Armed Forces Medicine

2019

CAPITAL PUBLISHING

DEACTIVATION AND DISPOSAL: CRITICAL TOOLS IN PREVENTING PRESCRIPTION OPIOID ABUSE

More than half of all veterans receiving care through the Veterans Health Administration are affected by chronic pain.[1]

For members of our military community suffering visible and invisible wounds of war, pain management often involves prescription medications including opioids and other painkillers. These are critical tools in helping our brave heroes, but they carry real risk of addiction, misuse and potentially fatal overdose.

Nearly one in four active-duty service members and retirees had at least one opioid prescription in 2017.[2]

Of particular concern are the enormous quantities of opioids that are leftover, unneeded and unused:

- It's estimated that up to 70% of opioids prescribed for surgical use were leftover and unused.[3]
- Studies show that more than 60% of people with leftover prescription opioids kept their pills for future use rather than disposing of them – with one in five reporting they had shared their medication with another person.[4]
- More than half of those individuals currently misusing prescription opioids, received or took the drug from a friend or relative, meaning they never had a prescription themselves.[5]

If we are to protect our service members, veterans, and their loved ones from the dangers of prescription opioid misuse and put this crisis behind us, **effective deactivation and disposal of these dangerous, leftover drugs is a must.**

Take-back programs and kiosks provide an important route for disposal of leftover drugs, but rural Americans or those of limited mobility – including many veterans – deserve other options.

There's a need for at-home alternatives that deactivate these drugs – rendering them non-retrievable for all practical purposes - and then allows them to be safely disposed of in the normal trash.

The Deterra® Drug Deactivation System is an independently tested, safe and environmentally sound solution to permanently deactivate, destroy and dispose of unneeded pills, patches, liquids, creams and films right at home.

Visit DeterraSystem.com to learn how you can equip service members and veterans with Deterra to safely dispose of their leftover opioids and other medications at home.

Call 612.568.1128 or email Sales@DeterraSystem.com to speak with a representative.

[1]https://www.psychologytoday.com/us/blog/invisible-wounds/201701/va-says-68000-vets-addicted-opioid-painkillers
[2]https://www.militarytimes.com/pay-benefits/2018/12/04/one-in-four-troops-have-an-opioid-prescription-in-a-given-year/
[3]https://jamanetwork.com/journals/jamasurgery/article-abstract/2644905
[4]https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2527388
[5]https://www.samhsa.gov/data/nsduh/reports-detailed-tables-2017-NSDUH

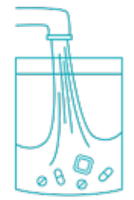
DETERRA® drug deactivation system

THE DETERRA DRUG DEACTIVATION SYSTEM HELPS STOP PRESCRIPTION DRUG MISUSE BEFORE IT STARTS.

Deterra® can rid any home or healthcare facility of dangerous, leftover drugs in minutes,[6] ensuring that unused prescription opioids and other drugs are **gone – for good**.

Deterra's process is powered by proprietary MAT$_{12}$® Molecular Adsorption Technology which deactivates medications using activated carbon - rendering them inert, unavailable for misuse, non-retrievable for all practical purposes and safe for the environment, in three easy steps.

1 Tear open pouch – do not remove inner pod(s). Place unused medications inside.



2 Fill pouch halfway with warm water and wait 30 seconds for air to release. Some foaming may occur.

3 Seal pouch tightly, gently shake and dispose of in normal trash.

VISIT DETERRASYSTEM.COM TO EXPLORE THE SCIENCE.

Deterra deactivates many dosage forms including pills, patches, liquids, creams and films, and is available in a variety of sizes that can destroy from 15 to over 25,000 pills.[7]

Call 612.568.1128 or email Sales@DeterraSystem.com to get a customized quote for a disposal solution that meets your needs.

[6] The deactivation process starts quickly but takes time to complete.
[7] Deterra deactivates many dosage forms including pills, patches, liquids, creams and films.

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I AM. THE ANSWER.®

Active Duty
FOREWORD

Whole of Military Health is Greater than Sum of Parts

Military Health System Communications Office

Department of Defense health leaders who spoke about Military Health System reform during the 2018 meeting of AMSUS, the Society of Federal Health Professionals, stressed collaboration and commitment to implement massive organizational transformation.

"What you're hearing is, this is a Military Health System and not an Air Force or an Army or Navy or even a Defense Health Agency system," said Lt. Gen. Dorothy Hogg, the Air Force surgeon general. "All the parts are required in order for MHS to be the best it can be. That's why we're all committed" to making sure transformation is successful.

Otherwise, Hogg said, "It fails our beneficiaries: our service men and women and our family members. And we will not let that happen."

Hogg was one of six panelists speaking on Thursday, Nov. 29, during the 127th AMSUS annual meeting. "Change is hardest in the beginning, messiest in the middle, and easiest at the end," she said, referring to requirements of the National Defense Authorization Act for fiscal years 2017 and 2019 to transition administration of all military treatment facilities to the DHA no later than Sept. 30, 2021.

Dr. Terry Adirim, deputy assistant secretary of defense for health services policy and oversight, served as panel moderator. In her opening remarks, she noted that having DHA as the single agency responsible for the administration of all MTFs is the best way to improve and sustain operational medical force readiness and medical readiness of the armed forces, improve beneficiaries' access to care, improve health outcomes, and lower costs.

Dr. John Cho (far right), AMSUS executive director, introduces speakers (from left) Navy Vice Adm. Raquel Bono, Defense Health Agency director; Lt. Gen. Nadja West, Army Surgeon General; Vice Adm. Forrest Faison III, Navy Surgeon General; Lt. Gen. Dorothy Hogg, Air Force Surgeon General; Navy Rear Adm. Colin Chinn, Joint Staff surgeon, Dr. Richard Thomas, president of Uniformed Services University of the Health Sciences; and Dr. Terry Adirim, Deputy Assistant Secretary of Defense for Health Services Policy and Oversight.
(MHS photo by Hannah Wagner)

> "All the parts are required in order for MHS to be the best it can be. That's why we're all committed"

Navy Vice Adm. Raquel Bono, DHA director, was the first panelist to speak. She said the transformation enables the MHS to create efficiencies among collective patient populations, particularly with appointment processes and pharmacy refills.

Lt. Gen. Nadja West, the Army surgeon general, noted the hospitals and clinics at Fort Bragg, North Carolina, were among the inaugural group of MTFs to transition to the DHA on Oct. 1.

"It's a model of how smooth a transition can be," she said, noting there was no disruption in either care or the readiness mission.

"Through transformation, we'll ensure [Army Medicine] remains a no-fail mission," West said.

Vice Adm. Forrest Faison III, the Navy surgeon general, said the sea service "is taking advantage of the many, many opportunities that come with transformation. It will allow us to focus on our true north: ensuring we're doing all we can to save lives and return sons and daughters home to their families."

"If you're going to fight tonight, you've got to be able to save lives tonight," Faison said. "Every mom and dad in America is depending on us to do that."

Navy Rear Adm. Colin Chinn, the Joint Staff surgeon, described his role as a global medical integrator. Medical interoperability is needed not just among the services, he said, but also among allied and partner nations. "They are vital to our global success," he said.

Dr. Richard Thomas, president of Uniformed Services University of the Health Sciences, was the final panelist to speak. He noted that the mission of USU includes educating, training, and preparing health professionals to support military and public health efforts.

"We don't fight alone," Thomas said, "and we certainly don't heal alone."

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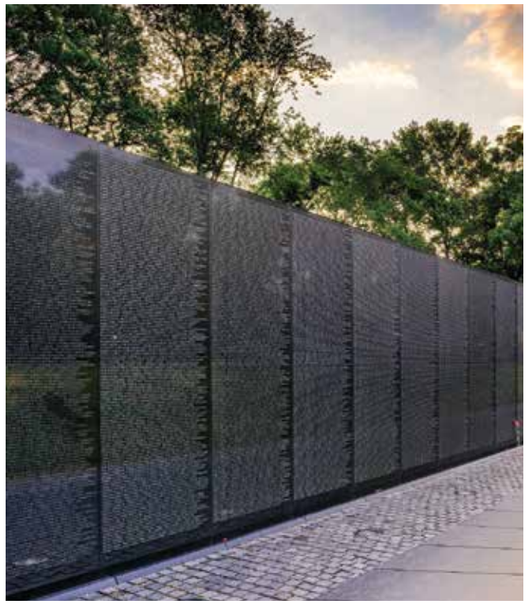

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Forging a New Path in Military Health

By Lt. Gen. Dorothy Hogg, Air Force Surgeon General

(U.S. Air Force illustration)

This was a year of tremendous change for Air Force Medicine, of challenges faced and overcome. Everyone in the Air Force Medical Service should be proud of what we accomplished in 2018, and aware of 2019's opportunities. As I reflect on 2018, I am struck by the hard work, dedication, and spirit displayed by the AFMS family.

One of the most welcome changes I experienced on becoming SG is that I have more opportunities to get out into the field and visit with medics. There is nothing more inspiring and important than hearing directly from you, and listening to your challenges, motivations, and even your frustrations.

In just six months, Chief and I have traveled to installations all over the world. We met Airmen practicing operational medicine in the Middle East, Airmen leading the transition to the Defense Health Agency at Joint Base Charleston, and Airmen stationed in Korea during times of heightened tension on the peninsula. We witnessed the EMT Rodeo at Cannon Air Force Base, celebrated the USAFSAM 75th anniversary, and heard from providers at Shaw AFB setting up an integrated operational support program.

For us, these visits are about learning how we can better support those on the front lines of patient care. At each visit, we call for Airmen to be disruptive innovators. We are standing at an inflection point in the history of military health. The choices we make and the paths we forge have the potential to affect how generations of military medics deliver care.

Every medic should always be searching for new ways to do business, testing better processes, and challenging our established systems. Take risks and create ideas to overturn the market. Don't look back to what is known and comfortable. Open the aperture, think bigger, think wider. This spirit, practiced at all levels of the AFMS, will transform this challenging moment into an incredible opportunity to better serve our patients, deliver improved medical support to combatant commanders, and create a more agile and efficient system.

As we move forward with AFMS transformation in 2019, I know many are concerned about the future. I understand those concerns. Change is hardest at the beginning, messiest in the middle, and easiest at the end. We believe when we get to the end, we will have a stronger AFMS and a stronger Military Health System.

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Active Duty
SPECIAL FEATURES

The Frontline of Healthcare

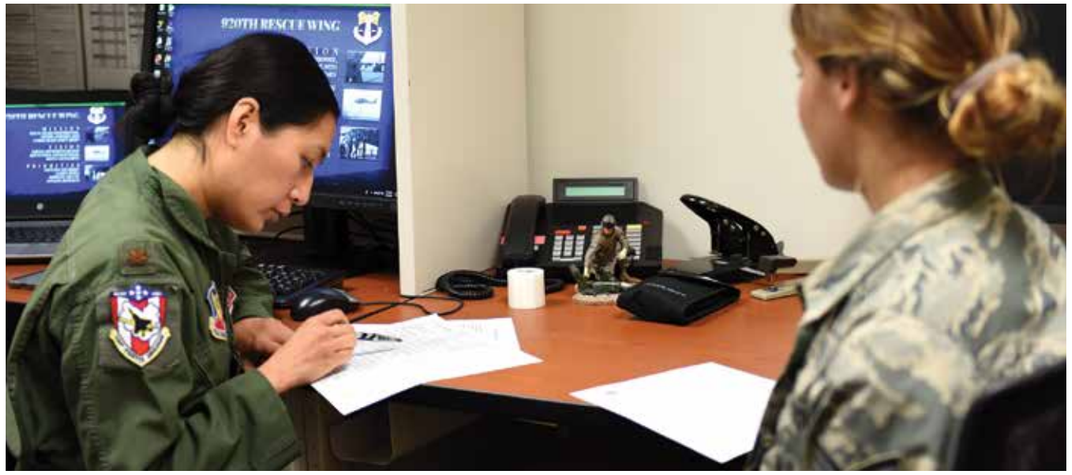
By Airman Hope Geiger, 180th Fighter Wing Ohio National Guard

On the frontline of healthcare, medical technicians are one of the first faces an individual sees when visiting a medical facility. From, administering immunizations to assisting in aeromedical evacuations, these trained professionals supply critical support and are valuable members of any healthcare team.

Senior Airman Kathryn Dobbs, an aerospace medical technician assigned to the 180th Fighter Wing, Ohio Air National Guard, worked alongside the Massachusetts Air National Guard's 104th Fighter Wing, performing incentive flight physicals and tending to various medical issues that occurred while the units deployed to Patrick Air Force Base, Florida, Jan. 25-10 Feb., 2019.

Medical technicians are considered the "jack of all trades," explained Dobbs. Their basic duties include managing patient care from admission to discharge, participating in and leading training exercises such as self-aid buddy care, and performing other duties such as medical administration, laboratory, pharmacy public health and medical logistics duties. They also perform other specialized duties like aeromedical evacuations, allergy and immunization, neurology diagnostics and critical care.

Senior Airman Kathryn Dobbs, an aerospace medical technician assigned to the 180th Fighter Wing, Ohio Air National Guard, checks Senior Airman Hope Geiger, a photojournalist assigned to the 180FW, ears during an incentive flight physical at Patrick Air Force Base, Florida, Feb. 1, 2019. The 180FW deployed more than 130 Airmen and 10 F-16s to Patrick in an effort to enhance flying operations and readiness capabilities that can often be hindered by harsh winter weather at home-station in Northwest Ohio. Incentive flights are special flights provided to outstanding Airmen who continually go above and beyond in their primary duties. *(Air National Guard photo by Senior Master Sgt. Beth Holliker)*



Maj. Tina Nguyen, a Flight Surgeon assigned to the 104th Fighter Wing, Barnes Air National Guard, gives a physiology brief to Senior Airman Hope Geiger, a photojournalist assigned to the 180th Fighter Wing, Ohio Air National Guard, during an incentive flight physical. As part of the Patrick AFB deployment, the 180FW will conduct Dissimilar Air Combat Training, Basic Fighter Maneuvers, Defensive Air Counter Tactics and Tactical Intercept missions alongside F-15 Eagles assigned to the 104th Fighter Wing, Barnes Air National Guard Base, Massachusetts. Incentive flights are special flights provided to outstanding Airmen who continually go above and beyond in their primary duties. *(Air National Guard photo by Senior Master Sgt. Beth Holliker)*

"While rare, injuries still happen," said Dobbs. "Having medical on these deployments allows us to treat our people in house instead of having to go to the clinic or even the local hospital. We had a few minor injuries here so far, and without medical our people would not be able to be treated so quickly."

"If any medical concern comes up during the trip we are right there to take care of the issues rather than having them go to the clinic," said Col. Joshua Wright, a Flight Surgeon assigned to the 180FW. "The big save with that is, if there is an issue then they have to register with Tricare in a different region, it's a lot of paperwork, and then unregister when they get back to their normal duty station. If medical is along, it saves a lot of paperwork and hassle, plus we can take care of our people fairly easily."

Throughout the two-week deployment, many Airmen from the 180FW, 104FW, 301FW and 45th Space Wing received a special opportunity to get an incentive flight to fly in a fighter jet. Incentive flights are special flights provided to outstanding Airmen who continually go above and beyond in their primary duties. Before they can fly, they must meet certain physical requirements to be qualified to fly.

Dobbs has worked alongside two flight surgeons from the 104FW, Lt. Col. Mark Prete and Maj. Tina Nguyen, performing incentive flight physicals for four different guard, active and reserve units.

For flight physicals, Dobbs checked the Airman's vitals to see that they are within normal limits, their weight, sitting height and leg measurements, lung and heart sounds, ears, abdomen and musculoskeletal system. There are certain criteria Airmen must meet before being able to safely fly in a fighter jet, and if they met those standards a flight doctor from the 104FW would then perform a physiology brief. This briefing explains what can happen to the body when in the jet and how to properly prepare for the flight.

It is important to the mission, for medical, to be able to work alongside other units. For the first week, the 180FW only had two medical technicians and no flight surgeon, while the 104FW deployed their flight doctors and no medical technicians. They were able to work together to complete approximately 30 flight physicals.

"It is a part of what we do in the Air Force, we are always training with other people," said Wright. "If we ever come in contact with other units, we're always able to share our best practices, get different ideas on how to improve our own way of things and help them if they have issues as well. It is always good to collaborate with other units."

While working alongside other units, Dobbs has been able to learn some new things in her career field. "I've picked up a few new tricks on this deployment just by watching the other doctors that have been here and them being so willing to teach me," Dobbs explained. Dobbs' previous deployments have always been with just the 180FW medical group and the Patrick trip was her first opportunity to deploy with the entire wing.

"I've really enjoyed being able to meet everyone and learn about what they do," said Dobbs. "Learning about and talking with people in other career fields has helped me learn what I can do to better improve their medical experience."

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Armed Forces Medicine 2019

Active Duty
SPECIAL FEATURES

U.S. Air Force 59th Medical Wing Evaluates, Improves Heat Illness Procedures

By Tech. Sgt. Christopher Carwile, 59th Medical Wing Public Affairs

The 59th Medical Wing is implementing new capabilities to provide potentially life-saving treatments for Air Force trainees engaging in high-intensity physical training in the hot and humid conditions of San Antonio.

To ensure basic military training and technical school students receive this rapid care, health officials are working with the Korey Stringer Institute at the University of Connecticut to review and update 59th MDW and 37th Training Wing policies for responding to suspected exertional heat illness, including exertional heat stroke. Exertional heat stroke is a life-threatening medical emergency that results from prolonged exertion in the heat, resulting in failure of the body's mechanisms for self-cooling.

The training works hand-in-hand with an upcoming Exertional Heat Illness Response Policy Letter from the 59th MDW and guidance from the Air Force Medical Operations Agency.

"With rapid response and proper treatment, heat stroke is 100 percent survivable with no lasting effects," said KSI's chief operating officer Dr. Douglas Casa, who lead the training team here.

"We need to respond quickly once someone goes down or shows signs of heat stroke; the clock for cooling them doesn't start when they go down, it starts when (body temperature) rises above 105 degrees," Casa said.

Dr. Douglas Casa, Korey Stringer Institute chief operating officer, briefs Air Force personnel on the five key factors to help prevent exertional heat stroke Sept. 29, 2015, at Joint Base San Antonio-Lackland. *(U.S. Air Force photo/Staff Sgt. Jason Huddleston)*

Airmen watch as Korey Stringer Institute officials Dr. Douglas Casa, Dr. Rebecca Stearns, and Luke Belval demonstrate the proper treatment for patients with heatstroke Sept. 29, 2015, at Joint Base San Antonio-Lackland. *(U.S. Air Force photo/Staff Sgt. Jason Huddleston)*

A core body temperature above 105 degrees Fahrenheit for 30 to 60 minutes usually results in temporary damage to vital organs — including brain, liver, kidneys or muscle — that could affect a military career; 60 to 90 minutes results in permanent organ damage and possibly death, Casa explained.

"The bottom line — if you take away nothing else from this training — is that you must get the core temperature under 105 within the first 30 minutes," Casa stressed throughout the training.

Members of the 559th Medical Group initially met with members of the Consortium for Health and Military Performance and KSI to review response procedures in 2014. During those discussions, the group identified areas that were not up to the current evidence-based standard of care for exertional heat stroke.

"We have updated Air Force-wide policies and created a new medical wing instruction on how heat stroke is to be treated, based on the latest research and guidance from leading experts in the field like KSI. This is so important to the health of our trainees, especially when San Antonio has high heat during the extensive basic and technical school training sessions," said Maj. Asha Mandhare, 559th MDG Trainee Health Surveillance Flight commander.

Casa and his team taught the new procedures to members of the 559th MDG and the 37th TRW, conducting multiple training sessions with medical technicians, first responders, training squadron staff and military training instructors and leaders Sept. 29-30. Five JBSA training locations where the highest-risk training occurs were selected. The sessions focused on response and treatment procedures for heat stroke victims.

The new policies and procedures focus on three key points: first, accurate diagnosis of core body temperature; second, on-site ice-water immersion for victims of exertional heat stroke; and third, the cool first, transport second principle. Other important points include the role of training instructors and cadre, who are the key to early recognition of dangerous symptoms.

During a heat-related medical emergency, MTLs and MTIs will provide a non-medical support role - such as helping with transportation — while medical technicians and first responders aid the victim. Casa's team taught medics and cadre to place sheets and towels soaked in ice-cold water on the head and body to cool victims while en route to an immersion tub. If a tub is not available the procedure is a stand-alone measure.

There are currently six immersion sites located at key training areas across JBSA, with a seventh on the way, according to Mandhare.

"We are very grateful to have (Casa) out here; he's the who's who of heat stroke," said Capt. (Dr.) Nathaniel Nye, sports medicine physician and Versatile Injury Prevention and Embedded Reconditioning element chief.

"By far, the most important thing I do is work with the military," Casa said. "Sports are just wins and losses on the field, what (you) do here is what really matters."

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Active Duty
ADDICTION

Combating Alcohol Abuse with SMART

Specifc, Measurable, Attainable, Relevant, and Time-based Plan

By The Military Health System Communications Office

Parties and special occasions usually involve games, music, and alcoholic beverages. They are times of festivity and fun. For someone concerned about alcohol intake or battling substance abuse, social events may seem threatening. But it is possible to participate in activities that include alcohol.

Photo courtesy of the U.S. Air Force

Get the Facts about Risky Drinking

The first step to understanding your alcohol limits is to know the facts, signs, and symptoms about alcohol abuse. The Psychological Health Center of Excellence (PHCoE) gives examples of alcohol misuse and facts about risky driving:

- Drinking more or for a longer time than you intend
- Continuing to drink even though it makes you feel depressed or anxious
- Experiencing symptoms of withdrawal when you don't drink
- Experiencing interference with daily activities, family, friends, and work
- Having to consume more drinks than you once did to get the same effect

Set Your Limits

If you're not practicing abstinence, but want to be mindful of your drinking behavior, there are ways to set limits. Tracking your daily drink intake may be a helpful way to manage substance use, but can be difficult to practice in social situations.

Before going to the party, have a plan and remember to be S.M.A.R.T:

- Specific. Set a drink type and number limit for yourself. If you decide to drink a beer, ask yourself what type of beer, stick to that brand and style, and don't go over your limit. Every alcohol beverage has a different alcohol content, which changes your body's response.
- Measurable. Understand how your body processes alcohol to determine your specific limitations. Look at the standard drink calculator to see how different types of drinks will affect your body.
- Attainable. Is your goal realistic for your lifestyle? Set a goal that you are confident and positive about achieving.
- Relevant. Ask yourself if your goal applies to your current surroundings. If you are at a wine-tasting event, know how much wine is enough for you.
- Time-based. Set a drinking cut-off time and length of time between each drink. Determine how many drinks is a safe number for you.

Choose Your Surroundings

Choosing your surrounding can be the best way to combat pressure. If you are battling substance abuse, consider attending an alcohol-free holiday party or host your own alcohol-free small gathering. Suggest ideas to the host that don't involve drinking. Fun ideas include:

- Karaoke
- Board, card and trivia games
- Dance competitions
- Holiday-themed relays
- Arts and crafts
- Gift exchanges

It's also OK not to go to a party if you feel it could harm your sobriety. When it's impossible to avoid functions with alcohol, make sure you have a way to leave if you're feeling uncomfortable. Share that you're limiting your drinking or not drinking at all. Purposefully voicing your concerns can help eliminate potential peer pressure to join or overindulge in drinking.

The Alcohol and Drug Abuse Prevention and Treatment program ensures Airmen are aware of the limitations and consequences of alcohol abuse and its impact on their Air Force career. At each installation, the ADAPT program offers awareness outreach, assessment, and counseling. *(U.S. Air Force photo by Samuel King Jr.)*

On-the-go Support: Mobile Apps

There are several mobile apps that can help you assess and manage your alcohol use. Some mobile apps can help you learn healthier ways to cope with certain triggers, such as stress.

Here a few to consider:

- Pier Pressure, developed by Navy Alcohol and Drug Abuse Prevention, offers resources to help practice responsible drinking behaviors in real life to include: a blood alcohol content (BAC) calculator; calorie and alcohol content calculators for beer, wine, spirits and popular cocktails; safe drinking tips; and direct access to local taxi searches and popular ride-sharing apps
- VetChange, developed by the Department of Veterans Affairs, is for veterans and service members who are concerned about their drinking and how it relates to post-traumatic stress after deployment, and for all people who are interested in developing healthier drinking behaviors.
- Learn about more DHA mobile apps, developed by the Connected Health branch, such as Virtual Hope Box, LifeArmor, and Breathe2Relax on the mHealth Clinical Integration webpage.

Learn More from Online Resources

- Defense Health Agency alcohol and drug abuse self-assessment (confidential)
- TRICARE Alcohol Awareness (featuring "That Guy" public awareness campaign)
- Military Health Podcast: "Next Generation Behavioral Health," episode 17, "Substance Use"
- "Life Without Liquor" one service member's personal story of how he overcame a drinking problem
- Military OneSource: Military Policy and Treatment for Substance Use
- "Rethinking Drinking: Alcohol and Your Health" publication with research-based information from the National Institutes of Health
- "Harmful Interactions: Mixing Alcohol with Medicines" publication from National Institute on Alcohol Abuse and Alcoholisim

You can overcome substance abuse by knowing the facts, sticking to your goals, informing others of your intentions, having good support, and creating a positive environment for long-lasting change.

For more information on SMART, please visit: https://www.pdhealth.mil/sites/default/files/images/docs/MyPlanforChange_082416_FINAL.PDF

health.mil

Active Duty
ADDICTION

Progress in Preventing Opioid Abuse

By Lisa Ferdinando

The Military Health System is making progress in preventing and managing opioid abuse among its beneficiaries, but further actions in education and prevention are needed, the director of the Defense Health Agency said recently.

Navy Vice Adm. Raquel C. Bono told the House Armed Services military personnel subcommittee that the Military Health System has an obligation to provide the best care for its beneficiaries, including in pain management, while taking steps to prevent addiction.

"The department has made strides in managing opioid abuse within our system and is continuously looking to further enhance our programs," she told the committee members.

Less than one percent of active duty service members either abuse or are addicted to opioids, she said, adding, the overdose death rate among active duty service members is 2.7 out of 100,000, half of the national rate when adjusted for demographics.

Air Force Staff Sgt. Matthew Pick, with the 66th Security Forces Squadron, holds a nasal applicator and naloxone medication vial at Hanscom Air Force Base, Mass., Dec. 11, 2017. Naloxone is one of several medications designed to temporarily reverse the effects of an opioid overdose. Hanscom was the first Air Force installation to issue the drug to law enforcement personnel under permission of the base commander.
(Air Force photo by Mark Herlihy)

Steps to Educate, Prevent, Manage

In the Military Health System, 83 percent of long-term opioid patients are older than 45 years old, most likely to be retirees or retiree family members, and obtain most of their care from outside of military hospitals and clinics, Bono said.

She outlined steps the department is taking to prevent opioid abuse, to include: instituting comprehensive provider education that leads to a reduction in opioid prescribing; expanding partnerships with federal, state, private sector and contracted partners; developing alternatives to opioids for both direct and purchased care settings; and further expanding a prescription drug monitoring program to include state monitoring programs.

Purchased Care

The TRICARE Health Program is often referred to as purchased care. It is the services we "purchase" through the managed care support contracts.

Commitment to Patients, Nation

The Military Health System's mission is to ensure the medical readiness of the nation's armed forces and provide world-class healthcare for its 9.4 million beneficiaries, Bono told the committee.

As part of the larger U.S. health system, the Military Health System has a shared responsibility in addressing the nation's opioid epidemic, she said.

"This crisis is touching the lives of so many of our fellow citizens and the department is committed to playing its part to help combat the epidemic and ensure our patients receive the finest care we can provide," Bono said.

She explained DoD's approach to the opioid crisis has a dual focus: to implement a comprehensive model of pain management that focuses on nonpharmacologic pain treatments; and to optimize safe usage for patients when opioid use is necessary.

The department, according to Bono, is "making headway, but there is more to be done in educating our patients and providers on threats from opioid addiction and strategies to reduce abuse."

defense.gov

Active Duty
ADDICTION

Military Health System Opioid Registry To Reduce Addiction

By The Military Health System Communications Office

Two Military Health System innovations are helping to ensure best practices for patients with pain, and for patients who've been diagnosed with post-traumatic stress disorder.

The MHS Opioid Registry utilizes cutting-edge technology for data management and reporting to identify patients who've been prescribed opioids, said Chris Nichols, the Defense Health Agency's program manager for Enterprise Intelligence and Data Solutions. Clinical pharmacy professionals, physicians, and other authorized providers can use the patient lookup capability to proactively monitor and manage patients, and intervene as appropriate.

Opioids such as oxycodone, hydrocodone, codeine, and morphine are prescribed to relieve pain. But they are highly addictive, health care experts say, and overuse can lead to death.

The rates of opioid addiction and overdose deaths are lower in the military than among the general population, said Vice Adm. Raquel Bono, DHA director, during a House Armed Service Committee hearing in June on Military Health System reform. Still, she said, the MHS has a role to play.

"Our beneficiaries are no strangers to chronic pain," Bono said. "While our primary focus is on our own patient population, we're also cognizant of the larger public health crisis surrounding opioids. As health professionals and public servants, we have an obligation to help confront that crisis."

The MHS Opioid Registry was launched in December 2016 and released to all sites in 2017. Data in the registry includes more than 200 variables including demographics, medications, morphine equivalence daily dose, results of urine drug testing, and opioid risk factors. In the future, MHS Opioid Registry users will also be able to evaluate and track alternative non-opioid therapies for pain management.

Nichols said a registry that's accessible by both DoD and VA providers and staff is currently under development.

The PTS Provider Prescribing Profile was developed by the DHA's Pharmacy Operations Division. It lists all providers at military treatment facilities who are treating patients with PTSD or acute stress disorder, said Sushma Roberts, PhD, a clinical psychologist and senior program manager for DoD/VA Integrated Behavioral Health, Clinical Communities Support Section, Clinical Support Division. The tool also documents the medications providers are prescribing.

From February 2000 to June 2018, about 230,000 active-duty service members were diagnosed with PTSD, Roberts said, adding that 75 percent were diagnosed following a deployment of 30 days or longer.

The clinical practice guideline released in 2017 recommended against prescribing benzodiazepines for PTSD patients, Roberts said. Benzos, also known as tranquilizers, act on the brain and central nervous system to produce a calming effect.

People can easily develop a tolerance to benzos, health care experts say, needing higher doses and increased frequency to achieve the same effects. People also may suffer withdrawal symptoms, including insomnia, irritability, anxiety, panic attacks, and seizures.

"Benzos aren't necessarily bad," said Army Lt. Col. Dennis Sarmiento, a psychiatrist and chair of the DHA's Behavioral Health Clinical Community. "There are indications for their use. Short-term, they can help with anxiety, panic, and sleep. Treating such symptoms can help providers engage patients in care and better establish or reinforce rapport."

But medications other than benzos are recommended for treating PTSD because they're more effective, Sarmiento said. For example, antidepressants such as Zoloft, Paxil, Prozac, and Effexor raise the brain's level of serotonin, a chemical that reduces symptoms of depression and anxiety.

They also can be used with trauma-focused psychotherapy, Sarmiento said. Those therapies include talking or writing about traumatic events, or learning and practicing meditation or deep-breathing exercises to manage anxiety.

Sarmiento notes that throughout the MHS, benzo prescriptions have been on a downward trend since peaking in 2012.

According to the tool, the number of benzos prescriptions for MHS beneficiaries diagnosed with PTSD dropped from 1,922 in the first quarter of fiscal year 2017 to 1,622 for second quarter of FY 2018.

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Armed Forces Medicine 2019

Active Duty
ADDICTION

Breaking the Cycle of Addiction with MAT

Medically Assisted Treatment for Opioid Use

By the Military Health System Communications Office

The United States is in the middle of an opioid overdose epidemic, according to the Centers for Disease Control and Prevention, which calculates that more than 350,000 deaths are attributed to opioid overdoses nationwide since 1999. The military is at the forefront of efforts to help curb those numbers through its expansion of medically assisted treatment, also known as MAT.

Vice Adm. Raquel C. Bono, director of the Defense Health Agency, reported to the House Armed Services Committee last month that the military's rate of deadly opiate overdoses is a quarter of the national average, according to House transcripts. Dr. Fuad Issa, chief of the implementation section at the DHA Psychological Health Center of Excellence, said the availability of MAT has a lot to do with breaking the cycle of addiction.

In 2016, the Department of Defense expanded the availability of MAT as part of the TRICARE benefit, with the goal of increasing successful treatment and reducing the number of overdoses and deaths due to opiate abuse, said DHA clinical psychologist and senior policy analyst Dr. Krystyna Bienia.

"Drugs like methadone, naltrexone, and buprenorphine as a medically assisted treatment plan relieve withdrawal symptoms and psychological cravings that make opiate addiction so hard to overcome," she said. "Used correctly, and in conjunction with psychotherapy, support, and counseling, they can help users overcome the addiction to opioids."

The Substance Abuse and Mental Health Services Administration points out that the benefits of MAT include not only curbing withdrawal symptoms and preventing cravings, but also providing medical supervision. MAT works to normalize brain chemistry, block the euphoric effects of opioids (which include prescription drugs such as hydrocodone and oxycodone), and stabilize body functions without the negative effects of the abused drug. MAT has proven to be clinically effective and significantly reduces the need for inpatient detoxification. Bienia notes that MAT provides a comprehensive, individually tailored program of medication and behavioral therapy.

Yet some MAT medications have challenges of their own. Methadone, for example, doesn't produce euphoria; rather, it tricks addicts into thinking they're getting the opiate, according to the National Institute on Drug Abuse. Methadone works by changing how the brain and nervous system respond to pain. But according to Issa, methadone itself can be addictive.

That's why Navy Capt. Edward Simmer, psychiatrist and chief clinical officer for TRICARE, believes it's important to realize that the medication is only one component of the treatment plan. He suggests part of his patients' treatment is going to 12-step programs such as Narcotics Anonymous, and including other community support.

"There's a large social component to drug use," Simmer said. "Relapses are often caused by being around others who use drugs, or stresses associated with drug use. Therefore, successful treatment requires eliminating these triggers to the greatest extent possible."

