Agency's Hearing Center of Excellence Military Hearing Conservation Report for fiscal year 2021 revealed that hearing loss in the Department of Defense remains relatively stable among service members and civilians enrolled in hearing conservation programs.

The report showed the percent of hearing-impaired service members increased slightly from 14.5% in fiscal year 2020 to 14.7% in FY21. Civilians saw a gradual decrease from 46.1% in FY13 to 42.2% in FY21.

According to Dr. Theresa Schulz, HCE prevention section chief, active duty service members have the lowest rates of hearing impairment in FY21 (13.3%) compared to the Reserve (18.0%) and National Guard (17.4%).

"Overall, hearing health in the DOD appears to be relatively stable for service members and civilians in hearing conservation programs from FY20-FY21," explained Schulz. "The evidence suggests a trend of a marginal increase in hearing impairment for all service members combined and for active duty service members when FY21 data is compared to FY20," she said.

The report also indicated that the number of unique hearing tests completed by DOD in FY21 decreased slightly for active duty and National Guard when compared to FY20 data; however, the Reserve and DOD civilian hearing tests increased in FY21 compared to FY20, explained Schulz.

Reducing hearing loss is a centerpiece of DOD's policy to protect military personnel and noise-exposed civilians from hearing impairment caused by occupational and operational noise exposure through a continuous, effective, and comprehensive hearing conservation program. The policy also strives to reduce hazardous occupational and operational noise exposure to enhance mission readiness, communication, and safety.

Those enrolled in a hearing conservation program get annual hearing tests, hearing protection fittings, and hearing conservation education sessions to reduce noise-induced hearing loss, according to HCE's Branch Chief U.S. Air Force Col. Samuel Spear. "These educational sessions are important touch-points for achieving hearing readiness," he said. "Hearing readiness is a process to ensure service members have the necessary hearing capability and properly fitted hearing protection devices for mission readiness and deployment."

Dr. Theresa Schulz. *Photo courtesy of the U.S. Defense Health Agency*

Seeing a change in hearing impairment data could take some time, Schulz noted. The upcoming FY22 hearing health report consequently may not show a vast improvement over the current report. "Changes in these high-level metrics can take years because these lagging measures lack the ability to measure short-term changes, but we are closely monitoring," she added.

Although these measures of effectiveness are lagging measures, they do summarize the overall hearing health of the force including the civilian workforce, Schulz pointed out.

"We are always exploring ways to improve our hearing loss prevention efforts at the DOD, service, and individual levels. This includes efforts to better monitor, protect, and educate — the three components of HCE's Comprehensive Hearing Health Program," said Schulz.

health.mil

Active Duty
CARDIOLOGY

Opinion: Why a Healthy Heart Matters at Any Age

By Dr. Jesse Monestersky, Defense Centers for Public Health-Aberdeen

In February, many Americans are thinking about Valentine's Day and how to best show those who matter to us that they are special. Let's start by caring not just about Valentine hearts, but especially about our heart health.

February is also National Heart Health Month or American Heart Month, which is endorsed by the American Heart Association and the Centers for Disease Control and Prevention. Additionally, the second week of every February is Heart Failure Awareness Week, sponsored by the Heart Failure Society of America.

Celebrating National Heart Health Month is consistent with the core mission of the Defense Centers for Public Health–Aberdeen, formerly known as the Army Public Health Center. A healthy and fit service member is a deployable and combat-ready service member. Heart disease and heart failure are not compatible with continued active-duty service.

The Cardiology staff at Walter Reed National Military Medical Center (WRNMMC) celebrates National Wear Red Day Feb. 3 by donning red (masks, clothing, making, accessories, etc.), to raise awareness about heart disease. *U.S. Navy photo by Mass Communication Specialist 1st Class Jesse R. Sharpe*

Heart disease is a killer

I want to remind service members and their family members that maintaining a healthy heart is important at any age. Not taking care of our heart when we are younger can lead to serious cardiovascular problems and heart disease — or even heart failure — in later years.

Sometimes heart disease may be "silent" and not diagnosed until a person experiences serious signs or symptoms, like a heart attack. Some service members and young adults may think that heart disease is a problem for older generations to worry about. But heart disease affects every age group, not just older adults.

Heart disease is the leading cause of death in women and men. The CDC reports that almost 700,000 Americans worldwide died from heart disease in 2020. Many cases are preventable; almost 50 percent of Americans have at least one of the three leading risk factors for heart disease: high blood pressure, high cholesterol, and smoking.

Heart failure is a specific form of heart disease. At this point the heart muscle cannot pump enough blood and oxygen to support other organs in your body. Though it can be medically managed, the CDC reports more than six million Americans are living with heart failure and has linked heart failure to more than 300,000 deaths in one year.

While heart failure is one of the most common diagnoses in hospital patients aged 65 and above, it also affects children, young adults and the middle-aged. Like heart disease and heart attacks, heart failure is largely preventable by adopting a healthier lifestyle and following your healthcare provider's recommendations.

You can reduce your risk

Lifestyle changes and medical management can greatly reduce the risks of developing — and dying from — heart disease. In fact, developing healthier habits at the earliest age possible can improve your odds of better heart health later in life.

You can reduce your risk of developing or dying from heart disease by preventing or improving the following:

- Diabetes
- Overweight and obesity
- Unhealthy diet
- Physical inactivity
- Excessive alcohol use

Cardiovascular Fitness

The Department of Defense recognizes the importance of cardiovascular fitness as a key measure of heart health by mandating measurable standards in policy, doctrine, procedures and equipment.

For example, most of a Soldier's fitness centers around the health of their heart and cardiovascular system. The Army Combat Fitness Test measures cardiovascular and cardiac fitness.

Heart health is important for you and your family

The importance of heart health also extends to the family. Knowing that the family is healthy allows our service members to deploy on missions in defense of our nation with less worry about their families back home.

We should not only focus on our own cardiovascular health but promote heart health in our families and friends as well. This is a good time to consider what we can personally do to prevent heart disease.

Look at your own habits and those of family members and see how many of these suggested actions you can take to improve heart health:

- Maintain a healthy body weight by selecting healthy foods and snacks and actively participating in regular exercise.
- Maintain a normal cholesterol level through diet, medication or both.
- Monitor and maintain a healthy blood pressure.
- Improve your sleeping habits to ensure 7–8 hours of quality sleep.
- Protect your heart from damaging substances such as tobacco, e-cigarettes, excessive alcohol and certain over-the-counter drugs and supplements.

Photo graphic courtesy of Hill Air force Base

Resources

The military family has ready access to expert healthcare providers who are available to answer individual questions and to help maintain heart health. On our military installations, we have access to free fitness centers, Army/Armed Forces Wellness Centers, fitness coaches, dietitians, smoking cessation program counselors, health educators, and a full range of other health professionals.

army.mil

CPG

Lifestyle Changes Can Improve Heart Health

The Cardiology staff at Walter Reed National Military Medical Center (WRNMMC) celebrated National Wear Red Day Feb. 3 by donning red (masks, clothing, making, accessories, etc.), to raise awareness about heart disease.

Observed during Heart Health Month, Wear Red Day is recognized annually on the first Friday in February to draw attention to heart disease, one of the leading causes of death in the United States, according to the National Heart, Lung and Blood Institute, a division of the National Institutes of Health (NIH).

"Heart disease is the leading cause of death among Americans, especially women," said Joan LoepkerDuncan, chief nursing officer in charge of Cardiology Service at WRNMMC. "We want our patients to know their risk and partner with their providers to protect their hearts. Patients can ask their providers to check their blood pressure, cholesterol and blood glucose."

LoepkerDuncan added there are several things people can do to reduce their risk for heart disease, including never or quitting smoking, eating heart healthy, and aiming for at least 30 minutes of physical activity at least five days a week.

"According to the Centers for Disease Control and Prevention (CDC), an estimated 80 percent of cardiovascular disease, including heart disease and stroke, is preventable," LoepkerDuncan continued.

walterreed.tricare.mil

CPG

Active Duty
EMERGENCY

Navy Expeditionary Medical Unit Rotations Provide Ongoing Support in the Middle East

By Chief Petty Officer Jeremy Smith, Naval Medical Forces Atlantic

The 30-member team conducted Role 2 enhanced (2E) shore-based capabilities at Erbil Air Base in Iraq, where they provided life, limb, and eyesight saving care to the U.S. Armed Forces, DoD civilian contractors, and multi-national coalition forces. They also provided critical support to the Role I and Role II facilities in the Eastern Syria Security Area (ESSA).

Naval Medical Forces Atlantic (NMFL), Deputy Commander Capt. Shelley K. Perkins, praised the team for a job well done.

"Welcome home! You all should be so proud of what you accomplished throughout this deployment." expressed Perkins. "You were reinforcing Navy Medicine's expeditionary mission throughout this entire process, and you were the sustaining medical force capable of supporting joint and naval forces."

Some of NEMU 10G-13's highlights from deployment included support of 1,000 patient encounters, 12 surgeries, 80 medical and strategic evacuations, 50 patient movements to host nation hospitals, 26 mass casualty exercises, and 250 simulated patients. The unit delivered 224 hours of continuing medical education to medics, corpsman, nurses and physicians onboard EAB.

"Teamwork was the cornerstone of this deployment," said NEMU 10G Commander Capt. Jerrol B. Wallace. "We brought this team together through arguably the toughest time of the year. We missed 90% of the major holidays, but through that we became family. This team built a bond that will last for years to come."

Throughout the deployment, the NEMU 10G-13 tracked all COVID-19 cases and administered 2,000 influenza and 50 COVID vaccines. To fill a critical shortfall in blood product available in the country, the team ensured adequate numbers of screened donors for the walking blood bank were available within EAB, which resulted in 200 servicemembers being ready to donate if warranted by the situation.

"What you accomplished over the past seven months was providing sustained naval medicine worldwide and being on the ready to give aid when called upon," explained EMF-J Executive Officer Capt. Kenneth R. Basford. "Situations you encountered will be used to better the process in this ever-changing world."

Personnel assigned to Navy Expeditionary Medical Unit 10- Gulf (NEMU 10G), Rotation 13 board an Air Force C-17 as they prepare to leave Kuwait for Erbil, Iraq on Oct. 20, 2022. NEMU 10G, Rotation 13 deployed in support of Operation Inherent Resolve to conduct Role 2 enhanced (2E) medical care shore-based capabilities at Erbil Air Base in Iraq for U.S. Armed Forces, civilian contractors, and multi-national coalition forces. *U.S. Navy photo by Capt. Jerrol Wallace*

The team utilized medical partnerships with the host nation and allied forces, such as the EAB German surgical team, Netherlands dental team, and the Italian Role I to expand their medical care capabilities to support the warfighter by providing lifesaving medical interventions, diagnostic testing, radiologic services and cost savings for medical evacuations.

EMU 10 Rotation 14 relieved Rotation 13 on April 20 to continue the forward deployed medical readiness mission in support of Operation Inherent Resolve.

Six months prior to deployment, NMFL starts the work-up and certification phase prior to the mission. During this period, NMFL screened and selected personnel to fill vital manning positions, ensured medical screenings and pipeline training for specific billets, and equipping the unit with protective gear was completed. Once the manning phase was completed the unit was sent to Fort Bliss, Texas, to complete a 14-day combat skills course.

"The course was vital in creating unit cohesion, familiarity with weapons and austere environment expectations for deployment," said Hospital Corpsman 1st Class Mary Sigler, an action officer for planning, operations and medical intelligence department at NMFL.

Additionally, throughout the deployments, NMFL provides logistics and administrative support to the deployed unit. Information provided throughout the deployment ensures personnel are trained and qualified for the available equipment in the region.

Cmdr. Katharina Pellegrin, left, the trauma director, and intensive care unit nurse Lt. Leah Wiltshire, far back right, both assigned to Navy Expeditionary Medical Unit 10- Gulf (NEMU 10G), Rotation 13, monitor Army medics assigned to the 709th Medical Company Area Support (MCAS), as they receive a report during a mass casualty exercise, March 22, 2023. NEMU 10G, Rotation 13 deployed in support of Operation Inherent Resolve to conduct Role 2 enhanced (2E) medical care shore-based capabilities at Erbil Air Base in Iraq for U.S. Armed Forces, civilian contractors, and multi-national coalition forces. *U.S. Navy photo by Capt. Jerrol Wallace*

Operation Inherent Resolve continues to work by, with and through regional partners to militarily defeat the Islamic State of Iraq and Syria, or ISIS, in order to enable whole-of-coalition governmental actions to increase regional stability.

NMFL, headquartered in Portsmouth, Virginia, delivers operationally focused medical expertise and capabilities to meet Fleet, Marine and Joint Force requirements by providing equipment, sustainment and maintenance of medical forces during combat operations and public health crises.

Hospital Corpsman 2nd Class Freeman Morrison, a biomedical technician, left, and Lt. j. g. Andrew Mappus, an emergency room nurse, right, assigned to Navy Expeditionary Medical Unit 10- Gulf (NEMU 10G), Rotation 13, are monitoring an U.S. Army Medic Task Force Buckeye, 37th Infantry Brigade Combat Team, as he draws blood from an Army Soldier during the Walking Blood Bank screening rodeo, Dec. 20, 2022. NEMU 10G, Rotation 13 deployed in support of Operation Inherent Resolve to conduct Role 2 enhanced (2E) medical care shore-based capabilities at Erbil Air Base in Iraq for U.S. Armed Forces, civilian contractors, and multi-national coalition forces. *U.S. Navy photo by Capt. Jerrol Wallace*

NMFL provides oversight for 21 NMRTCs, logistics, and public health and dental services throughout the U.S. East Coast, U.S. Gulf Coast, Cuba, Hawaii, Europe, and the Middle East.

Navy Medicine — represented by more than 44,000 highly-trained military and civilian health care professionals — provides enduring expeditionary medical support to the warfighter on, below, and above the sea, and ashore.

The Defense Visual Information Distribution Service

Armed Forces Medicine 2023

HALYARD

YOU'RE THERE TO PROTECT US.

It has never been more evident than during the COVID-19 pandemic. Your dedication and resilience in the face of overwhelming challenge is inspiring to us all. We want to thank the Medical Staff of our Nation's Armed Forces for going beyond the call of duty to help those who need it most - and to help protect everyone as we move forward.

WE'RE HERE TO PROTECT YOU.

At O&M Halyard, we have been right there with you through the toughest times and will continue to be there to support your efforts through the coming years. Whether it's performing routine tasks or working with chemo drugs, you can count on us to deliver the quality PPE you need - including these three essential gloves:

SKYBREEZE*
General use for most tasks.

- Meets or exceeds current ASTM D6319 standards[1]
- AQL of 1.5
- Cleared for use with chemotherapy drugs per ASTM D6978[2]

STERLING SG*
Hospital-wide/general use for virtually every task†.

- Meets or exceeds current ASTM D6319 standards[1]
- AQL of 1.0
- Cleared for use with chemotherapy drugs per ASTM D6978[2]

PURPLE NITRILE-XTRA*
Maximum protection from bacteria, viruses and chemicals with extra coverage for higher risk procedures†.

- Meets or exceeds current ASTM D6319 standards[1]
- Extended 12" cuff
- NFPA 1999 certified
- AQL of 1.0
- Cleared for use with chemotherapy drugs per ASTM D6978[2]

Contact your Prime Vender or visit www.halyardhealth.com for more information.

[1] Standard Specification for Nitrile Examination Gloves for Medical Application
[2] Standard Practice for Assessment of Resistance of Medical Gloves to Permeation by Chemotherapy Drugs
† Based on glove thickness and physical properties

Active Duty
FIELD MEDICINE

Meet the Winners of the 2023 Army's Best Medic Competition

By Sgt. Pablo Saez, U.S. Army Public Affairs

The Command Sgt. Maj. Jack Clark Army Best Medic Competition is a grueling three-day test of strength, knowledge and endurance held annually. This year's competition at Fort Polk, Louisiana, put some of the best medics in the Army to the test by challenging their abilities to determine who is the most skilled.

This year's winners, Capt. Alexander Kenney and Sgt. 1st Class Douglas Petty from the 6th Ranger Training Battalion, Airborne Ranger Training Brigade, demonstrated exceptional skill, resilience and teamwork, solidifying their place among the top medics in the Army.

Combat medic specialists — also known by their military occupation specialty 68W — play a critical role in the Army. They are responsible for providing medical support to Soldiers on the battlefield and ensuring their health and well-being. They are often the first line of aid and care when Soldiers are injured or become ill.

Medics are required to be physically fit, mentally tough and knowledgeable in a wide range of medical procedures and techniques. The Army's Best Medic Competition is not only a test of individual skill and endurance but also a testament to the importance of the medic's role in the Army.

Kenney explained the competition is broken down into multiple phases: the Army Combat Fitness Test; an obstacle course; aircraft repelling; Combat Water Survival Test; a helocast; a ruck march; an extrication exercise; casualty hoist operations; M4 rifle qualifications; stress shoots; a written test; day and night land navigation; tactical combat casualty care; health services and support; prolonged field care; a mystery event; and a chemical, biological, radiological and nuclear event.

Kenney is a former combat medic and currently serves as the battalion physician assistant, or 65D, for the 6th Ranger Training Battalion. Petty, on the other hand, had no medical experience prior to joining the Army in 2009. Despite this, he chose to become a combat medic and worked hard to become an excellent one. Both Soldiers put in tremendous effort to achieve their status as top-tier medics.

Winning the Best Medic Competition requires more than just physical fitness and knowledge of medical procedures. It requires a relentless pursuit of excellence, a dedication to being the best possible version of oneself, and an unwavering commitment to the well-being of fellow Soldiers.

Photo credit U.S. Army Medical Command

Kenney and Petty have put in years of hard work and training to reach the level of skill and knowledge necessary to be the best medics in the Army. They have been tested in some of the most challenging and demanding environments imaginable, including combat deployments to Iraq and Afghanistan, and have emerged stronger and more resilient as a result. Their journey to the top of their field has been a long and difficult one, but it has prepared them well for the challenges that lie ahead.

Kenney noted that "being prepared and pushing the limits of what you know at any given time was super important."

This mentality of being a lifelong student is essential to being the best medic possible.

Petty agreed, saying that "It made me realize real quick that if I don't stay on top of my medicine and my mental state, that not only am I going to feel the repercussions of it, but the guys are going to feel the repercussions of it as well."

Both Soldiers are now dedicated to teaching the next generation of medics. "One of the best things about military medicine, especially as [physician assistants], is most of us are prior enlisted," said Kenney. "Not a lot of us are direct commissions off the street or non-medical people beforehand, and we understand the value of building that in the next generation."

Petty, who now serves as the battalion senior medic and medic platoon sergeant, knows the importance of sharing his knowledge and experience. "I want to be able to pass that knowledge on to them and see them want to do stuff and be able to help them with the connections I have to get to these other places," he said. "Train them up to go to these places and go to schools that I have been to and that Capt. Kenney has been to, we have that knowledge to pass to them to see them be successful."

Petty is also keenly aware of the weight of his responsibility at 6th Ranger Training Battalion.

"It's the most dangerous, the most high-risk battalion in the United States Army," he said. "Maintaining health and welfare is a huge portion of that, and understanding what each one is going through — which is why we're all Ranger tabbed as well — we've all been through the program. So knowing what their issues are, and knowing what their struggles are, are super helpful in being able to deliver effective care and anticipate what their challenges are going to be medically."

The Ranger Tab refers to a badge earned by Soldiers who have completed the grueling Army Ranger School, a course that specializes in small unit tactics and leadership. Rangers develop functional skills directly related to units whose mission is to engage the enemy in close combat and direct fire battles.

Kenney and Petty have done what few in the Army have. They have proven that they are the best of the best. But for them, it is not about the accolades, but about the work they do every day to make sure that their fellow Soldiers are healthy and well.

"Integrity and dedication. It's a no-fail mission, so you have to be dedicated to what you do," said Kenney. "And the integrity piece of it is not only doing the right thing 100% of the time, but having the self-check, self-awareness, the integrity to take it up every day. Learn something new and be better than you were yesterday, because medicine is a lifelong learning experience."

Petty agreed, saying he's "trying to instill in them the confidence and knowledge and a willingness to want to grow both medically and as a Soldier."

Kenney and Petty serve as role models for anyone who wants to make a difference in the lives of others, and they exemplify the very best of what it means to serve in the U.S. Army.

"The greatest benefit that you can actually see is from the ground up," said Kenney. "I do enjoy the fact that I continually have to learn, and it's not something I get bored with," said Petty. "That willingness to never give up has really made me succeed throughout the Army."

army.mil

CPG

Technology, Safety Stand Out at 2023 Army Best Medic Competition

By Jean Graves, Defense Health Agency

Bayne-Jones Army Community Hospital planned, coordinated and executed the 2023 Command Sgt. Maj. Jack L. Clark U.S. Army Best Medic Competition Jan. 22-25 at the Joint Readiness Training Center and Fort Polk, Louisiana.

During the competition the U.S. Army Medical Research and Development Command participated in more than one way. In addition to having a team competing for the Best Medic title, they had another team supporting the competition with the Health Readiness and Performance System.

Command Sgt. Major Timothy J. Sprunger, Medical Readiness Command, West, wanted to use HRAPS after learning about it at an exercise last year at Fort Irwin, California.

Sprunger said HRAPS is a small, wearable device that monitors a variety of health metrics and the geographical location of the contestants.

"It's usually worn on your chest, and it picks up your heart rate, core body temperature, activity level and location," he said. "I thought it would be a great addition to the Army Best Medic Competition because not only does it monitor specific health data, but it also allows us to track the geographical locations of each competitor."

Sprunger said seeing the biometric data and location of contestants in real time was useful during the competition.

"This technology allowed us to view each person, their heart rate and activity levels during each lane of the competition," he said. "We can use that information to examine the physical demands on competitors to help with the planning process for next year."

Sprunger said there are countless opportunities for this type of technology. "I can see this being used in future iterations of Best Medic, Best Leader and Best Squad competitions," he said. "The data provided in real time is valuable for the health and safety of our competitors. By monitoring their heart rate and core temperature we can intervene if a contestant is in distress or about to go into distress."

Emily Krohn, assistant product manager with the U.S. Army Medical Materiel Development Activity's Warfighter Health, Performance and Evacuation Project Management Office, was on site in the tactical command post for the entire competition.

Krohn said HRAPS is a Defense Health Agency advanced effort currently in development at USAMMDA. "The goal of HRAPS is to provide real time health and performance monitoring on warfighters, both in high-risk training events and real-world operations," she said.

Krohn said the primary purpose of HRAPS is for injury prevention and situational awareness of a warfighter's general physical state.

"In an operational environment there is no way to tell what a Soldier's core body temperature is until it's potentially too late," she said. "Each year there is a high number of heat casualties in the training environment, so the primary focus of HRAPS is safety and minimizing preventable injuries."

Krohn said for the Best Medic Competition they were primarily focused on body temperature and location.

"There are a lot of preventable things we are trying to help leaders manage, things like lack of sleep and heat injuries," she said. "We are also looking at future capabilities and applications to reduce muscular-skeletal injuries and provide early warning of infections."

Krohn said one day Soldiers may be able to tell they are getting sick before experiencing symptoms based on wearable devices and human performance algorithms.

"Participating in the Army Best Medic Competition is a great Soldier touch point for us to get feedback on the wearability and placement of the device," she said. "From a leadership standpoint it also helps us understand if we are gathering the information needed to help commanders make informed decisions to plan and execute future competitions."

1st Lt. Ilnur Sibagatullin, a member of the MRC, W team, assigned to Weed Army Community Hospital, Fort Irwin, said he had the opportunity to test other wearable health performance technology when the Performance Triad initiative was first implemented.

"But I've never worn something like this during a competition so I'm really looking forward to getting feedback from the crew once the competition is over," he said.

Krohn said the senior medics in the competitions are using the software to monitor the Soldiers' core body temperatures and locations.

Staff Sgt. Cameron Joyner, a combat medic assigned BJACH, is the senior medic for the Army Best Medic Competition. He said HRAPS has been a useful tool for him and the medical support personnel.

"It's really taken the guess work out of tracking down casualties and monitoring the competitors," he said. "At one point in the competition we noticed a competitor had an elevated body temperature and was moving around on the GPS in a weird fashion. We took that information, located the individual and checked him out. He was perfectly fine, but if it was something, we could have prevented it before it became life threatening."

1st Lt. Ilnur Sibagatulin, representing Medical Readiness Command, West wore the Health Readiness and Performance System during the U.S. Army Best Medic Competition Jan. 22-25 at the Joint Readiness Training Center and Fort Polk, Louisiana. Sibagatulin, a U.S. Army Nurse Corps officer is assigned to Weed Army Community Hospital, Fort Irwin, California.

Joyner said HRAPS is a good tool he hopes to see in wider use in the Army one day. "This technology would be very helpful with our jobs," he said. "Often there is only one medic assigned to a platoon of 30 people, [and] this system would be invaluable if fielded in the Army. You can't always see everyone at once. It would be helpful with monitoring, management and care of patients, allowing us to catch problems a little sooner."

Sprunger said this technology may one day help medics on the battlefield. "It will allow a medic to quickly pull and monitor vital signs by scanning a wearable device versus trying to do it manually in the dark or under extreme conditions," he said. "A wearable device like this could potentially assist medics in a prolonged casualty care situation to monitor trends and potentially pass along important health information to the next level of care. The possibilities as a record and continuity of care are limitless."

In the meantime, Sprunger said the HRAPS data gathered this year will ensure the continued relevance, rigor and realism of future competitions.

The Defense Visual Information Distribution Service

Active Duty
FIELD MEDICINE

The Evolution of Combat MEDEVACS

Helicopter medics, medicine increase survival odds for critically injured service members

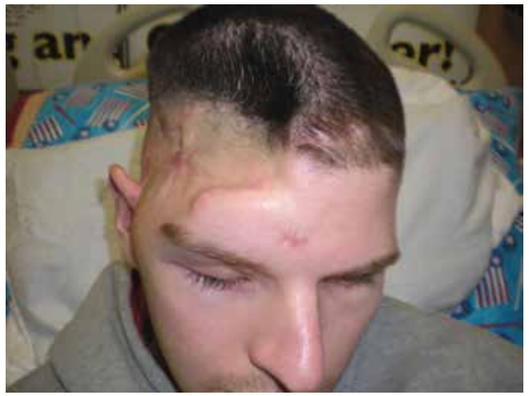
By Chris Mayhew, Disabled American Veterans Communications

When the television show "M*A*S*H" aired in the 1970s and 1980s, it was likely the first exposure for much of the American public to the use of military helicopter medevacs in combat. Set during the Korean War, the drama highlighted the lifesaving capabilities of the budding practice. Since then, medevac operations have evolved.

Photo courtesy of the National Archives (127-GR-6-51-A156671)

The odds of surviving a critical injury improved from 75% in Vietnam to 98% in Afghanistan in 2011, with the average time getting to a stateside hospital also decreasing from 45 days to three, according to Army and Air Force medical reports. As the wars in Iraq and Afghanistan wore on, the outcomes for seriously wounded warfighters continued to improve. The use of tourniquets, blood transfusions and pre-hospital transport within 60 minutes resulted in an about 44% reduction in deaths among critically injured casualties from 2001 to 2017, according to a study from the Journal of American Medical Association.

The importance of medevacs is exemplified when 2022 Disabled American Veteran of the Year Adam Alexander holds his infant daughter at his home in Wisconsin. The Army veteran was firing on enemy positions in Afghanistan when he took a sniper round to the head. Medevac pilots were ordered not to land, but one didn't get the order due to a technical error. The pilot landed, and Alexander is alive today as a result. "I send a Christmas card to the flight medic who came to get me, every year" Alexander said. Medics inserted a tube to establish an airway during the flight from Firebase Chamkani to the hospital at Forward Operating Base Salerno, Afghanistan. Surgeons removed part of Alexander's skull at Solerno, then he was flown to Germany where he was stabilized before being transported stateside to Walter Reed National Military Medical Center. "Any other conflict, I can tell you that Adam would be deceased, and praise God and great medical technology he's here today," said Mike Hert, who served with Alexander in Afghanistan and is now a fellow member of DAV Chapter 17 in Oshkosh, Wisconsin.

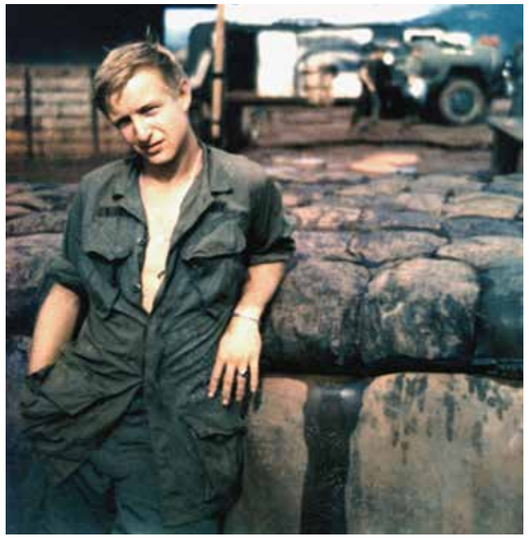


Army veteran Adam Alexander took a sniper round to the head in Afghanistan. A helicopter medevac quickly transported him to a hospital and lifesaving surgeries. P*hoto courtesy of Disabled American Veterans Communications*

As Alexander's case confirms, these critically injured heroes often return, forever changed, to a country that has promised to care for them—making DAV's mission even more necessary. "Our country sends our fighting men and women into harm's way, and many of them return with life-altering wounds," said DAV National Commander Joe Parsetich, a service-connected disabled Air Force veteran of the Vietnam War. "Combat leaves those who uphold our freedoms with traumatic brain injuries, shrapnel wounds and limb loss in many instances. DAV stands with our wounded veterans to assist them with reaching their full potential and ensuring they receive the benefits they earned."

Modern medevacs bring trained medics, equipment and speed from the battlefield to maximize the care administered in what is known as the "golden hour," a crucial time when it is more likely a life can be saved. Starting in Iraq, combat outposts were also equipped with medical bags that keep blood and IV fluids cool for immediate use on the battlefield. Today, combat medic specialist training starts with a 16-week program with extensive field training.

During the Vietnam War, DAV member David W. Chaffin, of Hebron, Kentucky, had 10 weeks of training as a medic before joining an air cavalry regiment. Chaffin said he received field training on the job. "You wanted to stop the bleeding as much as possible," Chaffin said. His equipment consisted mainly of bandages, surgical scissors, a bottle of saline to start an IV and morphine. There wasn't always a stretcher in combat, Chaffin said, adding that the wounded often had to be carried to a helicopter landing zone in a poncho. "I am sure the military is a lot more advanced today," he said.



Vietnam War Army veteran David Chaffin is pictured in 1969 on a day when not in the field as a combat medic. *Photo courtesy of Disabled American Veterans Communications*

By the time of the invasion of Iraq in 2003, surgical units could fold out of the back of a Humvee, said Deputy National Service Director for Training Scott Hope, who served as a flight medic in Iraq for 17 months from 2003 to 2005. Before wounded personnel made it to the medevac helicopter, medics on the ground could do things like apply a rapid tourniquet, which uses Velcro, or an occlusive dressing, which shields a chest wound from the open air while allowing breathing, Hope said. Aboard the aircraft, pumps could put more fluids into a patient than an IV drip. There were tools to increase oxygen and infuse blood with platelets during the flight to a hospital, he said. "We would fly in hot and low," Hope added.

Army veteran Scott Hope is pictured in a desert area of Iraq in 2003, where he served as a flight medic aboard Blackhawk helicopters. *Photo courtesy of Disabled American Veterans Communications*

For Alexander, the joy of marrying his wife and having a child was made possible because a helicopter pilot landed during combat, providing a lifeline for a critically wounded soldier. "Every day above ground from here on out is a good day, because they gave me a 5% chance to live when I was injured, and here I am over 10 years later," Alexander said.

Active Duty
GASTROENTEROLOGY

Colorectal Cancer Screening Age Decreases to 45

By Robert Hammer

Although the overall death rate from colorectal cancer has been on the decline in recent years, it remains the second leading cause of cancer deaths in the United States. There has also been an increase in colorectal cancer-related death for people younger than 55, and an increase in diagnosis in patients between the ages of 40-49 over the past decade, according to the National Cancer Institute.

With this new upwards trend, national health guidelines recently lowered the initial screening age from 50 to 45. This change means that an additional 21 million Americans will be eligible for screening.

In the Military Health System, the estimated impact of the lower age recommendation is that over 200,000 additional beneficiaries will need to be screened for CRC, according to Dr. Chin Hee Kim, deputy chief of specialty care support of the Defense Health Agency Directorate of Medical Affairs.

The new DHA guidelines also offer various CRC screening options, including expanding the use of a stool-based test known as Fecal Immunochemical Test, or FIT, as an alternative to a colonoscopy.

"Colorectal cancer screening, and preventive screenings in general, are important for overall wellness and healthy living. The MHS strives to implement evidence-based strategies to optimize both prevention and early detection of serious diseases before they become major," Kim said. "Preventive care helps to sustain your health, meet standards for duty fitness, and maintain medical readiness."

There is a 5-year survival rate of approximately 90%, if colorectal cancer is detected early.

When Should You Be Screened for Colorectal Cancer?

"Beginning at age 45, all average-risk men and women should undergo routine CRC screening," said Kim.

Patients are considered to be at average risk if they:

- Do not have a personal history of CRC or certain types of polyps.
- Do not have a family history of CRC.
- Do not have a personal history of inflammatory bowel disease.
- Do not have a confirmed or suspected hereditary CRC syndrome.

According to Kim, CRC might not cause symptoms right away, but if you have one of these symptoms, you should see a doctor.

- Rectal bleeding with bright red blood.
- A change in bowel habits, such as diarrhea, constipation, or narrowing of the stool that lasts for more than a few days.
- A feeling that you need to have a bowel movement that's not relieved by having one.
- Blood in the stool, which might make the stool look dark brown or black.
- Cramping or abdominal pain.
- Unintended weight loss.

Kim said, "The screening method for CRC is based on shared decision making between the provider and the patient after discussing risks and benefits of all available screening options. A colonoscopy can be offered for both average risk and high-risk patients. The goal is to inform our beneficiaries about all screening options, including FIT, to optimize overall CRC screening for the MHS."

Increasing Usage of FIT as a Tool

"While we have made great strides in colon cancer screening and prevention over the last several decades, around one-third of the U.S. population is not up-to-date on testing. By educating patients and providers about evidence-based alternatives to colonoscopy such as FIT, we are striving to expand access to screening to as many patients as we possibly can," said U.S. Navy Lt. Brett Sadowski, program director of gastroenterology fellowship at the Navy Medicine Readiness and Training Command in San Diego.

Of the existing stool-based testing available, FIT is one of the most sensitive and cost-effective screening tests for colon cancer screening. The FIT is an easy to use, non-invasive, stool-based test that can be done at home.

The test must be done every year, but many people find them more convenient than other tests like a colonoscopy," said Kim.

Instead of having to undergo an invasive procedure like a colonoscopy, one can collect their stool sample at home and mail it to the lab in provided packaging. Importantly, if a positive test result occurs, the patient should understand that a colonoscopy needs to be performed to complete the screening process. Like all screening tests, patients should be aware of following limitations of FIT, which include:

- May miss tumors that bleed in small amounts or not at all.
- Lower sensitivity to detect a potential pre-cancerous lesion in the colon.
- Essential need to be repeated annually.

"The MHS is also working with clinicians to communicate and standardize workflow that incorporates the new age recommendation along with the appropriate use of FIT for average-risk patients. Medical logistics is also ensuring that FIT supplies are available at all military treatment facilities," Kim said.

Lifestyle Changes Could Reduce Risks

"Lifestyle factors play a profound role in our ability to impact our gut microbiome to support gut health. For all individuals, but especially for those who are at highest risk, lifestyle factors play an important role in reducing the risk of colorectal cancer," U.S. Air Force Col. Mary A. Kiel, chief of the Air Force Medical Home Program at Air Force Medical Readiness Agency.

TRICARE Benefits

TRICARE covers colorectal cancer screenings for average-risk beneficiaries beginning at the age of 45 years old. It will cover the following types of screenings:

- Fecal Immunochemical Testing: One stool sample once every 12-months.
- Fecal Immunochemical Testing: Stool DNA tests once every 1-3 years.
- Fecal Occult Blood Testing: Three consecutive stool samples once every 12 months.
- Flexible sigmoidoscopy: Once every 5-years.
- Optical colonoscopy: Once every 10 years.
- Computed Tomographic Colonography: Once every 5 years.
- Flexible Sigmoidoscopy: Every 10 years with FIT every year.

health.mil

Active Duty
INFECTIOUS DISEASES

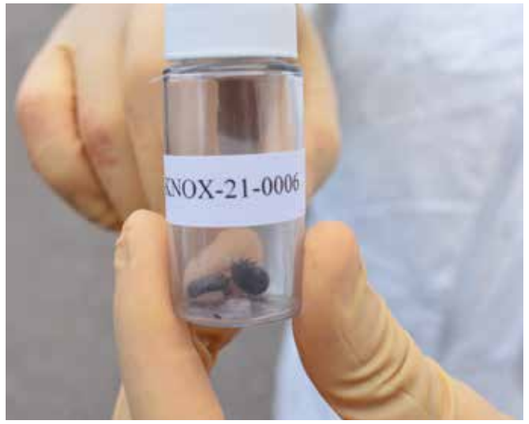
Medical Countermeasures for Insect-Borne Diseases: Q&A with Experts

By Robert Hammer, Military Health System

Countermeasures for vector-borne diseases are often offered in the military when a service member is deployed to certain parts of the world. These types of countermeasures were developed to protect from infections spread by insects, rodents, and other animals. Insect-borne diseases, such as yellow fever, tick-borne encephalitis, Japanese encephalitis, and others infect millions of people each year.

The Military Health System has a long history of providing medical countermeasures for insect-borne diseases. We spoke to two experts in the MHS to learn about the various diseases and what the MHS has done to combat them.

Dr. Cecilia Mikita is medical director of the Defense Health Agency Immunization Health Care Division, North Atlantic Region, at Walter Reed National Military Medical Center. Dr. Margaret Ryan is the medical director of the DHA Immunization Health Care Division, Pacific Region, at the Naval Medical Center in San Diego, California.



Members of Fort Knox, Kentucky, Public Health Activity and Environmental Health Services collected ticks from harvested deer in October 2021. These collected ticks offer insight into the species of ticks and the pathogens of tick-borne illness those ticks may be carrying that are present on the installation and surrounding areas. *Photo credit Sara Morris, Fort Knox*

What is tick-borne encephalitis?

Tick-borne encephalitis is a potentially serious viral disease associated with bites from infected ticks. TBE virus is not found in the United States; it is isolated to specific geographic regions extending from western and northern Europe through eastern and northern Asia. The virus is primarily transmitted to humans by infected ticks, with the highest risk between April and November. TBE-infected ticks are found in woodland habitats, and persons undertaking recreational outdoor activities, including hiking and camping, or who may be occupationally exposed, are at highest risk.

What are the symptoms of tick-borne encephalitis?

TBE is a potentially chronic and fatal neurologic disease. Most people infected with TBE virus have flu-like symptoms of fevers, fatigue, headaches, joint and muscle aches, and nausea which resolve in one to eight days. Approximately one-third of patients may progress to a second phase of neurologic symptoms including meningitis, encephalitis, myelitis, and paralysis.

How does this illness affect service members?

In the past 20 years, there have been 20 cases of TBE diagnosed in Department of Defense beneficiaries who traveled to parts of Europe, China, or Russia. The U.S. military has excellent programs, including disease tracking by the Armed Forces Health Surveillance Division and Integrated Pest Management, to prevent exposure to ticks carrying the virus in at-risk areas of the world.

Is there a vaccine against tick-borne encephalitis?

TBE vaccines have been available in Europe since the 1970s. The currently available TBE vaccine was licensed by the Food and Drug Administration in the U.S. in 2021. TBE vaccine is not a Force Health Protection requirement, but it is highly recommended for military service members and family members who will be traveling and living in at-risk areas of Europe and Asia and undertaking at-risk activities.

Who is the vaccine approved for?

The vaccine is approved for people aged 1 and older who are at risk of TBE exposure. The primary vaccine series is three doses, and one booster dose administered at least three years after the primary series if there is ongoing risk of exposure. It is a highly effective vaccine, creating an excellent immune response in 99% of vaccine recipients.

How can you protect against TBE?

Tick precautions are a very effective prevention strategy. The military's Integrated Pest Management Program plays a crucial role in preventing TBE. Precautions include the use of DEET or picaridin, wearing long pants and sleeves, and treating clothing and gear with permethrin. Tick checks should be performed on your body after being outdoors. Programs than combine mosquito control with individual vaccination are highly effective at preventing TBE.

What is yellow fever?

Yellow fever is a mosquito-borne virus found in tropical and subtropical areas in South America and Africa. It is transmitted from one host to another via the bite of an infected mosquito.

What are the symptoms of yellow fever?

Symptoms can vary widely from a mild febrile illness to severe infection. The incubation period is typically three to six days. If symptomatic, individuals present with sudden onset of fever, chills, headache, back pain, muscle aches, fatigue, weakness, nausea, and vomiting. Approximately 15% of individuals progress to a more serious or toxic form of the disease after a brief remission. Symptoms include high fevers, jaundice, bleeding, shock, and multisystem organ failure. Twenty to 50% of severe cases with liver or kidney involvement may die from YF.

Is there a vaccine against yellow fever?

The first YF vaccine was developed in 1938. The currently available vaccine is approved for individuals nine months of age and older. YF vaccine is required for military and civilian/DOD personnel deploying to or traveling to YF-endemic areas, including South America and Africa. Vaccination may be required for entry into certain countries. Most travelers require a single, lifetime dose of YF vaccine. YF vaccine is highly effective, with 99% of people developing immunity within 30 days after vaccination.

How can you protect against yellow fever?

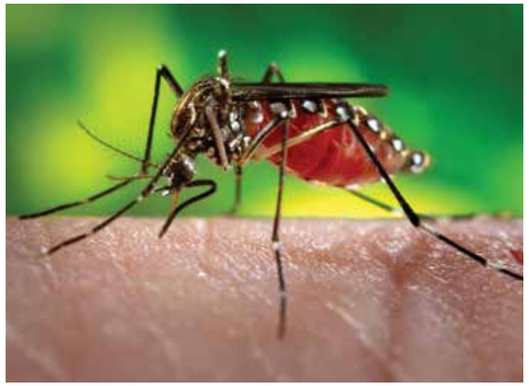
Mosquito control is an essential part of YF disease prevention. The Integrated Pest Management Program, including the use of insect repellent and insecticides, is imperative to preventing YF and other mosquito-borne infections. Programs than combine mosquito control with individual vaccination are highly effective at preventing YF.

What is Japanese Encephalitis?

Japanese Encephalitis virus is a mosquito-borne virus found in Asia and many areas of the Western Pacific. JE virus is closely related to West Nile virus. The virus can infect birds, certain farm animals, and humans; infected animals and persons are sometimes called "hosts." Mosquitos transmit the virus between hosts; mosquitoes are called "vectors."

What are the symptoms of this illness?

Although most people infected with JE virus have only mild fever or body aches, approximately one in every 250 people



A female Aedes aegypti mosquito while she was in the process of acquiring a blood meal from her human host. The U.S. military has a history of creating vaccines to protect against vector-borne diseases. *Photo credit U.S. Navy Petty Officer 3rd Class William Phillips, Naval Support Activity Bethesda*

with JE infection will develop encephalitis within one to two weeks after becoming infected. Encephalitis means "inflammation or the brain." Encephalitis from JE infection is characterized by high fever, severe headache, stiff neck, confusion, seizures, and/or paralysis. JE infection is fatal in approximately one-third of those who develop encephalitis. Among people who survive encephalitis after JE infection, approximately half will have lifelong disability.

Is there a vaccine against Japanese Encephalitis?

Yes, there is a highly effective vaccine available to prevent JE in humans. The vaccination is part of the routine childhood immunization schedule for children in Japan. It is required for military service members who travel to, or live in, JE-risk areas. JE vaccination is strongly recommended for military family members and others who travel to, or live in, JE-risk areas.

JE vaccine is recommended for all people ages two months and older who are at risk of JE exposure. The primary vaccine series is two doses, given at least one month apart. For persons who remain in, or return to, a JE-risk area after their primary vaccine series, a third dose can be given one year later.

When was the vaccine developed?

JE vaccines have been available in the United States since 1992. The current vaccine, which is abbreviated as JE-VC was FDA-licensed in 2009.

How can you protect against JE?

The military's Integrated pest management program, which include appropriate use of insecticide and insect repellent, is critical in preventing JE as well as other mosquito-borne infections. Programs than combine mosquito control with individual vaccination are highly effective at preventing JE.

health.mil

CPG

Active Duty
INFECTIOUS DISEASES

JBSA Health Officials Urge People to Be Cautious Around Bats

By David DeKunder 502nd Air Base Wing Public Affairs

March through October is bat migration season here which means there may be an increased instance of bats trying to make their way into facilities and living spaces. According to Texas A&M AgriLife Extension Service, there are 33 bat species in Texas, representing one of the most diverse bat populations in the U.S. — a population that is growing.

Joint Base San Antonio health officials are reminding residents to be careful, use common sense and take cautionary measures if they spot a bat on the installation.

Bats can carry rabies, a disease that can be spread from wild animals to pets to people.

According to the Texas Department of Health, approximately one percent of bats in the San Antonio area carry the rabies virus. In 2021, there were 22 cases of bats testing positive for rabies in Bexar County.

Bats can get into homes and structures through small openings, one-half to one-fourth inches, such as crevices, eaves, window blinds or shutters.

Senior Airman Angela Hollins, 559th Medical Squadron community health element chief, said JBSA residents or members who spot a bat near or inside a structure should not attempt to touch it with their hands.

"If you see a bat resting outside on a wall of your residence, under roof hangings, or on the ground, leave it alone," Hollins said. "You are not at risk unless you handle it."

March through October is bat migration season here which means there may be an increased instance of bats trying to make their way into facilities and living spaces. According to Texas A&M AgriLife Extension Service, there are 33 bat species in Texas, representing one of the most diverse bat populations in the U.S. — a population that is growing. *Courtesy photo by JBSA Photo Gallery*

Hollins cautions people to keep children and pets away from an area where a bat has been found, so to prevent exposure to a bat that may have rabies.

"For bats that get trapped and are found inside a residence or installation building, the best way to remove it is to open a nearby window and doors, as bats will want to go outdoors," Hollins added.

If the bat doesn't leave, JBSA members and residents can call the Civil Engineering Emergency Service Call Desk at 210-652-3151. JBSA residents also have the option of contacting their housing office to get the bat removed.

Beverly Benson, Army Public Health Nursing rabies prevention program manager at JBSA-Fort Sam Houston, said people should avoid contact with a sick bat, which can be flopping around on the ground, because of the possibility they could contract rabies from it if they touch it. If residents find a sick bat, she said residents need to keep their pets and children away from it.

Rabies is spread to a pet or human from a bite or through a scratch with saliva from a rabid animal infected by it. The virus can also be transmitted by a pet who has been infected to other pets and humans they bite or scratch.

Any bare skin contact with a bat or its saliva, or waking up to a bat in your room, could put you at risk for exposure to rabies, according to Seattle & King County Public Health. Teach your kids not to touch bats, or any wild animal, and be sure to keep your pets away from bats. Talk to your family about the importance of respecting wildlife from a distance.

Any JBSA residents or members who find a sick or dead bat are urged to call the Civil Engineering Emergency Service Call Desk.

People who are bitten or scratched by a bat, or any animal that is infected by rabies, should wash the area that was bitten immediately with soap water and go to a medical provider immediately to get checked out. The rabies infection can be prevented through a series of five shots. A pet that comes in contact with or is bitten by a bat should be taken to a veterinarian immediately.

If not treated, Benson said rabies is a disease that is 100 percent fatal once symptoms begin.

Benson said bats have small teeth that even if they bite you, sometimes that bite can't be felt and a person may not realize they have been bitten. Bats also leave small teeth marks that can disappear quickly.

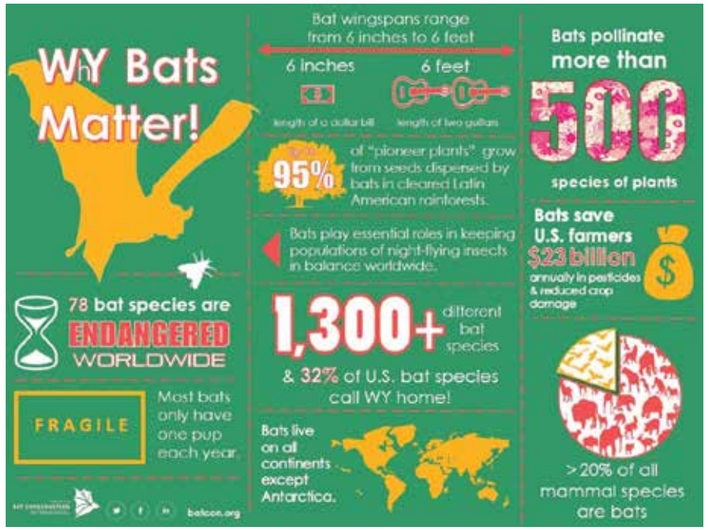
For example, a sleeping person who wakes up to find a bat in the room they were in or sees a bat in a room in which a child or other person was in, should seek medical assistance immediately.

"You don't want to take any chances," Benson said.

Salinas said residents should keep their pets vaccinated against rabies as Texas law requires annual booster shots for pets.

Residents can take measures to prevent bats from entering their homes, as bats can enter tiny openings.

Preventive measures include having chimneys capped, openings around eaves caulked or filled in, filling any electrical or plumbing holes outside leading into the house, having one-fourth inch mesh hardware cloth installed behind vents or shutters, utilizing draft guards under doors, keeping window screens maintained and not leaving doors open. Bat colonies that take up residence in attics, in wall spaces or under eaves of occupied buildings can be safely evicted. Using pesticides against bats is illegal and using traps can drive bats to other areas of a structure.



Bats in the United States are regarded for the most part as beneficial animals; they assist in maintaining the balance of nature by eating enormous quantities of insects like mosquitos, termites, and agricultural pests, diminishing mosquito-related diseases and the need for pesticides, according to Bat Conservation International. The majority of the approximately 30 bat species recorded from Texas feed principally on insects. *Courtesy graphic by JBSA Gallery*

Bats in the United States are regarded for the most part as beneficial animals; they assist in maintaining the balance of nature by eating enormous quantities of insects like mosquitos, termites, and agricultural pests, diminishing mosquito-related diseases and the need for pesticides, according to Bat Conservation International. The majority of the approximately 30 bat species recorded from Texas feed principally on insects.

Others pollinate many valuable plants, ensuring the production of fruits that support local economies, as well as diverse animal populations. Fruit-eating bats in the tropics disperse seeds that are critical to restoring cleared or damaged rainforests.

Even bat droppings (called guano) are valuable as a rich natural fertilizer. Guano is a major natural resource worldwide, and, when mined responsibly with bats in mind, it can provide significant economic benefits for landowners and local communities.

If a bat has come in direct contact with a family member or pet, seek assistance to capture the bat safely. The bat must be submitted for testing to determine rabies status. Contact the base Pest Management Office at 652-4299 or CE EMCS to have the bat tested for rabies. People with direct contact with the bat (bat-touched skin) should get immediate medical attention.

For more information, contact the 559th MDS Public Health Flight at 210-652-1876.

(Editor's Note: Original article by David DeKunder has been updated for this publication date.)

jbsa.mil

Armed Forces Medicine 2023

NOT ALL PROTECTIVE MEASURES ARE WORN ON THE OUTSIDE.

Learn more at
BNVaccines.com

BAVARIAN NORDIC

RabAvert®
Rabies Vaccine

PROTECTING OUR TROOPS FOR 25 YEARS AND COUNTING.

RabAvert® (Rabies Vaccine) is proven effective providing robust protection.[1,2]

The market-leading rabies vaccine in the US.[3]

Worldwide clinical experience, with more than 50 clinical trials since 1983.[1]

INDICATIONS AND USAGE

RabAvert is a vaccine approved for all age groups to help prevent rabies infection both before and after a suspected exposure.

