ARMED FORCES MEDICINE

2017

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Indication

BROVANA® (arformoterol tartrate) Inhalation Solution is indicated for the long-term, twice-daily (morning and evening) maintenance treatment of bronchoconstriction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema. BROVANA is for use by nebulization only.

Important Safety Information

WARNING: ASTHMA-RELATED DEATH

Long-acting beta$_2$-adrenergic agonists (LABA) increase the risk of asthma-related death. Data from a large placebo-controlled US study that compared the safety of another long-acting beta$_2$-adrenergic agonist (salmeterol) or placebo added to usual asthma therapy showed an increase in asthma-related deaths in patients receiving salmeterol. This finding with salmeterol is considered a class effect of LABA, including arformoterol, the active ingredient in BROVANA (see WARNINGS). The safety and efficacy of BROVANA in patients with asthma have not been established. All LABA, including BROVANA, are contraindicated in patients with asthma without use of a long-term asthma control medication (see CONTRAINDICATIONS).

Nebulized BROVANA for COPD offers:

Consistent 12-hour bronchodilation[1,2]

Some tolerance to the bronchodilator effect of BROVANA was observed after 6 weeks of dosing (at the end of the dosing interval), although the FEV_1 improvement remained statistically significant. This was not accompanied by other clinical manifestations of tolerance. BROVANA is not indicated for the treatment of acute episodes of bronchospasm, ie, rescue therapy, and does not replace fast-acting rescue inhalers.

Proven safety profile[1]

Percentage of patients reporting AEs was comparable to placebo[1]

The five most common adverse events reported with frequency ≥2% in patients taking BROVANA, and occurring more frequently than in patients taking placebo, were pain (8% vs 5%), chest pain (7% vs 6%), back pain (6% vs 2%), diarrhea (6% vs 4%), and sinusitis (5% vs 4%).

Coverage under many HMOs/PPOs and Medicare Part B

Prior SABA use no longer required for Medicare patients*

Patient support

Sunovion Answers℠ is at your patients' service
1-844-BROVANA
(1-844-276-8262)
8am-8pm ET Monday through Friday

*Not a guarantee of coverage.

References: 1. BROVANA [prescribing information]. Sunovion Pharmaceuticals Inc.; 2014. **2.** Baumgartner RA, Hanania NA, Calhoun WJ, Sahn SA, Sciarappa K, Hanrahan JP. Nebulized arformoterol in patients with COPD: a 12-week, multicenter, randomized, double-blind, double-dummy, placebo- and active-controlled trial. *Clin Ther.* 2007;29(2):261-278.

Please see the Brief Summary of Prescribing Information on the following pages for additional safety information. Please visit www.sunovionprofile.com/brovana for full Prescribing Information.

NEBULIZE WITH

Brovana® 15 mcg

(arformoterol tartrate) Inhalation Solution

BROVANA® (arformoterol tartrate) Inhalation Solution 15 mcg*/2 mL

*potency expressed as arformoterol

FOR ORAL INHALATION ONLY

BRIEF SUMMARY

WARNING: ASTHMA RELATED DEATH

Long-acting beta$_2$-adrenergic agonists (LABA) increase the risk of asthma-related death. Data from a large placebo-controlled US study that compared the safety of another long-acting beta$_2$-adrenergic agonist (salmeterol) or placebo added to usual asthma therapy showed an increase in asthma-related deaths in patients receiving salmeterol. This finding with salmeterol is considered a class effect of LABA, including arformoterol, the active ingredient in BROVANA (see WARNINGS). The safety and efficacy of BROVANA in patients with asthma have not been established. All LABA, including BROVANA, are contraindicated in patients with asthma without use of a long-term asthma control medication (see CONTRAINDICATIONS).

INDICATIONS AND USAGE

BROVANA (arformoterol tartrate) Inhalation Solution is indicated for the long-term, twice daily (morning and evening) maintenance treatment of bronchoconstriction in patients with chronic obstructive pulmonary disease (COPD), including chronic bronchitis and emphysema. BROVANA is for use by nebulization only.