Bienia explained that the duration of MAT depends on the patient. "After months or a year or more of treatment, the medication can be gradually reduced and eventually stopped … but in some cases [it] has to be taken for a lifetime," she said.

Issa noted that in the past, opiate users had to get their medication at a special dosing site, but today, a prescription for drugs effective in alleviating opiate withdrawal symptoms, such as the combination of buprenorphine and naloxone, can be filled at a local pharmacy. The 2016 TRICARE Mental Health and Substance Use Final Rule allows TRICARE-authorized physicians to provide office-based opioid treatment.

Issa said he believes this may be making a difference, noting that in addition to TRICARE changes, DoD has been training medical providers on the risks of opioids. The number of DoD opioid prescriptions dropped by 56 percent between 2013 and 2017.

According to Bono's testimony to the House committee, less than 1 percent of active-duty service members are abusing or addicted to opioids.

In 2017, the DHA Psychological Health Center of Excellence, along with the Medical Directorate - National Capital Region, trained 192 physicians to prescribe MAT, and more nurse practitioners are being added this year to expand the network and coverage of MAT providers, said Issa.

"Beating an addiction is a drastic change in someone's life, but treatment works," said Simmer. "People do overcome addiction when everyone works together. There is hope."

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PROBUPHINE® (buprenorphine) implant is the first and only product on the market for the six month maintenance treatment of opioid dependence that provides steady state blood levels of buprenorphine around the clock[1]

IMPORTANT SAFETY INFORMATION

WARNING: IMPLANT MIGRATION, PROTRUSION, EXPULSION and NERVE DAMAGE ASSOCIATED WITH INSERTION AND REMOVAL

- **Insertion and removal of PROBUPHINE® are associated with the risk of implant migration, protrusion, expulsion, and nerve damage related to the procedure**
- **PROBUPHINE® is only available through a restricted program called the PROBUPHINE® REMS Program**

See Brief Summary of Prescribing Information for Complete Boxed Warning

INDICATION AND USAGE

- PROBUPHINE® is indicated for the maintenance treatment of opioid dependence in patients who have achieved and sustained prolonged clinical stability on low-to-moderate doses of a transmucosal buprenorphine-containing product (i.e., doses of no more than 8 mg per day of Subutex or Suboxone sublingual tablet or generic equivalent).

- PROBUPHINE® should be used as part of a complete treatment program to include counseling and psychosocial support.

- PROBUPHINE® is not appropriate for new entrants to treatment and patients who have not achieved and sustained prolonged clinical stability, while being maintained on buprenorphine 8 mg per day or less of a Subutex or Suboxone sublingual tablet equivalent or generic equivalent.

NOW from Titan Pharmaceuticals, Inc.

PROBUPHINE® (buprenorphine) is a subdermal implant utilizing Titan Pharmaceuticals, Inc.'s proprietary ProNeura™ drug delivery platform[1]

For your stable patients who need on-going treatment for opioid dependence who have been maintained on transmucosal buprenorphine (<= 8 mg/day) for at least three months[1]

Contraindication
PROBUPHINE® is contraindicated in patients with a history of hypersensitivity to buprenorphine or any other ingredients in PROBUPHINE® (e.g., EVA).

Warnings and Precautions
Serious Complications from Insertion and Removal: Rare but serious complications including nerve damage and migration resulting in embolism and death may result from improper insertion of drug implants inserted in the upper arm. Additional complications may include local migration, protrusion, and expulsion. Incomplete insertions or infections may lead to protrusion or expulsion. All Healthcare Providers must successfully complete a live training program on the insertion and removal procedures and become certified in the PROBUPHINE® REMS program, prior to performing insertions or prescribing PROBUPHINE® implants.
Addiction, Abuse, and Misuse: Buprenorphine can be abused in a manner similar to other opioids. Monitor patients for conditions indicative of diversion or progression of opioid dependence and addictive behaviors.
Respiratory Depression: Life-threatening respiratory depression and death have occurred in association with buprenorphine use. Warn patients of the potential danger of self-administration of benzodiazepines or other CNS depressants while under treatment with PROBPHINE®.
Neonatal Opioid Withdrawal Syndrome: Neonatal opioid withdrawal syndrome (NOWS) is an expected and treatable outcome of prolonged use of opioids during pregnancy.
Adrenal Insufficiency: If diagnosed, treat with physiologic replacement of corticosteroids, and wean patient off of the opioid.
Unintentional Pediatric Exposure: In the event an implant protrudes or comes out, keep the implant away from children. Buprenorphine can cause severe, possibly fatal, respiratory depression in children.
Risk of Opioid Withdrawal with Abrupt Discontinuation: If treatment with PROBUPHINE® is discontinued, monitor patients for withdrawal and treat appropriately
Risk of Hepatitis, Hepatic Events: Monitor liver function tests prior to initiation and during treatment and evaluate suspected hepatic events.
Risk of Withdrawal in Patients Dependent on Full Agonist Opioids: Verify that patient is clinically stable on transmucosal buprenorphine and not dependent on full agonists before inserting PROBUPHINE®.
Treatment of Emergent Acute Pain: Treat pain with a non-opioid analgesic whenever possible. If opioid therapy is required, monitor patients closely because higher doses may be required for analgesic effect.

Adverse Reactions
Adverse events commonly associated with PROBUPHINE® administration (>10% of subjects) were implant-site pain, pruritus, and erythema, as well as non-implant-site related events (2:5%) of headache, depression, constipation, nausea, vomiting, back pain, toothache, and oropharyngeal pain

Please see Brief Summary of Prescribing Information, including the Boxed Warning, on the following pages.

Reference:
1. Probuphine® (package insert). South San Francisco, CA: Titan Pharmaceuticals, Inc.; 2018

TITAN PHARMACEUTICALS

Probuphine®
(buprenorphine) implant
74.2 mg buprenorphine per implant
(equivalent to 80 mg buprenorphine HCl)

PROBUPHINE® (buprenorphine) implants
BRIEF SUMMARY OF PRESCRIBING INFORMATION

This Brief Summary does not include all the information needed to use Probuphine® safely and effectively. See package insert for Full Prescribing Information and Boxed Warning

IMPORTANT SAFETY INFORMATION

Contraindication

PROBUPHINE® is contraindicated in patients with a history of hypersensitivity to buprenorphine or any other ingredients in PROBUPHINE (e.g., EVA).

WARNING: IMPLANT MIGRATION, PROTRUSION, EXPULSION, AND NERVE DAMAGE ASSOCIATED WITH INSERTION AND REMOVAL

Risk Associated with Insertion and Removal

Insertion and removal of PROBUPHINE® are associated with the risk of implant migration, protrusion, and expulsion resulting from the procedure. Rare but serious complications including nerve damage and migration resulting in embolism and death may result from improper insertion of drug implants inserted in the upper arm. Additional complications may include local migration, protrusion and expulsion. Incomplete insertions or infections may lead to protrusion or expulsion. Because of the risks associated with insertion and removal, PROBUPHINE® is available only through a restricted program called the PROBUPHINE® REMS Program. All Healthcare Providers must successfully complete a live training program on the insertion and removal procedures and become certified, prior to performing insertions orprescribing PROBUPHINE® implants. Patients must be monitored to ensure that PROBUPHINE® is removed by a healthcare provider certified to perform insertions.

Warnings and Precautions

Serious Complications from Insertion and Removal: Rare but serious complications including nerve damage and migration resulting in embolism and death may result from improper insertion of drug implants inserted in the upper arm. Additional complications may include local migration, protrusion, and expulsion. Incomplete insertions or infections may lead to protrusion or expulsion. All Healthcare Providers must successfully complete a live training program on the insertion and removal procedures and become certified in the PROBUPHINE® REMS program, prior to performing insertions or prescribing PROBUPHINE® implants.

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Risk of Hepatitis, Hepatic Events: Monitor liver function tests prior to initiation and during treatment and evaluate suspected hepatic events.

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Treatment of Emergent Acute Pain: Treat pain with a non-opioid analgesic whenever possible. If opioid therapy is required, monitor patients closely because higher doses may be required for analgesic effect.

Continued on next page

IMPORTANT SAFETY INFORMATION

Drug Abuse

As a controlled drug, like morphine and other opioids, PROBUPHINE® has the potential for being abused and is subject to criminal diversion. Each PROBUPHINE® implant contains 74.2 mg of buprenorphine and can come out or protrude, resulting in the potential for accidental exposure or intentional misuse, abuse, and diversion. Healthcare Providers should contact their state professional licensing board or state controlled substances authority for information on how to prevent and detect misuse, abuse, and diversion of buprenorphine.

Abuse of buprenorphine poses a risk of overdose and death. Proper assessment of the patient, periodic re-evaluation of therapy, and proper handling and storage of PROBUPHINE® are appropriate measures that help to limit misuse, abuse, and diversion of opioid drugs.

Over Dosage

Clinical Presentation: The manifestations of acute buprenorphine overdose include pinpoint pupils, sedation, hypotension, respiratory depression, and death.

Treatment of Overdose: In case of overdose, priorities are the re-establishment of a patent and protected airway and institution of assisted ventilation, if needed. Employ other supportive measures (including oxygen, vasopressors) in the management of circulatory shock and pulmonary edema as indicated. Cardiac arrest or arrhythmias will require advanced life support techniques.

Please refer to https://probuphine.com/prescribing-information/ for detailed information

Adverse Reactions

- Serious Complications from Insertion and Removal of PROBUPHINE
- Addiction, Abuse, and Misuse
- Respiratory and CNS Depression
- Neonatal Opioid Withdrawal Syndrome
- Adrenal Insufficiency
- Opioid Withdrawal
- Hepatitis, Hepatic Events
- Hypersensitivity Reactions
- Orthostatic Hypotension
- Elevation of Cerebrospinal Fluid Pressure
- Elevation of Intracholedochal Pressure
- Infection

To report SUSPECTED ADVERSE REACTIONS, contact Titan Pharmaceuticals, Inc. at 1-844- 859-6341 or FDA at 1-800-FDA-1088 or www.fda.gov/medwatch

Patient Counseling Information

Advise the patient to read the FDA-approved patient labelling (Medication Guide).

Instruct patients to read the Medication Guide each time PROBUPHINE® is implanted because new information may be available.

Reference:

1. Probuphine® (package insert). South San Francisco, CA: Titan Pharmaceuticals, Inc.; 2018

Please See Full Prescribing Information Including Boxed Warning And Medication Guide
https://probuphine.com/prescribing-information/
https://probuphine.com/wp-content/uploads/2017/06/medguide-clean.pdf

TITAN™ PHARMACEUTICALS

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Active Duty
EMERGENCY

USAISR Leading the Way in 'Stop the Bleed' Initiative

By Dr. Steven Galvan, USAISR Public Affairs Officer U.S. Army Institute of Surgical Research

"Stop the Bleed" national awareness campaign was launched in 2015 to encourage bystanders in emergency incidents to get involved and stop life threating bleeding. The campaign encourages everyone to become trained, equipped and empowered to help stop bleeding in emergencies before help arrives.

To support this initiative, Col. (Dr.) Shawn Nessen, commander of the U.S. Army Institute of Surgical Research and the Army Surgeon General Trauma Consultant, have requested that all USAISR staff be trained to stop the bleed. "The USAISR efforts to control battlefield hemorrhage have resulted in many saved lives among our wounded service members," said Nessen. "Implementing the stop the bleed program, initiated by the White House, gives us an opportunity to extend our leadership to the civilian sector. This program will allow anyone trained in its techniques to manage hemorrhage until help arrives." The first phase of the getting staff trained to stop the bleed involved two things: outfitting "Stop the Bleed" kits near every AED (automated external defibrillator) stations throughout the institute's two buildings, and conducting hands-on classes to train instructors who will be training the staff.

Chris Bell places a tourniquet on Staff Sgt. Luis Sanchez during a training session designed to train instructors to conduct classes for U.S. Army Institute of Surgical Research staff members on "Stop the Bleed."

"We took ownership of our own competence in that we are making ourselves more ready to respond to problems like violence like at the Navy Yard, and twice at Fort Hood," said Dr. John Kragh, an orthopedic surgeon and tourniquet researcher, who assisted with the initial training. "We are also stewards of the community on this issue, and therefore, we are role models. Col. Nessen has emphasized these points well."

Kragh stressed that the most important thing that staff members learn is when they see a need; they can intervene and stop the bleed. "See a need? Stop the bleed! They get information on how and when to intervene so they can better judge, and they demonstrate the skills," added Kragh. Staff Sgt. Luis Sanchez, logistics noncommissioned officer, was among the first staff members to undergo the instructor training. "The training was very good, especially for the staff members who have never encountered this type of situation where they need to know what to do and act quickly," he said. "I learned how properly pack a wound on a casualty mannequin.

This training was beneficial because it keeps us sharp and ready." Stephanie Truss, USAISR Health, Safety and Environmental manager, coordinated the instructor training and attended the initial class. "The installation of the "Stop the Bleed" kits along with the rapid deployment of a diverse training team are all integral parts of the commander's initiative," said Truss. "We are the leading edge for the methods of stop the bleed and we hope to not only increase the amount of skilled trained staff but for each of them to share the knowledge in the community."

Truss will coordinate another iteration of instructor classes before initiating training for the staff in 2018. "It's important for our staff to be trained, because we never know what can happen," said Sanchez. "The more prepared we are as a staff, the better our chances of surviving in a situation where we need to apply these skills and save lives." "We are changing the world," added Kragh. "In my experience, it's really slow and hard to substantially improve the world.

It's most gratifying to have improved first aid which potentially affects learners and patients globally. We continue this effort in service of the 7.5 billion people on the planet today and the next 7.5 billion to come. This is as good as it gets, the work of our lifetime to help others hold onto their lifetimes."

usaisr.amedd.army.mil

Active Duty
EMERGENCY

School of Air Evacuation to Hold 75th Anniversary in Conjunction with USAFSAM's Centennial Celebrations

By Stacey Geiger, 88th Air Base Wing Public Affairs

The School of Air Evacuation is celebrating their 75th anniversary August 2 and 3 at the United States Air Force School of Aerospace Medicine.

"As part of USAFSAM's centennial celebration, the two-day event will honor the past, present and future of aeromedical evacuation," said Elizabeth Miller, Deputy Chair of the En Route Care Department. "Throughout event, we have a series of captivating guest speakers lined up to discuss various topics in regards to air evacuation."

Lt. Gen. Dorothy Hogg, United States Air Force Surgeon General, will kick off the event and provide her perspective of Air Force Medical Service.

Patient simulators, which can blink, speak, bleed and allow students to monitor vital signs and administer drugs, are used for aeromedical evacuation training by active-duty, reserve and ANG Airmen, as well as, members of other services and partner nations, aboard C-17 and C-130 mockups during the Flight Nurse and Aeromedical Technician Course at the 711th Human Performance Wing's U.S. Air Force School of Aerospace Medicine at Wright Patterson AFB, Ohio, Jan. 29, 2018.
(U.S. Air Force photo by J.M. Eddins Jr.)

The 349th Air Evacuation Group was activated during World War II on October 6, 1942 at Bowman Field, Kentucky. Directed by the war department, the 349th's mission was to train flight surgeons, nurses and enlisted members for air evacuation duties aboard cargo carriers. On February 18, 1943, the 349th graduated their first class of 30 nurses. The graduates participated in a four-week program that included class work in air evacuation nursing, air evacuation tactics, survival, aeromedical physiology, mental hygiene in relation to flying, training in plane loading procedures, military indoctrination and a one day bivouac.

On June 25, 1943, the name "School of Air Evacuation" was officially recognized by the Army Air Force. In 1944, the School of Air Evacuation was transferred to be part of the School of Aviation Medicine located at Brooks AFB, Texas, and then relocated to Wright-Patterson AFB in 2011.

Following the guest speakers, a "Jenny" dedication will be held to recognize and show appreciation to the first airplane used in air evacuation which was instrumental in prepared the Air Force for the aeromedical evacuation mission. 711th Human Performance Wing commander, Brig. Gen. Mark Koeniger, will be the dedication's guest speaker.

The "Jenny", a Curtiss JN-4, was the first aircraft deemed as the first air ambulance. At the end of World War I, the United States Army recognized the need to air transport wounded soldiers. In the same year, 1918, Maj. Nelson E. Driver and Capt. William C. Ocker converted a Curtiss JN-4 "Jenny" bi-plane into an air ambulance. The cockpit was modified to accommodate a stretcher and the beginning of aeromedical evacuation was born.

Day two will continue with guest speakers followed by a wreath presentation in remembrance of the flight nurses and technicians who have lost their lives in the line of duty. Names of the fallen will be read with a moment of silence.

After the wreath presentation, tours of the School of Aeromedical Evacuation will be offered and conclude with the graduation ceremony for students currently attending the School of Aeromedical Evacuation Flight Nurse and Technician Course.

"It is an honor to host the 75th anniversary here at USAFSAM, we are privileged to have a diverse group of speakers and events that celebrate the past, present and future of the noble profession of evacuating wounded warriors and bringing them home," said Miller.

airforcemedicine.af.mil

HALYARD

GEAR UP FOR CRITICAL INTERVENTIONS

THE RIGHT GLOVE FOR THE RIGHT TASK

On-the-job barrier performance of exam gloves can differ, depending on the glove material and the task at hand. Consider the benefits and limitations of these materials when selecting exam gloves for each situation:

	Natural Rubber Latex	Nitrile	Vinyl	Polychloroprene
Puncture resistance/ durability	✓	✓		✓
Comfort and tactile sensitivity	✓✓	✓		✓✓
Resistance to chemo drugs and chemicals	✓	✓✓		✓
Cost	$$	$$	$	$$$
Risk of Type I allergic reaction	⚠			

With its balanced properties, affordable cost and no risk of latex allergies, Nitrile has become the #1 exam glove material in the healthcare industry.

IMPORTANT FACTORS TO CONSIDER

ASTM standards can help you determine if your glove has the properties you need for each application. The standards for nitrile exam glove characteristics are contained in ASTM D6319-10.[1]

- **Powder-free.** Powdered exam gloves are banned by the FDA as of January 18, 2017[2] because they present a substantial risk to patients and healthcare workers. Make sure all exam gloves are powder-free.
- **Thickness (ASTM D3767).** Choose glove thickness based on the level of risk. Thicker gloves are generally more protective but offer less comfort and tactile sensitivity.
- **Length.** Choose longer gloves when the area of exposure is wider or unknown or there is a risk of channeling (fluids flowing down between the gown cuff and the glove).
- **Tensile Strength (ASTM D412).** Aim for high tensile strength (the amount of force applied to a glove until it breaks, normalized for thickness). Also consider the force at break, which is not normalized for thickness. This gives you a better reading of glove durability.
- **Ultimate Elongation (ASTM D412).** Look for a high level of stretch so gloves give rather than break when stressed or snagged during a procedure.

KNOW ABOUT TESTING STANDARDS

A wide range of tests help determine the usability of exam gloves in different environments and procedures.

- **Water Leak test (ASTM D5151)** fills gloves with water to detect holes that compromise protection. Aim for the lowest possible value: AQL of 1.0 or lower.[3]
- **Viral Penetration (ASTM F1671-97b)** – be sure the gloves you choose have successfully passed this test.
- **Chemotherapy Drugs testing** clears gloves for this special use. The chemotherapy gloves you select should be tested per the latest standard (ASTM D6978-05) using a wide range of chemotherapy agents. Breakthrough times should be listed on the dispenser box.

[1] The standards for exam gloves characteristics are contained in ASTM D3578-05 for natural rubber latex and D5250-06 for vinyl.
[2] https://www.federalregister.gov/documents/2016/12/19/2016-30382/banned-devices-powdered-surgeons-gloves-powdered-patient-examination-gloves-and-absorbable-powder
[3] The ASTM standard allows for an AQL of maximum 2.5 for exam gloves.

Caution: These gloves do not protect against heat or fire. Do not use in applications involving exposure to fire, flames or other heat.

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With proprietary QUICK CHECK* breach detection technology, NEW BLACK-FIRE* Nitrile Exam Gloves offer the unique ability to detect rips and tears by revealing a high-visibility orange inner layer through the breach.

STERLING SG* & STERLING*
Hospital-wide/general use for virtually every task[1]. Comfortable, strong, cleared for use in chemotherapy.

- Available with extended cuff
- NFPA 1999-2013 certified[11]
- AQL of 1.0

BLACK-FIRE*
Tactical black glove for low to high risk procedures[1]. QUICK CHECK* breach detection: black side for stealth, orange side for high visibility.

- NFPA 1999-2013 certified
- AQL of 1.0
- Resists permeation of fentanyl for up to 240 minutes (tested according to ASTM D6978)

PURPLE NITRILE*
Maximum protection for higher risk procedures[1]. Cleared for use with a wide range of chemotherapy drugs.

- Available with extended cuff
- NFPA 1999-2013 certified[11]
- AQL of 1.0

[1] Based on glove thickness and physical properties
[11] Select models only

For more information and samples, contact your distributor or go to www.black-fire.com

Active Duty
EMERGENCY

380th EMDG: Providing Care to the Fight

By Tech. Sgt. Darnell T. Cannady, 380 AEW/PA

Senior Airman Stephanie Poe-Orange, 380th Expeditionary Medical Group aerospace medical technician, checks the blood pressure of a patient at Al Dhafra Air Base, United Arab Emirates, Nov. 21, 2018. The Medical Operations Flight consists of Clinical Operations and Specialty Services.
(U.S. Air Force photo by Tech. Sgt. Darnell T. Cannady)

The 380th Air Expeditionary Wing consists of four groups executing the warfighting mission. One of these groups, the 380th Expeditionary Medical Group, provides various medical care and services supporting deployed personnel at Al Dhafra Air Base, United Arab Emirates.

To achieve success, they are focused on evolving as a high-reliability organization by embedding innovation and Continuous Process Improvement at every level. By strengthening host nation and coalition partnerships, they increase efficacy and maximize the extension of medical benefits to all through enabling and empowering Phantom Medics through deliberate professional leadership development.

"As an Expeditionary Medical Group, our mission is to support defense of the region and delivery of airpower by providing high-quality, highly reliable trusted care," said Maj. Brandon Cochran, 380th Expeditionary Medical Group administrator. "Our aim is to optimize warfighter performance through proactive and adaptive medicine. The 380th EMDG is staffed and prepared to support urgent or emergency medical needs as well as support the flight medicine enterprise of the 380 AEW."

There are three distinct flights executing the 380th EMDG mission. Each features a unique and tailored skillset focused on the delivery of trusted care to Al Dhafra AB.

The Aeromedical-Dental Flight consists of Dental, Public Health, Bioenvironmental Engineering, Flight Medicine, and Aerospace Medical Support. With a broad and diverse capability set, the AMDF flight provides limited comprehensive dental care, disease surveillance and trending, sanitation and hygiene education, inspection services and industrial shop training and surveillance.

They also provide Chemical-Biological-Radiological-Nuclear response, air and water quality testing and radiation safety and noise dosimetry. Furthermore, they provide flight medicine and aerospace medical support by fatigue management, flyer care and emergency response, occupational health, and aeromedical evacuation support.

"I think that is the best reality," said Master Sgt. Lolita Reels, 380th EMDG public health craftsman. "We get out there and see what different occupations are doing, what they're studied for and how they're applying it. As medical, I believe we get to see more than any other shop because we see the health perspective, and the job perspective along with the overall perspective of readiness and how it affects us."

The Medical Operations Flight consists of Clinical Operations and Specialty Services. The Clinical Operations element provides routine and urgent warfighter care to include immunizations while the Specialty Services element provides both Mental Health and Physical Therapy services.

MDOF is our point-of-care flight, 90 percent of patient interactions are accomplished by the Airmen of this flight. This flight also supports on base response missions; such as injury, fire emergency services, and Explosive Ordinance Disposal detonation support.

"My job is important by making sure that everyone is ready to perform their jobs at the best of their abilities," said Senior Airman Stephanie Poe-Orange, 380th EMDG aerospace medical technician. "If I can help people every day then it's a successful day to me"

> "As an Expeditionary Medical Group, our mission is to support defense of the region and delivery of airpower by providing high-quality, highly reliable trusted care. Our aim is to optimize warfighter performance through proactive and adaptive medicine. The 380th EMDG is staffed and prepared to support urgent or emergency medical needs as well as support the flight medicine enterprise of the 380 AEW."
>
> Maj. Brandon Cochran
> 380th Expeditionary Medical Group administrator

The Medical Support Flight consists of Support Services and Ancillary Services. The Support Services element consists of Medical Administration, Medical Logistics and Biomedical Repair. Often behind the scenes, these Airmen facilitate TRICARE liaison services, off-base or network referral care management, claims payment, aeromedical evacuation coordination, medical information systems support, and unit travel and readiness services. They also provide medical supply and equipment repair, medical equipment maintenance, medical facility management, and management of medical War Reserve Material.

"You can't fly without supply, so if we don't receive, procure, or acquisition items the warfighters needs then the mission stops," said Master Sgt. Camela LaCoste, 380th EMDG medical logistics noncommissioned officer in charge. "We have more than 650,000 items at the Medical Logistics Hospital, we're proud of that and it's at 100 percent accuracy. We can immediately grab items and ship them out or distribute them on the spot."

The Ancillary Services element consists of Pharmacy, Radiology and Laboratory Services. This element provides highly specialized diagnostic and therapeutic capabilities that are critical in the prevention, diagnosis and treatment of illness or injury.

"At the end of the day, we support the warfighters," added LaCoste. "We support the Wing, Groups and down-range members with lifesaving supplies, and I really like having a part in that process."

Phantom Medics are engaged across the wing. Mental Health regularly participates in personal improvement seminars as part of the Al Dhafra AB Coalition for Awareness, Response and Empowerment team. Furthermore, the Public Health and Bioenvironmental Engineering sections provide key on-the-job training, sanitation and hygiene, confined space safety, hazard materials program and occupational health in their work areas to ensure maximum mission accomplishment with the minimum exposure to health risks for Airmen.

The 380th EMDG also regularly supports wing events such as the DANCON 25K March, EOD Detonations, Fire Emergency Response, military ceremonies and many others.

"Just as maintenance is necessary on all aircraft, and Intelligence Surveillance and Reconnaissance, and weapons system to produce maximum lethality, so is maintenance and care necessary to achieve optimal performance in the human weapons system," said Cochran. "(Al Dhafra AB) needs every Airman and Soldier functioning at their best to adapt to the sheer volume and velocity of the mission in an ever-changing expeditionary environment. It's our job, as Phantom Medics, to ensure they are physically and mentally prepared to meet this challenge."

airforcemedicine.af.mil

Active Duty
EMERGENCY

Rabies: One of the World's Oldest and Deadliest Threats to Military Soldiers

By Tom Adams, Publisher

I had the great pleasure of speaking with Peter Costa recently, founding co-organizer of the annual observance that's become known as "World Rabies Day", and discussing the very serious threat that Rabies, one of the world's oldest recorded diseases, still poses to U.S. Military personnel serving both domestically and abroad.

Peter Costa has worked with the Veterinary Medical Corps, helping educate military personnel in Afghanistan and other nations about this disease and raise awareness to bring improvements in prevention measures and medical response following an exposure.

"Soldiers were positioned on base perimeters to monitor for feral animal activity, because of the higher risks of infection to animals in those countries and the higher risks for them to transmit the Rabies infection to humans. Instruction was given on ways to prevent animal to human contact whenever possible, but unfortunately exposures still happen as was the case several years ago when a solder died after coming back from deployment overseas."

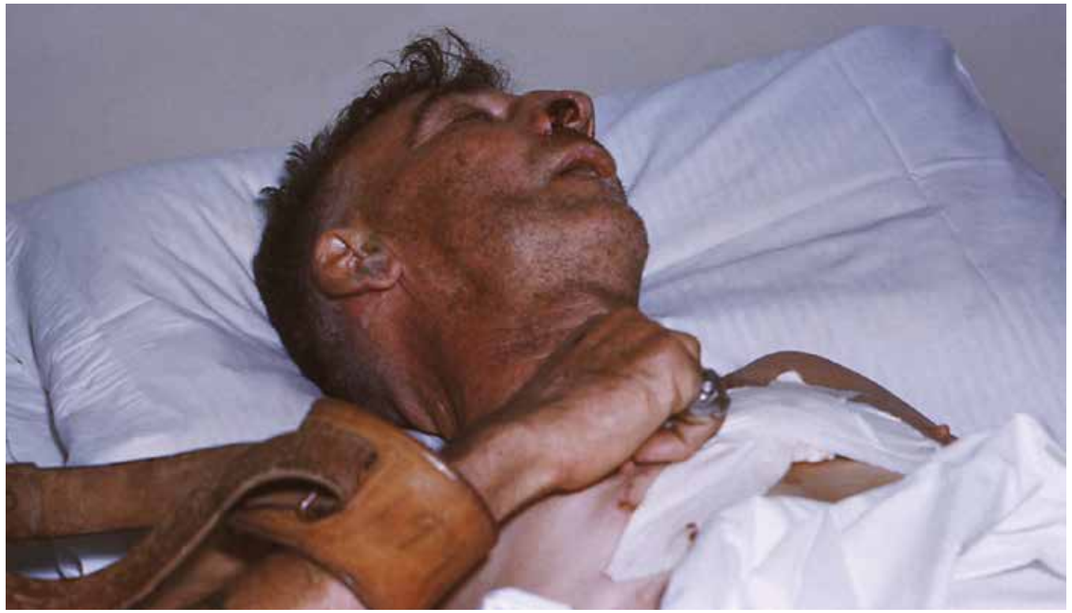
Rabies continues to be one of the world's most deadly diseases. "Despite all of the emerging infectious diseases that our hospitals are up against, and including our U.S. Military, which is going into countries that are higher-risk for Rabies infection as well as a variety of other serious health issues, Rabies continues to be the deadliest disease. Of all the infectious diseases we hear about on the news such as Ebola, Zika, MERS, SARS, and recently a rise in Yellow Fever, Rabies continues to have the highest case fatality rate of any disease and kills 99.9 percent of those who become infected."

Military health experts agree that education should begin at the pre-deployment stage, during the initial preparation of readiness. Whether or not soldiers will ever be exposed is secondary, the fact remains that if they do get exposed, their chance of survival depends on receiving prompt and proper medical care from qualified and educated health care providers.

Kedrion Biopharma, the company for which Peter Costa now works, presented a poster at last year's International Rabies in the Americas (RITA) Conference to highlight their human rabies immune globulin (HRIG), which can be stored at room

temperature for up to one month. HRIG, and the rabies vaccine series along with thorough washing of wounds provides 100% protection as long as the exposure is treated in a timely manner. [CPI]

Cold-chain storage of rabies biologics has long been a topic of concern for treating rabies exposures in locations where proper refrigeration cannot be guaranteed and is often discussed at the annual RITA Conference by the world's leading rabies researchers and scientists. Notably, Kedrion Biopharma's HRIG product is the only HRIG with 30-day room temperature stability, which helps reduce waste through loss prevention. The extended temperature stability may also be beneficial for use in remote areas, non-acute settings and field-based medical applications such as wilderness medicine and armed forces operations.



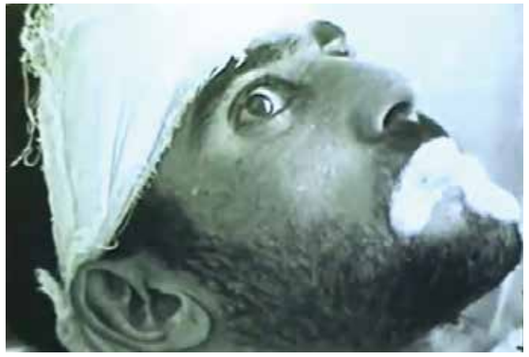
Hospitalized human rabies victim restrained while bedridden. (*Photo credit: CDC*)

Peter Costa stated that, "During my time working with the Veterinary Medical Corps, we promoted specific posters developed by the U.S. Army Public Health Command showing the basic educational points needed most for rabies prevention. The Military has so many possible areas that can be connected to the disease and this also includes a veterinary component for vaccinating and protecting working animals, guard dogs and recovery animals that are coming back into the United States".

Costa's current education to U.S. medical providers also includes information about a recent change to the HRIG market landscape, where a new formulation was introduced by Grifols. This formulation is a different concentration than what has been the industry standard for nearly 50 years and may cause confusion among medical providers.

"This concentration change brings with it operational, clinical, and medication safety considerations, which all medical personnel must be made aware of in order to make informed treatment decisions. We have been working extensively over the past few months to describe what changes have occurred and how it impacts hospitals and practice guidelines/protocols for rabies post-exposure prophylaxis."

Peter Costa is a public health educator and epidemiologist by training. He received a master's degree in public health and went on to become a master certified health education specialist. He has been recognized for his contributions to veterinary public health and human health with an honorary diploma from the American Veterinary Epidemiological Society. In 2006, the U.S. CDC conducted a national search looking for a public health educator to help spearhead their global rabies education campaign. They had done a national search through the state health departments, where at the time Costa was working at the North Carolina Division of Public Health and their State Public Health Veterinarian mentioned it to him.



Signs and Symptoms: The early symptoms of rabies include malaise, alternating periods of irritability and anxiety, headache, fever, and sometimes, itching or pain at the site of the bite. The disease progresses to depression, agitation, throat spasm followed by excessive salivation (foaming at the mouth) and hydrophobia. In the later stages of the disease rabies leads to; numbness or paralysis, spasms of the throat muscles, seizures, mental confusion, coma, and death. Death usually occurs within 2 weeks of onset of symptoms. The incubation period is related to the distance between the bite site and the brain, wound severity and amount of virus. The symptoms usually start 2 to 8 weeks after exposure to a rabid animal. Rarely, it can take as few as 5 days or more than a year for symptoms to appear. (*Photo credit: Hawaii State Public Health*)

continued on page 38

IMMEDIATE RABIES PROTECTION

Designed Using Advanced Manufacturing Technology

INDICATIONS AND USAGE

KEDRAB™ (Rabies Immune Globulin [Human]) is a human rabies immunoglobulin (HRIG) indicated for passive, transient post-exposure prophylaxis (PEP) of rabies infection, when given immediately after contact with a rabid or possibly rabid animal. KEDRAB should be administered concurrently with a full course of rabies vaccine.

- Additional doses of KEDRAB should not be administered once vaccine treatment has been initiated, since this may interfere with the immune response to the rabies vaccine.
- KEDRAB should not be administered to patients with a history of a complete pre-exposure or post-exposure vaccination regimen and confirmed adequate rabies antibody titer.