IMPORTANT SAFETY INFORMATION

- People with a history of severe allergic reaction (e.g., anaphylaxis) to RabAvert or any of its ingredients should not receive RabAvert for protection before a potential exposure (PrEP) to the rabies virus. They should receive a different rabies vaccine if a suitable product is available. However, because rabies is almost always fatal if left untreated, the protection provided with RabAvert after a potential exposure (PEP) to the rabies virus outweighs the risks associated with a severe allergic reaction..
- The ingredients of RabAvert, which could in rare cases, cause allergic reactions in some people, include egg and chicken proteins, processed bovine (cow) gelatin and trace amounts of neomycin, chlortetracycline, and amphotericin B. Let your healthcare professional know if you have had any issues, including allergic reactions, with any of these ingredients or with vaccines in general.
- Severe, potentially life-threatening allergic reaction, swelling of the brain and spinal cord; loss of movement or sensation due to nerve damage, such as inflammation of the brain or temporary loss of movement; Guillain-Barré Syndrome; inflammation of spinal cord; inflamed nerves of the eye; and multiple sclerosis have in very rare cases been reported.
- RabAvert should be injected into muscle only. RabAvert injected into a vein may cause a reaction throughout the body, including shock.
- Fainting can occur when injectable vaccines are used, including RabAvert. Your healthcare provider should put procedures in place to avoid falling injury and to restore blood flow to the brain after fainting.
- Patients with a weakened immune system due to illness or the use of certain medications or treatments (such as radiation therapy, antimalarials, and corticosteroids) may have issues developing immunity. If such a patient is receiving RabAvert, then the healthcare professional may measure immune response through blood testing. Vaccination with RabAvert for protection before a potential exposure (PrEP) to the rabies virus should be delayed in anyone who is sick or recovering from an illness.
- RabAvert contains albumin which is a protein found in human blood that carries an extremely remote risk for transmission of viral diseases, including Creutzfeldt-Jakob disease (CJD), a rare brain disorder. No cases of transmission of viral diseases or CJD have ever been identified for albumin.
- Persons who have not been previously vaccinated against rabies will receive Human Rabies Immune Globulin (HRIG). HRIG should not be administered to persons who have been previously vaccinated as it may counteract the effect of the rabies vaccine. Let your healthcare provider know if you were previously vaccinated for rabies as you may not need HRIG.
- Only use RabAvert while pregnant or breastfeeding if clearly needed. RabAvert was not studied in pregnant or lactating women so it is not known if RabAvert can cause any harm to the fetus, have any effect on ability to get pregnant, or whether it is passed through breast milk to infants (but many drugs are excreted in human milk).
- There is no information on how RabAvert works when given at the same time as other vaccines.
- The most common side effects in clinical trials were reactions at the injection site, such as reddening, hardening, and pain; flu-like symptoms, such as lack of energy, tiredness, fever, headache, muscle pain, and feeling of discomfort; joint pain; dizziness; swelling of lymph nodes; upset stomach; and rash.
- Vaccination before a potential exposure (PrEP) to the rabies virus does not remove the need for additional therapy after a suspected or known rabies exposure.
- Seek the advice of a healthcare professional to help assess your specific level of risk if you are traveling to areas of high risk of rabies exposure; in frequent contact with the rabies virus or rabid animals, such as on the job; and/or are active outdoors and could encounter animals with rabies in the wild.
- If you are exposed to a potentially rabid animal, seek medical attention right away before you have symptoms. Once symptoms are present, the rabies infection has spread through the body and survival is unlikely.

Reporting Suspected Adverse Reactions

- Patients should always ask their healthcare professionals for medical advice about the appropriate use of vaccines and adverse events. To report SUSPECTED ADVERSE REACTIONS, contact Bavarian Nordic at 1-844-4BAVARIAN or the US Department of Health and Human Services by either visiting **www.vaers.hhs.gov/reportevent.html** or calling **1-800-822-7967**.

REFERENCES: 1. Giesen A, et al. 30 years of rabies vaccination with Rabipur: a summary of clinical data and global experience. *Expert Rev Vaccines*. 2015:14:351-367. **2.** RabAvert Rabies Vaccine. Prescribing Information. Accessed July. 2022. https://dailymed.nlm.nih.gov/dailymed/fda/fdaDrugXsl.cfm?setid=84b7a672-eeb1-4527-84ac-68196b156be2 **3.** IQVIA. Data on file. 2018 - May 2022. Accessed July 2022.

PRESCRIBING INFORMATION

RabAvert

Rabies Vaccine

Rabies Vaccine for Human Use

DESCRIPTION

RabAvert Rabies Vaccine produced by GlaxoSmithKline GmbH for Bavarian Nordic A/S is a sterile, freeze-dried vaccine obtained by growing the fixed-virus strain Flury Low Egg Passage (LEP) in primary cultures of chicken fibroblasts. The strain Flury LEP was obtained from American Type Culture Collection as the 59th egg passage. The growth medium for propagation of the virus is a synthetic cell culture medium with the addition of human albumin, polygeline (processed bovine gelatin), and antibiotics. The virus is inactivated with β-propiolactone and further processed by zonal centrifugation in a sucrose density gradient. The vaccine is lyophilized after addition of a stabilizer solution that consists of buffered polygeline and potassium glutamate. One dose of reconstituted vaccine contains ≤12 mg polygeline (processed bovine gelatin), ≤0.3 mg human serum albumin, 1 mg potassium glutamate, and 0.3 mg sodium EDTA. Small quantities of bovine serum are used in the cell culture process. Bovine components originate only from the United States, Australia, and New Zealand. Minimal amounts of chicken protein may be present in the final product; ovalbumin content is ≤3 ng/dose (1 mL), based on ELISA. Antibiotics (neomycin, chlortetracycline, amphotericin B) added during cell and virus propagation are largely removed during subsequent steps in the manufacturing process. In the final vaccine, neomycin is present at ≤10 mcg, chlortetracycline at ≤200 ng, and amphotericin B at ≤20 ng per dose. RabAvert is intended for intramuscular (IM) injection. The vaccine contains no preservative and should be used immediately after reconstitution with the supplied Sterile Diluent for RabAvert (Water for Injection). The potency of the final product is determined by the National Institutes of Health (NIH) mouse potency test using the United States (US) reference standard. The potency of 1 dose (1.0 mL) of RabAvert is at least 2.5 IU of rabies antigen. RabAvert is a white, freeze-dried vaccine for reconstitution with the diluent prior to use; the reconstituted vaccine is a clear to slightly opalescent, colorless to slightly pink suspension.

CLINICAL PHARMACOLOGY

Rabies in the United States: Over the last 100 years, the epidemiology of rabies in animals in the US has changed dramatically. More than 90% of all animal rabies cases reported annually to the Centers for Disease Control and Prevention (CDC) now occur in wildlife, whereas before 1960 the majority was in domestic animals. The principal rabies hosts today are wild terrestrial carnivores and bats. Annual human deaths have fallen from more than a hundred at the turn of the century to 1 to 2 per year despite major epizootics of animal rabies in several geographic areas. Within the US, only Hawaii has remained rabies free. Although rabies among humans is rare in the US, every year tens of thousands of people receive rabies vaccine for postexposure prophylaxis.

Rabies is a viral infection transmitted via the saliva of infected mammals. The virus enters the central nervous system of the host, causing an encephalomyelitis that is almost invariably fatal. The incubation period varies between 5 days and several years, but is usually between 20 and 60 days. Clinical rabies presents either in a furious or in a paralytic form. Clinical illness most often starts with prodromal complaints of malaise, anorexia, fatigue, headache, and fever followed by pain or paresthesia at the site of exposure. Anxiety, agitation, and irritability may be prominent during this period, followed by hyperactivity; disorientation; seizures; aerophobia and hydrophobia; hypersalivation; and eventually paralysis, coma, and death.

Modern day prophylaxis has proven nearly 100% successful; most human fatalities now occur in people who fail to seek medical treatment, usually because they do not recognize a risk in the animal contact leading to the infection. Inappropriate postexposure prophylaxis may also result in clinical rabies. Survival after clinical rabies is extremely rare, and is associated with severe brain damage and permanent disability.

RabAvert (in combination with passive immunization with Human Rabies Immune Globulin [HRIG] and local wound treatment) in postexposure treatment against rabies has been shown to protect patients of all age groups from rabies, when the vaccine was administered according to CDC's Advisory Committee on Immunization Practices (ACIP) or World Health Organization (WHO) guidelines and as soon as possible after rabid animal contact. Anti-rabies antibody titers after immunization have been shown to reach levels well above the minimum antibody titer accepted as seroconversion (protective titer) within 14 days after initiating the postexposure treatment series. The minimum antibody titer accepted as seroconversion is a 1:5 titer (complete inhibition in the rapid fluorescent focus inhibition test [RFFIT] at 1:5 dilution) as specified by CDC[1] or ≥0.5 IU/mL as specified by WHO.[2,3]

Clinical Studies:

Preexposure Vaccination: The immunogenicity of RabAvert was demonstrated in clinical trials conducted in different countries such as the US,[4,5] the United Kingdom (UK),[6] Croatia,[7] and Thailand.[8-10] When administered according to the recommended immunization schedule (Days 0, 7, and 21 or 0, 7, and 28), 100% of subjects attained a protective titer. In 2 studies carried out in the US in 101 subjects, antibody titers >0.5 IU/mL were obtained by Day 28 in all subjects. In studies carried out in Thailand in 22 subjects and in Croatia in 25 subjects, antibody titers of >0.5 IU/mL were obtained by Day 14 (injections on Days 0, 7, and 21) in all subjects.

The ability of RabAvert to boost previously immunized subjects was evaluated in 3 clinical trials. In the Thailand study, preexposure booster doses were administered to 10 individuals. Antibody titers of >0.5 IU/mL were present at baseline on Day 0 in all subjects.[9] Titers after a booster dose were enhanced from geometric mean titers (GMTs) of 1.91 to 23.66 IU/mL on Day 30. In an additional booster study, individuals known to have been immunized with Human Diploid Cell Vaccine (HDCV) were boosted with RabAvert. In this study, a booster response was observed on Day 14 for all individuals (22/22).[11] In a trial carried out in the US,[4] an IM booster dose of RabAvert resulted in a significant increase in titers in all subjects (35/35), regardless of whether they had received RabAvert or HDCV as the primary vaccine.

Persistence of antibody after immunization with RabAvert was evaluated. In a trial performed in the UK, neutralizing antibody titers >0.5 IU/mL were present 2 years after immunization in all sera (6/6) tested.

Preexposure Vaccination in Children: Preexposure administration of RabAvert in 11 Thai children aged 2 years and older resulted in antibody levels higher than 0.5 IU/mL on Day 14 in all children.[12]

Postexposure Treatment: RabAvert, when used in the recommended postexposure WHO program of 5 to 6 IM injections of 1 mL (Days 0, 3, 7, 14, and 30 and optionally on Day 90) provided protective titers of neutralizing antibody (>0.5 IU/mL) in 158/160 patients[8,9,13-16] within 14 days and in 215/216 patients by Days 28 to 38.

Of these, 203 were followed for at least 10 months. No case of rabies was observed.[8,9,13-20] Some patients received HRIG, 20 to 30 IU/kg body weight, or Equine Rabies Immune Globulin (ERIG), 40 IU/kg body weight, at the time of the first dose. In most studies,[8,9,13,17] the addition of either HRIG or ERIG caused a slight decrease in GMTs which was neither clinically relevant nor statistically significant. In one study,[16] patients receiving HRIG had significantly lower (P<0.05) GMTs on Day 14; however, this was not clinically relevant. After Day 14 there was no statistical significance.

The results of several studies of normal volunteers receiving the postexposure WHO regimen, i.e., "simulated" postexposure, showed that with sampling by Days 28 to 30, 205/208 vaccinees had protective titers >0.5 IU/mL.

No postexposure vaccine failures have occurred in the US since cell culture vaccines have been routinely used.[1] Failures have occurred abroad, almost always after deviation from the recommended postexposure treatment protocol.[21-24] In 2 cases with bites to the face, treatment failed although no deviation from the recommended postexposure treatment protocol appeared to have occurred.[25]

Postexposure Treatment in Children: In a 10-year serosurveillance study, RabAvert was administered to 91 children aged 1 to 5 years and 436 children and adolescents aged 6 to 20 years.[19] The vaccine was effective in both age groups. None of these patients developed rabies.

One newborn received RabAvert on an immunization schedule of Days 0, 3, 7, 14, and 30; the antibody concentration on Day 37 was 2.34 IU/mL. There were no clinically significant adverse events.[26]

INDICATIONS AND USAGE

RabAvert is indicated for preexposure vaccination, in both primary series and booster dose, and for postexposure prophylaxis against rabies in all age groups.

Usually an immunization series is initiated and completed with 1 vaccine product.

No clinical studies have been conducted that document a change in efficacy or the frequency of adverse reactions when the series is completed with a second vaccine product. However, for booster immunization, RabAvert was shown to elicit protective antibody level responses in persons tested who received a primary series with HDCV.[4,11]

Preexposure Vaccination: See Table 1 and DOSAGE AND ADMINISTRATION.

Preexposure vaccination consists of 3 doses of RabAvert 1.0 mL given intramuscularly (deltoid region), 1 each on Days 0, 7, and 21 or 28[1] (see also Table 1 for criteria for preexposure vaccination).

Preexposure vaccination does not eliminate the need for additional therapy after a known rabies exposure (see DOSAGE AND ADMINISTRATION: Postexposure Prophylaxis of Previously Immunized Persons).

Preexposure vaccination should be offered to persons in high-risk groups, such as veterinarians, animal handlers, wildlife officers in areas where animal rabies is enzootic, certain laboratory workers, and persons spending time in foreign countries where rabies is endemic. Persons whose activities bring them into contact with potentially rabid dogs, cats, foxes, skunks, bats, or other species at risk of having rabies should also be considered for preexposure vaccination. International travelers might be candidates for preexposure vaccination if they are likely to come in contact with animals in areas where dog rabies is enzootic and immediate access to appropriate medical care, including biologics, might be limited.[27,28]

Preexposure vaccination is given for several reasons. First, it may provide protection to persons with inapparent exposure to rabies. Second, it may protect persons whose postexposure therapy might be expected to be delayed. Finally, although it does not eliminate the need for prompt therapy after a rabies exposure, it simplifies therapy by eliminating the need for globulin and decreasing the number of doses of vaccine needed. This is of particular importance for persons at high risk of being exposed in countries where the available rabies-immunizing products may carry a higher risk of adverse reactions.

In some instances, booster doses of vaccine should be administered to maintain a serum titer corresponding to at least complete neutralization at a 1:5 serum dilution by the RFFIT (Table 1); each booster immunization consists of a single dose. See CLINICAL PHARMACOLOGY. Serum antibody determinations to decide upon the need for a booster dose is suggested by ACIP and is considered cost effective.

Table 1. Rabies Preexposure Prophylaxis Guide – United States, 1999[a]

Risk Category and Nature of Risk	Typical Populations	Preexposure Prophylaxis Recommendations
Continuous. Virus present continuously, often in high concentrations. Specific exposures likely to go unrecognized. Bite, non-bite, or aerosol exposure.	Rabies research lab workers,[b] rabies biologics production workers.	Primary course. Serologic testing every 6 months; booster vaccination if antibody titer is below acceptable level.[b]
Frequent. Exposure usually episodic, with source recognized, but exposure might be unrecognized. Bite, non-bite, or aerosol exposure.	Rabies diagnostic lab workers,[b] spelunkers, veterinarians and staff, and animal-control and wildlife workers in rabies enzootic areas.	Primary course. Serologic testing every 2 years; booster vaccination if antibody titer is below acceptable level.[c]
Infrequent (greater than population-at-large). Exposure nearly always episodic with source recognized. Bite or non-bite exposure.	Veterinarians and animal-control and wildlife workers in areas with low rabies rates. Veterinary students. Travelers visiting areas where rabies is enzootic and immediate access to appropriate medical care including biologics is limited.	Primary course. No serologic testing or booster vaccination.[c]
Rare (population-at-large). Exposures always episodic with source recognized. Bite or non-bite exposure.	US population-at-large, including persons in rabies-epizootic areas.	No vaccination necessary.

[a]Adapted from the Recommendations of the Advisory Committee on Immunization Practices: Human Rabies Prevention – United States, 1999.[1]

[b]Judgment of relative risk and extra monitoring of vaccination status of laboratory workers is the responsibility of the laboratory supervisor.[29]

[c]Minimum acceptable antibody level is complete virus neutralization at a 1:5 serum dilution by rapid fluorescent focus inhibition test. A booster dose should be administered if the titer falls below this level.

Postexposure Treatment: See Table 2 and DOSAGE AND ADMINISTRATION.

The following recommendations are only a guide. In applying them, take into account the animal species involved, the circumstances of the bite or other exposure, the immunization status of the animal, and presence of rabies in the region (as outlined below). Local or state public health officials should be consulted if questions arise about the need for rabies prophylaxis.[1]

Table 2. Rabies Postexposure Prophylaxis Guide – United States, 1999[a]

Animal Type	Evaluation and Disposition of Animal	Postexposure Prophylaxis Recommendations
Dogs, cats, and ferrets	Healthy and available for 10 days' observation	Should not begin prophylaxis unless animal develops clinical signs of rabies[b]
	Rabid or suspected rabid	Immediately vaccinate
	Unknown (e.g., escaped)	Consult public health officials
Skunks, raccoons, bats, foxes, and most other carnivores	Regarded as rabid unless animal proven negative by laboratory tests[c]	Consider immediate vaccination
Livestock, small rodents, lagomorphs (rabbits and hares), large rodents (woodchucks and beavers), and other mammals	Consider individually	Consult public health officials. Bites of squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, mice, other small rodents, rabbits, and hares almost never require antirabies postexposure prophylaxis.

[a]Adapted from the Recommendations of the Advisory Committee on Immunization Practices: Human Rabies Prevention – United States, 1999.[1]

[b]During the 10-day observation period, begin postexposure prophylaxis at the first sign of rabies in a dog, cat, or ferret that has bitten someone. If the animal exhibits clinical signs of rabies, it should be euthanized immediately and tested.

[c]The animal should be euthanized and tested as soon as possible. Holding for observation is not recommended. Discontinue vaccine if immunofluorescence test results of the animal are negative.

In the US, the following factors should be considered before antirabies treatment is initiated.

Species of Biting Animal: Wild terrestrial animals (especially skunks, raccoons, foxes, and coyotes) and bats are the animals most commonly infected with rabies and are the most important potential source of infection for both humans and domestic animals. Unless a wild animal is tested and shown not to be rabid, postexposure prophylaxis should be initiated upon bite or non-bite exposure to the animals (see definition in "Type of Exposure" below). If treatment has been initiated and subsequent testing in a qualified laboratory shows the exposing animal is not rabid, postexposure prophylaxis can be discontinued.[1]

The likelihood of rabies in a domestic animal varies from region to region; hence, the need for postexposure prophylaxis also varies.[1]

Small rodents (such as squirrels, hamsters, guinea pigs, gerbils, chipmunks, rats, and mice) and lagomorphs (including rabbits and hares) are almost never found to be infected with rabies and have not been known to transmit rabies to humans in the US. Bites from large rodents such as woodchucks (including groundhogs) and beavers should be considered as possible rabies exposures, especially in regions where rabies is enzootic in raccoons.[30] In all cases involving rodents, the state or local health department should be consulted before a decision is made to initiate antirabies postexposure prophylaxis.[1]

Circumstances of Biting Incident: An UNPROVOKED attack is more likely than a provoked attack to indicate the animal is rabid. Bites inflicted on a person attempting to feed or handle an apparently healthy animal should generally be regarded as PROVOKED. A currently vaccinated dog, cat, or ferret is unlikely to become infected with rabies.[1]

Type of Exposure: Rabies is transmitted by introducing the virus into open cuts or wounds in skin or via mucous membranes. The likelihood of rabies infection varies with the nature and extent of exposure. Two categories of exposure should be considered:

Bite: Any penetration of the skin by teeth. Bites to highly innervated areas such as the face and hands carry the highest risk, but the site of the bite should not influence the decision to begin treatment. Recent epidemiologic data suggest that even the very limited injury inflicted by a bat bite (compared with lesions caused by terrestrial carnivores) should prompt consideration of postexposure prophylaxis unless the bat is available for testing and is negative for evidence of rabies.[1]

Non-bite: The contamination of open wounds, abrasions, mucous membranes, or theoretically, scratches with saliva or other potentially infectious material (such as neural tissue) from a rabid animal constitutes a non-bite exposure. In all instances of potential human exposures involving bats, and the bat is not available for testing, postexposure prophylaxis might be appropriate even if a bite, scratch, or mucous membrane exposure is not apparent when there is reasonable probability that such exposure might have occurred. Postexposure prophylaxis can be considered for persons who were in the same room as the bat and who might be unaware that a bite or direct contact had occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally disabled person, or intoxicated person) and rabies cannot be ruled out by testing the bat. Other contact by itself, such as petting a rabid animal and contact with blood, urine, or feces (e.g., guano) of a rabid animal, does not constitute an exposure and is not an indication for prophylaxis. Because the rabies virus is inactivated by desiccation and ultraviolet irradiation, in general, if the material containing the virus is dry, the virus can be considered noninfectious. Two cases of rabies have been attributed to probable aerosol exposures in laboratories, and 2 cases of rabies in Texas could possibly have been due to airborne exposures in caves containing millions of bats.[1]

The only documented cases for rabies from human-to-human transmission occurred in 8 patients, including 2 in the US, who received corneas transplanted from persons who died of rabies undiagnosed at the time of death.[1] Stringent guidelines for acceptance of donor corneas have been implemented to reduce this risk.

Bite and non-bite exposure from humans with rabies theoretically could transmit rabies, but no laboratory-diagnosed cases occurring under such situations have been documented. Each potential exposure to human rabies should be carefully evaluated to minimize unnecessary rabies prophylaxis.[1]

Postexposure Treatment Schedule: See also DOSAGE AND ADMINISTRATION.

The essential components of rabies postexposure prophylaxis are prompt local treatment of wounds and administration of both HRIG and vaccine.

A complete course of postexposure treatment for previously unvaccinated adults and children consists of a total of 5 doses of vaccine, each 1.0 mL: one IM injection (deltoid) on each of Days 0, 3, 7, 14, and 28. For previously immunized adults and children, a total of 2 doses of vaccine, each 1.0 mL: one IM injection (deltoid) on each of Days 0 and 3. No HRIG should be administered to previously vaccinated persons as it may blunt their rapid memory response to rabies antigen.

Local Treatment of Wounds: Immediate and thorough washing of all bite wounds and scratches with soap and water is an important measure for preventing rabies. In animal studies, thorough local wound cleansing alone has been shown to reduce markedly the likelihood of rabies. Whenever possible, bite injuries should not be sutured to avoid further and/or deeper contamination. Tetanus prophylaxis and measures to control bacterial infection should be given as indicated.[1]

Postexposure Prophylaxis of Rabies: The regimen for postexposure prophylaxis depends on whether or not the patient has been previously immunized against rabies (see below). For persons who have not previously been immunized against rabies, the schedule consists of an initial IM injection of HRIG exactly 20 IU/kg body weight in total. If anatomically feasible, the FULL DOSE of HRIG should be thoroughly infiltrated in the area around and into the wounds. Any remaining volume of HRIG should be injected intramuscularly at a site distant from rabies vaccine administration. HRIG should never be administered in the same syringe or in the same anatomical site as the rabies vaccine. HRIG is administered only once (for specific instructions for HRIG use, see the product package insert). The HRIG injection is followed by a series of 5 individual injections of RabAvert (1.0 mL each) given intramuscularly on Days 0, 3, 7, 14, and 28. Postexposure rabies prophylaxis should begin the same day exposure occurred or as soon after exposure as possible. The combined use of HRIG and RabAvert is recommended by the CDC for both bite and non-bite exposures, regardless of the interval between exposure and initiation of treatment.

In the event that HRIG is not readily available for the initiation of treatment, it can be given through the seventh day after administration of the first dose of vaccine. HRIG is not indicated beyond the seventh day because an antibody response to RabAvert is presumed to have begun by that time.[1]

The sooner treatment is begun after exposure, the better. However, there have been instances in which the decision to begin treatment was made as late as 6 months or longer after exposure due to delay in recognition that an exposure had occurred. Postexposure antirabies treatment should always include administration of both passive antibody (HRIG) and immunization, with the exception of persons who have previously received complete immunization regimens (preexposure or postexposure) with a cell culture vaccine, or persons who have been immunized with other types of vaccines and have had documented rabies antibody titers. Persons who have previously received rabies immunization should receive 2 IM doses of RabAvert: one on Day 0 and another on Day 3. They should not be given HRIG as this may blunt their rapid memory response to rabies antigen.

Postexposure Prophylaxis Outside the United States: If postexposure treatment is begun outside the US with regimens or biologics that are not used in the US, it may be prudent to provide additional treatment when the patient reaches the US. State or local health departments should be contacted for specific advice in such cases.[1]

CONTRAINDICATIONS

Preexposure Prophylaxis:

Hypersensitivity: History of anaphylaxis to the vaccine or any of the vaccine components constitutes a contraindication to preexposure vaccination with this vaccine.

Postexposure Prophylaxis: In view of the almost invariably fatal outcome of rabies, there is no contraindication to postexposure prophylaxis, including pregnancy.[1]

WARNINGS

Patients considered to be at risk of a severe hypersensitivity reaction to the vaccine or any of the vaccine components should receive an alternative rabies vaccine if a suitable product is available.

Anaphylaxis, meningitis; neuroparalytic events such as encephalitis, transient paralysis; Guillain-Barré Syndrome; myelitis; retrobulbar neuritis; and multiple sclerosis have been reported to be temporally associated with the use of RabAvert. See PRECAUTIONS and ADVERSE REACTIONS. A patient's risk of developing rabies must be carefully considered, however, before deciding to discontinue immunization.

For intramuscular use only. For adults, the deltoid area is the preferred site of immunization; for small children and infants, administration into the anterolateral zone of the thigh is preferred. The use of the gluteal region should be avoided, since administration in this area may result in lower neutralizing antibody titers.[1]

Unintentional intravascular injection may result in systemic reactions, including shock.

Syncope (fainting) can occur in association with administration of injectable vaccines, including RabAvert. Syncope can be accompanied by transient neurological signs such as visual disturbance, paresthesia, and tonic-clonic limb movements. Procedures should be in place to avoid falling injury and to restore cerebral perfusion following syncope. See PRECAUTIONS and ADVERSE REACTIONS.

Development of active immunity after vaccination may be impaired in immune-compromised individuals. Please refer to PRECAUTIONS: Drug Interactions.

This product contains albumin, a derivative of human blood. It is present in RabAvert at concentrations of ≤0.3 mg/dose. Based on effective donor screening and product manufacturing processes, it carries an extremely remote risk for transmission of viral diseases. A theoretical risk for transmission of Creutzfeld-Jakob disease (CJD) also is considered extremely remote. No cases of transmission of viral diseases or CJD have ever been identified for albumin.

PRECAUTIONS

General: The healthcare provider should question the patient, parent, or guardian about (1) the current health status of the vaccinee and (2) reactions to a previous dose of RabAvert or a similar product. Preexposure vaccination should be postponed in the case of sick and convalescent persons and those considered to be in the incubation stage of an infectious disease. A separate, sterile syringe and needle should be used for each patient. Needles must not be recapped and should be properly disposed of. As with any rabies vaccine, vaccination with RabAvert may not protect 100% of susceptible individuals.

Hypersensitivity: RabAvert contains residues of egg and chicken proteins, such as ovalbumin. In instances where individuals have developed clinical symptoms of anaphylaxis such as generalized urticaria, upper airway (lip, tongue, throat, laryngeal, or epiglottal) edema, laryngeal spasm or bronchospasm, hypotension, or shock, following exposure to egg or chicken protein, the vaccine should only be administered by personnel with the capability and facilities to manage anaphylaxis post vaccination.

Since reconstituted RabAvert contains processed bovine gelatin and trace amounts of neomycin, chlortetracycline, and amphotericin B, the possibility of allergic reactions in individuals hypersensitive to these substances should be considered when administering the vaccine.

Epinephrine injection (1:1,000) must be immediately available should anaphylactic or other allergic reactions occur.

When a person with a history of hypersensitivity must be given RabAvert, antihistamines may be given; epinephrine (1:1,000), volume replacement, corticosteroids, and oxygen should be readily available to counteract anaphylactic reactions.

Drug Interactions: Radiation therapy, antimalarials, corticosteroids, other immunosuppressive agents, and immunosuppressive illnesses can interfere with the development of active immunity after vaccination and may diminish the protective efficacy of the vaccine. Preexposure vaccination should be administered to such persons with the awareness that the immune response may be inadequate. Immunosuppressive agents should not be administered during postexposure therapy unless essential for the treatment of other conditions. When rabies postexposure prophylaxis is administered to persons receiving corticosteroids or other immunosuppressive therapy, or who are immunosuppressed, it is important that a serum sample on Day 14 (the day of the fourth vaccination) be tested for rabies antibody to ensure that an acceptable antibody response has been induced.[1]

HRIG must not be administered at more than the recommended dose, since active immunization to the vaccine may be impaired.

No data are available regarding the concurrent administration of RabAvert with other vaccines.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Long-term studies with RabAvert have not been conducted to assess the potential for carcinogenesis, mutagenesis, or impairment of fertility.

Use in Pregnancy: Animal reproductive studies have not been conducted with RabAvert. It is also not known whether RabAvert can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. RabAvert should be given to a pregnant woman only if clearly needed. The ACIP has issued recommendations for use of rabies vaccine in pregnant women.[1]

Use in Nursing Mothers: It is not known whether RabAvert is excreted in animal or human milk, but many drugs are excreted in human milk. Although there are no data, because of the potential consequences of inadequately treated rabies exposure, nursing is not considered a contraindication to postexposure prophylaxis. If the risk of exposure to rabies is substantial, preexposure vaccination might also be indicated during nursing.

Pediatric Use: Children and infants receive the same dose of 1 mL, given intramuscularly, as do adults.

Only limited data on the safety and efficacy of RabAvert in the pediatric age group are available. However, in 3 studies some preexposure and postexposure experience has been gained[12,19,26] (see CLINICAL PHARMACOLOGY: Clinical Studies).

Geriatric Use: Clinical studies of RabAvert did not include sufficient numbers of subjects aged 65 and older to determine whether they respond differently from younger subjects. Other reported clinical experience has not identified differences in responses between the elderly and younger patients.

ADVERSE REACTIONS

In very rare cases, neurological and neuroparalytical events have been reported in temporal association with administration of RabAvert (see WARNINGS). These include cases of hypersensitivity (see CONTRAINDICATIONS, WARNINGS, and PRECAUTIONS).

The most commonly occurring adverse reactions are injection site reactions, such as injection site erythema, induration, and pain; flu-like symptoms, such as asthenia, fatigue, fever, headache, myalgia, and malaise; arthralgia; dizziness; lymphadenopathy; nausea; and rash.

A patient's risk of acquiring rabies must be carefully considered before deciding to discontinue vaccination. Advice and assistance on the management of serious adverse reactions for persons receiving rabies vaccines may be sought from the state health department or CDC (see CONTRAINDICATIONS).

Local reactions such as induration, swelling, and reddening have been reported more often than systemic reactions. In a comparative trial in normal volunteers, Dreesen et al..[4] described their experience with RabAvert compared with an HDCV rabies vaccine. Nineteen subjects received RabAvert and 20 received HDCV. The most commonly reported adverse reaction was pain at the injection site, reported in 45% of the HDCV group and 34% of the group receiving RabAvert. Localized lymphadenopathy was reported in about 15% of each group. The most common systemic reactions were malaise (15% RabAvert vs. 25% HDCV), headache (10% RabAvert vs. 20% HDCV), and dizziness (15% RabAvert vs. 10% HDCV). In a recent study in the US[5], 83 subjects received RabAvert and 82 received HDCV. Again, the most common adverse reaction was pain at the injection site in 80% in the HDCV group and 84% in the group receiving RabAvert. The most common systemic reactions were headache (52% RabAvert vs. 45% HDCV), myalgia (53% RabAvert vs. 38% HDCV), and malaise (20% RabAvert vs. 17% HDCV). None of the adverse events were serious; almost all adverse events were of mild or moderate intensity. Statistically significant differences between vaccination groups were not found. Both vaccines were generally well tolerated.

Uncommonly observed adverse events include temperatures above 38°C (100°F), swollen lymph nodes, pain in limbs, and gastrointestinal complaints. In rare cases, patients have experienced severe headache, fatigue, circulatory reactions, sweating, chills, monoarthritis, and allergic reactions; transient paresthesias and 1 case of suspected urticaria pigmentosa have also been reported.

Observed During Clinical Practice (See WARNINGS and PRECAUTIONS): The following adverse reactions have been identified during post approval use of RabAvert. Because these reactions are reported voluntarily from a population of uncertain size, estimates of frequency cannot be made. These events have been chosen for inclusion due to their seriousness, frequency of reporting, causal connection to RabAvert, or a combination of these factors:

Allergic: Anaphylaxis, Type III hypersensitivity-like reactions, bronchospasm, urticaria, pruritus, edema.

Central Nervous System: Neuroparalysis, encephalitis, meningitis, transient paralysis, Guillain-Barré Syndrome, myelitis, retrobulbar neuritis, multiple sclerosis, presyncope, syncope, vertigo, visual disturbance.

Cardiac: Palpitations, hot flush.

Local: Extensive limb swelling.

Skin and Subcutaneous Tissue Disorders: Angioedema.

The use of corticosteroids to treat life-threatening neuroparalytic reactions may inhibit the development of immunity to rabies (see PRECAUTIONS, Drug Interactions).

Once initiated, rabies prophylaxis should not be interrupted or discontinued because of local or mild systemic adverse reactions to rabies vaccine. Usually such reactions can be successfully managed with anti-inflammatory and antipyretic agents.

Reporting of Adverse Events: Adverse events should be reported by the healthcare provider or patient to the US Department of Health and Human Services (DHHS) Vaccine Adverse Event Reporting System (VAERS). Report forms and information about reporting requirements or completion of the form can be obtained from VAERS by calling the toll-free number 1-800-822-7967.[1] In the US, such events can be reported to Bavarian Nordic: phone: 1-800-675-9596.

DOSAGE AND ADMINISTRATION

For intramuscular use only. The individual dose for adults, children, and infants is 1 mL.

In adults, administer vaccine by IM injection into the deltoid muscle. In small children and infants, administer vaccine into the anterolateral zone of the thigh. The gluteal area should be avoided for vaccine injections, since administration in this area may result in lower neutralizing antibody titers. Care should be taken to avoid injection into or near blood vessels and nerves. After aspiration, if blood or any suspicious discoloration appears in the syringe, do not inject but discard contents and repeat procedure using a new dose of vaccine at a different site.

Preexposure Dosage:

Primary Immunization: In the US, ACIP recommends 3 injections of 1 mL each: 1 injection on Day 0 and 1 on Day 7, and 1 either on Day 21 or 28 (for criteria for preexposure vaccination, see Table 1).

Booster Immunization: The individual booster dose is 1 mL, given intramuscularly.

Booster immunization is given to persons who have received previous rabies immunization and remain at increased risk of rabies exposure by reasons of occupation or avocation.

Persons who work with live rabies virus in research laboratories or vaccine production facilities (for continuous-risk category, see Table 1) should have a serum sample tested for rabies antibodies every 6 months. The minimum acceptable antibody level is complete virus neutralization at a 1:5 serum dilution by RFFIT. A booster dose should be administered if the titer falls below this level.

The frequent-risk category includes other laboratory workers such as those doing rabies diagnostic testing, spelunkers, veterinarians and staff, and animal-control and wildlife officers in areas where rabies is epizootic. Persons in the frequent-risk category should have a serum sample tested for rabies antibodies every 2 years and if the titer is less than complete neutralization at a 1:5 serum dilution by RFFIT should have a booster dose of vaccine. Alternatively, a booster can be administered in the absence of a titer determination.

The infrequent-risk category, including veterinarians, animal-control and wildlife officers working in areas of low rabies enzooticity (infrequent-exposure group), and international travelers to rabies enzootic areas, do not require routine preexposure booster doses of RabAvert after completion of a full primary preexposure vaccination scheme (Table 1).

Postexposure Dosage: Immunization should begin as soon as possible after exposure. A complete course of immunization consists of a total of 5 injections of 1 mL each: 1 injection on each of Days 0, 3, 7, 14, and 28 in conjunction with the administration of HRIG on Day 0. For children, see PRECAUTIONS: Pediatric Use.

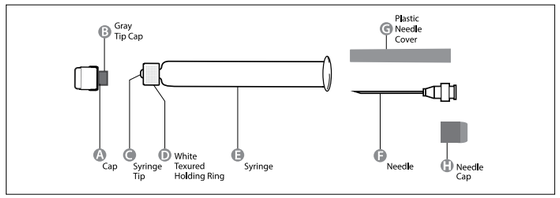
Begin with the administration of HRIG. Give 20 IU/kg body weight.

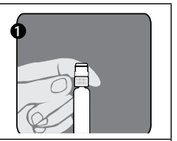
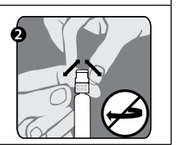
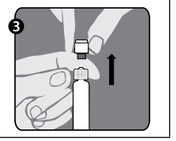
This formula is applicable to all age groups, including infants and children. The recommended dosage of HRIG should not exceed 20 IU/kg body weight because it may otherwise interfere with active antibody production. Since vaccine-induced antibody appears within 1 week, HRIG is not indicated more than 7 days after initiating postexposure prophylaxis with RabAvert. If anatomically feasible, the FULL DOSE of HRIG should be thoroughly infiltrated in the area around and into the wounds. Any remaining volume of HRIG should be injected intramuscularly at a site distant from rabies vaccine administration. HRIG should never be administered in the same syringe or in the same anatomical site as the rabies vaccine.

Because the antibody response following the recommended immunization regimen with RabAvert has been satisfactory, routine post-immunization serologic testing is not recommended. Serologic testing is indicated in unusual circumstances, as when the patient is known to be immunosuppressed. Contact the appropriate state health department or CDC for recommendations.

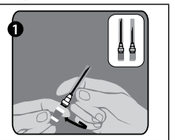
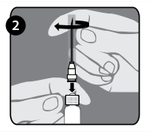
Postexposure Prophylaxis of Previously Immunized Persons: When rabies exposure occurs in a previously vaccinated person, that person should receive 2 IM (deltoid) doses (1 mL each) of RabAvert: one immediately and one 3 days later. HRIG should not be given in these cases. Persons considered to have been immunized previously are those who received a complete preexposure vaccination or postexposure prophylaxis with RabAvert or other tissue culture vaccines or have been documented to have had a protective antibody response to another rabies vaccine. If the immune status of a previously vaccinated person is not known, full postexposure antirabies treatment (HRIG plus 5 doses of vaccine) is recommended. In such cases, if a protective titer can be demonstrated in a serum sample collected before vaccine is given, treatment can be discontinued after at least 2 doses of vaccine.

Instructions for Reconstituting RabAvert: Parenteral drug products should be inspected visually for particulate matter and discoloration prior to administration. If either of these conditions exists, the vaccine should not be administered.



Step 1: With one hand, hold the syringe (E) with the cap pointing upward. Be sure to hold the syringe by the white textured holding ring (D).	
Step 2: With the other hand, grasp the cap (A) and firmly rock it back and forth to break its connection to the white textured holding ring (D). **Do not twist or turn the cap.**	
Step 3: Lift up to remove the cap (A) and the attached gray tip cap (B). Be careful not to touch the sterile syringe tip (C).	

Needle application (these instructions apply to both the green and the orange needles):

Step 1: Twist to remove the cap from the green reconstitution needle. Do not remove the plastic cover (G). This needle is the longer of the two needles.	
Step 2: With one hand, firmly hold syringe (E) by white textured holding ring (D). With your other hand, insert needle (F) and twist clockwise until it locks into place. Once needle is locked, remove its plastic cover (G). The syringe (E) is now ready for use.	

The package contains a vial of freeze-dried vaccine, a syringe containing 1 mL of sterile diluent, a sterile needle for reconstitution, and a sterile needle suitable for IM injection. The longer of the 2 needles supplied is the reconstitution needle. Affix the reconstitution needle to the syringe containing the Sterile Diluent for RabAvert. Insert the needle at a 45° angle and slowly inject the entire contents of the diluent (1 mL) into the vaccine vial. Mix gently to avoid foaming. The white, freeze-dried vaccine dissolves to give a clear to slightly opalescent, colorless to slightly pink suspension. Withdraw the total amount of dissolved vaccine into the syringe and replace the long needle with the smaller needle for IM injection. The reconstituted vaccine should be used immediately.

A separate sterile syringe and needle should be used for each patient. Needles must not be recapped and should be disposed of properly.

The lyophilization of the vaccine is performed under reduced pressure and the subsequent closure of the vials is done under vacuum. If there is no negative pressure in the vial, injection of Sterile Diluent for RabAvert would lead to an excess positive pressure in the vial. After reconstitution of the vaccine, it is recommended to unscrew the syringe from the needle to eliminate the negative pressure. After that, the vaccine can be easily withdrawn from the vial. It is not recommended to induce excess pressure, since over-pressurization may prevent withdrawing the proper amount of the vaccine.

HOW SUPPLIED

RabAvert product presentation is listed in Table 3.

Table 3. RabAvert Product Presentation

Presentation	Carton NDC Number	Components
Single-dose kit	50632-010-01	• 1 vial of freeze-dried vaccine containing a single dose [NDC 50632-013-01] • 1 disposable prefilled syringe of Sterile Diluent for reconstitution (1 mL) [NDC 50632-011-01] • 1 small needle for injection (25 gauge, 1 inch) and 1 long needle for reconstitution (21 gauge, 1 ½ inch)

RabAvert should be stored protected from light at 2°C to 8°C (36°F to 46°F). After reconstitution, the vaccine is to be used immediately. The vaccine may not be used after the expiration date given on package and container.

REFERENCES

1. CDC. Recommendations of the Advisory Committee on Immunization Practices (ACIP). Human Rabies Prevention – United States, 1999. Morbidity and Mortality Weekly Report Recommendations and Report, January 8, 1999, Vol.48, RR-1; 1.1-21.
2. Smith JS, Yager, PA & Baer, GM. A rapid reproducible test for determining rabies neutralizing antibody. *Bull WHO*. 1973; 48: 535-541.
3. Eighth Report of the WHO Expert Committee on Rabies. WHO Technical Report Series, no. 824; 1992.
4. Dreesen DW, et al. Two-year comparative trial on the immunogenicity and adverse effects of purified chick embryo cell rabies vaccine for preexposure immunization. *Vaccine.* 1989; 7: 397-400.
5. Dreesen, DW. Investigation of antibody response to purified chick embryo cell tissue culture vaccine (PCECV) or human diploid cell culture vaccine (HDCV) in healthy volunteers. Study synopsis 7USA401RA, September 1996 – December 1996 (unpublished).
6. Nicholson KG, et al. Preexposure studies with purified chick embryo cell culture rabies vaccine and human diploid cell vaccine: serological and clinical responses in man. *Vaccine.* 1987; 5: 208-210.
7. Vodopija I, et al. An evaluation of second generation tissue culture rabies vaccines for use in man: a four-vaccine comparative immunogenicity study using a preexposure vaccination schedule and an abbreviated 2-1-1 postexposure schedule. *Vaccine.* 1986; 4: 245-248.
8. Wasi C, et al. Purified chick embryo cell rabies vaccine (letter). *Lancet.* 1986; 1: 40.
9. Wasi C. Rabies prophylaxis with purified chick embryo (PCEC) rabies vaccine. Protocol 8T--201RA, 1983 - 1984 (unpublished).
10. Wasi C. Personal communication to Behringwerke AG, 1990.
11. Bijok U, et al. Clinical trials in healthy volunteers with the new purified chick embryo cell rabies vaccine for man. *J Commun Dis.* 1984; 16: 61-69.
12. Lumbiganon P, et al. Preexposure vaccination with purified chick embryo cell rabies vaccines in children. *Asian Pacific J Allergy Immunol.* 1989; 7: 99-101.
13. Vodopija I. Post-exposure rabies prophylaxis with purified chick embryo cell (PCEC) rabies vaccine. Protocol 7YU-201RA, 1983-1985 (unpublished).
14. John J. Evaluation of purified chick embryo cell culture (PCEC) rabies vaccine, 1987 (unpublished).
15. Tanphaichitra D, Siristonpun Y. Study of the efficacy of a purified chick embryo cell vaccine in patients bitten by rabid animals. *Intern Med.* 1987; 3: 158-160.
16. Thongcharoen P, et al. Effectiveness of new economical schedule of rabies postexposure prophylaxis using purified chick embryo cell tissue culture rabies vaccine. Protocol 7T--301IP, 1993 (unpublished).
17. Ljubicic M, et al. Efficacy of PCEC vaccines in post-exposure rabies prophylaxis. In: Vodopija, Nicholson, Smerdel & Bijok (eds.): Improvements in rabies post-exposure treatment (Proceedings of a meeting in Dubrovnik, Yogoslavia). Zagreb Institute of Public Health 1985.17.
18. Madhusudana SN, Tripathi KK. Post exposure studies with human diploid cell rabies vaccine and purified chick embryo cell vaccine: Comparative Serological Responses in Man. Zbl Bakt 1989; 271: 345-350.
19. Sehgal S, et al. Ten year longitudinal study of efficacy and safety of purified chick embryo cell vaccine for pre- and postexposure prophylaxis of rabies in Indian population. *J Commun Dis.* 1995; 27: 36-43.
20. Sehgal S, et al. Clinical evaluation of purified chick embryo cell antirabies vaccine for postexposure treatment. *J Commun Dis.* 1988; 20: 293-300.
21. Fishbein DB, et al. Administration of human diploid-cell rabies vaccine in the gluteal area. *N Engl J Med.* 1988; 318: 124-125.
22. Shill M, et al. Fatal rabies encephalitis despite appropriate postexposure prophylaxis. A case report. *N Engl J Med.* 1987; 316: 1257-1258.
23. Wilde H, et al. Failure of rabies postexposure treatment in Thailand. *Vaccine.* 1989; 7: 49-52.
24. Kuwert EK, et al. postexposure use of human diploid cell culture rabies vaccine. *Dev Biol Stand.* 1977; 37: 273-286.
25. Hemachudha T, et al. Additional reports of failure to respond to treatment after rabies exposure in Thailand. *Clin Infect Dis.* 1999; 28: 143-144.
26. Lumbiganon P, Wasi C. Survival after rabies immunisation in newborn infant of affected mother. *Lancet.* 1990; 336: 319-320.
27. Centers for Disease Control and Prevention. Health Information for International Travel, 2003-2004 (The Yellow Book). Atlanta: US Department of Health and Human Services, Public Health Service, 2003. Internet version at: http://www.cdc.gov/travel/yb
28. World Health Organization. International Travel and Health, 2002. Geneva, Switzerland. Internet version at: http://www.who.int/ith
29. CDC and NIH. Biosafety in microbiological and biomedical laboratories. 3rd. ed. Washington, D.C. HHS Publication no. (CDC) 93-8395, Washington, DC: US Department of Health and Human Services, 1993.
30. Krebs JW, et al. Rabies surveillance in the United States in 2001. *J Am Vet Med Assoc.* 2002; 221: 1690-1701.

BAVARIAN NORDIC

Manufactured for Bavarian Nordic A/S,
DK-2900 Hellerup, Denmark (US License No. 2096)
by GSK Vaccines, GmbH, D-35006 Marburg, Germany.

Distributed by Bavarian Nordic Inc.
3025 Carrington Mill Blvd., Suite 100
Morrisville, NC 27560

RAB:6PI
Rev. 01/2021

502057

Active Duty
INFECTIOUS DISEASES

USU President Encourages Attendees to "Think Outside the Box" at Infectious Disease Symposium

The Uniformed Services University's (USU) Infectious Disease Clinical Research Program (IDCRP) hosted its first Science Symposium, USU President gives welcoming remarks

By Sarah Marshall

USU President Dr. Jonathan Woodson delivered opening remarks during IDCRP's first annual Science Symposium in March. *Photo credit HJF communications*

Infectious diseases like COVID, HIV, and battlefield wound infections cause illness and disruptions that threaten health and military readiness around the world. To help foster collaboration in the field and share best practices, the Uniformed Services University's (USU) Infectious Disease Clinical Research Program (IDCRP) hosted its first Science Symposium March 6-10.

The event was held in collaboration with the Defense Health Agency Infectious Disease Working Group Subcommittee. Army Brig. Gen. (Dr.) Clinton Murray, Commanding General, Medical Readiness Command, Europe/Command Surgeon, kicked off the event with a keynote address, speaking to the importance of infectious disease research in light of the ongoing operational landscape that demands anticipation of where and how the U.S. military and its allies need to be prepared to fight.

Throughout the week, the event included presentations on an array of relevant topics, such as emerging infectious disease diagnostics, clinical applications of new technologies, and clinical characteristics of COVID-19 reinfection.

In his welcoming remarks, USU President Dr. Jonathan Woodson told symposium attendees to think outside the box in seeking solutions to addressing infectious disease threats.

"Forums like this one provide outstanding opportunities to share lessons-learned and best practices," Woodson said. "I look to all of you at this meeting to help us solve the difficult infectious disease challenges, from multidrug resistance and biofilms in war wounds, to skin and soft tissue infections in our basic trainees, to preparing us to respond rapidly to the next pandemic, whether from a next generation version of COVID or Ebola or bioterrorism, or an emerging infectious disease threat we don't even know about yet. Lean forward! Push the envelope."

During IDCRP's first annual Science Symposium, Army Capt. Benjamin Custer, a USU grad and National Capital Consortium Infectious Disease fellow, delivers a presentation on visceral leishmaniasis in service members. *Photo credit MC2 Brennen Easter, USU*

IDCRP is the top resource for the Department of Defense to readily identify and assess infectious disease risks and is also the DoD's global multi-center, collaborative clinical research network.

"IDCRP conducts clinical research to mitigate the impact of infectious diseases on military populations," says Dr. Robert O'Connell, IDCRP director. The Center is also focused on improving care of the warfighter, and ensuring the military community is ready to respond whenever and wherever the next infectious disease outbreak occurs.

Now approaching its 18th year, the IDCRP has been successful in generating clinical research evidence to impact

IDCRP Science Director Dr. David Tribble welcomed participants to the Center's first annual Science Symposium, which took place March 6-10 at the Henry M. Jackson Foundation for the Advancement of Military Medicine (HJF). *Photo credit HJF communications*

DoD policy and practice in the mitigation of infections affecting active duty servicemembers and MHS beneficiaries, said Dr. David Tribble, IDCRP's science director and symposium organizer.

"This success is due to our partnerships with the military infectious disease clinical and research community, the NIAID/NIH, and other non-DoD partners," Tribble said. "The IDCRP Science Symposium provides a forum to discuss the breadth of this effort, consider critical gaps, and develop future research."

IDCRP plans to make the symposium an annual meeting to continue the critical joint information sharing, according to O'Connell. "This event will help us form and strengthen essential collaborative partnerships and focus our research strategy."

Uniformed Services University

Active Duty
LABORATORY

Defense Public Health Celebrates Opening of New $248 million Public Health Laboratory

By Douglas Holl, Defense Centers for Public Health-Aberdeen

Dignitaries and distinguished guests gathered at Aberdeen Proving Ground South, formerly known as Edgewood, April 5 to celebrate the opening of the Department of Defense's new Public Health Laboratory at Building E2850.

The ribbon-cutting ceremony, which was attended by more than 500 staff and guests, marks the official opening of the lab that will support all scientific and most logistic operations for Defense Centers for Public Health-Aberdeen scientists and workers. These employees will enjoy many modern office amenities including 14 conference rooms, six huddle rooms, five breakrooms, and a wellness room. The building also contains a 50-person classroom for internal and external training courses.

"Public health and military health cannot be thought of separately," said Dr. Lester Martinez-Lopez, Assistant Secretary of Defense for Health Affairs, during the event. "Military public health is essential to achieving readiness — both that of our global military forces and their families. And critically important to public health is science — the kind of science that this facility will support."

Army Lt. Gen. Telita Crosland, director, Defense Health Agency, said the new lab represents the culmination of decades of incredible teamwork to support Combatant Commands with near real-time disease and bio-surveillance threat information to prevent disease and hazards for our service members.