CONTRAINDICATIONS

BROVANA Inhalation Solution is contraindicated in patients with a history of hypersensitivity to arformoterol, racemic formoterol or to any other components of this product.

All LABA, including BROVANA, are contraindicated in patients with asthma without use of a long-term asthma control medication. (see **WARNINGS**).

WARNINGS

- **ASTHMA RELATED DEATH**
  Long-acting beta$_2$-adrenergic agonists may increase the risk of asthma-related death. The safety and efficacy of BROVANA in patients with asthma have not been established. All LABA, including BROVANA, are contraindicated in patients with asthma without use of a long-term asthma control medication (see CONTRAINDICATIONS).
  – A 28-week, placebo-controlled US study comparing the safety of salmeterol with placebo, each added to usual asthma therapy, showed an increase in asthma-related deaths in patients receiving salmeterol (13/13,176 in patients treated with salmeterol vs. 3/13,179 in patients treated with placebo; RR 4.37, 95% CI 1.25, 15.34). The increased risk of asthma-related death may represent a class effect of the long-acting beta$_2$-adrenergic agonists, including BROVANA. No study adequate to determine whether the rate of asthma-related death is increased in patients treated with BROVANA has been conducted.
  – Clinical studies with racemic formoterol (Foradil® Aerolizer®) suggested a higher incidence of serious asthma exacerbations in patients who received racemic formoterol than in those who received placebo. The sizes of these studies were not adequate to precisely quantify the differences in serious asthma exacerbation rates between treatment groups.
- **The studies described above enrolled patients with asthma. Data are not available to determine whether the rate of death in patients with COPD is increased by long-acting beta$_2$-adrenergic agonists.**
- **BROVANA is indicated for the long term, twice daily (morning and evening) maintenance treatment for bronchoconstriction in chronic obstructive pulmonary disease (COPD), and is not indicated for the treatment of acute episodes of bronchospasm, i.e., rescue therapy.**
- **BROVANA should not be initiated in patients with acutely deteriorating COPD, which may be a life-threatening condition. The use of BROVANA in this setting is inappropriate.**
- **BROVANA should not be used in children, as the safety and efficacy of BROVANA have not been established in pediatric patients.**
- **BROVANA should not be used in conjunction with other inhaled, long-acting beta$_2$-agonists. BROVANA should not be used with other medications containing long-acting beta$_2$-agonists.**
- **When beginning treatment with BROVANA, patients who have been taking inhaled, short-acting beta$_2$-agonists on a regular basis (e.g., four times a day) should be instructed to discontinue the regular use of these drugs and use them only for symptomatic relief of acute respiratory symptoms.**
- **See PRECAUTIONS and Information for Patients.**

Paradoxical Bronchospasm

As with other inhaled beta$_2$-agonists, BROVANA can produce paradoxical bronchospasm that may be life-threatening. If paradoxical bronchospasm occurs, BROVANA should be discontinued immediately and alternative therapy instituted.

Deterioration of Disease

COPD may deteriorate acutely over a period of hours or chronically over several days or longer. If BROVANA no longer controls the symptoms of bronchoconstriction, or the patient's inhaled, short-acting beta$_2$-agonist becomes less effective or the patient needs more inhalation of short-acting beta$_2$-agonist than usual, these may be markers of deterioration of disease. In this setting, a re-evaluation of the patient and the COPD treatment regimen should be undertaken at once. Increasing the daily dosage of BROVANA beyond the recommended 15 mcg twice daily dose is not appropriate in this situation.

Cardiovascular Effects

BROVANA, like other beta$_2$-agonists, can produce a clinically significant cardiovascular effect in some patients as measured by increases in pulse rate, blood pressure, and/or symptoms. Although such effects are uncommon after administration of BROVANA at the recommended dose, if they occur, the drug may need to be discontinued. In addition, beta-agonists have been reported to produce ECG changes, such as flattening of the T wave, prolongation of the QTc interval, and ST segment depression. The clinical significance of these findings is unknown. BROVANA, as with other sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension (see **PRECAUTIONS, General**).