KEDRAB™
Rabies Immune Globulin (Human)

Visit KEDRAB.com or call 1-855-353-7466 to order KEDRAB today.

KEDRAB IMMEDIATELY NEUTRALIZES THE RABIES VIRUS[1]

Because the rabies vaccine can take approximately 7 to 10 days to work,[2] use a human rabies immune globulin (HRIG), such as KEDRAB, to deliver immediate rabies virus neutralizing antibody protection on day 0.[2,3]

KEDRAB™ (Rabies Immune Globulin [Human]) Product Highlights

Stability[1]:

- The only HRIG that can be stored at room temperature not exceeding 25°C (77°F) for up to one month. Use within one month; do not return to refrigeration

Purity[4]:

- Plasma is processed and purified using a series of chromatographic steps resulting in:
  - Reduced aggregates and coagulation factors
  - Highly pure IgG (≥95%)

Safety[1]:

- Three validated and effective viral inactivation/removal steps are employed in the manufacture of KEDRAB
- The manufacturing process reduces the level of thrombogenic activity
  - Patients at increased risk of thrombosis or thrombotic complications should be monitored for at least 24 hours after administration

Available in 2-mL and 10-mL vials (NDC 76125-150-02/NDC 76125-150-10)[1]

Preservative free, latex free, and pyrogen free[1]

SELECTED IMPORTANT SAFETY INFORMATION

- Patients who can document previous complete rabies pre-exposure prophylaxis or complete post-exposure prophylaxis should only receive a booster rabies vaccine without KEDRAB, because KEDRAB may interfere with the anamnestic response to the vaccine (ACIP).
- KEDRAB should not be injected into a blood vessel because of the risk of severe allergic or hypersensitivity reactions, including anaphylactic shock. KEDRAB can induce a fall in blood pressure associated with an anaphylactic reaction, even in patients who tolerated previous treatment with human immunoglobulin. KEDRAB should be discontinued immediately if there is an allergic or anaphylactic type reaction. In case of shock, standard medical treatment should be implemented. Epinephrine should be available.

Please see additional Important Safety Information and Brief Summary of Prescribing Information on the following pages and visit KEDRAB.com.

KEDRION BIOPHARMA

INDICATIONS AND USAGE

KEDRAB™ (Rabies Immune Globulin [Human]) is a human rabies immunoglobulin (HRIG) indicated for passive, transient post-exposure prophylaxis (PEP) of rabies infection, when given immediately after contact with a rabid or possibly rabid animal. KEDRAB should be administered concurrently with a full course of rabies vaccine.

- Additional doses of KEDRAB should not be administered once vaccine treatment has been initiated, since this may interfere with the immune response to the rabies vaccine.
- KEDRAB should not be administered to patients with a history of a complete pre-exposure or post-exposure vaccination regimen and confirmed adequate rabies antibody titer.

IMPORTANT SAFETY INFORMATION

- Patients who can document previous complete rabies pre-exposure prophylaxis or complete post-exposure prophylaxis should only receive a booster rabies vaccine without KEDRAB, because KEDRAB may interfere with the anamnestic response to the vaccine (ACIP).
- KEDRAB should not be injected into a blood vessel because of the risk of severe allergic or hypersensitivity reactions, including anaphylactic shock. KEDRAB can induce a fall in blood pressure associated with an anaphylactic reaction, even in patients who tolerated previous treatment with human immunoglobulin. KEDRAB should be discontinued immediately if there is an allergic or anaphylactic type reaction. In case of shock, standard medical treatment should be implemented. Epinephrine should be available.
- Patients with a history of prior systemic allergic reactions following administration of human immune globulin preparations should be monitored for hypersensitivity. KEDRAB contains a small quantity of IgA. Patients who are deficient in IgA have the potential to develop IgA antibodies and may have anaphylactic reactions following administration of blood components containing IgA. The healthcare provider should assess the risks of this reaction against the benefits of administering KEDRAB.
- Patients at increased risk of thrombosis or thrombotic complications should be monitored for at least 24 hours after KEDRAB administration.
- Hemolysis may occur in patients receiving immune globulin products, particularly those who are determined to be at increased risk. Clinical symptoms and signs of hemolysis include fever, chills and dark urine. If any of these occur, appropriate laboratory testing should be performed and medical therapy administered as indicated.
- KEDRAB administration may interfere with the development of an immune response to live attenuated virus vaccines. After KEDRAB administration, immunization with measles vaccine should be avoided within 4 months; other live attenuated virus vaccines avoided within 3 months.
- A transient rise of the various passively transferred antibodies in the patient's blood may result in misleading positive results of serologic tests after KEDRAB administration. Passive transmission of antibodies to erythrocyte antigens may interfere with serologic tests for red cell antibodies such as the antiglobulin test (Coombs' test).
- KEDRAB is derived from human plasma; therefore, the potential exists that KEDRAB administration may transmit infectious agents such as viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent. There is also the possibility that unknown infectious agents may be present in KEDRAB.
- In clinical trials, the most common adverse reactions in subjects treated with KEDRAB were injection site pain (33%), headache (15%), muscle pain (9%), and upper respiratory tract infection (9%).

Please see Brief Summary of Full Prescribing Information on following page.

References: 1. KEDRAB [package insert]. Fort Lee, NJ: Kedrion Biopharma Inc.; 2017. **2.** Centers for Disease Control and Prevention. Use of a reduced (4-dose) vaccine schedule for postexposure prophylaxis to prevent human rabies: recommendations of the Advisory Committee on Immunization Practices. *MMWR Morb Mortal Wkly Rep.* 2010;59(2):1-9. **3.** Centers for Disease Control and Prevention. Human Rabies Prevention—United States, 2008 Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR Morb Mortal Wkly Rep.* 2008;57(RR-3):1-28. **4.** Data on file. Kamada Ltd.

KEDRAB™
Rabies Immune Globulin (Human)

KEDRION BIOPHARMA

KEDRAB Rabies Immune Globulin (Human)

BRIEF SUMMARY OF FULL PRESCRIBING INFORMATION

INDICATIONS AND USAGE

KEDRAB is a human rabies immunoglobulin (HRIG) indicated for passive, transient postexposure prophylaxis (PEP) of rabies infection, when given immediately after contact with a rabid or possibly rabid animal. KEDRAB should be administered concurrently with a full course of rabies vaccine. Do not administer additional (repeat) doses of KEDRAB once vaccine treatment has been initiated, since this may interfere with the immune response to the rabies vaccine. Do not administer KEDRAB to patients with a history of a complete pre-exposure or post-exposure vaccination regimen and confirmed adequate rabies antibody titer.

WARNINGS AND PRECAUTIONS

Previous Rabies Vaccination: Patients who can document previous complete rabies pre-exposure prophylaxis or complete post-exposure prophylaxis should only receive a booster rabies vaccine without KEDRAB, because KEDRAB may interfere with the anamnestic response to the vaccine (ACIP). **Anaphylactic Shock:** KEDRAB should not be injected into a blood vessel because of the risk of severe allergic or hypersensitivity reactions, including anaphylactic shock. KEDRAB can induce a fall in blood pressure associated with an anaphylactic reaction, even in patients who tolerated previous treatment with human immunoglobulin. Discontinue KEDRAB injection immediately if there is an allergic or anaphylactic type reaction. In case of shock, implement standard medical treatment. Epinephrine should be available for treatment of acute anaphylactic symptoms. **Hypersensitivity:** Patients with a history of prior systemic allergic reactions following administration of human immune globulin preparations should be monitored for hypersensitivity. KEDRAB contains a small quantity of IgA. Patients who are deficient in IgA have the potential to develop IgA antibodies and may have anaphylactic reactions following administration of blood components containing IgA. The healthcare provider should assess the risks of this reaction against the benefits of administering KEDRAB. **Thrombosis:** Patients at increased risk of thrombosis or thrombotic complications should be monitored for at least 24 hours after KEDRAB administration. Patients at increased risk of thrombosis include patients with acquired or hereditary hypercoagulable states, prolonged immobilization, in-dwelling vascular catheters, advanced age, estrogen use, a history of venous or arterial thrombosis, cardiovascular risk factors (including history of atherosclerosis and/or impaired cardiac output), and hyperviscosity syndromes (including cryoglobulinemias, fasting chylomicronemia and/or high triglyceride levels, and monoclonal gammopathies). Consider measurement of baseline blood viscosity in patients at risk for hyperviscosity. **Hemolysis:** Hemolysis may occur in patients receiving immune globulin products, particularly those who are determined to be at increased risk. Patients at increased risk include those with non-O blood group types, those with underlying associated inflammatory conditions, and those receiving high cumulative doses of immune globulins over the course of several days. Clinical symptoms and signs of hemolysis include fever, chills and dark urine. If any of these occur, perform appropriate laboratory testing and administer medical therapy as indicated. **Live Attenuated Virus Vaccines:** KEDRAB administration may interfere with the development of an immune response to live attenuated virus vaccines. Avoid immunization with measles vaccine within 4 months after KEDRAB administration. Avoid immunization with other live attenuated virus vaccines within 3 months after KEDRAB administration. **Interference with Serologic Testing:** A transient rise of the various passively transferred antibodies in the patient's blood may result in misleading positive results of serologic tests after KEDRAB administration. Passive transmission of antibodies to erythrocyte antigens, e.g., A, B, and D, may interfere with serologic tests for red cell antibodies such as the antiglobulin test (Coombs' test). **Transmissible Infectious Agents:** KEDRAB is derived from human plasma; therefore, the potential exists that KEDRAB administration may transmit infectious agents such as viruses, the variant Creutzfeldt-Jakob disease (vCJD) agent, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent. The risk of transmitting an infectious agent has been minimized by: Screening plasma donors for prior exposure to certain viruses; Testing for certain viral infections; Inactivating and removing certain viruses during the manufacturing process [see *Description* in the Full Prescribing Information]. Despite these measures, KEDRAB administration can still potentially transmit infectious diseases. There is also the possibility that unknown infectious agents may be present in KEDRAB. Any infection considered to have possibly been transmitted by this product should be reported by the physician or other healthcare provider to Kedrion Biopharma Inc. Customer Service (1-855-353-7466) or FDA at 1-800-FDA-1088.

ADVERSE REACTIONS

Clinical Trials Experience: Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in clinical trials of a drug cannot be directly compared to rates of adverse reactions in clinical trials of another drug and may not reflect the rates observed in clinical practice. KEDRAB was evaluated in three single-center, controlled clinical trials. Subjects in the clinical studies of KEDRAB were healthy adults, primarily white and ranged in age from 18 to 72 years. A total of 160 subjects were treated in these three studies, including 91 subjects who received single intramuscular doses of KEDRAB (20 IU/kg) with or without rabies vaccine. Table 1 summarizes adverse events (assessed by the investigator as related or unrelated to study treatment) occurring in >3% of subjects in the clinical trials of KEDRAB. The most frequent adverse events in the KEDRAB group (>6%) were injection site pain, headache, muscle pain, and upper respiratory tract infection (Table 1). **Table 1: Adverse Events Occurring in >3% of Subjects in All Studies Combined** (91 subjects receiving KEDRAB vs. 84 subjects receiving Comparator HRIG vs. 8 subjects receiving Saline Placebo + Vaccine). Data are presented as number of subjects (% of subjects). Injection site pain, 30 (33), 26 (31), 2 (25); Headache, 14 (15), 11 (13), 3 (38); Muscle pain, 8 (9), 6 (7), 0; Upper respiratory tract infection, 8 (9), 8 (10), 0; Joint pain, 5 (6), 0, 1 (13); Dizziness, 5 (6), 3 (4), 0; Fatigue, 5 (6), 2 (2), 0; Abdominal pain, 4 (4), 1 (1), 0; Blood in urine, 4 (4), 2 (2), 0; Nausea, 4 (4), 3 (4), 0; Feeling faint, 4 (4), 1 (1), 0; Bruising, 3 (3), 1 (1), 0; Sunburn, 3 (3), 0, 0; White blood cells in urine, 3 (3), 4 (5), 0. Less common adverse events were joint pain, dizziness, fatigue, abdominal pain, blood in urine, nausea, feeling faint, bruising, sunburn, and white blood cells in urine.

DRUG INTERACTIONS

Do not administer additional (repeat) doses of KEDRAB once vaccination has been initiated, since additional doses of KEDRAB may interfere with the immune response to the vaccine. Do not administer KEDRAB into the same anatomical site(s) as rabies vaccine. KEDRAB contains other antibodies that may interfere with the response to live vaccines such as measles, mumps, polio or rubella. Avoid immunization with live virus vaccines within 3 months after KEDRAB administration, or in the case of measles vaccine, within 4 months after KEDRAB administration [see *Warnings and Precautions / Live Attenuated Virus Vaccines*].

USE IN SPECIFIC POPULATIONS

Pregnancy: *Risk Summary.* KEDRAB has not been studied in pregnant women. Therefore, the risk of major birth defects and miscarriage in pregnant women who are exposed to KEDRAB is unknown. Animal developmental or reproduction toxicity studies have not been conducted with KEDRAB. It is not known whether KEDRAB can cause harm to the fetus when administered to a pregnant woman or whether KEDRAB can affect reproductive capacity. In the U.S. general population, the estimated background of major birth defects occurs in 2-4% of the general population and miscarriage occurs in 15-20% of clinically recognized pregnancies. **Lactation:** *Risk Summary.* There is no information regarding the presence of KEDRAB in human milk, the effects on the breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for KEDRAB and any potential adverse effects on the breastfed infant from KEDRAB or from the underlying maternal condition. **Pediatric Use:** The safety and effectiveness of KEDRAB in the pediatric population have not been established. **Geriatric Use:** Clinical studies of KEDRAB did not include sufficient numbers of subjects aged 65 years and over to determine whether they respond differently from younger subjects. Clinical experience with HRIG products has not identified differences in effectiveness between elderly and younger patients (ACIP).

NONCLINICAL TOXICOLOGY

Animal Toxicology and/or Pharmacology: Intramuscular administration of a single dose of KEDRAB to rats at 60 and 120 IU/kg (3-fold and 6-fold higher than the recommended human dose of 20 IU/kg), did not result in any signs of toxicity.

For a copy of the Full Prescribing Information for KEDRAB, please visit www.KEDRAB.com.

Distributed by:
Kedrion Biopharma Inc.,
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US License No. 1826

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U.S. Army Capt. Brian Smith takes down information about a puppy belonging to a Liberian man before the animal is inoculated with a rabies vaccine, March 24, 2008. Smith is a veterinarian assigned to the 64th Medical Battalion, attached to Africa Partnership Station.
(Photo credit: The Department of Defense)

Costa applied for the position and was selected to help a non-profit group called the Global Alliance for Rabies Control launch a new program that is now known across the globe as World Rabies Day. This annual event is recognized by the United Nations and during 2007-2012 Costa directed all of the global awareness, education and communication efforts around Rabies prevention in over 150 countries. He dealt with religious issues, cultural barriers, and understanding why certain people are dying from rabies in different areas, and how to work with the Ministries of Health and Agriculture to help prevent the disease.

He helped to clear up misunderstandings and myths about Rabies and conceptualized novel programs like the Rabies Educator Certificate to encourage more individuals to pursue specializing in rabies education.

Costa continues to stay active in the rabies prevention community and currently serves on the International Steering Committee for Rabies in the Americas, and works with the Public Library of Science (PLOS) Neglected Tropical Diseases journal to review and edit publications on Rabies.

And while he now devotes much of his time to Kedrion Biopharma, the company that markets KEDRAB (Rabies Immune Globulin [Human]), he remains active in helping to fill the public health gap that still exists in preventing rabies — despite the long history of the disease.

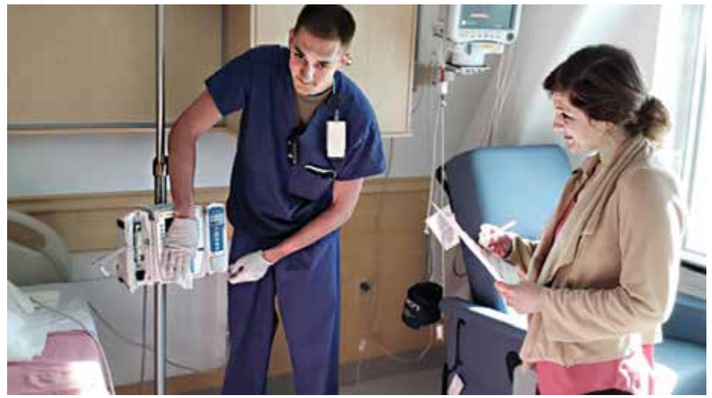
U.S. Army Pvt. Valerie McCants, assigned to the 64th Medical Battalion, prepares one of 150 doses of rabies vaccine administered to pets in Monrovia, Liberia. *(Photo credit: The Department of Defense)*

Active Duty
INFECTION PREVENTION

Meet an Every Day MHS Infection Control Champion

By DoD Patient Safety Program

The Patient Safety Champion Certificate of Recognition is a peer-to-peer initiative to recognize patient safety champions throughout the Military Health System. Ms. Rebekah Lail, infection prevention manager at Medical Department Activity — Alaska at Fort Wainwright, Alaska, was one of the first recipients after the DoD Patient Safety Program launched the initiative in March 2018.



Pfc. Logan Pickell (left), a licensed practical nurse on the Multi-Service Unit at Bassett Army Community Hospital, conducts an environmental cleaning tracer with Rebekah Lail (right), the infection prevention manager.

Lail is helping to lead the staff at MEDDAC-AK, which includes Bassett Army Community Hospital and three outlying clinics, as they are focused on six key areas this year: instrument pre-cleaning, high-level disinfection, hand hygiene, bloodborne pathogen exposures, isolation precautions and sterilization.

To track progress against these goal areas, they are using the Joint Commission tracer methodology, which follows the experience of care, treatment or service for patients through an organization's entire health care delivery process. Tracers are a cornerstone to Joint Commission accreditation.

"The tracers are designed to look at multiple elements of performance. Five of our six goals are tracked using tracers. For these goals, the data can be plugged into the system and produce compliance reports," Lail explains. "I can look each month and see where I need to place my focus. The tracer system makes it easier to drill down and find compliance issues."

Each day, Lail ensures daily priorities support the facility's long-term goals, because many patient safety issues can come from something not being properly cleaned and sterilized.

"Every day I review the patients on the floor to see if we have patients in isolation or with a central line or surgical site," Lail said. "We're a small military treatment facility and don't have a lot of infections, but our goal is to keep our rate at zero. We haven't had any catheter-associated urinary tract infections in about 10 years and central line-associated blood stream infections in more than five years."

More recently, the Bassett ACH staff have been successful in eliminating Clostridium difficile infections.

The sterile processing department is one part of Bassett's effective infection prevention system. They are responsible for properly cleaning and sterilizing tools and equipment according to manufacturer recommendations. Depending on what is being cleaned, the manufacturer recommendations can vary, adding a layer of complexity to the cleaning and sterilizing processes, Lail said.

Infection prevention requires a whole team effort beyond a highly reliable sterile processing department. Lail attributes coordination through inpatient staff in the Multi-Service Unit and Maternal Newborn Unit with playing a big role in keeping the rate of CAUTI so low. Most catheters do not stay in for more than two days; they remove them as soon as possible. Additionally, while the MTF doesn't have a lot of central lines, they carefully follow procedural checklists to keep CLABSI infections down.

To further support infection prevention in other areas of the facility, Lail conducts weekly safety environment of care site visits. Every department gets looked at twice a year.

During her visits, Lail looks at whether the area and equipment are cleaned properly, and checks in with staff that they have the resources they need to do their jobs safely to prevent infection. For example, ensuring staff are wiping down equipment, such as endoscopes, at the point-of-use and transporting this used equipment properly to prevent contamination of other clean and sterile equipment are processes she is confirming are in place.

New staff are taught basic infection prevention skills during newcomer orientation to begin implementing right away. To reinforce this knowledge, inpatient and outpatient staff participate in an annual skills fair. The last skills fair focused on CLABSI prevention through proper central line care and maintenance, instrument pre-cleaning for infection prevention.

"I believe the more information and education we can provide staff about why we do certain things, it helps staff to make conscious decisions to do the right thing every time," Lail said. "We've noticed when we help staff understand the 'why' behind a process, we have better compliance with our policies and procedures."

On a more regular basis, Bassett leaders conduct daily huddles, leadership rounds and monthly control meetings. During the daily morning nursing reports and daily quality and safety huddles, Lail incorporates components of TeamSTEPPS

Team Strategies and Tools to Enhance Performance and Patient Safety

(TeamSTEPPS) is an evidence-based teamwork system designed to improve the quality, safety and efficiency of healthcare.

TeamSTEPPS consists of a collection of instructions, materials and tools to help drive a successful teamwork initiative from the initial planning to implementation through to sustainment.

The system is designed to improve patient safety using a three-phase approach: Phase I Assessment: Facility determines organizational readiness; Phase II Planning, Training & Implementation: Facility "decides what to do" and "makes it happen;" and Phase III Sustainment: Facility spreads the improvements in teamwork performance, clinical processes and outcomes resulting from the TeamSTEPPS initiative, such as closed-loop communication. She also encourages staff to feel comfortable speaking up in the interest of patient safety.

Monthly patient safety and infection control meetings provide Lail an opportunity to report on improvement projects. She also networks and collaborates regularly with other Army facilities to share lessons learned.

While there isn't one thing the staff attribute to keeping the infection rates so low, Lail believes it's the multiple things done to educate and make sure staff are following all infection prevention policies and evidence-based guidelines that makes the difference.

In recognition of these safety initiatives, Lail received the Patient Safety Champion Certificate of Recognition this year. Capt. Rory Walton, an operating room nurse at Bassett ACH, nominated Ms. Lail for the award because of the partnership she has established with MEDDAC-AK staff.

"Upon her arrival, Ms. Lail made collaborative and data-based initiatives to move our organization's patient safety efforts forward. She is devoted to developing effective solutions for both our clinicians and patients," Walton said. "Her tenacious spirit and upbeat attitude have brought lasting change to each department she engages with."

Walton attributes Ms. Lail for being a key player in advancing the facility into a high reliability organization.

"We could not be more thankful for the helpful ways she has challenged us to grow, collaborate, and lead the nation in patient care," Walton said.

health.mil

Ms. Rebekah Lail, infection prevention manager at Medical Department Activity — Alaska at Fort Wainwright, Alaska, is helping to lead the staff at MEDDAC-AK, which includes Bassett Army Community Hospital and three outlying clinics, as they are focused on six key areas this year: instrument pre-cleaning, high-level disinfection, hand hygiene, bloodborne pathogen exposures, isolation precautions and sterilization.

Active Duty
INFECTION PREVENTION

Grand Forks AFB Public Health Team Acts Fast to Combat Virus

By Senior Airman Elora J. Martinez, 319th Air Base Wing Public Affairs

Winter is infamous for wreaking havoc on immune systems and taking people down with the common cold, but when numbers abnormally started to rise on Grand Forks Air Force Base of military members, spouses and children experiencing a gastrointestinal virus in December, members of the 319th Medical Group took notice.

Capt. Clay Whiddon, 319 MDG public health element chief, explained the chain of events which led to a base-wide effort to tackle the onset of a virus, which was quickly spreading.

Whiddon credits the good communication between different organizations on base as one of the main roles in initially spotting the virus.

"The Child Development Center, doctors and first sergeants called to let public health know a lot of people were going down with something," Whiddon said, continuing on to detail how the 319 MDG responded proactively and began conducting tests and investigations to pinpoint which virus was affecting Grand Forks AFB personnel and families.

"After we were alerted about what was going on, public health technicians printed off 200 gastrointestinal questionnaires and got in touch with everyone who presented symptoms, whether linked to the virus or not," Whiddon explained.

As the 319 MDG sent samples to a state laboratory to officially identify the virus, base leadership decided to shut down the CDC and Youth Programs to prevent further spread.

After receiving this direction, other base agencies quickly went to work fighting the spread of what later was confirmed as norovirus.

Airmen with the 319th Logistics Readiness Squadron work together to fill a small pool with soapy water to clean thousands of toys January 18, 2019, on Grand Forks Air Force Base, North Dakota. Toys from the Child Development Center and Youth Programs went through a deep-clean over a period of several days: first soaked in a bleach solution, then hand-scrubbed in soapy water and rinsed with clean water before being left to air-dry. The thorough process ensured once sanitized, all frequently-used toys could be returned to base children without risk re-infecting them with a gastrointestinal virus which affected nearly more than 100 personnel and family members in the weeks prior. *(U.S. Air Force photo by Senior Airman Elora J. Martinez)*

The 319th Contracting Flight awarded a contract practically overnight in order to professionally clean the CDC and Youth Programs, allowing the facilities to safely reopen just days after closing.

The 319th Force Support Squadron, 319th Logistics Readiness Squadron and 319th Mission Support Group worked diligently even during off-duty hours to sanitize gym equipment, common public areas and thousands of toys, ensuring the community's chances of being re-infected were minimal.

During the base-wide sanitation efforts, the small team of public health technicians, ranging from Airmen to senior enlisted leaders, provided wing leadership recommendations for communication plans in order to keep the base population up to date.

"We knew we wanted to be forward with the information we had," Whiddon said. "The quick response from leadership, outstanding communication through public affairs and the community's great reaction made a difference in preventing the spread of the virus."

Whiddon praised the cooperation and faith of the Grand Forks AFB community, mentioning how crucial it was that people stayed home to wait out the illness rather than spreading it in the workplace or other high-trafficked areas to include the dining hall, fitness center and childcare facilities.

"I don't think any base beside Grand Forks would have had a community response like that," he exclaimed.

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Active Duty
LABORATORY

Celebrating "Military" Medical Professionals Week

By Airman 1st Class Nathan Byrnes, 99th Air Base Wing Public Affairs

This Medical Laboratory Professionals Week provides the profession with a unique opportunity to increase public understanding of, and appreciation for, laboratory personnel and the dedicated efforts of laboratory professionals that often go unnoticed by the general public.

Often working behind closed doors, with little interaction with the patients they serve, the clinical laboratory at the 99th Medical Group plays a vital role in patient care within the health care system.

The laboratory at the 99th Medical Group is made up of several sections: Hematology, Phlebotomy, Microbiology, Histology, Chemistry, Urinalysis, Transfusion Services, Point of Care Testing, Central Processing and Shipping. Each section performs a wide variety of complex testing to analyze body fluids, tissue, and other specimens that are crucial in the detection, diagnosis and treatment of disease.

The majority of patient interaction with the laboratory is with the phlebotomy section, as they provide the important role of being the 'face' of the lab.

"You have to be the consummate professional because you are representing the department and the hospital," said Dove Hallstrom, 99th MDSS phlebotomist. "We are the lab, as far as the patient is concerned, because that is as far as they ever see. If we don't do our job properly, everyone else is messed up, everybody else is delayed. If we do our job like the experts and professionals we are, it helps facilitate patient care."

A lab technician, assigned to the 99th Medical Support Squadron, checks the samples at Nellis Air Force Base, Nev., April 15, 2016. Medical Laboratory Professionals Week kicked off for the men and women of the 99th MDSS Laboratory Pathology Flight on April 25.

Senior Airman Vianey Wainright, 99th Medical Support Squadron laboratory technician, holds an agar plate at Nellis Air Force Base, Nev., April 15, 2016. The 99th MDSS ensures maximum wartime readiness in support of the largest and most diverse bases in Air Combat Command.
(U.S. Air Force photo by Airman 1st Class Kevin Tanenbaum)

Hallstrom, a retired Air Force laboratory technician, uses her military experience and knowledge as a lab technician to be a 'bridge' between the different departments of the lab and to assist the flow of communication.

While patients only see the phlebotomy department, there is much more going on behind the scenes within the laboratory that patients don't get to see and each is just as important as the other.

"Working in the laboratory is so much more than just 'pushing buttons' on the analyzers," said Vivian B. Candelario, 99th MDSS Hematology laboratory technician. "Laboratory technicians actually perform detailed quality control, maintenance procedures and troubleshooting on the analyzers. We have to be able to interpret the results from the analyzer to ensure accuracy and reliability. Medical Technologists, like myself, must have a Bachelor's degree and be board certified as well."

"Every lab tech undergoes a rigorous training process in each area of the Lab, and their competence in performing procedures must be assessed before they can work in the sections," said Candelario.

For instance, the hematology section is just one section, but it requires the knowledge of many scientific disciplines. The individuals that work in the hematology section must have an understanding of immunology, hematology, molecular biology, genetics, biochemistry, and pathophysiology. The same principle applies to each section of the clinical laboratory.

"Patient laboratory results play a vital role with diagnosis," said Tamisha Cherry, 99th MDSS medical laboratory technician. "Hematology provides Hemoglobin, Hematocrit, Platelet Count, Prothrombin Time/International Normalized Ratio, Partial Thromboplastin time and other coagulation studies that help determine what type of products to transfuse and how much is needed. Chemistry tests for bilirubin and haptoglobin; urinalysis for microscopic red cells aid in assessing if a transfusion reaction has occurred."

It is these kinds of tests that have to be precise and accurate, and have no room for failure, as is vital to the patient's health.

"The Transfusion Service performs routine and compatibility testing to support the transfusion needs of a number of specialty services, including surgery, obstetrics and emergency transfusions," said Cherry. "We provide products to save patient's life."

> "You have to be the consummate professional because you are representing the department and the hospital," said Dove Hallstrom, 99th MDSS phlebotomist. "We are the lab, as far as the patient is concerned, because that is as far as they ever see. If we don't do our job properly, everyone else is messed up, everybody else is delayed. If we do our job like the experts and professionals we are, it helps facilitate patient care."

Even though each section is specialized in the tests they perform, all of the lab sections work together to provide the best patient care.

"Many of our staff are trained to work in multiple sections within the laboratory and when staffing is short in one section, staff is moved around to ensure adequate coverage," said Rocky Crawford, 99th MDSS chemistry technical supervisor. "In the chemistry section, we share information concerning the condition of specimens. We alert the other sections if there is a problem with the quality of a specimen which could affect the accuracy of results.

"For example, if chemistry receives a specimen that is hemolyzed, we will notify the hematology department of this as the hemolysis may also be present in the hematology specimen and the results they obtain could be adversely affected."

It's obvious that the professionals in the clinical lab enjoy their job and care about their patients, making sure they get the best care by providing quick and accurate test results.

The Airmen and civilians that work in the 99th MDSS Laboratory deliver world-class support and should be highlighted year round as their vast training and knowledge lead to the timely and accurate dissemination of vital information to physicians that helps save lives.

"Truth be told, physicians rely on the lab results to be able to effectively diagnose and treat patients. Lab technicians are the 'behind the scenes' partners of physicians," said Candelario.

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A medical laboratory technician, assigned to the 99th Medical Support Squadron, prepares a slide in the microbiology department in the 99th Medical Group at Nellis Air Force Base, Nev., April 15, 2016. Medical Laboratory Professionals Week provides the profession with a unique opportunity to increase public understanding of and appreciation for clinical laboratory personnel. *(U.S. Air Force photo by Airman 1st Class Nathan Byrnes)*

Active Duty
LABORATORY

Expeditionary Bioenvironmental Technicians Safeguard 386th AEW

By Staff Sgt. Arielle Vasquez, 386th Air Expeditionary Wing Public Affairs

Deployments take U.S. service members to all corners of the globe, which can present a number of health risks, especially in new environments. This is where the 386th Expeditionary Medical Group bioenvironmental engineering flight steps in to combat and reduce these hazards. In the same way the Occupational Safety and Health Act protects employees at work, the technicians monitor and ensure a safe working environment for service members.

Staff Sgt. Charles Rideout, 386th EMDG bioenvironmental engineering technician, prepares a bottled water sample for analysis at an undisclosed location in Southwest Asia, Feb. 18, 2019. The 24-hour test simultaneously detects both total coliforms and Escherichia coli. (*U.S. Air Force photo by Staff Sgt. Arielle Vasquez)*

Staff Sgt. Paige Moloto, 386th EMDG bioenvironmental engineering technician, heats reagent to verify drinking standard requirements at an undisclosed location in Southwest Asia, Feb. 18, 2019. The bioenvironmental team applies a proactive approach and eliminates potential issues by conducting numerous sampling tests weekly. (*U.S. Air Force photo by Staff Sgt. Arielle Vasquez)*

"Our mission is to bolster operational effectiveness and do our part in keeping the 386th AEW members healthy said Staff Sgt. Charles Rideout, 386th EMDG bioenvironmental engineering technician. "Our flight is responsible for preventative medicine as well as emergency management."

The four-person team provides numerous services across the installation including water testing, air sampling, work site health assessments and heat index calculations. Through the compilation and utilization of this information, the flight is able to prevent illnesses and injuries before they occur.

A major way the flight keeps members and coalition partners fit to fight is by ensuring the safety of water on the installation. "We conduct water sampling tests weekly," said Staff Sgt. Paige Moloto, 386th EMDG bioenvironmental engineering technician. "Typically, we are responsible for over 40 samples a week, from bottled water, municipal systems and storage tanks."

While the bioenvironmental technicians are experts in preventative health, avoiding hazards are not always possible. "In the event of a release of chemical, biological or radioactive warfare agents, we work in partnership with emergency management, security forces and the fire department, to identify the threat and determine effective treatment methods," Moloto explained.

Data the flight gathers is also necessary in aiding medical providers to treat patients. Bioenvironmental technicians provide concrete information on the environment, hazards and chemicals that help guide the care of patients that may have been exposed, ensuring providers continue to informed treatment decisions years after the service member's exposure.

While being in an expeditionary environment comes with unique challenges, the technicians have expressed their appreciation for what they do every day.

"It is a great feeling to know how much of an impact and responsibility we have on this installation by keeping people healthy and fit," Rideout said. "Sometimes, it is easy to get caught up in the day-to-day work, but what we do is absolutely critical to the mission."

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Active Duty
MENTAL HEALTH

Mental Health Providers, Leadership Partner for Deployment Resiliency, Readiness

By Shireen Bedi, Air Force Surgeon General Public Affairs

Deployed mental health providers work closely with leadership to help maintain warfighter resiliency and readiness.

Service members are away from their usual support systems during deployment, and because the environment and stress puts them in unusual situations, they require innovative and flexible forms of mental health care.

In a deployed setting, mental health providers help service members at all levels providing support, preventative interventions, and consultation. The goal is to assist commanders with maintaining their Airmen's overall health in order to accomplish the mission.