"For more than 80 years, the Army Public Health Center worked tirelessly in support of that mission on behalf of the Army," said Crosland. "Now, as the Defense Centers for Public Health-Aberdeen, they are part of a larger global network of joint public health professionals, working together to support the Department of Defense and protect the lives or our men and women in uniform."

The Army Corps of Engineers supervised construction of the 280,000-square-foot laboratory building, which took eight years to complete and cost around $248 million. It is comprised of 67 individual lab spaces that will serve most of the Center's directorates including Environmental Health Sciences and Engineering, Occupational Health Sciences, Laboratory Sciences, and Toxicology. These lab spaces feature mobile

Army Lt. Col. Scott Vial, Defense Centers for Public Health-Aberdeen Public Health Laboratory project manager, briefs Dr. Lester Martinez-Lopez, Assistant Secretary of Defense for Health Affairs, outside of one of two anechoic chambers used for radio frequency experiments in the Public Health Laboratory at Aberdeen Proving Ground South April 5, 2023. The tour was part of a ribbon-cutting launching the new 280,000-square-foot Public Health Laboratory, which took eight years to complete and cost around $248 million. *Photo credit Graham Snodgrass*

casework and are tailorable to future public health missions, including another pandemic response. The building also includes several highly specialized lab spaces including an insectary for entomological studies and two anechoic chambers for radio frequency experiments.

"Many of the systems we're currently using will be replaced and upgraded as part of this move to E 2850, including new anechoic chambers, lasers, meters, and sensors," said John DeFrank, Nonionizing Radiation Division chief. "These advanced capabilities will enable the subject matter experts in the Nonionizing Radiation Division under DCPH-A to maintain our leadership in supporting nonionizing radiation protection for DOD. These SMEs envisioned what we needed to meet the challenges of protecting everyone from the innate hazards of advanced electromagnetic technologies. We're poised to see that vision realized and brought to life."

The new DCPH-A lab traces its lineage back more than 80 years to the Army Industrial Hygiene Laboratory, which was established at the beginning of World War II under the direct

jurisdiction of the Army surgeon general. Originally located at the prestigious Johns Hopkins School of Hygiene and Public Health, this early laboratory had a staff of just three employees and an annual budget of only $3,000.

"The majority of our scientists are currently housed in 13 buildings across APG South," said Army Lt. Col. Scott Vial, Public Health Laboratory project manager. "Eleven of these buildings are obsolete, some more than a century old were built to support World War I and World War II. They're no longer sustainable or viable to support current or future missions, which is why Congress and DOD invested heavily in this new lab."

Vial said the biggest upgrades are in terms of modernization. "We'll be getting more than 2,000 new pieces of lab equipment," said Vial. "The new equipment is largely state-of-the-art and on par with what you'd find in a civilian or university setting. Some of our specialty labs like entomology and non-ionizing radiation will benefit greatly from their physical spaces and the purpose-built infrastructure and equipment."

Vial said lab personnel began moving into the building in February starting with the Toxicology Directorate Health Effects Division. "They identified move processes that worked well and processes that need improvement before the moves begin in earnest," said Vial. "The next group of folks who move will be our logistics personnel in June. They're moving next so that they're in place to support our scientists' set-up and accreditation requirements when individual labs begin moving in."

Valerie Adams, a biologist with Health Effects Division, praised the transition team for their professionalism and flexibility. "The phrase 'no plan survives first contact with the enemy' was likely used several times to express how plans versus the real world often don't completely match up," said Adams. "Lieutenant Colonel Vial provided excellent leadership and oversight and managed to maintain a sense of humor while dealing with a lot of moving parts and objectives."

Rear Adm. Brandon Taylor, Defense Health Agency Public Health director, shared what the new lab will mean to the DOD community. "As we wind down the public health emergency known as the COVID-19 pandemic, we know that a joint response to our global public health challenges is the best approach," said Taylor. "Recently, experts here at Aberdeen received samples from across DOD and helped us target the areas that were in most need of COVID-19 mitigation strategies. The work here saves lives by stopping or preventing disease in our DOD community."

DCPH-A Director Army Col. Alisa Wilma also praised the breadth, depth and quality of work done every day by DCPH-A personnel. "I am honored to be a part of an organization that protects the health of our DOD family," said Wilma. "I believe that one of the most important missions is our role in identifying and assessing those chemical, biological, radiological and physical hazards that threaten DOD personnel in deployed locations, on installations and in our workplaces worldwide."

The Defense Visual Information Distribution Service

Lab Professionals Play Key Role in Public Health and Patient Care

By the Armed Forces Health Surveillance Division

Medical laboratory professionals work at all levels within the U.S. Department of Defense to help identify and diagnose various health threats that may impact our forces.

"Medical laboratory scientists are health care detectives working on the front lines to provide critical information for health care providers," said U.S. Air Force Col. Patrick Kennedy, chief of DHA's Armed Forces Health Surveillance Division.

"In garrison, we use state-of-the-art instrumentation and scientific methods to provide accurate and timely diagnostics to analyze all types of body fluids," added Kennedy. In addition to his role at AFHSD, Kennedy performs two additional duties for Air Force as the Air Force Surgeon General Consultant for Laboratory and Biomedical Associate Corps Chief for Laboratory.

Lab professionals serve in various positions throughout the DOD — in military hospitals and clinics' laboratories to diagnose disease, in research organizations searching for new ways to detect and treat disease, and as policy developers at DOD level," said U.S. Air Force Lt. Col. Warren Conrow, director of the center for laboratory medicine services at DHA.

"We also staff donor centers and transfusion centers to ensure a lifeline of blood products; we partner with our public health partners to provide disease surveillance; we serve as executive officers, commanders, and even as directors," he added.

"Lab analysis is critical to 80% of any medical diagnosis, and our ability to test enables leaders to make force health protection decisions (in garrison and deployed)," said Kennedy.

Conrow agreed, "The lab protects the warfighter and our military community by providing the right diagnostic information (accurate and safe lab and pathology results), performed by the right people, using the right testing guidelines, at the right time."

Future advances for lab professionals include developments in transfusion medicine in a deployed environment to reduce casualties. Lab-supporting trauma surgery with advances in blood banking, such as low tier type O whole blood, has decreased casualty rates significantly in war zones.

health.mil

Active Duty
MEN'S HEALTH

BAMC Offers New Prostate Cancer Therapy for Patients

By Lori Newman, Brooke Army Medical Center Public Affairs

The Brooke Army Medical Center Department of Nuclear Medicine is now offering a newly approved treatment for patients who have prostate cancer.

Other than skin cancer, prostate cancer is the most common cancer in American men. The American Cancer Society estimates that 268,490 men in the United States will be diagnosed with prostate cancer this year.

On March 23, 2022, the Food and Drug Administration approved the use of lutetium Lu 177 vipivotide tetraxetan for the treatment of adult patients with prostate-specific membrane antigen (PSMA)-positive metastatic castration-resistant prostate cancer (mCRPC) who have been treated with androgen receptor pathway inhibition and taxane-based chemotherapy.

On the same day, the FDA approved gallium Ga 68 gozetotide, a radioactive diagnostic agent for positron emission tomography (PET) of PSMA-positive lesions, for patients with metastatic prostate cancer for whom lutetium Lu 177 vipivotide tetraxetan PSMA-directed therapy is indicated.

According to the FDA, this is the first radioactive diagnostic agent approved in the use of a radioligand therapeutic agent. Radioligand therapy combines a targeting compound that binds to markers expressed by tumors and a radioactive isotope, causing DNA damage that inhibits tumor growth and replication. This therapeutic approach enables targeted delivery of radiation to the tumor, while limiting damage to the surrounding normal tissue.

PET is a functional imaging technique that uses radioactive substances known as radiotracers to visualize and measure changes in metabolic processes, and in other physiological activities including blood flow, regional chemical composition, and absorption.

"What makes this treatment unique is the PSMA is used for PET imaging and for treatment," explained U.S. Army Lt. Col. (Dr.) Nathan McWhorter, Department of Nuclear Medicine chief. "One type of radioactive particle is tagged to the pharmaceutical for imaging and a different type of radioactive particle is attached to the same pharmaceutical for treatment. This is called a theranostic. Theranostics is a treatment strategy that combines therapeutics with diagnostics."

McWhorter said they are very excited to be able to offer this new treatment to patients here at BAMC.

"This has been a highly anticipated treatment. We have had several of our referring doctors from urology and radiation oncology who've been anxiously awaiting the arrival of this treatment," he said.

"We are the first military medical treatment facility to offer this new treatment," he added.

The treatment consists of a small volume of the drug being infused through IV injection every six weeks for up to six treatments.

"We can't say this is a cure, but it has shown to be very successful with prolonging not only the patients' life, but also improving their quality of life," McWhorter said. "We want our patients to be able to get out, go places, do things and live the life they want to live and not worry as much about the cancer they have."

Retired Sgt. Maj. of the Marine Corps Harold G. Overstreet is the first patient at BAMC to receive the new treatment.

"I often tell people, regardless of what their ailment is, if you live long enough, they will find a cure sooner or later," Overstreet said. "I think this is the next evolution, the next step. I've been going through cancer treatment for 20 years now and I think each one of them gets a little better."

"I feel very fortunate to have been selected to be the first one here to receive this treatment," the 78-year-old added. "Everybody has been very enthusiastic and supportive. The treatment you get here at BAMC is top shelf, there's none better. I believe military medicine is the best you can get."

McWhorter said, "Our mission in Nuclear Medicine at BAMC is straight forward; we want the best, most state-of-the-art medicine available so our patients can have the highest quality of life."

The Defense Visual Information Distribution Service

A targeted prostate cancer treatment **that can help men live longer**

If you have PSMA+ mCRPC, PLUVICTO™ (lutetium Lu 177 vipivotide tetraxetan) is the first and only treatment that targets PSMA+ cancer cells wherever they are in the body.

Talk to your doctor or visit PLUVICTO.com

Men with PSMA+ mCRPC who received PLUVICTO plus best standard of care (BSoC) lived a median of 4 months longer: 15.3 months vs 11.3 months with BSoC alone.

Noncancerous PSMA+ cells and other surrounding cells will also be impacted.

mCRPC, metastatic castration-resistant prostate cancer; PSMA+, prostate-specific membrane antigen positive.

PLUVICTO™
lutetium Lu 177 vipivotide tetraxetan
INJECTION FOR INTRAVENOUS USE

What is PLUVICTO™ (lutetium Lu 177 vipivotide tetraxetan)?

PLUVICTO is a radiopharmaceutical used to treat adults with an advanced cancer called prostate-specific membrane antigen–positive metastatic castration-resistant prostate cancer (PSMA-positive mCRPC) that:

- has spread to other parts of the body (metastatic), and
- has already been treated with other anticancer treatments

IMPORTANT SAFETY INFORMATION

What is the most important information I should know about PLUVICTO?

Use of PLUVICTO involves exposure to radioactivity. Long-term, accruing radiation exposure is associated with an increased risk for cancer.

Please see additional Important Safety Information on the next page and Brief Summary of full Prescribing Information on the following pages.

About the clinical trial

The PLUVICTO clinical study measured **overall survival (OS)**. This is the total time men with metastatic prostate cancer were alive from the start of treatment. **Median OS** is the length of time half of the men were still alive.

In a study of 831 men with PSMA+ metastatic prostate cancer, 551 were treated with PLUVICTO once every 6 weeks (up to 6 treatments) plus BSoC as determined by their doctor. Another 280 were treated with BSoC alone.

IMPORTANT SAFETY INFORMATION (continued)

What is the most important information I should know about PLUVICTO? (continued)

To minimize radiation exposure to others following administration of PLUVICTO, limit close contact (less than 3 feet) with household contacts for 2 days or with children and pregnant women for 7 days, refrain from sexual activity for 7 days, and sleep in a separate bedroom from household contacts for 3 days, from children for 7 days, or from pregnant women for 15 days.

PLUVICTO may cause serious side effects, including:

- **Low level of blood cell counts.** Tell your doctor right away if you develop any new or worsening symptoms, including:
  - Tiredness or weakness
  - Pale skin
  - Shortness of breath
  - Bleeding or bruising more easily than normal or difficulty stopping bleeding
  - Frequent infections with signs such as fever, chills, sore throat, or mouth ulcers
- **Kidney problems.** Tell your doctor right away if you develop any new or worsening symptoms, including passing urine less often or passing much smaller amounts of urine than usual

Before you receive PLUVICTO, tell your doctor if any of these apply to you:

- You have low level of blood cell counts (hemoglobin, white blood cell count, absolute neutrophil count, platelet count)
- You have or have had tiredness, weakness, pale skin, shortness of breath, bleeding or bruising more easily than normal or difficulty stopping bleeding, or frequent infections with signs such as fever, chills, sore throat, or mouth ulcers (possible signs of myelosuppression)
- You have or have had kidney problems
- You have or have had any other type of cancer or treatment for cancer, as PLUVICTO contributes to your long-term cumulative radiation exposure
- You are sexually active as:
  - All radiopharmaceuticals, including PLUVICTO, have the potential to cause harm to an unborn baby
  - You should use effective contraception for intercourse during treatment with PLUVICTO and for 14 weeks after your last dose
  - PLUVICTO may cause temporary or permanent infertility

Before administration of PLUVICTO, you should drink plenty of water in order to urinate as often as possible during the first hours after administration.

The most common side effects of PLUVICTO include:

- Tiredness
- Dry mouth
- Nausea
- Low red blood cell count
- Loss of appetite
- Changes in bowel movements (constipation or diarrhea)
- Vomiting
- Low blood platelet count
- Urinary tract infection
- Weight loss
- Abdominal pain

These are not all of the possible side effects of PLUVICTO. Call your doctor for advice about side effects. You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see Brief Summary of full Prescribing Information on the following pages.

Advanced Accelerator Applications
A Novartis Company

205070 6/22

Summary of Important Information

What is PLUVICTO™ (lutetium Lu 177 vipivotide tetraxetan)?
PLUVICTO is a radiopharmaceutical used to treat adults with an advanced cancer called prostate-specific membrane antigen–positive metastatic castration-resistant prostate cancer (PSMA-positive mCRPC) that:
- has spread to other parts of the body (metastatic), and
- has already been treated with other anticancer treatments

What is the most important information I should know about PLUVICTO?
The use of PLUVICTO involves exposure to radioactivity. Long-term, accruing radiation exposure is associated with an increased risk for cancer.

PLUVICTO may cause serious side effects, including:
- **Low level of blood cell counts.** Tell your doctor right away if you develop any new or worsening symptoms, including:
  - Tiredness or weakness
  - Pale skin
  - Shortness of breath
  - Bleeding or bruising more easily than normal or difficulty stopping bleeding
  - Frequent infections with signs such as fever, chills, sore throat or mouth ulcers
- **Kidney problems.** Tell your doctor right away if you develop any new or worsening symptoms, including passing urine less often or passing much smaller amounts of urine than usual

The most common side effects of PLUVICTO include:
- Tiredness
- Dry mouth
- Nausea
- Low red blood cell count
- Loss of appetite
- Changes in bowel movements (constipation or diarrhea)
- Vomiting
- Low blood platelet count
- Urinary tract infection
- Weight loss
- Abdominal pain

These are not all of the possible side effects of PLUVICTO. Call your doctor for advice about side effects. You may report side effects to the FDA at 1-800-FDA-1088.

What should I tell my doctor before receiving PLUVICTO therapy?
Before you receive PLUVICTO, tell your doctor if any of these apply to you:
- You have low level of blood cell counts (hemoglobin, white blood cell count, absolute neutrophil count, platelet count)
- You have or have had tiredness, weakness, pale skin, shortness of breath, bleeding or bruising more easily than normal or difficulty to stop bleeding, or frequent infections with signs such as fever, chills, sore throat, or mouth ulcers (possible signs of myelosuppression)
- You have or have had kidney problems
- You have or have had any other type of cancer or treatment for cancer, as PLUVICTO contributes to your long-term cumulative radiation exposure
- You are sexually active as:
  - All radiopharmaceuticals, including PLUVICTO, have the potential to cause harm to an unborn baby
  - You should use effective contraception for intercourse during treatment with PLUVICTO and for 14 weeks after your last dose
  - PLUVICTO may cause temporary or permanent infertility

Before administration of PLUVICTO, you should drink plenty of water in order to urinate as often as possible during the first hours after administration.

How will I receive PLUVICTO?
- There are strict laws on the use, handling and disposal of radiopharmaceutical products. PLUVICTO will only be used in special controlled areas. This product will only be handled and given to you by people who are trained and qualified to use it safely. These persons will take special care for the safe use of this product and will keep you informed of their actions
- The recommended dose is 7.4 GBq (gigabecquerel, the unit used to express radioactivity)
- PLUVICTO is given approximately every 6 weeks for a total of 6 doses
- PLUVICTO is administered directly into a vein
- Your nuclear medicine doctor will inform you about the usual duration of the procedure
- If you have any questions about how long you will receive PLUVICTO, talk to your nuclear medicine doctor
- Your nuclear medicine doctor will do blood tests before and during treatment to check your condition and to detect any side effects as early as possible. Based on the results, your nuclear medicine doctor may decide to delay, modify or stop your treatment with PLUVICTO if necessary
- An overdose is unlikely. However, in the case of an overdose, you will receive the appropriate treatment
- If you miss an appointment for an administration, contact your nuclear medicine doctor as soon as possible to reschedule

After administration of PLUVICTO, you should:
- Remain hydrated and urinate frequently in order to eliminate the product from your body
- Limit close contact (less than 3 feet) with others in your household for 2 days or with children and pregnant women for 7 days
- Refrain from sexual activity for 7 days
- Sleep in a separate bedroom from others in your household for 3 days, from children for 7 days, or from pregnant women for 15 days
- The nuclear medicine doctor will inform you if you need to take any special precautions after receiving this medicine. This may include special precautions for you or your caregiver with regard to toilet use, showering, laundry, waste disposal, emergency medical assistance, unplanned hospitalization or traveling. Contact your nuclear medicine doctor if you have any questions

General information about the safe and effective use of PLUVICTO
Talk to your nuclear medicine doctor about any concerns. You can ask your nuclear medicine doctor for information about PLUVICTO that is written for healthcare professionals.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Active Duty
MEN'S HEALTH

TRICARE Preventive Health Services for Men of All Ages

By TRICARE Communications

According to the Centers for Disease Control and Prevention (CDC), the life expectancy for men in the U.S. is nearly six years less than that for women. And that gap is getting wider. However, men can still live long, healthy lives by eating right, exercising, and getting preventive health care.

"Preventive health care isn't just for older men," said Jeannine Pickrell, RN, nurse consultant for Disease Management & Population Health at the Defense Health Agency. "Seeing a health care provider for preventive services can help men of all ages by detecting health problems early, before they become life-threatening."

Many preventive services are available when you visit your provider for other routine care. Annual Health Promotion and Disease Prevention (HP&DP) exams are also available to any TRICARE enrollee over age 6. This provides multiple preventive services during one visit with no out-of-pocket costs for getting preventive care when following the plan's rules, as outlined in the TRICARE Costs and Fees Fact Sheet. Those who are 65 or older have TRICARE For Life, and can follow Medicare's rules for getting preventive care.

Which preventive services are needed? That depends on several factors, including:

- Age
- Race
- Family history
- Overall life expectancy

These and other risk factors determine which services are medically necessary and covered by TRICARE.

U.S. Air Force Col. (Dr.) Travis Batts, medical director, Department of Cardiology, explains a procedure to a patient at Wilford Hall Ambulatory Surgical Center, Joint Base San Antonio-Lackland, June 12, 2023. *U.S. Air Force photo by Tech. Sgt. Tory Patterson*

Below is a list of preventive care services recommended for men:

Colorectal cancer is more common in menOpens CDC.gov than in women. If you're age 45 or older with average risk for colon cancer, TRICARE covers several types of screenings for colorectal cancerOpens tricare.mil. Some risk factors for colorectal cancer include:

- History of inflammatory bowel disease
- Family history of colorectal cancer
- Lifestyle factors such as diet, alcohol, and tobacco use

Prostate cancer

TRICARE covers annual prostate cancer examsOpens tricare.mil for men age 50 or older with at least a 10-year life expectancy. Some patients are eligible for prostate cancer exams starting at age 40 or age 45 if they have certain risk factors. Ask if there is a family history of prostate cancer to determine early testing eligibility. African American men are eligible for prostate exams at age 45 regardless of family history.

Testicular cancer

Not all cancer screenings are for older men. According to the CDC, testicular cancer is most common in men ages 20 to 39. TRICARE covers testicular cancer exams annually for males age 13 to 39 who have a history of cryptorchidism, orchiopexy, or testicular atrophy.

Lung cancer

Men use tobacco products more often than women. They also have higher rates of getting and dying from lung cancer than women. TRICARE covers lung cancer screening for:

- Ages 50 to 80 years old
- Have a 20 pack per year or more history of smoking
- Currently smoke or have quit smoking within the past 15 years

Heart disease is the leading cause of death for men in the U.S. As noted by the CDC, half of the men who die suddenly of coronary heart disease had no previous symptoms. It's important to get preventive checkups even if there are no symptoms displayed.

Cardiovascular disease screenings are a covered benefit. This includes cholesterol and blood pressure checks.

Of course, there's more to preventive health than checkups and screenings. Keeping a healthy lifestyle is an everyday job.

health.mil

Active Duty
MENTAL HEALTH

Military Health System Confronts Stigma Surrounding Mental Health Care

By Robert Hammer, MHS Communications

Stigma can be a barrier to a service member seeking support for their mental health. Recognizing mental health as part of overall health and changing attitudes are keys to addressing it.

"A significant challenge to seeking help for mental health is stigma," said Dr. Nancy Skopp, research and clinical psychologist with the Defense Health Agency's Psychological Health Center of Excellence.

Cultural biases, a lack of trust with the system, and even feeling shame and embarrassment are some of the reasons many do not seek out mental health care services, according to Skopp.

Skopp acknowledged that within the military, some service members view seeking help as a sign of "weakness, social inferiority, and/or a lack of resourcefulness. These feelings may be attributable to the culture within individual military units."

"For example, warrior ethos emphasizes discipline, mental toughness, and self-sufficiency, and foremost attention to successful mission execution," she added.

Skopp emphasized the importance of normalizing conversations around mental health, which makes it easier to take the first step to reach out and seek help.

How Stigma is Evolving

The office of the Deputy Secretary of Defense recently issued a document recommending the Department of Defense begin a review of policies to eliminate stigmatizing language related to mental health.

U.S. Air Force Maj. Huong Timp, 133rd Medical Group Physician Assistant, sits down with an airman to guide them through what the Medical Group can offer someone needing mental health support in St. Paul, Minn., Feb. 7, 2020. One obstacle facing someone seeking help for mental health is often times they feel a stigma is attached to seeking help. *Photo credit U.S. Navy Petty Officer 1st Class Sarah Villegas, Office of the Master Chief Petty Officer of the U.S. Navy*

"I think the military, in regard to mental health, has done a great job to address some of the concerns of stigma," said U.S. Navy Lt. Cmdr. Nick Guzman, mental health department head, Naval Medical Center Portsmouth.

"Military service members are subjected to all sorts of stressors unique to the traditional U.S. population such as having to relocate every two to three years, possibly overseas, adjust to a new assignment and uproot family that can bring upon career and financial challenges. These factors give rise to stress and anxiety in effort to quickly adapt to new sense of normalcy," said Guzman.

Guzman explained many younger service members are more open to seeking help and talking about mental health. Mental health is now a large part of military entry programs and talked about more openly.

He mentioned the services now introduce mental health education and resilience training in their introductory programs. The U.S. Navy, for example, has employed a human performance curriculum during bootcamp training designed to strengthen a sailor's mental, physical, and spiritual capacity to strive towards optimal performance.

Older generations of service members are less likely to talk about or seek help for mental health conditions, he added.

"If they believe it could potentially have a negative impact on their career, or affect their security clearance, or put them out of commission for a bit, they are more hesitant," said Guzman.

According to the Defense Counterintelligence and Security Agency, out of more than 2.3 million security clearance reviews between 2012-2018, only 12 individuals (0.005% of all cases) had their clearance denied or revoked due to psychological health concerns.

Guzman also noted that service members with specialty duties or assignments may be more hesitant to seek help.

"They may see it as a negative reflection on themselves, like a deficiency or character default or defect, or a fear that others may judge them for seeking help," Guzman said. "A bit of that does exist, but I do see stigma on the decline."

He noted the recent COVID-19 pandemic helped lessen stigma as there was an increase in service members and their families seeking mental health assistance, taking into consideration the degree of isolation and unpredictability created by the pandemic.

"Mental health in general is not viewed as negatively as it once was, in part due to the perceived benefits from those that sought help proactively and who remain mission ready," said Guzman.

Skopp said changing this stigma begins at the top with leadership.

"It will take time and sustained effort at all military levels," said Skopp. "Leaders are uniquely positioned to influence desired cultural changes. It is critical for military leaders to fight aspects of military culture that promote negative beliefs about seeking care and continue efforts to reduce stigma."

Changing the Language Used to Discuss Mental Health

Changing language used when working with a service member seeking help, or in promotional materials, is one effort the Military Health System is using to reduce stigma.

"Avoiding negative language is important," said Skopp. "Language can open discussion of mental health issues and stigma. Mental health providers can use language in useful ways to start talking about stigma with their patients."

The Psychological Health Center of Excellence has suggestions for how alternative language can be used when discussing mental health.

Alternatives to stigmatizing language can include:

- Avoiding language that defines someone by their condition or assumes that condition can't be managed or overcome
- Avoiding language that makes judgments or assumes intention
- Describing without downplaying or becoming overly graphic
- Using updated, accurate terminology

Testimonials are another tool to help normalize talking about mental health care, especially from senior leaders, suggested Guzman.

"I think putting stories out there from leaders who are open about seeking help is beneficial," said Guzman. "If someone was willing to put themselves out there to share their story—this is good."

Guzman believes the military needs to rethink what mental health is, and "think about it in a different capacity."

"Mental health is important to stay healthy, because it includes various levels of functioning, or various aspects of our normal daily functioning," said Guzman. "It's linked to our physical health, and our social, interpersonal health, our emotional well-being, as well as our ability to perform complicated tasks and under stress."

health.mil

Active Duty
MENTAL HEALTH

USU Psychiatrists Develop Global Disaster and Preventive Psychiatry Training for American Psychiatric Association

The Uniformed Services University, in conjunction with the APA, has created a new course entitled "Disaster and Prevention Psychiatry: Protecting Health and Fostering Community Resilience"

By Emily Jessee

In the wake of rising global disasters and their impact on the population, the Uniformed Services University (USU), in conjunction with the American Psychiatric Association (APA), has created a first-of-its-kind course to ready understanding of and preparedness for such crises.

USU's new course was created through its Department of Psychiatry and the Center for the Study of Traumatic Stress, in conjunction with the APA. *Photo courtesy of The Uniformed Services University*

This groundbreaking course — "Disaster and Prevention Psychiatry: Protecting Health and Fostering Community Resilience" — offers a comprehensive, vital focus on public mental health principles and how they affect individuals and their disrupted communities. The online disaster psychiatric course is available at no cost to the public, accessible by creating a free account on APA's Learning Center. The course also features eight continuing education credits upon completion. While created with psychiatrists and other mental health professionals in mind, this course contains valuable information on the widespread effects of varying global disasters that is highly useful to first responders, disaster workers, policy makers, and community leaders.

U.S. Public Health Service Capt. (Dr.) Joshua Morganstein, deputy director of USU's CSTS, and Associate Professor and Vice Chair of USU's Department of Psychiatry, Dr. James "Curt" West, developed the course for more than a year alongside APA. *Photo courtesy of The Uniformed Services University*

"This training will be of great value to healthcare professionals, disaster planners, and community leaders across a wide spectrum of professions," says U.S. Public Health Service Capt. (Dr.) Joshua Morganstein, deputy director of USU's Center for the Study of Traumatic Stress (CSTS).

Associate Professor and Vice Chair of USU's Department of Psychiatry Dr. James "Curt" West, a co-developer of the course, expresses that the training "fills a critical void in knowledge dissemination at a time where our world is being confronted by an increasing number of disasters that are leaving a profound psychological and behavioral health toll in their wake."

The course's nine modules cover topics ranging from prevention to emergency response, including: basic concepts in disaster and preventive psychiatry; psychological and behavioral effects of disasters; risk and vulnerability to disasters; public health approaches to interventions and disasters; psychological first aid; risk and crisis communication; leadership consultation; protecting disaster responders; and disaster preparedness.

"Disaster and Preventive Psychiatry" aims to contribute significantly to the field of Disaster Psychiatry education, and was created through the foundational work by USU's Department of Psychiatry and its CSTS.

The Uniformed Services University

Active Duty
NEUROLOGY

Concussion Protocols Aid Diagnosis, Treatment, and Recovery

By Janet Aker, MHS Communications

Whether on the sport field or the battlefield, the Defense Health Agency is the global leader in research on the effects of concussion — known as mild traumatic brain injury — in the military. Its research has fueled the development of protocols to help providers assess and treat concussion from initial injury to acute and post-acute medical settings, rehabilitation, and, ultimately, a return to family, community, work, continued duty, or recreation.

Over the past 22 years, more than 468,000 U.S. service members have sustained a TBI, with the majority of events occurring in training maneuvers, such as breaching structures, anti-tank weapon use, parachute jumping, and blast exposure, according to the DHA's Traumatic Brain Injury Center of Excellence.

Only 16.9% of TBIs occur in the deployed setting, with others related to sports, recreational activities, and motor vehicle collisions, TBICoE stated, adding nearly 83% of TBIs were diagnosed as mild.

Concussions on the Field, Return to Play, Return to Learn

The U.S. Naval Academy records more than 250 concussions per academic year out of 4,500 total midshipmen, said U.S. Navy Cmdr. (Dr.) Kevin Bernstein, team physician for Navy football and a sports medicine specialist. "It's probably one of the higher concentrations of a TBI-type of scenario" because of the number of sports teams and the fact the academy is a Division I National Collegiate Athletic Association school, he added.

While many concussions come from sports such as football, rugby, soccer, lacrosse, and hockey, they also come from the academy's required physical education activities such as boxing and combat ground fighting, Bernstein explained.

Naval Academy athletic trainers and physicians use the standardized Sports Concussion Assessment Tool 5Does to the NIH website (SCAT5) for immediate on-field diagnosis of concussion, Bernstein said. The diagnosis of a concussion is a clinical judgment, the protocol states. It was developed by the worldwide Concussion in Sport Group.

The U.S. Air Force Academy website records more than 300 concussions annually and diagnoses concussion based on two main components: mechanism of injury and ensuing signs and symptoms, academy sport medicine and concussion researchers said. It also uses the SCAT5, which is followed up by referring a cadet to the Cadet Concussion Clinic, which performs a full neurological examination including:

- Symptom inventories
- Cranial nerve testing
- Standardized Assessment of Concussion
- Balance Error Scoring System
- Immediate Post-Concussion Assessment and Cognitive Testing
- Vestibular Ocular Motor Screening

Both academies have similar five-phase return to play protocols, developed in part with DHA and the NCAA, with a minimum of five days off from sports or PE activities.

Since 2014, the Department of Defense has collaborated with the NCAA to advance studies of TBI in contact sports, club sports, and service academy training exercises in the most comprehensive research of its kind through the Concussion Assessment, Research, and Evaluation Consortium.

Because the academies are learning institutions, they also follow return-to-learn protocols after concussion.

The Air Force Academy's phased system has been in place since 2018 and includes:

- Cognitive and physical rest that allows the brain to heal more quickly and typically begins the day of injury; this usually lasts for two to three days.
- Light cognitive tasks such as homework and computer work for up to 60 minutes
- Return to partial classes with maximum modifications
- Return to full class with minimum modifications
- Full class attendance with no modifications

"We try to get them back into class, even if they're just sitting there not actively learning or engaged," Bernstein said. "We find that getting them back into a classroom with their friends and social peers is really helpful."

Whether on the sport field or the battlefield, the Defense Health Agency is the global leader in research on the effects of concussion — known as mild traumatic brain injury — in the military. Its research has fueled the development of protocols to help providers assess and treat concussion from initial injury to acute and post-acute medical settings, rehabilitation, and, ultimately, a return to family, community, work, continued duty, or recreation.
Photo courtesy of the U.S. Defense Health Agency

According to the Air Force Cadet Concussion Clinic, "the identification of risky training activities has led to a 75% decrease in concussions during basic cadet training and during military training throughout the year."

Through these protocols, the academy is able to identify the true incidence of concussion. This allows for appropriate care and leads to an earlier return to duty, a former Air Force academy researcher said.

Active-Duty Concussion

DHA and academic research collaborations have led to the development of many tools, resources, and guides over the last two decades, and there is still much more to learn about brain health. Resources and tools include the:

- TBICoE clinical recommendations and tools for concussion that provide:
- Guidance on assessing and managing mild TBI symptoms
- An algorithmic approach to evaluating, managing, and referring concussion patients for specialty care
- Training to show providers how to identify and treat patients with concussion-related symptoms
- Fact sheets and patient guides with tips and tools to help service members and veterans cope with a mild TBI
- MACE-2 battlefield concussion protocol
- Progressive Return to Activity protocol and patient safety and leadership guide
- Blast overpressure interim guidance
- Automated Neuropsychological Assessment Metrics computer-based neurologic tests at baseline during basic training and at pre-deployment and post-deployment
- Vision Center of Excellence and its registry of eye injuries known as Defense & Veterans Eye Injury and Vision Registry
- Hearing Center of Excellencegoes to HCE website and its focus on TBI hearing effects
- DOD/USU Brain Tissue Repository under the direction of Dr. Daniel Perl

Blast Overpressure

The January 2020 attack on American service members at the Al Asad Airbase in Iraq demonstrated the impact of targeted missiles on brain health, specifically concussive waves known as blast overpressure, said U.S. Navy Capt. Scott Cota, TBICoE division chief. The air strikes resulted in 110 service members diagnosed with TBIs.

The concern about blast overpressure is global: Last November, DHA hosted a blast overpressure conference with members of the North Atlantic Treaty Organization to discuss current research and future initiatives and protective methods.

Later in 2023, a report will go to Congress detailing the use of certain weapons and their blast overpressure effects on warfighters. DOD issued interim guidance on this topic on in 2022.

The fiscal year 2018 National Defense Authorization Act study "Low Level Blast Pressure Exposure in Service Members" and the recent NATO conference are linked to the department's Warfighter Brain Health Initiative. This joint strategy and action plan addresses long-term or late effects of TBI, from blast exposures, with the goal of optimizing brain health and countering TBI.

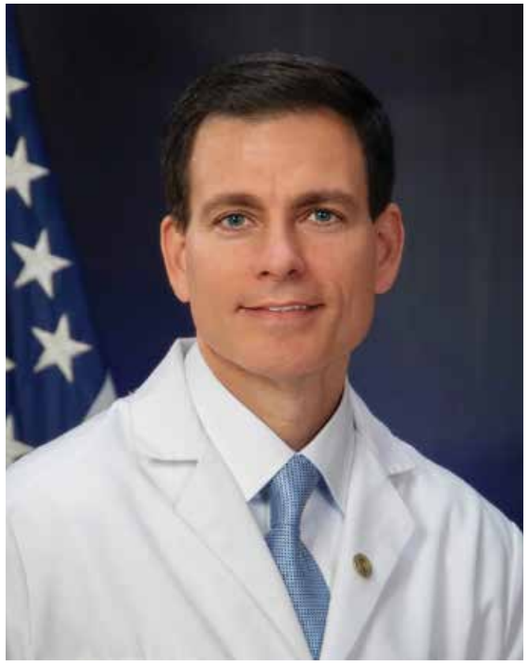
What Comes Next for a Holistic System

"The research effort between the DOD and the NCAA is to improve our understanding of brain injury, in particular how to better diagnose and treat those with acute concussion to maximize their recovery and optimize their return to military duty and sports," said Dr. Paul Pasquina, chair of the Uniformed Service University's Department of Physical Medicine and Rehabilitation.

In addition, "we would also like to provide athletes, service members, military leaders, and sports coaches better tools to help predict recovery time and the long-term prognosis after concussion or repetitive head impact exposure," Pasquina said.

"There remain many unanswered questions regarding the long-term outcomes of individuals with a history of concussion, blast exposure, or repetitive head impact exposure," he said. "If there any unique determining factors that may identify a person as being more susceptible for long-term problems after concussion, or if there are any early markers to help identify those that might be at risk of developing long-term problems, we owe it to our service members and athletes to try and find them."

Pasquina was a co-leader of the concussion consortium's second phase from 2018 to 2021. That phase looked at the effects of sport, military training, and concussion over the course of a collegiate career and outcomes up to five years after graduation. The first phase (2014-2018) focused on six-month outcomes following concussion. On March 23, 2023, DOD



Dr. Paul F. Pasquina serves as chair of the Uniformed Services University of the Health Sciences and received the AMSUS Lifetime Achievement Award in 2020. *U.S. Army Medical Command photo by Stephanie Abdullah*

announced a third, five-year phase, that will allow further examination beyond five years from injury.

The consortium data are available to "those involved in caring for individuals with concussion or brain injury, so they are much more aware of the signs and symptoms, the type of recovery that takes place, of how to better educate their patients, their patients' families, as well as the various stakeholders, whether they be health care providers, military leaders or policy makers," Pasquina added.

The findings of the CARE study have already penetrated the clinical practice of caring for individuals with concussion and "will translate beyond varsity athletes and military service members to help the greater population," Pasquina said.

"The general idea is to maintain the human weapon system, which is the most critical element of any warfighting structure," Cota said. "The earliest we can get to some of these performance measures and identify the impact on performance and how to mitigate and … accelerate return to duty and recovery, the better. All of those things are within reach."

health.mil

CPG

Active Duty
NURSING

Blanchfield Army Community Hospital Spotlights Careers in Nursing

By Maria Christina Yager, Blanchfield Army Community Hospital

Across the nation Nurses Week is celebrated annually, May 6-12, and serves as an opportunity to spotlight what has been called the most trusted profession in the country.

"Active duty, National Guard, Reserve, civilian, and contractor nurses are all vital members of our nursing team," said U.S. Army Col. Richard Clark, a registered nurse and Deputy Commander for Nursing at Blanchfield Army Community Hospital, Fort Campbell, Kentucky. "Nurses play key roles at every level in hospitals, clinics, research labs, classrooms, and more, and in the military, they bring those skills close to the battlefield to save lives."

While doctors and nurses are both associated with healthcare, their paths and roles are different.

"Nursing is more hands on. Surgeons and doctors see the patient for a brief period, but the nurses are the eyes and ears for the doctor. We're the ones that are with the patient 99% of the time," said U.S. Army Maj. Dustin McCrary, a perioperative registered nurse in Blanchfield's post anesthesia care unit.

McCrary began his Army career as a combat medic specialist working closely with doctors, nurses, and physician assistants. When he decided to attend college and further his medical training, he felt nursing was the right path for him and was even able to use an Army program to pay for his training.

The U.S. Army Medical Department Enlisted Commissioning Program pays for eligible Soldiers like McCrary to attend college full time to complete a Bachelor of Science in Nursing degree from an accredited program and earn a commission as an Army Nurse Corps Officer. The Army's Health Professions Scholarship Program can assist individuals with no prior military experience or affiliation complete a BSN and earn a commission in the ANC.

"The HPSP is one of the most comprehensive scholarships available in the health care field, covering your full tuition for an advanced medical degree while also providing a monthly stipend," said Clark.

While these are routes that may help an individual become an Army Nurse, not all nurses within the Military Health System

A BACH Nurse Preceptor looks on as Nurse Summer Training Program participant Cadet Josephine Adeola operates an automated medication dispensing system on the hospital's inpatient unit. Adeola was one of four college nursing students in the U.S. Army Reserve Officer Training Corps to participate in a month-long U. S. Army Nurse Summer Training Program at Blanchfield Army Community Hospital, Fort Campbell, Kentucky. The nurse cadets, represent the future of the Army Nurse Corps and NSTP introduces cadets to the Army Medical Department and to the roles and responsibilities of an Army Nurse Corps Officer. *U.S. Army photo credit Justin Moeller*

serve in the military. Civilian nurses are also employed by the military to work in military hospitals, clinics and other facilities caring for service members, retirees, and other eligible beneficiaries.

"I loved serving this population," said Dawn Thomas, a registered nurse with more than 20 years of federal service. Thomas first joined the Blanchfield Team in 2002 as a licensed practical nurse, also known as a licensed vocational nurse, after her husband encouraged her to attend nursing school.

Individuals may complete an accredited practical nursing certificate program through a community college or technical school in about 12 months and begin work as an LPN after

U.S. Army Nurses at Blanchfield Army Community Hospital, Fort Campbell, Kentucky, are part of the Army's Ready Medical Force, capable of deploying, establishing, and maintaining medical support, like field hospitals, anywhere the Army needs it. Nurses Week, May 6-12, is a time to formally recognize the contribution nurses make. *Photo courtesy of the U.S. Army*

passing the National Licensure Examination (NCLEX-PN). The median annual wage for licensed practical and licensed vocational nurses in 2021 was reported by the U.S. Bureau of Labor Statistics as $48,070.

Thomas' first job was in a nursing home, before she came to work at Blanchfield's Emergency Center. After several years working as an LPN, Thomas returned to school to complete her Bachelor of Science in Nursing, while continuing to work at BACH. After completing her degree, she passed the national exam for licensure as a reregistered nurse.

Registered nurses have greater responsibility, are more involved in administering medications, treating patients, creating, and coordinating care plans ordered by the doctor and oversee the duties of LPNs and aides. It also has a higher starting salary and more variety. The median annual wage for registered nurses was $77,600 in 2021.

"You can do anything in nursing. You can do bedside care, you can do management, you can do research. If you are a nurse, it is endless," said Ashley Hooper, a registered nurse in Blanchfield's Emergency Center. Hooper is an emergency room nurse and experienced in trauma care.

"Right after nursing school I worked in a Nashville emergency room for several years. I like the acuity and the excitement," she said.

Hooper chose to pursue a career in nursing after she became a young mother and experienced the impact a good nurse can make.

"I had a labor and delivery nurse who was amazing, and she made me feel very comfortable. I was terrified and she made it a pleasant experience. I wanted to be like her, so I went to nursing school," said Hooper, adding that nursing also provides good job security.

"Even during the pandemic, with things being shut down, me being a single parent, I never had to worry about taking care of my family," added Hooper.

The U.S. Bureau of Labor Statistics reports job growth is expected across most types of healthcare settings, including hospitals and outpatient care centers that provide same-day services, such as chemotherapy, rehabilitation, and surgery. In addition, because many older people prefer to be treated at home or in residential care facilities, registered nurses will be in demand in those settings.

"You can diversify and go anyplace," said U.S. Army Nurse Maj. Chelsi Hennessey, a critical care registered nurse assigned to the 586th Field Hospital on Fort Campbell, Kentucky. She and others in her unit currently work out of Blanchfield, but the Soldiers can deploy on short notice and stand up a portable hospital anywhere in the world the Army needs medical forces.

During the early days of the COVID-19 pandemic, the Army sent the unit to New York City, where they established a field hospital to help care for patients after the city's hospitals were overwhelmed.

"I chose to become an Army nurse because you get to experience things that people may never get to experience. You get to deploy all over the world and make lifelong friends. It's just a good experience overall," added Hennessey.

The U.S. Bureau of Labor Statistics Occupational Outlook Handbook projects Nurse Practitioners to be the fastest growing occupation over the next eight years. A Nurse Practitioner is a licensed and certified advanced practice registered nurse with a master's degree or higher in their area of specialty. Their advanced training, which includes certification and clinical hours, enables NPs to diagnose and treat a wide variety of illness, disease, and conditions, similar to a doctor.

Other APRN fields include clinical nurse specialist, certified nurse midwife, and nurse anesthetist. The median annual wage for nurse anesthetists, nurse midwives, and nurse practitioners in 2021 was $123,780.

"I would say nursing is a great career choice. There is always going to be a job anywhere that you'd like to move and there are so many opportunities in the nursing field that you have opportunities that you wouldn't normally have in other career paths," said McCrary.

The Defense Visual Information Distribution Service

Active Duty
NURSING

24 Nations Unite at Military Nursing Exchange to Enhance USAFE-AFAFRICA Partnerships, Readiness

By Capt. Jose Davis, United States Air Forces in Europe - Air Forces Africa

Nurses and medical professionals from 24 allied and partner nations, including the U.S., converged at the U.S. Air Forces in Europe - Air Forces Africa 2023 European-African Military Nursing Exchange conference, May 31 – June 2, to share medical knowledge and professional best practices with one another.

This year's conference included military service members; National Guard and Reserve component medical professionals; and military delegations from South Africa, Madagascar, Zambia, Comoros, Angola, Algeria, Niger, Nigeria, Morocco, Ghana, Democratic Republic of the Congo, Cameroon, Uganda, North Macedonia, Servia, Germany, Croatia, Albania, Poland, Kosovo, Azerbaijan, Bosnia & Herzegovina, the Netherlands, and Armenia.

"This conference was very useful and interesting," said 2nd Lt. Jasmina Balata-Pajt, nurse and medic for the Bosnia and Herzegovina military. "Especially the hands-on simulation, where I saw some new equipment that I could use in my country when I go back — thank you for this opportunity!"

Bosnia and Herzegovina military nurse and medic, 2nd Lt. Jasmina Balata-Pajt, trains on a virtual reality medical situation at the U.S. Air Forces in Europe - Air Forces Africa European-African Military Nursing Exchange Conference, May 31, 2023. *U.S. Air Force photo by Capt. Jose Davis*

Polish Air Force medic, 1st Lt. Marzena Dudaryk, administers Tactical Combat Casualty Care during a simulation session at the U.S. Air Forces in Europe - Air Forces Africa European-African Military Nursing Exchange Conference, May 31, 2023. *U.S. Air Force photo by Capt. Jose Davis*

The USAFE-AFAFRICA-hosted European and African Military Nursing Exchange, or EAMNE, began in 2014. This year's event marks the eighth iteration of the conference, bringing U.S. allies and partners from around the world to a single location to collaborate and train together, improving medical readiness.

Several distinguished speakers presented at the conference, including Brig. Gen. Jeannine M. Ryder, commander of the 59th Medical Wing, San Antonio Military Health System, and Chief Nurse of the U.S. Air Force; and Brig. Gen. Clinton K. Murray, command surgeon for U.S. Army Europe and Africa and director of the Defense Health Region Agency Europe.

"It is an honor to be here with you today to speak on the Air Force Nurse Corps, but most importantly to build partnerships, create relationships and understand each other's challenges," Ryder said during her opening remarks at the event. "This conference enables networking and an ability to have open communication between many nations, bringing a diverse perspective on every problem.

"This diverse group can solve many concerns we tackle every day. Finally, it allows us to understand that we have the same purpose as nursing services in our respective militaries; we deliver a ready force and develop ready medics while providing safe, quality care to our patients."

af.mil

Active Duty
NUTRITION

Nutrition's Role in Total Force Fitness Examined at Conference

Story by Janet Aker, Defense Health Agency

Napoleon famously said an army travels on its stomach, acknowledging that food is one of the most essential elements to survival.

Today, the conversation focuses on the right, most nutritious food that fuels the health and readiness of service members and their families, the main topic for Department of Defense health leaders at a June 14 conference highlighting nutrition-focused initiatives across the DOD.

Organized by the Uniformed Services University of the Health Sciences' Consortium for Health and Military Performance, or CHAMP, the conference brought health and wellness leaders together to discuss how nutrition fuels Total Force Fitness by improving:

- Quality of life
- Readiness
- Performance
- Physical exercise
- Prevention of chronic disease
- Increased lifespan through lifestyle and dietary changes ("food as medicine")

Dr. Lester Martínez-López, assistant secretary of defense for health affairs, opened the conference with a call for action, saying: "We need to close the gap, and make sure everybody has access to nutritious food," whether on a mission or day-to-day duties, at all times of the day and night.

"We want, as a system, to be the standard bearers for prevention" of chronic diseases such as cardiovascular disease, musculoskeletal injuries, diabetes, and hypertension, Martínez-López said. "We need to understand the repercussions of how we create an environment whereby providing good nutrition and by providing the opportunity to exercise, we minimize the risk of chronic diseases. And, I'd say that we optimize military readiness."

Another aspect is nutritious food for the 2.8 million military children in schools through such programs as free and reduced cost nutritious lunches and breakfasts, as well as snacks.

Defense Centers for Public Health-Aberdeen graphic illustration by Graham Snodgrass

These programs optimize children's health so they can be better learners and, later, better service members and civilian professionals and leaders, Martínez-López said.

By having Defense Health Agency and Department of Veterans Affairs experts working on closing the nutrition and performance gap, "we advance the science, and we advance the policy to create the right environment for our service members and their family members to fully benefit from the services we provide," Martínez-López said.

The conference included presentations on:

- Nutritional fitness assessments and interventions as integral to Total Force Fitness
- Nutrition for performance and cardiovascular health
- DOD Education Activity's school meals and their role in promoting healthy school environments and ensuring military-connected youth receive proper nutrition for growth and development
- Leadership in cultivating a military culture of wellness
- Collaborative efforts underway between the VA and DOD to reduce diet-related diseases
- Current "food as medicine" and "food as fuel" approaches to mitigate chronic disease and optimize military readiness
- Unique approach to delivering nutrition health education within the Armed Forces Wellness Centers to assess and prevent chronic diseases, including cardiovascular disease
- American College of Lifestyle Medicine Food as Medicine course for DOD and VA providers

Part of a Larger Healthy Foods Mission

The conference was built on a larger effort across the whole of government to improve access to food and empower healthy choices.

In September 2022, President Biden hosted a White House Conference on Hunger, Nutrition and Health to bring Americans together to achieve a common goal to increase healthy eating and physical activity, and reduce hunger and diet-related diseases like hypertension, obesity, and diabetes by 2030.

The White House released a National Nutrition Strategy with five pillars:

- Improve food access and affordability
- Integrate nutrition and health
- Empower consumers to make and have access to healthy choices
- Support physical activity for all
- Enhance nutrition and food security research

U.S. Army Spc. Darius Coleman, a culinary specialist assigned to the153rd Quartermaster Field Feeding Company, Special Troops Battalion, 1st Armored Division Sustainment Brigade, stocks the dining hall at Fort Bliss, Texas, June 1, 2023. Culinary specialist ensure there are a variety of foods for Soldiers to eat. *U.S. Army photo by Sgt. Jason Hammond*

Food security is also receiving an increased focus from the DOD. In July 2022, the department published the Strengthening Food Security in the Force: Strategy and Roadmap. According to Gilbert R. Cisneros, Jr., undersecretary of defense for personnel and readiness, the strategy and roadmap "represents a whole-of-DOD effort. Its focus is to equip our service members and families with the tools, skills, and resources necessary to ensure they have access to sufficient nutritious food

U.S. Army Spc. Jermaine James, a culinary specialist assigned to the153rd Quartermaster Field Feeding Company, Special Troops Battalion, 1st Armored Division Sustainment Brigade, stirs beef stroganoff at Fort Bliss, Texas, June 1, 2023. The culinary specialists are preparing their lunch menu for Soldiers. U.S. *Army photo by Sgt. Jason Hammond*

to meet the myriad demands of the military mission, without having to endure undue hardship or make difficult financial and personal decisions that may impact their quality of life."

Resources

The conference included many resources and websites for all military members and veterans. Foremost:
The Uniformed Services University's Consortium for Health and Military Performance's Nutritional Fitness Resources: Bridging Performance and Disease Prevention, a compilation from conference experts across the DHA, Department of Defense Education Activity, and the VA.

Other CHAMP human performance nutrition resources include:

- Warfighter Nutrition Guide provides evidence-based information on nutrition for service members and warfighters, families, and the military community. The 16 chapters include information on hot topics including balancing energy, macronutrients and micronutrients, hydration, and nutrient timing.
- Get into Fighting Weight workbook from CHAMP
- Go for Green healthy food initiative, which conference speakers highlighted as being used across the military
- Build Your Plate in Three Easy Steps

The conference featured speakers from CHAMP, the DHA, VA, DODEA, Air Force Medical Readiness Agency, Air Force Lifestyle & Performance Medicine Working Group, Armed Forces Wellness Center, Defense Centers for Public Health-Aberdeen, and Brooke Army Medical Center in San Antonio, Texas.