Immediate Hypersensitivity Reactions

Immediate hypersensitivity reactions may occur after administration of BROVANA as demonstrated by cases of anaphylactic reaction, urticaria, angioedema, rash and bronchospasm.

Do Not Exceed Recommended Dose

Fatalities have been reported in association with excessive use of inhaled sympathomimetic drugs. As with other inhaled beta$_2$-adrenergic drugs, BROVANA should not be used more often, at higher doses than recommended, or with other long-acting beta-agonists.

PRECAUTIONS

General

BROVANA Inhalation Solution should not be used to treat acute symptoms of COPD. BROVANA has not been studied in the relief of acute symptoms and extra doses should not be used for that purpose. When prescribing BROVANA, the physician should also provide the patient with an inhaled, short-acting beta$_2$-agonist for treatment of COPD symptoms that occur acutely, despite regular twice-daily (morning and evening) use of BROVANA. Patients should also be cautioned that increasing inhaled beta$_2$-agonist use is a signal of deteriorating disease for which prompt medical attention is indicated (see **Information for Patients**).

BROVANA, like other sympathomimetic amines, should be used with caution in patients with cardiovascular disorders, especially coronary insufficiency, cardiac arrhythmias, and hypertension; in patients with convulsive disorders or thyrotoxicosis; and in patients who are unusually responsive to sympathomimetic amines. Clinically significant changes in systolic and/or diastolic blood pressure, pulse rate and electrocardiograms have been seen infrequently in individual patients in controlled clinical studies with arformoterol tartrate. Doses of the related beta$_2$-agonist albuterol, when administered intravenously, have been reported to aggravate preexisting diabetes mellitus and ketoacidosis.

Beta-agonist medications may produce significant hypokalemia in some patients, possibly through intracellular shunting, which has the potential to produce adverse cardiovascular effects. The decrease in serum potassium is usually transient, not requiring supplementation. Clinically significant changes in blood glucose and/or serum potassium were infrequent during clinical studies with long-term administration of BROVANA at the recommended dose.

Information for Patients

Patients should be instructed to read the accompanying Medication Guide with each new prescription and refill. Patients should be given the following information:

1. Patients should be informed that long-acting beta$_2$-adrenergic agonists, such as BROVANA, increase the risk of asthma-related death. All LABA, including BROVANA, are contraindicated in patients with asthma without use of a long-term asthma control medication (see **CONTRAINDICATIONS**).
2. BROVANA is not indicated to relieve acute respiratory symptoms and extra doses should not be used for that purpose. Acute symptoms should be treated with an inhaled, short-acting, beta$_2$-agonist (the healthcare provider should prescribe the patient with such medication and instruct the patient in how it should be used). Patients should be instructed to seek medical attention if their symptoms worsen, if BROVANA treatment becomes less effective, or if they need more inhalations of a short-acting beta$_2$-agonist than usual. Patients should not inhale more than one dose at any one time. The daily dosage of BROVANA should not exceed one ready-to-use vial (15 mcg) by inhalation twice daily (30 mcg total daily dose).
3. Patients should be informed that treatment with beta$_2$-agonists may lead to adverse events which include palpitations, chest pain, rapid heart rate, tremor, or nervousness.
4. Patients should be instructed to use BROVANA by nebulizer only and not to inject or swallow this inhalation solution.
5. Patients should protect BROVANA ready-to-use vials from light and excessive heat. The protective foil pouches should be stored under refrigeration between 2ºC and 8ºC (36º–46ºF). They should not be used after the expiration date stamped on the container. After opening the pouch, unused ready-to-use vials should be returned to, and stored in, the pouch. An opened ready-to-use vial should be used right away. Discard any ready-to-use vial if the solution is not colorless.
6. The drug compatibility (physical and chemical), efficacy and safety of BROVANA when mixed with other drugs in a nebulizer have not been established.
7. Women should be advised to contact their physician if they become pregnant or if they are nursing.
8. It is important that patients understand how to use BROVANA appropriately and how it should be used in relation to other medications to treat COPD they are taking.