"We are there to serve two clients, the patient and the Air Force," said Maj. Adam Dell, the flight commander and director of Psychological Health for the 71st Flying Training Wing, Vance Air Force Base, Oklahoma. "We serve as consultants to the commanders to give them the most resilient and ready Airman possible to execute the mission. We are also there to sustain the human weapon system, providing the care they need."

Mental health providers rely on leadership engagement to provide the necessary support warfighters require to remain ready and resilient throughout their deployment. (*U.S. Air Force illustration by Josh Mahler)*

As Maj. Michael Ann Glotfelter, Director of Clinical Health Psychology at Wright-Patterson Air Force Base, Ohio, explains, mental health providers mainly focus on maintaining the medical readiness and resiliency of warfighters. This means focusing on prevention and early intervention, which requires leadership engagement. This is crucial to get ahead of possible issues that may arise during deployment.

> "Deployment is not a normal situation, but by having a constant presence within the units, we were able to help with so much more than what folks may think."
>
> — Maj. Michael Ann Glotfelter

"It is important that leadership work with us on issues that could impact the unit and mission," said Glotfelter. "Deployment is stressful for many reasons, so folks may have normal reactions to abnormal situations. As mental health providers we can offer brief, solution-focused treatment to get Airmen back to the mission as quickly as possible."

Dell also highlights the importance of the provider — leadership relationship to develop effective interventions.

"One of the best pieces of advice from the wing commander was that he needed me to be a mental health provider that could speak to commanders and leaders in that installation in a meaningful way," said Dell. "Working with leadership, I created a suicide prevention seminar, which was taught to hundreds of service members during deployment. We discussed mental health concerns, why they happen, how it impacts the entire unit, and what they can do to prevent it."

Their connection to the front line and commanders makes these providers vital to the health and readiness of the warfighter, and their ability to accomplish the mission.

"Deployment is not a normal situation, but by having a constant presence within the units, we were able to help with so much more than what folks may think," said Glotfelter. "Coming to mental health does not mean you are going home. We want to keep service members healthy and in the fight, and we look for every opportunity to provide that support."

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Active Duty
MENTAL HEALTH

USAFSAM Readies Operational Mental Health Care Providers

By Shireen Bedi, Air Force Surgeon General Public Affairs

The U.S. Air Force School of Aerospace Medicine has set up Air Force's first operational training program for embedded mental health care providers and technicians, preparing them to join Integrated Operational Support teams.

Since May, Air Force mental health care providers, technicians and social workers going into IOS positions can receive specialized training at USAFSAM, Wright-Patterson Air Force Base, Ohio. The goal is to provide the skills needed to support the squadron and their commander.

IOS teams embed within squadrons and offer front-line, consultative support for Airmen and leadership. They are typically embedded within high-demand and high-risk career fields, addressing the needs of the entire squadron. Adding mental health providers enhance IOS teams' ability to improve squadron performance.

"We are there to advise commanders on ways to improve the operational environment so their Airmen can perform well under strenuous, high risk conditions," said Tech. Sgt. Michael Tryon, non-commissioned officer in charge of the Aeromedical Operational Psychology program at USAFSAM. "Focusing on the entire squadron helps understand the root causes of mental and behavioral health issues."

According to Tryon, working as part of an IOS team is different than working in a medical group setting. Providers and technicians integrated into the squadron gain a strong familiarity with its mission. The specialized training teaches them to look for systemic solutions to health issues facing each squadron, and how to best educate its Airmen.

"Traditional residencies and technical schools have a heavy focus on providing care in a clinic," said Tyron. "Working in a consultative IOS role can be a dramatic shift for many mental health providers and techs. They often aren't sure what they're walking into with this new duty position."

To address these role differences and demands, the IOS training program was developed in collaboration with psychologists and technicians with embedded support experience. It is a weeklong course that builds on the normal clinical skillsets to provide an introduction to embedded care.

Topics cover such things as how to fulfill the consultative role to operators and leadership, knowing how to measure the impact of mental health IOS services, and understanding Total Force warfighting communities and their specific mental health needs.

Tech. Sgt. Michael Tryon, non-commissioned officer in charge, Aeromedical Operational Psychology at the U.S. Air Force School of Aerospace Medicine, Wright-Patterson Air Force Base, Ohio, prepares to teach a course for Integrated Operational Support mental health care providers, technicians and social workers, Aug. 30, 2018. The IOS mental health care training program prepares providers going into IOS positions, focusing on how to support the entire squadron to improve performance. (*U.S. Air Force photo by Richard Eldridge*)

Currently, training is only at USAFSAM, but Tryon anticipates the IOS training program will expand.

"It is exciting getting our mental health care providers and technicians out of the medical group and getting into the units, using their skills to more directly impact the mission at an operational level," said Tryon.

As the IOS platform grows, so will the need for specialized training.

"The IOS mental health training course addresses a vital opportunity for embedded providers," said Chief Master Sgt. G. Steve Cum, Chief, Medical Enlisted Force. "As IOS continues to grow, it is critical that training programs are available to better support these providers and technicians who are caring for our Airmen. The providers at USAFSAM have developed the necessary training for these embedded providers to better serve our Airmen working in high-demand units."

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Active Duty
NEUROLOGY

Healthy Sleep for Healing

By the Military Health System Communications Office

Sleep is an important factor in health. In addition to aiding in the healing of the body after injury, studies suggest that sleep can help boost the immune system, prevent disease, and ease depression. Yet a common complaint among service members and veterans with traumatic brain injury is difficulty sleeping. Many people with brain injuries also experience sleep disorders.

Sleep disorders and sleep disturbances are two different things.

A concussion and a sleep disorder can present with similar symptoms such as irritability, headaches, anxiety, and inability to focus. Treatment of TBI starts with the treatment of sleep to help determine which symptoms are related to poor sleep and which are injury related.

"For instance, something like short-term memory is very impacted by sleep loss," said Dr. Janna Mantua principal investigator studying sleep at Walter Reed Army Institute of Research. "Ruling out sleep disorders that might be undetected is really critical."

For those with a TBI, sleep disturbances or poor sleep can actually slow recovery and worsen symptoms, according to DVBIC officials. Those who are not getting adequate sleep report more pain, irritability, memory loss and functional problems.

Mantua said historically people with brain injuries were kept awake to monitor symptoms, but that is no longer the guidance. "The general recommendation is the opposite: to rest, to stay in the dark, to not look at any screens," she said.

Sleep can be sabotaged by choosing to sleep at the wrong time, getting too much screen time before bed, or self-medicating. "A Better Night Sleep" podcast, produced by the Defense Health Agency, gives practical tips on sleep disorders and information on the evidence-based treatments that really work.

Researchers from academia and the private sector are teaming up to study and improve the sleep quality of Soldiers. Here, Soldiers from the 505th Parachute Infantry Regiment catch a few winks before jumping over North Carolina during a training exercise. (*Photo Credit: Sgt. Christopher Harper*)

"The number one nonprescription drug people are taking to help them get to sleep at night is a beer or a glass of wine, or other kinds of alcohol," said Dr. Julie Kinn, research psychologist at DHA. "But then, you're putting a lot of sugar into your body, you're going to metabolize it in a few hours and need to get up and go to the bathroom, and then you're going to be wide awake. Plus drinking alcohol doesn't help you learn other good ways of getting to sleep like meditating, purposefully relaxing or turning of all your screens, etc."

Patients and healthcare providers have access to resources for learning healthy sleep habits. The Defense and Veterans Brain Injury Center recently released a Sleep Interactive Provider Training to teach military providers the evaluation and management of sleep disturbances following concussion in a deployed and non-deployed primary-care setting. The interactive training introduces the "Management of Sleep Disturbances Following Concussion/ Mild TBI Clinical Recommendation" and companion clinical support tool. DVBIC also provides guidance to help primary care managers assess and manage sleep disturbances associated with concussion, including specific recommendations for managing symptoms of insomnia, circadian rhythm sleep-wake disorder, and obstructive sleep apnea. The healthy sleep fact sheet offers tips and exercises for patients to help get a better night sleep.

Mantua encourages anyone with sleeping difficulties to speak to your doctor. "We know how to treat bad sleep. Sometimes it takes people a long time to get there — for instance insomnia is difficult to treat — but we know treatments that work."

health.mil

Active Duty
NEUROLOGY

Sleepless Nights Could Point to Greater Health Problem

By Navy Petty Officer 1st Class James Stenberg

Everyone has had the occasional sleepless night, but regular sleep problems can interfere with daily life and be signs of a serious health problem.

Naval Hospital Pensacola's Sleep Clinic is able to help find out if someone's sleepless nights are being caused by something as simple as stress or a more underlying issue such as a sleep disorder.

Sleep disorders cause more than just restless nights. The lack of quality sleep can have a negative impact on a person's energy, emotional balance and health.

"A person that wakes up throughout the night because they are having trouble breathing or are having some other underlying condition can start to feel effects on their cognitive and mental functions," said Navy Petty Officer 3rd Class John Betts, leading petty officer assigned to the Neurology/Sleep Clinic on Naval Hospital Pensacola. "If you deprive someone of sleep for 24, 48 or even 72 hours, they are not going to be functioning right. Their decision making abilities are going to decrease and the ability to function accordingly or to think [clearly] will start being affected tremendously as time goes on without sleep."

Navy Petty Officer 3rd class John Betts, the leading petty officer assigned to the Neurology/Sleep Clinic on Naval Hospital Pensacola, Fla., attaches diagnostic equipment to a sailor in preparation for a sleep study, Jan. 10,2014. NHP performs sleep studies in an attempt to diagnose and treat sleep disorders. *(U.S. Navy photo by Petty Officer 1st Class James Stenberg/Released)*

According to the Center for Disease Control and Prevention, insufficient sleep is associated with a number of chronic diseases and conditions such as diabetes, cardiovascular disease, obesity and depression. Not getting enough sleep is associated with the onset of these diseases and may also complicate their management and outcome.

A common sleep disorder is sleep apnea. Sleep apnea is where a person's breathing temporarily stops due to a blockage of the upper airways and the sleep clinic can identify this disorder by monitoring a person while sleeping.

"What we are trying to find [while observing a patient sleeping] is if there is a lack of breathing or an apneic event, which is no breathing," said Betts. "When you stop breathing at night, your oxygen saturation decreases and over time that can take a toll on your body."

Anyone who has sleep apnea and has had heart problems should be treated for the sleep apnea because they are more at risk for developing future cardiac complications.

"If a patient has a history of cardiac issues and they have apnea, it would be best to correct that issue as soon as possible," said Betts. "When your oxygen saturation drops, there is not enough oxygen flowing through your body. This means all your organs, including your heart, are not getting as much oxygen as they should so it can start causing more issues in the future for cardiac patients."

The Sleep Clinic at NHP has six beds to perform sleep studies and conducts the studies Monday – Thursday. The clinic is open to all NHP beneficiaries through referral only. If beneficiaries think that they may have a sleep disorder, they should talk to their primary care manager or medical home port team to discuss their options.

"Sleep is the most important thing [we do] because we spend a third of our life doing it," said Shawn Roy, sleep clinic manager. "When it's being disrupted by either sleep apnea or other things, our quality of life tends to go down, both mental and physical."

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Active Duty
NURSING

Military Nursing Exchange Brings Together 23 Partner Nations

By Tech. Sgt. Jessica Hines, USAFE-AFAFRICA Public Affairs

Representatives from 23 countries around Europe and Africa gathered at Ramstein Air Base, Germany, this week to share and collaborate during the 2019 European African Military Nursing Exchange.

The 4-day event brought together nurses and medical professionals to present and share best practices, lessons learned and innovative health care practices pertaining to various military nursing specialties.

Col. Jill Scheckel, USAFE-AFAFRICA command surgeon, welcomed the diverse group of health professionals to the event: "We have invited each country to brief us on their current military medical readiness, global healthcare impacts and disaster response capabilities and challenges.

"We all ascribe to evidence based medicine and there's no better time than now to share experiences to improve our military medicine and move towards this goal," she added.

The 2019 EAMNE is the 6th iteration of its kind, with extensive planning and coordination to connect partner nations in a collaborative environment that promotes hands-on training scenarios. With the rise in humanitarian medical assistance across the globe, coordinated events such as this expand upon the critical life-saving practices countries can share with each other.

Medical professionals from around Europe and Africa receive small-group training at Ramstein Air Base, Germany, April 3, 2019. The 2019 European African Military Nursing Exchange is the 6th iteration of its kind, with extensive planning and coordination to connect partner nations in a collaborative environment that promotes hands-on training scenarios. *(U.S. Air Force photo by Tech. Sgt. Jessica Hines)*

Medical professionals from around Europe and Africa receive small-group training at Ramstein Air Base, Germany, April 3, 2019. The 2019 European African Military Nursing Exchange is the 6th iteration of its kind, with extensive planning and coordination to connect partner nations in a collaborative environment that promotes hands-on training scenarios.
U.S. Air Force photo by Tech. Sgt. Jessica Hines

"We wanted the hands-on opportunity for each country to have the chance to demonstrate their individual capabilities," said Col. Maureen Charles, USAFE-AFAFRICA command nurse.

According to Charles, previous EAMNE events were held in Garmish-Partenkirch, which limited training opportunities because they lacked the necessary equipment to fully demonstrate medical response efforts.

Hosting the event on Ramstein allowed for a wide array of medical equipment and static displays for attendees to observe and test. "It's all about the learning opportunities, because we really want our partner nations to get to know each other and be able to take what they learn here back to their countries," added Charles.

United States, European and African military nurses also focused on each nation's unique cultures, communication patterns and capacity for interoperability.

"We are duty bound to provide the best medical support that we can to the troops engaged in peacekeeping missions and during times of conflict and natural disasters," said Scheckel. "Medical support is what we are all about. Peacekeeping is a hard and noble business," she said.

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Active Duty
OPHTHALMOLOGY

First Corneal Transplant Performed at JBER Hospital

By Airman 1st Class Crystal A. Jenkins, JBER Public Affairs

Patients with a common eye disease now have alternatives as the 673d Surgical Squadron and Ophthalmology team advanced their skills and performed their first corneal transplant February 27, 2019, at the Joint Base Elmendorf-Richardson Hospital.

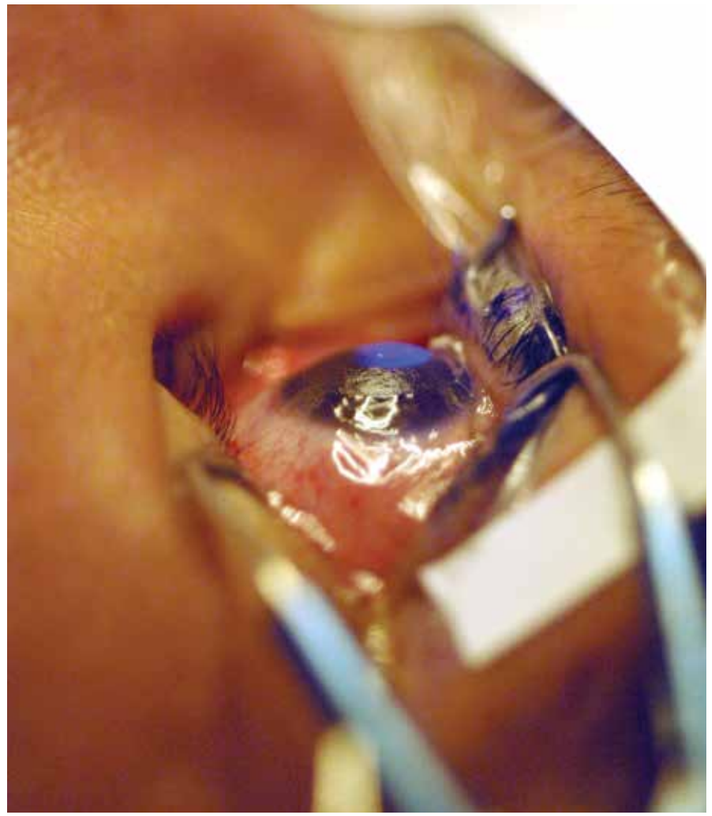
The hereditary eye disease known as Fuchs' Corneal Dystrophy displays symptoms which for most can often become noticeable after the age of 50 and can ultimately cause a significant loss in vision.

This loss of sight can be treated with two different methods of cornea transplant known as Descemet's Stripping Endothelial Keratoplasty (DSEK) and Descemet's Membrane Endothelial Keratosplaty (DMEK).

The JBER patient who received the first corneal transplant, John Anderson, is a retired military member and pilot who had multiple symptoms which include, blurred vision.

"It takes a little bit of time to recover, but this surgery will help keep my vision from deteriorating in the near future," Anderson said. "I'm grateful there was a doctor here able to perform this kind of surgery. After doing a lot of research myself, I'm glad this was able to be done before it became too severe."

Long before a decision is made, a patient with Fuchs' must first understand how the cornea works, since the disease initially only affects a single layer of the cornea.



A refractive surgery laser shines blue on a patient's cornea as it corrects their vision on Nov. 3, 2010, at Lackland Air Force Base, Texas. (*U.S. Air Force photo/Staff Sgt. Robert Barnett)*

The cornea, which is the clear window on the front of the eye, is comprised of three main layers — the epithelium, stroma and endothelium. The epithelium is a barrier which protects the cornea from dust, debris and bacteria. The stroma is the middle layer and makes up 90 percent of cornea thickness, mostly of collagen and other structural materials. It gives the cornea its strength and dome-like shape. The endothelium, one layer of cells on the Descemet membrane, provides the appropriate balance of fluid in the cornea, keeping it thin and clear.

"While attending Harvard ophthalmology's primary teaching hospital, Massachusetts Eye and Ear, I was introduced to both types of treatment and was able to see firsthand their varying success rates," said U.S. Air Force Lt. Col. J. Richard Townley, 673d Surgical Squadron chief of ophthalmology and refractive surgery consultant to the surgeon general.

"It became very important to me to become proficient in performing the DMEK method. By being able to perform this surgery, my patients are now 15 times less likely to experience infection, [they] have a faster rate of recovery, needing only a localized immune suppressant and may not require the continued use of steroids for the rest of their life."

Recognizing the symptoms and seeking specialized care during the early stages of Fuchs' helps ensure patients receive appropriate treatment before the corneas have become permanently damaged from more advanced stages of the disease (i.e., scarring from longstanding corneal swelling).

Patients with a common eye disease now have alternatives as the 673d Surgical Squadron and Ophthalmology team advanced their skills and performed their first corneal transplant.

"Corneal scarring is the one factor that imparts a degree of urgency to deciding when to have a corneal transplant," Townley said. "In general, corneal scarring limits vision, but it can improve after surgery. Undergoing DMEK surgery before your corneas have significantly scarred gives you the best chance of having good vision after the procedure."

To understand the varying options, one must do a fair amount of research and have an ophthalmologist experienced in current best practices.

In 2013, Townley was the first Department of Defense ophthalmologist to perform DMEK surgery at Wilford Hall Ambulatory Surgical Center at Lackland Air Force Base, Texas. Now, after performing more than 30 DMEK procedures and seeing the success rate, he has continued taking this knowledge forward in his career and helping more surgical teams become familiar with the procedure.

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Lt. Col. (Dr.) Charles Reilly performs refractive surgery at the Joint Warfighter Refractive Surgery Center Nov. 3, 2010, at Lackland Air Force Base, Texas. Dr. Reilly recently performed a unique procedure to restore a patient's vision using a type of glue to correct a thinning cornea. Dr. Reilly is an ophthalmologist with the 59th Surgical Support Squadron. (*U.S. Air Force photo/Staff Sgt. Robert Barnett)*

Active Duty
OPHTHALMOLOGY

Joint Optometry Team Gives Warfighters Clarity

By Tech. Sgt. Christopher Hubenthal, 379th Air Expeditionary Wing Public Affairs

U.S. Airmen at Al Udeid Air Base, Qatar and U.S. Soldiers at Camp As Sayliyah, Qatar, combine optometry capabilities to ensure servicemembers across U.S. Central Command are able to focus on their mission.

Once a week, U.S. Air Force Lt. Col. Peter Carra, 379th Expeditionary Medical Group optometry officer in charge, and Tech. Sgt. Marquita Moore, 379th EMDG optometry NCO in charge, travel from AUAB to CAS to perform eye exams alongside their U.S. Army counterparts of Area Support Group – Qatar.

Carra and Moore provide Soldiers at CAS eye exams, physicals and referrals to ensure their optometry needs are met while deployed.

U.S. Air Force Lt. Col. Peter Carra, 379th Expeditionary Medical Group (EMDG) optometry officer in charge, performs an eye exam for a U.S. Soldier March 9, 2019, at Camp As Sayliyah (CAS), Qatar. Carra and Tech. Sgt. Marquita Moore, 379th EMDG optometry NCO in charge, travel to CAS once a week to provide eye care for Soldiers who, in turn, fabricate glasses prescribed for Airmen at Al Udeid Air Base, Qatar, and servicemembers at other deployed locations throughout U.S. Central Command. (*U.S. Air Force photo by Tech. Sgt. Christopher Hubenthal)*

"You need your eyes for everything," Carra said "In order to do your job, whether it's shooting, operating a computer, driving a truck or providing medical care, you have to see what you're doing. We have services that allow our members to get to 20/20. Just having that extra advantage and sharpness gives you that extra capability that strengthens the mission."

While Carra and Moore handle prescriptions, U.S. Army optical laboratory specialists handle the creation of glasses for patients throughout U.S. Central Command, grinding and shaping lenses on site to fit individual needs.

"We scratch each other's back," said U.S. Army Spc. Carlos Rodriguez, Area Support Group — Qatar optical laboratory specialist. "They come over here to CAS and they give everyone their prescriptions and I make all their orders. I'm helping them out and they're taking time out of their schedule to help the Army out."

U.S. Army Spc. Justin Jones, 354th Medical Company Logistics Support optical laboratory specialist, 8th Medical Brigade, Area Support Group - Qatar, fabricates lenses for glasses March 9, 2019, at Camp As Sayliyah, Qatar. Jones is part of a team that grinds and frames glasses from data provided by a U.S. Air Force optometry team from Al Udeid Air Base, Qatar. (*U.S. Air Force photo by Tech. Sgt. Christopher Hubenthal)*

U.S. Army Spc. Justin Jones, 354th Medical Company Logistics Support optical laboratory specialist, 8th Medical Brigade, Area Support Group - Qatar, fabricates lenses for glasses March 9, 2019, at Camp As Sayliyah, Qatar. Jones is part of a team that grinds and frames glasses from data provided by a U.S. Air Force optometry team from Al Udeid Air Base, Qatar. (*U.S. Air Force photo by Tech. Sgt. Christopher Hubenthal)*

Carra said the Army's ability to create lenses the same day prescriptions are written saves time, enabling servicemembers to operate with rapid efficiency.

"At Al Udeid we don't have the ability to grind lenses," said Carra. "We can do all the ordering and testing back at the base, but here is where the rubber hits the road. They're basically cutting the lenses, taking the prescription blanks, putting them into the frames people choose and then delivering them back to us."

Carra said the teamwork is a step in the right direction toward future joint medical interoperability.

"The Army's been great. They've been super welcoming and very accommodating," said Carra. "During this deployment I've had that opportunity to work with the Army to see some of the forms they use, see some of their programs and specialties, and I think it's a really good step to one day having a more united medical service."

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Active Duty
OPHTHALMOLOGY

Military to Bring Eye Care to Front Lines with Mobile App

By Shireen Bedi, Air Force Surgeon General Public Affairs

Eye injuries in a deployed setting can be a significant setback for any service member, but new telemedicine capabilities are helping to keep them in the fight.

With funding from the 59th Medical Wing, Joint Base San Antonio, Texas, Air Force and Army medical researchers are developing a HIPAA-compliant smart phone application to connect providers downrange with on-call ophthalmologists either in-theater or at a clinic.

"Ten to 15 percent of combat injuries involve the eye," said Air Force Maj. (Dr.) William G. Gensheimer, ophthalmology element leader, and chief of cornea and refractive surgery at the Warfighter Eye Center, Joint Base Andrews, Maryland. "There may not be many ophthalmologists in a deployed setting."

The smart phone application, called FOXTROT, which stands for forward operating base expert telemedicine resource utilizing mobile application for trauma, will bring specialty eye care much closer to the point of injury. Specifically, it will allow providers downrange to conduct eye exams and assist with diagnosis and the management of eye injuries.

"If there is Wi-Fi connectivity, the user can video teleconference an ophthalmologist either in theater, in a clinic in Germany or back in the United States and receive real-time consultation for their patient," said Gensheimer. "When there is no connectivity, the application will function like secure email and the medic can send the necessary information."

U.S. Air Force Lt. Col. Peter Carra, 379th Expeditionary Medical Group optometry officer in charge, performs an eye exam for a U.S. Soldier March 9, 2019, at Camp As Sayliyah (CAS), Qatar. Carra and Tech. Sgt. Marquita Moore, 379th EMDG optometry NCO in charge, travel to CAS once a week to provide eye care for Soldiers who, in turn, fabricate glasses prescribed for Airmen at Al Udeid Air Base, Qatar, and servicemembers at other deployed locations throughout U.S. Central Command.
(*U.S. Air Force photo by Tech. Sgt. Christopher Hubenthal*)

According to Army Lt. Col. (Dr.) Jennifer Stowe, an optometrist and deputy director of administration at the Virtual Medical Center, Fort Sam Houston, Texas, FOXTROT addresses the need for specialized telemedicine capabilities that specifically focuses on treating eye trauma downrange. "As it stands, the current technology does not have the technical requirements necessary for deployed eye care," said Stowe. "As an optometrist, it is without a doubt an expected capability to speed up recovery in a deployed setting."

As Gensheimer explains, having this type of technology downrange could ensure the readiness of service members, improving the chances they can return to duty much sooner. "With the application a downrange provider can consult an ophthalmologist and the service member can receive treatment much sooner than before," said Gensheimer. "This improves the chances of preserving their eyesight and potentially return them to duty much more quickly."

In addition to improved care downrange, Stowe says that the application could have a positive impact on the readiness of military medical providers. Increased exposure to a wider variety of patients through the application gives them a deeper and broader experience of practice. "The more complex patients we see, the more our case mix increases, and the more talented as providers we become," said Stowe. "This application will increase our medical readiness as providers by increasing our knowledge base in how we care for eye trauma."

Currently, the application is being developed in collaboration with the U.S. Army Medical Research and Materiel Command's Telemedicine and Advanced Technology Research Center.

The next steps are to test the application to ensure it functions well downrange and develop standardized protocols for the use of the application.

"We want to make sure that the application can transmit the necessary information and assist ophthalmologists in making correct diagnoses and developing treatment plans," said Gensheimer. "Having access to this type of care can have a significant impact on readiness, reducing eye injury evacuations and improving health outcomes."

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Active Duty
OPHTHALMOLOGY

7 Tips for Maintaining Vision

By Military Health System Communications Office

Eyes may be the window to the soul, as William Shakespeare reportedly said, but in the military, eyesight is essential to remain fit for duty. Here are seven tips for maintaining good eye health:

INJURY PROTECTION:

"I think wearing eye protection is the most important thing anybody can do to protect their vision for the long term," said Dr. Robert Mazzoli, a retired Army colonel and an ophthalmologist at the Vision Center of Excellence, or VCE. Of the approximately 2,000 eye injuries that occur in the United States daily, he said, 90 percent would have been prevented by wearing proper eye protection.

The VCE offers guidance on activities that call for wearing eye protection. In addition to obviously risky activities, such as grinding and hammering, Mazzoli said playing sports, working with bungee cords, and using household cleaning products or other chemicals are also risky. The Authorized Protective Eyewear List details items that provide the highest level of eye protection.

If an injury does occur, the worst thing to do is to put pressure on the eye, Mazzoli said, such as patching it. This could lead to further injury, including loss of vision and even loss of the eye itself. A rigid shield protects against further damage, he said. If a shield is not available, he suggested donning a pair of glasses to serve as a shield and then taping them in place before seeking immediate medical help.

ULTRAVIOLET RAYS:

The sun's ultraviolet, or UV, rays can affect vision and lead to conditions such as macular degeneration and cataracts,

Spc. Brianne Coots, an eye specialist in the U.S. Army Reserve assigned to the 1984th U.S. Army Hospital, 9th Mission Support Command out of Honolulu, Hawaii, performs an eye exam during Tropic Care 2018 in Kea'au, Hawaii, June 24, 2018. *(Photo by Sgt. Stephanie Ramirez)*

Mazzoli said. Macular degeneration, which permanently damages the retina over time, is the leading cause of age-related blindness. Cataracts are the clouding of the lens, the part of the eye that focuses light.

Sunglasses labeled UV 400 offer the best protection, and should be worn even on overcast days because UV light can go through clouds, said Mazzoli.

SMARTPHONES:

"When you're using smartphones, both the screens and what we're trying to see are typically very small, and this taxes an individual's ability to focus on and resolve the content being viewed," said Dr. Felix Barker, an optometrist with the Department of Veterans Affairs who works with the VCE.

Barker also said smartphones increase demands on vision because they're held close to the eyes for reading. "The eyes try to converge, meaning that they turn closer together," he said. "When you spend an excessive amount of time on smartphones, you can put a lot of stress on your vision and cause blurred or even double vision."

ARTIFICIAL TEARS:

Dry, itchy eyes are common among allergy sufferers, Mazzoli said. But he recommends against overusing products that contain redness relief ingredients such as potassium chloride and tetrahydrozoline, because they may eventually damage the eyes. Instead, look for products that advertise themselves simply as artificial tears, which provide lubrication.

SMOKING:

According to the American Cancer Society, smokers are at increased risk for developing vision loss and eye disease such as Dry Eye Syndrome, which appears as damaged blood vessels and causes itchy and burning sensations.

CONTECT LENS SAFETY:

Contact lenses can damage eyes if they're worn for too many hours or not cleaned or stored properly, according to the Centers for Disease Control and Prevention. The CDC's recommendations include not sleeping in contact lenses unless your eye doctor has prescribed this, and removing lenses before swimming, showering, and using a hot tub.

VISION EXAMS:

Active-duty service members can get routine eye exams as needed to maintain fitness for duty. Their covered family members are eligible for one routine eye exam per year and may be eligible for more robust coverage. The TRICARE website has information about eligibility and coverage for all MHS beneficiaries.

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Active Duty
ORAL HEALTH

Celebrating 106 years of the Dental Corps

A Message from the Navy Surgeon General, Vice Admiral C. Forrest Faison III

Vice Admiral C. Forrest Faison III, Surgeon General of the Navy and Chief, Bureau of Medicine and Surgery

On behalf of Navy Medicine, I wish to extend my sincerest congratulations to the men and women of our Navy Dental Corps as you celebrate your 106th anniversary.

The Dental Corps has served with steadfast devotion to duty since August 22, 1912 when President Howard Taft signed into law an act passed by the 62nd Congress establishing the Navy Dental Corps. From its original cadre of 30 assistant dental surgeons, to the now 1,300-plus active duty and reserve personnel, the Dental Corps has served in times of peace and war to ensure dental readiness and optimize dental health.

Today, the Dental Corps is integrated seamlessly with the medical and line communities, deploying with Marine Expeditionary Units, Carrier Strike Groups, and supporting humanitarian and disaster relief missions around the world. Whether they are performing clinical operations at sea, in charge of branch clinics, or commanding entire hospitals, the depth and breadth of these officers and their leadership knows no bounds.

You are pioneers, innovators, warriors, and healers. You are educators, researchers, life-long learners, and true professionals. It is your honor, courage, and commitment that we celebrate today. Thank you for your service and for the sacrifice of you and your families. Happy 106th Birthday Shipmates. I am honored and humbled to serve alongside you.

The Dental Corps was established by an act of Congress in 1912 and its membership consists of dental officers of the Regular Navy and Naval Reserve. The primary mission of the Corps is to prevent or remedy dental conditions that may interfere with the performance of duty by service members.

navymedicine.navylive.dodlive.mil

Navy Lt. Joshua Erickson, left, a dentist, and Lt. Cdr. Jeffrey Culbreath, an oral and maxillofacial surgeon, both serving at Naval Health Clinic Charleston, cut the cake during NHCC's ceremony celebrating the 106th birthday of the U.S. Navy Dental Corps. *(Photo by Kris Patterson, NHCC Public Affairs Officer)*

Active Duty
ORAL HEALTH

Patients Inspire Prosthodontist

By Staff Sgt. Kevin Iinuma, 59th Medical Wing Public Affairs

In the Dental Surgery Clinic at San Antonio Military Medical Center, maxillofacial prosthodontists and technicians serve many patients per month and perform procedures each work day.

Maxillofacial prosthetic is a subspecialty of prosthodontics and is the only subspecialty recognized by the American Dental Association. There are currently 14 maxillofacial prosthetic fellowship programs in the world, and seven are within the United States; two are federal programs USAF and USN.

"I've found a home," said Lt. Col. Young J. Honnlee, a 59th Medical Wing provider. "The specialty improves quality of life by restoring or replacing oral and associated maxillofacial structures with artificial substitutes such as silicone prostheses, acrylic prostheses, metal frameworks, and a combination of all the materials."

Lt. Col. (Dr.) Young J. Honnlee, 59th Medical Wing maxillofacial prosthodontics fellow, evaluates the inside of a patient's mouth at San Antonio Military Medical Center, Joint Base San Antonio-Fort Sam Houston, Texas. Honnlee prepares to make impressions of the patient's teeth. *(U.S. Air Force photo by Staff Sgt. Kevin Iinuma)*

For the first 20 of Honnlee's nearly 30 years of service, he worked as a general dentist, but fell in love with prosthodontics as soon as he discovered the specialty and has remained so to this day. One patient he remembered had cancer in her tongue during his residency, Honnlee and his team conducted a palatal augmentation procedure, for a patient who had cancer in her tongue, enabling her tongue to reach the roof of her mouth. The patient wept for joy when she heard herself speak for the first time in years.

"We have great patients to work with because they are really appreciative, and they truly appreciate the service we provide," Honnlee said. "I wouldn't trade anything for these patients."