The Defense Visual Information Distribution Service

Active Duty
OCCUPATIONAL HEALTH

Military Health Care Personnel Learn about Environmental Exposures

By Terry Goodman, MHS Communications

More than 450 military and civilian personnel from across the Military Health System attended a recent "Understanding and Evaluating Military Environmental Exposures" webinar offered by the Defense Health Agency's Continuing Education Program Office within the Education and Training Directorate.

The attendees, including those unable to attend the live session, can earn continuing education or continuing medical education credits by completing the Home Study course offered by CEPO starting May 15.

Attendees learned how to identify common environmental exposures, the purpose of the Department of Veterans Affairs Airborne Hazards and Open Burn Pit Registry, and how health care providers conduct medical evaluations of service members with environmental exposure concerns. Participants also learned the importance of the Individual Longitudinal Exposure Record, an individual, electronic record of exposures designed in collaboration between VA and the Department of Defense.

"The special feature webinar is one of several recent outreach and education efforts undertaken by DOD to promote awareness and understanding of military exposures among health care providers and service members and is a reflection of the ongoing collaboration between DOD and VA," said Steve Jones, director of force readiness and health assurance policy with the Office of the Deputy Assistant Secretary of Defense for Health Readiness Policy & Oversight.

Dr. Jesse Monestersky, an occupational and environmental medicine branch physician at the Defense Centers for Public Health-Aberdeen, in Aberdeen, Maryland, told attendees the MHS' goal is to deliver a seamless continuum of care for service members when they leave the military.

"The value of the targeted primary care encounter for active duty service members is to get their health concerns related to burn pit and other environmental exposures addressed and have it documented in their military medical record," Monestersky said.

"Service members are required to get additional exposure-related exams by the VA for disability compensation determination when no longer on active duty. The documentation proves invaluable to the examiner during the disability claim process when reviewing their medical records."

Larry Vandergrift, the project manager of the Individual Longitudinal Exposure Record, said the tool enables clinicians, epidemiologists, researchers, and claims adjudicators to obtain exposure documentation.

"ILER is a web-based application that provides the DOD and the VA the ability to link an individual to exposures improving the efficiency, effectiveness, and quality of health care," Vandegrift said. "It supports epidemiological research by determining whether deployment-related exposures are associated with post-deployment health outcomes and supports clinical care and public health activities by searching for individuals and associating them to known exposure events."

Dr. Eric Shuping, operations director of the VA's Health Outcomes of Military Exposures office talked about the multiple registries the office oversees and clarified the overarching purpose of the registries.

"The purpose of the redesigned registry is to conduct surveillance of the entire cohort and to update the cohort on any new findings," Shuping said. "The entire Defense Manpower Data Center roster of veterans and service members who deployed to the Southwest Asia theater of operations — from August 2, 1990 to present — will be migrated into the Veterans Integrated Registries Platform."

The VA's Post-Deployment Health Services currently manages six congressionally mandated registries: Agent Orange, Gulf War Registry, Ionizing Radiation Registry, Toxic Embedded Fragments, Depleted Uranium, and Airborne Hazards and Open Burn Pit Registry.

More than 970,000 veterans are enrolled in these registries. In 2022, the Airborne Hazards and Open Burn Pit Registry had 67,519 new participants, an all-time high.

U.S. Air Force Master Sgt. Lonnie Kemp, noncommissioned officer in charge of the bioenvironmental engineering office with the 124th Medical Group, 124th Fighter Wing in Boise, Idaho, said he attended the training to get a better understanding of how medical providers view environmental exposures, ensuring he can provide airmen within his unit the most current information regarding their health and life after service.

"The 124th Fighter Wing continuously strives to provide the best opportunities and care for our airmen as it relates to their physical health, mental health, welfare, and safety," Kemp said. "This training, and others like it, positively impacts our capability to meet that goal."

health.mil

CPG

Active Duty
OCCUPATIONAL HEALTH

Occupational Medicine, Industrial Hygiene Work Together to Protect DOD Workers

By Douglas Holl, Defense Centers for Public Health-Aberdeen

One of the advantages of working in an organization like the Defense Centers for Public Health – Aberdeen are the synergies created by having professionals from multiple disciplines working together to support service member and government civilian worker health.

A good example of this can be found in DCPH-A's Occupational Medicine and Industrial Hygiene specialties. Members of these teams work together to understand what issues Department of Defense civilian and military staff are facing in the various workplaces, and to create ways to keep these workers safe and healthy.

DCPH-A defines occupational health as promoting excellent physical health, mental health and well-being of Department of Defense workers by monitoring employee health and identifying and eliminating or mitigating chemical, biological, physical, psychological and other workplace hazards in operational and non-deployed environments.

"As an integral member of the OH team, Occupational Medicine professionals focus on preventing and managing work-related injury, illness and disability," said Renita Shoffner, a certified occupational health nurse specialist with DCPH-A. "Occupational Medicine also provides clinical services, including medical qualification examinations, medical surveillance examinations, and, when necessary, potential exposure evaluations and diagnosis and treatment of work-related illness and injury."

Defense Centers for Public Health-Aberdeen industrial hygienist Emma Bieniek and Spc. Jeremy Rohrer use a Q-Trak direct reading instrument to assess indoor air quality parameters at the Edgewood Area of Aberdeen Proving Ground, Maryland. DCPH-A's Occupational Medicine and Industrial Hygiene specialists work together to understand what issues Department of Defense civilian and military staff are facing in the various workplaces, and to create ways to keep these workers safe and healthy.
Defense Centers for Public Health-Aberdeen photo by Graham Snodgrass

Within the public health discipline, the industrial hygiene program plays a crucial role in promoting and maintaining a healthy and safe workplace, said Jennifer Mancini, an industrial hygienist with DCPH-A. The industrial hygiene staff often work under Preventive Medicine Services at military medical treatment facilities and provide support to all tenant organizations on an installation. Some of the larger commands, such as the Army Combat Capabilities Development Command, Army Futures Command and Army Materiel Command have their own dedicated industrial hygiene staff.

"Industrial hygienists and technicians gather workplace exposure information from onsite assessments and personal sampling, analyze the data, and compare these data to occupational exposure limits, known as OELs, and/or guidelines to determine what measures, if any, are needed to keep the workers safe," said Mancini. "The industrial hygienist makes recommendations on the best way to control any hazards. The recommendations often include using engineering controls, such as exhaust ventilation, or personal protective equipment, such as gloves, protective suits, or respirators, to keep any exposure levels below the OELs."

Interacting with service members provides the biggest job satisfaction for Rebecca Hughes, an industrial hygienist working in DCPH-A's Field Services Division.

"This is especially important when you are doing field work with junior service members who might be at their first duty station, and you have an opportunity to encourage them to use safe work practices," said Hughes.

Hughes describes one field mission she conducted at an outdoor firing range where she was monitoring for lead and other heavy metal exposures.

"The XO [Executive Officer] had come out to take photos for their end-of-day 'good news' story and shared that she was seven months pregnant. She asked if she was 'safe' from the lead

exposure at the range while standing with us in our staging area," said Hughes. "She was really concerned because she'd had a previous miscarriage and didn't want to do anything that might harm her baby. I told her that we were there to learn what levels of lead the troops were being exposed to on the range because the ammunition had lead in the primer."

Hughes further explained to the XO that standing where they were on the range, they were likely exposed to less lead than those on the firing range; however, there is no safe level of lead.

"These interactions really hit home on the importance of our work and the people we are striving to protect," said Hughes.

Mancini says it's important for the industrial hygienists and occupational medicine specialists to work together.

"When I talk about what I do, I say I'm like a workplace detective. If something is going on in the workplace, we investigate to identify the problem and share this information with our occupational medicine specialists so we can assess and control the hazard."

Occupational medicine conducts medical surveillance based on an individual's present exposure to specific hazards. The Occupational Health and Safety Administration mandates and enforces safety and health standards for workplace hazards, said Mancini.

The DOD OM and IH programs collaborate to ensure that DOD complies with OSHA regulatory requirements and other OELs such as those published by the American Conference of Governmental Industrial Hygienists and other professional societies who constantly update their exposure limits and guidelines, said Mancini.

Industrial hygienists record workplaces, workers, hazards, and controls in the Defense Occupational and Environmental Health Readiness System — Industrial Hygiene, or DOEHRS-IH, based on quantitative and/or qualitative personal sampling in workplaces.

"The IH and OM programs work together to ensure accurate documentation of workers' exposures and hazards in the DOEHRS-IH system," said Shoffner. "The OM staff reviews the sampling data and recommendations provided by the IH and determines if personnel should be enrolled in medical surveillance."

Shoffner says medical surveillance allows OH and IH to monitor individuals for adverse health effects and determine the effectiveness of exposure prevention strategies.

"Having all this information in DOEHRS-IH ensures that complete records follow each service member or employee as they [change duty stations] or take on different roles across the DOD," said Shoffner.

The respiratory protection program at the installation level is an excellent example of OM and IH collaboration, said Mancini.

The process starts when the industrial hygienist performs an assessment and/or sampling in the workplace to determine if there are any respiratory hazards for workers. Based on the assessment, sampling results and regulatory requirements, the industrial hygienist will determine who in this group of workers needs to be in respiratory protection, also known as RP.

Next, occupational medicine clinicians will evaluate workers to determine if they are medically cleared to wear the specific type of respirator selected by the IH, said Mancini.

"After being medically cleared, and before they wear any RP, workers must be fit-tested for the specific type of RP (brand, type, size) and be trained to use and maintain their RP," she adds.

All this information is entered into DOEHRS-IH to provide complete records for employees.

Every year, the industrial hygienist performs a workplace assessment to see if any changes in the workplace, tasks, etc., have impacted the need for RP or the type of RP needed, said Mancini. Changes in the workplace can easily be overlooked, so it's important to have an annual update to ensure all of the hazards have been identified and controls are in place.
Occupational medicine clinic staff also perform an annual medical clearance for the workers and check in with Industrial Hygiene to make sure there aren't any changes to the workplace or PPE, said Shoffner.

She adds, "The IH and OM programs will work together to ensure that any changes are reported, new workers in that area are put into the RP program, and workers are kept safe from these respiratory hazards."

Together, local installation OM and IH programs work hard to ensure that everyone can complete their mission and stay safe and healthy.

"Public health is a team effort and works best when everyone is involved," said Mancini.

OM/IH Workplace Health Resources

- DCPH-A Industrial Hygiene: https://phc.amedd.army.mil/topics/workplacehealth/ih/Pages/default.aspx
- DCPH-A Occupational and Environmental Medicine: https://phc.amedd.army.mil/topics/workplacehealth/om/Pages/default.aspx

The Defense Visual Information Distribution Service

Active Duty
ONCOLOGY

Walter Reed Revives Cancer Survivorship Days Two-day Event

Story by Vernishia Vaughn, Walter Reed National Military Medical Center

United States Navy Lieutenant Commander Matt Nealeigh, Director of Breast Care and Research Center at Walter Reed, delivers remarks for the opening ceremony of the Walter Reed Cancer Survivorship two-day event. *Photo courtesy of Walter Reed National Military Medical Center*

Walter Reed National Military Medical Center wrapped up Cancer Survivorship Days event, a two-day celebration of life for cancer survivors and their families.

The event is in recognition of the 36th annual National Cancer Survivors Day held on June 4, and was held again for the first time since the COVID-19 pandemic.

The Cancer Survivorship Days event, organized by Marie Borsellino, Survivorship Coordinator at the Murtha Cancer Center Research Program, is making a comeback after a hiatus. "We are thrilled to bring back this meaningful event to celebrate the resilience and strength of cancer survivors and their families," said Borsellino.

Dr. Monica Bertagnolli, Director of the National Cancer Institute, highlighted the significance of the event, stating, "Cancer Survivorship Days provides a unique opportunity for survivors and their loved ones to come together in solidarity, share their stories, and gain valuable resources for their continued journey."

Key partners and members, including Dr. Jeremy Perkins, the chair of the cancer committee, have contributed to the event's success. "Our team has worked tirelessly to create an engaging and supportive environment for all attendees, and we are grateful for the collaboration of our partners in making this event possible," said Perkins.

Attendees of the Cancer Survivorship Days participated in various activities, learned about available resources, and connected with fellow survivors and families. The two-day event also aims to foster long-lasting networks and support systems for survivors and their families.

Photo courtesy of the Murtha Cancer Center (MCC) at Walter Reed National Military Medical Center

Borsellino envisions a bright future for the Cancer Survivorship Days event, expressing her desire to "expand the offerings and opportunities for in-person events, ensuring that we continue to provide a valuable and uplifting experience for all attendees."

The Defense Visual Information Distribution Service

Active Duty
ONCOLOGY

Lung Cancer Leading Cause of Cancer Death

By Robert Hammer

Despite reduction in numbers in recent years, lung cancer is the leading cause of cancer deaths in the United States.

Each year, an average of 218,500 people are diagnosed with lung cancer, and about 142,000 people die from the disease, according to the Centers for Disease Control and Prevention. Though different people have different symptoms for lung cancer, most people with lung cancer don't have symptoms until the cancer is advanced, according to the CDC.

Observed annually in November, Lung Cancer Awareness Month draws attention to the disease to increase awareness of causes and symptoms of lung cancer and steps to take if you think you need to be screened.

The three leading causes of lung cancer are cigarette smoking, exposure to second-hand smoke, and exposure to radon, according to the National Institutes of Health, with 90 % of lung cancer deaths caused by smoking and the use of tobacco products.

Along with the above leading causes, previous exposure to any kind of radiation, exposure to asbestos, and family history should all be taken seriously. Smoking, along with exposure to other causes, increases the risk of lung cancer, according to U.S. Army Major (Dr.) Mateo Houle, a pulmonologist at the Brooke Army Medical Center in Fort Sam Houston, Texas.

Despite this, lung cancer is often preventable because it is often related to behavioral choices. "Smoking is the single greatest risk factor to develop lung cancer," said Houle. "It is possible to develop lung cancer from exposure to radon or other environmental factors, but these are far less common."

Some warfighters work in locations where there may be hazardous chemicals that can possibly cause cancer. If you have concerns, Houle said, the first step should be consulting a supervisor. If there is a question, all work locations should have Material Safety Data Sheets that can be consulted.

"The MSDS is a manual that shows all the chemicals used in the workplace and their known effects following exposure. The Occupational Safety and Health Administration regulates workplace exposures/chemicals and safety," Houle said.

Unlike some cancers, most symptoms of lung cancer are not discovered until the cancer is advanced. "Unfortunately, there are no signs of lung cancer in the early stages," said Houle.

Despite there being no obvious early signs, there are symptoms one can watch for according to the NIH.

Possible Signs of Lung Cancer

- A new cough that won't go away
- Shortness of breath
- Chest pain
- Hoarseness
- Losing weight (without trying)
- Coughing up blood

Screening for Lung Cancer

"There may be appropriate screenings available to catch cancer at an early, curative stage," said Houle. Lung cancer screening is recommended only for adults who have no symptoms but who are at high risk for developing the disease because of their smoking history and age.

"We have a lung cancer screening program, and at BAMC we have a specific lung cancer screening clinic where we offer education and same day CT lung cancer screening for those who are referred here," said Houle. "We then evaluate each case of new diagnosis of lung cancer in a multidisciplinary team, once per week. We also have a smoking cessation program at BAMC which has nursing and behavioral health embedded in the clinic."

Even though lung cancer can be hard to cure, early detection can lower the risk of dying from this disease. TRICARE will cover an annual low-dose computed tomography screenings for lung cancer if the beneficiary is between 50- to 80-years-old and has a 20-pack per-year history of smoking, is currently smoking or has quit within the past 15 years.

Lung cancer screening is not without risks. That is why lung cancer screening is recommended only for adults who are at high risk for developing the disease because of their smoking history and age.

Lung Cancer Prevention

Unfortunately, there is nothing that can be done to prevent lung cancer, but there are steps you can take to minimize your risk.

- Stop smoking, or don't start.
- Avoid secondhand smoke, and don't smoke around others.
- Test your home for radon and asbestos (if appropriate).
- Take safety precautions at work if you're around toxic chemicals or carcinogens.
- Examine your diet and exercise.

health.mil

CPG

Active Duty
OPHTHALMOLOGY

Vision Center of Excellence Sponsoring Landmark Eye Health Study

By Janet A. Aker

Vision health is critical to force readiness, so much so that eye problems can cut a military career short. A recently launched study could lead to better tracking of eye health over a service member's career to prevent future eye conditions.

The Defense Health Agency's Vision Center of Excellence is working with the RAND Army Research Division on a one-year study to determine whether a "comprehensive baseline military eye examination requirement should be established across the services to fill gaps in information and improve warfighter vision health," VCE said.

The study began in July 2022 and is expected to be completed next autumn with a peer-reviewed report due then.

"Today's modern warfighter has to be so technical in their visual skills, that we think there should be more done to follow eye health and ocular conditions," said Dr. Michael Pattison, VCE's program manager of readiness and operations optometry.

Currently, service members get an eye exam at their enlistment physical. However, according to Pattison, the RAND study is looking to determine the value of requiring service members to also receive a comprehensive eye exam, including a full ocular health assessment and a manifest refraction to see if visual correction is necessary. The latter procedure, which measures the degree to which light bends as it passes through the cornea and lens on to the back of the eye, is extremely important in determining if someone has a serious eye disease.

"My biggest issue is if I've got someone who's got a rifle in their hands, do I want that person to see 'good enough'? Or, do I want them to see to the best of their ability?" Pattison said.

Pattison also noted that expanding current guidelines for routine eye care could be beneficial to determine if there has been a change from the initial eye exam due to combat-related or non-battle injuries and diseases, including sports-related and other off-duty ocular injuries.

Additionally, when service members separate from the military or retire, there is no routine method to determine whether an eye disorder has a service-related connection, he added.

This can prove to be a challenge for the Department of Veterans Affairs when it comes to caring for the vision of veterans, Pattison pointed out.

Having both a beginning point and an endpoint for eye health and vision could help resolve this gap in information, he said.

Vision Correction Surgery

The long-term results of vision correction surgery are another variable where comprehensive data would be useful, Pattison suggested.

Laser eye correction surgery is one way a service member can optimize their vision. "What it's not doing is catching the other people who are 'getting by,'" Pattison said.

The RAND survey may determine if there should be periodic monitoring of those vision-corrected service members as well, he suggested.

Current Standards

Those seeking to serve in the military have their vision tested during their enlistment physical and receive eyeglasses if they need them. They must be able to see 20/40 or better using both eyes together at a distance.

Those who are deployed are fitted with better-than-ballistics-grade military combat eye protection and gas mask inserts that match their prescriptions. All deployed service members use Military Combat Eye Protection-approved lenses that are found on the Authorized Protective Eyewear List, known as APEL. MCEP standards are set by the Tri-Service Vision and Conservation Program.

During required periodic health assessments, medical personnel are required to ask if the service member has had a change in vision that:

- impacts daily performance
- resulted in being on any medical profile (noting functional limitations) or limited duty

Additionally, service members are asked if they wear corrective lenses, and, if so, how many pairs of glasses they have, whether they have prescription gas mask inserts, and are they current with their service-specific vision and eyewear standards.

"The RAND study will help us connect all the data for military vision health and readiness status to build a methodology that will better identify whether the strategies we have for the efficacy of eye care are working," Pattison said.

health.mil

CPG

Active Duty
OPTOMETRY

Eyes on Vision Readiness

By Kristen Wong, Joint Base Anacostia-Bolling

The ability to see clearly is often taken for granted, but vision impairment can be the difference between mission success and mission failure.

The 316th Medical Squadron Optometry Clinic on Joint Base Anacostia-Bolling provides quality eye care for Airmen in the National Capital Region and ensures they remain ready for the Air Force mission. The clinic operates under the 316th Medical Group, which provides care to more than 455,000 beneficiaries across the NCR. All services are in support of their mission, "Mobilize, deploy, and sustain medical services; maintain the health of the force; and deliver safe, effective and timely healthcare to those we serve, anytime, anywhere."

U.S. Air Force Maj. Brooke Kibel, 316th MDS optometry element chief, recommends annual or biennial eye examinations, even if there are no major issues to note and vision appears to be normal.

Changes in vision are gradual and can be easily overlooked; patients are often unaware their vision has changed at all until they see how it can be improved.

"We show Airmen the best they can see at 20 feet," said U.S. Air Force Tech. Sgt. Tosha Parson, 316th MDS optometry technician. "We can also answer questions like why their computer screens seem blurry or why they have to hold their phones closer or pull it back farther in order to see clearly."

The Optometry Clinic provides comprehensive eye examinations addressing refractive error, actor and chronic ocular health conditions, and the treatment and management of ocular disease.

Services include primary eye care, diagnosis and treatment of eye disease, evaluation of ocular manifestations of diabetes and other systemic disease, vision testing for driver's license renewal, eyeglass dispensing for active duty and retired members, Department of Defense Medical Evaluation Review Board examinations and flight physicals.

"A lot of what we do is education," said Kibel. "Many people assume if they can see, their eyes are fine. But there's still a health component to it. There are so many things outside of your eyes that we can diagnose. We can diagnose diabetes, high blood pressure, cholesterol issues and other medical conditions; any type of systemic health issue can be reflected in the eye."

The optometry team also advises against ignoring any symptoms where vision becomes anything other than normal. Patients often dismiss seemingly minor symptoms that could be considered visual emergencies. Problematic symptoms include flashes of light, floating spots, any sudden loss of vision, etc. In any situation where vision becomes anything other than normal, Airmen should contact the Optometry Clinic as soon as possible.

Kibel warns that the most extreme consequence of not addressing eye issues is permanent loss of vision.

"The risk of that happening is very, very low, less than 1%, but it's still important to come in if you have symptoms. If you're blinking your eyes and it's not going away and the symptoms are persistent, that's when you want to get it looked at," Kibel said.

Unlike most other duty stations, service members stationed on JBAB are not limited to the Optometry Clinic on JBAB; optometry patients can be seen at any of the base clinics in the NCR. Patients calling the appointment line can specifically request to be scheduled for JBAB or they can request the first available appointment at any of the clinics in the area.

While eye health may not generally be considered one of the most pressing health concerns, maintaining good eye health and vision is important for Airmen's overall health and mission readiness.

Kibel added, "Airmen don't need the [minor vision adjustments] to survive but that tiny prescription can make a huge and unexpected impact on their quality of life."

The Defense Visual Information Distribution Service

Active Duty
ORAL HEALTH

Frontline Expeditionary Dental Care is Near-time Reality

By Scotty Hogan, U.S. Army Medical Materiel Development Activity (USAMMDA)

U.S. Army Medical Materiel Development Activity's (USAMMDA)'s Warfighter Deployed Medical Systems (WDMS) is working to modernize several field deployable dental treatment systems to provide dental treatments to Warfighters in a not so typical way.

"The goal of Army Medicine is to treat and maintain the fighting force as far-forward on the battlefield as possible during a potential war against a near peer adversary," said Adam Hayes, assistant product manager with EDMS. "The systems will bring dental care capability farther forward than ever before."

The three dental systems nearing modernization completion, the Dental Operating System (DOS), Field Portable Dental System (FPDS) and Dental Filmless Imaging System (DFIS) are complete and ready for fielding, according to Hayes.

When fielding equipment to active-duty units, weight, space and size are usually a concern. The DOS is easier to transport with high-torque, dental drill, an air compressor, vacuum pump, and a self-contained water system.

According to Hayes, the DOS provides the frontline dentist with tools traditionally reserved for a dentist's office, and greatly increases far-forward care capabilities.

Adam Hayes, assistant product manager with the U.S. Army Medical Materiel Development Activity (USAMMDA), sits for an interview to highlight the components of modernized, deployable dental care systems, Fort Detrick, Md., Oct. 20, 2022. *U.S. Army Photo by T. T. Parish/Released*

A Dental Filmless Imaging System (DFIS) handheld x-ray device sits on display inside the headquarters of the U.S. Army Medical Materiel Development Activity (USAMMDA), Fort Detrick, Md., Oct. 20, 2022. U.S. *Army Photo by T. T. Parish*

"The Dental Operating System, which has completed the modernization process, furnishes the dental force with a smaller, lighter, and more comprehensive unit with more capabilities than the legacy systems," he said. "It increases battlefield mobility [for deployed military dentists] and enables individual completion of required critical tasks within dental teams."

Feedback from the units required mobile solutions.

"Dental teams all agreed our equipment needed mobility without sacrificing capability," said Lt. Col. Andres Mendoza, an Army dentist and instructor for the Captains Career Course at the Medical Center of Excellence at Fort Sam Houston in Texas. "The DOS offers a capable and mobile solution consistent with the Army's Medical Modernization Strategy."

The second device, the Field Portable Dental System, also known as FPDS, allows military dentists to provide care in austere locations and more expeditiously and efficiently than before.

"The legacy systems were primarily a battery operated, handheld drill," said Hayes. "It worked well for certain procedures, but lacked the torque and power required for some [other] dental care. As a result, providers requested a modernization effort to replace the older systems."

A Field Portable Dental System (FPDS) sits on display inside the headquarters of the U.S. Army Medical Materiel Development Activity (USAMMDA), Fort Detrick, Md., Oct. 20, 2022. USAMMDA team members with the Warfighter Deployed Medical Systems (WDMS) Project Management Office have worked for more than a year to assess current deployable dental capabilities across the U.S. Army and its sister services – the modernization efforts have included both Department of Defense and private sector organizations. The Field Portable Dental System (FPDS), Dental Operating System (DOS) and Dental Filmless Imaging System (DFIS) are designed to be scalable, rugged and portable and provide military dental care providers unparalleled capabilities to meet the current and future dental care needs of deployed service members. USAMMDA, the U.S. Army's premier developer of new drugs, vaccines, devices and medical support equipment, routinely partners with both U.S. DOD units and non-DOD organizations to provide Warfighters high-quality edical capabilities. *Photo by T. T. Parish, USAMMDA public affairs*

"The FPDS is battery operated and includes solar panels, which can be used to recharge the batteries," he said. "It can also be powered using a traditional electrical outlet or tactical vehicle power. It has a much stronger drill, air and irrigation capabilities."

According to Hayes, the FPDS is small enough to fit inside a backpack and is well-suited for the battlefield of the future.

> When fielding equipment to active-duty units, weight, space and size are usually a concern. The DOS is easier to transport with high-torque, dental drill, an air compressor, vacuum pump, and a self-contained water system.

"We know the next battlefield will be over an extremely vast area with the potential for a litany of injuries," Hayes said. "So, this device provides dentists the hyper mobility needed to treat the Army and its partners."

According to Lt. Col. Larry Munk, the commander of the U.S. Army's Dental Clinic Command at Fort Rucker, Ala., the FPDS and DOS will add substantial capabilities to the Dental Corps. "The DOS and FPDS will give greater capability and capacity due to the inter-compatibility of their equipment and because they both use a state-of-the-art electric engine, replacing the legacy air-driven engine," he said. "The range is also greater due to the systems' ability to use a variety of voltages or batteries with solar-charging capabilities."

Finally, WDMS' Dental Filmless Imaging System (DFIS) will allow dentists to capture, process, store, and view dental X-ray images in the field via a rugged, custom-built laptop. Internal sensors within the laptop take and store the x-rays on the laptop, which is also equipped with an inter-oral camera, allowing the user to capture pictures and livestream images from within the mouth. An additional capability allows a barcode scanner to automatically scan and enter patient data.

"It took around a year to get this system built," said Hayes. "Over the next year, we plan to obtain authorizations to operate and to begin fielding the system to the force."

A Dental Filmless Imaging System (DFIS) handheld x-ray device sits on display inside the headquarters of the U.S. Army Medical Materiel Development Activity (USAMMDA), Fort Detrick, Md., Oct. 20, 2022. *U.S. Army Photo by T. T. Parish/Released*

In the future, the system will connect to DOD networks as part of existing dental sets for medical and dental care providers, he said. This will allow dentists on the frontline to consult with specialists for additional guidance and to perform advanced procedures, possibly reducing the need for evacuations.

"The added capabilities of these systems may reduce the number of Warfighters who need to be evacuated, and the negative impact evacuations can have on units like being undermanned and sleep-deprived," said Hayes. "These three systems bring scalability to dental equipment sets, allowing dental officers to deliver an agile battlefield sustainment response."

The Defense Visual Information Distribution Service

Active Duty
ORTHOPEDICS

Experts Gather for Training on Advanced Combat Surgical Skills

By Gia Oney, MHS Communications

Military and civilian medical professionals gathered for the Federal Advanced Skills Training-Limb Trauma symposium, a three-day activity focused on advanced combat surgical skills and rehabilitation best practices, from June 27 to 29. A collaboration between the Uniformed Services University of the Health Sciences, the Defense Health Agency's Extremity Trauma and Amputation Center of Excellence, and the Department of Defense Joint Trauma System, the event featured a diverse group of experts in the amputation care field offering both lectures and hands-on simulations and demonstrations.

Former Nebraska Sen. Bob Kerrey delivered the keynote address during the biannual Federal Advanced Skills Training- Limb Trauma symposium, which took place June 27-29 at the Uniformed Services University in Bethesda, Maryland. *Photo by MC2 Brennen Easter, Uniformed Services University*

Spearheading the event was U.S. Army Col. (Dr.) Benjamin "Kyle" Potter, a professor and chair of the USUHS department of surgery. Potter has vast experience in orthopedic surgery and musculoskeletal oncology, both in forward theaters and at military hospitals and clinics in the United States.

"The FAST-Limb Trauma symposium is significant not just because we are reviewing combat casualty care best practices and teaching those techniques to surgeons, but because we are doing so in an interdisciplinary fashion — with vascular, reconstructive, and orthopedic experts teaching surgeons across all specialties what they need to know to ensure our wounded warriors get the best care downrange," Potter said.

Morning sessions included podium presentation on topics ranging from hemorrhage control and burn management to amputation care clinical practice guidelines and upper limb salvage management. Afternoon sessions included lessons and training in the USUHS anatomical teaching lab.

Included in the diverse lineup of military and civilian guest speakers was retired U.S. Sen. Bob Kerrey, the former governor of Nebraska, who was also a Navy SEAL during the Vietnam War and is a recipient of the Medal of Honor. During a tour in Vietnam, Kerrey was severely wounded and required a below-the-knee amputation on his right leg. Although he's been out of politics for over 20 years, Kerrey is still active in advocating for limb care for service members and veterans.

A major component of the event was the current research and provider education and training on limb loss and amputation care.

John Shero, the center director, believes the ongoing research his team does directly impacts health care delivery to patients with limb trauma and amputations. The center is a branch of the DHA Research and Engineering Directorate.

"A large part of the FAST- Limb Trauma symposium deals with the research we're conducting, and how that research informs clinical care," Shero said. "The tremendous partnership we have with USUHS to educate and train providers within the Military Health System enables us to better support the medical readiness of our surgeons and clinician staff and most importantly, MHS patients."

health.mil

Active Duty
ORTHOPEDICS

Limb Loss, Amputation Resources, Advances from Military Health System

By Janet A. Aker, MHS Communications

Losing a limb to trauma, or amputation from any cause, creates undeniably serious life adjustments. That's why it's crucial for clinicians helping patients experiencing limb loss to have the tools they need.

For providers treating individuals with limb loss — inside and outside of the military — the Defense Health Agency is a source of continuing education, ongoing research, and outcomes measures. DHA's resources are based on data obtained by treating more than 1,700 deployment-related amputations since 2001. Those clinical resources are updated as the science advances across the Department of Defense and the Department of Veterans Affairs.

"All amputation is major," said Andrea Crunkhorn, chief of clinical affairs at DHA's Extremity Trauma and Amputation Center of Excellence who also holds a doctorate in physical therapy. "In a society where communication is now typing with all 10 fingers or your thumbs, loss of even part of a digit severely impairs efficient and effective communication as well as makes all activities of daily living more difficult, with huge functional implications for anyone."

Clinical Practice Guidelines

EACE was established in 2011 and joined the DHA in 2022 as the fifth center of excellence in the Defense Health Agency's Research and Engineering Directorate. One of the major efforts EACE supports is the development of clinical guidelines. EACE clinicians, Military Health System clinicians, and VA clinicians work with the Department of Veterans Affairs/Department of Defense Evidence-Based Practice Guideline Work Group, which has issued two amputation focused clinical practice guidelines. These CPGs provide the framework for evidence-based best practices, and include:

- Rehabilitation of Lower Limb Amputation, Version 2 – 2017
- Management of Upper Limb Amputation Rehabilitation (ULA) – 2022

"It is essential, particularly in a field that is emerging and changing as quickly as amputation and limb trauma care, that all providers look for well-produced guidelines such as these," Crunkhorn said.

The 2017 Lower Limb Amputation Rehabilitation CPG was based on a review of 3,500 articles on lower limb amputation. Only 73 articles were of high enough quality that the VA/DOD working group creating the guidelines included them in the results for building recommendations, Crunkhorn said.

The working group assesses the research-based evidence and other factors such as results from a patient focus group, patient values, likelihood of harm of doing or not doing the recommended action, and burden on clinicians and health care systems (time, resources, staffing)," Crunkhorn said.

The working group also addresses research and clinical gaps both as part of the CPG and in crafting additional documents to assist clinicians and patients.

For example, last year the work group realized there was zero content on pregnancy, parenting or childcare in the Upper Limb Amputation Rehabilitation CPG. The work group published a novel patient handout on pregnancy and added content on parenting and child care to the patient handbook "Within Reach." This content was primarily written by former U.S. Army Maj (Dr.) Megan Loftsgaarden, who was then chief of the Physical Medicine and Rehabilitation Service at the Center for the Intrepid at Brooke Army Medical Center in San Antonio, Texas.

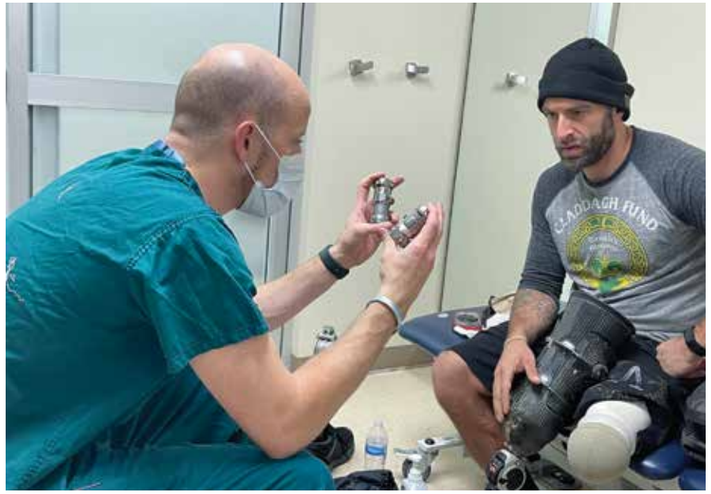
Additional EACE Resources

There are many other resources at providers' fingertips.

EACE has an archive of on-demand training modules on provider-requested health outcome measures related to limb loss and amputation. This resource hosts 32 archived sessions from the multidisciplinary information-sharing series. Monthly sessions introduce new material, case studies, and best practices into the clinical setting.

Monthly DOD-VA Grand Rounds provide evidence-based educational opportunities designed to improve the quality and consistency of care. There is also a continuing education course, the 2021 Federal Advanced Amputation Skills Training, for at-home study.

EACE partners with three Advanced Rehabilitation Centers. ARCs provide state-of-the art, patient-centered, sports model-based care for limb dysfunction and amputation to DOD beneficiaries, allied military personnel, and select civilians. The three ARCs are Walter Reed National Military Medical Center's Military Advanced Training Center (MATC); Brooke Army Medical Center's The Center for the Intrepid (CFI); and Naval Medical Center San Diego's Comprehensive Combat and Complex Casualty Care (C5) Program.



Earl Granville, a retired U.S. Army National Guard staff sergeant, discusses fixing his artificial limb with Tyler Cook, a prosthetist at Walter Reed National Military Medical Center in Bethesda, Maryland, on April 23, 2022. Granville lost his leg in a combat mission abroad. *Photo by Alpha Kamara*

The EACE has a resource page for all providers, patients and caregivers. For MHS providers, the EACE developed an internal page on Carepoint for additional content: the ARC Resource Page.

The ARC documents website has DHA outcome measures information "as we drive toward a standardized outcome set to improve amputation rehabilitation across the DHA," she added.

Both websites provide background information on the ARCs, their capabilities, how to refer patients to them, as well as treatment protocols, and other useful information, according to Crunkhorn.

Limb Loss Recovery as a Career

Dr. Tawnee Sparling is the medical director for amputee care and the director of combat casualty care at Walter Reed National Military Medical Center in Bethesda, Maryland.

"New clinicians interested in entering this field [should] spend time with providers in all of the different specialties involved in the care of this patient population," Sparling suggested. "You should learn about wound care, observe in the OR, ask your prosthetist questions, spend time in their lab, observe therapists doing their evaluations, and ask your patients about their goals," Sparling advised.

At WRNMMC, Sparling works in the Military Advanced Training Center, which is one of the three ARCs, a state-of-the art rehabilitation facility that works with prosthetics and athletic equipment to further recovery from limb loss or amputation.

Her daily patient practice crosses many areas, including clinical, educational, and research components. "I coordinate their rehabilitative care, manage their pain, and help them achieve their functional and quality-of-life goals."

The MATC is "a unique multi-disciplinary clinic where providers from PM&R, physical therapy, occupational therapy, prosthetics/orthotics, and case management teams work together to achieve a patient-centered care model," Sparling explained.

She works with EACE weekly "to improve our use of validated clinical outcome measures within our clinics, develop training principles for providers within the realm of amputee rehabilitation, and develop educational content for providers through our state-of-the-science symposiums."

New Technologies

Newer providers with an interest in limb loss should stay up to date with research and new technologies and innovations as much as possible, Sparling advised. These include:

- Osseointegration, or the direct anchoring of a prosthesis to the bone structure
- Agonist-antagonist myoneural interfaces to improve proprioceptive control for enhanced prosthetic use, decreased residual limb atrophy, and maintain appropriate phantom limb sensations
- Implantable peripheral nerve electrodes to improve motor prosthetic control and provide sensory integration into prosthetic terminal devices

DHA has developed advanced practice knowledge, skills and abilities in amputation care for physical therapists, occupational therapists, physiatrists, orthotists and prosthetists, Crunkhorn pointed out. "We share knowledge and skills with civilian colleagues to ensure that the lessons learned from war have a greater impact on our Nation and whole society."

health.mil

CPG

Active Duty
PEDIATRICS

Ask the Doc: How to Get Caught Up on Childhood Immunizations

By Janet A. Aker, MHS Communications

Hi Doc,

I am getting back into a regular schedule for doctor appointments for my children following the pandemic and am worried I may have missed some scheduled vaccinations. How can I get them caught up on recommended vaccines, even if it's off the normal schedule? Also, my children and I are going on a trip to Europe this summer. What immunizations are recommended for my kids before going on our trip?

— U.S. Coast Guard Petty Officer 1st Class Vic Vack

Samuel Thomas, age 4, gets his COVID-19 vaccination on Wednesday, July 20, 2022, becoming the first kid under the age of 5 to get vaccinated against COVID at Naval Health Clinic Patuxent River. As the son of, Capt. David Thomas, the clinic's commanding officer, he wanted to lead by example and show other kids that there's nothing to be scared of. *Photo by Kathy Hieatt*

Dear Petty Officer 1st Class Vack,

It's great to hear you want to get your kids caught up on their scheduled vaccinations. Many service members face the same issues. I found just the person to talk to about this. I contacted Dr. David Hrncir, medical director of central region vaccine safety hub for the Defense Health Agency Immunization Healthcare Division. Here's what he said:

Studies show that certain groups of children got very behind on their immunizations during the COVID-19 pandemic. Newborns and infants generally got their vaccines on time. Older children missed some of their doctor visits and the associated vaccinations. Now is the time to schedule those visits and get necessary immunizations.

The Centers for Disease Control and Prevention specifically addresses catch-up immunizations for children and adolescents who start their immunizations late or who are more than one month behind, and I strongly recommend using CDC as your guide.

Military beneficiaries can contact the Immunization Healthcare Division support center for help with sorting out missed immunizations and getting a recommended plan for catching back up to an age-appropriate schedule.

24/7 support center manned by nurses and physicians is available to address all vaccine concerns. You can contact the support center by telephone or email at: 1-877-GETVACC (1-877-438-8222, option 1) or DODvaccines@mail.mil

Your civilian and TRICARE-authorized providers can provide recommended vaccinations during your routine office visit. You can always discuss your concerns with your primary care provider or immunization technician.

You can get the catch-up shots at your local TRICARE network pharmacy, your local provider, or a military hospital or clinic. Military beneficiaries can get covered vaccines for free at participating retail network pharmacies when administered by a pharmacist. Call in advance to make sure the site you select has all the vaccines in stock.

As for vaccinations needed for your European trip, CDC has a wonderful website under its Traveler's Health Destinations section for travel to a large variety of countries. Recommendations cover routine vaccines and other immunizations such as COVID-19, hepatitis A, hepatitis B, rabies, and tick-borne encephalitis.

There is also a handy list covering the benefits and risks associated with immunizations, as well as adverse event management and informational resources. These are based on the recommendations of the CDC's Advisory Committee on Immunization Practices and are updated as needed.

Petty Officer 1st Class, I hope this advice is helpful as you do the right thing to get your kids up to date on their shots and ready for Europe.

Good luck my friend, and as always … take care out there!

health.mil

CPG

Active Duty
PEDIATRICS

New USU Course Focuses on Mental Health of Military Children

The Uniformed Services University's Graduate School of Nursing developed a new course, Child and Adolescent Mental Health, to address the mental health needs of military children in medicine.

By Ian Neligh

Military families face a host of challenges such as frequent moves, periods of separation, and deployments, which can all have an impact on children and adolescents. A newly-refined course developed by the Uniformed Services University (USU) Daniel K. Inouye Graduate School of Nursing (GSN) was created specifically with the mental health needs of military children in mind.

Air Force Lt. Col. Regina Owen, program director for the university's Psychiatric Mental Health Nurse Practitioner program, (PMHNP) developed the course, Child and Adolescent Mental Health, and first rolled it out for students last year before further refining it for this year's curriculum.

The Defense Department celebrates April as the Month of the Military Child in honor of the 1.6 million military children and the unique challenges they often face.

"There are identified mental health disorders that commonly occur in this population" Owen says. "This course is designed to focus on evidence-based treatments for depression, anxiety, ADHD and behavioral problems."

Owen says military children sometimes experience multiple stressors when a parent is deployed, which she said is a challenging role in a military family unit. Understanding how to cope with the psychological consequences of increased stressors and traumatic events like COVID-19, in part, prompted the course's creation.

"Knowing that military children and their families were having such a difficult time, just like non-military families, it was a prime opportunity to add this course to our curriculum and share this knowledge with all healthcare providers," Owen says, adding another part of the inspiration behind the course's

Maj. Justin Orton, clinical psychologist at William Beaumont Army Medical Center, pins a green ribbon in support of Mental Health Awareness Month on a Bliss Elementary School student, during a wellness walk at Bliss Elementary School, Fort Bliss, Texas. *Photo credit: Marcy Sanchez, William Beaumont Army Medical Center*

A military child participates in the Joint Base Lewis-McChord (JBLM) Pilot for a Day program. *Photo by U.S. Air Force Airman 1st Class Mikayla Heineck*

creation came from feedback of the graduating students.

Owen says over the years the PMHNP graduates had requested a specific course dedicated to addressing pediatric mental health and the unique military issues confronted by military children and their families.

"How are we ensuring that children continue to be heard? I think that is the biggest part — adults sometimes have a hard time understanding this unique situation these military children are in," Owen says. "They are not able to articulate everything that they feel. So we have to stop, listen and help them."

Owen described the new course as an intense six-weeks focusing on depression, anxiety, ADHD, and behavioral problems which, she says, are the most common mental health diagnoses of children across the board.

Army Maj. Kimberley Maggio took the first iteration of the course last summer as a student in the Psychiatric Mental Health Nurse Practitioner program.

"So much is happening in the life of a child and adolescent that creates a lasting impact into their future," Maggio says. "I've never really had an in-depth course on the mental health of this population, so I was thankful I had the opportunity."

Maggio says she thought the course layout did a fabulous job of breaking down each lesson and its application to the real world.

"From a general mental health perspective, so much is happening in a child's life during this time that develops who they are and how they see the world," Maggio says. "…The military child is placed in a unique position, unlike any of their peers in this specialty. The transient and versatile aspects of their lives mean they experience their upbringing a little differently than most."

According to Maggio, providers owe it to the children to be knowledgeable and understanding of their specific needs.

"They play a crucial part in the life of service members and their care is a priority," Maggio says.

Air Force Maj. Anna Crane, who also took the course, said from a military perspective, she believes a significant part of service members' military success and mission readiness includes their physical, mental, and emotional well-being and that of their children.

"It is noteworthy to point out that a service member may find it difficult to focus on military duties or maintain mission readiness if there is little or no support for child and adolescent mental health," she says. Crane adds that providing appropriate mental health interventions and support for children is paramount.

Crane says the Child and Adolescent Mental Health course provided a foundation that allowed her a deeper understanding of how developmental stages may affect mental health, and what communication skills are effective when engaging with children and adolescents.

According to Owen, the biggest issue regarding military child mental health is helping parents learn how to support their child and taking a moment to recognize their strengths.

"It is hard. Everyone is busy, but children just need a minute of your time. That's really what's hard for some people. To stop and see it through their lens," Owen says. "Just be present with your child when there are things that are difficult, or challenging, and be present there — not just in body, but in mind, too."

The Uniformed Services University

Active Duty
PEDIATRICS

What You Should Know About RSV: Symptoms, Prevention, Care

By TRICARE Communications

RSV is a seasonal illness of special concern to children under age two, adults over age 65, and people of all ages who have a weakened immune system. Its symptoms closely resemble a cold or annual flu, so it's important to know the signs of RSV. RSV symptoms can change quickly and put patients at risk of serious illness, hospitalization, and even death.

"RSV is a common virus that can affect anyone of any age, and its symptoms are generally mild and manageable," said Col. Patrick Kennedy, chief of the Armed Forces Health Surveillance Division at the Defense Health Agency. "However, certain populations such as infants, especially premature infants or babies who are 6 months or younger, are at higher risk of serious disease. TRICARE encourages you to be familiar with the signs of RSV and see your health care provider if you think you or a family member has RSV."

Photo courtesy of TRICARE news

Recognizing RSV symptoms

According to the Centers for Disease Control and Prevention (CDC), RSV symptoms can appear in stages — not all at once — about four to six days after infection. Some signals that you may have RSV usually include:

- Fever
- Runny nose
- Decrease in appetite
- Coughing
- Sneezing
- Wheezing

Signs of RSV in very young infants may be irritability, decreased activity, having a hard time breathing, and breathing apnea (pauses between breaths). The most serious symptom of RSV is difficulty breathing. If your child's breathing is rapid, as if they're trying to "catch their breath," or if you can see their ribs when they breathe, seek medical care immediately.

Preventing RSV

Most children will have had RSV before age 2, but anyone can catch RSV again. RSV is highly contagious and there's currently no vaccine for the virus. Take extra care to keep infants or young children healthy, especially those who:

- Were born prematurely
- Have chronic lung or heart disease
- Have a weakened immune system

If you have a child that's especially high risk, talk to your child's doctor about the drug palivizumab, also known as Synagis. Developed by a military pediatrician, palivizumab is a prescription drug that can help prevent severe RSV in certain infants and children who are at high risk for severe disease. According to the CDC, while the drug can help prevent serious RSV disease, it can't help cure or treat children already suffering from serious RSV.

The CDC suggests these proactive steps to protect others and to avoid getting sick with RSV:

- Wash your hands often for 20 seconds with soap and water, and help young children do the same. If soap and water are unavailable, use an alcohol-based hand sanitizer.
- Avoid close contact with people who have cold-like symptoms.
- Avoid touching your eyes, nose, and mouth with unwashed hands.
- Always cover sneezes and coughs with a tissue or upper shirt sleeve.
- Clean and disinfect high-touch surfaces, such as doorknobs, toys, and mobile devices.
- Stay at home if you feel sick.

tricare.mil

Active Duty
PHARMACY

Pharmacists Indispensable in Dispensing Patient-Centered Care

By Douglas Stutz, Naval Hospital Bremerton/Navy Medicine Readiness and Training Command Bremerton

They're behind the scenes, but not behind the times.

National Pharmacist Day, January 12, 2023, provides an annual date to recognize that the pharmacists assigned to Naval Hospital Bremerton are at the forefront in combining high tech convenience with patient-centered care.

Those days of an apothecary using an abacus to prepare and dispense medicine are long gone. NHB pharmacists — such as Lt. Cmdr. Evan Romrell, Lt. Cmdr. Jason Galka, and Isabella "Bella" Wolak — are a crucial link in providing health care support to those in need.

They are intricately involved in offering advice about prescription dosage, usage and efficacy. They collaborate and counsel with physicians, nurses and health care teams as well as patients on the proper and safe use of medications.

From text messaging to the Q-Anywhere option to ScriptCenter pickup centers, all NHB Pharmacy upgrades are designed to provide safe, secure and timely prescriptions for all eligible beneficiaries. Yet none of the improvements take place without the pharmacists making it happen. Which is no small task due to the sheer amount of medications provided on a daily basis.

"Our volume is the same [approximately 330,000 outpatient prescriptions filled in 2021] but staffing is a challenge. We're down several pharmacists and six or seven pharmacy technicians. But our staff are amazing," said Romrell, who deflected attention from themselves to attention on what they provide NHB's patients.

"We've streamlined with a few innovations to limit waiting in the lobby and the changes we've made benefit our staff and our patients," Romrell said.

To sign up for the text messaging service, patients can simply add their phone number when they check in at one of the Outpatient Pharmacy's kiosks.

"Additionally, pharmacy staff can update their profile at the window," said Romrell. According to Romrell, signing up for texts allows patients to get the latest information about their prescriptions, such as ready notifications or messages about a delay due to a medication being out of stock.

NHB pharmacists — such as Lt. Cmdr. Evan Romrell, Lt. Cmdr. Jason Galka, and Isabella "Bella" Wolak — are a crucial link in providing health care support to those in need. They are intricately involved in offering advice about prescription dosage, usage and efficacy. They collaborate and counsel with physicians, nurses and health care teams as well as patients on the proper and safe use of medications. *Photo courtesy of the Naval Hospital Bremerton*

"Or if they use Q-anywhere, their phone number is automatically saved. By using the Q-Anywhere feature it allows them to pre-activate their prescriptions from 'anywhere.' Then they can just come to pick them up when they are ready, greatly reducing the time spent waiting in the pharmacy," Romrell said, urging those who want to skip the pharmacy wait, to sign up for their Q-anywhere Phast Pass Prescription Service.

The ScriptCenter is a self-serve dispensing service available for all customers who need after hours services. Or just choose not to wait in the lobby. ScriptCenter is easy to use. The process starts when ordering prescriptions through AudioCare at 360-475-4217, then select the ScriptCenter kiosk option at several pickup location. When requesting for the first time, registration is required so a patient needs to bring the 12-digit prescription number (starting with 000) found on the medication bottle. For those who don't have a prescription number, it is still possible to establish a username and PIN to access the ScriptCenter. Pharmacy staff can help complete the registration when the prescription is filled.

Romrell also hinted that there's more advances pending, all designed to make it easier for their patients to pick up their prescriptions. "If anyone has any problem, let us know and we'll help work through it," stated Romrell.

The Defense Visual Information Distribution Service

Active Duty
PHARMACY

Military Pharmacists Face Unique Challenges While Deployed

By Robert Hammer

Tasked with having to know about hundreds of types of drugs and their interactions, equipment, and much more, pharmacists are vital in keeping warfighters healthy and ensuring that the U.S. military maintains a medically ready force.

For deployed pharmacists, they face unique challenges, as they don't work in a traditional brick and mortar setting. Rather, deployed pharmacists can be on a ship in the middle of the ocean, or in a makeshift building in the Middle East or Africa. The deployed pharmacy workforce may have to take care of warfighters in abnormal situations or locations.

A deployed pharmacist is, "a pharmacist forward, in a hostile environment, supporting a broad range of contingency operations in support of our nation's objectives," said U.S. Army Maj. Lance R. Murphy, chief of ambulatory care pharmacy services at Tripler Army Medical Center, in Honolulu, Hawaii.