Drug Interactions

If additional adrenergic drugs are to be administered by any route, they should be used with caution because the pharmacologically predictable sympathetic effects of BROVANA may be potentiated.

When paroxetine, a potent inhibitor of CYP2D6, was co-administered with BROVANA at steady-state, exposure to either drug was not altered. Dosage adjustments of BROVANA are not necessary when the drug is given concomitantly with potent CYP2D6 inhibitors.

Concomitant treatment with methylxanthines (aminophylline, theophylline), steroids, or diuretics may potentiate any hypokalemic effect of adrenergic agonists.

The ECG changes and/or hypokalemia that may result from the administration of nonpotassium sparing diuretics (such as loop or thiazide diuretics) can be acutely worsened by beta-agonists, especially when the recommended dose of the beta-agonist is exceeded.

Although the clinical significance of these effects is not known, caution is advised in the co-administration of beta-agonists with non-potassium sparing diuretics.

BROVANA, as with other beta$_2$-agonists, should be administered with extreme caution to patients being treated with monoamine oxidase inhibitors, tricyclic antidepressants, or drugs known to prolong the QTc interval because the action of adrenergic agonists on the cardiovascular system may be potentiated by these agents. Drugs that are known to prolong the QTc interval have an increased risk of ventricular arrhythmias. The concurrent use of intravenously or orally administered methylxanthines (e.g., aminophylline, theophylline) by patients receiving BROVANA has not been completely evaluated. In two combined 12-week placebo controlled trials that included BROVANA doses of 15 mcg twice daily, 25 mcg twice daily, and 50 mcg once daily, 54 of 873 BROVANA-treated subjects received concomitant theophylline at study entry. In a 12-month controlled trial that included a 50 mcg once daily BROVANA dose, 30 of the 528 BROVANA-treated subjects received concomitant theophylline at study entry. In these trials, heart rate and systolic blood pressure were approximately 2-3 bpm and 6-8 mm Hg higher, respectively, in subjects on concomitant theophylline compared with the overall population.

Beta-adrenergic receptor antagonists (beta-blockers) and BROVANA may interfere with the effect of each other when administered concurrently. Beta-blockers not only block the therapeutic effects of beta-agonists, but may produce severe bronchospasm in COPD patients. Therefore, patients with COPD should not normally be treated with beta-blockers. However, under certain circumstances, e.g., as prophylaxis after myocardial infarction, there may be no acceptable alternatives to the use of beta-blockers in patients with COPD. In this setting, cardioselective beta-blockers could be considered, although they should be administered with caution.

Carcinogenesis, Mutagenesis, Impairment of Fertility

Long-term studies were conducted in mice using oral administration and rats using inhalation administration to evaluate the carcinogenic potential of arformoterol. In a 24-month carcinogenicity study in CD-1 mice, arformoterol caused a dose-related increase in the incidence of uterine and cervical endometrial stromal polyps and stromal cell sarcoma in female mice at oral doses of 1 mg/kg and above (AUC exposure approximately 70 times adult exposure at the maximum recommended daily inhalation dose). In a 24-month carcinogenicity study in Sprague-Dawley rats, arformoterol caused a statistically significant increase in the incidence of thyroid gland c-cell adenoma and carcinoma in female rats at an inhalation dose of 200 mcg/kg (AUC exposure approximately 130 times adult exposure at the maximum recommended daily inhalation dose). There were no tumor findings with an inhalation dose of 40 mcg/kg (AUC exposure approximately 55 times adult exposure at the maximum recommended daily inhalation dose). Arformoterol was not mutagenic or clastogenic in the following tests: mutagenicity tests in bacteria, chromosome aberration analyses in mammalian cells, and micronucleus test in mice.

Arformoterol had no effects on fertility and reproductive performance in rats at oral doses up to 10 mg/kg (approximately 2700 times the maximum recommended daily inhalation dose in adults on a mg/m^2 basis).