Ms. Nancy Hansen (left), 59th Dental Training Squadron anaplastologist, and Lt. Col (Dr.) Young J. Honnlee, 59th Medical Wing maxillofacial prosthodontics fellow, inspect a patient's eye socket at San Antonio Military Medical Center, Joint Base San Antonio-Fort Sam Houston, Texas. Hansen and Honnlee work together in creating a prosthetic eye for the patient. *(U.S. Air Force photo by Staff Sgt. Kevin Iinuma)*

Honnlee has seen more than 275 patients, performed nearly 600 procedures and many lab procedures in his time as a maxillofacial prosthodontist. "I'm here seeing the providers because of a tragic event in my life," said Luis Corral, a retired Air Force Staff Sgt., who is also a patient. "They really are working to help make my life better."

Due to a life changing event, Corral received severe injuries to the lower half of his face and left eye. With several surgeries, therapy, and the help from maxillofacial, he is now able to move his jaw and speak. Maxillofacial prosthodontists work with providers in a variety of medical disciplines such as oncologists, radiologists, dermatologists, and others to provide the best care for their patients.

In the past, providers would hand-craft prosthetics for patients. However, they now take advantage of modern 3-D printing techniques. The processes that used to take weeks are now cut down to days.

"I can only imagine what the patients have gone through," said Honnlee. "But their attitude is so bright, it makes me want to be like them, be more motivated, and have a better outlook on life."

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Active Duty
ORAL HEALTH

Air Force Dental Tech Gains 'Once in a Lifetime Experience'

By Staff Sgt. Jeremy L. Mosier, 386th Air Expeditionary Wing Public Affairs

Members of the 386th Expeditionary Wing dental team were given a unique opportunity to join forces with the Army veterinary clinic to provide support to the K-9 unit at an undisclosed location in Southwest Asia, Dec. 8.

In most instances in a deployed environment the medical group supports the vet by providing medications and food related support, but on this day it was to perform a teeth cleaning on Military Working Dog Viking.

"I am very grateful to do this out here," said Staff Sgt. Torri Olivieri, 386th Expeditionary Medical Group dental services noncommissioned officer in charge. "Working with a military working dog and supporting the mission in this aspect is a once-in-a-lifetime experience."

In a deployed location, the veterinary clinic leans heavily on the medical group in emergencies to support the K-9 unit if the veterinary clinic is unavailable.

Staff Sgt. Torri Olivieri, 386th Expeditionary Medical Group dental services noncommissioned officer in charge, conducts a teeth cleaning at an undisclosed location in Southwest Asia, Dec. 7, 2018. While deployed, the veterinary clinic relies on the medical group for many of their medications and as a contingency plan if an emergent situation were to occur. *(U.S. Air Force photo by Staff Sgt. Jeremy L. Mosier)*

Army Capt. Carolyn Scholl, 719th Medical Detachment Veterinary Services veterinary core officer, prepares to insert a breathing tube in military working dog Wiking's throat during a routine teeth cleaning at an undisclosed location in Southwest Asia, Dec. 7, 2018. During this routine teeth cleaning, the veterinary clinic invited members of the 386th Expeditionary Medical Group dental clinic to perform the cleaning, which is a rare opportunity for dental technicians. *(U.S. Air Force photo by Staff Sgt. Jeremy L. Mosier)*

"I called the dental tech and dentist down here today so they could get hands-on experience with the MWD, because if there is an emergent situation they would be the ones taking care of the dog," said Army Spc. Caitlin Hinds, 719th Medical Detachment Veterinary Services vet technician.

While the veterinary clinic is a role three facility, which means they are able to support a majority of surgeries, they aren't specifically trained to perform routine cleanings.

The vet clinic takes the opportunity to invite both medical clinic staff and dog handlers to many routine visits, such as blood draws and check-ups, to ensure they have the knowledge and are comfortable to do these things if they are unavailable, Hinds explained.

> "Working with a military working dog and supporting the mission in this aspect is a once-in-a-lifetime experience."
>
> Staff Sgt. Torri Olivieri,
> 386th Expeditionary Medical Group

Staff Sgt. Angelina Borges, 386th Expeditionary Medical Group military working dog handler, discussed an incident earlier this year when her partner, MWD Vviking, was having issues lying down and sitting and the vet was there to help her every step of the way to help improve his health.

"I am really thankful for the vet clinic here and how they have explained everything to me," Borges said.

The trust and willingness to accommodate one another has really bolstered the partnership between the Army and Air Force and Hinds looks to keep improving that relationship.

"I can go to the kennel master and medical group and say, 'I need this,' and they are more than willing to help," Hinds explained. "It makes me feel good, because I am building the bonds back."

The cohesiveness between units at 'The Rock' stems from these bonds and has developed with trust and partnership with one goal in mind — to complete the mission.

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Active Duty
PEDIATRICS

Puget Sound Military Health System Sets Bar for Access to Pediatric Specialty Care in Joint Environment

By Emily Yeh, Pacific Regional Health Command

Providers at Madigan Army Medical Center and Naval Hospital Bremerton are setting the bar high when it comes to true patient-centered care in a joint environment. As part of the Puget Sound Military Health System, providers in the pediatric medical services have established a program that increases access to care for beneficiaries.

Each month specialists from Madigan travel to Bremerton to run their specialty clinics. Their efforts make it easier for families stationed at Bremerton, Bangor and Oak Harbor, to receive specialty care that would otherwise require travelling to receive. This is especially important for those who require constant and consistent care, whether for themselves or a family member.

Lt. Col. (Dr.) Jason Caboot, pediatric pulmonologist, Madigan, is one of the providers constantly forging the path to bring services to beneficiaries.

"When I came to Madigan, I knew there were doctors from the gastroenterology program traveling to Bremerton to offer their services," said Caboot. "I realized a need for this type of service in the pediatric specialty care program which would enhance access to care for our patients."

The Puget Sound region is unique in its geographic area. A clinic that is a few miles as the crow flies, can take up to two hours to get to because of driving and transportation options. Having the Madigan doctors go up to Bremerton saves the beneficiary time, while keeping a consistent relationship with their provider.

Caboot goes up to Bremerton once a month, sometimes twice. He is able to provide a full range of medical services to his pediatric patients because the clinic and staff share all assets with him. It is a true partnership.

Elizabeth Schaff, the mother of Jacob, an established and frequently seen patient of Caboot, said it has been great to have the option to see her son's provider at Bremerton.

"We require medical care for my son Jacob every few months. We were going to three different hospitals, so it has been nice to have one point of service, with one provider that we know," said Schaff.

Army Lt. Col. (Dr.) Jason Caboot, pediatric pulmonologist, Madigan Army Medical Center, examines Jacob Schaff, an established pediatric specialty care patient at Naval Hospital Bremerton, Washington. The Schaff's often find themselves traveling throughout the Puget Sound area to seek the specialty care Jacob requires. *U.S. Navy photo by Emily Yeh*

As a retiree family, the Schaff's have settled down and chosen Bremerton as their primary facility. With Jacob's medical needs, they often find themselves traveling throughout the Puget Sound area to seek the specialty care Jacob requires. The novelty of having the doctor come to you and not having to travel to see the doctors is refreshing.

The continuity of care is also important to Schaff. "Jacob is comfortable with Dr. Caboot, and we don't have to re-establish a medical history or relationship when he goes to the doctor every few months," Schaff said.

At Naval Hospital Bremerton, Lt. Cmdr. Ritka Weiss, chief of the pediatric specialty care clinic, knows that from a customer service perspective, having the embedded specialists at Bremerton is a dream come true. Not only do pediatric patients remain in the military health system through these partnerships, beneficiaries who would have needed to seek treatment outside of the military medical treatment facilities in the region can have everything taken care of within their military medical treatment facility of choice.

According to Ritka, what is common within the military health system is that patients don't want to go anywhere else. They

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want to be part of the military health system, with providers, and facilities that they know. It is comforting to know that all their needs can be taken care of under one roof, in one place.

For some, the military health providers are like family. It's that same sense for providers. The face-to-face with someone familiar means a lot, it is also important for the continuity of care. The care is seamless when you can keep it in the same facility, continued Ritka. As Ritka says, "I love it, for our families, for our staff."

Both the providers and patients see the benefits of the collaboration to bring better access to care across the military services. Using the pediatric specialty care program as a model, respiratory care is now being expanded at Bremerton, with providers from Madigan. "We are trying to increase and build the asthma education program," said Jill Levin, respiratory therapist, Madigan.

Levin started going to Bremerton with Caboot in December 2018. This has allowed them to maximize time, freeing up appointment slots, allowing for more access to care for other patients. Across the Puget Sound's Military Health System these joint efforts have built a stronger patient-provider bond.

health.mil

Pediatric nurse exemplifies Trusted Care

By Senior Airman Abby L. Finkel, 48th Fighter Wing Public Affairs

Trusted Care is a core component of Air Force medicine. There are nine principles, one of which is speaking up. This critical principle was exemplified by 48th Medical Group attending pediatric nurse practitioner Capt. Kelsey Pilcher in the case of two newborns recently brought into her care.

The babies, both less than a week old, came into the clinic for their newborn visits within 20 minutes of each other. While at the clinic, both had standard bloodwork drawn to check their bilirubin levels at the medical labratory. High bilirubin levels can lead to jaundice and if not treated can have long-term consequences including brain damage.

When the test results came back, Pilhcer thought something was wrong. "When I got the results," she said, "I realized it didn't quite match the clinical picture."

The first baby, who was visually showing all the signs of having high bilirubin levels, had normal test results. The second baby, who showed signs of having normal levels, had test results indicating high bilirubin levels. "It made me question if the bilirubins were actually associated with the right baby," she said. Pilcher trusted her instincts, spoke up, and had the tests redone.

"In the medical field it's so necessary (to speak up)," Pilcher said, "If something goes unnoticed, or if your technician or nurse notices that something doesn't seem quite right, but they don't say anything, there can be consequences, both long-term and immediate."

In this case, not speaking up would have resulted in the baby who actually needed additional medical care being sent home. The second lab results matched what Pilcher had observed in the babies, and resulted in the correct baby being admitted to the hospital.

"Captain Pilcher's great catch highlights just how important it is for all Airmen, regardless of positon, to speak up if they recognize something that they feel may jeopardize patient safety and to stand by that conviction until a satisfactory explanation or solution is presented," said Capt. Adam Hotz, 20th Medical Operations Squadron medical director of pediatrics.

Capt. Kelsey Pilcher, 48th Medical Group pediatric nurse practitioner, performs a check-up on a newborn at RAF Lakenheath, England
(U.S. Air Force photo by Senior Airman Malcolm Mayfield)

The duty to speak up fosters a mindset that values alternative perspectives. It helps Air Force medical leaders build deeper organizational trust, remove barriers and reinforce a mutual respect.

"At the heart of duty, to speak up is the recognition that we all are human and capable of making errors, and none of us wants one of those errors to adversely affect the patients we are working so hard to help," Hotz said. "It empowers everyone involved in a patient's care to advocate for that patient's safety and ensures there are no barriers to that end."

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Active Duty
PEDIATRICS

MHAFB Pediatric Clinic Works Diligently to Keep Children Healthy

By Airman 1st Class Andrew Kobialka, 366th Fighter Wing Public Affairs

A small boy in blue jeans, a grey T-shirt and sporting a blonde comb over with a slight sheen from the gel used to hold it in place is ushered into a room with plain white walls. As he entered, the boy notices a chair to the right of the door. Hanging on the wall above a chair is an otoscope, a medical tool used to look into ears. The boy then rushes to climb up the chair, staring at the tool with a twinkle of what seemed to be curious excitement in his eye.

He continues climbing, laughing at the crinkling of the paper that covers the seat, and reaches for the otoscope. Before he snatches it, Senior Airman Shania Stanford, 366th Medical Support Squadron pediatrics clinic aerospace medical technician, enters the room. When the boy sees Stanford, he jokingly opens his mouth wide and says "ahh" as if he has done this many times before. A smirk slowly forms as he bursts into a triumphant laughter. He knows the routine and he's proud of it.

This is 3-year-old Jude at his pediatrics appointment. He has been to the clinic several times and is accustomed to the check-up procedure.

Although not all kids will be as enthusiastic as Jude, all of them will be treated with the professional medical care they need.

The pediatric clinic's objective is to care for children from birth to the age of 18 and provide military families a peace of mind knowing their kids are in good health.

Stanford said she sees kids like Jude on a daily basis and has learned to adapt to make them as relaxed as possible.

"We change our approach by using softer voices, verbal encouragement, and playfulness when interacting with kids to make them feel more comfortable," Stanford said. "We also offer incentives, like stickers and candy, to encourage them to be excited about their medical appointments."

Even so, the doctor's office can be a really intimidating experience for some children.

"Some patients really like coming to the doctor, and some of them are scared every single time," Stanford said. "It's just about being patient and gentle with them because they don't understand what we're doing when they're little."

A welcoming environment is important for families to never hesitate about getting the proper healthcare their kids need.

The clinic prioritizes maintaining top-tier patient care, said Tech. Sgt. Matthew Goebel, 366th MDSS pediatric clinic NCO in charge.

One of the ways they ensure excellent care is by pre-screening patient records before their appointment to avoid asking repetitive questions. This enables the clinic to efficiently use the time with each patient to perform check-ups and treatments while minimizing administrative redundancy.

Goebel explained that patients who come in for a follow-up appointment will see the same doctor and have the opportunity to establish trust with them to further receive excellent care.

The way the clinic takes care of Airmen is making sure their families are cared for.

"It takes a dedicated team to make that happen," Goebel said.

Effective teams are made with people who are excited about what they do on a daily basis.

"I am very passionate about my job," said Stanford. "When it comes to pediatrics, I love kids and I am honored to be one of the people that contributes to their overall health."

This passion is what creates an internal commitment for pediatric technicians like Stanford to provide excellent care to every child they see.

This care includes providers offering procedures in the clinic such as: circumcisions, incision and drainages, frenectomies and more. Technicians are also trained as immunizations backup technicians (IBTs).

Stanford and the pediatrics team strive each day to ensure the children of our Airmen are happy and healthy.

"In the end, my favorite part of my job is seeing patients get better," said Stanford. "You can see such a difference in their behavior. They go from very lethargic to playful and happy. It's like a whole new person!"

"That's what motivates me. That transformation. It's so rewarding."

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Active Duty
PREVENTATIVE HEALTH

Project HeRO Seeks to Improve Squadron Health Habits

By Peter Holstein, Air Force Surgeon General Public Affairs

A new Air Force Health and Readiness Optimization program, or HeRO, seeks to partner with squadrons by using data to help Airmen improve health habits that impact readiness.

HeRO represents a reboot of Air Force Health Promotion efforts. It is designed to target at-risk squadrons using data and evidence-based interventions to minimize work-days lost to preventable illness or injury. It rolled out at 10 sites in 2018, with plans to expand Air Force-wide in 2019.

"We are creating programs to help our local health promotion teams engage at the squadron level," said Col. Thomas Moore, chief, Air Force Health Promotion Branch. "HeRO uses information from annual personal health assessment questionnaires so our teams can identify squadrons showing high rates of negative health behaviors."

With a Department of Defense-wide focus on keeping more service members ready and in the fight, preventing work-days lost to preventable illness or injuries is critical.

"We started by examining how these different health behaviors affect the mission," said Lt. Col. Jennifer Harward, deputy chief, Air Force Health Promotion Branch. "If you lose an Airman for a day from a preventable health behavior, or if they are not performing at their best, then that is a real impact on readiness."

Taking a data-driven and evidence-based approach helps health promotion teams make the case to squadron leadership.

"We use data to get squadron leader buy-in, and from there we can really impact health behaviors," said Moore. "We can show them their squadron's tobacco use is higher than the base average, or their people get less sleep than other units across the Air Force, and explain how it may affect mission performance."

Some of the most concerning data relates to sleep habits. Airmen who get fewer than five hours of sleep each night are considered at high-risk of having sleep deprivation affect performance.

"The science-focused sleep information was eye-opening for everyone," said Shane Warye, chief of Health Promotions at MacDill Air Force Base, Florida. "Sleep deprivation can be self-induced, from playing video games or extensive screen time, or it can be caused by variable shifts that prevent consistent sleep patterns."

No matter the cause, sleep deprivation has the potential to affect mission performance.

"Our interventions educate Airmen on the benefits of sleep and teach strategies to improve sleep habits," said Warye. "Earning leadership's buy-in and utilizing creative challenges leverages social support within squadrons to strengthen habits."

Project HeRO gives health promotion offices standard, evidence-based strategies and interventions, and provides a framework for implementing them successfully. As Warye noted, most Airmen have heard many of the messages on nutrition, fitness and tobacco before. The critical step is getting them to act on them.

"We want to be the spark that ignites a unit to improve their habits and overall readiness," said Warye. "The data driven approach convinces the commanders, chiefs, first sergeants and frontline supervisors, and they fan the flame to drive the message home and impact Airmen's health and readiness."

"We can educate and inform Airmen all day," said Moore. "But engagement from squadron leadership and influencers is more likely to motivate Airmen to really change their habits and get healthier."

Harward pointed out that many of these messages are not new to Airmen. Using squadron leadership as messengers is more likely to motivate Airmen to change their health habits.

"When Health Promotion teams work together with commanders, they develop synergy to improve mission success," said Harward. "When you give people concrete steps to change their behavior, and get their leadership and their influencers involved, it makes a real difference in maximizing Airmen's effectiveness."

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Active Duty
SURGERY

Fleet Surgical Team Saves Life Aboard USS Somerset

By Navy Mass Communication Specialist 2nd Class Kyle Carlstrom

Electrician's Mate Fireman Samuel Guidroz was more than 4,500 miles away from home when he was awakened by a sharp pain in his abdomen on the morning of Nov. 27, 2018.

The 20-year-old Sailor, assigned to the San Antonio-class amphibious transport dock ship USS Somerset (LPD 25), tried to treat the day like any other day spent underway in the Pacific Ocean. But the discomfort in his stomach soon drove him to the ship's medical bay.

"I had a nauseating feeling in my lower abdomen," said Guidroz, from his bed in the ship's recovery ward. "They ran some x-rays and a few additional tests."

"Fireman Guidroz came to us, and we were able to determine he had acute appendicitis," said Cmdr. Jeffery Chao, the surgeon for Littoral Combat Group One (LCG-1).

Chao said it was fortunate that the fleet surgical team happened to be there on the Somerset to augment the ship's capabilities. The fleet surgical team is attached to Amphibious Squadron (PHIBRON) 3, which is currently embarked on USS Somerset as part of LCG-1. If they had not been there, surgery aboard USS Somerset would not have been an option.

But not everything was working in Guidroz's favor.

"The sea state at the time was a bit rough, so it made me nervous," Guidroz said. "The doctors eased my mind though, assuring me it was the right thing to do."

The LCG-1 fleet surgical team and the Sailors aboard USS Somerset acted immediately. The officer of the deck turned the ship to the steadiest course available. The maneuver significantly lessened the ship's motion in the water, allowing the medical personnel to do their work with precision. Then they prepared for surgery.

When Guidroz awoke, he felt groggy but relieved.

"Everything went great. Just like it would have if I had been back at a regular hospital," Guidroz said.

Chao says he expects Guidroz to make a full recovery in the next few days.

Cmdr. Jeffrey Chao, the Littoral Combat Group One (LCG-1) surgeon, second from left, performs an emergency appendectomy as other medical team members assist aboard the San Antonio-class amphibious transport dock ship USS Somerset (LPD 25) assist Nov. 27, 2018, while underway in the Pacific Ocean. USS Somerset is part of LCG-1, which is deployed in support of the Enduring Promise Initiative to reaffirm U.S. Southern Command™s longstanding commitment to the nations of the Western Hemisphere.
(U.S. Navy Photo by Mass Communication Specialist 1st Class Andrew Brame)

"This was a great learning experience to know the medical capabilities out here are far greater than my initial expectations," Guidroz said. "It feels good knowing and having that assurance that something like this can be taken care of out here at sea. I can't thank the medical team enough for what they did."

Since the surgery, Guidroz has been in contact with his family at their home in Baton Rouge, Louisiana.

"They were happy this was able to be done here on the ship, and even a bit surprised," Guidroz said. "Being away from them was different at first, but I've made some new friends out here. And it's important, I think, having people close to you when you're away from home."

USS Somerset is a San Antonio-class amphibious transport docking ship, based out of San Diego. LCG-1 is deployed to the U.S. 4th Fleet area of operations in support of the Enduring Promise Initiative to reaffirm U.S. Southern Command's longstanding commitment to the nations of the Western Hemisphere.

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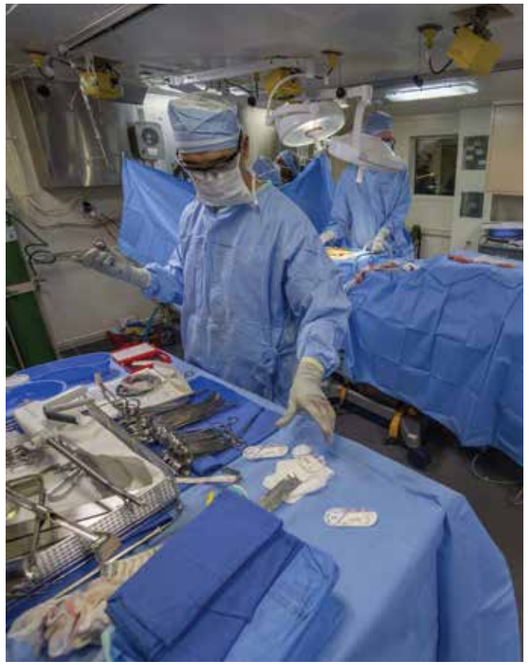

Cmdr. Jeffrey Chao, the Littoral Combat Group One (LCG-1) surgeon, performs an emergency appendectomy as other medical team members assist aboard the San Antonio-class amphibious transport dock ship USS Somerset (LPD 25) Nov. 27, 2018, while underway in the Pacific Ocean. Somerset is part of LCG-1, which is deployed in support of the Enduring Promise Initiative to reaffirm U.S. Southern Command's longstanding commitment to the nations of the Western Hemisphere.
(U.S. Navy photo by Mass Communication Specialist 1st Class Andrew Brame)

Cmdr. Jeffrey Chao, the Littoral Combat Group One (LCG 1) surgeon, performs an emergency appendectomy as other medical team members assist aboard the San Antonio-class amphibious transport dock ship USS Somerset (LPD 25), Nov. 27, 2018, while underway in the Pacific Ocean. Somerset is part of LCG-1, which is deployed in support of the Enduring Promise Initiative to reaffirm U.S. Southern Command's longstanding commitment to the nations of the Western Hemisphere.
(U.S. Navy Photo by Mass Communication Specialist 1st Class Andrew Brame)

Cmdr. Jeffrey Chao, the Littoral Combat Group One (LCG-1) surgeon, left, performs an emergency appendectomy as other medical team members assist aboard the San Antonio-class amphibious transport dock ship USS Somerset (LPD 25) Nov. 27, 2018, while underway in the Pacific Ocean. USS Somerset is part of LCG-1, which is deployed in support of the Enduring Promise Initiative to reaffirm U.S. Southern Command™s longstanding commitment to the nations of the Western Hemisphere.
(U.S. Navy Photo by Mass Communication Specialist 1st Class Andrew Brame)

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>
> Electrician's Mate Fireman Samuel Guidroz

Active Duty
SURGERY

Langley Surgical Team Goes 'Purple'

By Air Force 2nd Lt. Samuel Eckholm

A joint surgical team comprised of three separate branches assembled at U.S. Air Force Hospital Langley to perform an operation.

Consisting of a Navy surgeon, Air Force nurse, and Army technician, the team was organized to perform a Functional Endoscopic Sinus Surgery to restore a patient's sinus ventilation to normal function.

"It's always a great experience working with different branches in the operating room where we are able to learn from each other and share different perspectives," said Army Spc. Travona Parker, Specialty Care Unit surgical technician.

Falling in line with the Tidewater enhanced Multi-Service Market, providing health care in a joint environment works to improve readiness by ensuring that health care providers have the capabilities they need while providing patients with convenient access to care.

At the end of August 2018, Fort Eustis' McDonald Army Health Center closed their operating room and joined the Navy in conducting surgical procedures at Hospital Langley. While operating room time has always been a hot commodity, having both the Army and Navy integrated into the Hospital Langley facility has maximized their utilization.

According to Air Force Maj. Erni Eulenstein, Surgical Operations Squadron Operating Room flight commander,

A joint surgical team comprised of three separate branches assembled to perform an operation at U.S. Air Force Hospital Langley at Joint Base Langley-Eustis, Virginia. Consisting of a Navy surgeon, Air Force nurse and Army technician, the team performed a Functional Endoscopic Sinus Surgery to restore a patient's sinus ventilation to normal function. *(U.S. Air Force photo by 2nd Lt. Samuel Eckholm)*

U.S. Air Force Maj. Mandy Giffin, Surgical Operations Squadron operating room nurse, prepares the OR for surgery at Joint Base Langley-Eustis, Virginia, Dec. 11, 2018 . Giffin has served in all three branches, bringing a lot of experience into the OR. *(U.S. Air Force photo by 2nd Lt. Samuel Eckholm)*

> Giffin believes there are many benefits to working as a joint surgical team. "You are able to hear what everyone's different experiences are and you can compare them to how you do things yourself."

"Allowing multiple services to operate at Langley has helped reduce the duplication of effort while also increasing efficiency." If an operating room is not being used by the Air Force, it is often able to be filled by an Army or Navy surgeon to help increase utilization.

Of the surgical operations currently going on at Hospital Langley, roughly 68 percent are done by Langley providers, 28 percent are done by Fort Eustis providers, and the rest are done by Portsmouth providers.

With different services coming together, challenges would be expected. However, besides a few scheduling issues, things have run smoothly. "Everyone seems to be integrating and working well together," Eulenstein said.

Navy Lt. Cmdr. Dinchen Jardine, Navy Medical Center Portsmouth Department of Otolaryngology, served as the lead surgeon during the FESS procedure and appreciates the opportunity to utilize Hospital Langley's facilities while working side-by-side with the Air Force and Army. "It definitely helps everyone see and understand best practices that then in turn can add to providing the best care possible for patients," Jardine said.

Air Force Maj. Mandy Giffin, Surgical Operations Squadron operating room nurse, has served in all three branches, bringing a lot of experience into the OR. She enlisted in the Army before joining the Navy reserves as a surgical technician. She then joined the Air Force and went to nursing school where she now serves in an active duty component at Hospital Langley.

Giffin believes there are many benefits to working as a joint surgical team. "You are able to hear what everyone's different experiences are and you can compare them to how you do things yourself."

"We are definitely becoming very purple," Giffin said, a term used to describe the blending of uniforms working together from different services. "It's become so efficient that at this point, I don't even think twice about it."

airforcemedicine.af.mil

Active Duty
SURGERY

U.S. Army Institute of Surgical Research, 70th Anniversary

By Dr. Steven Galvan, USAISR Public Affairs Officer U.S. Army Institute of Surgical Research

The Commander of the U.S. Army Institute of Surgical Research, Col. (Dr.) Shawn C. Nessen, center, and the USAISR Senior Enlisted Advisor, Sgt. Maj. William "Dave" Poist Jr., unveil a bronze plaque for Dr. Basil Pruitt Jr., during the USAISR 70thAnniversary Symposium July 18 at Fort Sam Houston, Texas. *(Photo by Dr. Steven Galvan, USAISR Public Affairs Officer)*

The U.S. Army Institute of Surgical Research celebrated the Institute's 70th anniversary of operations July 18, 2018 at Fort Sam Houston, Texas. To commemorate the occasion, the ISR held a symposium to highlight the contributions in research on trauma and burn care over the last seven decades.

"The ISR has established and maintained a reputation of being the world's leader in trauma and burn research," said Col. (Dr.) Shawn Nessen, USAISR commander and trauma consultant to the Army Surgeon General. "That was accomplished through a dedicated staff and leaders who cared about our combat wounded."

Two former ISR commanders (Drs. Basil Pruitt Jr., 1968-1996; and John Holcomb, 2002-2008) were invited to present historical talks during the day's events. Pruitt and Holcomb, both retired Army colonels, provided historical insight on the Institute's contributions to combat casualty care during the Vietnam War, as well as Overseas Contingency Operations in Afghanistan and Iraq.

Pruitt described how the ISR came into existence during World War II with the discovery of the new antibiotic penicillin. The use of penicillin started in 1943 after a fire at the Cocoanut Grove nightclub in Boston killed 492 people and injured hundreds more in the deadliest nightclub fire in U.S. history.

"Penicillin was used on 13 patients who were gravely ill and they rapidly improved," explained Pruitt.

Some patients burned in Boston were transferred to Halloran General Hospital in Staten Island, New York where Dr. Champ Lyons was charged by the Army to lead the evaluation of penicillin on the patients. Shortly after that, Lyons who was commissioned as a Major in the Army to establish the first Surgical Research Unit.

That SRU was disestablished in 1945 after WWII, but in 1947 a new SRU was created at Brooke General Hospital at Fort Sam Houston with three staff members. Over time, the ISR has grown to more than 840 staff members and is recognized around the world as leaders in trauma and burn research.

The U.S. Army Institute of Surgical Research new facility

"The ISR team effort is incredible and not replicated anywhere else," said Holcomb. Holcomb described the ISR research efforts during his tenure which included studies on tourniquets, combat gauze, resuscitation for burns and hemorrhage, blood products, and the establishment of the Joint Trauma System.

usaisr.amedd.army.mil

Armed Forces Medicine 2019

Active Duty
WOUND CARE

USAISR Burn Center Nurses Compete in 'Dressing Wars'

By Dr. Steven Galvan, USAISR Public Affairs Officer U.S. Army Institute of Surgical Research

Nurses at the U.S. Army Institute of Surgical Research Burn Center at Joint Base San Antonio-Fort Sam Houston, Texas, have a unique mission and require specialized training. The nurses who work at the Burn Intensive Care Unit, the Department of Defense sole burn center, care for patients with the highest acuity level in the DoD. To help ensure all nurses at the BICU provide consistent and uniform wound care within established standards, they attend annual skills validation sessions as well as quarterly staff development days.

"Staff development day is necessary to disseminate new and updated information to the staff and ensure we are all providing the best, evidence based care that we can to our patient population," said Alexandra "Alex" Helms, BICU preceptor coordinator. "Not only do the nurses receive specialized training in small groups, but they are also given a day to relax away from the stressful environment of bedside care and have a little fun, and are given the opportunity to ask questions in a safe environment with their peers."

During the most recent staff development day, Sept. 14, the BICU staff participated in a competition dubbed "Dressing Wars." The staff was divided into teams to perform specific simulated wound care techniques on a staff member from their group.

"The dressing was then judged based on sterile technique, use of resources and time management, aesthetics, functionality and accuracy of dressing compared to orders," said Brent Sabatino, assistant civilian nurse officer in charge of the Outpatient Burn Clinic.

The judges for this activity included a wound care expert, critical care physician, rehab therapist, BICU officer in charge and wound care clinical nursing specialist.

"The ability of the dressings to stay on during physical therapy range of motion exercises as well as walking were all part of the 'functionality' judging," added Sabatino. "This judging was done by the rehab unit staff."

The nurses at the U.S. Army Institute of Surgical Research Burn Center Intensive Care Unit were divided into teams to perform specific simulated wound care techniques on a staff member from their group during a staff development day Sept. 14 at Joint Base San Antonio-Fort Sam Houston, Texas. *(Photo by Dr. Steven Galvan, USAISR Public Affairs Officer)*

"Staff development day was developed as an eight-hour training day away from the bedside to complete team building and morale boosting activities while also disseminating new or updated information on unit happenings," added Helms. "The teams were strategically built to merge nightshift, dayshift, brand-new employees versus well-seasoned employees, military, civilian, contract, licensed vocational nurses and registered nurses."

"This was a fun way of making a skills training seem like a competition amongst peers but with feedback given to the group, not aimed at specific staff members," said Sabatino.

Sgt. 1st Class Daniel Peters, BICU noncommissioned officer in charge, agreed that staff development days promote team building and unit cohesion between the leadership and the staff.

"It is a chance to break down barriers and get to know each other in a different setting away from patient care," he said. "We utilize this time to come together as an entire team and reinforce our mission statement and unit goals, so we all stay focused in the same direction."

"Overall, the staff really seemed to enjoy staff development day and we received a lot of feedback for future session suggestions and ways to improve," added Helms.

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The Department of Veterans Affairs Patient Experience Symposium and Medal of Honor Recipient Hershel "Woody" Williams, Marine Corps, World War II and Iwo Jima Veteran

By Tim Hudak

The very first VA Patient Experience Symposium was held this year to bring more than 400 VA leaders together for the purpose of sharing best practices in customer service. The VA's Veteran Experience Office's (VEO) Patient Experience team is supporting VA medical centers to deliver an excellent patient experience.

Learning from best practices in both VA and private sector, VA has created and implemented several VA Patient Experience tools to ensure every employee is trained and focused on providing Veterans not only with the care they need, but also with care that is delivered in an exceptional and consistent manner.

This first-of-its-kind gathering for VA will serve as a significant milestone in the future of VA Patient Experience. One of the VA's most notable former employees shared his experiences at the VA with the symposium. Medal of Honor recipient Hershel "Woody" Williams, Marine Corps, World War II and Iwo Jima Veteran worked for the U.S. Department of Veterans Affairs for more than 30 years.

Williams was one of the first VA employees (then named the Veterans Administration) hired in West Virginia, and now has a VA hospital named in his honor.

"The Veterans and their loved ones in this country of ours, could not exist, in my opinion without the Department of Veterans Affairs," said Williams. "Where would they go? How would they receive those things to which they are entitled if there were not people who were willing to give their lives, energy, wisdom, to serve other people…That's certainly is what we are all about."

During his remarks, he compared the VA of yesterday and today's VA, which he observed first hand as a Veteran and employee.

"We are seeking ways, every way we possibly can to make absolutely sure that every Veteran and their widow and orphans, their families, receive those things to which they are really entitled and earned by protecting us and our freedom," said Williams. "Think of that, how much change has taken place, and every bit of it is good. But we still have a way to go. There's still those out there that we need to make sure are not left behind.

Following the war, Woody worked for the Department of Veterans Affairs (VA) for 33 years as a Veterans Service Representative, allowing him to continue serving veterans and their families. Woody retired after serving 20 years in the Marine Corps and Marine Corps Reserves. He served as the Commandant of the Veterans Nursing Home in Barboursville, WV for nearly 10 years, helping veterans who were often in their last years of life.