Typically, it's the pharmacist's job to screen, package, and distribute medication to patients, ensuring they are prescribed the correct dosage to treat their ailment. Yet while on deployment, it can be much more than that.

"A deployed pharmacist is the primary drug/medication expert for the management, storage, and acquisition of pharmaceuticals. Many times, you are the only pharmacist within your area of operation and will expected to be always available," said U.S. Army Lt. Col. Norman Tuala, deputy chief of the department of pharmacy at Tripler Army Medical Center.

Tuala went on to explain that there are four positions for a deployed pharmacist: field hospital pharmacist, division pharmacist, medical logistics pharmacist, and theater pharmacy consultant.

He said, "You need to be proficient as an outpatient and inpatient pharmacist; however, you'll need to be more familiar with logistics such as different ordering platforms, forward logistic elements."

Challenges as a Deployed Pharmacist

Logistics and supply management can be one of the biggest challenges a deployed pharmacist may face, Tuala explained. "My biggest concerns were supply availability, controlled substance accountability, and management of refrigerated items. I didn't always have what I needed, but I was able to pursue available logistics contacts to request what I needed. You cannot operate as you do while you are back in garrison and expect most pharmaceutical orders to arrive next day."

Yet the conditions are manageable if the pharmacist plans ahead.

He also mentioned, "manpower, logistics, formulary changes, and varying missions," as some of the biggest challenges while on deployment.

He recalled a time when he was deployed where logistics played a key factor.

"There was an outbreak of a gastro-intestinal parasite in Kuwait. I was responsible for ordering the medications to treat the infection and side effects. I was able to verify treatment and get the medications, as well as prevention medication, shipped out within two hours and delivered on site within 24 hours," said Murphy.

Personal Experiences on Deployment

When deployed, everyone has a different experience, or way, that they prepare.

"Most of the preparation is mental. When preparing for a traditional deployment, brushing up on sterile compounding and critical care are top priority. For my job, it was more 'on the job' training and learning the logistics side of pharmacy and medicine," said Murphy. "I managed the U.S. Central Command formulary, ordered and shipped out all of the medications for the theater, developed and updated policies and procedures for the area of responsibility, and served as a clinical subject matter expert."

Sometimes when deployed, a pharmacist might come across certain medications that they might not stock in a typical pharmacy. "This will depend on the environment, but when I was in Afghanistan, we had snake antivenom, which was something I normally had not stocked within my pharmacy," said Tuala. Murphy also mentioned that he was once responsible for procuring antivenoms to treat snake and scorpion bites, which was unique for him.

While serving on a deployed mission, you must prepare and plan for certain situation that you normally would, like "mass casualty, enemy fire, disrupted logistics channels and evacuations," said Murphy. "My largest concern was making sure units had enough medications and had all their requirements in a timely manner. The last thing I wanted was for a unit to realize they were short on a medication/treatment while they were handling a mass casualty or under fire."

health.mil

Active Duty
PHYSICAL THERAPY

Physical Therapy Ensures Combat Readiness

By Airman 1st Class Leighton Lucero, 4th Fighter Wing Public Affairs

"Everyone, including us, joke that PT stands for pain and torture, but we are really here to help you," said Maj. Jeffrey Walker, 4th Operational Medical Readiness Squadron human performance flight commander. "Our goal is to get you back to doing everything that you normally do."

Staff Sgt. Jeffrey Trigg, 4th Component Maintenance Squadron egress technician, exercises his injury under supervision from Kendall Erickson, a 4th Operational Medical Readiness Squadron physical therapy clinic physical therapist assistant contractor at Seymour Johnson Air Force Base, North Carolina, June 22, 2023. *U.S. Air Force photo by Airman 1st Class Leighton Lucero*

The 4 OMRS physical therapy clinic at Seymour Johnson Air Force Base, North Carolina, gives active duty service members the steps forward in order to recover in a safe, and effective manner after an injury or physical problem.

"The focus on physical readiness is important to the mission, however, injuries are bound to occur," said Staff Sgt. Koji

Cameron Perntis, right, 4th Operational Medical Readiness Squadron physical therapy clinic civilian physical therapist assistant contractor, assesses the injury of Staff Sgt. Trevor Herrli, 333rd Fighter Generation Squadron weapons load team chief at Seymour Johnson Air Force Base, North Carolina, June 22, 2023. *U.S. Air Force photo by Airman 1st Class Leighton Lucero*

Maj. Jeffrey Walker, right, 4th Operational Medical Readiness Squadron human performance flight commander, shows Staff Sgt. Trevor Herrli, 333rd Fighter Generation Squadron weapons load team chief, a stretch to assist in rehabilitating his injury at Seymour Johnson Air Force Base, North Carolina, June 22, 2023. *U.S. Air Force photo by Airman 1st Class Leighton Lucero*

Yoshioka, 4th OMRS physical therapist. "We get new inquiries every day about new or pre-existing injuries."

Depending on the patient, their physiology and the injury, individualized programs are created for each Airman to ensure they are getting the right treatment for getting them back in the fight.

"The science is always changing, so we always have to keep up with the latest and greatest evidence on what the most current treatment plan is," said Walker. "No injury has a one-size-fits-all fix, there are basic guidelines to follow from professional organizations, but we have to tailor the rehabilitation to the individual patient."

The efforts provided by physiotherapists go beyond the duty day and their efforts maintain the strength of the force.

"We will spend extra time after hours to go over patient plans for care as a team," said Yoshioka. "We have to rely on each other's expertise to give our patients the best options for recovery."

The mental health aspect of recovery is just as important as the physical. According to the American Psychiatric Association, people living with chronic pain can be at heightened risk for mental health problems, anxiety, depression and substance use disorders. Chronic pain can affect sleep and can increase stress levels. The physical therapy clinic assists in restoring and maintaining morale during the recovery process.

The goal of physical therapy is to be a resource that adds to the 4th Fighter Wing's mission, to maintain combat airpower and mission readiness.

The Defense Visual Information Distribution Service

Active Duty
RADIOLOGY

BAMC Interventional Radiology Offers Less Invasive Option for Patients with Disc Degeneration

By Lori Newman, Brooke Army Medical Center Public Affairs

Brooke Army Medical Center Interventional Radiology offers a new, less invasive option for some patients who have disc degeneration.

"Interventional Radiology performs minimally invasive image guided procedures, also known as pinhole surgery," explained Air Force Maj. (Dr.) Matthew Taon, interventional radiologist. "The technology we use for this procedure centers on a non-surgical, injectable allograft that uses allogeneic tissue and disc material to repair degenerative discs."

Army Sgt. 1st Class Mitchell Alwin, an X-ray technician assigned to the 264th Medical Battalion on Joint Base San Antonio-Fort Sam Houston, was the first patient to receive the procedure at BAMC.

Taon used tiny needles to get into the disc, as well as live X-ray (fluoroscopy) and 3-dimensional imaging (cone beam computed tomography) to visualize the entire process. This procedure is intended to rehydrate damaged/dehydrated intervertebral discs and can provide pain relief for months to years. Alwin was thankful that this new procedure was available to him, and that it provided him relief from his constant pain.

"My pain was a constant 7 or 8," Alwin said. "It affected everything daily no matter what I did — sitting or standing, I felt tingling and numbness down the legs. I couldn't sleep, that's really what made it worse."

He said after the procedure he experienced a little tenderness in the area for a couple of days, but he felt great afterward. "To get three- or four-months relief was way better than anything else," Alwin said. "The lower risk was definitely worth the reward."

"Dr. Taon is phenomenal, not only is he knowledgeable, but he's also great at what he does," Alwin added. "When he told me it was a newer procedure, I said, 'Let's do it. You have my full trust and confidence.'"

Beneficiaries need a referral to Interventional Radiology from their primary care manager for an assessment to see if they are a good candidate for this procedure. "The ideal candidate for this procedure is someone whose disc is damaged but there is still some disc tissue that can be rehydrated," Taon said. "If the disc is completely destroyed and there is nothing to rehydrate, it's too late. We need to assess all possible avenues to see if this

U.S. Air Force Maj. (Dr.) Matthew Taon, interventional radiologist, demonstrates a minimally invasive image guided procedure at Brooke Army Medical Center, Fort Sam Houston, Texas, March 2, 2023. The new, less invasive option for some patients who have disc degeneration centers on a non-surgical, injectable allograft that uses allogeneic tissue and disc material to repair degenerative discs. *DoD photo by Jason W. Edwards*

procedure is the correct one. Sometimes there are multiple issues causing the pain. If that's the case, we attack it one step at a time."

BAMC Interventional Radiology manages disease processes and performs procedures from head to toe, including stroke thrombectomies to remove blood clots from the brain, oncologic tumor ablations and embolization, uterine fibroid embolization, arteriovenous malformation treatments, hemodialysis vascular access procedures, and interventional pain treatments.

Interventional Radiology is also an integral component of ensuring BAMC's Level I trauma accreditation. "We perform life-saving procedures such as hemorrhage-stopping embolization, revascularization, and pulmonary thrombectomy to remove clots from the lungs, to name a few," Taon explained.

"The minimally invasive innovations Maj. (Dr.) Matthew Taon and the BAMC Interventional Radiology team perform are just another example of the cutting-edge medical capabilities of the San Antonio Market," said Army Col. (Dr.) Michael Wirt, Department of Radiology chief. "This intervention greatly contributes to returning our Soldiers and Airmen to the fight, improving our Service Member's readiness and ability to serve our Nation anytime and anywhere we are called."

The Defense Visual Information Distribution Service

Active Duty
RESEARCH

Research Makes Madigan Army Medical Center Healthier

By Kirstin Grace-Simons

Medical knowledge and practice advance through significant, long-term investment in research. Madigan Army Medical Center on Joint Base Lewis-McChord makes that investment and celebrates it every spring. On Friday, May 5, the Col. Pat C. Kelly Madigan Research Day offered up 13 podium presentations and 64 posters detailing research done at Madigan over the past year.

Capt. Ariana Enzerink, a resident in Internal Medicine, shares her research with attendees of the poster judging session of the 2023 Col. Pat C. Kelly Madigan Research Day on Friday, May 5, 2023, at Madigan Army Medical Center on Joint Base Lewis-McChord, Washington. *Photo credit Kirstin Grace-Simons, U.S. Army*

The morning started with brief introductions by Lt. Col. Jacob Hogue, the chief of the Department of Clinical Investigation, and Madigan Commander Col. Jonathan "Craig" Taylor, and quickly moved into the podium presentations.

Consisting of preclinical, clinical and quality improvement and program evaluation categories, the podium session gave presenters the opportunity to highlight their research in subjects including the duration of breastfeeding, developing training on sexual assault for healthcare professionals, pain therapies and mindfulness and stress mitigation, to name just a few.

Sandwiched between the preclinical and clinical sessions was the Maj. Gen. Jack K. Gamble Memorial Medical Lecture by U.S. Navy Capt. Sherri Rudinsky, a physician and the chair of the Department of Military and Emergency Medicine at Uniformed Service University of the Health Sciences School of Medicine in Bethesda, Md.

Maj. Jeffery Ransom, the director of the Interdisciplinary Pain Management Center, gives his presentation titled, "Effects of Different Types of Interdisciplinary Treatment Hours on Pain Impact in a Military Population with Chronic Pain" during the clinical session at the 2023 Col. Pat C. Kelly Madigan Research Day in Letterman Auditorium at Madigan Army Medical Center on Joint Base Lewis-McChord, Wash., on May 5, 2023. *Photo Credit Kirstin Grace-Simons, U.S. Army*

Rudinsky's lecture was titled, "Preparing the next Generation of Military Medical Officers: Innovative Research Opportunities in Simulation-Based Education."

U.S. Navy Capt. Sherri Rudinsky, a physician and the chair of the Department of Military and Emergency Medicine at Uniformed Service University of the Health Sciences School of Medicine in Bethesda, Md., offers the 2023 Maj. Gen. Jack K. Gamble Memorial Medical Lecture titled, "Preparing the next Generation of Military Medical Officers: Innovative Research Opportunities in Simulation-Based Education," at Madigan Army Medical Center's annual Col. Pat C. Kelly Madigan Research Day in Letterman Auditorium on May 5, 2023. *Photo credit Kirstin Grace-Simons, U.S. Army*

She noted that the unique requirements of operational medicine — the need to adapt and provide medical care in deployed environments that are, by definition, dangerous — means the contemporary military medical officer needs a nuanced skill set beyond what the education they traditionally received would produce.

Conducting studies to get a handle on how military medical officers feel their education prepared them to render care in the wide variety of circumstances they may find themselves, the need for more military-specific elements in the curriculum is clear.

While most felt well-prepared to comfortably practice medicine in a clinical environment, fewer than half deemed themselves ready to perform with confidence as deployed physicians.

These studies revealed that the number one barrier to building more operational elements into medical education was time. While the ability to conduct field training exercises is limited due to their need for extensive planning and resources, simulation is part of the answer.

> "Simulation, we know, is a broad spectrum of modalities, from the simple to the task trainers to our role players all the way to immersive, large-scale, high-fidelity simulations. And certainly, all modalities have their strengths and weaknesses and really need to be utilized in a way that makes sense," said Rudinsky.

Task trainers — mannequins that are usually just a part of the body for medical professionals to train on — are in common use for doctors, nurses and technicians to practice skills like drawing blood, putting in an IV or intubating — putting a tube down a patient's throat.

Top-of-the-line simulators have become surprisingly life-like. Some have simulated breathing, heartbeats, pulses and come complete with layers of skin, fat and muscle.

Madigan's Charles A. Andersen Simulation Center has a variety of simulators for all types of training opportunities.

Rudinsky argued that just as a physician would not be expected to perform a procedure for the first time on a patient in an emergency room, neither should a military physician experience some of the aspects of providing military medicine on their first deployment.

At USUHS, they take a gradual approach to incorporating operational medicine into the curriculum.

Lt. Col. Jacob Hogue, the chief of Pediatric Genetics and director of the Department of Clinical Investigation at Madigan Army Medical Center on Joint Base Lewis-McChord, Wash., talks with U.S. Navy Capt. Sherri Rudinsky, the guest lecturer at the 2023 Col. Pat C. Kelly Madigan Research Day, during the lunch break of a busy day celebrating research on Friday, May 5, 2023. *Photo credit Kirstin Grace-Simons, U.S. Army*

First year medical students play the roles of patients in the large-scale battle-type exercise. They see first-hand how a team of medical professionals works together in a stressful, dangerous situation to provide care to their teammates.

From there, they enter their own teams that grow with each passing year, as does the level of care they provide in the exercises — from initial assessment of the injuries of a patient to prolonged care in a combat environment with limited resources, equipment and personnel to treat that patient.

Their last year brings all of the lessons together and they are the student leaders in the large-scale exercise. The communication, teamwork, leadership, stress management and other skills they have developed in these exercises is intended to better prepare them for deployed situations later in their careers than training in a classroom or clinic could.

> Rudinsky said of the years of these simulation exercises, "They really grow and progress over time, and it really solidifies the learning."

While Madigan does a single exercise with its graduating residents each year in May, they repeatedly voice that it has the same impact on their learning of giving them a deeper understanding of what to expect in terms of operational medicine.

In answering questions from the audience about making the most of simulators and simulation, especially when some of the equipment is very expensive and difficult to maintain over time, Rudinsky advised to develop a very solid set of objectives for training and work backwards. This way, the design of the training, and what equipment is needed, is focused on what the

Dozens of research posters were on display throughout the first week of May at Madigan Army Medical Center on Joint Base Lewis-McChord, Wash., with the physical copies lining the walls of the Department of Clinical Inquiry on Friday, May 5, 2023, for the 2023 Col. Pat C. Kelly Madigan Research Day. *Photo Credit Kirstin Grace-Simons, U.S. Army*

students will learn. She noted that the high-end mannequins may be great, but they aren't always what meets the training need the best, which is what should always be the focus.

Following a morning of podium presentations, the DCI opened its doors and hallways for a luncheon and the poster judging session. Each of those 60-plus posters were displayed on the long hallways of the ground floor research area of Madigan.

Standing beside their work, the residents and interns engaged instructors, staff, researchers from partner organizations like the University of Washington and Geneva Foundation, as well as their own classmates in their research. They answer questions about their posters and the research findings they displayed.

While there was some nervousness, the electricity in the air seemed mostly excitement at sharing a year's worth, or sometimes more, of research.

Maj. Joshua Monson, a resident in the obstetrics/gynecology program, smiled broadly as he stood next to his poster with original research.

Maj. Joshua Monson, a resident in the Obstetrics/Gynecology program, is happy to present his research titled, "Neuroinflammation leads to axon loss in a murine model of preterm birth," at the poster judging session of the 2023 Col. Pat C. Kelly Madigan Research Day on Friday, May 5, 2023, at Madigan Army Medical Center on Joint Base Lewis-McChord, Wash. *Photo credit Kirstin Grace-Simons, U.S. Army*

For Capt. Timothy Wright, a urology resident who had two posters on view, collaboration made the experience especially valuable. "It's a cool opportunity to work beside other people in the hospital, from different specialties and from the other departments of the hospital," he said. "I was able to work with the statisticians, the folks in DCI and the radiologists, and get involved more."

Capt. Timothy Wright, a Urology resident, stands between his two posters of clinical research during the poster judging session of the 2023 Col. Pat C. Kelly Madigan Research Day on Friday, May 5, 2023, at Madigan Army Medical Center on Joint Base Lewis-McChord, Wash. *Photo credit Kirstin Grace-Simons, U.S. Army*

It was exactly this interaction with other staff that made Capt. Johanna McGrath's research highly meaningful to her when her OB/GYN patient ran into difficulties with her pregnancy.

"We actually involved so many other services like general surgery, anesthesia, the nursing supervisor, our nursing staff, and the ICU was aware of her, and that's not normal for most of our patients, because they're generally very healthy and they go home after one or two days. So, this experience really showed me about being very aware of when a patient needs multidisciplinary care and being open and communicating with those services. Going forward, I think that's something for me to actually really think about when I see a patient that may not be our typical, healthy mom," said McGrath.

> Monson appreciated, "Being able to go back to the primary sources." He enjoyed taking a deeper dive into research than he had before, learning how to better apply what he found to his own field of medicine.

The day closed out back in Letterman Auditorium with an award ceremony that included honorary awards for a year's worth of service to research at Madigan as well as the winning presentations and posters.

army.mil

Active Duty
SURGERY

New "mCurriculum" Launched to Help Surgeons Worldwide Sharpen Skills, Improve Clinical Readiness

By Sarah Marshall

To ensure that surgeons worldwide, particularly military surgeons, keep their skills sharp and maintain their clinical readiness, the Uniformed Services University (USU), in conjunction with the American College of Surgeons (ACS), the Military Health System Strategic Partnership American College of Surgeons (MHSSPACS), and the University of California, Davis, has developed a new resource — the Military Clinical Readiness Curriculum, or "mCurriculum."

U.S. Navy photo by Mass Communication Specialist 1st Class Jessica Bidwell

The training modules are free and easily accessible, and can help surgeons around the globe to care for patients with complex injuries. They are also formatted for a smartphone, tablet, or computer and can be scanned for key points, depending on an individual's learning needs, and they include a voiceover transcript.

The curriculum was developed with military surgeons in mind, however, the quick and easy-to-use modules are relevant to trauma patient care anywhere in the world, and can be used by any surgeon who needs to fill a particular knowledge gap. They can also be used as a "just-in-time" training resource.

How It Began

Dean of USU's School of Medicine, Dr. Eric Elster, initially had the idea for the curriculum and this program, which came to fruition over the course of several years thanks to a long-standing collaborative relationship between the military and the ACS. In 2012, he and renowned vascular surgeon Dr. Norman Rich, former USU Department of Surgery chair, initially met with ACS's then executive director Dr. David Hoyt to discuss ways to support a continued partnership between the ACS and the military. Through this meeting, the surgeons recognized a shared ethos as well as a need for a continued reciprocal learning relationship, which later led to the formation of the MHSSPACS.

The MHSSPACS was formalized at the Clinical Congress in 2014 for the purpose of exchanging information between the military and civilian surgical communities in four areas: trauma systems, surgical quality care, military-relevant research, and education and training. Additionally, this endeavor led to a re-establishment of the Excelsior Surgical Society for Military Surgeons, which has since become self-sustaining and has grown to include more than 450 members, Elster noted.

Then, through the MHSSPACS, military and civilian surgeons continued to foster their relationships, working together as they led a designated committee for each of the four key areas — all of which have proven to be successful, Elster said.

For instance, under Trauma Systems, military and civilian surgeons wrote a blue book for military-civilian partnerships, which the military now uses to select and monitor military-civilian partnerships. Under Surgical Quality Care, a quality consortium was established, which is now used as a benchmark quality program in all military treatment facilities.

On the Education and Training front, a 2016 meeting was held with all general surgery leaders across the Military Health System, in collaboration with the ACS. This meeting laid the foundation for what became the KSA Clinical Research Program, which provides an innovative approach to measuring, evaluating, and sustaining clinical proficiency.

Through this program, KSA Metrics are used to evaluate the readiness value derived from each clinician's peacetime workload. KSA Knowledge Assessments were also developed, through this program, to ensure clinical knowledge sustainment by identifying any knowledge gaps. KSA Skills Assessments then use best-in-class educational principles to teach and assess life-, limb-, and eyesight-saving procedures. This entire effort has been adopted by the Department of Defense, Elster said, adding that it was a huge team effort involving more than 100 key personnel.

Ultimately, in developing the KSA program, it became apparent that there was also a need for a curriculum to go with the KSA Knowledge Assessment. Thus, the mCurriculum was developed, Elster explained.

What It Looks Like

The mCurriculum was developed from the KSAs, which in turn were extracted from lessons learned from the DoD's Joint Trauma System clinical practice guidelines — lessons learned from Operation Iraqi Freedom/Operation Enduring Freedom, Elster explained. The modules have also been translated into Ukrainian, and additional modules will be released in the near future.

The first 12 modules are broken into seven knowledge domains: airway and breathing; critical care and prevention; expeditionary unique; head and spine injury; torso trauma; transfusion and resuscitation; and wounds, amputations, and fractures. The modules include lessons such as management of war wounds, amputation, burn care, blunt abdominal trauma, wartime vascular injury, and pediatric trauma.

The program is designed to help prepare for the Knowledge Assessment, or to retrain after they take it. It can also be used for just-in-time training, should they need to sharpen their skills ahead of a unique case. Its three key components include: knowledge assessment, skills assessment, and a metric practice, which all come together to ensure that surgeons are both current and competent for that critical mission set, Elster explained.

"It's part of our trust with the American public to ensure that our surgeons are ready for civilian trauma," Elster said. "They're ready for military trauma; they're ready to take care of our nation's heroes."

The Uniformed Services University

Walter Reed National Military Medical Center Performs Historic First Single-Port Robotic Surgery

By James Black

Walter Reed unveiled its new single-port robotic surgical system, becoming the first Department of Defense facility, and the first military hospital in the National Capital Region, to use the newly FDA-approved medical device.

"This is one of the most transformative technological advances across disciplines right now, reshaping how we approach surgical disease," said U.S. Navy Lt. Cmdr. (Dr.) Brandon R. Garren, who with his team today, performed a minimally invasive surgery on a patient with an enlarged prostate. Garren, the service chief of the Department of Urology at Walter Reed, worked with a multidisciplinary team that trained for months to perform today's milestone surgery.

During the groundbreaking procedure, Garren utilized a console with hand and foot controls to command the robots, while a second surgeon stood by to supervise the way the surgical instruments worked. Garren controlled the robot's motions, adjusting its precision with his hand and foot gestures, while a series of robotic arms picked up and manipulated the surgical instruments.

Robotic surgery has exponentially improved outcomes for patients: minimizing scarring, improving recovery times and post-operative pain — as well as reducing hospital stays. The technology has wide-ranging applications for a variety of surgical procedures including coronary artery bypass, joint replacement, organ transplantation, gynecological operations, and cancer treatments.

U.S. Navy Lt. Cmdr. (Dr.) Brandon R. Garren, the service chief of the Department of Urology at Walter Reed National Military Medical Center, poses for a photo in the operating room. The center recently implemented a single-port robotic surgical system. *Photo credit Ricardo Reyes-Guevara, Department of Defense*

health.mil

Active Duty
SURGERY

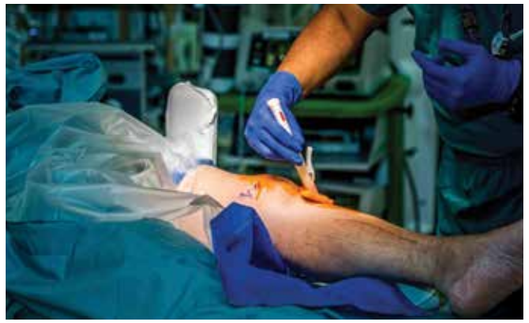
Belvoir Hospital Reaches Milestone with Robotic-Assisted Joint Replacement Surgery

By Reese Brown, Fort Belvoir Community Hospital

Concentration, focus, and professionalism were on full display during a robotic-assisted joint replacement surgery at the Belvoir Hospital February 23, 2023. The hospital is the first medical treatment facility in the Defense Health Agency with this robotic-assisted platform (VELYS), and the cutting-edge technology provides the joint replacement surgeons an unparalleled amount of real-time surgical data. Leveraging this technology greatly increases and enables consistent, reproducible, and accurate surgical bone cuts and gives instantaneous feedback in real-time.

Department of Defense photo by Reese Brown

"We are thrilled to offer technological advancements like the Depuy VELYS Robotic-Assisted Solution joint replacement surgery at the Belvoir Hospital," said Lt. Col. Robert McGill, Chief of Orthopaedics and Rehabilitation at the hospital.



Department of Defense photo by Reese Brown

Robotic-assisted joint replacement has grown from 4% of knee replacements in 2018 to roughly 12% in 2022 and is projected to be almost 30% in 2025. Robotic-assisted capabilities such as these within Military Treatment Facilities strive to better expose orthopedic residents to this technology and promises to provide a better groundwork for their own surgical practices and skill sets.

"Combining the VELYS with our existing ERAS (Enhanced Recovery After Surgery) protocols work hand-in-hand to achieve a combined goal of expert, safe, and compassionate patient care", said McGill. "Advances such as these expand our ability to deploy the most up-to-date technology in the care of our surgical arthroplasty patients and furthers our goal of becoming the premier location for musculoskeletal care in the National Capital Region Market."

The Belvoir Hospital is a 120-bed, 1.3 million-square-foot military community hospital that serves a regional population of 250,000 personnel with about 100,000 enrollees receiving inpatient and specialty care services supported by 55 specialty clinics, a Warrior Pavilion (for combat injured/wounded/ ill), Inpatient Addictions Program, and three satellite family health centers at the Pentagon, Dumfries and Fairfax, Virginia.

Department of Defense photo by Reese Brown

The Defense Visual Information Distribution Service

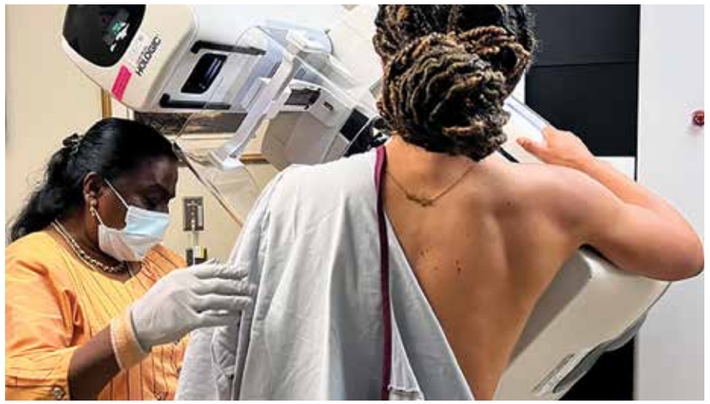
Active Duty
WOMEN'S HEALTH

Breast Cancer Reminder: Get Your Annual Screening

By Janet A. Aker, MHS Communications

"The most important thing is starting a conversation with your primary physician or your primary provider to learn when you should start annual screenings," said U.S. Navy Lt. Cmdr. (Dr.) Matthew Nealeigh, director of the Breast Care and Research Center at Walter Reed National Military Medical Center, and an assistant professor of surgery at the Uniformed Services University of the Health Sciences, both in Bethesda, Maryland.

TRICARE covers mammograms during a health promotion and disease prevention exam without a referral for women over 40 or younger if they have an increased risk for breast cancer, according to their health care provider, said Tonya Utterback, referral manager of the clinical oversight and integration section of the TRICARE health plan.



U.S. Navy Capt. Kelly Elmore, Walter Reed National Military Medical Center's chief of staff, documented her recent mammogram appointment with hopes of encouraging other women to get their mammograms. Annual mammograms are highly effective at detecting cancerous cells in breasts. *DOD photo credit Vernishia R. Vaughn-Lucas*

Mammography Gold Standard and Early Detection

Digital mammography using digital breast tomosynthesis, also known as DBT, is the current gold standard for mammography, said U.S. Navy Cmdr. (Dr.) Matthew Bauer, the radiology department head at Bremerton Naval Hospital.

"This technique obtains multiple images of the breast in different planes and creates a 3D image series similar to a computerized tomography scan."

"All screening mammograms performed at Bremerton use DBT, and all breast densities can benefit from the use of the technology," Buchart explained.

Digital imaging and advances in equipment have lowered the radiation dose associated with mammography, "which is reassuring for patients having these screening exams performed annually," she said.

Your Records Go with You

Current digital mammographic technology has advanced annual screenings in several ways, making your breast health records portable.

"With digital images, the exams can be transferred easily between facilities, whether via computer connections or CDs, which is especially important in the military community as service members change duty stations," Buchart said.

The MHS GENESIS patient electronic health record portals, which are customized to patients' wellness needs, include a specific reminder for annual mammograms and breast exams.

What's Coming Next?

The newest innovation in breast screening involves the use of a contrast agent administered via IV so radiologists can see more small tumors or suspicious breast tissue.

"Contrast-enhanced mammography is an evolving technique, where an iodinated contrast dye is administered intravenously prior to performing the mammogram," Bauer said. "Much like the use of iodinated contrast with CT scans, this technique may allow radiologists to more easily identify masses in the breast."

health.mil

Active Duty
WOMEN'S HEALTH

Women's Health Equity is a Real Focus for DOD, Mullen Says

By Janet A. Aker, MHS Communications

Health equality for women in service and women beneficiaries is and will remain a top priority for the Department of Defense, Acting Assistant Secretary of Defense for Health Affairs Seileen Mullen made clear during a recent podcast.

Talking to the Army Wife Network on Nov. 30, Mullen said women have unique needs, including reproductive care and gender-specific care issues, because they differ from men in cardiovascular health, mental health, and musculoskeletal injures, among other medical issues.

"We've made that a real focus and part of my portfolio and my issue," Mullen said.

Women are the fastest growing percentage of the armed services at about 18% of the total, and women make up 4.7 million DOD beneficiaries, she pointed out.

Mullen discussed the DOD's recent focus on contraceptive and reproductive care during the podcast.

Family Planning or Deployment Planning

She spoke about the recent directive requiring walk-in contraceptive services at military hospitals and clinics and the variety of contraceptive choices that are available through the Military Health System.

"That is very critical because you either want to plan your family or plan your deployment," Mullen said.

On Sept. 27, the Defense Health Agency issued the requirement that military hospitals and clinics offer full-scope, walk-in contraceptive services. By January 2023, DHA hospitals and clinics will specify the location and hours of operation for walk-in services, providing same-day access with no appointment or referral needed.

A 2020 RAND study that was published in 2022, informed much of the increased focus on women's health, Mullen said.

That study — the first on military women's health in 30 years– highlighted the need for women's health services "which are becoming some of the top clinical service delivery lines in the MHS," she said.

She also pointed to the DOD's memo on ensuring access to reproductive health published on Oct. 20.

In that memo, Secretary of Defense Lloyd J. Austin III directs the military to "conduct a comprehensive contraception education campaign to enhance service members' awareness of the resources available to them and their families, including emergency contraception."

"That education campaign will also highlight the fact that the Department of Defense has eliminated TRICARE co-pays for medical contraceptive services, including intrauterine devices," the memo states.

"We're removing that copay to make it that much easier for women in the military to get services such as IUDs and contraceptive implants," Mullen said.

She let the audience know about two mobile apps that help female service members and their families decide on family planning and deployment readiness, the Decide and Be Ready mobile app, and the Deployment Readiness Education for Service Women (DRES) mobile app, respectively.

The military is also conducting pilot programs with doulas, who help women through pregnancy and childbirth, and lactation consultants.

The websites www.health.mil and www.tricare.mil are both great sources of information on women's contraceptive and reproductive information, Mullen said.

Empowerment is Key

The podcaster asked Mullen what empowerment means to her, a question she asks every guest.

"Empowerment is autonomy," Mullen responded. "I think we are each capable, fully realized human beings who know what's best for ourselves and the best decisions for ourselves and for our families."

"I believe we should be allowed as often, and as frequently as possible, to express autonomy," she added.

"We are people who are smart. We know what we would like to do, and we know what's right to do," she said. "I think that autonomy to do those actions is what empowerment means to me."

health.mil

Active Duty
WOMEN'S HEALTH

Ford's Commitment to Women's Health

By Petty Officer 2nd Class Jackson Adkins, USS Gerald R. Ford (CVN 78)

"My aunt passed away in 2008 from breast cancer," said Lt. Nyasia Jenkins, from Unci, New York, assigned to USS Gerald R. Ford's (CVN 78) medical department. "It was detected late so there was really no chance for us to see her."
One in eight women will face cancer in their life. Additionally, breast cancer has a 99 percent survival rate if detected in early stages and a 29 percent survival rate if detected late.

Lt. Cmdr. Samuel Douglas, Ford's surgeon, offers a service in identifying breast cancer in the early stage for women aboard Ford. Douglas' service is just one of many that Ford provides.

"There are a number of resources available aboard Ford," says Jenkins. "There are routine health screenings, which for women in particular include breast and cervical cancer screenings, as well as routine health visits."

Ford recognizes the importance of Women's Health Month and Breast Cancer Awareness Month and strives to keep its female crew members a healthy fighting force.
"Our surgeon is doing screenings for women who may have a higher risk of breast cancer," said Jenkins. "They can reach out to him to get a more advanced high risk screening or any other information they may need."

"We are a force and must be taken care of," added Lt. Sarah Alferos, from San Diego, assigned to Ford's medical department. "Ford's medical team is extremely equipped to navigate what you may need as a female."

Alferos notes that roughly 20 percent of the Navy's fighting force is comprised of women, making this month not only important to the Ford but the Navy as a whole.
"The month of October should be focused on certain areas women may not be thinking about too much, such as breast cancer, screenings, nutrition, mental health or fitness standards," said Alferos. "It's a month when we can focus on the resources available."
Jenkins offers her advice to women regarding health, not only during this month but year-round.

"Take advantage of your opportunities for your own health," said Jenkins. "Take control and accountability. If you think or notice something is wrong or out of the norm, come get seen. It's extremely important to be your own advocate."

Hospital Corpsman 1st Class Cassandra Styles, from Oxford, Mississippi, assigned to USS Gerald R. Ford's (CVN 78) dental department, prepares sterile dressing during a mass casualty drill in the ship's operating room, Sept. 20th, 2022. Ford is underway in the Atlantic Ocean conducting carrier qualifications and workups for a scheduled deployment this fall.
U.S. Navy photo by Mass Communication Specialist 2nd Class Jackson Adkins

Women's Health Month and Breast Cancer Awareness Month are particularly important to the Ford namesake. Betty Ford, the United States First Lady from 1974-1977 and wife of USS Gerald R. Ford's namesake, was diagnosed with breast cancer two months after President Gerald R. Ford took office. After fighting her battle, she advocated and inspired women around the United States to be aware of their health, just as USS Gerald R. Ford is doing during the month of October.

"It's nice to know this ship can provide the capabilities for individuals, even if we are underway, to be seen and maintain their health," said Jenkins.
The ship's medical department has carried on Betty Ford's legacy of advocating for women's health, even while deployed.

The Defense Visual Information Distribution Service

Active Duty
WOUND CARE

USAMMDA's Burn Treatment Innovators Continue Future Treatment Developments, Modernization

By T. T. Parish, U.S. Army Medical Materiel Development Activity (USAMMDA)

A major source of combat-related trauma during the conflicts in Iraq and Afghanistan was Improvised Explosive Devices. Thousands of U.S. service members were injured by IEDs, suffering blast and burn injuries, accounting for more than 80% of burn injuries sustained during combat operations from 2001 to 2018.

Here, on the tails of National Burn Awareness Week, the U.S. Army Medical Materiel Development Activity's Warfighter Expeditionary Medicine and Treatment Project Management Office provides an update about current and ongoing burn treatment initiatives for future use by the Joint Forces.

The U.S. Army is preparing for a Future Operating Environment (FOE) that will be markedly different from the asymmetrical battlefields of Iraq and Afghanistan. That FOE will affect both the number of casualties who suffer burn injuries and the severity of those burn injuries.

Current means of treating burn injuries in theater will not be sufficient to minimize the loss of life from burns caused by advanced weaponry. The Burn Treatment and Skin Repair (BTSR) acquisition program is working to deliver burn treatment solutions that improve the Army's capabilities to manage burn casualties in the FOE.

Burn injuries are complicated and require a variety of interventions, so the BTSR program team is working to field a family of solutions, including an infection prevention and temporizing cover capability; a non-surgical debridement capability to eliminate burned tissue (eschar); and a digital burn assessment capability. These products can be used in modular ways to treat and manage burn patients experiencing a wide range of injuries.

The U.S. Army Medical Materiel Development Activity's Warfighter Expeditionary Medicine and Treatment Project Management Office continues burn treatment initiatives and modernization efforts to develop products for future use by the Joint Forces. *Official U.S. Army Photo Illustration by Jennifer Aggelis*

The goals of the BTSR team are to improve front line medical providers' triage and resuscitation capabilities; prevent infection while protecting wounds more effectively; and provide non-surgical options for managing challenging wounds in austere environments as close to the point of injury as possible.

The ability to provide care as close to the point of injury as possible will be critical as casualty numbers increase, and front-line forces face the dual challenges of limited supplies and uncertain medevac timelines.

By providing better-tuned resuscitation, the BTSR products can reduce waste of life-extending fluids. Improving temporary cover products to protect burn wounds would allow them to be left in place longer, extending the time between dressing changes from one to three days with less chance of negative complications. Non-surgical debridement may help to avoid the high resource demands of surgical interventions.

These burn treatment advancements may one day make holistic burn treatment more efficient, while offering more effective interventions than current treatment options.

The BTSR capability will enable some Warfighters to return to duty more rapidly, the goal of all military medicine. Soldiers, Sailors, Airmen and Marines with minor burn injuries — partial thickness burns less than 20% total body surface area — may one day receive treatment without medevac to non-combat areas, returning faster to their units in the operating forces.

As the Army prepares for a more dispersed, more austere, and more challenging FOE, the ability to treat and manage burn wounds in theater will be critical to saving lives, preserving the fighting force, and maximizing the use of limited medical supplies.

The Defense Visual Information Distribution Service

Active Duty
WOUND CARE

Former Medic Excels at Academics, Leads Medical, Burn Treatment Development

By T. T. Parish, U.S. Army Medical Materiel Development Activity (USAMMDA)

Kristin Jones Maia has a passion for learning, and it shows. As a product manager and go-to expert at Fort Detrick's U.S. Army Medical Materiel Development Activity (USAMMDA), she leads a development team focused on battlefield burn treatments.

"As a former medic, working at the leading edge of medical development efforts is meaningful and fulfilling," said Jones Maia. "It enables better treatment for casualties on the battlefield, while also supporting and equipping the medics of the future."

Kristin Jones Maia stands for a photo at the headquarters of the U.S. Army Medical Materiel Development Activity, Fort Detrick, Md., Dec. 5, 2022. Jones Maia, a former Army combat medic, is currently a product manager at USAMMDA's Warfighter Expeditionary Medicine and Treatment (WEMT) Project Management Office. *Official U.S. Army Photo by T. T. Parish*

She says her passion for helping Service Members is inspired by her service during the early days of the Iraq War.

"I served as a combat medic for about 30 months, and I was deployed for 15 of those," she said.

As a product manager at USAMMDA's Warfighter Expeditionary Medicine and Treatment (WEMT) Project Management Office, she continues to advance her studies. She's found time to complete not one, not two, but three degrees.

Her latest educational achievement — which may not be her last — is a master's degree in Systems Engineering Management from the Naval Post Graduate School.

The U.S. Army Medical Materiel Development Activity's Warfighter Expeditionary Medicine and Treatment Project Management Office continues burn treatment initiatives and modernization efforts to develop products for future use by the Joint Forces. *U.S. Army photo credit by Jennifer Aggelis*

Previously, she earned a master's degree in International Relations from American University in 2015 and a bachelor's degree in Business Administration from the University of Maryland University Campus in 2009.

She said her Army experience has shaped her and inspired her to be professionally and academically driven.

"It [the Army] is one of the most important periods of my life," she said. "It really shaped me into the person I am today."

"There are around five years between each of my degrees," said Jones Maia. "Five years from now, my children will be in college themselves. Maybe I'll look to pursue a doctorate degree."

With a strong work ethic, excellent job performance and an instinct for translating research into fielded products to help the force. Jones Maia as she has established herself as a mainstay and selfless leader.

She and her USAMMDA team are developing technology to avoid surgical infection, and innovations to preserve the life and fighting strength of service members.

The Defense Visual Information Distribution Service

Veterans
FOREWORD

New VA Mission Statement Recognizes Sacred Commitment to all Veterans, their Families, Caregivers and Survivors

By the Department of Veterans Affairs Office of Media Relations

On March 16, 2023 VA announced an updated version of its 1959 mission statement: "To fulfill President Lincoln's promise to care for those who have served in our nation's military and for their families, caregivers, and survivors."

The new mission statement is inclusive of all those who have served in our nation's military — including women Veterans — as well as Veteran families, caregivers, and survivors. VA currently serves more than 600,000 women Veterans, the fastest growing cohort of Veterans. VA also serves more than 50,000 Veteran caregivers, more than 600,000 Veteran survivors, and millions of Veterans who did not serve in combat.

In crafting the new mission statement, VA surveyed roughly 30,000 Veterans. Among Veterans surveyed, the new version of VA's mission statement was chosen over the current version by every age group; by men and by women; by LGBTQ+ Veterans; and by white, Black/African American, Hispanic/Latino, Asian and American Indian/Alaska Native Veterans.

"Whenever any Veteran, family member, caregiver or survivor walks by a VA facility, we want them to see themselves in the mission statement on the outside of the building," said VA Secretary Denis McDonough. "We are here to serve all Veterans, their families, caregivers and survivors — and now, our mission statement reflects exactly that."

In addition to two rounds of surveys, VA conducted dozens of small-group engagements with Veterans to understand what was most important to them in a VA mission statement, then incorporated that feedback into quantitative research. The new mission statement reflects that VA serves all of the heroes who have served our country, regardless of their race, gender, background, sexual orientation, religion, zip code or identity.

The previous mission statement was: "To fulfill President Lincoln's promise 'to care for him who shall have borne the battle, and for his widow, and his orphan.'" The previous mission statement is posted in roughly 50% of VA's facilities. Over the coming months, VA's new mission statement will replace the previous version.

Secretary McDonough hosted an event commemorating the new mission statement, featuring speeches from a woman Veteran, a caregiver and a survivor about what it means to feel included in VA's mission.

va.gov

VA Secretary Dennis McDonough delivers remarks to a packed crowd of service members, their families and survivors during the 2023 Women's History Month Event where he announced VA's new mission statement. *Photo courtesy of VHA*

VA Now Working with 1,000+ Community-based Coalitions to End Veteran Suicide

By the Veterans Health Administration Homeless Programs Office

The Department of Veterans Affairs announced in May it is now working with more than 1,000 local community coalitions engaged in ending Veteran suicide.

These coalitions, established through VA's Public Health Model for Suicide Prevention, now reach more than 7.5 million Veterans nationwide.

By combining community coalitions with clinical intervention strategies as outlined in VA's National Strategy for Preventing Veteran Suicide, these coalitions help reduce the risk of suicide by providing Veterans with tailored resources and direct support in the communities where they work and live. One example is the Monona County Suicide Prevention Coalition in Iowa, which recently implemented an "Ask the Question" campaign to open lines of communication between Veterans, their community members, and their medical providers.

VA Secretary Denis McDonough. *Photo courtesy of VHA*

Graphic courtesy of whitehouse.gov

Preventing Veteran suicide is VA's top clinical priority and a top priority of the Biden-Harris administration, as outlined in the White House Strategy for Preventing Military and Veteran Suicide 2021. In September, VA released the 2022 National Veteran Suicide Prevention Annual Report, which showed Veteran suicides decreased from 2019 to 2020, and fewer Veterans died by suicide in 2020 than in any year since 2006.

"One suicide will always be one too many, and it will take all of us — working together — to end Veteran suicide," said VA Secretary Denis McDonough. "We are working with these coalitions to support Veterans at risk of suicide all across America, combining VA's clinical expertise with on-the-ground community interventions to save lives."

As a part of President Biden's Unity Agenda and the Biden-Harris Administration's comprehensive plan to reduce military and Veteran suicide, VA has recently announced or continued several additional efforts to end Veteran suicide. In January, VA announced Veterans in acute suicidal crisis can go to any VA or non-VA health care facility for emergent suicide care, including inpatient or crisis residential care for up to 30 days and outpatient care for up to 90 days. In response to the National Suicide Hotline Designation Act designating the 988 Suicide and Crisis Lifeline, the Department of Veterans Affairs has made it more user friendly to access the Veterans Crisis Line with "Dial 988 then Press 1."

VA has also awarded $20 million through Mission Daybreak, a grand challenge aimed at developing innovations to reduce Veteran suicides; granted more than $52 million to 80 community-based organizations through the Staff Sergeant Parker Gordon Fox Suicide Prevention Grant Program; conducted an ongoing public outreach effort on firearm suicide prevention and lethal means safety; and leveraged a national Veteran suicide prevention awareness campaign, "Don't Wait. Reach Out."

Local communities can learn more about how to establish coalitions by visiting the Community Based Interventions for Suicide Prevention Overview and emailing VHASPPCBISP@va.gov.

If you're a Veteran in crisis or concerned about one, contact the Veterans Crisis Line to receive 24/7 confidential support. You don't have to be enrolled in VA benefits or health care to connect. To reach responders, Dial 988 then Press 1, chat online at VeteransCrisisLine.net/Chat, or text 838255.

va.gov

Armed Forces Medicine 2023

Veterans
SPECIAL FEATURES

VHA National Pharmacogenomics Program (NPP)

Exclusive interview with Acting NPP Director Deepak Voora, MD and NPP Deputy Director Jill Bates, PharmD

By Thomas S Adams III, Publisher of Armed Forces Medicine

The promise of pharmacogenomics (PGX) offers an advantage to medical professionals not seen since the invention of the microscope. And just as the milestone discoveries achieved from this advanced tool revolutionized medicine by allowing scientists to actually see what was occurring at the cellular level, having now the ability to see at a DNA level offers even more possibilities than even the greatest minds of our day could fully conceive.

The Veterans Health Administration is using this incredible approach to provide its physicians with the most advanced tools ever known to the world of medicine and the absolute best individual care direction for every Veteran. Leading this remarkable program are Dr. Deepak Voora and Dr. Jill Bates from the National Pharmacogenomics Program (NPP). Voora explains how this blood test analyzes a person's genes (or DNA) to understand our predispositions to certain diseases.

PHASER Director, Dr. Deepak Voora. *Photo courtesy of VHA*

The way some people process medicines has to do with the genes we inherit. "Encoded in our genes are the instructions for certain processes within our body that are important for metabolizing medications," Voora states. "Just like there are differences in how we look, there are differences in how our organs function in terms of how they process medicines."

This blood test at its core is measuring the differences in the genes that contribute to how our organs function when it comes to processing medicines. By using this information, as well as all the knowledge known about how medications work and how they're processed, it allows healthcare professionals to make predictions about how a patient might respond to a medicine, and then ultimately recommendations for what to do with the dose of a medicine, or what type of medicine should be prescribed.

"This test and the data it produces are specific to a given medication, because medications are all processed uniquely in the body," said Bates. "That's a really important component of the test - the results are really only interpretable in the context of a given medication."

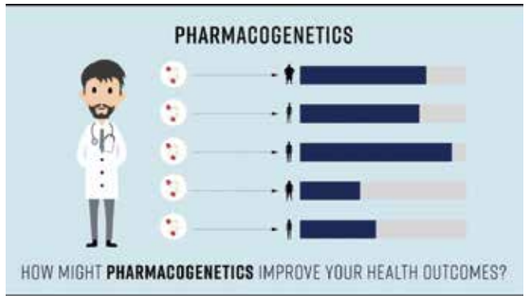
When doctors look at the medications that this test can inform, they can take those medications and group them into four bigger categories: mental health, cardiology, oncology, pain management, for example. In each of those categories there are multiple medications that can

Pharmacy Program Manager, Dr. Jill Bates. *Photo courtesy of VHA*

be informed by this test, but it's not limited to only these four different categories. Additional areas such as neurology and rheumatology, infectious diseases, and gastroenterology, as well as others can also benefit.

In terms of looking ahead to what other areas or patients that can benefit, there's evidence to suggest that patients who are older or on new or more medicines than others, or have had prior side effects to medicines, might be indicators for the patients who can benefit from this type of testing more than others. This can help plot a certain trajectory with all of their medicines.

"We are in the very early days in this field of precision medicine and being able to use our patients' genomics to help with their healthcare, so we're not at the point yet where we could predict exactly what side effects a patient might have using this test," stated Voora. "Some side effects are not based on genetics and might be due to a patient's diet or other



Graphic courtesy of VHA

medicines they are taking, or how they're organs function in general because of other medical problems. We may never get to that level of precision, but we are trying to be a little bit more precise through adding this important piece of the puzzle to a patient's profile."

Bates added that one medication could have many side effects, and while this test isn't going to determine if a patient will have all of them, the tool can focus in on one or two. Basically, it depends on the protein that it's testing for and how that influences the body's response to the medication.

"Additionally, there may be what is called incidental findings where the gene informs the medication, but then it also may have some information with regard to a syndrome," Bates stated. "In the cases where you've got genes included in the test that have multiple meanings, that would prompt a different clinical approach than a panel that contains genes only specific to medications."

The testing panels are multi-use: VA currently uses an 11-gene panel that covers over 40 different medicines. Voora and Bates say using this method helps minimize the need for patient retesting. However, that strategy has some limitations, because as the scientific evidence evolves new genes or new meanings might appear, and then the test might be outdated and retesting is necessary.

"We've actually had to face that a couple of times as we started with an 8 panel and then we went to an 11 gene and now we're going to go to a 15 gene, there are some patients where those added genes are information their providers may really need, so they would need to get retested", said Voora. "We are trying to devise a reasonable strategy to minimize retesting, and the extra burden that places on the patient and the healthcare system."

When educating health providers Voora stresses that pharmacogenetics is just one piece of a puzzle: ultimately a patient's provider needs to bring together what they know about the patient in terms of other diseases they have or other medicines they are taking.

Bates added that each patient's journey is different and the PHASER testing can inform how to appropriately dose medications to avoid unwanted side effects in each patient.

When it comes to educating his patients, Voora states he tells them that while their DNA doesn't change, the effects of a medication on the body can change over time. "It may be the same patient, the same drug, the same genetic test result, but maybe their disease has advanced, or maybe they have changed in in other ways," he added. "It's not a set it and forget it type thing, it does require updating and reevaluation over time."

Graphic courtesy of VHA

***Deepak Voora, MD** is a cardiology specialist, Director of Pharmacogenomics Testing for Veterans Program for the Department of Veterans Affairs, and an Associate Professor at Duke University School of Medicine.*

As a physician-scientist with over 20 years of experience in the area of systems and translational pharmacogenomics, Dr. Voora's work spans the spectrum of discovering novel genomic biomarkers that describe drug responses to implementing genomic tools that health care providers can use to tailor drug therapy in clinical practice.