Hershel "Woody" Williams, Medal of Honor recipient, speaks to Airman at Sheppard Air Force Base, Texas, Feb. 19, 2016. Williams took a detour from the Iwo Jima reunion to visit with Airmen and speak about their oath and every day assumptions made about today's service members. Williams was a Marine Corps corporal Feb. 21, 1945, when he used a flame thrower to clear Japanese fighting positions while U.S. forces were taking the island of Iwo Jima off the coast of Japan. *(U.S. Air Force photo/Senior Airman Kyle Gese)*

What you are doing here today, is working on that road, that path to succeed in that goal."

Williams spent some time at the symposium, sharing his experiences and learning of the new patient experience efforts underway such as the Red Coat Ambassadors or the 10-4 zone.

"It has been my life of joy, to be able to serve my fellow Veterans," concluded Williams.

To view Williams' full remarks, visit: https://youtube/0VhWYrLGhjU?t=820

va.gov

VA continues Work to Improve the Patient Experience with Commitment to Customer Service

By Beth Lamb

VA assembled more than 450 VA health care decision-makers and clinicians, including all VA medical center directors in Washington D.C. last week for one purpose — improving the Patient Experience at VA. The 2019 VA Patient Experience Symposium allowed VA employees to share best practices and align in support of Secretary Wilkie's prime directive, customer service.

Dr. Richard Stone, executive in charge of the Veterans Health Administration (VHA) set the tone for the conference stating, "When a patient chooses to come see you, you earn the next visit by whether or not you instill trust. That trust is very fragile and can be eroded easily by every experience Veterans have, even if you don't have anything to do with it."

Dr. Richard Stone, executive in charge, Veterans Health Administration, speaks about the patient experience at the VA PX Symposium.

The symposium may have re-emphasized VA's commitment to customer service, but it didn't start here. Over the past 18 months, the Veterans Experience Office has supported each VA Medical Center in some way, all VA Hospitals have implemented Red Coat Ambassadors, and more than 60,000 VHA employees have completed the Own the Moment Customer Experience Workshop.

This in addition to the thousands of dedicated VHA employees who have challenged every process to ensure the Veteran was at the center, piloting and creating new projects – all to see what makes life easiest for their Veteran patients.

VA sites of care are more than just a brick and mortar building to stop by for a health care appointment. They are communities, supported by Veterans, their families, caregivers, survivors, veteran service organizations, volunteers and employees.

Red Coat Ambassadors are now at every VA medical center across the U.S., another way to improve the patient experience.

There are a lot of factors that determine a positive patient experience, it could be a warm greeting at the front desk, a Red Coat volunteer walking Veterans to an appointment, clear signage or parking access. Putting the Veteran and their family at the center of all VA data, technology, tools, and engagement strategies will guide culture change and improve sustainment of programs within VA.

The results of a recent VA customer experience feedback survey showed an average 2.4 percent increase in Veteran trust of VA hospitals during fiscal year (FY) 2018.

Beginning in fall 2017 through September 2018, VA surveyed 1,660,563 Veterans regarding their trust of VA health care outpatient services and found that the "trust scores" of 128 out of 139 VA medical centers increased by an average of 2.4 percent by the end of Fiscal Year 2018

Honor Recipient Hershel "Woody" Williams, Marine Corps, World War II and Iwo Jima Veteran speaks to the assembly

"Listening to our Veteran patients plays an important role in providing world class customer service," said VA Secretary Robert Wilkie. "VA is not only listening to our Veterans, but we are taking action on their concerns as well as their recommendations to improve VA health care."

An additional quarterly VA-wide survey, asking Veterans if they "trust VA to fulfill our country's commitment to Veterans," scored as 55 percent saying yes, they trust VA in 2016 with an increase to 73 percent saying they trust the VA at the end of 2018.

Medal of Honor recipient and former VA employee, Herschel "Woody" Williams told the group, "None of us could exist in this world alone, we must have service to others to exist, to survive." Williams began working for the Huntington VA in West Virginia in 1946 and it is now named after him.

While patient experience is very complex and fragile, it must be the centerpiece of ALL we do.

va.gov

Veterans
SPECIAL FEATURES

39th National Veterans Wheelchair Games Showcases Veteran Athletic Spirit

Over 600 Veterans to participate in rehabilitation event co-sponsored by VA and PVA

By the VA Office of Public and Intergovernmental Affairs

More than 600 military Veterans from across the country, Puerto Rico and Great Britain competed in the 39th National Veterans Wheelchair Games (Wheelchair Games) held this year in Louisville, Kentucky.

The Wheelchair Games, co-presented each year by the U.S. Department of Veterans Affairs (VA) and Paralyzed Veterans of America (PVA), is a multi-event sports rehabilitation program. The games are open to U.S. military Veterans who use wheelchairs for sports competition due to spinal cord injuries, amputations or certain neurological disorders, and who receive care at VA medical facilities or military treatment centers.

"The Wheelchair Games showcase the athletic ability and competitive spirit of our nation's Veterans," said VA Secretary Robert Wilkie. "Competition through sports and recreation plays an important role in the rehabilitation journey and these games exemplify VA's commitment to supporting Veterans who are navigating recovery and rehabilitation to achieve active, independent lives."

VA research and clinical experience have shown that physical activity is important to maintaining good health, speeding recovery and improving overall quality of life. For many injured Veterans, the Wheelchair Games provides their first exposure to wheelchair athletics. Veterans have the opportunity to compete in 20 different events throughout the week including archery, billiards, bowling, cycling, track, field, quad rugby, wheelchair basketball and more.

Ryan Major loves rugby because it's loud, fast and has lots of crashes. He is hoping for gold at this year's National Veterans Wheelchair Games.

"Every year, our members look forward to this event for the adaptive sports competition and the chance to reconnect with peers," said David Zurfluh, a disabled Air Force Veteran and national president of PVA, who himself will compete this week. "The PVA mission is to ensure Veterans with disabilities have the same life experiences as everyone else, and co-hosting this event certainly delivers on that mission."

The opening ceremonies were held on Thursday at the Kentucky International Convention Center (KICC).

va.gov

Veterans
SPECIAL FEATURES

2019 Warrior Games in Tampa, Florida

By Petty Officer 1st Class Tyrell Morris, Navy Public Affairs Support Element East

Team Navy kicked off the 2019 Department of Defense (DoD) Warrior Games competing alongside 40 Navy and Coast Guardsmen, who advanced to the DoD level in March as part of the Navy Wounded Warrior - Safe Harbor (NWW-SH) program. NWW-SH provides individually tailored assistance designed to optimize recovery, rehabilitation and reintegration activities.

"I am extremely proud of Navy Wounded Warrior- Safe Harbor," said Vice Adm. Mary M. Jackson, Commander Navy Installations Command. "Our team works very, very hard to assist our Sailors and Coast Guardsmen and women who are navigating the uncertain and often cumbersome path of being wounded, ill or injured."

NWW-SH is solely responsible for coordinating the non-medical care for Sailors and Coast Guardsmen and providing resources and support to their families and caregivers.

"It is a special honor to see these service members strive against competition and adversity. They truly exhibit the character and courage the services demand," said Hon. Greg Slavonic, Assistant Secretary of the Navy for Manpower and Reserve Affairs.

Cmdr. Robert Fry participates in the men's 800-meter run for Team Navy during the 2019 Department of Defense Warrior Games at the University of South Florida, June 22. Team Navy is comprised of athletes from Navy Wounded Warrior-Safe Harbor, the Navy's sole organization for coordinating the non-medical care of seriously wounded, ill and injured Sailors and Coast Guardsmen, providing resources and support to their families. *(U.S. Navy photo by Mass Communication Specialist 3rd Class Kody A. Phillips/Released)*

Team Navy joins approximately 300 service members from the other branches of the U.S. military, as well as the United Kingdom Armed Forces, Australia Defence Force, Armed Forces of the Netherlands, Canadian Armed Forces and the Danish Armed Forces.

"Warrior Games brings together folks with different disabilities and it gives us the opportunity to look at the strength we all have because there is one common goal to move on and try things we've never done before," said Rear Adm. Kyle Cozad, Team Navy rookie.

Since 2010, the Warrior Games have introduced wounded, ill and injured service members and veterans to Paralympic-style sports, including golf, which is a new competition this year.

"Adaptive sports and the Warrior Games are some of the many resources available to our wounded warriors," said Jackson. "It is absolutely inspiring and impressive to see these athletes compete and to watch the team building and energy they get from each other. I firmly believe that coming to watch these warriors is a life-changing experience."

dvidshub.net

Veterans
AUDIOLOGY

VA researcher Receives Career Award for Contributions in Hearing Loss

M. Patrick Feeney, PhD

A U.S. Department of Veterans Affairs (VA) researcher was recently recognized by the American Academy of Audiology for his work in improving the lives of Veterans and others affected by hearing loss.

Dr. Patrick Feeney was presented the 2019 Jerger Career Award for research in audiology at the American Academy of Audiology's annual meeting March 29.

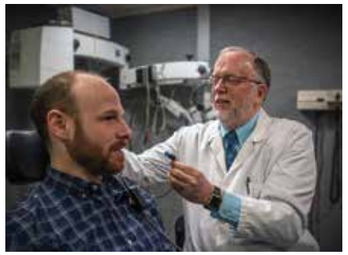
The Jerger Award is given annually to an investigator whose research contributions have significantly impacted the practice of audiology. Over the past 30 years, Feeney's research has focused on peripheral and central auditory function in Veterans and others.

"Hearing loss and tinnitus have long been among the disabilities affecting Veterans," said VA Secretary Robert Wilkie. "The innovative research conducted by Dr. Feeney and his team is critical in finding ways to address these issues."

Feeney directs the National Center for Rehabilitative Auditory Research (NCRAR) at the VA Portland Health Care System in Oregon. NCRAR, funded by VA Rehabilitation Research and Development, is the only VA research center dedicated to the discovery and delivery of innovative solutions for Veterans with hearing impairments.

The center educates Veterans and the public about preventing hearing loss and coping with tinnitus — or ringing in the ears. It partners with institutions in the community to promote education, share clinical information, and train auditory researchers and clinicians.

Feeney has worked as a clinical audiologist and served on the faculty at several research institutions. He is a professor at Oregon Health and Science University, is active in several professional organizations and was past president of the American Academy of Audiology from 2008 to 2009. He also has been a faculty member at Ohio State University and the University of Washington.



Department of Veterans Affairs (VA) is proactively using the latest in telehealth technology to reach rural Veterans

Feeney has contributed to more than 50 publications in peer-reviewed journals, 11 textbook chapters for the profession of audiology and more than 50 published abstracts.

va.gov

Dr. M. Patrick Feeney is director of the National Center for Rehabilitative Auditory Research. He is pictured with a VA employee, demonstrating a hearing test. *Photo by David M. Moody, VA Portland Health Care System, Oregon*

Veterans
AUDIOLOGY

"I'm Hearing Better Now than I Have in 20 years"

Hearing aid fitted via Audiology Telehealth

By Jamie Mobley, Public Affairs Specialist at the New Orleans VA Medical Center

In Vietnam, Army Veteran Jerry Smith was a paratrooper. When he got home, he thought he would never be able to hear again.

"In the Infantry, machine guns, rifles, hand grenades, all those noises blew my hearing away," he said. "Helicopters, artillery, everything happening at once, all day, every day. When I came home from Vietnam in '71, they didn't know how to fix that kind of stuff."

For years, Smith has been getting his health care at the Southeast Louisiana Veterans Health Care System's community-based outpatient clinic in Baton Rouge. He said the clinic has taken great care of him over the years.

"Before I started wearing hearing aids, I couldn't hear you at all. Then after I got the first hearing aids, if there was background noise, it would block sounds and I couldn't hear well.

"I just kinda got used to thinking it would always be half-way. You're always asking, 'What'd you say?' and people kind of shied away from wanting to hold a conversation."

Decided to give telehealth fitting a try

The Baton Rouge clinic has three audiologists working in-house and one audiologist who sees patients via telehealth. When hearing aids are prescribed, telehealth fittings are offered as an alternative to in-person fittings. Smith decided to give it a try.

"The audiology department has been awfully good to me. They've gone out of their way to be helpful."

Upon arrival for a telehealth fitting, Veterans meet audiology health technician Audrey Fleet. First, Fleet makes sure Veterans are prepared for the fitting, looking into their ears to make sure they are clear and ready. Then she goes over the aids with the Veterans, giving a basic orientation on how to use them, take care of them and order supplies–and how to get in touch with the clinic for potential questions or problems. During orientation, Dr. Jessica Riggs remotes into the conversation on screen from her office in Mobile, Alabama. Once all three parties are in place, the telehealth fitting can begin.

Fleet places a collar on the Veteran's neck and a small, flexible probe into the ear canal, which Riggs uses to perform real-ear measurements using readings of the sound the Veteran is receiving from the probe while listening to recorded speech samples.

Then Riggs remotely adjusts the sound levels of the hearing aid to match target amplification levels based on the Veteran's hearing loss across the speech frequencies. This ensures the Veteran gets a just-right level on amplification–not too loud, not too quiet.

Smith said his telehealth fitting appointment with Fleet and Dr. Riggs was almost like being in the room with the audiologist. "Audrey was able to put me at ease. With the telehealth, the doctor was able to say, 'You're gonna hear some bells ringing for a minute as I adjust the aids' and it was instantaneous."

Fleet explained why she thinks tele-audiology is a good fit for Veterans of her clinic. "Most of the time they can get in a little sooner if they do a telehealth fitting," she said. "The primary benefit is the time saved, less wait for an appointment. We've had very good survey results."

Riggs agreed, "It's neat! It cuts down on the Veterans' wait times. I like it because I know they are getting their hearing aids faster, and I'm happy to help. Technology is always advancing!"

Grateful for the Baton Rouge hearing clinic

As technology has improved, so have Smith's hearing aids. He said, "I'm hearing again. Before I started wearing hearing aids, I couldn't hear you. Now I can hear. If I'm sitting out there in the hallway and you're talking to me, I can hear what you said. These aids are fine-tuned to what I need."

Having good hearing is very important to Smith. "I'm active in life. I do a lot of theater, I work backstage with lights and sounds, choreography and as a hobby. I love it. Once you're able to hear what you're doing after the work you put into it, it's very satisfying."

Smith said he's grateful for the Baton Rouge hearing clinic and for how they have helped him.

"I'm hearing better now than I have in 20 years."

va.gov

Veterans
CARDIOLOGY

Are Omega-3s Really Good for Your Heart?

By Mike Richman, VA Research Communication

Many studies have shown that eating fatty fish as part of a healthy, balanced diet keeps your heart strong and helps lower the risk of heart disease, the leading cause of death in the United States. Fatty fish, such as salmon, mackerel, and tuna, are good sources for omega-3 fatty acids, which lower elevated levels of triglycerides, a major form of fat in the body. Higher levels of triglycerides in the blood can mean a greater risk of heart attack or stroke.

The cardio and other reputed health benefits of omega-3s — which include curbing stiffness and joint pain and preventing dementia — have prompted millions of Americans to buy them as fish oil and algae supplements. Omega-3 fatty acids are among the most popular dietary supplements on the market today. But the health benefits of these supplements have long been controversial, mainly because of inconsistent research results.

Are there prescription forms of omega-3s that are any better than the supplements available online and in stores? The most common omega-3s that are prescribed to reduce the risk of heart disease are eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA), both of which are in fish and fish oils, as well as alpha-linoleic acid (ALA), which is in certain nuts, seeds, and vegetables.

Dr. Salim Virani, a staff cardiologist at the Michael E. DeBakey VA Medical Center in Houston, hopes that omega-3s, especially those that are prescribed, can potentially produce major cardio benefits. He recently co-authored a review that summarized the findings and clinical implications from a series of omega-3 trials. The review appeared online in the journal Current Atherosclerosis Reports in January 2019.

Virani and his colleagues devoted most of the review to a study on a fish oil that is available only by prescription: icosapent ethyl. Researchers on the REDUCE-IT study found that icosapent ethyl, which is highly purified derivative of EPA, was tied to a lower risk of heart disease in patients with preexisting diabetes or cardiovascular disease, plus elevated triglyceride levels. The trial included more than 8,000 participants. During the five-year follow-up, 17 percent of the patients taking four grams a day of icosapent ethyl experienced a heart attack or stroke. Twenty-two percent of the patients on the placebo, which was mineral oil, had heart disease or stroke.

"Current data suggest that higher dosages of pure [EPA prescriptions] provide additional benefit" in the reduction of heart disease, Virani and his colleagues wrote. "Data from the randomized controlled trial REDUCE-IT, when viewed within the context of other trials, such as JELIS, add to the growing body of evidence on the use of omega-3 fatty acid therapies in the treatment of [heart disease].

In his career, Virani has researched heart disease prevention through the use of lifestyle changes and treatments related to lipid disorders. The latter are high blood levels of triglycerides or LDL cholesterol, which is bad cholesterol, or both. Elevated concentrations of LDL can also lead to heart disease. Virani, who is also an associate professor at the Baylor College of Medicine in in Texas, discussed his work with VA Research Currents.

What should the general public know about consuming omega-3 fatty acids in a diet and via supplements for cardiovascular health?

Major guidelines from large academic societies, including the American Heart Association and the American College of Cardiology, recommend a diet that includes vegetables, legumes, fruits, whole grains, and fish to reduce the risk of heart disease. Fatty fish, such as salmon and mackerel, are good sources of omega-3 fatty acids. As such, it's not recommended that the general public use fish oil supplements, which haven't been shown to help prevent heart attacks or strokes. Consumption of fish should suffice. The benefits from naturally produced omega-3s have been seen in patients with elevated triglycerides who were given prescription fish oil. We recommend that patients and the general public first consult with their health care providers to see if they are candidates for those therapies, rather than consume over-the-counter fish-oil tablets.

Photo Credit: National Eye Institute

What is it about icosapent ethyl that makes it more effective in reducing heart disease than an over-the-counter supplement, and does it have major side effects?

Some scientists think that icosapent ethyl may have a special membrane stabilizing effect that other prescribed fish oils don't. Some people think that when you lower triglycerides with some other fish oils, LDL cholesterol levels may go up. But LDL cholesterol generally doesn't rise when you prescribe EPA, like the derivative used in the REDUCE-IT trial. Experts believe that that may be the reason, but it's not something that's proven. In terms of side effects, there was a small risk of increased bleeding among the patients in REDUCE-IT, as well as an increase in an irregular heartbeat called atrial fibrillation, or AFib. But there was a much greater reduction in heart attacks and strokes, compared with an increase in these side effects.

Your review says, "Given the different formulations, dosages, and patient populations studied, cardiovascular outcome trials of omega-3 fatty acids have provided valuable insight into the use of these agents in cardioprotection." What was the primary methodology for these studies?

The studies we reviewed were randomized controlled trials. Patients with a history of diabetes or cardiovascular diseases, such as heart attack or stroke, received prescription fish oil, compared with a placebo. The fish oil used was different in the trials. It's also important to note that in the more contemporary trials, such as REDUCE-IT and JELIS, these patients were already on other drugs — most importantly, statins — that are very important in reducing the risk of heart attack or stroke. The important message here is that in the right patient, omega-3 prescription fish oil may be helpful when taken, in addition to statin therapy. Patients should not think that omega-3s can replace their other cardiac medications. They should continue taking all other cardiac drugs, including statin therapy, even when they are prescribed a fish oil by their health care provider. If the medication needs to be adjusted, their health care provider will let them know.

Major guidelines from large academic societies, including the American Heart Association and the American College of Cardiology, recommend a diet that includes vegetables, legumes, fruits, whole grains, and fish to reduce the risk of heart disease. Fatty fish, such as salmon and mackerel, are good sources of omega-3 fatty acids. As such, it's not recommended that the general public use fish oil supplements, which haven't been shown to help prevent heart attacks or strokes. Consumption of fish should suffice.

Is there new information that helps resolve the debate over whether omega-3s indeed assist in heart function?
Most of the studies related to cardiac function have been small studies. Practice changing studies are generally large studies performed using a randomized trial design. For omega-3s, some of these large randomized trials have been completed, and some important ones are still ongoing. The ongoing trials will provide definitive evidence of which patients derive the most benefit from omega-3s and which types of omega-3s should be used. There is no current evidence to support widespread use of omega-3s by the general public for cardiovascular benefit.

Of the three main omega 3s–EPA, DHA, and ALA — which one stands out as having the greatest cardiovascular benefits, and will they be prescribed in greater number in the coming years?

They are all important. ALA is an essential fatty acid, so it must be consumed through dietary sources, mostly via nuts, vegetable oils, flax seeds, and leafy vegetables. EPA and DHA are largely derived from the diet, mainly from oily fish or fish oil supplements, although they can also be produced through ALA.

An increase in prescriptions in the coming years will depend on the results of an ongoing study called the STRENGTH trial. It's going to be as large as the REDUCE-IT study. Researchers on the STRENGTH trial are examining whether four grams daily of a lipid-controlling drug that contains both EPA and DHA reduces the risk of heart disease in statin-treated patients with high levels of triglycerides and low levels of HDL cholesterol, which is known as good cholesterol. The results for STRENGTH should be out in the next two to three years. If the results are positive, then the confidence doctors have in prescribing omega-3s will rise. If you have two studies that come back positive, that definitely improves your degree of certainty that a therapy will be beneficial. The cost of this is a big issue, as well. We discussed that in one of our other manuscripts that was just published in the journal Circulation of the American Heart Association. We provided the cost estimates in VA of prescribing the form of EPA used in the REDUCE-IT study to prevent heart disease or diabetes in patients with high levels of triglycerides.

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Veterans
ENDOCRINOLOGY

Sharing Decisions Helps Veterans Manage Diabetes

By Dr. Brian Burke, internal medicine physician at the Dayton VA Medical Center

Diabetes affects an estimated 30.3 million people in the United States or about 9.4 percent of the population.

Patients with diabetes have a lot to manage to stay healthy — paying close attention to their diet, making sure they get plenty of exercises, often managing multiple medications, and ensuring their numbers (blood glucose, blood pressure, and cholesterol) are within their goal range. It is important for patients with diabetes to be active members of their health care team and have a voice and ownership in the decisions made about their care.

A Shared Decision Making (SDM) encounter occurs when the patient, his loved ones and the health care team discuss together what treatment options best address the patient's goals. Managing diabetes on a day to day basis is a family affair. The decision-making process takes into account evidence-based information about available options, the health care team's knowledge and experience, and the patient's values and preferences.

In 2017, Department of Veterans Affairs and the Department of Defense recognized the important role SDM plays in managing diabetes when they updated their Clinical Practice Guideline for the Management of Type 2 Diabetes Mellitus in Primary Care.

The guideline stated that "when properly executed, SDM may decrease patient anxiety, increase trust in clinicians, and improve treatment adherence." Improved patient-clinician communication can be used to convey openness to discuss any future concerns.

The Agency for Healthcare Research and Quality (AHRQ) is a national leader in SDM, offering the SHARE Approach model and curriculum for training clinicians to implement SDM in practice using a team-based approach. SHARE is a major component of a Federal Interagency Workgroup to improve hypoglycemic safety in support of the National Action Plan for Adverse Drug Event Prevention.

Led by the Department of Health and Human Services Office of Disease Prevention and Health Promotion, agencies across the Federal Government are working to encourage the use of SDM and related principles such as health literacy and numeracy in treating patients with diabetes.

The Veterans Health Administration (VHA), the Department of Defense and the Indian Health Service recommend AHRQ's SHARE Approach as a tool to be used by clinicians to assist patients in developing individualized glycemic goals to prevent hypoglycemic events.

VHA has developed a national voluntary program, the Choosing Wisely Hypoglycemic Safety Initiative to identify Veterans at high risk for hypoglycemia who may be overtreated with hypoglycemic agents at the time of a clinical visit based upon a clinical reminder in the electronic medical record.

The VA Employee Education System has partnered with AHRQ to develop a series of videos for patients, their families, and all clinicians to increase awareness of hypoglycemia and the importance of using shared decision making in discussing treatment goals with their healthcare team.

They will be shown on closed-circuit televisions in VA waiting rooms across the country and are available to the public. The SHARE Approach curriculum and materials have also been adapted for use in the VA's online education platform.

Diabetes and complications such as low blood sugars can be difficult for a patient and his or her family. Applying SDM principles to managing diabetes can help care teams be more responsive to a patient's situation, needs, and preferences while putting them directly at the center of their care.

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Veterans
IMMUNOLOGY

VA on Path to Cure 100,000 Veterans of Hepatitis C

The U.S. Department of Veterans Affairs (VA) recently announced that it is on track to eliminate the hepatitis C virus (HCV) in as few as two months, in all Veterans willing and able to be treated.

As of March 3, 2019 nearly 116,000 Veterans started all-oral hepatitis C medications in VA, of which 96,654 Veterans completed treatment and have been cured.

"As the largest single provider of HCV care in the U.S., this is terrific news because it means we are within striking range of eliminating hepatitis C among Veterans under the care of the Veterans Health Administration," said VA Secretary Robert Wilkie. "Diagnosing, treating and curing hepatitis C virus infection among Veterans has been a significant priority for VA."

HCV infection can lead to advanced liver disease (ALD), liver cancer and death. Treatment of HCV can prevent development or progression of ALD, greatly improving survival. However, before 2014, HCV treatment required weekly interferon injections for up to a year, with low cure rates (35-55 percent) among Veterans and significant physical and psychiatric side effects leading to frequent early discontinuation.

Up to that time, of the approximately 180,000 Veterans in VA care who had been diagnosed with chronic HCV infection, only 12,000 had been treated and cured, while over 30,000 had developed ALD.

In early 2014, highly effective, less toxic, all-oral, direct-acting antivirals became available, revolutionizing the treatment of HCV. With the support of Congress and other stakeholders, VA implemented an aggressive program to find all undiagnosed Veterans in VA care with HCV — including those who did not know they carried the infection — link them to HCV care, and offer them treatment with these new medications.

At the peak of this effort to rapidly deploy all-oral direct-acting antivirals, VA began treating close to 2,000 Veterans with HCV every week; nearly one treatment started every minute of every work day.

As a result of this historic effort, the overall death rate one year after treatment reduced to 80 percent among Veterans in VA care with HCV. Veterans cured of HCV with these medications were also 84 percent less likely to develop liver cancer.

Veteran Darrell Mason is presented with a certificate marking the 100,000th Veteran treated for hepatitis C

The Hines team (L to R): Phyllis Weber, Dr. Steve Scaglione, Dr. Karine Rozenberg, Dr. Veronica Loy, Dr. Kushal Shah

The announcement cements VA's position as a national leader in diagnosis and treatment of HCV and marks a major milestone in the nation's fight against viral hepatitis. VA is on track to treat more than 125,000 Veterans with these lifesaving medications by October. Currently, fewer than 27,000 Veterans in VA care remain to be treated.

All marketed hepatitis C medications are on the VA National Formulary Hepatitis C medications used today have few side effects and can be administered as a once a day treatment for as little as eight weeks.

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Veterans
IMMUNOLOGY

A Plan for Ending the HIV Epidemic in America

By Dr. Anthony Fauci, Director of the National Institutes of Health's (NIH) National Institute of Allergy and Infectious Diseases (NIAID), as addressed at the 2019 Conference on Retroviruses and Opportunistic Infections (CROI)

The plan is to decrease the number of new HIV infections by 75% in 5 years and by 90% in 10; acheived by the effors of the NIAID and the leaders of the Centers for Disease Control and Prevention (CDC), Health Resources and Services Administration (HRSA), Indian Health Service (IHS), and Office of the Assistant Secretary of Health (OASH) which have collaborated on a strategy to make best use of the highly effective tools that are now available — specifically, HIV treatment and pre-exposure prophylaxis (PrEP).

There are The 19 NIH-supported Centers for HIV Research and six additional AIDS Research Centers supported by the National Institute of Mental Health, which will focus on implementation science and NIH also will continue to advance it's HIV research agenda across a range of topics, including new and improved forms of HIV prevention and treatment, a vaccine, and research toward an HIV cure.

"We still have a significant problem with HIV in the United States," said Dr. Fauci, with 1.1 million Americans living with HIV, 38,000 new HIV infections each year, and significant demographic and geographic disparities in new infections concentrated mostly among men who have sex with men and racial/ethnic minorities.


Dr. Anthony Fauci

Another discussion during the 2019 Conference on Retroviruses and Opportunistic Infections (CROI) was from Dr. Carl W. Dieffenbach, PhD, the Director of the Division of AIDS at NIH's National Institute of Allergy and Infectious Diseases (NIAID), where he discussed the promising findings from a large study evaluating a "universal test and treat" strategy, as well as other results showing improved viral suppression and retention in care when point-of-care viral load testing is offered. The clinical trial called "Population Effects of Antiretroviral Therapy to Reduce HIV Transmission" (PopART), or HPTN 071, was presented at the Conference, sponsored by NIAID and funded primarily by the President's Emergency Plan for AIDS Relief (PEPFAR).


Dr. Carl W. Dieffenbach, PhD

PopART, or HPTN 071, was presented at the Conference and sponsored by NIAID. Primarily funded by the President's Emergency Plan for AIDS Relief (PEPFAR), PopART found that that conducting population-wide, home-based HIV testing and offering treatment to those diagnosed with HIV — a strategy often referred to as "universal test and treat" — resulted in high rates (70%) of viral suppression and a 30% reduction in new HIV infections. The researchers concluded that such a strategy could help control the epidemic in certain settings.

The study showed Point-of-Care Viral Load Testing significantly improved HIV viral suppression and retention in care in South Africa, partly by ensuring rapid receipt of viral load results to patients and their providers. The researchers, led by Dr. Paul Drain of the University of Washington, concluded that increasing access to point-of-care viral load testing could help to achieve goals for increasing the proportion of people living with HIV who are virally suppressed in many areas in southern Africa where less than 50% of people with HIV have achieved viral load suppression.

hiv.gov

Veterans
IMMUNOLOGY

Caring for Veterans with HIV

By Elizabeth Maguire, MSW, Communications Lead for the HIV, Hepatitis, and Related Conditions Programs

The VA is the single largest provider of HIV care in the US, serving over 30,000 Veterans with HIV across the country, committed to each step in the HIV care continuum from testing and diagnosis, to linkage to care, and treatment and prevention. Community and federal partners play a critical in extending the care we can provide to our Veterans with HIV.

With over 43% of all Veterans in care tested for HIV, VA is committed to ensuring all Veterans continue to have access to testing and high-quality HIV care at diagnosis. VA is also committed to HIV prevention by continuing to strongly promote Pre-Exposure Prophylaxis, a medication that can help prevent HIV for those who are negative but at risk for HIV.

VA is also focusing on increasing awareness and action on HIV treatment as prevention (TasP) or Undetectable=Untransmittable (U=U).

If the virus is undetectable, the person with HIV cannot pass the virus on to others through sex. This is critical to preventing new cases of HIV. At VA, we are working to make sure that people diagnosed with HIV are started on treatment right away and stay on treatment.

VA medical providers are encouraged to talk with their patients about PrEP, and condoms. With taking preventative measures, we can reduce the number of new HIV infections and work to make sure Veterans in VA care with HIV are receiving the very best treatment available.

The Department of Veterans Affairs (VA) leads the country in HIV/AIDS screening, testing, treatment, research and prevention.

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Adjunct Professor and Nurse Practitioner Richard Stiles consults with a patient at the New York City VA Medical Center

Veterans
NEPHROLOGY

Many Patients Show Signs of Chronic Kidney Disease before Diabetes Diagnosis

By Tristan Horrom, VA Research Communications

Many patients who will later be diagnosed with diabetes show signs of chronic kidney disease (CKD) even before their diabetes diagnosis, according to a study by researchers with the University of Tennessee Health Science Center and VA MidSouth Healthcare Network.

Doctors have long known that patients with diabetes are at risk for kidney disease. But the new study shows that patients could be suffering undiagnosed kidney damage even before they are aware that they have diabetes.

Looking at data from VA electronic health records, the researchers found that more than 30 percent of diabetic Veterans had prior CKD signs. They also found racial and regional disparities for kidney disease risk.

The results appeared in the Feb. 9, 2018, issue of the journal PLoS One.

Diabetes and kidney disease strongly linked

About 10 percent of the U.S. population — around 20 million people — have CKD. Diabetes is the leading cause of CKD and end-stage renal disease. One-third of adults with diabetes have CKD. Other conditions that often co-occur with diabetes, such as cardiovascular disease, also raise the risk of kidney disease.

No cure currently exists for CKD, but treatment can delay its progression if it is detected early. Dr. Csaba Kovesdy, a researcher at the Memphis VA Medical Center and author on the study, explains the importance of early detection: "While CKD is silent, it can also lead to a higher risk of various complications such as high blood pressure, cardiovascular disease, and death. Early recognition of CKD can help implement measures that can delay its progression, and is thus very important. While there are no cures for established CKD, a healthy lifestyle, good blood pressure and diabetes control, and avoidance of various harmful exposures, such as over-the-counter painkillers, can help delay CKD's progression."

Health care guidelines recommend screening for CKD for at-risk patients. However, patients often are screened only after they are diagnosed with established diabetes.

To assess the risk of kidney damage from undiagnosed diabetes, the researchers looked at data on 36,794 Veterans who were diagnosed with diabetes between 2003 and 2013. They found that 31.6 percent of these Veterans had evidence of CKD prior to the diabetes diagnosis, based on estimated glomerular filtration rate (eGFR) and urine-albumin-creatine ratios, two common measures of kidney function.

Veterans with higher age, hemoglobin A1C, blood pressure, and body mass index (BMI) also had a greater risk of CKD. All of these factors are themselves risk factors for diabetes. Those with cerebrovascular disease, congestive heart failure, or peripheral artery disease — conditions that are frequently seen alongside diabetes — had higher kidney disease risk as well.

The results suggest that kidney damage often occurs before diabetes is diagnosed, say the researchers. They propose two possible reasons for this early kidney damage: Type 2 diabetes can be undiagnosed for a long time, meaning the kidneys are being damaged without the patient or doctors being aware. Or, kidney damage could come from other conditions common in the population at risk for diabetes.

According to the researchers, the results highlight an opportunity for broadening screening among patients with increased risk of CKD.

Kovesdy explains that early laboratory testing is needed because CKD often does not have outward signs. "Chronic kidney disease is silent, so patients can develop even advanced stages of chronic kidney disease before noticing anything.

The only way to detect it in most affected individuals is through laboratory measurement, i.e., serum creatinine and urine albumin. Serum creatinine is measured very frequently among Veterans, but an abnormal value would only diagnose stage 3 and above of chronic kidney disease. Urine albumin screening would be a way to identify early stages, but the use of this screening test is mostly limited to diabetics."

Doctors have long known that patients with diabetes are at risk for kidney disease. But the new study shows that patients could be suffering undiagnosed kidney damage even before they are aware that they have diabetes.

Dr. Csaba Kovesdy treats patients and conducts research at the Memphis VA Medical Center and University of Tennessee Health Science Center. *(Photo by Warren Roseborough)*

Certain races, regions of the country at higher risk

The study also revealed disparities in the rates of CKD based on race. Asian Americans and African Americans had higher rates of chronic kidney disease than whites. However, the proportion of patients who were minorities decreased as disease severity increased.

These results based on racial group differ somewhat from the results of other studies. African Americans and Hispanics have generally been shown to have higher rates of CKD than whites. The disease also tends to progress faster in these populations. But results in this study did not show a higher risk for Hispanics. More advanced kidney disease also had a more even racial distribution, according to the new data.

The researchers posit that these differences could be because they were looking at a different stage of the disease. Most prior studies have focused on end-stage renal disease.

The study also showed different risk for kidney disease based on where in the country Veterans lived. Those in the Northeast had lower risk of chronic kidney disease than those in the Midwest, South, and West.

The highest rates of chronic kidney disease were in the upper Midwest, central and south Florida, and a band of the mid-south and North Carolina.

These regional differences could be due to lower socioeconomic status of Veterans in those areas and less access to care, say the researchers. More analysis is needed to figure out exactly why these parts of the country have higher rates of CKD, as well as to explore the reasons for the difference in risk based on race.

Kovesdy says, "Better awareness of the risk factors for CKD — for example, high blood pressure, obesity, cardiovascular disease, race-ethnicity, family history — is needed for health care providers to become proactive about screening for early-stage CKD."

The study was funded by VA and the University of Tennessee Health Science Center Institute for Research, Innovation, Synergy, and Health Equity.

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Veterans
NEUROLOGY

Veterans' Neurology Care and Epilepsy Research at the American Epilepsy Society's 2018 Meeting

VA healthcare professionals pioneer Veterans' care

VA Careers was at the 2018 American Epilepsy Society (AES) meeting in New Orleans answering questions about working at the U.S. Department of Veterans Affairs (VA) and learning about the latest in Veterans' neurology and epilepsy care from researchers representing the VA National Epilepsy Centers of Excellence that spoke at the event.

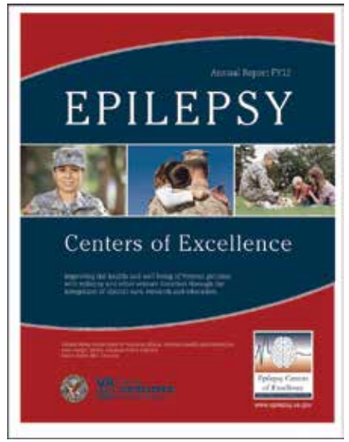
VA Careers encouraged 2018 attendees to stop by their booth at the Ernest N. Morial Convention Center to learn more about VA healthcare careers from Sam Wainscott, a recruiter from the VA National Healthcare Recruiting Service.

"Sam is at the AES 2018 meeting to share information with healthcare professionals interested in working as physicians, fellows and leaders and serving Veterans who are living with epilepsy and other seizure disorders," said Darren Sherrard, associate director of recruitment marketing.

Specifically, Sam is interested in meeting leaders in the field of epilepsy who may be interested in becoming the director of VA's National Epilepsy Center of Excellence. This physician must have a documented track record of successful leadership, research and academic accomplishments.

The American Epilepsy Society is one of the oldest neurological professional organizations in the country. The Society seeks to promote interdisciplinary communications, scientific investigation and exchange of clinical information about epilepsy and other seizure disorders.

VA Careers is handing out information to healthcare professionals interested in



epileptic neurology careers at VA, which are making a lasting impact on Veterans' health and the field of epileptology.

"VA career professionals are doing important work in this field, including on the relationship between traumatic brain injury and onset of epilepsy," Sherrard said. "We encourage attendees interested in a VA career path to visit Booth #T-31 to share their contact information and resumes with Sam, who can also answer questions about available positions through VA Epilepsy National Centers of Excellence."

Clinicians and scientists from the VA National Epilepsy Centers of Excellence also presented findings on the use of electronic health records to evaluate comorbidities that may affect behavior and treatment in patients with epilepsy. Use of the electronic health record to research, innovate and coordinate treatment is a cornerstone of the VA mission to modernize and improve healthcare for Veterans.

Dr. Hamada Hamid Altalib, co-director of the VA National Epilepsy Centers for Excellence, addressed two AES sessions:

- Cognitive and Behavioral Treatment Special Interest Group – Integrating Behavioral Health into Epilepsy Care: Addressing Barriers.
- Interprofessional Care Symposium – Ethical Considerations that Impact Professionals Caring for the Patient with Epilepsy.

In addition to joining a staff committed to epilepsy research and treatment innovation, healthcare providers at VA are eligible for a wide array of benefits, including medical and dental insurance and generous leave policies. Employees also have access to the federal retirement system.

Depending on open positions, VA providers can work anywhere in the United States, Puerto Rico, American Samoa and Guam with one active license. In addition, benefits transition with professionals who move to a new facility. There are also mobile telework options, transportation support and, in some cases, child care subsidies.

va.gov

EPIDIOLEX® (cannabidiol) oral solution, C

Brief Summary of Prescribing Information

See package insert for full Prescribing Information or visit www.EPIDIOLEXhcp.com

Rx only

INDICATIONS AND USAGE - EPIDIOLEX is indicated for the treatment of seizures associated with Lennox-Gastaut syndrome (LGS) or Dravet syndrome (DS) in patients 2 years of age and older.

CONTRAINDICATION - EPIDIOLEX is contraindicated in patients with a history of hypersensitivity to cannabidiol or any of the ingredients in the product *[see Description and Warnings and Precautions in full PI]*.

WARNINGS AND PRECAUTIONS

Hepatocellular Injury - EPIDIOLEX causes dose-related elevations of liver transaminases (alanine aminotransferase [ALT] and/or aspartate aminotransferase [AST]). In controlled studies for LGS and DS, the incidence of ALT elevations above 3 times the upper limit of normal (ULN) was 13% in EPIDIOLEX-treated patients compared with 1% in patients on placebo. Less than 1% of EPIDIOLEX-treated patients had ALT or AST levels greater than 20 times the ULN. There were cases of transaminase elevations associated with hospitalization in patients taking EPIDIOLEX. In clinical trials, serum transaminase elevations typically occurred in the first two months of treatment initiation; however, there were some cases observed up to 18 months after initiation of treatment, particularly in patients taking concomitant valproate. Resolution of transaminase elevations occurred with discontinuation of EPIDIOLEX or reduction of EPIDIOLEX and/or concomitant valproate in about two-thirds of the cases. In about one-third of the cases, transaminase elevations resolved during continued treatment with EPIDIOLEX, without dose reduction.

Risk Factors for Transaminase Elevation:

Concomitant Valproate and Clobazam - The majority of ALT elevations occurred in patients taking concomitant valproate. Concomitant use of clobazam also increased the incidence of transaminase elevations, although to a lesser extent than valproate *[see Drug Interactions in full PI]*. In EPIDIOLEX-treated patients, the incidence of ALT elevations greater than 3 times the ULN was 30% in patients taking both concomitant valproate and clobazam, 21% in patients taking concomitant valproate (without clobazam), 4% in patients taking concomitant clobazam (without valproate), and 3% in patients taking neither drug. Consider discontinuation or dose adjustment of valproate or clobazam if liver enzyme elevations occur.

Dose - Transaminase elevations are dose-related. Overall, ALT elevations greater than 3 times the ULN were reported in 17% of patients taking EPIDIOLEX 20 mg/kg/day compared with 1% in patients taking EPIDIOLEX 10 mg/kg/day.

Baseline Transaminase Elevations - Patients with baseline transaminase levels above the ULN had higher rates of transaminase elevations when taking EPIDIOLEX. In controlled trials (Studies 1, 2, and 3) in patients taking EPIDIOLEX 20 mg/kg/day, the frequency of treatment-emergent ALT elevations greater than 3 times the ULN was 30% when ALT was above the ULN at baseline, compared to 12% when ALT was within the normal range at baseline. No patients taking EPIDIOLEX 10 mg/kg/day experienced ALT elevations greater than 3 times the ULN when ALT was above the ULN at baseline, compared with 2% of patients in whom ALT was within the normal range at baseline.

Monitoring: In general, transaminase elevations of greater than 3 times the ULN in the presence of elevated bilirubin without an alternative explanation are an important predictor of severe liver injury. Early identification of elevated liver enzymes may decrease the risk of a serious outcome. Patients with elevated baseline transaminase levels above 3 times the ULN, accompanied by elevations in bilirubin above 2 times the ULN, should be evaluated prior to initiation of EPIDIOLEX treatment.

Prior to starting treatment with EPIDIOLEX, obtain serum transaminases (ALT and AST) and total bilirubin levels. Serum transaminases and total bilirubin levels should be obtained at 1 month, 3 months, and 6 months after initiation of treatment with EPIDIOLEX, and periodically thereafter or as clinically indicated. Serum transaminases and total bilirubin levels should also be obtained within 1 month following changes in EPIDIOLEX dosage and addition of or changes in medications that are known to impact the liver. Consider more frequent monitoring of serum transaminases and bilirubin in patients who are taking valproate or who have elevated liver enzymes at baseline.

If a patient develops clinical signs or symptoms suggestive of hepatic dysfunction (e.g., unexplained nausea, vomiting, right upper quadrant abdominal pain, fatigue, anorexia, or jaundice and/or dark urine), promptly measure serum transaminases and total bilirubin and interrupt or discontinue treatment with EPIDIOLEX, as appropriate. Discontinue EPIDIOLEX in any patients with elevations of transaminase levels greater than 3 times the ULN and bilirubin levels greater than 2 times the ULN. Patients with sustained transaminase elevations of greater than 5 times the ULN should also have treatment discontinued. Patients with prolonged elevations of serum transaminases should be evaluated for other possible causes. Consider dosage adjustment of any co-administered medication that is known to affect the liver (e.g., valproate and clobazam).

Somnolence and Sedation - EPIDIOLEX can cause somnolence and sedation. In controlled studies for LGS and DS, the incidence of somnolence and sedation (including lethargy) was 32% in EPIDIOLEX-treated patients, compared with 11% in patients on placebo and was dose-related (34% of patients taking EPIDIOLEX 20 mg/kg/day, compared with 27% in patients taking EPIDIOLEX 10 mg/kg/day). The rate was higher in patients on concomitant clobazam (46% in EPIDIOLEX-treated patients taking clobazam compared with 16% in EPIDIOLEX-treated patients not on clobazam). In general, these effects were more common early in treatment and may diminish with continued treatment. Other CNS depressants, including alcohol, could potentiate the somnolence and sedation effect of EPIDIOLEX. Prescribers should monitor patients for somnolence and sedation and should advise patients not to drive or operate machinery until they have gained sufficient experience on EPIDIOLEX to gauge whether it adversely affects their ability to drive or operate machinery.

Suicidal Behavior and Ideation - Antiepileptic drugs (AEDs), including EPIDIOLEX, increase the risk of suicidal thoughts or behavior in patients taking these drugs for any indication. Patients treated with an AED for any indication should be monitored for the emergence or worsening of depression, suicidal thoughts or behavior, or any unusual changes in mood or behavior. Pooled analyses of 199 placebo-controlled clinical trials (mono- and adjunctive therapy) of 11 different AEDs showed that patients randomized to one of the AEDs had approximately twice the risk (adjusted Relative Risk 1.8, 95% CI:1.2, 2.7) of suicidal thinking or behavior compared to patients randomized to placebo. In these trials, which had a median treatment duration of 12 weeks, the estimated incidence rate of suicidal behavior or ideation among 27863 AED-treated patients was 0.43%, compared to 0.24% among 16029 placebo-treated patients, representing an increase of approximately one case of suicidal thinking or behavior for every 530 patients treated. There were four suicides in drug-treated patients in the trials and none in placebo-treated patients, but the number is too small to allow any conclusion about drug effect on suicide. The increased risk of suicidal thoughts or behavior with AEDs was observed as early as 1 week after starting drug treatment with AEDs and persisted for the duration of treatment assessed. Because most trials included in the analysis did not extend beyond 24 weeks, the risk of suicidal thoughts or behavior beyond 24 weeks could not be assessed. The risk of suicidal thoughts or behavior was generally consistent among drugs in the data analyzed. The finding of increased risk with AEDs of varying mechanisms of action and across a range of indications suggests that the risk applies to all AEDs used for any indication. The risk did not vary substantially by age (5–100 years) in the clinical trials analyzed *[see Warnings and Precautions in full PI for absolute and relative risk by indication for all evaluated AEDs]*.

The relative risk for suicidal thoughts or behavior was higher in clinical trials in patients with epilepsy than in clinical trials in patients with psychiatric or other conditions, but the absolute risk differences were similar for the epilepsy and psychiatric indications. Anyone considering prescribing EPIDIOLEX or any other AED must balance the risk of suicidal thoughts or behaviors with the risk of untreated illness. Epilepsy and many other illnesses for which AEDs are prescribed are themselves associated with morbidity and mortality and an increased risk of suicidal thoughts and behavior. Should suicidal thoughts and behavior emerge during treatment, consider whether the emergence of these symptoms in any given patient may be related to the illness being treated.

Hypersensitivity Reactions - EPIDIOLEX can cause hypersensitivity reactions. One subject in the EPIDIOLEX clinical trials had pruritus, erythema, and angioedema requiring treatment with antihistamines. Patients with known or suspected hypersensitivity to any ingredients of EPIDIOLEX were excluded from the clinical trials. If a patient develops hypersensitivity reactions after treatment with EPIDIOLEX, the drug should be discontinued. EPIDIOLEX is contraindicated in patients with a prior hypersensitivity reaction to cannabidiol or any of the ingredients in the product, which includes sesame seed oil *[see Description in full PI]*.

Withdrawal of Antiepileptic Drugs (AEDs) - As with most antiepileptic drugs, EPIDIOLEX should generally be withdrawn gradually because of the risk of increased seizure frequency and status epilepticus *[see Dosage and Administration and Clinical Studies in full PI]*. But if withdrawal is needed because of a serious adverse event, rapid discontinuation can be considered.

ADVERSE REACTIONS

The following important adverse reactions are described elsewhere *[see Warnings and Precautions in full PI]*:

- Hepatocellular Injury
- Somnolence and Sedation
- Suicidal Behavior and Ideation
- Hypersensitivity Reactions
- Withdrawal of Antiepileptic Drugs

Clinical Trials Experience: Because clinical trials are conducted under widely varying conditions, adverse reaction rates observed in the clinical trials of a drug cannot be directly compared to rates in the clinical trials of another drug and may not reflect the rates observed in practice. In controlled and uncontrolled trials in patients with LGS and DS, 689 patients were treated with EPIDIOLEX, including 533 patients treated for more than 6 months, and 391 patients treated for more than 1 year. In an expanded access program and other compassionate use programs, 161 patients with DS and LGS were treated with EPIDIOLEX, including 109 patients treated for more than 6 months, 91 patients treated for more than 1 year, and 50 patients treated for more than 2 years.

In placebo-controlled trials of patients with LGS or DS (includes Studies 1, 2, 3, and a Phase 2 controlled study in DS), 323 patients received EPIDIOLEX. Adverse reactions are presented below; the duration of treatment in these trials was up to 14 weeks. Approximately 46% of patients were female, 83% were Caucasian, and the mean age was 14 years (range 2 to 48 years). All patients were taking other AEDs. In controlled trials, the rate of discontinuation as a result of any adverse reaction was 2.7% for patients taking EPIDIOLEX 10 mg/kg/day, 11.8% for patients taking EPIDIOLEX 20 mg/kg/day, and 1.3% for patients on placebo. The most frequent cause of discontinuations was transaminase elevation. Discontinuation for transaminase elevation occurred at an incidence of 1.3% in patients taking EPIDIOLEX 10 mg/kg/day, 5.9% in patients taking EPIDIOLEX 20 mg/kg/day, and 0.4% in patients on placebo. Somnolence, sedation, and lethargy led to discontinuation in 3% of patients taking EPIDIOLEX 20 mg/kg/day compared to 0% of patients taking EPIDIOLEX 10 mg/kg/day or on placebo. The most common adverse reactions that occurred in EPIDIOLEX-treated patients (incidence at least 10% and greater than placebo) were somnolence; decreased appetite; diarrhea; transaminase elevations; fatigue, malaise, and asthenia; rash; insomnia, sleep disorder, and poor quality sleep; and infections. The table below lists the adverse reactions that were reported in ≥3% of EPIDIOLEX-treated patients, and at a rate greater than those on placebo in the placebo-controlled trials in LGS and DS. Adverse reactions were similar across LGS and DS in pediatric and adult patients.

Adverse Reactions in Patients Treated with EPIDIOLEX in Controlled Trials

Adverse Reactions	EPIDIOLEX 10 mg/kg/day N=75 %	EPIDIOLEX 20 mg/kg/day N=238 %	Placebo N=227 %
Hepatic Disorders			
Transaminases elevated	8	16	3
Gastrointestinal Disorders			
Decreased appetite	16	22	5
Diarrhea	9	20	9
Weight decreased	3	5	1
Gastroenteritis	0	4	1
Abdominal pain, discomfort	3	3	1
Nervous System Disorders			
Somnolence	23	25	8
Sedation	3	6	1
Lethargy	4	8	2
Fatigue, malaise, asthenia	11	12	4
Insomnia, sleep disorder, poor quality sleep	11	5	4
Irritability, agitation	9	5	2
Aggression, anger	3	5	<1
Drooling, salivary hypersecretion	1	4	<1
Gait disturbance	3	2	<1
Infections			
Infection, all	41	40	31
Infection, viral	7	11	6
Pneumonia	8	5	1
Infection, fungal	1	3	0
Infection, other	25	21	24
Other			
Rash	7	13	3
Hypoxia, respiratory failure	3	3	1

Decreased Weight - EPIDIOLEX can cause weight loss. In the controlled trials of patients with LGS or DS, based on measured weights, 16% of EPIDIOLEX-treated patients had a decrease in weight of ≥5% from their baseline weight, compared to 8% of patients on placebo. The decrease in weight appeared to be dose-related, with 18% of patients on EPIDIOLEX 20 mg/kg/day experiencing a decrease in weight ≥5%, compared to 9% in patients on EPIDIOLEX 10 mg/kg/day. In some cases, the decreased weight was reported as an adverse event (see Table above).

Hematologic Abnormalities - EPIDIOLEX can cause decreases in hemoglobin and hematocrit. In controlled trials of patients with LGS or DS, the mean decrease in hemoglobin from baseline to end of treatment was -0.42 g/dL in EPIDIOLEX-treated patients and -0.03 g/dL in patients on placebo. A corresponding decrease in hematocrit was also observed, with a mean change of -1.5% in EPIDIOLEX-treated patients, and -0.4% in patients on placebo. There was no effect on red blood cell indices. Thirty percent (30%) of EPIDIOLEX-treated patients developed a new laboratory-defined anemia during the course of the study (defined as a normal hemoglobin concentration at baseline, with a reported value less than the lower limit of normal at a subsequent time point), versus 13% of patients on placebo.

Increases in Creatinine - EPIDIOLEX can cause elevations in serum creatinine. The mechanism has not been determined. In controlled studies in healthy adults and in patients with LGS and DS, an increase in serum creatinine of approximately 10% was observed within 2 weeks of starting EPIDIOLEX. The increase was reversible in healthy adults. Reversibility was not assessed in studies in LGS and DS.

DRUG INTERACTIONS

Effect of Other Drugs on EPIDIOLEX

Moderate or Strong Inhibitors of CYP3A4 or CYP2C19: EPIDIOLEX is metabolized by CYP3A4 and CYP2C19. Therefore, coadministration with a moderate or strong inhibitor of CYP3A4 or CYP2C19 will increase cannabidiol plasma concentrations, which may result in a greater risk of adverse reactions. Consider a reduction in EPIDIOLEX dosage when coadministered with a moderate or strong inhibitor of CYP3A4 or CYP2C19 *[see Clinical Pharmacology in full PI]*.

Strong CYP3A4 or CYP2C19 Inducers: Coadministration with a strong CYP3A4 or CYP2C19 inducer will decrease cannabidiol plasma concentrations, which may lower the efficacy of EPIDIOLEX. Consider an increase in EPIDIOLEX dosage (based on clinical response and tolerability) when coadministered with a strong CYP3A4 or CYP2C19 inducer *[see Clinical Pharmacology in full PI]*.

Effect of EPIDIOLEX on Other Drugs

UGT1A9, UGT2B7, CYP1A2, CYP2B6, CYP2C8, CYP2C9 and CYP2C19 Substrates: In vitro data predict drug-drug interactions with CYP1A2 substrates (e.g., theophylline, caffeine), CYP2B6 substrates (e.g., bupropion, efavirenz), uridine 5' diphospho-glucuronosyltransferase 1A9 (UGT1A9) (e.g., diflunisal, propofol, fenofibrate), and UGT2B7 (e.g., gemfibrozil, lamotrigine, morphine, lorazepam) when coadministered with EPIDIOLEX. Coadministration of EPIDIOLEX is also predicted to cause clinically significant interactions with CYP2C8 and CYP2C9 (e.g., phenytoin) substrates. Because of potential inhibition of enzyme activity, consider a reduction in dosage of substrates of UGT1A9, UGT2B7, CYP2C8, and CYP2C9, as clinically appropriate, if adverse reactions are experienced when administered concomitantly with EPIDIOLEX. Because of potential for both induction and inhibition of enzyme activity, consider adjusting dosage of substrates of CYP1A2 and CYP2B6, as clinically appropriate *[see Clinical Pharmacology in full PI]*.

Sensitive CYP2C19 Substrates: In vivo data show that coadministration of EPIDIOLEX increases plasma concentrations of drugs that are metabolized by (i.e., are substrates of) CYP2C19 (e.g., diazepam) and may increase the risk of adverse reactions with these substrates *[see Clinical Pharmacology in full PI]*. Consider a reduction in dosage of sensitive CYP2C19 substrates, as clinically appropriate, when coadministered with EPIDIOLEX.

Clobazam: Coadministration of EPIDIOLEX produces a 3-fold increase in plasma concentrations of N-desmethylclobazam, the active metabolite of clobazam (a substrate of CYP2C19) *[see Clinical Pharmacology in full PI]*. This may increase the risk of clobazam-related adverse reactions *[see Warnings and Precautions in full PI]*. Consider a reduction in dosage of clobazam if adverse reactions known to occur with clobazam are experienced when co-administered with EPIDIOLEX.

Concomitant Use of EPIDIOLEX and Valproate - Concomitant use of EPIDIOLEX and valproate increases the incidence of liver enzyme elevations *[see Warnings and Precautions in full PI]*. Discontinuation or reduction of EPIDIOLEX and/or concomitant valproate should be considered. Insufficient data are available to assess the risk of concomitant administration of other hepatotoxic drugs and EPIDIOLEX.

CNS Depressants and Alcohol - Concomitant use of EPIDIOLEX with other CNS depressants may increase the risk of sedation and somnolence *[see Warnings and Precautions in full PI]*.

USE IN SPECIFIC POPULATIONS

Pregnancy

Pregnancy Exposure Registry: There is a pregnancy exposure registry that monitors pregnancy outcomes in women exposed to antiepileptic drugs (AEDs), such as EPIDIOLEX, during pregnancy. Encourage women who are taking EPIDIOLEX during pregnancy to enroll in the North American Antiepileptic Drug (NAAED) Pregnancy Registry by calling the toll free number 1-888-233-2334 or visiting http://www.aedpregnancyregistry.org/.

Risk Summary: There are no adequate data on the developmental risks associated with the use of EPIDIOLEX in pregnant women. Administration of cannabidiol to pregnant animals produced evidence of developmental toxicity (increased embryofetal mortality in rats and decreased fetal body weights in rabbits; decreased growth, delayed sexual maturation, long-term neurobehavioral changes, and adverse effects on the reproductive system in rat offspring) at maternal plasma exposures similar to (rabbit) or greater than (rat) that in humans at therapeutic doses *(see Animal Data in full PI)*.

Lactation

Risk Summary: There are no data on the presence of cannabidiol or its metabolites in human milk, the effects on the breastfed infant, or the effects on milk production. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for EPIDIOLEX and any potential adverse effects on the breastfed infant from EPIDIOLEX or from the underlying maternal condition.

Pediatric Use - Safety and effectiveness of EPIDIOLEX for the treatment of seizures associated with Lennox-Gastaut syndrome or Dravet syndrome have been established in patients 2 years of age and older. Safety and effectiveness of EPIDIOLEX in pediatric patients below 2 years of age have not been established.

Geriatric Use - Clinical trials of EPIDIOLEX in the treatment of LGS and DS did not include any patients aged above 55 years to determine whether or not they respond differently from younger patients. In general, dose selection for an elderly patient should be cautious, usually starting at the low end of the dosing range, reflecting the greater frequency of decreased hepatic, renal, or cardiac function, and of concomitant disease or other drug therapy *[see Dosage and Administration, Warnings and Precautions, and Clinical Pharmacology in full PI]*.

Hepatic Impairment - Because of an increase in exposure to EPIDIOLEX, dosage adjustments are necessary in patients with moderate or severe hepatic impairment *[see Dosage and Administration, Warnings and Precautions, and Clinical Pharmacology in full PI]*. EPIDIOLEX does not require dosage adjustments in patients with mild hepatic impairment.

DRUG ABUSE AND DEPENDENCE - Controlled Substance: EPIDIOLEX is controlled in Schedule V of the Controlled Substances Act.

Abuse - Animal abuse-related studies show that cannabidiol does not produce cannabinoid-like behavioral responses, including generalization to delta-9-tetrahydrocannabinol (THC) in a drug discrimination study. Cannabidiol also does not produce animal self-administration, suggesting it does not produce rewarding effects. In a human abuse potential study, acute administration of cannabidiol to non-dependent adult recreational drug users at therapeutic and supratherapeutic doses of 750, 1500, and 4500 mg in the fasted state (equivalent respectively to 10, 20, and 60 mg/kg in a 75 kg adult) produced responses on positive subjective measures such as Drug Liking and Take Drug Again that were within the acceptable placebo range. In contrast, 10 and 30 mg of dronabinol (synthetic THC) and 2 mg alprazolam produced large increases on positive subjective measures compared to placebo that were statistically significantly greater than those produced by cannabidiol. In other Phase 1 clinical studies conducted with cannabidiol, there were no reports of abuse-related adverse events.

Dependence - In a human physical dependence study, administration of cannabidiol 1500 mg/day (750 mg twice daily) to adults for 28 days did not produce signs or symptoms of withdrawal over a 6-week assessment period beginning three days after drug discontinuation. This suggests that cannabidiol likely does not produce physical dependence.

Please see the full PI for Patient Counseling Information

See full Prescribing Information at www.EPIDIOLEXhcp.com.

Marketed by Greenwich Biosciences, Inc., Carlsbad, CA 92008 USA

Veterans
NEUROLOGY

VA and National Multiple Sclerosis Society Join Forces to Enhance Health Care Services for Veterans

Intent to promote whole health and wellness goals of Veterans and families

By Marsha Tarver, PhD, MA, and Robert Baum

As part of the U.S Department of Veterans Affairs (VA) efforts to advance and improve the lives of Veterans living with multiple sclerosis (MS), the department announced its recent partnership with the National Multiple Sclerosis Society.

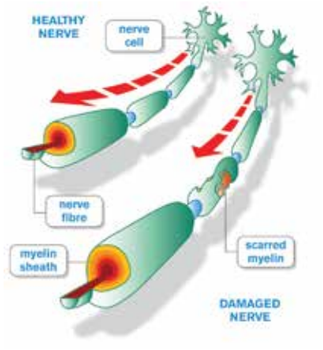
The partnership, formalized on March 6, will continue to build upon VA's national network of MS clinical services, education and research.

VA Secretary Robert Wilkie said VA is committed to working closely with Veterans and their caregivers, community health care professionals, MS advocates and Veterans service organizations to identify new and innovative ways to support this initiative.

"MS can be an overwhelming challenge for those who are fighting the disease and their loved ones who care for them," Wilkie said. "VA recognizes and values the strength of collaborations with our external partners, which can help increase access to care and lead to a more fulfilled quality of life."

VA and the National MS Society seek to enhance health services, education, self-efficacy and promote whole health goals of Veterans and their families, by sharing certain resources and collaborating on policy, educational and research initiatives.

"Veterans living with multiple sclerosis need our support," said Cyndi Zagieboylo, president and CEO of the National MS Society. "This agreement is a very clear commitment from the federal government and the society that we are here for them — and will be here for them."



When the immune system attacks the myelin sheath, the fatty tissue that surrounds and protects nerve fibers, as well as the nerve fibers themselves, the damage is called demyelination and the scar tissues that develop when myelin is damaged are called sclerosis, also known as lesions or plaquesany. When any part of the myelin sheath or nerve fiber is damaged or destroyed, nerve impulses traveling to and from the brain and spinal cord are distorted or interrupted.

According to the National MS Society, nearly 1 million people are living with MS in the United States. Approximately 20,000 Veterans with MS are cared for annually in the Veterans Health Administration. With the 2003 establishment of VA's MS Centers of Excellence, Veterans and their families have access to a national network of regional and support programs to improve their diagnosis and treatment.

Veterans may be eligible for a broad range of programs and services provided by the VA. These programs are based upon enrollment eligibility and discharge status from active military service. There are several categories of eligibility based upon a variety of factors. Some of these factors are related to time of service and priority groups.

Veterans that served in a theater of combat operations after November 11, 1998 are eligible for an extended period of eligibility for health care for five years post discharge.

Enrollment Priority Groups range from 1-8, with 1 being the highest priority for enrollment. A Priority Group 1 Veteran has service-connected disabilities rated 50% or more. A Priority Group 8 Veteran has a gross household income above the VA national income threshold and the geographically-adjusted income threshold for their resident location, and who agrees to pay co-pays.

Women Veterans are eligible for the same VA benefits as male Veterans. Their eligibility is based upon the same Enrollment Priority Group process mentioned above. Once eligibility is determined, women Veterans can receive their medical care from specialized Women's Centers available at each VA Medical Center.

Medical care for eligible Veterans with MS includes disease modifying therapies, other medications, physical and occupational therapy, and other health care services and medical equipment

va.gov

Veterans
NUTRITION

Help Your Patients Include More Fruits and Vegetables in Their Diet

Fruits and vegetables contain essential vitamins and minerals. The nutrients that fruits and vegetables provide can help you reduce your risk of cancer, diabetes, heart disease, stroke and other diseases.

They are also low in calories and high in fiber, so they keep you feeling fuller longer.

If you can grow fresh items at home or buy local produce, you will be doing yourself — and the planet — a world of good. Growing and eating locally grown fruits and veggies minimizes greenhouse-gas emissions by cutting out food transportation, decreases pesticide use and maximizes flavor and nutrition. Why? "Locally grown foods are fresher because they are picked when ripe, not before," explains Lynn Novorska, MOVE!® Dietitian Coordinator. "Purchase from the farmer's market or look for the goods at the supermarket labeled 'local.' To save cost, buy produce in bulk at the peak season, freeze and use at a later date."

VA Nutrition and Food Services support local food producers

Did you know that your local VA may be serving milk, bread, and produce that are procured from local small businesses? In fact, there is an emerging trend for VAs to procure locally grown produce for patient meal service. San Francisco,

Local vendors participate at a farmer's market outside one of the VA's healthcare facilities in Boston, MA

St. Louis, MO, Martinsburg, WV, Clarksburg, WV. and the District of Columbia VA Medical Centers are gearing up for this year's farm fresh produce. Patients enjoy the fresh spring strawberries, asparagus, salad greens, and broccoli that hail the start of the season. Sandy Spicher, Martinsburg VA administrative dietitian remarks, "our patients love the looks and taste of our locally grown fruits and vegetables. They are glad that we are supporting our farmers."

Farmers markets at VA Medical Centers

"Did you know that out of 50 states, VA Medical Centers in 24 states have a farmers market?" asks Kimberly Thompson, a dietitian at the Memphis VA. "There are a total of 33 farmers markets on VA properties across the country."

With Veteran and community health in mind, Veterans Canteen Services are teaming up with many VA Medical Centers across the country to provide on-site farmers markets for easy access to fresh and local produce. This gives VA patients and their families easy access to local produce and a quick way to put their dietitians' advice into action.

va.gov

Veterans
ONCOLOGY

Collaboration between VA and National Cancer Institute Improves Access to Clinical Trials

Veterans with cancer who receive treatment from the Department of Veterans Affairs (VA) will now have easier access to clinical trials of novel cancer treatments, thanks to an agreement between VA and the National Cancer Institute (NCI), part of the National Institutes of Health.

The NCI and VA Interagency Group to Accelerate Trials Enrollment, or NAVIGATE, which is launching at 12 VA facilities across the country, will enhance the ability of veterans to participate in trials carried out through NCI's National Clinical Trials Network (NCTN) and the NCI Community Oncology Research Program (NCORP). As part of the agreement, NCI will provide infrastructure funding support needed for the VA facilities to participate in NCI-sponsored trials, enhancing the ability of veterans with cancer to receive promising treatments locally. In turn, VA will manage organizational and operational activities within its national healthcare system to establish a network to focus on NCI trial goals.

"NAVIGATE is an opportunity for VA and NCI to partner at the national level to make clinical trials more accessible to veterans," said James H. Doroshow, MD, deputy director for Clinical and Translational Research, NCI. "This agreement will not only provide veterans greater access to NCI clinical trials, it will enhance accrual to NCTN and NCORP trials, resulting in more timely completion of these studies. This interagency collaboration will also work to help veterans overcome barriers they've faced trying to access clinical trials as part of their cancer care."