***Jill S. Bates, PharmD, MS, BCOP, DipACLM, FASHP** is a clinical pharmacist, the Deputy Executive Director of the National Pharmacogenomics Program for the Department of Veterans Affairs, and is also Associate Professor of Clinical Education at the UNC Eshelman School of Pharmacy. Dr. Bates specializes in precision medicine and has experience as a leader in clinical pharmacy practice, oncology pharmacy, and residency training.*

CPG

Veterans
SPECIAL FEATURES

VA Whole Health Encourages Veterans to Decide What Matters to Them

By Andrea Young, Health Systems Specialist/Communications – Office of Patient Centered Care & Cultural Transformation

VA health care providers are experts in the field of health care — and Veterans are the experts in their own lives. Working together, they can create a plan that will help the Veteran live their best life and achieve their own personal goals.

Whole Health is VA's approach to care that supports Veterans' health and well-being. Whole Health centers around what matters to the Veteran, not what is the matter with them. This means the health care team will get to know the Veteran as a person and work together to develop a personalized health plan based on values, needs, and goals.

Consider the example of Marine Corps Veteran, Richard Fratarelli, who, at 77 years old, made huge strides in his personal fitness and health with help from a Whole Health Coach. Fratarelli, a Vietnam-era combat Veteran, said his doctors had been telling him for several years he needed to lose weight, and he kept putting it off. He decided he couldn't delay any longer after lab results indicated he needed medication for diabetes. His VA primary care provider encouraged him to work with a Whole Health Coach to lose weight.

Fratarelli lost a whopping 70 pounds in less than a year with the support of his Whole Health Coach Lindsey Higdon at the Port Charlotte VA Outpatient Clinic in Florida. Besides sticking to a healthy diet, exercise was key to meeting his health goals. Fratarelli noted that when he started in June 2021, "I could barely make it across the room." Now he walks four miles most days. He even walked a 5K Turkey Trot — with a walker!

Marine Veteran, Richard Fratarelli and Whole Health Coach, Lindsey Higdon of the Port Charlotte, Florida VA Outpatient Clinic worked together to help him lose 70 pounds and be able to walk without a walker again. *Photo courtesy of VHA.*

When the health care team knows what the Veteran's goals are, it is easier to work together to help them live their best life. The bottom line is that most Veterans care more about living a full and meaningful life rather than focusing on glucose levels, blood pressure, or weight. What people really want is to be able to live the life they want for as long as possible.

Whole Health includes relationships and personal goals

Sometimes it is not physical health that drives life changes, but quality of life concerns. Air Force Veteran Ray Obenza says Whole Health prompted him set a personal goal of spending more time with his family, especially his daughter. Using the Whole Health Personal Health Inventory at www.va.gov/wholehealth, he recognized he wanted to prioritize his family. Using Whole Health tools, Ray also focused on his physical health, including exercising more often and improving his sleep quality. His message is simple, "I find that the VA's Whole Health model of care is the perfect way to address the physical, mental, and emotional needs we all have, and unlock the keys to achieve what we want most in life," he says.

Research supports a Whole Health system

VA Whole Health has been the subject of several research studies, which have shown that there is a lot to be excited about. Key research included an observational study of 53,412 Veterans to examine how downstream utilization of spine procedures differs between users and non-users of Whole Health. In this study, those who used Whole Health services and complementary and integrative health therapies had a 19-25% decrease from the expected rate of subsequent invasive spine procedures compared to Veterans who did not use these interventions.

A second study found that Veterans with depression and anxiety disorders, and/or PTSD who used Whole Health services were 2.3 times more likely to use evidence-based psychotherapy for those conditions in the subsequent year, as compared to Veterans who did not use Whole Health.

Yet another study showed a threefold reduction in opioid use among Veterans with chronic pain who used Whole Health services (38% decrease) as compared with those who did not (11%

decrease). Additional benefits have included increased engagement in health care and self-care, improvements in overall stress and well-being, and increased sense of meaning and purpose in life. Increased meaning may be especially important because evidence shows that a loss of sense of purpose in life is associated with 2.4 times the risk of early death.

Whole Health is growing in VA in person and virtually

In VA's Fiscal Year that ended September 30, 2022, over 16% of all Veterans receiving care through VA also received Whole Health services. Over one million Veterans received nearly four million appointments. Tele-Whole Health services were provided to more than 97,000 Veterans, which was a 39% increase over the prior year.

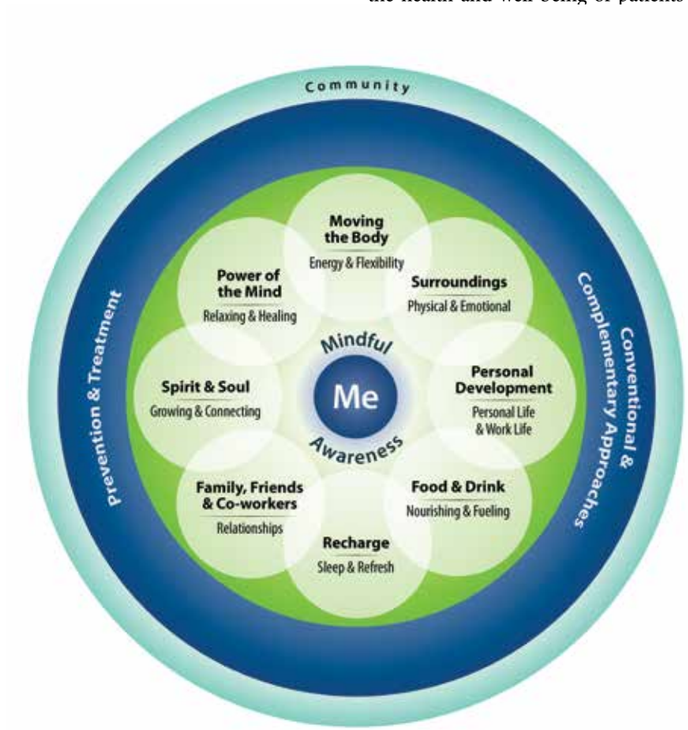
U.S. Air Force Veteran, Ray Obenza of Pittsburgh focused on spending more time with his family after developing his Whole Health Personal Health Inventory. *Photo courtesy of VHA*

Whole Health is also supporting VA clinicians and staff

VA was one of the first health care systems in the nation to recognize that the health and well-being of patients is intrinsically linked with the people who serve them. Since 2020, the support and services for Employee Whole Health has grown exponentially. There are programs and services to support clinicians and staff to take charge of their own health, using many of the same tools designed for Veterans.

As Chief of Staff managing over 450 clinicians and other staff in Salisbury, North Carolina, Dr. Randall Gehl sets the tone for his team and his Veteran patients by making time for his personal Whole Health.

"I live a better life both at work and at home because of Whole Health; because it informs my professional self and my personal self," says Dr. Gehl. "You can't teach Whole Health without becoming infected by it; without doing your own Personal Health Inventory, without taking a look inward to your life, and without incorporating and modeling the behavior that you want to see amongst your staff."



The Circle of Health illustrates the big picture connections between a Veteran's health and other aspects of their life. Whole Health opens the door to discuss not only health conditions but the many other things that impact well-being. *Graphic courtesy of VHA*

Veterans can learn about Whole Health and begin their own journey

Whether someone wants to wake up with less pain, improve personal relationships, or reduce stress, Veterans can start by talking with a VA health care provider or visiting www.va.gov/wholehealth to complete a Personal Health Inventory.

The Personal Health Inventory walks Veterans through eight self-care areas identified on the Circle of Health to help them determine how they affect their health and quality of life. Based on the answers, this self-assessment tool will help pinpoint areas to work on with VA health care provider.

Whole Health services are available at every VA in the nation, and this transformation is improving quality of life for Veterans, family members and VA employees. Veterans can take the first step on their own Whole Health journey by finding their local Whole Health services on the VA facility point of contact directory at www.va.gov/wholehealth.

va.gov

CPG

Veterans
CARDIOLOGY

Traumatic Brain Injury Carries Risk for Cardiovascular Disease in Post-9/11 Veterans

By Erica Sprey, VA Research Communications

A joint study by VA and the Department of Defense (DOD) has found that traumatic brain injury (TBI) in younger Veterans may lead to future risk for cardiovascular disease (CVD).

A large study conducted by researchers at the VA Salt Lake City Health Care System, DOD's Uniformed Services University in Bethesda, Maryland, and others uncovered an association between TBI and CVD in post-9/11 Veterans. The investigators found that all levels of TBI (mild, moderate-severe, and penetrating) were associated with a greater risk of developing CVD.

"We found that post-9/11 Veterans with a history of TBI were more likely to develop CVD than Veterans without TBI," said senior author Dr. Mary Jo Pugh, a research scientist with VA Salt Lake City. "Furthermore, there was evidence to suggest a dose-response, whereby more severe TBI was associated with higher CVD risk."

Younger Veterans at risk

DOD considers TBI a signature injury of the wars in Iraq and Afghanistan. Approximately one in five of the 4.5 million

Traumatic brain injury carries a number of consequences. Now, a joint VA/DOD study found that TBI can increase the risk for cardiovascular disease. *(Photo for illustrative purposes only. ©Getty Images/Nopphon Pattanasri)*

service members who served after 9/11 have sustained at least one TBI. This type of injury is associated with a host of long-term health effects, including mental health conditions like PTSD, long-term disability, sleep problems, and chronic headaches.

The association between TBI and subsequent CVD has not been previously examined in post-9/11 Veterans. Prior studies have suggested that TBI can increase the risk for CVD, but in most cases, results were limited to cerebrovascular incidents like stroke.

The study team looked at health data from more than 1.5 million Veterans gathered from the DOD trauma registry, deployment health data, and other DOD and VA health records for the Long-term Impact of Military-Relevant Brain Injury Consortium/Chronic Effects of Neurotrauma Consortium (LIMBIC-CENC) Phenotype study — a joint DOD and VA research endeavor. Of this number, more than 300,000 Veterans had a history of TBI.

"We once thought of TBI as a discrete event that a patient could recover fully from. Now, the emerging thought is that TBI is a chronic disease process."

— Dr. Mary Jo Pugh

In the study, Veterans with TBI were found to be younger (median age 27) and were more likely to be male, than those without a brain injury. The group with brain injuries was also more likely to have been enlisted, have served in the Army or Marines, served on active duty, have been deployed, and have been exposed to combat. Veterans with TBI were also more likely to have a history of smoking, substance use disorder, obesity, insomnia, and anxiety than those without brain injury.

"In addition to overall cardiovascular disease, we found that TBI increased the risk of each individual disease, including heart attack, stroke, peripheral artery disease, and cardiovascular death," said first author Dr. Ian Stewart, LTC, USAF, Uniformed Services University. "The results for cardiovascular death are particularly important, because they are less likely to be the result of bias."

A proactive approach to care

Past studies show an association between TBI and inflammation in the body. When brain cells die as a result of traumatic injury, the process causes inflammation in surrounding tissues. An animal study by researchers at the University of Michigan found that mice with TBI had increased markers of "stickiness" inside the blood vessel walls, leading to atherosclerosis or a buildup of deposits within the arteries.

"While the majority of research examines inflammation shortly after [brain] injury, there is some evidence to suggest changes to the immune system for months, or even years, after a traumatic event," said Stewart. "Since inflammation has been associated with both CVD and cardiovascular risk factors (such as hypertension), it is possible that this represents one pathway by which an episode of TBI can result in subsequent CVD.

"We once thought of TBI as a discrete event that a patient could recover fully from. Now, the emerging thought is that TBI is more than a discrete event — it is a chronic disease process," Stewart noted. "Our results give further evidence for this point of view by demonstrating that patients with TBI are at an increased risk of adverse cardiovascular outcomes for years after the initial event."

This is important for physicians and Veterans to understand, said Stewart, because there are several strategies for preventing cardiovascular disease. For example, losing weight, eating healthy foods, exercising regularly, and quitting smoking can all help reduce a person's risk for CVD.

"Given the relatively young age of the study group, these results suggest that there may be an increased burden of CVD as these Veterans age and develop other CVD risk factors," noted Pugh. "Future studies are needed to determine if the increased risk associated with TBIs is modifiable."

According to Stewart, future research will involve designing a randomized clinical trial to identify medical care or lifestyle modifications that can decrease cardiovascular risk and improve outcomes. "The men and women who have volunteered to serve our country, and sustained a TBI in that service, deserve nothing less than our whole-hearted effort," Stewart said.

CVD is an umbrella term for conditions that affect the heart or blood vessels. Health conditions in this category include stroke, coronary artery disease, and peripheral artery disease. These conditions can be caused, in part, by a build-up of fatty plaque inside blood vessels that restricts blood flow to vital organs and tissues.

In the U.S., CVD is responsible for one in three deaths annually. That's nearly 860,000 deaths each year, according to the CDC. Leading risk factors for CVD are high blood pressure, high cholesterol, and diabetes, among others. These are conditions that more often occur in older individuals.

va.gov

Veterans
CHIROPRACTIC CARE

Chiropractic Residencies Enhance Rural Veteran Care

Chiropractors and chiropractic residents at Iowa outpatient clinic

By Tonya Lobbestael, Public affairs officer, VA Office of Academic Affiliations

Chiropractors and chiropractic residents at the Fort Dodge Community Based Outpatient Clinic (CBOC) in Iowa are making a big difference in Veteran care.

When Air Force Veteran Marty Alne experienced severe back pain a few years ago, his treatment option was like many Veterans who live in rural locations. He had to travel more than two hours to the Des Moines VA or see the only community chiropractor near him.

Today, that has all changed thanks to chiropractors and chiropractic residents who are working, teaching and training at the Fort Dodge CBOC.

VA's health professions education programs now include 10 integrated clinical practice chiropractic residencies across the U.S. The programs are providing access to more interprofessional care for rural Veterans while training future health professionals.

Nathan Hinkeldey, Des Moines VA Chiropractic Residency Program director and Palmer College of Chiropractic faculty, believes placing residents at rural CBOCs is extremely important because musculoskeletal pain is one of the most common issues for Veterans.

Direct access makes care more efficient

"Access to care in rural areas is low. This type of direct access to providers who are chiropractors and physical therapists makes care more efficient," Hinkeldey said. Des Moines VA has both chiropractors and physical therapists who work collaboratively at its Fort Dodge CBOC.

Nathan Hinkeldey, D.C., DACRB, director of the Des Moines VA Chiropractic Residency Program. *Photo courtesy of Palmer College Chiropractic*

The value of accredited VA chiropractic residencies goes beyond access to care. The integrated clinical practice chiropractic residency programs provide advanced clinical training with a primary focus on treating complex patients in an interprofessional team.

Serving Veterans in rural communities was one of the main reasons chiropractic resident Ian Le, who completed training at Bay Pines VA in Florida, chose to complete his residency at the Des Moines VA.

"Having a chiropractor in a CBOC is extremely valuable," he said. "We work hand in hand with the primary care doctors, the physical therapist, the occupational therapist, and neurology. I think one of the valuable things about VA residency is that we've demonstrated the value of chiropractors in a multidisciplinary health care system."

Also work with the neuromusculoskeletal system

While many think of chiropractic care as a way to alleviate neck and back pain, Le says they also work more globally with the musculoskeletal system and the neuromusculoskeletal system.

"We have a lot of patients who have peripheral neuropathies, conditions that might also be co-managed with a neurologist." Hinkeldey credits his training at Bay Pines VA with preparing him to see more complex patients than he would normally see in private practice during his residency.

"It means a lot to us that they give us that care." Hinkeldey says VA is setting the standard for chiropractic training and care, adding that he expects more private hospital chiropractic residency programs will be established based on VA's interprofessional training programs.

Veteran Marty Alne is just grateful to have quality chiropractors close to home. "It's a special kind of person that works at VA. It means a lot to us that they give us that care."

VA recognizes the more than 1,400 educational institutions that partner with VA to train future health professionals. These academic affiliations, some of which began more than 75 years ago, are coordinated by VA's Office of Academic Affiliations.

Find out more by visiting the Office of Academic Affiliations website at https://www.va.gov/oaa/

va.gov

Veterans
ENDOCRINOLOGY

It Takes a Team to Manage Diabetes

By Shane Suzuki, VHA Clinical Services

Successfully managing diabetes means something different for every diagnosed person. Whether it's Type 1 or Type 2; whether insulin is prescribed or not; and how often blood sugars need to be measured are all just part of the individualized plans that every person with diabetes needs to manage with their health care team.

"When I was first told I had diabetes, I didn't really know what that would mean for me," said Daniel Hollingsworth, an Air Force Veteran and longtime patient of the Miami VA Healthcare System. "I didn't know the full implications of how it could impact my health going forward."

Being diagnosed with diabetes means that the body either doesn't make insulin or cannot use insulin correctly. Regardless of the type of diabetes someone has, it can lead to cause serious health issues such as blindness, kidney failure, heart disease and even limb loss or death.

"I hate to say it, but at first I didn't take it as seriously as I should," said Hollingsworth. "Then, about four years ago, my A1C — measurement of blood sugar — started to rise and my doctor was concerned that my medications weren't enough. So I asked my VA doctor if they had some resources for me, and I started going to a weekly diabetes education class."

When Veterans choose VA for their health care needs, they have access to teams of specialists and innovative programs that, together, contribute the best health guidance to Veterans' personalized health care plan. In Hollingsworth's case, this meant his weekly meetings with a registered dietitian and a nurse from the diabetes clinic in addition to his regular primary care visits.

Air Force Veteran Daniel Hollingsworth manages his diabetes with the help of the care team at Miami VA Healthcare System. In addition to diagnosing and prescribing medication to help control diabetes, the facility offers other resources including educational classes and consults with a dietician. *Photo courtesy of VHA*

"I've been going to these classes every week for four years, and I have to say that the education has been excellent – it's made a difference," he said. "I understand now how diabetes impacts the whole body and how my diet and medications work to help me. I've watched my A1C decrease significantly, and I think it's 99 percent due to my VA team."

Even during holidays and special occasions, Hollingsworth knows he has the tools to successfully manage his diabetes while also celebrating with his friends and family.

"We had a class where we picked a potential meal from a selection of low-carb foods," he said. "What we didn't know was that the Miami VA would actually have one of their chefs make all those meals for us so we could see how good it could be. It really turned out well, and it was tasty!"

In addition to medication and diet, managing stress is also a key part of successfully managing diabetes, said Ileana Alexander, Assistant Chief of Nutrition and Food Services at the Miami VAHS. Stress can add up quickly and impact a patient who otherwise has a solid, well-balanced routine. By using the Whole Health approach combined with evidence-based nutrition guidance and medication management, Veterans are given tools they can use in their everyday lives.

VA uses the Whole Health model to connect Veterans to what matters most and allow Veterans and their healthcare team to design a personal plan for managing their health and well-being. This often means seeing the big-picture connections between health and other aspects of life, enrolling into local VA diabetes teams or using VA's Virtual Diabetes Clinics to get advice on how to eat mindfully (and deliciously).

"What I learned is that the same things that help my diabetes also help me live a healthier life," Hollingsworth said. "I encourage all Veterans to get in touch with their doctor and get their tests done, so they know what to do. There are so many people looking to help."

CPG

Veterans
ENDOCRINOLOGY

Ohio Veterans' Facility Relied on AHRQ Resource to Develop Diabetes Initiative

By the Agency for Healthcare Research and Quality

The Dayton (Ohio) Veterans Affairs (VA) Medical Center facility has adopted AHRQ's SHARE Approach as part of the U.S. Department of Veterans Affairs' national Hypoglycemic Safety Initiative to help high-risk diabetes patients get individual care quickly. The SHARE Approach is a curriculum that teaches healthcare professionals how to engage patients in their healthcare decision making.

The facility uses it to support discussions between patients, family members, and healthcare teams about the possible treatment options that could most benefit the patient.

People diagnosed with diabetes quickly learn to pay attention to their A1C levels. The A1C blood test measures average blood sugar levels over the previous 2 to 3 months. For most people, a good A1C reading is below seven. However, that may be too low for many older people with diabetes because they risk developing hypoglycemia (abnormally low blood sugar).

Those at highest risk for hypoglycemia are patients over 75 years old with dementia or cognitive impairment and renal impairment. Hypoglycemia can cause weakness, fatigue, blurred vision, dizziness, and nausea.

"About half of our veterans with diabetes — around 500 patients — are at high risk for hypoglycemia," said Brian Burke, MD, an internal medicine physician who is chief of diabetes services at the Dayton VA Medical Center. "For these patients, general efforts to lower A1C levels only increase their risk for hypoglycemia.

Brian Burke, MD. *Photo courtesy of the Dayton VA Medical Center.*

Older veterans often do not have typical signs or symptoms of low blood sugar, but more frequently develop confusion and weakness."

To reduce the risk of hypoglycemia in these patients, Dr. Burke, Rebecca Dix, PharmD, and their colleagues created the Dayton VA Hypoglycemia Safety Initiative in 2017. In addition to using SHARE Approach training, they adopted an electronic tool that allows the healthcare team to monitor risk factors and patients' A1C status. Patient care teams are trained in using AHRQ's SHARE Approach to facilitate discussions with patients.

When risk factors are identified, patients have a conversation with VA healthcare providers, particularly clinical pharmacy specialists, to discuss reducing or changing their medication to reduce their risk of hypoglycemia. Clinical pharmacists can change medications and adjust dosages quickly, without a patient needing an additional visit with a primary care provider.

"We have found that having pharmacists work directly with patients is usually a huge relief to patients and their families," said Dr. Dix. "Giving patients permission to loosen their strict diabetes control can make it a lot easier for them. And they feel much better when they don't experience hypoglycemic episodes."

She added, "Not only do our pharmacists use our screening tool, our primary care doctors also use it. But it really is the patient's choice whether to reduce their medication. We want them involved as much as possible in making this decision."

In 2017, the U.S. Departments of Veterans Affairs and Defense recognized the important role shared decision making plays in managing diabetes. Their Clinical Practice Guideline for the Management of Type 2 Diabetes Mellitus in Primary Care states that "when properly executed, [shared decision making] may decrease patient anxiety, increase trust in clinicians, and improve treatment adherence."

Other VA facilities also are using AHRQ's SHARE Approach to collaborate on diabetes care.

Furthermore, Dr. Burke said, "We anticipate that this process will also be used for other areas of care. Shared decision making is something a lot of clinicians already do throughout the VA."

ahrq.gov

CPG

Veterans
GENETICS

Million Veteran Program Study Offers New Insights on Genetic Risk for Non-alcoholic Fatty Liver Disease

By Tristan Horrom, VA Research Communications

A VA Million Veteran Program study identified genetic factors that increase the risk of non-alcoholic fatty liver disease (NAFLD). In a first-of-its-kind multi-ancestry genetic study, the researchers found 77 locations on the human genome that affect risk for NAFLD. Twenty-five of the locations had never been associated with the disease before.

The results can be used to build a genetic prediction model of NAFLD, according to the researchers, and will also increase understanding of how the disease develops. The findings appeared in the June 2, 2022, issue of "Nature Genetics."

A growing cause of liver disease

NAFLD is defined as accumulation of at least 5% fat in the liver, in the absence of other known causes of liver disease. It can cause both cirrhosis and liver cancer. The condition has both genetic and biological risk factors. Risk factors include obesity, insulin resistance and metabolic syndrome.

NAFLD is a growing cause of liver disease. It has an estimated worldwide prevalence of 25% in adults. In the United States, that prevalence is projected to climb to nearly 34% by 2030.

While NAFLD is a growing problem, it is markedly underdiagnosed because of the invasive nature of liver biopsies, high variability in imaging results and poor sensitivity in diagnostic codes.

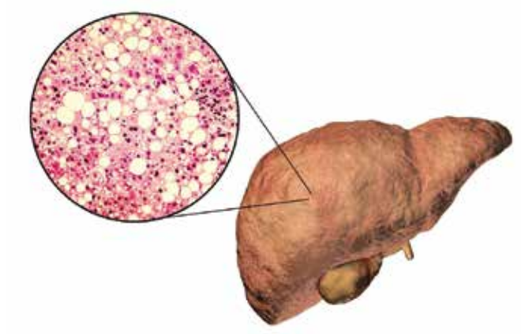


Photo courtesy of VHA

Because of the difficulty in diagnosing NAFLD, doctors often use a proxy method of identifying the disease. A blood test that checks for elevated levels of an enzyme called alanine aminotransferase (ALT) can be used to find NAFLD. Chronic ALT elevation is a sign of liver damage.

New gene locations identified in genetically diverse population
To better understand the inherited risk for NAFLD, VA researchers studied the genomes of more than 90,000 MVP volunteers with chronic ALT elevation not explained by other factors. They compared this group to nearly 130,000 controls without elevated ALT.

The study population was particularly noted for being diverse, something not often seen in large genetic studies. The diversity of Veterans participating in MVP is an important strength of the program — MVP is one of the world's largest and most diverse biobanks, with 25% of participants being non-white. This study population was 75.1% White, 17.1% African American, 6.9% Hispanic and 0.9% Asian.

The researchers identified 77 locations on the genome across ethnicities where gene variation affected chronic, unexplained elevation of ALT. Of these, 25 had not previously been associated with NAFLD or ALT. They also identified one additional gene location associated only in participants of European ancestry, and two only in those of African ancestry.

The findings "effectively tripled" the known genetic locations related to NAFLD, according to Dr. Ben Voight of the Corporal Michael J. Crescenz VA Medical Center and University of Pennsylvania Perelman School of Medicine, one of the lead investigators of the study. "Genetic studies of NAFLD have been stymied owing to the difficulties and invasiveness of phenotyping patients," he explains. "For the last 10 years, the total number of robust genetic associations known could be counted on two hands. That has been unquestionably frustrating." This research adds greatly to the understanding of genetic risks for the disease, says Voight.

va.gov

CPG

Veterans
GENETICS

Genetic Testing May Benefit Patients with Depression

Study yields positive results on accurate medication dosing

By Mike Richman, VA Research Communications

A new VA study found that pharmacogenomic testing can help providers avoid prescribing antidepressant medications that may have undesirable outcomes. Pharmacogenomics is the study of how genes affect the body's response to drugs.

The researchers also found that the patients who underwent genetic testing had more positive outcomes, compared with patients in usual care. Over 24 weeks of treatment, the group with genetic testing had in a drop in depression symptoms—with a peak effect at 12 weeks. Each patient in the study had major depressive disorder. Symptoms of that health condition include insomnia, loss of appetite, feelings of sadness and depression, and thoughts of dying by suicide.

The results appeared in July 2022 in the *Journal of the American Medical Association.*

Dr. David Oslin, director of VA's VISN 4 Mental Illness, Research, Education, and Clinical Center (MIRECC), led the study. He thinks the results will encourage providers to consider using pharmacogenomic testing, with patient consent, to help drive treatment decisions.

"From a VA policy perspective, I don't think that we would say the study is robust enough that we recommend testing everybody," says Oslin, who is also a psychiatrist at the Corporal Michael J. Crescenz VA Medical Center in Philadelphia. "The results were not a slam dunk, and in fact, an important outcome of the study is that only about 15% to 20% of the patients had genes that would significantly interfere with the prescribed medication. But I think the results favoring a positive effect on treatment, although small, will encourage providers to test patients and get this genetic information. Future research should explore if there are subgroups of patients who would benefit more from testing."

Dr. David Oslin, director of VA's VISN 4 Mental Illness, Research, Education, and Clinical Center (MIRECC), led the study. His research showed that pharmacogenomic testing can help providers avoid prescribing antidepressant medications that may have undesirable outcomes. *Photo by Jonathan Hodges, courtesy of VHA*

The focus on metabolizing the drug

In recent years, pharmacogenomic testing has received greater attention as a tool to personalize medication selection and is often used to treat patients with health conditions such as cancer and heart disease. Many in the medical community hope the testing can also be helpful in treating people with major depressive disorder. Research has been limited, however, on demonstrating improved clinical outcomes.

Currently, most of the pharmacogenomic testing focuses on a variant in the genes that encode hepatic CYP450 enzymes, a pathway that metabolizes drugs in the liver. Oslin and his team used a commercial battery of genes that focused on the CYP450 system. The battery tested eight genes, six of which test for variants in enzymes of the liver.

What do genes have to do with antidepressants?

"The genes we tested don't actually relate to depression," Oslin says. "They relate to how a person metabolizes the drugs once they're in the body. Some of these genes will cause the medications to metabolize much faster than normal. Others will cause the drugs to metabolize much slower than normal, which means you'll end up with a lot of medication in your body."

The patients enrolled in the study were initiating or switching treatment with an antidepressant drug. The study included nearly 2,000 patients from 22 VA medical centers who were randomized evenly, with half receiving pharmacogenomic testing and the other half getting usual care. Oslin and his colleagues aimed to learn if genetic testing helped patients receive fewer medications with predicted drug-gene interactions and if that produced better outcomes.

A drug-gene interaction is an association between a medication and a genetic variant that may affect a patient's response to drug treatment. Having that information helps the provider select the appropriate dosage for a specific patient.

The `crux' of the study

The patients in the control group received genetic testing, but their providers didn't see the results. That meant those providers made medication choices for their patients that weren't supported by pharmacogenomic tests.

"That was really the crux of the study," Oslin says. "Does the pharmacogenetic test help you choose the medicine that you want to use with this particular patient?"

The study found a marked shift in prescribing away from medications with significant drug-gene interactions or moderate drug-gene interactions. Overall, 59% of the patients in the genetic testing group received a medication with no predicted drug-gene interaction, compared with 26% in the control group. The researchers defined that difference as "statistically significant and clinically meaningful."

Oslin says he went into the study thinking the research team would not see such a dramatic effect in predicted drug-gene interactions. He was "somewhat surprised" by the result. "There was essentially a major shift in avoiding medicines that had a predicted drug-gene interaction," he says.

To test their DNA, the patients used a cheek swab.

"Some companies do use a blood draw," Oslin explained. "There's no advantage or disadvantage to one versus the other. It really has to do with how the company processes the sample. Cheek swabs and blood samples are the most common sources of DNA. The sample is then used to look at several very specific genes that are known to relate to the metabolism of antidepressants and many other drugs. But in this study, we were interested only in antidepressants."

> **"I do think the results favoring a positive effect on treatment, although small, will encourage providers to test patients and get this genetic information."**
>
> *— Dr. David Oslin*

The researchers interviewed the patients about their depression outcomes. All three outcomes — depression remission, depression response, and symptom improvement — favored the group that received the genetic tests. They were all statistically significant over the course of 24 weeks, with a peak effect at 12 weeks. Depression outcomes were not statistically different between the groups at 24 weeks.

"We were not powered to look specifically at 24 weeks," Oslin explains. "That wasn't part of our primary hypothesis. Our primary hypothesis was an overall effect. And we showed an overall effect in all three of the ways that we measured outcomes. So, it's a glass half full, glass half empty kind of thing. Another way to think about the results is the group that had the pharmacogenetic test results had a faster response. That also was not something that we tested. But clearly if you look at 12 weeks in all three outcomes, the group that got the genetic test showed a better improvement in remission, response, and symptom improvement.

"It's important to realize that the test is not telling you whether the patient is going to respond to the treatment or not," he adds. "It's telling you something about how the patient metabolizes the medication. So it's not telling me that this is a good medicine for the patient. It's telling me not to prescribe this medicine, or perhaps to adjust the dosing, because the patient doesn't metabolize it well."

PTSD affected treatment response

In supplemental material, the researchers noted that the presence of PTSD in patients had a profound negative impact on remission from depression. Basically, the patients with PTSD responded poorly to antidepressants. "We know from the literature that PTSD doesn't respond well to antidepressants," Oslin says. The main psychotherapies for patients with PTSD, he points out, are cognitive processing therapy and prolonged exposure — both widely used in VA.

"One of the special ways that we did this study is as a pragmatic study in frontline clinical practices," Oslin says. "We used clinicians and their patients. The providers all had to say that the patients were being treated for depression. But they could have had comorbidities, and many of them had comorbid PTSD, which had a big influence on treatment outcomes in a negative way."

For providers who would like to do pharmacogenomic testing in the future, the burden is low across the board, says Oslin. There's no risk to patients in getting the test.

"The costs actually are very low because the results can be used over the patient's lifetime," Oslin says. "So you're not talking about a test that has a shelf life of only five minutes. And there's really no risk to getting the test. You're just getting the cheek swab or a blood test. Cost is low, risk is low, and the population benefits are probably low. But overall, this test likely benefits some patients substantially."

va.gov

CPG

Veterans
MENTAL HEALTH

Compassionate Contact Corps: Helping Veterans with Loneliness and Isolation to Engage

Exclusive interview with Mr. Prince Taylor, acting director of the Center for Development and Civic Engagement, and Lori Murphy clinical social worker at the Columbus Ohio VA

By Thomas S Adams III, Publisher of Armed Forces Medicine

It is a great privilege for us to highlight the programs and people behind them that truly make a difference in the lives of our Veterans. The Department of Veterans Affairs Compassionate Contact Corps is a wonderful example, which began during the pandemic and remains in place now as an essential service. Reaching out to Veterans isolated and unable to personally connect because of COVID-19 restrictions, this program validates the importance of how meaningful compassionate communication is to both Veterans and their care providers.

"The Compassionate Contact Corps program was started back in the early days of the COVID-19 pandemic when people were told to go home, socially distance and stay away from friends and family and medical centers," said Lori Murphy, a clinical social worker at the Columbus, Ohio VA. "Prince [Taylor] got together with a group of coordinators who had been working on a volunteer home visiting program that we had in place at several VA healthcare facilities across the country to come up with a replacement for the in-person visitation program that he had to shut down due to the pandemic."

There were eight coordinators on the call that day in March of 2020 who understood the situation and devised a plan of action. The CCC program came together quickly as volunteers were matched with Veterans that were even more isolated than ever. A training guide was created for those volunteers with policies and brochures, with the intention it was just going to be temporary because at the time everyone thought the pandemic would only last few months. The result at those eight original facilities was tremendous as the program really took off. Volunteers were matched up with Veterans and they could call that same Veteran each week, so friendships really started to develop pretty quickly.

Both volunteers and Veterans enjoyed talking about their mutual hobbies and interests. As they reminisced about their lives it became a lifeline not only for the Veterans receiving the calls, but also for the volunteers. With Acting Director of the Center for Development and Civic Engagement Prince Taylor's leadership, the program expanded as he promoted the successes from those original eight sites. Eventually other sites began hearing about CCC and wanted to adopt the program themselves.

Mr. Prince Taylor, acting director of the Center for Development and Civic Engagement. *Photo courtesy of VHA*

Now, three years later CCC is in 75 VA facilities and able to touch a lot more Veterans in need, working on reducing the factor of loneliness and those social determinants of health that have profound impacts on overall mental and physical health.

The CCC caught the attention of the US Surgeon General Dr. Vivek Murthy and now Murphy and Taylor are both serving on the Surgeon General's Interagency Task Force on Loneliness.

According to Taylor, the original program was designed to support caregivers and wasn't initially geared toward addressing loneliness or social isolation. While the program supports Veteran caregivers indirectly it became clear as time passed that the main audience that needed CCC was the Veteran.

"A lot of Veterans don't necessarily say that they are feeling lonely, so this de-stigmatizes that because it's a VA program," stated Taylor. "It also helps a lot of our volunteers. That said, we still find tremendous value in our in-home visitor program. That's not in as many sites, but I would love to see that grow the way Compassionate Contact Corps has."

This program has grown beyond the original team's wildest dreams, and because there was no congressional or presidential mandate it is extremely encouraging to see as a grassroots effort. This is attributed because of the gap that it fills, where clinicians normally didn't have an intervention for this before, now they have a real program to use.

The program is designed so that the same volunteer is phoning the same Veteran each time for continuity and relationship building, because having the same volunteer is very important so real connections are developed. Veterans can also request more than one person to call them at different times. Volunteers can also request to call more than one Veteran, depending on their capacity.

CCC volunteers undergo extensive training before being matched with Veterans. "We really consider this a non-clinical service because these are volunteers, so even if they have a professional clinical background, they're wearing their volunteer hat when they make those phone calls," said Lori Murphy. "During volunteer training, we really guide the volunteers on the policies of the program and stress that they're not to provide any kind of medical advice."

This includes listening skills and "ice breakers" to get positive conversations going, as well as understanding boundaries where they are also not to give any legal, financial or spiritual advice.

Sometimes volunteers may be calling call a Veteran who was previously disengaged with VA healthcare and through these weekly calls they're rebuilding Veterans' trust in VA services. Sometimes questions come up about needing more medical or clinical support, so the volunteers are also trained that when those kinds of questions arise they can encourage the Veteran to call their VA providers for help. Volunteers can also bring those concerns back to the voluntary service Department, which then routes it to that Veteran's appropriate staff person, therefore providing additional outreach to Veterans in need that might otherwise remain disengaged.

The program also has a few resources available to help with training, including a short intro type of video available to clinicians. "Unfortunately, outside of social workers, most clinicians, especially doctors, don't learn about conditions like loneliness in medical school because it's not classified as a clinical condition," said Taylor. "I think it's important to say that clinicians typically spend up to 20% of their time on non-clinical issues because of conditions like loneliness. A study done in the UK showed programs like CCC gives clinicians a lot of that time back."

Doctor Alan Teo from the Portland VA conducted some research a couple years ago where his team found that a lot of doctors didn't know what to do when loneliness was identified because it was non-clinical. This program now gives them an intervention, like an arrow in their quiver that they can reach into and provide a service to those Veterans that don't necessarily fall into a clinical condition like depression or anxiety but may just be experiencing some chronic loneliness and social isolation.

Lori Murphy, clinical social worker. *Photo courtesy of VHA*

There are different types of loneliness, for example a person can be very happily married and still experiencing loneliness in other areas of their life. In fact, couples can even be lonely together. There is intimate such as a spouse, and also a best friend or a community, which is a different type of connection, so even Veterans with solid family relationships can still be experience significant loneliness.

"When Veterans are referred to the program, we asked them about their hobbies, their interests, their backgrounds, and then we of course, know our volunteers and some of that information about them," said Lori Murphy. "That's usually used to best match up Veterans and volunteers. Most of the time it actually is a pretty good match, but every once in a while they just don't totally click, so Veterans and volunteers can certainly be re-matched if needed."

Graphic courtesy of the National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health

As a social worker in Columbus, Murphy has a personal interest about this topic of loneliness and isolation and trying to fill that gap of unmet services. This came from her experience throughout her professional career of working with Veterans and patients in general. "It become very clear even just in quick phone calls when they would try to engage me with deeper conversation and want to share with me about their life and their hobbies and interests," she said. "As a social worker, I'm a good listening ear but didn't always have the time to dedicate to those kind of more social friendly phone calls, and we really didn't have a service to provide for that. So, my connection with Prince and the rest of the team was really to address that unmet need. I really think compassionate contact core has done a great job at that."

Taylor is a Navy Veteran, and even though he didn't have a clinical background or studied the depths of loneliness, he knew that it was imperative to get involved. Taylor stated that this topic has become a priority since the pandemic began, with the Surgeon General speaking about recent studies comparing loneliness to smoking half a pack of cigarettes a day. He wanted to support his fellow Veterans during the pandemic and beyond.

"I am really grateful for Lori and the rest of the early team for pushing me and saying, 'we need we have an opportunity to do something more," said Taylor. "I didn't realize how special this was going to be. I'm grateful for you writing articles like this, because I think it's important that we get the word out there so Veterans that can benefit from a program like this don't feel stigmatized, and that they know VA is there for them. "

Photo courtesy of VHA

Veterans
NEPHROLOGY

Kidney Care Expands with Clinical Resource Hub

Over 500 Veterans have received telenephrology kidney services

By Dr. Ramon Bonegio, Dr. David T. Moore, Kathy Tuozzo, and Kim Waller VISN 1 telenephrology services

More than one in seven US adults — that's 37 million people— are estimated to have chronic kidney disease (CKD), according to the National Institutes of Health. The prevalence within the Veteran population is estimated to be 34 percent higher than the general population.

Due to a national shortage of nephrologists (kidney specialists), Veterans seeking treatment for CKD in rural communities have said they can live hours from the nearest specialist and it can take over six months to be seen outside of the VA system.

Enter Clinical Resource Hubs, a national program launched by VA to tackle access to care issues by deploying innovative technologies and resources to improve access to a wide range of specialties, including much needed nephrology services. All 18 VISNs have a CRH that can help support access to clinical care for Veterans when local facilities have gaps in staffing.

Photo courtesy of VHA

"This is one of those instances where VA cannot rely on the community to step in and provide specialty care," said Dr. David T. Moore, a VA Clinical Resource Hubs (CRH) director.

Bringing specialized kidney services to rural communities

Moore and Kathy Tuozzo, MSN, CRH associate chief nurse, are working with nephrologists in Boston and Connecticut led by Dr. Ramon Bonegio and Dr. Susan Crowley to apply this approach nationally.

They are tapping into New England's wealth of medical training programs and specialty services, connecting nephrologists at affiliated universities with rural VISNs. In doing so, the VISN 1 CRH is bringing these specialized services to rural communities ranging from Maine to the Rocky Mountains.

This program is also building capacity and expertise to treat CKD locally at rural facilities. At facilities without an on-site nephrologist, CRH specialists from Boston and Connecticut are training nurses and Advanced Practice Providers to become local experts in kidney care so that they can take care of their own panels of patients under guidance from the remote nephrologists in New England.

Provided services for more than 500 Veterans

"Through CRH, you can really start to see we are building this valuable infrastructure for doing interfacility care whether it be in the same time zone or not," said Dr. Moore.

Already, the program is seeing improvements in outcomes. Veterans in the CRH telenephrology program are transitioning to dialysis with safer types of vascular access and are receiving newer treatments such as SGLT2 inhibitors, which reduce the need for dialysis and transplant.

The VISN 1 CRH telenephrology program is providing excellent care to Veterans from coast to coast. To date, over 500 Veterans have received telenephrology services from this innovative program.

For more on how CRH is working to expand care for rural Veterans nationwide please visit https://www.ruralhealth.va.gov/providers/Enterprise_Wide_Initiatives.asp

Veterans
NEPHROLOGY

Matters of the Heart… and Kidneys

4 ways heart and kidney disease are connected

The American Kidney Fund

Heart disease is the leading cause of death among Americans, with one person in the U.S. dying every 34 seconds from heart disease, according to the Centers for Disease Control and Prevention. Furthermore, approximately 805,000 people in the U.S. have a heart attack every year and 20.1 million adults 20 years or older have coronary artery disease (CAD). Given the strong connection between heart disease and kidney disease, the American Kidney Fund (AKF) promotes heart health as part of its mission to fight kidney disease and help people live healthier lives.

Unfortunately, studies have shown that veterans have higher rates of both heart and kidney disease. The percent of veterans with kidney disease is 34% higher than the general population and veterans are also at an increased risk for a cardiovascular event like a heart attack or stroke.

Furthermore, the VA's Department of Research and Development says heart disease is the leading cause of hospitalization in the VA health care system. Because of the intense stress related to their jobs, veterans are more at risk for post-traumatic stress disorder, high blood pressure and exposure to herbicides like Agent Orange, all of which are risk factors for heart disease.

As part of AKF's partnership with the Veterans Health Administration (VHA), we are working to address the rising rates of kidney disease within the veteran community, including understanding how other factors, like heart disease, impact this rise.

Here are four facts about how heart and kidney disease are connected:

Heart disease can cause kidney disease… and vice versa

Kidney disease can cause heart disease, but heart disease can also cause kidney disease, a condition sometimes called cardiorenal syndrome.

When a patient has kidney disease, it puts stress on their entire cardiovascular system. The heart has to pump harder to get blood to the kidneys, which can lead to hypertension (high blood pressure) and, ultimately, heart disease. Also, when kidneys are damaged, they do not filter the blood as effectively, leaving extra fluid and waste products in the bloodstream. Over time, the buildup of extra fluid and waste products can damage other organs — including the heart.

Getty Images/iStockphoto, courtesy of CDC

On the other side of the equation, heart disease, particularly chronic heart failure, can negatively impact the kidneys. A damaged heart may have a decrease in cardiac output, which means the heart has a harder time sending blood to the kidneys to filter. The kidneys then become less effective, leading to a decrease in kidney function (or kidney disease). Additionally, the body may compensate for decreased cardiac output with neurohormonal changes that trigger the nervous and hormonal systems to retain more salt and water.

While this initially can help with blood flow, sustained, increased levels of salt and water will eventually lead to a further decrease in cardiac output and renal function. Furthermore, as the heart becomes less effective, increasing blood pressure and sodium and fluid levels will also put more pressure on the veins, including the renal veins that help the kidneys dispose of filtered waste.

Heart disease is the number one cause of death among people on dialysis

Although dialysis is one of the life-saving treatments available for people with kidney failure, it puts patients at an increased risk of heart problems. Heart disease is the number one cause of death among people on dialysis. There are several reasons for this unfortunate trend.

First, many people on dialysis already struggle with heart problems as (again) long-term kidney damage can cause heart disease. Second, many people on dialysis also struggle with high blood pressure, which means the force of blood in their blood vessels is too strong and can damage the heart or kidneys. Third, if a patient has kidney failure, they need to be careful about managing their potassium, as their kidneys can no longer control that balance. Potassium controls muscle contractions, and the most important muscle is the heart. If potassium becomes unbalanced, it can put the patient at risk for heart disease or heart failure.

Other reasons that people on dialysis die from heart disease include complications from anemia, an increased risk of stroke and general stress on the body when the patient goes from a state of high fluid and waste product concentration to none in a short period of time — which is what dialysis does.

The kidneys help regulate blood pressure and create red blood cells

In addition to filtering blood, the kidneys also affect the cardiovascular system in other ways. Healthy kidneys produce a hormone that helps regulate blood pressure — helping to prevent the heart from pumping blood too forcefully or not forcefully enough. They also produce a hormone called erythropoietin (EPO), which sends a signal to the body to make more red blood cells. If the kidneys are not working as well as they should, they cannot make enough EPO.

Photo courtesy of the American Kidney Fund

Without enough EPO, the body does not know to make enough red blood cells. This means fewer red blood cells are available for carrying oxygen through the body, leading to anemia and heart problems.

The best way to prevent both heart and kidney disease is to prevent the problems that can lead to them

These problems include diabetes, high blood pressure and anemia. All three of these conditions can cause both kidney disease and heart disease. Fortunately, patients can take general steps to lower risk including:

- Eating a kidney-friendly and/or heart healthy food and fluid plan
- Being active 30 minutes a day most days of the week
- Quitting smoking (if the patient smokes)
- Maintaining or lowering blood pressure to a healthy level (below 140/90)
- Keeping blood glucose in target range (if the patient has diabetes)
- Getting regular blood and urine tests to assess kidney function and detect any damage as early as possible

Learn more about the connection between heart and kidney disease on AKF's website at kidneyfund.org/heart-disease-and-ckd.

AKF has also created a website page dedicated entirely to resources for veterans with kidney disease: KidneyFund.org/Veterans. Some of these resources include downloadable guides for veteran patients to talk to their doctors about the risk and management of kidney disease; infographics with tips on how to prevent kidney disease and steps to take to protect themselves against kidney failure; and recorded educational webinars.

CPG

Armed Forces Medicine 2023

Veterans
NEPHROLOGY

Support for Veterans with Kidney Disease

VA currently cares for 600,000 Veterans with kidney disease

By Chien Chen, HAP acting chief officer and nurse executive

Kidney disease is often labeled a "silent killer" due to its lack of physical symptoms in the early stages. Chronic kidney disease (CKD) develops when the kidneys get damaged and lose the ability to filter waste and fluids out of the blood.

CKD is the ninth leading cause of death in the U.S. While anyone can get kidney disease, factors such as heart disease, diabetes, high blood pressure, age, ethnicity and a family history of kidney failure increase the risk.

According to the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK), the percentage of Veterans with kidney disease is around 34% higher than the general population.

NIDDK reports that VA currently cares for 600,000 Veterans with kidney disease and that more than 40,000 VA-enrolled Veterans are living with kidney failure. Collectively, Veterans have higher rates of CKD than the U.S. population.

In 2020, VA's National Center for Healthcare Advancement and Partnerships (HAP) and the American Kidney Fund (AKF) partnered to address the rising rates of kidney disease within the Veteran community.

"The partnership focuses on improving kidney disease educational materials and developing resources and programs to support Veterans, their families and caregivers," said Georgeanna Bady, HAP health system specialist.

Kidney disease risk factors

Diabetes and high blood pressure are the two leading causes of kidney disease.

Photo courtesy of VHA

More than 34 million people in the U.S. have diabetes, and it's the number one cause of kidney failure. Following diabetes, high blood pressure is the second cause of kidney failure. According to AKF, about one in four people have kidney failure because of high blood pressure. Because of the significant racial and ethnic disparities within the Veteran community, certain ethnicities, especially Black Veterans, are more prone to diabetes and high blood pressure increasing risk for CKD.

VA resources to support kidney health

Early detection and treatment can often keep kidney disease and CKD from getting worse. With the help of a health care provider, people at risk for kidney disease and people with CKD can take steps to protect their kidneys. In addition to VA resources supporting kidney health, the VHA-AKF partnership has developed resources to help slow down the progression of existing kidney disease.

VA's National Center for Health Promotion and Disease Prevention offers healthy living advice to help slow down diabetes and high blood pressure, and prevent kidney disease from worsening. VA Kidney Disease and Dialysis Services Fact Sheet (2020) gives an overview of VA kidney services and lists virtual tools for Veterans with CKD.

va.gov

CPG

Veterans
NEUROLOGY

Trauma and Parkinson's Disease

Exclusive interview with Dr. Indu (Indira) Subramanian is the Director of the Southwest PADRECC (Parkinson Disease Research, Education and Clinical Care) Center of Excellence in Parkinson Disease at the VA Greater Los Angeles Healthcare System

By Thomas S Adams III, Publisher of Armed Forces Medicine

Dr. Indira Subramanian is the Director of the Southwest PADRECC.
Photo courtesy of VHA

The VA estimates 110,000 Veterans currently enrolled in VA healthcare have Parkinson's disease. A tremendous effort is being made to help treat individuals with this condition, as well as understand what factors may contribute to the development and progression of this debilitating disease. Leading the way is the VA's Centers of Excellence for Parkinson's disease, through its six Parkinson's Disease Research, Education, and Clinical Centers (PADRECCs) for clinical care, education, research, and expanded movement disorder expertise.

Dr. Indira Subramanian, a neurologist and director of VA's Southwest PADRECC, has been studying the impact of Parkinson's disease for years and what factors may potentially exacerbate the disease, including trauma, which is what led to her work on early childhood adversity.

"Sadly, with the early childhood adversity many minoritized populations experience, they are systemically at a disadvantage," said Subramanian. One finding during Subramanian's research was that trauma seems to influence many types of diseases across the board. PTSD also has been shown to increase the risk of developing certain types of neurodegenerative diseases. Her research marks the first time trauma has been investigated in relation to Parkinson's.

While there is not yet evidence to support treating early traumas would prevent the onset of neurological disorders such as Parkinson's, there is a sense that identifying them and providing intervention may help.

"The hope is that if you can change society, especially for minoritized populations, we can get at the root of cause of trauma and address it which will hopefully lead to systemic change," said Subramanian.

Subramanian's team is working to combat the potential impact of trauma on her patients' conditions by emphasizing a whole health approach to care. She's also invested personally in developing the tools to help her patients achieve better health: She b ecame trained as a yoga teacher using mindfulness and other holistic approaches together with integrative medicine. Her most recent body of work has been about identifying modifiable variables that people living with Parkinson's can do to live better.

"I think it's important to develop practical solutions to help patients with PD live better and do better over the course of their disease," she said. "Some issues we've studied include loneliness in patients living with Parkinson's. Research shows that loneliness is as bad for you as the beneficial effects of exercise is good for you in Parkinson's."

With the advent of COVID, Subramanian began running a virtual support group to keep the VA's community of Parkinson's patients connected. She also interviewed about 120 thought leaders over the last two years, ranging from research scientists to various types of practitioners (including psychologists, physical therapists, yoga teachers, mindfulness teachers) and patients living with Parkinson's to understand ways to help patients live better.

"I've been pretty open minded in my approach and from those conversations we developed research papers on areas with pretty surprising findings," she said. "For example, women living with Parkinson's have very little representation, therefore, we published a paper with a number of women who are themselves doctors and healthcare providers, to show the gaps in care for women living with Parkinson's.

"I've also been quite interested in African American, Latinx patients and other minoritized populations and how poorly represented they are. The research and care they receive is not adequate compared to the care provided to older Caucasian men with PD. These other populations are really under underserved, and so that's been another focus of some of my recent publications."

As director of one of six VA PADRECCs in the country, Subramanian and her team are emphasizing things like getting quality sleep, having a balanced diet, getting exercise and engaging in social connection as part of
a "wellness prescription".

Subramanian paper also reflects on meeting people where they are, understanding their needs and educating others on how Parkinson's disease can impact anyone.

"I encountered an African American woman that had her diagnosis delayed because people thought that she couldn't have Parkinson's because she was black, or because she was a woman," she added. "My trainees are encouraged to not only think about Parkinson's patients in images of older white men and treat those patients in a certain algorithm, but well beyond that picture so the diagnosis is not delayed and treatments can be given that were not traditionally customized to that person."

Being able to recognize PD in people from all walks, explore their trauma and using a whole health approach that tailors care to a person's mental and physical health combined with social connection is making a tremendous difference for Veterans.

> "I think it's important to make it practical, and our patients have been really interested not just in pills and surgeries, but learning about things in their life they can do every day to help live better and do better over the course of their disease."
>
> *— Dr. Indu (Indira) Subramanian*

PADRECC is making this a priority as part of their intake beginning with check in. Often Veteran themselves are challenged with identifying what brings them joy.

"People have gotten into these ruts and we need to bring them out of that," Subramanian said. "Addressing trauma and isolation is part of the antidote in the wellness framework."

More information on Subramanian's research into the impact of childhood trauma in Parkinson's patients is available at https://cp.neurology.org/content/13/2/e200124

***Indu (Indira) Subramanian, MD** is the Director of the Southwest PADRECC (Parkinson Disease Research, Education and Clinical Care) Center of Excellence in Parkinson Disease at the VA Greater Los Angeles Healthcare System, and a Clinical Professor of Neurology at UCLA. She received her medical degree from the University of Toronto, Canada, completed her neurology residency and movement disorders fellowship training at UCLA and is board certified in integrative medicine.*

CPG

Photo courtesy of the California's Stem Cell Agency

Veterans
NEUROLOGY

Conquering Mountains and MS

By David Walter, Public Affairs Specialist

Looking for inspiration? Look no further than Anthony Moro. The U.S. Marine Corps Veteran recently climbed Tanzania's Mount Kilimanjaro, then flew to Japan a week later and summited Mount Fuji.

Here's the kicker: He's had multiple sclerosis for nearly 10 years. And, according to his MRI scans, he shouldn't be walking, let alone climbing mountains. Oh, and there's more: After his diagnosis led to his medical discharge from the Marines, Moro went on to start his own gym and worked as a strength and conditioning coach for Navy SEALs.

He's done similar work with the Air Force and the Milwaukee Bucks dance team, and he's pursuing a similar role with the Saudi Arabia soccer team. Moro is determined to do everything he can to beat MS. He altered his diet, kicked up his exercise regimen and gets regular checkups and treatments through the neurology team at the Veterans Affairs Milwaukee Healthcare System. And right now, Tony Moro is beating the tar out of MS.

"MS got diagnosed with Tony Moro," he joked. "I'm the worst diagnosis that MS has ever gotten." Moro's neurologist agrees. "He has a very inspiring story, and resiliency is very paramount to success with MS," said Dr. Sam Hooshmand, a neurologist with the Milwaukee VA. "One of the reasons he does so well is his lifestyle. He exercises regularly and has a very well balanced and nutritious diet, which is very important in multiple sclerosis therapy. "He is a big advocate for himself, which is essential for MS," Hooshmand explained. "He has a truly positive mentality, and he knows how important diet and exercise go into long-term MS. He's bought into this holistic, comprehensive care plan."

"Being as active as possible and eating as clean as possible is great," Moro said. "And I listen to my neurologists and take the medicines they tell me to take."

Beating expectations

MS is an autoimmune disorder in which the immune system attacks the central nervous system, Hooshmand said. The often-debilitating condition has no known cure or cause, though treatments continue to improve, helping MS patients lead long, full lives. MRI scans are key to diagnosing and tracking MS.

U.S. Marine Corps Veteran Tony Moro poses for a photo at the summit of Mount Kilimanjaro in Tanzania. Although he was diagnosed with multiple sclerosis nearly 10 years ago, Moro continues to pursue his dream of summitting the tallest mountains in the world. *Photo courtesy of VHA*

Hooshmand noted that Moro's scans show a severe lesion load in his brain and spinal cord and a high amount of scarring. But you wouldn't know that by looking at him. "It's truly remarkable how well he's doing despite his MRI burden" Hooshmand said. "The typical person with his MRI wouldn't have his level of functionality. So our goal with Anthony is to make sure he doesn't catch up to his MRI."

During Moro's last appointment, Hooshmand held him up as an example. "He said, 'If I didn't see you standing here right now, I wouldn't believe you could be standing here right now,'" Moro said. "And that's very humbling. I'm grateful for what the VA has done for me."

From rock bottom to mountaintops

Moro, 34, joined the Marines in 2006 and planned to make it his career. He served with the Third and Fourth Force Reconnaissance Battalions and fought in Sangin Valley, Afghanistan, in 2011 — considered one of the most intense campaigns of the war — and also served in the South Pacific and northern Europe. Then he woke up one day while on leave and couldn't see. "My eyes just started going blurry, like I was underwater," he said. He went to an eye doctor, who immediately sent him to a hospital, where he spent a week in the intensive care unit and was diagnosed with MS. The diagnosis was a massive body blow to Moro, who prided himself on his physical fitness. After living as an athlete for most of his life and surviving a helicopter crash and hellish fighting in Sangin, Moro said it felt like his body was now trying to kill him. "None of that could do anything to me," he said. "But then my own body was betraying me." Depression and post-traumatic stress disorder — not from combat, but from his diagnosis, he said — set in. Moro returned to Wisconsin with plans of going to college and playing football. But the MS was relentless, continuing to affect his vision and paralyzing his right leg.

U.S. Marine Corps Veteran Tony Moro snaps a selfie of the sunrise at the summit of Mount Kilimanjaro in Tanzania. Although he was diagnosed with multiple sclerosis nearly 10 years ago, Moro has fought the disease with diet, exercise and treatments from the Veterans Affairs Milwaukee Healthcare System. *Photo courtesy of VHA*

Moro said he spent about a year feeling sorry for himself; then he went to a wedding attended by many of his Marine buddies, and the tough love from them helped change his mindset. "Everybody else in my life was babying me, telling me it's OK to be weak," he said. "That day I was weak, but they knew me well enough to say, 'Suck it up.' That changed my life." That led Moro to the gym, and before long, he had designed his own exercise regimen using the rower, and soon moved on to "every kind of kettlebell training there was." His determination wasn't just physical. He enrolled in university and began studying exercise physiology while also playing alongside his brother on the football team. Moro earned his bachelor's degree and went to work as head personal trainer for the Milwaukee Bucks dance team. That led to similar stints with the Navy SEALs and the Air Force, as well as the Chicago Bears and Blackhawks. He opened his own gym and earned his master's degree. He's now eyeing a doctorate, studying neuro-mechanics and health and human performance. "I'm trying to figure out the whole puzzle," he said. "My first desire was to be an athlete. But then I had to figure out how I can be an athlete with MS."

Conquering mountains

His latest motivation — climbing mountains — is borne from his military buddies, who thrive on physical challenges. "I see them doing all this cool stuff, and I want to do that with them for as long as possible," Moro said. Motivated by news of the cancer death of a military friend, he flew to Tanzania to conquer Mount Kilimanjaro, the highest point in Africa. It took him seven days, but he was the first in his group to reach the summit. A week later, he was on his way to Okinawa, Japan, when his flight got delayed in Tokyo. So he called a buddy there and said, "Let's go climb Fuji." But fatigue and MS were taking their toll. Moro told his friend they'd have to take it slow, but they did it. The climb took about 14 hours, with the duo finishing after dark.

Next up for Moro is summiting Aconcagua in the Andes, the highest mountain in South America. That would give him two of the "Seven Summits" — the highest mountains on each of the continents. Moro plans to conquer them all. And his team at the Milwaukee VA will be there every step of the way. "I support all of his goals," Hooshmand said. "Our whole team wants to make sure we keep people living with MS as healthy as possible so they achieve their goals. Folks like Anthony can be an inspiration for others living with MS. I'm excited to see what his next adventure is."

"Our team is inspired by all of our MS patients," Penneau said. "They're not all climbing Kilimanjaro or Fuji, but they are climbing mountains, figuratively speaking. I'm inspired by all of our patients every day."

Note from the VA: Nearly one million people in the U.S. have MS, with around 20,000 Veterans receiving their MS care through VA each year. Please reach out to your healthcare provider if you have MS or think you may have MS. Fortunately, today, there are more than 20 FDA-approved MS disease-modifying therapies that reduce the frequency of MS relapses and may delay the accumulation of disability from MS. There are also many medications and therapies that help reduce MS symptoms. VA provides these medications, services and many other resources to help Veterans with MS live their best lives.

CPG

Veterans
NEUROLOGY

Primary Blast Injury of the Brain

New ICD-10 diagnostic code will promote better care for Veterans and others with blast injuries to the brain

By Erica Sprey and Katie Rories, VA Research Communications / VHA History Office

Traumatic brain injury, or TBI, occurs when energy impacts the head causing brain damage. Different methods of injury can cause TBI. For example, TBI may be caused by car accidents, contact sports, or military combat.

TBI often stems from physical impacts to the head or acceleration/deceleration injuries — where the brain strikes the inside of the skull. But what about brain injury caused by a blast wave from an explosion? Should that type of brain injury be considered distinct from a TBI caused by a physical impact? The short answer is "yes."

Blast injuries to the brain are often called "invisible injuries" because there is no evidence of an external injury on physical examination or routine medical imaging. In a blast, energy from explosive shock waves is transmitted into the brain, causing injury. "It has become clear through clinical practice and research that this type of TBI is a unique clinical entity," says trauma surgeon Dr. Ralph DePalma.

Dr. Ralph DePalma is a trauma surgeon and special operations officer for the VA Office of Research and Development. *Photo courtesy of VHA*

Prior to the fall of 2022, there was no dedicated medical code for blast injury to the brain. At that time, the Centers for Disease Control (CDC) International Classification of Diseases, 10th Revision, Clinical Modification (ICD-10-CM) code book contained eight separate codes for blast injury (or blast overpressure) to organs in the human body: the colon, rectum, ear, lung, bronchus, small intestine, fallopian tube, and thoracic trachea. But nothing for the brain.

That concern drove DePalma, special operations officer for the VA Office of Research and Development (ORD), and Dr. William Rice, an occupational medicine physician with the Department of Defense (DOD), to petition the CDC Coordination and Maintenance Committee in 2020 to create a new diagnostic code for primary blast injury of the brain.

With the assistance of team members from both agencies, it took two years to achieve their goal. The 2023 ICD-10-CM code updates, effective on October 1, 2022, contain a series of codes for "S06.8A — Primary blast injury of brain, not elsewhere classified."

Utility of medical coding

The ICD-10-CM is an international coding system used by physicians, hospitals, and medical billers to classify and code medical diagnoses and symptoms. ICD-10 codes are used for billing and payment of medical services, and for ordering diagnostic tests, medical imaging, and treatments like physical therapy. They also help facilitate medical research, disease monitoring (like COVID-19 trends), and understanding health care utilization, according to Rice. The 2022 edition of the ICD-10 code book contains over 73,000 codes.

For example, if you were in a skiing accident and broke the upper bone (thigh) in your right leg, and it did not protrude through the skin, your physician would code it: S72. 91XA unspecified fracture of right femur, initial encounter for closed fracture.

Example of an explosives trial conducted on the Experimental Proving Ground (EPG) at the Defence Research and Development Canada-Suffield Research Centre. *Photo credit Gillian Reimer, courtesy Defence Research and Development Canada*

"As a practicing physician, I am aware that if you write a prescription or order a lab test, you must include an ICD-10-CM code. Now, if a Veteran walks into a physician's office — outside VA — he or she can report that they had a blast exposure. With the new ICD-10 code for blast injury to the brain, a physician can bill for services and the radiologist can bill for needed specialized imaging studies," says DePalma. "It also allows the Veteran to submit a more specific reimbursement claim."

Training exposures

Service members (SMs) are not only exposed to blast injuries in combat, but also during training exercises. Rice, a practicing physician, cares for SMs and staff at the U.S. Army Aberdeen Proving Ground (APG), located along the Chesapeake Bay in Maryland. The proving ground was established in 1917 to support national defense during World War I.

Beginning in 1918, personnel at APG tested field artillery weapons, ammunition, trench mortars, air defense guns, and railway artillery. Following World War, I, the base's mission shifted to ordinance training and munitions research and development. Today, APG is known for world-class research and development, testing, and evaluation of military weapon systems and equipment.

"At a training level, some of our combat systems have a high blast overpressure exposure pattern. SMs in training can be exposed to these insults on a daily basis. In occupational medicine, we're still trying to decide what constitutes a dangerous or safe level of blast exposure," says Rice. "We are also seeking to identify occupational specialties and combat systems in which these types of exposures occur."

Blast overpressure (pressure caused by a shock wave from an explosion that is above normal atmospheric pressure) is measured in pounds per square inch (PSI) or kilopascals (kPA). Research has demonstrated that 50 kPA (7.3 PSI) of blast overpressure can rupture the eardrum and cause lung injury. Hemorrhage in the lung occurs above 100 kPA (14.5 PSI) of overpressure, says DePalma. SMs exposed to 150 kPA (21.7 PSI) of blast overpressure in the field will likely experience progressive lung injury leading to death. DOD strives to limit exposures far below these levels in training.

Blast injuries to the brain can produce a wide range of symptoms; affected people can experience difficulties with sleep and problems with vision, thinking, hearing, and other sensory issues. About 20% of Veterans cared for in VA report blast exposure. The average SM who experienced an explosion is exposed to a blast about three times in combat, says DePalma.

VA and DOD researchers are investigating more sensitive ways to identify brain injury from blast overpressure. Two examples are the use of special imaging to identify subtle brain damage and measuring chemicals in the blood, called biomarkers. "We are looking for better ways to protect SMs in combat and better ways to protect them in training," DePalma and Rice note.

"Given the number of service members, law enforcement officers, miners, and others that are routinely exposed to blast overpressure, primary blast injury of the brain is an important issue in several respects. The new ICD-10 code for primary blast injury of the brain is necessary and appropriate to understanding, diagnosing, treating, and better understanding this injury."

History of TBI

While SMs and Veterans have been affected by blast injuries throughout history, it wasn't until the 20th century that modern medicine was able to diagnose and treat these wounds of war.

Up until World War I, many blunt force trauma injuries to the brain from artillery shells, bullets, and other objects, were often fatal due to rudimentary battlefield medicine and high rates of infection. Many Veterans who survived these injuries often suffered from long-lasting emotional and psychological trauma. Some of them were cared for on the campuses of the National Home for Disabled Volunteer Soldiers, the Veterans Health Administration's (VHA) ancestor.

Dr. William Rice is an occupational medicine physician at the U.S. Army Aberdeen Proving Ground in Maryland. *Photo courtesy of VHA*

Attempts to understand and treat these brain injuries began during World War I. "Shell shock," the term derived during the war to understand a range of mental health issues, was originally thought to be the result of exposure to blasts. However, in 1922 the term shell shock was banned by the British Southborough Committee.

After World War II, the newly formed Veterans Bureau constructed hospitals specializing in the treatment of "neuropsychiatric" conditions affecting Veterans. Neuropsychiatric terminology such as "war neuroses," "combat fatigue," and "post-concussion syndrome," became catch-all terms for what we now know as TBI and mental health conditions such as posttraumatic stress disorder (PTSD).

During the 1920s and 1930s, treatment focused mostly on recreational therapies. The Veterans Hospital in Perry Point, Maryland, was one of these specialized hospitals. Remedies included baths, massages, the "simplest forms of psychotherapy," and above all else, rest of body and mind.

In World War II, advancements in battlefield medicine, faster evacuation time, and evolution of helmet design meant that blast injuries became more survivable than ever before. As a result, VA increased the number of mental health hospitals for Veterans to 26 and increased funding as brain injuries became an area of focus.

The Veterans Administration, at the forefront of this research, used various treatments for mental illness including insulin-shock therapy and electrical shock therapy — accepted treatments during that period — to care for psychiatric patients. In 1946, brain wave recording machines were installed in all VA hospitals to aid in the diagnosis of neurological issues.

VA researcher Dr. William Oldendorf developed the prototype for the modern-day CT scanner in the 1960s. His aim was to improve diagnosis and treatment for Veterans who had experienced a TBI.

Between 1980 and 1990, TBI rehabilitation was uncoupled from other mental health issues and established as its own subspecialty of rehabilitation medicine. To address the need for TBI rehabilitation, in 1992 the Defense and Veterans Head Injury Program, later renamed the Defense and Veterans Brain Injury Center (DVBIC), was established as a collaboration between the DOD, VA, and civilian partners, with a goal to integrate specialized TBI care, research, and education across the military, Veteran, and civilian medical care system.

"The new ICD-10 code for primary blast injury of the brain is necessary to understanding, diagnosing, treating, and better understanding this injury."

— Dr. Ralph DePalma

VA now supports longitudinal research studies that aim to discover the effects of TBI. Notably, the Long-Term Impact of Military-Relevant Brain Injury Consortium Chronic Effects of Neurotrauma Consortium (LIMBIC-CENC), a joint research initiative between DOD and VA, focuses on the long-term effects of combat-related and military-relevant mild TBI.

This program has recruited a large group of Veterans with TBI, many of which have been a result of a blast-related event, as well as a control population. The introduction and use of ICD-10-CM SO6.8A will enhance research by establishing primary blast injury of the brain as a unique clinical, specific entity.

"Ultimately we [DOD Health Affairs] see this partnership with VA to establish this critical ICD-10 code as a mechanism to track the health and well-being of SMs who transition into the VA system of care," says Kathy Lee, Director of Casualty Management in DOD Health Affairs. "Initiatives such as this supports 'taking care of our people.'"

va.gov

Veterans
ONCOLOGY

Black Veterans Receive Equal, or Superior, Lung Cancer Care in VA

By Tristan Horrom, VA Research Communications

Black Veterans with lung cancer receive comparable care, with equivalent, if not superior, treatment outcomes as white Veterans at VA, according to a study by VA St. Louis researchers. VA cancer care appears to be more equitable than care received in the private sector, where significant racial disparities exist.

First study author Dr. Brendan Heiden, of the Washington University School of Medicine in St. Louis, explains how the findings show the strength of the VA health care system. "This study highlights the exceptional care that Veterans receive through VA hospitals, including for highly complex diseases like lung cancer," he says. "The VA system also appears to mitigate racial and other disparities in care. Harnessing lessons from the VA may help to address lung cancer disparities in the general U.S. population."

The study appeared online in the April 8, 2022, issue of the journal *Chest*.

Black patients face care disparities in general population

Non-small cell lung cancer, the most common form of lung cancer, is the leading cause of cancer-related death in the United States. Surgery is the gold standard treatment for early-stage lung cancer.

Previous research in the general population has shown that Black patients are less likely than white patients to undergo surgery for lung cancer. Some studies have also shown that Black patients are less likely to receive high quality surgical procedures. Even when Black patients do receive surgery, they

U.S. Preventive Services Task Force guidelines recommend lung cancer screening for people who are 50 to 80 years old, have a 20 pack-year smoking history, and are current or former smokers. *Photo credit: ©Getty Images/izusek*

Photo courtesy of Defense Contract Audit Agency

tend not to live as long as white patients after treatment.

Multiple factors contribute to these disparities. Black patients are more likely than white patients to face inadequate insurance coverage and less access to care. They are also more likely to come up against provider bias and discrimination, poorer communication, and patient distrust of physicians stemming from cultural factors.

But many of these disparities are addressed in the VA system. VA is an equitable health insurance system. All Veterans receiving care through VA should have equal access to all types of care with little to no cost to the patient. VA also provides services like transportation, housing and employment assistance, and mental health care. These services help address the social determinants of health that often lead to unequal care based on race.

Equal care for Black and white Veterans in VA

To analyze the quality of cancer care Black Veterans received in VA, the researchers looked at data from 18,800 patients with early-stage non-small cell lung cancer. Of these, 57% of Black and 58% of white patients had surgery. Of the nearly 10,000 surgery patients, 85% of these patients were white, and 15% were Black.

Black Veterans were less likely to experience major post-operative complications, the researchers found. There was no difference between the groups in 30-day readmissions to the hospital and 30-day mortality rates (death following discharge from the hospital, within 30 days).

Patients were followed for about six years after surgery. After adjusting for other risk factors, Black Veterans were found to live significantly longer than white Veterans during this time period. To the best of the researchers' knowledge, this is the first study to show better survival rates in Black compared with white Veterans with lung cancer.

The study also assessed the quality of procedures patients received. Both patient groups had similar numbers in surgery type, amount of cancer cells at the edge of the surgical area, and upstaging to a more advanced form of cancer.

Black patients were slightly less likely to undergo appropriate lymph node sampling. In lymph node sampling, tissue samples are taken from several locations in the lymphatic system — part of the body's immune system — to check for cancer cells. Lymph node sampling is considered a metric of high-quality surgical treatment. In VA, 30% of Black patients and 34% of white patients received ideal lymph node sampling.

The findings were encouraging and show that VA has addressed many of the problems that lead to racial health care disparities in the private sector, according to the researchers. "We were excited to find that Black Veterans received high-quality care in VA, which was similar, if not superior, to the care received by white Veterans," explains Heiden.

On the logistical side, Black patients had slightly longer wait times between diagnosis and surgery. Black patients waited about 10 weeks on average, one week longer than white patients. However, prior research has shown that wait times as long as 12 weeks are not linked to worse outcomes, implying that the "vast majority" of Veterans receive timely surgery regardless of race.

Black and white patients had similar lengths of hospital stay. However, Black patients were less likely to experience prolonged lengths of stay.

Black Veterans with lung cancer receive comparable care, with equivalent, if not superior, treatment outcomes as white Veterans at VA, according to a study by VA St. Louis researchers.

The results of this study suggest that VA's universal health system and its efforts to address social determinants of health are making a difference, according to the researchers. While more work is needed to close the gap in lymph node sampling, Black Veterans receiving lung cancer surgery in VA do not face the same disparities seen in the general population. Lessons from VA could help improve cancer care for the rest of the country, note the researchers. "Harnessing strategies from the [Veterans Health Administration] may help mitigate racial disparities in lung cancer care in the U.S."

va.gov

CPG

Veterans
ADVERTORIAL

Revealing Actionable Insights for Precision Cancer Care

The power of a connected ecosystem providing the right information at the right time

Presented by Philips

Cancer care is complex and with the focus on cancer care becoming more targeted and personalized as well as continued advances in both diagnostics and treatments, this complexity will only increase. There is so much for clinicians to navigate: the volume of patients, data, complicated tumor characterization, expanding treatment options and clinical trials. Yet, their commitment every day is ensuring the best possible outcomes for each patient.

Photo courtesy of Philips

Cancer patients face this increased complexity too. As well as coping with the extreme physical and emotional burden of a diagnosis, a patient needs to see multiple professionals over hundreds of appointments. They have the additional burden of keeping up with all the information from different specialists and navigating their care. It goes without saying that missing appointments and delays in their care journey can lead to longer periods of uncertainty and may significantly impact their prognosis.

As we look to the future of best-practice cancer care, our active duty soldiers, Military Veterans, and their families need a clear care pathway that is efficient and connected across providers and locations, and clinicians need actionable insights and guidance at their fingertips.

Making data relevant and actionable underpins all our solutions here at Philips. We bring information together from disparate data sources, across domains and providers, from Philips systems and from other vendors, including electronic medical records, lab systems, pathology, radiology and genomics, to provide the multi-disciplinary team with a comprehensive view of the patient.

Photo courtesy of Philips

Oncology informatics solutions ensure the correct follow-up of findings and streamline the flow of information through the cancer care pathway, which may assist guidance of the selection of optimal treatment. These solutions enable generation, interpretation, and integration of the right insights at the right time across specialties, delivering findings directly to oncology care teams.

Photo courtesy of Philips

Helping clinicians easily visualize and analyze diagnostics and staging information and efficiently translating unstructured data to meaningful, structured data can help them make more informed, precise and personalized clinical decisions, with individual patient needs at the heart.

After all, it is only when data and all specialties involved in the care pathway have the information they need and work together in perfect harmony that efficient and optimal care for our service members and their families can be realized.

Veterans
ONCOLOGY

Chimaeric Antigen Receptor T-cell (CAR T) Therapy for Veterans with Blood Cancer

Exclusive interview with Dr. Salyka Sengsayadeth for Armed Forces Medicine 2023

By Thomas S Adams III, Publisher of Armed Forces Medicine

VA has made tremendous investments over the years in research and development that are now generating incredible breakthroughs to help those who have served and defended our nation. Precision therapies, whereby a patient's body chemistry is matched with a specific treatment for the best outcome, have opened a world of possibilities for the treatment and prevention of diseases such as blood cancer that until recently were considered incurable.

Cancer, including blood cancer, is a leading cause of illness and death for Veterans. Due to exposures of hazardous and radioactive materials encountered during military service, Veterans experience far higher rates of blood cancer than the general population. However, new precision therapies for blood cancer are resulting in higher cure and survival rates.

Dr. Salyka Sengsayadeth, a specialist in hematology, has witnessed the value of these new treatments first-hand. She is the medical director of stem cell transplant and cellular therapy at the Tennessee Valley Healthcare System and an Associate Professor Medicine at Vanderbilt University Medical Center.

"Our transplant center offers three types of what we call cellular therapies," said Sengsayadeth. "The oldest is called autologous stem cell transplant which is the most common type of therapy we do here it in Nashville, and the second is allogeneic transplant, and then the third is Chimaeric antigen receptor T-cell or CAR T cell therapy. This is the newest and most cutting-edge therapy that's

Dr. Salyka Sengsayadeth. *Photo courtesy of VHA*

available for treatment of blood cancers these days, and this has been available at our center since 2019."

Initial FDA approval came in 2018, and it rapidly became available for Veterans at the Tennessee Valley VA Healthcare System transplant center. Currently Nashville is the only one that offers this treatment within the VA healthcare system. Now going into its fourth year, a lot of Veterans have already received this incredible therapy.

"We refer to CAR T cell therapy being like a living drug essentially," stated Sengsayadeth. "When a patient is diagnosed with certain types of lymphomas, leukemias, or multiple myeloma, sometimes the standard therapies don't work well in those patients, so CAR T cell therapy was developed for when traditional treatments have not worked well or have stopped working all together."

What CAR T cell therapy does is use the patient's own immune cells called T cells to fight the disease. Taking T cells from the patient and sending them off to be engineered essentially with a gene that will help those T cells identify the tumor cells better makes it a highly targeted treatment. The newly reengineered T cells that are produced are then re-infused back into the patient after they've received chemotherapy, so the new T cells essentially attack the cancer cells in the patient, Sengsayadeth explained. "The data has really been promising in terms of how effective these T cell therapies are and may potentially be curative for some patients in the future. We just don't know that yet because it's still a new therapy."

This therapy was developed by learning how to attack a specific receptor on the cancer cells and enhancing the patient's own immune cells to accomplish that. There are different targets under the umbrella of CAR T cell therapies, and similar targets work well for the similar diseases. For example, in patients who have lymphomas and leukemias, the similar target is called CD 19. Multiple myeloma has a different target called ECMA, so even through they are different cellular targets they are similar in the way that they are manufactured for the patient.

Clinical trials initially looked at patients in more advanced stages that have gone through all of the previous therapies before. But as more knowledge has been gained delivery has started moving towards earlier stages of treatment. Data

The Tennessee Valley Healthcare System Bone Marrow Transplant team plays a huge role in providing cutting edge and innovative technology to Veterans. *Photo courtesy of VHA*

is now supporting effectiveness with diffuse large B cell lymphoma, but historically it has been offered for patients who've had more advanced stages of their disease, and it is being studied now to see if it's more effective in earlier stages or, or perhaps even at newly diagnosed.

Overall, this therapy has shown a lot of promise for patients who's prognosis is otherwise grim, which is why it is so exciting to be able to now have a potentially lifesaving therapy for those patients. And as time goes on this may prove to be useful earlier on in treatment and potentially could be the best application to use, but currently it is being used in combination with traditional therapies.

"When a patient perhaps needs this therapy, a lot of times they do need something to bridge them in order to make it to this therapy because as with a lot of cancers, they can progress rapidly so some patients may still need a therapy to bridge them until they receive the CAR T cell infusion." stated Sengsayadeth. ""Sometimes they are given kind of in parallel, just because a patient is getting CAR T cell therapy that doesn't exclude them from getting other therapies that might control the disease in order for them to get the treatment."

Awareness of CAR T is increasing and as a national transplant center, Nashville VA also gets patient referrals from providers all over the country. "We are actively working daily to get more of these CAR T cell therapies available with different products for different diseases and we are always working to have these newer products available for Veterans as soon as possible," she stated. "In addition, we are in the process of opening our own stem cell processing to help get these products to patients sooner."

Referring providers must complete an evaluation checklist with their patient to determine if CAR T is right for them. That checklist involves making sure the patient has a support person during the procedure because it is a very intensive one, where the patient is required to remain at a transplant center for at least five to six weeks.

The Nashville VA Medical Center. *Photo courtesy of VHA*

Patients also need to have certain levels of organ function to meet the requirements of eligibility, to ensure the procedure is going to be safe for them to undergo. Determining their medical comorbidity risk and also that they have adequate organ function is extremely important and are standard parts of evaluation that most referring centers are already well versed in, and similar in regard to the autologous transplant referral process.

All of these requirements, including the Veteran having a support person to accompany them during their treatment, is the referring provider's responsibility, however Nashville VA can offer a transplant social worker to also help the patient navigate their options.

"The Tennessee Valley evaluates patients quickly and gets these treatments available to them as quickly as possible and I will say that probably our center can do this treatment often faster than the Community because of the infrastructure that we have available which is already in place for our Veterans," said Sengsayadeth. "We are very receptive to inquiries about patients, so if a VA provider reaches out to us we respond very quickly to getting their questions answered."

VA medical providers seeking information about CAR T may contact the Nashville VA Medical Center's Oncology Service.

Veterans
ONCOLOGY

Aiming for the Moon(shot): Advancing Precision Oncology for Veterans

Dr. Carolyn Clancy, VHA Assistant Under Secretary for Health for Discovery, Education & Affiliate Networks (DEAN) and Dr. Michael Kelley, Executive Director, VA National Oncology Program (NOP), U.S. Department of Veterans Affairs

Every year, the Department of Veterans Affairs (VA) becomes a lifeline for approximately 500,000 cancer patients, guiding them through the entire spectrum of care, from screening to survivorship. Of the roughly 45,000 new cancer diagnoses in VA annually, around 25% are classified as rare cancers. Precision oncology, which enables physicians to better select cancer treatment strategies for individual patients, is a critical part of VA's approach to cancer care, including rare cancers. This means that oncologists at VA use molecular testing — which analyzes a patient's genomic profile — to determine a Veteran's cancer prognosis and the best course of treatment more accurately.

VA utilizes population-wide data, collected through cancer registries, on cancer recurrences and metastatic cancer development. These invaluable data serve as the foundation for informed decision-making within cancer care at VA. By linking these data points to patient characteristics, tumor profiles, treatments, and clinical outcomes, VA develops comprehensive data tools that support clinical needs and research priorities. Since genetic mutations are commonly found in many cancers, precision oncology is of paramount importance. Both inherited and acquired genetic variations significantly impact the effectiveness of anti-cancer drugs, reinforcing the necessity of precision oncology approaches.

In response to the Cancer Moonshot initiative first launched in 2016, VA established the National Precision Oncology Program (NPOP), marking a pivotal milestone in VA cancer care. To date, over 38,000 Veterans have benefited from care guided by molecular testing through NPOP. Further, more than 52,000 molecular tests have been ordered since the program's launch. With a scope that initially began as a focus on metastatic lung cancer, the program has expanded to cover all rare cancers, lung cancers, pancreatic cancers, advanced cholangiocarcinoma, bladder cancers, and other advanced solid tumors. Through NPOP, healthcare providers have access to the most appropriate molecular testing, allowing providers to discover mutations that may have targeted therapies. This approach empowers providers to design treatment plans that best align with the needs of the Veteran.

Dr. Carolyn Clancy, VHA Assistant Under Secretary for Health for Discovery, Education & Affiliate Networks (DEAN). *Photo courtesy of VHA*

NPOP utilizes its molecular testing database to develop innovative clinical decision support tools. These resources play a key role in guiding treatment decisions for Veterans, providing crucial information for families to understand potential risks, determining program requirements, and supporting research endeavors. As clinical guidelines and therapies evolve, NPOP re-analyzes the Veteran database to identify any newly available treatments or approaches. This dynamic analysis allows clinicians to continually evaluate and adjust treatment strategies accordingly.

VA's unique advantage lies in the financial accessibility of genomic testing for Veterans, unlike their civilian counterparts.

Dr. Michael Kelley, Executive Director, VA National Oncology Program (NOP). *Photo courtesy of VHA*

Precision oncology generates extensive complex genomic and molecular data that demands expertise in molecular biology, genomics, and specialized bioinformatics tools for interpretation and application in patient care. VA clinicians must effectively communicate the significance of this data to patients, considering that Veterans often have complex social environments involving family members and caregivers throughout their cancer journey.

Precision oncology is one of the many ways VA is at the forefront of cancer innovation, providing best-in-class cancer care. Additionally, the utilization of immunotherapy serves as another notable avenue in this pursuit. VA is increasingly adopting CAR-T therapy, also known as chimeric antigen receptor T-cell therapy, as a significant form of cancer treatment that harnesses the immune system to attack cancer. The process begins by extracting T-cells from the patient's blood. In the laboratory, the T-cells are genetically engineered to express a special receptor called a chimeric antigen receptor (CAR) that recognizes and binds to a specific protein found on the surface of cancer cells. Once the CAR T-cells are multiplied in large numbers, they are reintroduced into the patient's body through infusion. CAR T-cell therapy has shown promise in the treatment of certain blood cancers and is also being explored for its application for other types of cancer.

CAR T-cell therapies are currently tailored individually to each Veteran. These therapies are customized by collecting the patient's own T-cells and modifying them in the laboratory to express CARs on their surface. The CARs enable the T-cells to recognize and target specific proteins, known as antigens, present on the cancer cells.

Since 2017, the Food and Drug Administration (FDA) has approved six CAR T-cell therapies, all of which are specifically indicated for the treatment of blood cancers such as lymphomas, a certain form of leukemia, and, most recently, multiple myeloma. These therapies are available to Veterans at the VA Tennessee Valley (Nashville VA) Medical Center or at community partner sites. In addition, through a collaboration with the National Cancer Institute, investigational T-cell immunotherapy is available to many Veterans with various other types of cancers at the National Institutes of Health Clinical Center.

Also relevant to the future of cancer care at VA are the development of Bi-specific T-cell Engagers or BiTEs. Like CAR-T therapy, BiTEs are a form of immune therapy. BiTEs are injected or infused treatments that stimulate T-cells to attack cancer cells, but BiTEs do not require the T-cells to be removed from the patient and modified in the laboratory. Compared to CAR-T therapy, BiTEs are designed to be administered more easily and with less clinical infrastructure.

The FDA has approved BiTEs for lymphomas, a certain form of leukemia, multiple myeloma, and uveal melanoma. VA facilities that have the appropriate clinical infrastructure can treat Veterans with these cancers who meet the indications with these innovative immune therapy options.

Ultimately, improved genomic profiling accuracy enables clinicians to identify the most appropriate treatment options tailored to the individual. The more widespread molecular testing is, the more Veterans can have their care include the most effective treatments. To that end, VA is looking ahead for the most relevant pathways of expanding access to treatments like CAR T-cell and BiTES therapies. With successful and ongoing partnerships with places like the National Institutes of Health Clinical Center, the best treatment for a Veteran is never far off.

Precision oncology and cancer research are closely intertwined fields that rely on each other for progress. Precision oncology leverages insights from cancer research to develop novel therapies, while cancer research relies on precision oncology to validate discoveries and translate them into clinical practice. This symbiotic relationship reflects VA's learning health care model and dedication to addressing Veterans' needs.

Veterans
ONCOLOGY

Increasing Veteran Access to Colon Cancer Screenings

By Madison Coffey, Communications officer, VHA Innovation Ecosystem

Colon cancer is the second leading cause of cancer death in America. Dr. Jason Dominitz, executive director of VA's National Gastroenterology and Hepatology Program, knows that it doesn't need to be. According to Dominitz, the majority of colon cancers can be cured if detected early.

Most colon cancer screenings in VA are done with either colonoscopy or a fecal immunochemical test (FIT). FIT is a non-invasive test where Veterans collect a tiny stool sample in the comfort of their own home and mail it back to VA for analysis. However, hundreds of thousands of Veterans are unscreened or behind on screenings, and the COVID-19 pandemic only increased the problem.

"Routine colonoscopies came to halt in March 2020 and have not yet fully recovered," said Dominitz. "We also can't hand out FIT kits during telemedicine visits," he explained, highlighting one of the major issues facing Veterans and their physicians.

Fortunately, there was a solution: Mailed FIT kits for Veterans to use in their homes.

An innovative approach to colon cancer screenings

Dominitz trained at Durham VA in health services research and now works at Seattle VA. He was exposed to the idea of Mailed FIT after Kaiser Permanente successfully rolled out a similar program.

He partnered with staff from VISN 21 and other VA program offices, such as Primary Care, Laboratory Medicine and the National Center for Health Promotion and Disease Prevention. This approach, while not replacing current screening efforts, makes screening easy while simultaneously increasing colonoscopy access for Veterans with the highest risk for colon cancer.

Dr. Jason Dominitz. *Photo courtesy of the U.S. Department of Veterans Affairs*

"Mailed FIT separates colon cancer screening from the in-person visit and meets the needs for Veterans who don't come in on a regular or frequent basis," Dominitz said. "It also allows us to transition from an opportunistic approach to screening… where we have to wait for the Veteran to come in… to an organized approach, ensuring more Veterans have access."

Increasing access on a national scale

With help from VHA Diffusion of Excellence and the VHA Shark Tank Competition, Mailed FIT is now ramping up to serve Veterans across the nation.

Shark Tank identifies frontline employee innovations that promote positive outcomes and improved experiences for Veterans, employees, caregivers and VHA community.

"It's not been an easy process and we couldn't do it without a wonderful team of dedicated professionals, including Chris Moore," said Dominitz. Moore is a health systems specialist from VISN 21. "The fact that there is the ability within VA to take care of a problem on a national, enterprise-level is relatively unique in the US health care system."

Want to learn more about Mailed FIT and colorectal cancer screening at VA? You can explore their webpage on the Diffusion Marketplace to learn more about the techniques and spread of this rapidly growing innovation.

Innovation Heroes is a recurring series from the VHA Innovation Ecosystem, focusing on VA employees who are driving innovation forward and improving the lives of Veterans and fellow VA employees.

va.gov

CPG

Veteran's Blood Cancer Treated through TeleOncology

By Courtney Franchio is a program manager with VA's National Oncology Program

When Air Force Veteran Jackson Gerrard was diagnosed with myelodysplastic syndrome he was overwhelmed. "When I was first told, it was like running into a brick wall," said Gerrard. "Thoughts went running through my head and I thought, what are the consequences?".

The steadfast care of Gerrard's oncologist, Dr. Thomas Rodgers at the Durham VA Health Care System, provides him comfort through the stress of treatment. Gerrard is currently receiving chemotherapy for his cancer. "You need to have faith and trust in your doctor," said Gerrard. The high-quality care is what Gerrard expected from VA, but the way he receives it is a bit different than the average oncology consult.

Increasing access to cancer care through TeleOncology
Veterans enrolled in VHA are two and a half times more likely to live in rural areas. These regions face significant disparities in health care access, including for cancer. An American Society of Clinical Oncology (ASCO) workforce report notes that 66% of rural counties have no oncologist. According to the report, 4 in 10 Americans living in rural areas who have or had cancer say there are no cancer specialists near their home.

VA's National Oncology Program's National TeleOncology Program (NTO) is working to be part of the solution. Thanks to NTO, Veterans can connect with cancer specialists without a long drive, saving time and expense. Around the country, Veterans connect with NTO in two different ways: through CVT, like Gerrard, or via an internet-connected device in their own home through VA Video Connect (VVC).

TeleOncology benefits more than the Veterans who use the service. The oncologists who provide the care find purpose in serving our nation's heroes all over the country. "Providing care to patients like Mr. Gerrard is why I became an oncologist," said Dr. Rodgers. "With TeleOncology, I have the opportunity to reach Veterans all over the country. I never imagined having this level of impact when I first began my career. I am able to serve people who would otherwise have very limited options."

va.gov

CPG

Veterans
ONCOLOGY

VA's Clinical Cancer Genetics Services: Unlocking Cancer Genetics to Empower Veterans and Their Families

By Carolyn Menendez, MD, FACS, Director, Clinical Cancer Genetics Services, Veterans Health Administration

Health care providers are constantly seeking innovative ways to enhance the care we deliver to our patients. VA's Clinical Cancer Genetics Service, launched in spring of 2023, provides accessible, world-class cancer genetic counseling to Veterans across the nation. This innovative program makes hereditary and germline genetic testing available to Veterans predisposed to cancer based on their genetic profiles.

At its core, CCGS aims to assess hereditary cancer conditions and personalize cancer risks for our Veterans. By leveraging the power of genetic profiles, this pioneering initiative offers Veterans predisposed to cancer the opportunity to undergo hereditary and germline genetic testing. Through this process, we can identify effective treatments tailored to each Veteran's unique genetic background, paving the way for improved rates of detection, diagnosis and treatment outcomes.

A key component of CCGS is its commitment to supporting both providers and Veterans in making personalized cancer treatment decisions. By facilitating germline genetic testing when appropriate and aiding in results interpretation, CCGS empowers providers to make informed choices that align with the individual needs of each Veteran. Furthermore, this comprehensive service equips providers with the knowledge and resources necessary to navigate the complex emotional and logistical implications of the genetic information presented to patients. With CCGS by their side, Veterans receive not only cutting-edge care for their cancer diagnoses but also the unwavering support essential to their well-being.

Another strength of CCGS lies in its ability to streamline the delivery of precision oncology. Through the infrastructure provided by VA, health care providers can dedicate their time and energy to the most crucial aspect of their profession – caring for the individual Veteran. With less time spent staying current with advancements in precision oncology, managing testing logistics and coordinating data management, providers can fully focus on tailoring treatment plans that offer the greatest potential for success. CCGS is a testament to VA's commitment to optimizing health care delivery for our Veterans.

The backbone of the CCGS program is hereditary cancer counseling, which encompasses both pre-test and post-test counseling. Providers equipped with a deep understanding of cancer genetics conduct thorough assessments of risk, education and counseling, laying the foundation for informed and shared decision-making. Genetic testing, if desired by the Veteran after appropriate counseling and consent, is performed as part of this comprehensive process. Post-test counseling ensures seamless care coordination and annual follow-ups, safeguarding Veterans' ongoing health and well-being. By remaining up to date with guidelines and updated testing as indicated, CCGS strives to provide the best possible care to our Veterans, even as their needs evolve. The added benefit to the Veteran who receives hereditary cancer counseling is the ability to take that information and education back to their family, who can, in turn, develop a thoughtful and informed cancer screening and surveillance plan with their own providers.

As we strive to uphold the standard of care for our Veterans, CCGS has also set targeted wait times, prioritizing timely access to vital services. By providing expedited appointments within a week for urgent cases and routine appointments within a month, VA is addressing the pressing needs of Veterans throughout their cancer journeys. In the survivorship phase, CCGS continues to be an unwavering source of support, providing comprehensive counseling that extends beyond initial diagnosis and treatment.

To further enhance the impact of the CCGS program, multiple high priority initiatives have been implemented, including pathways for collaboration with diverse providers and the provision of educational opportunities. By fostering collaboration and offering resources, VA is creating a network of expertise that works diligently to make sure Veterans receive the highest quality genetic counseling services and education around their specific mutations. Moreover, CCGS engages in research endeavors, pushing the boundaries of cancer genetics and paving the way for novel advancements in the field. This commitment to knowledge generation empowers VA to remain at the forefront of precision medicine.

CCGS is a testament to the transformative power of precision medicine in the realm of Veterans' health care, but more specifically, cancer care. By providing cancer genetic counseling that results in personalized treatment options, screening, and surveillance plans, CCGS is transforming the way we think about cancer care for Veterans. With more streamlined processes, targeted wait times, and our commitment to excellence, the program represents the high standard of care we aim to deliver across VA.

Veterans
ONCOLOGY

VA Launches Largest Ever Liver Cancer Screening Study

Trial will recruit 4,700 Veterans with cirrhosis from 47 VA medical centers

By Hans Petersen, VHA NEWS editor and Air Force Veteran

This year the VA will embark on a study to determine the most effective screening technique for liver cancer, a deadly cancer that can be cured if caught early. This is the largest clinical trial in history related to liver cancer screening.

The study will determine whether detecting liver cancer earlier with abbreviated MRI can make a difference for patients' risk of death. The study is better known as PREMIUM—PREventing Liver Cancer Mortality through Imaging with Ultrasound vs. MRI. The trial's objective is to determine whether screening with abbreviated magnetic resonance imaging is better than ultrasound.

Ultrasound is the current standard of care in reducing liver cancer deaths in Veterans.

"This type of large, multicenter trial could only be conducted in VA, the largest integrated health care system in the country," said Dr. Carolyn M. Clancy, the assistant under secretary of Health for Discovery, Education and Affiliate Networks. "VA has a high prevalence of patients with advanced liver disease who could benefit from screening for liver cancer. The study has the potential to change clinical practice for tens of thousands of Veterans and non-Veterans alike. It could answer key questions about liver cancer screening that have been debated for more than three decades."

This effort is a part of the Biden-Harris Administration's Cancer Moonshot to care for those with cancer and end cancer as we know it. Liver cancer is the sixth leading cause of cancer-related death in the U.S. The PREMIUM trial will recruit 4,700 Veterans with cirrhosis (liver scarring caused by several different conditions) from 47 VA medical centers.

VA is the largest health care provider in the U.S. for patients with cirrhosis, a leading risk factor for liver cancer. Enrollment will begin in 2023 and follow participants over an 8-year period. This is the first clinical trial to compare the two screening methods (Ultrasound and MRI) for effect on patient death.

Ultrasound quality can vary

Ultrasound has long been the standard of care for liver cancer screening. Its quality can vary significantly depending on the person doing the procedure and the body type of the patient. MRI is the gold standard for detecting liver cancer once a mass is detected on ultrasound. Abbreviated MRI, a much shorter procedure than standard MRI, has shown promise in detecting liver cancer at early stages.

Photo courtesy of the National Library of Medicine

The trial is led by co-chairs Dr. George Ioannou of Puget Sound VA and Dr. Tamar Taddei of Connecticut VA, sponsored by the VA Cooperative Studies Program and coordinated by the West Haven CSP Coordinating Center.

va.gov

Veterans
PODIATRY

The Prevention of Amputations in Veterans Everywhere (PAVE) Program's 30th Anniversary

By Thomas S. Adams III, Publisher of Armed Forces Medicine

Diabetes rates are higher now than ever before, as stated by the Centers for Disease Control and Prevention. 37.3 million Americans, which is about 1 in 10, have diabetes and about 1 in 5 people with diabetes don't know they have it. Moreover, 96 million American adults have prediabetes, and in 2019 alone approximately 1.4 million new cases of type 2 diabetes increased for all racial and ethnic minority groups.

The CDC's National Diabetes Statistics Report provides information on the prevalence (existing cases) and incidence (new cases) of diabetes and prediabetes, risk factors for health complications from diabetes, and diabetes-related deaths and costs, which are estimated at $327 billion in medical costs and lost work and wages each year. People with diagnosed diabetes have more than twice the average medical costs that people without diabetes have.

The impact of diabetes on other health issues has also risen and includes high blood pressure, heart disease, chronic kidney disease, and the very serious risk of limb amputation as a result of diabetic related foot ulcers.

Veterans have even higher rates of both type 1 and type 2 diabetes than the general population, which are equally both risk factors for diabetic foot ulcers that can lead to amputation, so the VA has made it one of their top priorities to provide awareness, education, and even the most highly advanced technologies to help prevent wounds from forming even before they are visible. This has become one of the most valuable tools in preventing limb loss that so often is the result of an infected wound.

The VA's Prevention of Amputations in Veterans program is the longest running prevention program in the United States, and this year marks its 30th anniversary. Also known as "PAVE", this national program specifically educates and empowers VHA medical professionals with the resources they need to help Veterans prevent diabetic foot ulcers, which is ultimately the best way to also prevent amputations.

The VHA sees about 1.5 million Veteran patients each year at their podiatry clinics across the nation where PAVE is headquartered, and leading this national program for over 25 years is Dr. Jeffrey Robbins, DPM, the Podiatric Medical Director for VHA's Podiatry Services. His commitment to this directive for so many years has provided a perspective on how urgent the need is to continue bringing attention to this cause now more than ever, and to use new technologies as a part of the initiative to gain a preventative medicine approach that were previously unavailable until recently.

"VA's podiatry operations have existed for more than 30 years. The amputation program was established by a Public Law in 1992 where Congress directed the VA to identify patients who had an amputation or were at risk of amputation as a special disability group", stated Dr. Robbins, "Since then, there have been eight updates to the national policy directive, which has allowed us to look at the program and change it based on new science, new standards of care, new innovations and our experiences".

"While I feel that VA has the best amputation prevention program, and is the benchmark for amputation prevention in the United States, we are still amputating too many limbs. There are still too many patients that are suffering an amputation that we think we can prevent if detected and treated early enough", stated Dr. Robbins.

Jeffery Robbins, DPM. *Photo courtesy of VHA*

The promise of achieving this has advanced by leaps and bounds now that computer guided sensory technology can be used to measure temperature in a diabetic patient's feet, which can reveal the coming of an ulcer before it actually occurs, therefore providing ample warning time for the individual and their caregivers (via telehealth) to intervene before the wound occurs instead of treating it after. Having this early detection advantage provides an opportunity to ensure the patient is advised to reduce their activity, stay off of their feet as much as possible, plus encourage them to wear their diabetic shoes when they must. The initial research on these sensory devices has been able to identify a wound five weeks before it actually appears.

Graphic courtesy of VHA

Many of the key points to preventing DFU wounds are still the same with regard to recommendations like smoking cessation, reducing excessive weight, self-care foot behaviors, etc., and VHA education continues to provide these key point in posters and other presentations available to all category of medical professionals. Things like "Wash you feet everyday" and "Never walk barefooted" are reinforced with current education initiatives, but the recommendation for inspecting your feet for ulcers, blisters, or any sort of wounds has been updated from visual inspection to highly advanced computer guided detection.

Sensory neuropathy is a very important condition to consider with diabetic patients, and often they won't feel the onset of a blister or even know they have one until they see evidence such as blood on their socks. By then it a very difficult task to heal and often cannot be. Even when wound treatment is successful, the tissues around the area that have healed are even more vulnerable than they were prior to the wound, and therefore more likely to develop a wound again. A patient with diabetes who has an ulcer that heals has a 42% chance of dying within 5 years. That compares with a 22% 5-year mortality rate for breast cancer and an 8% chance for prostate cancer. And for those that do undergo amputation, this rate goes up to approximately 48%.

In order to be seen in the PAVE clinic, a Veteran must be referred by their primary care physician. This is why it is so important to educate all providers from primary to all related specialty including endocrinology, podiatry, cardiology, and nephrology, to stay connected with one another in providing essential recommendation and care to Veterans at risk for amputation. And while tremendous progress has been made, now more than ever VHA continues leading the way by remaining committed more now than ever to all Veterans by providing everything they need to stay healthy and lead meaningful, happy, and productive lives.

Photo courtesy of the NIH's Eunice Kennedy Shriver National Institute of Child Health and Human Development.

For more information about Anatomical Limb Loss Prevention please visit the "Center for Limb Loss and MoBility" website:

https://www.amputation.research.va.gov

CPG

Veterans
RURAL HEALTH

Expanding Access and Continuity: Close to Me Revolutionizes Infusion Care for Veterans

By Vida Passero, MD, MBA, Chief Medical Officer for VA National TeleOncology; and Jenna Shields, PharmD, BCOP, Pharmacy Program Manager, VA National TeleOncology

Many Veterans face barriers in accessing infusion treatments at VA Medical Centers. Factors such as travel, distance or rurality, parking, time constraints, and lack of caregiver support can hinder their ability to attend appointments and follow prescribed anti-cancer therapy regimens. Additionally, Community-Based Outpatient Clinics and Health Care Centers often have limited space and resources for infusion care, making them less viable options for Veterans seeking alternative treatment sites.