VA has a robust clinical research program that includes clinical trials in cancer and other diseases at approximately 100 sites nationwide. However, VA facilities often face challenges initiating and completing externally funded trials because of the need for partners to navigate the system. This program aims to overcome these challenges with dedicated staffing and a sustainable infrastructure, and to address existing barriers to trial enrollment that veterans, including minority patients, often experience. In addition, NAVIGATE will increase the participation of VA investigators in clinical cancer research, and provide opportunities for these researchers to identify studies that may be of particular importance to veterans with cancer.

The 12 VA sites picked to participate in NAVIGATE are: Atlanta VA Health Care System; James J. Peters VA Medical Center in New York City; Ralph H. Johnson VA Medical Center in

The Presumptive health conditions list includes Veterans who served in Vietnam exposed to Agent Orange

Charleston, South Carolina; VA Eastern Colorado Health Care System in Denver; Durham VA Medical Center in North Carolina; Edward Hines Jr. VA Hospital in Hines, Illinois; Tibor Rubin VA Medical Center in Long Beach, California; Minneapolis VA Health Care System; VA Palo Alto Health Care System in California; Portland VA Medical Center in Portland, Oregon; Audie L. Murphy VA Hospital/South Texas Veterans Health Care System in San Antonio; and VA Connecticut Healthcare System in West Haven.

The program will be jointly managed by VA and NCI for up to three years. It is expected that, during this time, the participating VA sites will establish long-term capabilities to continue participation in NCI trials after this program ends. The NAVIGATE program sites will also establish best practices and share insights to help VA sites nationwide to initiate new studies and enroll more veterans in cancer clinical trials.

"By increasing enrollment in cancer clinical trials, VA and veterans will be contributing to important oncology research," said VA Chief Research and Development Officer Rachel Ramoni, DMD, ScD. "This will not only help our veterans, but also advance cancer care for all Americans, and people around the world."

VA's involvement in NAVIGATE is being managed through the Cooperative Studies Program, part of VA's Office of Research and Development. NAVIGATE is overseen by an Executive Committee comprised of VA and NCI leadership responsible for ensuring effective coordination on key activities between the agencies and that program milestones are achieved.

cancer.gov

Veterans
ONCOLOGY

Colon Cancer Diagnoses in the VA Reaches 4,000 Cases Per Year

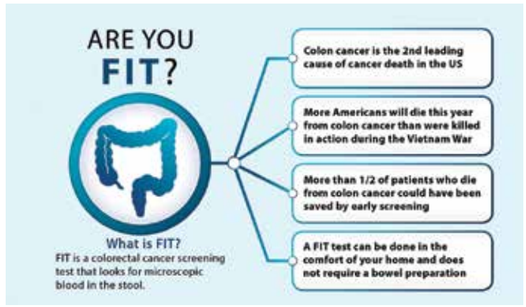
By Hans Petersen, VHA Office of Communications

This is the VA is now promoting to all medical professionals how important it is to encourage patients to get screened, and how the disease can usually be cured when caught early.

As described on the CDC's Colorectal Cancer Personal Screening Stories, Denise from Ohatchee, Alabama put off a screening colonoscopy for two years. When she finally did, she was diagnosed with rectal cancer. She stated, "For two years my doctor kept reminding me that I needed to have a screening colonoscopy. I was perfectly healthy and had no family history of colon cancer. I had many reasons to procrastinate, but basically, out of fear of the test, the prep, and a few dozen lame excuses, I chose to ignore my doctor. It wasn't until my husband dared me in front of my doctor that I agreed to the test."

"To make a long story short, at the age of 52, I was diagnosed with rectal cancer. My fear of colonoscopies was nothing compared to my fear of dying from colorectal cancer! I was fortunate. My cancer was in the early stages, and surgery offered me a cure. The prep for the colonoscopy was honestly not that bad. The colonoscopy was accompanied by sedation that made me wonder, is that all there is to it? The moral of my story is if I had waited until I had symptoms, it would have been too late. I was fortunate. My cancer was in the early stages and surgery offered me a cure. The prep was not that bad. The sedation made me wonder, 'Is that all there is to it?' The moral of my story is if I had waited until I had symptoms, it would have been too late."

For more information on Denise's story and those from others: https://www.cdc.gov/cancer/colorectal/basic_info/stories.htm



Colorectal cancer is the third most common cancer in the U.S. It is also the second leading cause of cancer deaths, behind lung cancer. The yearly death toll from colorectal cancer in America exceeds the total number of American combat deaths during the entire Vietnam War.

The Veterans Health Administration recommends screening for colorectal cancer in adults age 50 through 75.

The decision to screen for colorectal cancer in adults age 76 through 85 should be an individual one, taking into account the patient's overall health and prior screening history.

Six out ten deaths could be prevented

In the past decade, colorectal cancer has emerged as one of the most preventable common cancers. If all men and women age 50 and older were screened regularly, six out of ten deaths from colorectal cancer could be prevented. Screening is typically recommended for all between the ages of 50 and 75 years. VA diagnoses some 4,000 new cases of the disease each year in Veterans.

Colorectal cancer is cancer of the colon or rectum. It's as common in women as it is in men. Most colorectal cancers start as a growth called a polyp. If polyps are found and removed before they turn into cancer, many colorectal cancers can be prevented.

va.gov

Veterans
OPTHALMOLOGY

Meet Dr. Holst — Another One of VA's Top Doctors

By Keith E. Gottschalk, Public Affairs Specialist, VA Pittsburgh Healthcare System

Seth Holst is an ophthalmologist with eight years experience practicing at VA Pittsburgh Healthcare System, including three years as full-time staff physician. He received his undergraduate degree from Penn State University in biology and physiology in 1994 and his M.D. from the University of Pittsburgh School of Medicine in 1998.

Dr. Holst examines a Veteran patient

"Teaching resident physicians has been one of the most rewarding parts of this job."
Holst served an internship at Mercy Hospital of Pittsburgh (now UPMC Mercy), then completed his residency in ophthalmology at the Georgetown University Center for Sight in 2002.

"Working at VA has been rewarding for me both personally and professionally," he said. "I really enjoy the time I spend with our Veterans. It's great to have a chance to listen their stories of the past and hear their points of view on the current state of our country. These men and women sacrificed so much and are true heroes. I am honored every day to have the chance to help take care of them."

va.gov

All Veterans enrolled in VA health care are eligible for diagnostic, preventive and therapeutic eye care services and other health care services.

- VA eye care is the third busiest service in VHA, behind primary care and mental health.
- Ophthalmology is the second busiest surgical service, behind general surgery, with over 76,000 cases in FY18.
- The most common surgical procedure performed in VHA is cataract surgery.
- Over 30,000 laser surgery procedures were performed in our clinics in FY18.
- VA's Ophthalmology workforce consists of over 1200 physicians located at 115 clinics.

In fiscal year 2018, VHA's Office of Specialty Care Services provided Eye Care (Optometry and Ophthalmology) Services for a record number of over 1.81 million Veterans at about 381 VA medical facility sites located in urban, suburban, rural, and highly rural areas.

VA eye care providers (optometrists and ophthalmologists) prescribed nearly 1.7 million pairs of eyeglasses that were provided to Veterans by VA Prosthetic and Sensory Aids Services.

Every VA Eye (Optometry and/or Ophthalmology) Clinic provides basic low vision rehabilitation care. More intensive vision rehabilitation services are available within the VA Blind Rehabilitation Services program.

VA eye care providers perform essential eye and vision examinations within the VA Polytrauma / Traumatic Brain Injury (TBI) System of Care as well as provide brain injury vision rehabilitation services at select VA medical facilities

Veterans
OPTHALMOLOGY

Glaucoma and Regular Eye Exams

By Hans Petersen, VHA Office of Communications

Glaucoma is a disease that damages your eye's optic nerve. It usually happens when fluid builds up in the front part of your eye. That extra fluid increases the pressure in your eye, damaging the optic nerve.

However, some forms of glaucoma can damage the optic nerve, even when the eye pressure is in the normal range during the eye exam. This can happen when the eye pressure becomes high at other times of the day and the patient does not feel the pressure elevation. It can also happen when blood flow to the optic nerve becomes reduced below a critical level, which can happen during periods of very low blood pressure, even during sleep.

For example, in some patients who take their hypertension medications right before bedtime, it can cause the blood pressure to drop too low during hours of sleep. Another risk factor that can adversely affect glaucoma is obstructive sleep apnea, which may also reduce the delivery of oxygen to the optic nerve

Glaucoma is a leading cause of blindness for Veterans over 60 years old. But blindness from glaucoma can often be prevented with early treatment.

A very helpful video by VA's Dr. Dan Bettis which answers some of the common patient questions about glaucoma can be seen at https://www.youtube.com/watch?v=5SlcOTqrwTw&t=15s Please take five minutes and watch it with your family.

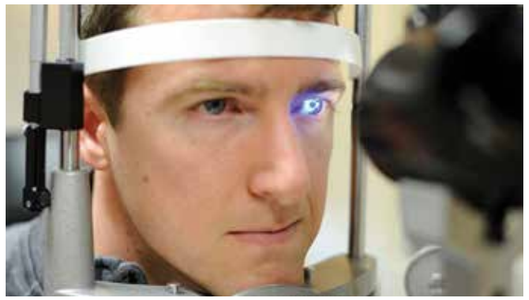
To see a very detailed patient's guide to information about the disease, please visit: http://www.iowaglaucoma.org/patient-resources

Veterans enrolled in VA health care can schedule appointments directly with Ophthalmology or Optometry without a referral from primary care.

Schedule an eye exam at your VA health care facility.

VA research provides valuable tools for vision treatment

VA is at the forefront of vision research and glaucoma is one of our top priorities. A current study by Dr. Markus Kuehn is a Bioassay to Predict the Development and Progression of Glaucoma, sponsored by the VA Rehabilitation, Research, and Development Division.



The project makes use of our recent discovery that glaucoma is associated with the development of a cellular autoimmune response that can further reduce vision. The investigators are testing if the strength of the reaction is predictive of future loss of vision and quality of life of the patient.

Early identification of patients at high risk to develop vision loss allows more aggressive treatment before the damage occurs. The development of a predictive assay would provide ophthalmologists with a valuable tool and preserve the quality of life for Veterans.

Dr. Kuehn is a professor in the Department of Ophthalmology and Visual Sciences at the Iowa City VA Center for Prevention and Treatment of Visual Loss.

An earlier study that suggests stem cells could ward off glaucoma can be viewed at: https://www.iowacity.va.gov/features/Study_suggests_stem_cells_could_ward_off_glaucoma.asp

Risk higher for African Americans

Approximately 2.2 million Americans have been diagnosed with glaucoma and the prevalence of the disease will rise to a projected 3 million by 2020.

The prevalence of glaucoma is three times higher in African Americans than in non-Hispanic whites. Additionally, the risk of visual impairment is higher and the age of onset is earlier than in whites.

va.gov

Veterans
PAIN MANAGEMENT

Reducing the Pain of Shingles

Recent studies show the efforts made to raise awareness and increase vaccinations for the Varicella Roster Virus that causes Chickenpox and Shingles have been effective in reducing the number of incidents in Veterans. According to principal investigator and co-author of the landmark 2004 Shingles Prevention Study, Dr. John Toney, Director of Healthcare Epidemiology, Antimicrobial Stewardship, and Infectious Disease Clinical Research Programs at the James A. Haley Veterans' Hospital and Clinics in Tampa, Fla., and Professor of Medicine in the Division of Infectious Disease and International Medicine at the University of South Florida Morsani College of Medicine.

In the largest study ever to investigate the disease, more than 38,500 older adults were enrolled in the study, 1,200 Veterans and others at the Tampa VA Hospital alone, data that resulted introduced the first ever shingles vaccine approved in 2006 by the Federal Drug Administration for people older than 60.

Dr. Toney explained that antiviral medication shortens the timeframe of the rash, reduces pain during the illness's active stage, and reduces the chance of getting complications of shingles, known as postherpetic neuralgia or PHN. "For most people, the rash comes and goes within two to four weeks", he said, "If you catch it early and are seen and treated within 72 hours of the rash first appearing, you'll have the best outcome. Your doctor will likely put you on antiviral medication".

A nurse applies a bandaid to the shoulder of a Veteran following vaccination

Risk factors include anyone who's had chickenpox or been exposed to someone who has chickenpox. And the risk increases with age. About half of all shingles cases occur in people older than 60. Additional risk factors include having a disease or illness that weakens your immune system, like HIV/AIDs, Cancer, (especially Hodgkin disease or lymphoma), and patients currently taking medications that suppress their immune system, including steroids.

The Real Danger: Postherpetic Neuralgia (PHN)

The rash and the pain of shingles aren't the real problem, according to Dr. Toney, who said those will go away. The real danger he explained, is PHN, the serious, persistent nerve condition that continues long after the shingles blisters have healed. It can last weeks, months, even years after the virus is no longer active.

Complications can include vision loss, neurological problems, skin infections, permanent scarring and a debilitating type of pain that is beyond description.

Most people will have one episode of shingles, another 20 percent will get it again, and it's rare to have it a third time, according to Dr. Toney. "But one in every five people who get shingles will get the most painful kind--and you have no way of knowing who will get it," he said.

Patients should be advised to avoid scratching or touching the rash, keep it covered and wash their hands often to prevent infecting others. The virus that causes shingles can be spread from a person with shingles when blisters are present to another person who has never had chickenpox or chickenpox vaccine. After the rash has developed a crust like appearance in a person with shingles, the person is no longer contagious.

"If you've had chickenpox and are age 60 or older, get vaccinated", says Dr. Toney. He also cautioned that not everyone is a candidate for the shingles vaccine. "If you're on medications that suppress your immune system, you should wait. And if you have HIV disease or other conditions that affect your immune system, you shouldn't get it," he said, "Discussion with your primary care provider is the best course of action".

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Veterans
PULMONOLOGY

Telehealth COPD Pilot Program Changes Lives

The Michael E. DeBakey VA Medical Center recently launched a new Telehealth Pulmonary Rehabilitation Pilot Program to more effectively treat Veterans who have Chronic Obstructive Pulmonary Disease (COPD) and are struggling to breathe.

"Before treatment for my COPD, I couldn't walk to the mailbox. I couldn't get enough air," said Robert Wesley, a Vietnam Veteran enrolled in the pilot. "So to get ready, drive to the VA, and walk the distance to get to the doctor's office was very hard. It was a no-win situation because treatment affects what I can do and how I can live."

COPD is a chronic inflammatory lung disease that causes obstructed airflow from the lungs. Symptoms include breathing difficulty, cough, mucus (sputum) production and wheezing.

The American Lung Association reports that COPD is the third leading cause of death in the U.S., but as a chronic, progressive disease, most patients will live with the disease for many years. The disease is not curable, yet it is possible to achieve improvement with pulmonary rehabilitation.

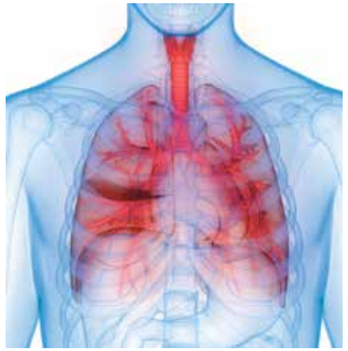
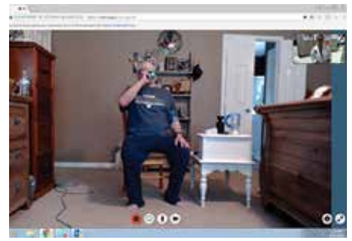


Photo credit: CDC

In southeast Texas, Veterans coping with COPD are now able to receive treatment without leaving the comfort of their homes. Under the new VA Telehealth Pulmonary Rehabilitation pilot, health care providers use tele-technology to reach Veterans and teach them valuable skills and techniques to manage their symptoms.



This unique program involves intensive, real-time interactive rehabilitation with a pulmonologist, a physical therapist, and a respiratory therapist closely monitoring each Veteran's progress. Following a patient-specific treatment program, Veterans use small exercise apparatuses such as a resistance band, a pedometer, an ergometer, and an incentive spirometer.

Each 120-minute session is conducted by a respiratory therapist and physical therapist and includes monitored exercise, education, and supportive interaction. In addition, the patient receives an exercise pictorial booklet, an exercise CD, a COPD diary and other education materials to use on their own.

"Our goal is to provide much-needed rehabilitation training and assistance to Veterans with COPD who may be unable or prefer not to leave their homes," said Amir Sharafkhaneh, MD, PhD, Staff Pulmonologist at the Houston VA and Professor of Medicine, Baylor College of Medicine.

"During the program, patients learn about things like breathing exercises, the benefits of exercise and physical activity, nutrition, stress and anxiety management, sleep and sleep hygiene, pharmacology, infection and emergency planning. It really is a great way for us to equip our veterans with the information they need to self-manage their health and improve their quality of life."

In this pilot phase of the project, Sharafkhaneh and the two VA therapists, Mon Bryant, PT, PhD and Christina Nguyen, RRT, seek to demonstrate that telehealth can be used effectively to provide pulmonary rehabilitation and promote life-long self-management.

To date, enrolled Veterans are pleased with the results.

"By the third week, I could tell a difference," said Wesley. "I feel stronger, breathe easier, and have more confidence in my ability. I considered canceling a reunion trip I had planned, but I now have the endurance and confidence to make the trip. I look forward daily to improving myself physically and not allowing COPD to rule my life."

va.gov

Veterans
PULMONOLOGY

Veterans in Burn Pit Registry Helping Fellow Vets

Helping researchers understand the effects of exposure to burn pits

By Dore Mobley, VA Patient Care Services Communications

For Veterans that have reported respiratory symptoms and other health conditions they believe are related to their exposure to burn pits during service in Iraq and Afghanistan, there are VA studies available such as the "Airborne Hazards" and "Open Burn Pit Registry for Veterans and Servicemembers" to help provide information about the health effects related to exposure.

An overall goal of scientific research on groups such as Veterans is generalizability — the measure of how well the research findings and conclusions from a sample population can be extended to the larger population.

It is always dependent on studying an ideal number of participants and the "correct" number of individuals representing relevant groups from the larger population such as race, gender or age.

In setting the eligibility criteria for the Airborne Hazards and Open Burn Pit Registry, VA researchers used generalizability as an important consideration.

Simply put, they want as many Veterans and active-duty service members who had deployed to specific locations to join the registry.

Participants could have been exposed to burn pits or not. They could be experiencing symptoms or not. Or, they could receive care from VA or not.

Photo credit: Department of Veterans Affairs

continued on page 106

continued from page 104

Helping to improve the care of your fellow Veterans

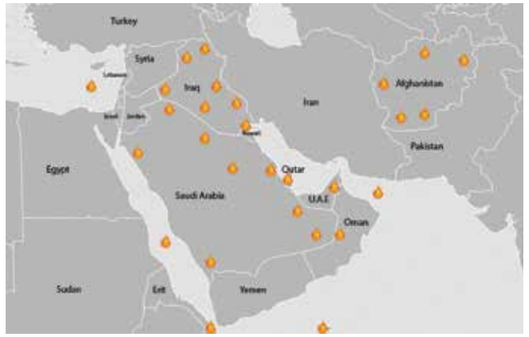
For researchers, everyone eligible to join the registry has a unique experience critical in establishing empirical evidence. By signing up and answering brief questions about their health, Veterans and active-duty service members are helping researchers understand the potential effects of exposure to burn pits and ultimately helping improve the care of their fellow Veterans.

It is estimated that 3 million Veterans and active-duty service members are eligible to join the registry. However, just over 173,000 have joined as of April 1, 2019, and 10 out of 100 have had the free, medical evaluation, which is important to confirm the self-reported data in the registry.

> "Research has indicated exposure to burn pits among military personnel increased the risk of respiratory conditions such as COPD"
>
> — National Institutes of Health

See what questions are asked

In hopes of encouraging more participation in the registry, VA is sharing a partial list of registry data collected from June 2014 through December 2018. This snapshot will give you a sense of the type of questions on the questionnaire as well as how the data is reported when shared with researchers and VA staff.



VA will determine eligibility for the Airborne Hazards and Open Burn Pit Registry based on deployment information from the Department of Defense (DoD). To be eligible, you must be a Veteran or Servicemember who deployed to contingency operations in the Southwest Asia theater of operations at any time on or after August 2, 1990 (as defined in 38 CFR 3.317(e)(2)), or Afghanistan or Djibouti on or after September 11, 2001. These regions include the following countries, bodies of water, and the airspace above these locations: Iraq, Afghanistan, Kuwait, Saudi Arabia, Bahrain, Djibouti, Gulf of Aden, Gulf of Oman, Oman, Qatar, United Arab Emirates, Waters of the Persian Gulf, Arabian Sea, and Red Sea

As a reminder, the registry is open to active-duty service members and most Veterans who deployed after 1990 to Southwest Asia, Iraq, Afghanistan, Djibouti and Africa, among other places.

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Veterans
RESEARCH

Palo Alto Researcher Receives the Kappa Delta Elizabeth Winston Lanier Award

By Michael Hill-Jackson

VA Palo Alto Health Care System (VAPAHCS) researcher Constance R. Chu, MD, has received the Kappa Delta Elizabeth Winston Lanier Award during the 2019 Annual Meeting of the American Academy of Orthopaedic Surgeons in Las Vegas, Nevada. The Kappa Delta awards are the highest honor in Orthopedic Surgery and presented by the Academy to persons who have performed research in orthopedic surgery that is of high significance and impact.

"Given our aging population of Veterans, Dr. Chu's work is crucial to the rehabilitation services we provide to our Veterans," said VAPAHCS Director Thomas J. Fitzgerald. "We are proud to have pioneers like her who push boundaries and join the ranks of those changing medicine around the world."

"It's an honor to receive this award and have our team recognized for all their hard work," said Dr. Chu. "We look forward to conducting more studies that will advance osteoarthritis prevention."

A 2013 Centers for Disease Control study estimates that one in four Veterans (25.6%) have arthritis, which is more prevalent among Veterans than non-Veterans in all socio-demographic categories.

The award recognizes nearly two decades of research conducted by Dr. Chu and her team on osteoarthritis (OA). The team studied four imaging techniques to identify cartilage and joint abnormalities after joint injury. Using a new MRI technique, they most recently developed the concept of "pre-osteoarthritis," making way for OA preventative medicine.

One non-invasive imaging technique called MRI UTE-T2 (Magnetic Resonance Imaging, Ultrashort Echo Time) was found to be the missing component to their goal of visualizing "pre-OA." This technique allowed Dr. Chu's team to make several findings, including:

- healing of subsurface cartilage damage in more than half of patients by two years after ACL surgery
- identification of cartilage abnormalities before the surface breaks down can possibly recover with therapeutic interventions
- the discovery of biomarkers that help to characterize a pre-osteoarthritis joint

VA Palo Alto Health Care System (VAPAHCS) researcher Constance R. Chu, MD, receives the Kappa Delta Elizabeth Winston Lanier Award during the 2019 Annual Meeting of the American Academy of Orthopaedic Surgeons in Las Vegas, Nevada.

"Being able to see "pre-osteoarthritis" using MRI UTE-T2 has allowed us to progress preventive treatment strategies from the laboratory into clinical trials," said Dr. Chu. "Moving forward, we will employ this imaging technique in our clinical trials to study biologics, gene therapy and gait retraining to treat joints early after ACL and joint injuries to help thwart osteoarthritis."

The Kappa Delta award was a reinforcement of their success as it follows a $10 million grant funded by the Department of Defense in late 2018 for their study "Novel Strategies to Prevent Post-traumatic Osteoarthritis." The grant includes three clinical trials, gene therapy, and induced pluripotent stem cell work.

In addition, her team is conducting a $1 million VA-funded clinical trial called "Precision Assessment of Platelet Rich Plasma for Joint Restoration" to see whether PRP helps Veterans with wear and tear to the knees. Dr. Chu's research is one of many research studies that make VA Palo Alto one of the top three largest research programs in VA, boasting programs such as the Center for Innovation to Implementation (Ci2i), the Health Economics Resource Center (HERC), and the Mental Illness Research Education and Clinical Center (MIRECC).

Dr. Chu serves as director of the Joint Preservation Center and chief of Sports Medicine at the VA Palo Alto Health Care System. She is also Professor and Vice Chair, Research, in the Department of Orthopedic Surgery at Stanford University. She graduated from the U.S. Military Academy at West Point and earned her medical degree from Harvard Medical School.

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Veterans
RESEARCH

VA Researchers Who Served

A chat with Dr. Edward Jones

By Mike Richman, VA Office of Research and Development

Dr. Edward Jones is in the Army Reserves. He's the section chief of general surgery and the interim director of advanced surgical endoscopy, a minimally invasive form of surgery, at the VA Eastern Colorado Health Care System in Denver. He offers a range of endoscopic treatment options for common surgical diseases. He also conducts research into surgical techniques and cancer outcomes. More than 40 of his papers have appeared in academic journals. He earned an excellence in research award from the Society of Gastrointestinal and Endoscopic Surgeons and the Army Achievement Medal. He's also an assistant professor of surgery at the University of Colorado.

Dr. Edward Jones, an Army reservist, is the section chief of general surgery and the interim director of advanced surgical endoscopy at the VA Eastern Colorado Health Care System. *Photo by Shawn Fury*

What motivated you to join the military?

I've always been interested in the military. I planned to join at multiple points in my life for a number of reasons. After high school, I wanted to join because the military sounded super cool. After college, I wanted to join so I could continue being an athlete and learn to become a leader. After medical school, I had $250,000 in student debt that I needed to start paying off. After surgical training, I wanted to be part of something bigger than myself and to help care for soldiers who put their lives on the line for our country and freedom. The loans haven't gone away, either.

What inspired your research career?

Great mentorship! Dr. Tom Robinson, the chief of surgery at the Eastern Colorado VA, encouraged me to start a research project during my surgical residency. He introduced me to energy device research by revealing that only a few physicians and manufacturers fully understand how these devices function. This left me dumbfounded. I couldn't imagine that the energy devices we use in nearly every surgical and treatment procedure weren't completely understood! These tools are used to make incisions and to stop bleeding. This gave me a strong desire to investigate these devices and teach other physicians their benefits and drawbacks. That desire has resulted in more than 50 different research ideas and projects in the last eight years. And we still have much work left to do!

Dr. Robinson also recruited both me and my wife, Teresa, to return to VA as academic surgeons. He has been with us through hard times and good times and is always willing to listen and lend a hand.

In addition to Dr. Robinson, have you had mentors who inspired you in life, the military, or your research career?

I've had many mentors in my life and would not be where am I without their help. Beginning with my grandparents, who both served in the military, to my parents and siblings, my family has always provided mentorship and support. Without that, I would never have made it through college, let alone medical school and residency.

Dr. Robinson introduced me to another Veteran who had who patched up soldiers on the beaches of Normandy during World War II, Dr. Ben Eiseman. Before passing away a few years ago, Dr. Eiseman published more than 450 manuscripts and remains one of the giants of surgery and medical research. In addition, two people decided to take a chance on me and Teresa by accepting us as a "couple" and have provided near-continuous mentorship for the last 10 years: Dr. Frederick Grover, a prominent researcher in cardiac surgery and a long-time VA surgeon, as well as the former chief of surgery at the University of Colorado; and Dr. Mark Nehler, the surgical residency program director at the University of Colorado.

Finally, my unit commander, Dr. Scott Armen, provides mentorship and motivation and leads by example. He does this as he balances his family, his academic career as chief of the division of trauma critical care at Penn State University, his ongoing deployments to Iraq and Afghanistan, and his recent promotion as a consultant to the U.S. surgeon general.

When and where did you serve in the military? Describe your military experience.

I joined the Army Reserve during my last year of a surgical fellowship in Ohio in 2014 and am on active duty now at Evans Army Community Hospital in Fort Carson, Colorado. Upon commissioning, I was assigned to the 629th forward surgical team in Blacklick, Ohio. During the six months I spent in Ohio before moving back to Denver, I drilled regularly with this small, 40-member unit and forged new friendships and bonds that I will maintain long after I get out of medicine and the military. The 629th is an incredible unit. It's designed to be ready to receive patients and perform surgery in difficult conditions just two hours after arrival. To always be prepared, we train regularly as a team. The general-trauma surgeons in the unit deploy to locations in the U.S. and overseas nearly every other year. This is extremely demanding on the unit and their families. However, the work is both important and rewarding, no matter whether you are in Afghanistan or Colorado Springs. The support required by family and friends can't be understated and is essential to my and the team's ability to function at a high level, especially given the high deployment tempo.

What kinds of research are you involved in? How does it potentially impact Veterans?

I chose to focus on areas that will impact many Veterans. With my training being surgical in nature, I've found a niche in surgical energy devices, in endoscopy, and in research aimed at reducing complications and death after surgery. I work in conjunction with my wife,
Dr. Teresa Jones, a general surgeon and a critical care doctor at the Eastern Colorado VA. During the past two years, she's implemented a mechanism that has reduced the surgical mortality by almost 50 percent when compared with VA quality predictions. This mechanism has the potential to positively impact every Veteran who undergoes surgery!

I'm currently working on an animal model of cardiac pacemakers and defibrillators to analyze potential malfunction or inadvertent shocks when patients undergo surgery or endoscopy. Similarly, we recently published several studies and a comprehensive review on operating room fires. We identified common alcohol-based skin preps as an easy fuel for fires. Dr. Kris Wikiel, Dr. Jason Samuels, Dr. Heather Carmichael, and I created a carbon dioxide-based device that reduces the risk of fires to near zero. We'll be presenting on that at the Society of Gastrointestinal and Endoscopic Surgeons conference in April.

We have other projects in the works, including animal studies by Dr. Carlton Barnett that evaluate the impact of thermal ablation on liver tumors. Dr. Kris Wikiel is pioneering the evaluation of energy devices in relation to chronic pain and recurrence after groin surgery. Dr. Tom Robinson, who is already a world-renowned expert in geriatric surgery and frailty, has nearly completed a pilot study looking at recovery after surgery as predicted by the number of steps a patient takes. In short, this is a very exciting time at the Eastern Colorado VA, as we continue to push the boundaries in many areas of research and surgical patient care.

How do you feel about the possibility of making life better for Veterans through your research?

In the end, the goal of our research is to make life better for our Veterans and for all patients. Our research is particularly beneficial to Veterans who, unfortunately, have higher rates of co-existing conditions, such as heart disease and diabetes, as well as exposure to unique situations and chemicals. Thus, reducing their surgical risk or improving the chances that their cancer will be cured results in more quality-of-life improvements, for example, than someone who does not have co-existing conditions or chemical exposures.

Does being a Veteran give you a greater emotional tie to the work you're doing or more insight into Veterans' needs?

I feel a close kinship with my patients. I've served with them and experienced life with them as a reservist and active duty surgeon. While I have not served in a combat zone, there's an immediate comfort in the doctor-patient relationship when my patients realize that I'm in the military, as well.

va.gov

Start your post-military career serving and caring for Veterans as VA physicians and nurses

U.S. Department of Veterans Affairs (VA) invites transitioning service members with training as physicians and nurses to explore a VA healthcare career. Providers ready for their next mission can talk to a recruiter about continuing a life of service as a VA healthcare provider," said Darren Sherrard, Associate Director, Recruitment Marketing.

"VA is eager to help service members transfer their healthcare training, leadership skills and experience to the many positions available at VA facilities across the country." Learn more about the specialized program at: https://www.vacareers.va.gov/Content/Documents/Print/vacareers_TMPflyer_508-1.pdf

Veterans
EPILOGUE

Military Traditions Instill Pride, Connection with Past

By Elaine Sanchez, Brooke Army Medical Center Public Affairs

I've seen more than my share of military traditions over the past 20 years. Countless times, I've sung service songs, watched the Honor Guard place the colors, and stood at attention during Reveille and Retreat.

While I've always admired the dignity and honor of these traditions, they became somewhat routine over the years. I didn't truly appreciate their purpose until my father passed away.

My father served in the Army during Vietnam and as a flight surgeon in the Air Force Reserve for 20 years. He reluctantly retired over a decade ago after receiving a diagnosis of Parkinson's disease, and lost his battle with the disease last month.

He had one wish: to be buried at a cemetery among others who had served.

Brooke Army Medical Center staff practice the rendering of flag honors for fallen heroes in July 2018. No matter the branch, war or length of service, BAMC salutes every veteran and first responder who dies in the hospital with a flag ceremony by an Honor Guard. *Photo by Robert Shields*

The day of his burial at a small veteran's cemetery up north was unseasonably cold. We were all shivering as we stood outside the sparse wooden chapel waiting for the service to begin. Nearby, six service members in dress uniform stood at attention, seemingly unaffected by the frigid wind whipping at the towering trees and countless rows of American flags adorning grave sites in honor of Veterans Day.

As our family lined the pews, the Honor Guard marched in and carefully folded the U.S. flag into a perfect triangle, only the blue field visible at completion. They solemnly presented the flag to my mother in the front row, who was struggling to hold back her tears.

"On behalf of the President of the United States, the United States Air Force and a grateful nation, please accept this flag as a symbol of our appreciation for your loved one's honorable and faithful service."

The air filled with the heart-wrenching sound of Taps followed by a three-rifle volley, a tradition that comes from battle ceasefires after both sides clear the dead. As the shots rang out, I never felt so proud of my father or so grateful for our military's traditions, particularly the honors paid to the fallen. They are honors given to all veterans, to include homeless veterans, at the gravesite.

They are traditions that most of us take for granted or even question why we carry them on. While they take time and effort, they must not fade away. They instill pride, honor, dignity, gratitude and a connection with a storied past.

That ceremony gave me a renewed appreciation for the military traditions we uphold each day at Brooke Army Medical Center, where I work — the precision of our flag postings by our tremendous Honor Guard, the changes of command and the service birthday celebrations.

Perhaps most importantly, no matter the branch, war or length of service, we salute every veteran and first responder who dies in the hospital with a flag ceremony by an Honor Guard.

After the U.S. flag is draped over the loved one, the Honor Guard leads a procession down the hall with the family at their side. As the group proceeds, nearby staff and visitors stand at attention or place their hand over their heart out of respect for the veteran's service.

I've seen the tears of family members as touched and honored by this final salute to their loved one as I was at my father's funeral.

Last night I was leaving the gym, talking on my phone, when I heard the sound of Retreat. In the past, I may have lingered inside for a few more minutes to keep out of the cold. Instead, I got off the phone, stood outside at attention, and listened until the final notes faded into the sky.

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Washington DC, USA – June 18, 2016: The Memorial Wall of the Vietnam Veterans Memorial in Washington DC at dawn.

Armed Forces Medicine 2019

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