To resolve these challenges, VA launched the Close to Me Infusion Care Delivery service in 2021. The service seeks to reduce travel time for Veterans, improve VA care continuity, and increase access points to Veteran-centric care by providing anti-cancer therapy services at three new types of locations: CBOCs, mobile infusion units and patient homes. Close to Me also promotes accessibility for Veterans while seamlessly integrating new staff responsibilities with current workflows to mitigate clinical disruptions.
One of the primary advantages of the Close to Me service is its ability to reduce travel time, which is especially significant as Veterans are two-and-a-half times more likely to live in rural areas. Long journeys to VAMCs can be burdensome and may result in missed appointments or delays in receiving critical treatment. Close to Me brings infusion therapy closer to where Veterans live, ensuring they can access care without the added stress of extensive travel. By expanding the service to CBOCs, mobile infusion units and patient homes, VA is creating convenient access points that cater to the unique needs of each Veteran. Close to Me has already saved

Graphic courtesy of VHA

an astounding 53,660 miles of travel for Veterans across CBOC sites.

Moreover, Close to Me aims to improve VA care continuity. By offering infusion services at various locations, Veterans can continue their treatment without disruptions caused by scheduling conflicts or logistical challenges. This ensures that Veterans receive consistent and uninterrupted care, which is crucial for their overall well-being and successful management of their health conditions. The inclusion of CBOCs as care sites in this initiative is particularly noteworthy — CBOCs are crucial components of VA's healthcare system, providing accessible care options for Veterans in their local communities.

The integration of Close to Me into existing workflows is a testament to VA's commitment to minimizing clinical disruptions. The service has been designed to seamlessly fit into the current infrastructure and operations of VA facilities. By carefully integrating new staff responsibilities, VA ensures that the implementation of Close to Me does not compromise the quality or efficiency of other essential healthcare services. This demonstrates a thoughtful approach to innovation that prioritizes the needs of Veterans while maintaining high standards of care.

The service has quickly expanded. As part of the program, 12 VA facilities across the country were selected this year to implement seven CBOC care models, three home care models and two clinic-build facilities. By incorporating the Close to Me Infusion Care Delivery service, these facilities are taking proactive steps to address the barriers that hinder Veterans from receiving necessary infusion treatments.

Since the groundbreaking launch of Close to Me, its impact has been nothing less than extraordinary in a remarkably brief period. More than 500 Veterans have enrolled in the service, resulting in 768 treatment encounters. Notably, zero medical emergencies have occurred during Close to Me infusion treatments, and adherence to treatment is nearly 100 percent.

Cancer care often represents financial toxicity, and Close to Me is a catalyst for significant cost savings. With a staggering avoidance of $1,086,407.60 in medication costs, this service is not only transforming how cancer care is delivered, but also eases the potential financial burden for our Veterans.

As Close to Me expands across the country, it will continue to make a significant impact on Veterans' lives by extending the reach of specialized care to a broader population, ultimately improving their health outcomes and overall wellbeing.

CPG

Veterans
SAFETY

Veterans Health Administration Safe Patient Handling and Mobility Programs (SPHM)

Interview with Dr. Tony Hilton DrPH, RN, MSN, FNP, CRRN, Jill Earwood MSN-HCQ, RN, CSPHP, and Timothy Buchanan MSN, RN, NPD-BC, CSPHP

By Thomas S. Adams III, Publisher of Armed Forces Medicine

The Veterans Health Administration (VHA) is committed to becoming a High Reliability Organization (HRO). I interviewed VHA's Safe Patient Handling and Mobility Program Director Dr. Tony Hilton, Western North Carolina VA Performance and Quality Nurse Manager Jill Earwood, and Veterans Integrated Network 8 Patient Safety Officer Timothy Buchanan about the efforts VHA is taken to commit zero harm and prevent never events at VA medical facilities.

Thank you so much for agreeing to sit down with me for this interview. What does HRO mean and why is it so important to VA?

Hilton: Thank you for having us, Tom. We're happy to share with our health community what VA is doing for Veterans to become a HRO and how HRO values have been embedded within our care around the clock. HRO, means zero harm for all, and never events fit perfectly within this.

When we talk about never events, there are so many components to this that we won't be able to cover in this short period of time, but we can highlight some things that will bring some attention to what we are doing to contribute to prevent them.

I've also invited Jill Earwood to join us, and she will speak on the facility side of quality management, and Timothy Buchanan who is a patient safety-handling officer with many years of experience and very broad view of never events.

Dr. Tony Hilton, DrPH, RN, MSN, FNP, CRRN, VHA SPHM National Program Manager. *Photo courtesy of VHA*

So what are never events? Are they the same as medical errors?

Hilton: Medical errors and never events are somewhat different topics, and there are some conditions that are considered routine such as catheter acquired infections which are tied to mobilizing patients, because when you keep them in bed they are going to have all of these problems. Instead of being bed bound for instance, helping them to be mobile will help prevent pressure injuries. You have to learn how to implement safe patient technologies so that they are programmed and actually functioning correctly, and prevent situations such as CAUTI, which is catheter-associated urinary tract infections that are directly tied to immobility in some respects. I would like to invite Jill Earwood to speak more about this from the facility perspective.

Earwood: So at the facility level, areas of focus for sure are fall prevention, because we know that one fall can definitely impact a person's life far beyond their hospital stay, and we are very focused on pressure injury prevention because they are painful and also costly, and we are very focused on all healthcare acquired infection prevention, and what people may not understand is that mobility is key in both pressure injury, falls, and healthcare acquired infection prevention.

As a person reconditions, because of their mobility, they are at a much higher risk to develop any one of these conditions, and many times multiple conditions because they are immobile. So they are compromised in their immobility, which leads to all of these complications, and we do a lot of things to help prevent healthcare acquired conditions, especially never events, but the safe patient handling and mobility program at the facility level can play a key role in intervention by giving staff the opportunity to mobilize patients, safely for both the patient and the staff, and with the highest level of technology meaning that patients who may not be able to walk being able to because the lift and harness can hold them up while they walk, whereas without that it would have taken manpower and that would put a much higher risk to both the patient and the staff.

When we do mobilize, our program has a process to screen these individuals to make sure we know which piece of equipment fits their needs the best. Implementing programs like this across the facility has definitely had a great impact on our outcomes.

We've seen significant decrease in falls and injuries, which is really where we want to focus, we've seen significant decrease in hospital acquired infections, specifically ventilator associated conditions, the breathing machines and respirators, and we've also see significant decrease in catheter associated urinary tract infections because, as you mobilize people they become less dependent on the stuff we use to keep them going, so we are able to get those catheters out and decrease the chance of infection. And pressure injuries, when people aren't sitting on those products or devices that cause pressure, they have less skin integrity issues as a result of this safe mobility that we are able to provide.

With regard to this technology and equipment, has this resulted in a collaborative effort between the entire network of clinicians to be able to communicate with the developers as to what you need them to create, or have the developers brought this technology to you for implementation?

Hilton: This was with intention, we have a story that started about twenty years ago, and when we found out that half the staff injuries were a direct result of manually handling patients. While we were doing this we also discovered that patients were also at risk for injuries, but we spent a lot of time looking at decreasing the number of staff injuries because at most facilities, that was the highest incident related to worker's compensation, and we have seen the change that has occurred once we implemented the program, where the number of injuries to staff has dropped by fifty percent over 10 years. So all of this happened by intention, none of it was by accident, and the private sector started looking at what the VA was doing and saw the outcomes, then started to adapt these procedures within their own plan.

The movement now is that we are not just looking at staff injuries but also looking at the negative effects of never events that safe patient handling can minimize. When you look at HRO, zero harm for all, that's what we want, zero harm to the patient and the staff. A lot of places look at it as, let's protect the patient and forget about the staff, but we include both within our directive and manuals for protection. Tim, please share your perspective on this.

Buchanan: Thank you for letting me be a part of this, like Jill and Tony before she became the national program manager, I managed a local program for the VA in St. Louis. I've been with the VA healthcare system since 2006, and have been at the VISN now for a little over a year, but for the entire time that I've been in safe patient handling I've also been in adjunct nursing faculty, and to this day I still am. Within the community it is a very different discussion, and different access to technology.

For instance, when I want to get patients out of bed and ask students how to access mobility, they are not given near as much access to technology as we are in the VA. And like Tony said, it was very intentional around 2010, thankfully we had some visionary leaders that did a couple of things. They went and asked Congress for over $110 million to do two things, one to put ceiling lifts primarily in patient areas but also in some specialty care outpatient areas — we really expanded on that conversation in outlying areas — and also put a full time person at each facility, which at the time was only part time but now it's full time, in the directive.

And what that's done is different than the community: for the most part, it has allowed us to move our program forward and achieved some of the outcomes that Tony has mentioned in reducing injuries over the last ten years by fifty percent, no other healthcare system can say that because they don't have near the amount of technology that we do.

I now wear another hat that brings both patient safety and employee safety together, that's in a position of influence with senior leadership because I have all the VA's in Florida and southern Georgia, so anytime I ask for something related to or put a spin on patient safety or employee safety, people listen. And some of those never events that people are really starting to listen for are, fall injuries, both employee related, and patient related, and also some of the other things Tony and Jill mentioned like hospital acquired pressure ulcers.

The hazards of immobility, now we know about it, leaving patients in bed may cost time, it may cost muscle, it may cost money, and we know better so we've got to do better. Thankfully in VA we're getting there but we still have a long way to go.

In my capacity, falls and medications are the two most common events that would potentially not allow a patient to walk out of the hospital. As much as we don't want to say it, patients trust us, and we really need to meet their expectations. You, as a patient, have a higher chance of dying in a hospital than you do anywhere else. Your chance of walking in a hospital and not walking out because you are dead is higher than it would be in a motor vehicle collision, or a shooting, but what I'm getting at is we in healthcare work in a very high risk area.

So some of those safeguards in patient handling and mobility that really affords us to protect both our patients and employees are second to none. It just makes sense, so we've got to spread the message and get others to buy in.

The other thing that we don't necessarily talk about in the VA, but our outside partners do, is insurability and incentives to implement technology and reduce premiums for workman's comp and other insurability. The other thing too that's frustrating is that we've taken legislation now at least seven times to the house floor and it's never gotten past committee, to actually implement a national safe patient handling and mobility law that protects employees and incentivizes hospitals both private and public,

Jill Earwood MSN-HCQ, RN, CSPHP, Performance and Quality Nurse Manager, North Carolina VA. *Photo courtesy of VHA*

profit and not for profit to really say, this is the thing we need to do to optimize care, improve outcomes, and reduce injury for both our staff and our patients.

Let's face it, our healthcare workforce is not getting any younger, it's not increasing in number, and in the United States anyway, our patients especially in VA are getting heavier and they are seeing more health disparities. So it's a big problem, and safe patient handling has a lot of answers to that problem, to help improve the general dynamic of health and well-being, and really focus on the continuum on care in all settings, both inpatient, outpatient, and in the community. We like to say especially for our Vets that mobility is life, or quality of life. We have to get people up safer and sooner, so that they maintain and not loose conditioning and functionality. It really does have the potential because we've seen it improve quality of life and also address psychological, physical, social, spiritually and emotional well-being across the continuum of care.

That's what I love about safe patient handling: it brings all of those things together. The takeaway is, what do healthcare organizations need to do to effect change? You can't change things overnight, and we've seen that because it's taken us ten plus years in the VA; we've actually been doing it since 2006 or a little bit before as Tony said — this pilot study started right here in a nursing home in Florida at the VA.

Audrey Nelson went out and asked for some money and started small, and now look at what it's become today, a shining start and benchmark approach for others to follow. This is really the thing to do; falls are the number one category of patient harm and patient injury, and this program directly affects that.

Hilton: There is something unique about Tim that I want to make sure you know. Tim is retired from the military and this article is directed to the DoD as I understand it, they don't have a safe patient handling program and he can speak to that.

Buchanan: Yes, I can speak about that. My background was in aeromedical evacuation, so if you can think of a way to move a patient out of a war zone in either a fixed wing, rotary wing, or ambulance opportunity vehicles or aircraft, I've done it. Here's what I mean by that, the DoD does not have the protections that our VA staff does. Not only are they put in battlefield conditions, but we're continuing to subject those military men and women to biomechanical stressors because of the unique forces that they lift. They lift from ground to above their head, trying to put a patient onto a plane, or lift a patient off the ground, or squat as they are getting a patient out of a vehicle in tight spaces, not just in a hospital but in austere environment.

So what are we doing to give those DoD staff, the men and women that are working in a military treatment facility, the same protections that our staff at the VA hospitals have? We've got a long way to go, and I think now we are in a position to breach the conversation. The number one budgetary item for the DoD is healthcare; that's what costs the most amount of money when you talk about the budget the military is given every year, so wouldn't you think it would only stand to reason that we really should be having conversation with the DoD about a program that could reduce your bottom line, help your military men and women, and also your other civilian staff that work for you?

Hilton: Yes because this is our audience, and we have really let it slip by not really partnering closely with the DoD, so we are now socializing a bit more with this interview and through articles and the AMSUS conferences, to really partner with our friends in the DoD, although the mission is different we still have to keep our staff and our Veterans and our active duty members safe, and we have a way of doing this.

Now that we are combining our HRO system and electronic health records it's even more critical to have these conversations because now we can document outcomes and track data. Without data, it's hard to convince leaders that there needs to be a change and investment. So this is so critical that we really want to make sure our partners on the DoD side have the support and we're willing to share everything, whatever it takes, at no expense by the way. There are other organizations that will come into your facility and say we'll tell you this, but you have to pay so much money to get it. So I do want them to know they are truly our partners and in this whole process with them.

What about the education to the patients themselves, to help them help themselves by being aware of information to help in their own care? I read about a Veteran that fell at home, and his wife who had a limited amount of training was able to help him, and also teach him some of the principles that he could do to help himself. What might be some of the highlights of this patient education you would like to mention?

Hilton: Yes, I'm glad you mentioned that. Half of the job of safe patient handling success is the staff, but the other half is the patient who has to incorporate into that, and they can't agree to something they don't understand. So their education is so critical. One of the things we have done is develop a national

Timothy Buchanan, MSN, RN, NPD-BC, CSPHP
VISN 8 Patient Safety Officer/Safe Patient Handling and Mobility Executive Sponsor.
Photo courtesy of VHA

technical advisory group called Patient Experience. And in VA years ago one of the first things we did was put together a PowerPoint presentation specifically addressing the risks a patient has when they come into the hospital, explaining the technology they are using and why they are using it, making it an attractive way of talking about it, and today now we are even deeper into it.

We now have nine individual clips specifically directed towards patients about what they can expect from safe patient handling, and Tim is one of the actors in this series. These are also now available in Spanish versions, so our goal is when they leave the military and are enrolled into the VA program, part of their well-do program is that they understand safe patient handling. And what this does, not only in the hospital setting, but also in the home and community.

You need the same resources to protect your family members once you leave the hospital, because you are not with us forever you are passing through, and we make sure we don't make you more disabled while you are passing through. We want you to have life, and life happens outside of the hospital, quality of life that's where our focus is, we want to prevent you from falling at home for instance. So there are very specific things that we do in safe patient handling that we teach our patients and their families and technologies that apply to help them or prevent putting them at risk of falls that we can help with.

Just think about this, if a patient falls at home — and this happens a lot, suppose they call 911 and when EMT shows up the whole neighborhood knows somebody is in trouble, there goes your privacy, and when the ambulance comes it costs thousands of dollars that could have paid for your technology and on and on. They could have had a broken hip, they are ending up in surgery and all of these trajectories that happen when you are not up front with them about these never events that we can prevent.

So we have programs in place that give patients direct access to education and materials, and we're in the process of trying to get them to respond about their experiences so we can really learn from them and how we can improve our education from their perspective.

I can see where this would not only improve their physical health but certainly also their mental health and attitude, which also plays a big part in their recovery. I had a very dear friend that suffered a spinal injury and was in a wheelchair, and one of the most important things to him was being able to get out and not be confined to his home. His wheelchair and his van were essential to his mental health, despite the fact that he battled pressure sores and infections that ultimately took his life, his quality of life was elevated by his ability to go out and see friends and family that lifted his spirits. This education is empowering patients in the same way.

Hilton: It is very unusual to have one program that touches on so many aspects of a patient's well-being and never events. When you have patients that are homebound, I think their suicide rates are higher, so it's critical that we get them back out into the community, so they can go out to dinner, or go walk your daughter down the aisle, all of the things that are meaningful to these patients, so I think we have a very powerful message in safe patient handling that we can affect so many different components of what our Veterans are experiencing.

One thing I can say is that this has become law in many different countries such as England and Canada, and I believe also in Australia, but we in the United States have not made it a law yet. Staff who actually mishandle patents get fired if they are not using the technology, so they take it very seriously. We want to build a culture that says we have the ability to change this trajectory, and we need the partnership of the DoD.

Safe Patient Handling affects our physicians, and all of our nurses are the frontline everyday. They are the ones who see never events more than any other person involved, and that's why it is so important to address from a nursing perspective.

Would you say that this technology also reduces the amount of nurses or caregivers required for patients?

Hilton: Yes, this has been another advantage of technology with safe patient handling. When properly implemented it reduces the required amount of manpower and increases patient satisfaction, reduction in claims for staff injuries happens, and so many more aspects are improved that we want to partner with our DoD members and community partners to help everyone involved.

We are also now using our electronic health records system to understand data that also provides opportunities for improvement by understanding as much as we can about every patient.

For more information about the VHA's safe patient handling and mobility program visit www.publichealth.va.gov/employeehealth/patient-handling/index.asp

Veterans
TECHNOLOGY

VA Telehealth Services Celebrates 20 Years of Advancing Veteran Care

By VA Office of Connected Care

This May marked 20 years since the launch of the VA Telehealth Services program office. Over the past two decades, millions of Veterans have used telehealth to access VA health care — and for many different reasons.

Rosie Glenn, a Navy Veteran living in Minnesota, says video visits help her save precious time in her busy days. She is the primary caregiver and home-school teacher for her son, who has a disability.

"It's awesome because now I have more free time in my day," Glenn said. "I don't know why I didn't start using telehealth sooner."

Air Force Veteran Jackson Gerrard used telehealth to beat back a rare form of blood cancer. There are few specialists near Gerrard's West Virginia home who can treat him — so he meets over video with his North Carolina-based VA oncologist, Dr. Thomas Rodgers.

Photo courtesy of VHA

"Getting a tremendous diagnosis like cancer and then being told that you have to go, get in your car, take your family and drive 300 miles, it's just impossible," Dr. Rodgers said. "To meet Veterans where they are for their care is one of the amazing things about [telehealth]."

Michael Novielli even credits VA telehealth with saving his life. The Marine Veteran and New York native has used telehealth for almost a decade to monitor his blood pressure. When he developed a dangerous case of pneumonia, it was his telehealth nurse, Marjorie Rogers, who first noticed the symptoms and urged him to go to the emergency room.

"Marjorie saved my life," Novielli said. "If I wasn't on the telehealth, I would have stayed home with the pneumonia, and who knows what would have happened."

Millions of Veterans served

The VA's telehealth program was started by then-VA Under Secretary Robert Roswell in 2003. A successful pilot of the Home Telehealth program in VISN 8 helped lay the foundation for the national program and ultimately, the expansion of VA Telehealth Services to include multiple telehealth modalities.

In fiscal 2022, more than 2.3 million Veterans took part in over 11 million episodes of care through telehealth.

The use of these services surged at the height of the COVID-19 pandemic. Over the past three years, the number of video visits to Veterans' homes has increased by 3,000%.

Rita Kobb, a nurse practitioner who serves as the VA Telehealth Training and Outreach Lead, was one of the national telehealth office's original employees.

"We've grown to be the No. 1 provider of telehealth in the United States and one of the largest providers of it in the entire world," Kobb said. "People look to us, from outside the agency, as an expert and as somebody to model their programs after."

So what's next for VA telehealth? Dr. Kevin Galpin, executive director of VA Telehealth Services, said the VA telehealth program will continue striving to connect Veterans to VA's trusted care, anytime and anywhere.

"Our top priority is providing Veterans with VA's world class health care when and where they need us," Galpin said. "That means delivering health care without walls — and seamlessly blending the best of virtual and in-person care into a great and therapeutic health care experience for our nations Veterans."

Learn more by visiting telehealth.va.gov.

Veterans
WOMEN'S HEALTH

Honoring 100 Years of Women Veteran Health Care at VA

By VA Office of Women's Health

Since 1923, the Department of Veterans Affairs (VA) has played a crucial role in providing comprehensive health care services to women Veterans. From its humble beginnings one hundred years ago to the present day, VA has continuously evolved and adapted to meet the growing and unique health care needs of women who have served in the military.

Pioneering women's health services

On September 14, 1923, the National Home for Disabled Volunteer Soldiers (Veteran Health Administration's origins) approved the first hospital spaces for women Veterans. Hospitalization and medical care for women who served as Army or Navy nurses during World War I were first authorized as part of Public Law 65-326 on March 3, 1919, just a few months after the Armistice.

At the time, approximately 52,000 women Veterans lived in America, 25% of whom were disabled and therefore eligible for care.


Welcome War Sufferers

The first unit of disabled women to enter a government hospital in the west was received at the Veterans Hospital near Livermore yesterday. Left to right (above) Mrs. Jessie M. Sarver, Miss Mary Johnson, Miss Clara Jaeske, Miss Leah Boyer, Mrs. Catherine Roberts, Miss Nora Sheean. (Below) Officers of the American Women's Overseas League acted as escort: Mrs. Eugene K. Sturgis, Miss Marian Crocker, Mrs. G. H. Taubles (president), Miss E. H. Rix.

A newspaper clipping stating that women Veterans have been received at the Veterans Hospital near Livermore. *Photo courtesy of VHA*

Fastest growing population group

Before June 12, 1948, women in the U.S. could only serve as nurses in the regular and reserve Armed Forces during peacetime. Following President Truman's signing of the Women's Armed Services Integration Act of 1948, women became permanent, regular members of the Army, Marine Corps, Navy, and the recently formed Air Force. Today, women make up about 17% of our nation's Armed Forces, serving in every branch of the U.S. military.

Graphic courtesy of VHA

This pivotal Act created a greater need for gender-specific health care for Veterans.

As the number of women serving in the military increased, so did the demand for specialized health care services tailored to their needs. Recognizing this shift, VA began developing comprehensive women's health programs in the 1970s.

Addressing the changing needs

The 1990s witnessed a turning point in VA's commitment to women Veterans' health. As more women began actively serving in the military and returning from combat, VA recognized the necessity to expand and improve services further. It became evident that a gender-specific approach was vital to ensure comprehensive care for women Veterans.

To address this need, VA initiated the Women Veterans Health Program in 1994, which aimed to provide gender-specific health care services, including primary care, mental health support, and reproductive health care. The program's success led to the establishment of dedicated women's health clinics across VA medical centers nationwide. These clinics, staffed by providers specifically trained in women's health, became a cornerstone of women Veterans' health care.

In subsequent years, VA continued to invest in improving access and quality of care for women Veterans. It expanded services to include gynecological care, breast and cervical cancer screenings, contraceptive counseling, and menopause management, among others. Additionally, VA has focused on enhancing mental health support for women Veterans, acknowledging the unique challenges they may face related to military sexual trauma, post-traumatic stress disorder (PTSD), and depression.

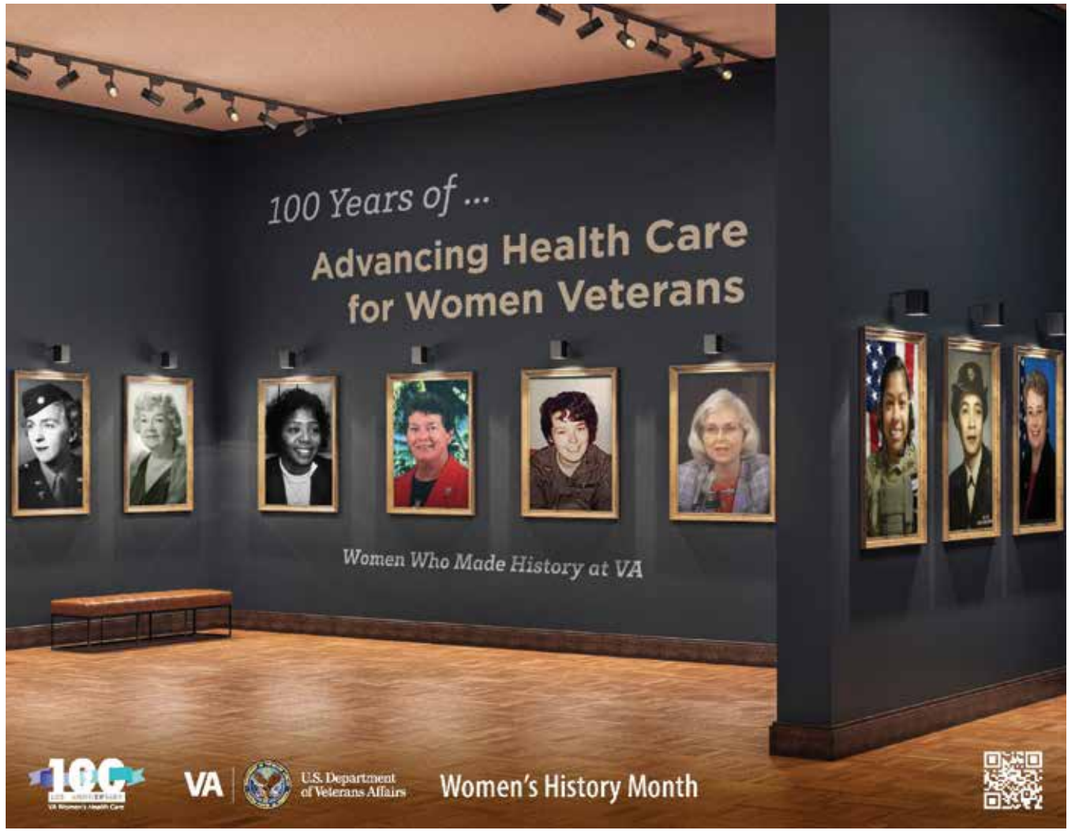


Photo courtesy of VHA

Current initiatives and future outlook

As VA commemorates a century of providing health care to women Veterans, it continues to build upon its progress and adapt to this fastest-growing population group. Recognizing the importance of comprehensive care, VA strives to expand its network of women's health clinics and increase the number of providers trained in women's health issues.

Moreover, VA has implemented innovative programs to enhance access to care. Telehealth services have become increasingly prominent, allowing women Veterans to receive virtual consultations and access mental health services from the comfort of their homes. This has been especially valuable for those in rural or remote areas who may face logistical challenges in accessing traditional health care facilities.

Looking ahead, VA remains committed to further improving health care delivery for women Veterans. Efforts are underway to integrate gender-specific care into all aspects of the VA system and to ensure that women Veterans' voices are heard in policymaking and program development.

Today, more than two million women Veterans live in the U.S. and women continue to be the fastest-growing Veteran population. Over 600,000 women Veterans will use VA for healthcare in 2023.

Recognizing 100 years of women Veteran health care

VA's century-long commitment to providing health care to women Veterans is a testament to its dedication to those who have served our country. From pioneering women's health programs to the establishment of specialized clinics, VA continually evolves to meet the unique needs of women who have bravely served in the military.

CPG

Veterans
WOMEN'S HEALTH

How Women in Oncology Are Leading the Way at VA

By Courtney Franchio, Program Manager, VA National Oncology Program (NOP)

It is an exciting time for Veterans' cancer care at VA. From best-in-class TeleOncology nursing practices to our doctors' innovative work on new oncology clinical pathways and more, women at VA's National Oncology Program are breaking new ground in how VA screens, treats, and delivers cancer care. These leaders are focused on eliminating health inequities, expanding access to world-class cancer care, and standing shoulder-to-shoulder with Veterans on their cancer journey.

Meet the women paving the way for continued excellence in cancer care at VA:

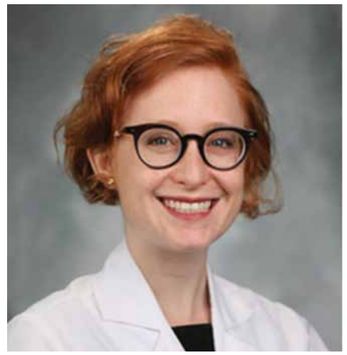
Breast and Gynecologic Oncology System of Excellence: Sarah V. Colonna, MD

Sarah V. Colonna, MD. *Photo courtesy of VHA*

Dr. Sarah Colonna is a medical oncologist specializing in breast cancer with a focus in clinical genetics at Huntsman Cancer Institute and at the George E. Wahlen VA in Salt Lake City. She serves as medical director of breast cancer for VA's Breast and Gynecologic Oncology System of Excellence. In addition, she treats Veterans with breast cancer across the country through VA's National TeleOncology. She led the effort to build clinical decision support tools for breast cancer that can be used across VA and is the Principal Investigator of the Breast Cancer Family Registry, which has researched families at increased risk for breast cancer since the 1990s.

"I want women and men with breast cancer to know they are getting the most modern and effective breast cancer treatments and genomic testing from an experienced and academic team," Colonna said.

Breast and Gynecology Oncology System of Excellence: Haley Moss, MD, MBA



Haley Moss, MD, MBA. *Photo courtesy of VHA*

Led by Haley Moss, MD, MBA, VA's Breast and Gynecologic Oncology System of Excellence is working to transform cancer prevention, treatment and outcomes while continuing to provide coordinated, integrated, and compassionate patient-centered healthcare.

"The number of Veterans who are seeking this cancer care at VA is growing," Moss said. "Our priority with establishing the System of Excellence is making sure Veterans can access the type of care they need."

In her role as director for BGSOE, Moss oversees the development and structure of care teams, facilitates outreach to VA medical facilities as the system expands, and provides consultations via National TeleOncology to other oncology providers, along with delivering patient care.

VA National TeleOncology: Gina McWhirter, MSN, MBA, RN

Gina McWhirter, MSN, MBA, RN. *Photo courtesy of VHA*

Gina McWhirter, MSN, MBA, RN is the director of VA's National TeleOncology. NTO services enable Veterans to receive word-class cancer care from the comfort of their own homes or at their local facility.

"With VA National TeleOncology, we're able to serve Veterans in a way that meets their needs. We can ensure they get best-in-class care even if they're miles away from a major VA facility," McWhirter said. Over her 15 years in VA, McWhirter has served in several patient care and leadership roles. She is passionate about oncology care for Veterans, ensuring that they receive world class care regardless of their location or socioeconomic barriers.

Delivering Cancer Care to Veterans Across the Country: Jenna Shields, PharmD, BCOP

Jenna Shields, PharmD, BCOP. *Photo courtesy of VHA*

Jenna Shields, PharmD, BCOP is the National Oncology Pharmacy Program Manager for the VHA National Oncology Program. In this role, she is active in developing and implementing innovative ways of delivering cancer care to Veterans across the country.

Dr. Shields worked as a Clinical Pharmacy Practitioner at VA Pittsburgh Healthcare System from 2010–2023, where she pioneered pharmacist-led oral anti-cancer therapy clinics and helped launch the Virtual Cancer Care Network in rural Pennsylvania. In 2020, she joined VA National TeleOncology as Pharmacy Program Manager.

She currently co-directs the Close to Me infusion service, which uses novel approaches to delivering cancer treatments to patients in rural areas.

Innovative and High-Reliability Nursing: Jade Brooks, MBA-HCM, BSN, RN OCN

Jade Brooks, MBA-HCM, BSN, RN OCN. *Photo courtesy of VHA*

Jade Brooks is a thoracic cancer nurse with VA National TeleOncology. She has twelve years of oncology nursing experience and champions innovation and equity in cancer care for Veterans.

"With the assistance of modern technology, we've expanded our commitment to provide specialized cancer care at your footstep. Our team is dedicated and ready to serve you from coast to coast," Brooks shared.

Long-standing Commitment and Service: Eileen Foti, BSN, RN, OCN

Eileen Foti, BSN, RN, OCN. *Photo courtesy of VHA*

Eileen Foti, BSN, RN, OCN joined the VA in 1997. Her 25 years of dedicated service to Veterans and their families encompasses Inpatient and Outpatient Hematology/Oncology care, case management, and program coordination.

She initiated and managed the implementation of Salt Lake City's VA Vista Chemotherapy Management platform and served as the facility's Bone Marrow Transplant coordinator.

She led the SLC VA National Lung Cancer Quality Improvement program and participated in the VA National Colon Cancer Care Quality Improvement initiative.

Before joining NTO, Eileen acted as care coordinator for one of seven sites chosen to assist with implementation of the National Lung Cancer Screening Project and served as liaison to patients and staff for the Virtual Care Manager national roll out during the Covid-19 pandemic.

VA's women oncology professionals are highly skilled and deliver personalized treatment and support to patients and their families across the cancer care continuum.

Their hard work is essential to VA's progress in promoting health equity and excellence in cancer care.

For more information about VA's oncology services visit: cancer.va.gov

CPG

From best-in-class TeleOncology nursing practices to our doctors' innovative work on new oncology clinical pathways and more, women at VA's National Oncology Program are breaking new ground in how VA screens, treats, and delivers cancer care.

She serves, she deserves the best care anywhere.

Embrace the Power of More!

Siemens Healthineers' goal is to expand access to superior screening technologies for all women everywhere by leveraging our innovative approach to mammography through iBreastExam™ and MAMMOMAT Revelation because screening is still key to early detection.

iBreastExam

iBreastExam™ is a non-invasive, radiation-free breast examination device that is FDA cleared for breast lesion documentation during Clinical Breast Exams (CBE) and it can be used virtually anywhere and for all adult women.

iBreastExam Scanner and Mobile App

- Simple to learn and use with a secure & easy-to-use interface
- Ultra-portable, lightweight, rechargeable
- Create a record of your CBEs in a consistent digital format that is easily incorporated into EMR systems and workflows
- Documentation using iBreastExam™ supports your clinical expertise and reinforces any decision to seek further diagnostic imaging

Scan the QR code to discover even more features of iBreastExam.

MAMMOMAT Revelation

The MAMMOMAT Revelation is engineered to offer more clinical certainty through its innovative 50-degree wide-angle design, delivering a wealth of invaluable information and empowering you to assess overlapping breast tissue, leading to enhanced diagnostic accuracy and confidence.

Discover all the MAMMOMAT Revelation has to offer by scanning the QR code.

Providing better access to care

Our ATO-certified, wide-angle technology can help bring lifesaving screening technology to more Veterans and active-duty servicewomen, while also providing Breast Density information at the time of screening. It is also available in a mobile configuration.

Designed for Superior Cancer Detection

MAMMOMAT Revelation is a unique 3D mammography system designed to help find breast cancer earlier, meaning fewer callbacks and a more definitive diagnosis in less time.

Designed for Protection

When it comes to cybersecurity, healthcare is the most breached industry[1]. Siemens Healthineers responds with cybersecurity features built to protect you. Thanks to the Secure Development Cycle, Revelation is built for today's operational requirements. Our systems are delivered on the latest operating systems.

Designed for Her

Designed for women by women, MAMMOMAT Revelation has unique personalized soft compression technology that adjusts to the anatomy of each woman's breast, while offering an optimal design for wheelchair patients.

Designed for Performance

Our ergonomic and workforce features make technologists' lives easier with 6-minute full 3D exams and seamless automation. This, coupled with 99.8%[2] uptime performance helps facilities meet growing demands.

siemens-healthineers.us/breast-care

Our MAMMOMAT Revelation is ATO certified—a certification that means we meet or exceed security requirements established through the VA Enterprise Risk Analysis (ERA) process.

[1]"Data Security in Healthcare Needs Intensive Care" Security Scorecard, accessed October 1, 2019.
[2]99.8% system uptime with preventative maintenance and software updates

XP-23-NAM-4918

SIEMENS Healthineers

Veterans
WOMEN'S HEALTH

VA's Breast & Gynecologic Oncology System of Excellence: Leading Innovative Cancer Care for Women Veterans

By Haley Moss, MD, MBA, Director, Breast and Gynecologic Oncology System of Excellence

Women Veterans are an increasingly significant demographic within the Veteran community, comprising 10 percent of the total Veteran population and projected to reach 14 percent by 2033 and 18 percent by 2040. To address their unique health needs and reduce health disparities, the Department of Veterans Affairs is focused on providing women Veterans the best possible health care.

This includes a specific focus on improving cancer care for women Veterans. Through initiatives such as the Breast & Gynecologic Oncology System of Excellence, VA aims to provide comprehensive and equitable care to women Veterans facing a cancer diagnosis. The most common malignancies among women Veterans include breast and uterine cancer.

Care for these malignancies often starts with diagnosis at the local level, as every VA Medical Center nationwide has a Women Veterans Program Manager to advocate for women Veterans and ensure they are getting appropriate breast and cervical cancer screening. There are designated staff to help coordinate services, from primary care to specialized care for chronic conditions or reproductive health. Once a diagnosis has been established, cancer care coordinators at local sites help facilitate appointments with oncologists in order to initiate treatment.

As part of VA's effort to deliver health care as a high-reliability organization, VA has forged dynamic partnerships with renowned pioneers in cancer research and care. With partners like the National Cancer Institute, Duke University, Huntsman Cancer Institute, Baylor School of Medicine, and more, VA's BGSoE is poised to redefine cancer care for women Veterans nationwide.

Through these groundbreaking collaborations, VA is revolutionizing cancer prevention, treatment, and outcomes, while unwaveringly upholding our commitment to coordinated, integrated, best-in-class care. Leveraging the power of cutting-edge technology and expertise, VA's BGSoE is uniquely situated to provide care to women Veterans nationwide via VA National TeleOncology and decentralized clinical trials. These initiatives aim to ensure that women Veterans have access to targeted and comprehensive cancer care, regardless of their geographical location.

As the number of women Veterans continues to grow, VA recognizes the importance of addressing their specialized health care needs. The establishment of the BGSoE exemplifies VA's commitment to improving care for women Veterans facing reproductive cancers, such as breast, ovarian, uterine and cervical cancer. The multidisciplinary team within BGSoE, including medical oncology, gynecologic oncology, breast surgery, radiation oncology, nursing and other specialties, works together to ensure coordinated, integrated, and compassionate patient-centered care.

Furthermore, through VA National TeleOncology, VA is bridging the geographical gap and facilitating remote consultations and treatment planning for women Veterans.

Since its launch, BGSoE has achieved significant milestones. These include hosting a White House Cancer Cabinet Community Conversation event, which fostered dialogue between cancer specialists, VA representatives and Veteran survivors. The program has also prioritized women's health research through literature reviews and coordinating a women's cancer research conference. To support treatment planning for complex cases, a national virtual multidisciplinary tumor board was established specifically aimed at breast cancer. Moreover, the implementation of a dashboard has facilitated the identification of newly diagnosed Veterans with breast and gynecologic cancers, ensuring timely, thoughtfully-coordinated and effective care.

VA's commitment to improving women's health care extends to addressing specialized needs, including cancer care for women Veterans. Through initiatives like the BGSoE and telehealth services, VA works diligently to provide comprehensive and equitable care, making certain that women Veterans receive the targeted treatment they deserve.

For more information about cancer care at VA, visit cancer.va.gov

CPG

Veterans
WOMEN'S HEALTH

VA's Training Programs Create Enhanced Care for Women Veterans

By VA Office of Women's Health

High-quality women's health care begins with clinicians who are trained and equipped to deliver gender-specific care. For the last 15 years, the U.S. Department of Veterans Affairs (VA) has demonstrated this commitment to ensuring that women Veterans receive excellent care by equipping its clinicians with the necessary training in gender-specific care.

Started in 2008, the Women's Health Mini-Residency program has reached a significant milestone this year, with over 10,000 clinicians successfully completing the program.

The Mini-Residency program is a deep-dive into the unique health issues faced by women Veterans. The material in the program is presented in a variety of ways, including small group case discussions, lectures, military gear demonstrations, and hands-on breast and pelvic exam skills training with a live model.

"I learned a lot and found this training VERY helpful," said one Primary Care Nurse. "The majority of my patients are male, but the female population of our Veteran patients is increasing substantially. We were able to use our brains to problem-solve during this training and were gently guided into thinking about the things we maybe hadn't thought about before."

Dr. Suzanne Taylor (left) and Dr. Catherine Brennan (right, white coat) engage with rural clinicians from the VA Altoona Health Care System during a Rural Mini-Residency training at the James E. Van Zandt VA Medical Center.
Photo courtesy of VHA

Photo courtesy of VHA

Mini-Residency addresses the growing need for gender-specific care

Women Veterans have unique health care needs, and as the fastest-growing segment of the Veteran population, there is an ever-growing need for clinicians who are trained in women's health topics.

Designed for clinicians, the Mini-Residency program material is focused on enhancing clinical skills to better serve the gender-specific health care needs of women Veterans.

In 2014, a study found that women Veterans who received their health care from Women's Health Primary Care Providers (primary care providers who have received the designation to care for women Veterans, a designation they can receive by completing the Mini-Residency) reported higher satisfaction with their primary care clinic. Additionally, these patients perceived that the gender-specific care they received was of superior quality compared to women Veterans who were assigned to other health care providers.

Enhancing skills to address women Veterans' health challenges

Providers and nurses who participated in the Mini-Residency program reported that they acquired new knowledge and skills that enabled them to better address the unique health issues faced by women Veterans. Participants also appreciated that they were able to apply those new skills immediately.

"As a primary care doctor caring for patients in a more rural setting, I will need to be confident that I am able to provide the needed care at the front-line level," said one rural primary care provider. "This course helped to solidify my knowledge base ... it was a WONDERFUL training."

Photo courtesy of VHA

Multiple training formats address the needs of practicing clinicians

VA recognizes that training must be tailored to meet clinicians where they are — whether that's virtual, in-person, or a hybrid of both. Clinicians have opportunities to participate in a program that fits their learning needs, including:

- Large national conferences: Offered several times a year, this training takes place over three days and covers core topics in women's health care in both the primary care and acute care settings.
- Local trainings: Each year, VA facilities and Veterans Integrated Services Networks (VISNs) host over a dozen training sessions utilizing the national Mini-Residency curriculum, funded by the VA Office of Women's Health.
- Office of Rural Health Partnered Trainings: Organized with sites directly, this training takes place directly at rural clinic sites with patient care teams. Specialized training teams travel to rural sites and teach clinicians using the national Mini-Residency curriculum.

Educating non-VA providers with the "Caring for Women Veterans" Course

Many women Veterans choose to receive their health care outside VA facilities, but their primary care provider may not fully understand the intricacies of providing care to a Veteran. The "Caring for Women Veterans" course helps to bridge that gap.

Built by VA faculty and clinicians with extensive experience in Mini-Residencies and a passion for women's health care, the Caring for Women Veterans training course is an online module that condenses some of the core topics of the 20-hours of Mini-Residency education into just one hour.

"Coming from a non-military background, this course helped me understand some of the reasons that women Veterans may need more specialized care than the general population" says one graduate.

The "Caring for Women Veterans" course is most often taken by non-VA providers to help them get up to speed on the best clinical practices in women's health, and by providers who are new to VA and may not have a background in treating Veterans.

What you can do to develop your expertise in women Veterans' health

VA is committed to ensuring women Veterans see trained clinicians, wherever they get their health care. Within VA, there is a large community of trained clinicians that continues to grow as more participate in the Women's Health Mini-Residency.

For clinicians outside of VA, one of the best ways to develop expertise in women Veterans' health is by taking the "Caring for Women Veterans" course on Veterans Health Administration TRAIN, a learning network that houses a comprehensive catalog of public health training opportunities.

This free, accredited, one-hour online training will help you better serve the women Veterans entrusted in your care. To take the course, visit https://www.womenshealth.va.gov/va-clinicians.asp#vha-train.

Join us in helping to provide the best care to women Veterans everywhere!

Photo courtesy of VHA

Veterans
WOMEN'S HEALTH

Expanded Breast Cancer Screening Options through the SERVICE Act named for Dr. Hendricks Thomas, Who Died from Breast Cancer in 2022

By Dr. Sally Haskell, Acting Chief Officer, VHA Office of Women's Health

Signed into law on June 7, 2022, the Dr. Kate Hendricks Thomas Supporting Expanded Review for Veterans in Combat Environment (SERVICE) Act (P.L. 117-133) expands breast cancer screening eligibility for Veterans and ensures research continues to advance our knowledge of toxic exposures and breast cancer.

Dr. Kate Hendricks Thomas. *Photo courtesy of the Office on Women's Health*

Thomas was a Marine Corps Veteran and public health professional. She deployed to Iraq in 2005, where she was exposed daily to a burn pit on base. In 2018, she was diagnosed with stage 4 breast cancer. She died on April 5, 2022, at the age of 42. Her legacy of service lives on through the SERVICE Act.

Although no direct link has been found between toxic exposure and breast cancer, VA is concerned about tragic individual cases, such as that with Thomas, and continues to support research and examine case data.

"VA is committed to providing state of the art breast cancer services to all eligible Veterans. Through the SERVICE Act, we honor Dr. Kate Hendricks Thomas and other Veterans whose service to our nation may have exposed them to life-threatening toxins," said VA Secretary Denis McDonough.

As a result of the SERVICE Act, VA will expand breast cancer risk assessments and clinically appropriate mammograms to women Veterans who have experienced toxic exposure. This risk assessment and mammogram also includes transgender women who have been on hormone therapy for more than 5 years, and transgender men who still have breasts.

VA to collaborate with DoD to expand eligibility

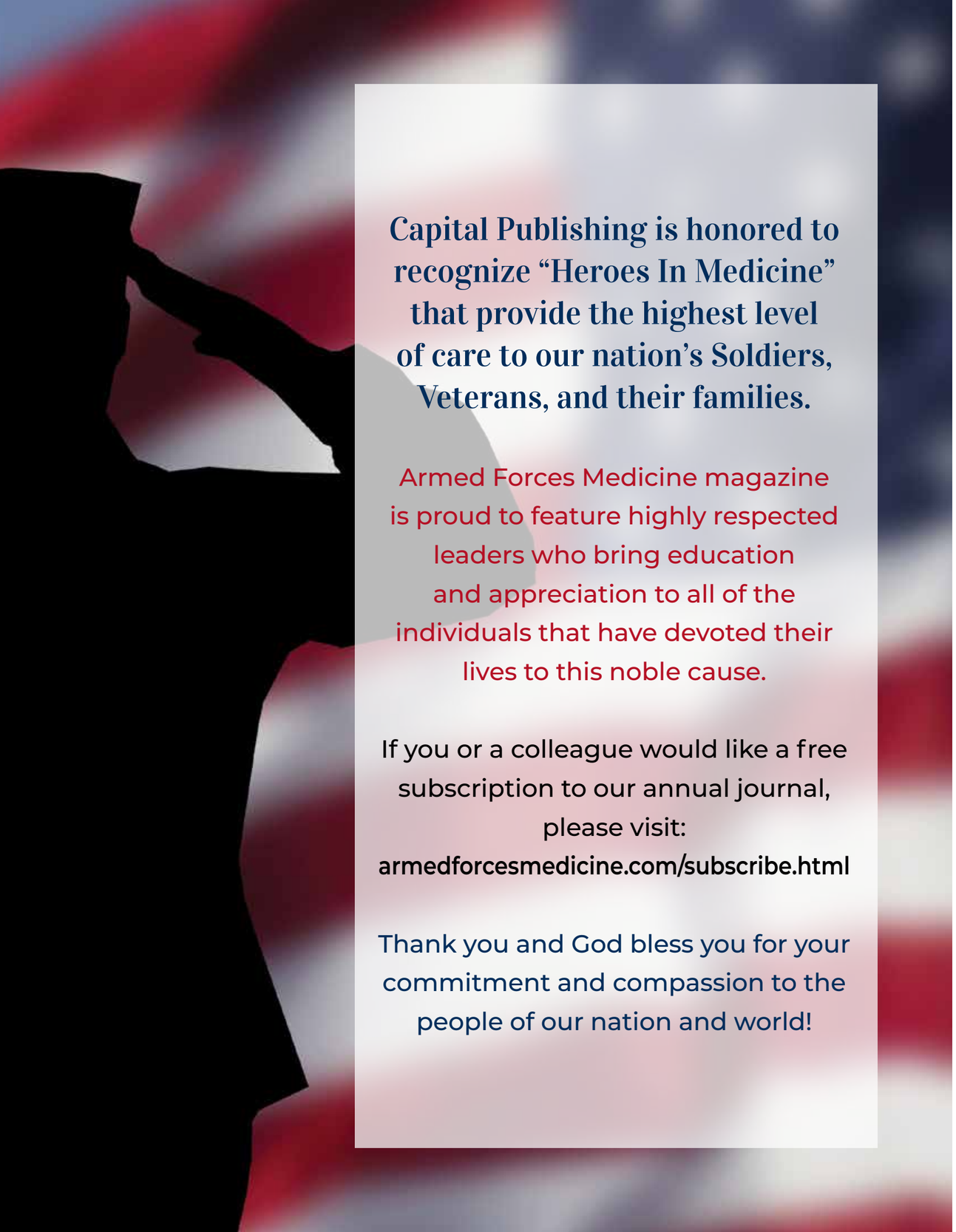
As part of the law, VA will collaborate with the Department of Defense to identify additional locations and time periods of service for toxic exposure, beyond those indicated in the current law. This will expand eligibility for these services in the future.

You may also have heard of the MAMMO Act. This is another law that will assist Veterans in accessing breast cancer screening and mammography screening. The Making Advances in Mammography and Medical Options for Veterans Act provides for expanded research, too. Under MAMMO, VA will ensure Veterans living in rural areas and those with paralysis, spinal cord injuries or other disorders have access to breast cancer screening. Through MAMMO, VA will also develop a Tele-screening Mammography Pilot using our outstanding Telehealth technology.

VA uses, and will continue to use, the American Cancer Society guidelines for breast cancer screening for average risk women. On-site mammograms are available at over 70 VA health care facilities and at convenient locations in the community.

If you are not currently enrolled in VA health care, you still may be eligible for a screening due to expanded eligibility under the SERVICE Act. Explore health care enrollment here.

With the enactment of the Promise to Address Comprehensive Toxics (PACT) Act Oct. 1, 2022, VA is now authorized to provide care and benefits to millions of toxic-exposed Veterans and their survivors. Contact your VA primary care provider to learn more or visit the PACT Act website. Discover the full range of VA health services for women Veterans. Visit Women's Health Care Needs | Veterans Affairs (va.gov) or call the Women Veterans Call Center at 855-829-6636.



Capital Publishing is honored to recognize "Heroes In Medicine" that provide the highest level of care to our nation's Soldiers, Veterans, and their families.

Armed Forces Medicine magazine is proud to feature highly respected leaders who bring education and appreciation to all of the individuals that have devoted their lives to this noble cause.

If you or a colleague would like a free subscription to our annual journal, please visit:
armedforcesmedicine.com/subscribe.html

Thank you and God bless you for your commitment and compassion to the people of our nation and world!

DIRECTORY OF ADVERTISERS

Front line wound care

proud to provide Active Duty and Military Veterans with products across the continuum of care

Smith+Nephew

VERSAJET◊ II
Hydrosurgery System

PICO◊
Single Use Negative Pressure
Wound Therapy System

STRAVIX PL◊
Lyopreserved
Umbilical Tissue

Learn more today

The information herein is intended for healthcare professionals. The PICO pumps contain a MAGNET. Keep the PICO pumps at least 4 inches (10 cm) away from other medical devices at all times. As with all electrical medical equipment, failure to maintain appropriate distance may disrupt the operation of nearby medical devices. For full product and safety information, please see the Instructions for Use.

For detailed product information, including indications for use, contraindications, precautions and warnings, please consult the product's instructions for use prior to use.

Advanced Wound Management Smith & Nephew Fort Worth, TX 76109 USA | www.smith-nephew.com | possiblewithpico.com | stravixpl.com|
T- 800-876-1261 F- 727-392-6914 ™Trademark of Smith+Nephew ©2022 Smith+Nephew | VJEE22-38467-0723