Pregnancy: Teratogenic Effects

Pregnancy Category C

Arformoterol has been shown to be teratogenic in rats based upon findings of omphalocele (umbilical hernia), a malformation, at oral doses of 1 mg/kg and above (AUC exposure approximately 370 times adult exposure at the maximum recommended daily inhalation dose). Increased pup loss at birth and during lactation and decreased pup weights were observed in rats at oral doses of 5 mg/kg and above (AUC exposure approximately 1100 times adult exposure at the maximum recommended daily inhalation dose). Delays in development were evident with an oral dose of 10 mg/kg (AUC exposure approximately 2400 times adult exposure at the maximum recommended daily inhalation dose).

Arformoterol has been shown to be teratogenic in rabbits based upon findings of malpositioned right kidney, a malformation, at oral doses of 20 mg/kg and above (AUC exposure approximately 8400 times adult exposure at the maximum recommended daily inhalation dose). Malformations including brachydactyly, bulbous aorta, and liver cysts were observed at doses of 40 mg/kg and above (approximately 22,000 times the maximum recommended daily inhalation dose in adults on a mg/m^2 basis). There are no adequate and well-controlled studies in pregnant women. BROVANA should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Use in Labor and Delivery

There are no human studies that have investigated the effects of BROVANA on preterm labor or labor at term. Because beta-agonists may potentially interfere with uterine contractility, BROVANA should be used during labor and delivery only if the potential benefit justifies the potential risk.

Nursing Mothers

In reproductive studies in rats, arformoterol was excreted in the milk. It is not known whether arformoterol is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when BROVANA is administered to a nursing woman.

Pediatric

BROVANA is approved for use in the long term maintenance treatment of bronchoconstriction associated with chronic obstructive pulmonary disease, including chronic bronchitis and emphysema. This disease does not occur in children. The safety and effectiveness of BROVANA in pediatric patients have not been established.

Geriatric

Of the 873 patients who received BROVANA in two placebo-controlled clinical studies in adults with COPD, 391 (45%) were 65 years of age or older while 96 (11%) were 75 years of age or older. No overall differences in safety or effectiveness were observed between these subjects and younger subjects. Among subjects age 65 years and older, 129 (33%) received BROVANA at the recommended dose of 15 mcg twice daily, while the remainder received higher doses. ECG alerts for ventricular ectopy in patients 65 to ≤75 years of age were comparable among patients receiving 15 mcg twice daily, 25 mcg twice daily, and placebo (3.9%, 5.2%, and 7.1%, respectively).

A higher frequency (12.4%) was observed when BROVANA was dosed at 50 mcg once daily. The clinical significance of this finding is not known. Other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out.

ADVERSE REACTIONS

Experience in Adult Patients with COPD

Of the 1,456 COPD patients in the two 12-week, placebo-controlled trials, 288 were treated with BROVANA Inhalation Solution 15 mcg twice daily and 293 were treated with placebo. Doses of 25 mcg twice daily and 50 mcg once daily were also evaluated. The numbers and percent of patients who reported adverse events were comparable in the 15 mcg twice daily and placebo groups.

The following table shows adverse events where the frequency was greater than or equal to 2% in the BROVANA 15 mcg twice daily group and where the rates of adverse events in the BROVANA 15 mcg twice daily group exceeded placebo. Ten adverse events demonstrated a dose relationship: asthenia, fever, bronchitis, COPD, headache, vomiting, hyperkalemia, leukocytosis, nervousness, and tremor.

Table 1: Number of Patients Experiencing Adverse Events from Two 12-Week, Double-Blind, Placebo-Controlled Clinical Trials

	BROVANA 15 mcg twice daily		Placebo	
	n	(%)	n	(%)
Total Patients	288	(100)	293	(100)
Pain	23	(8)	16	(5)
Chest Pain	19	(7)	19	(6)
Back Pain	16	(6)	6	(2)
Diarrhea	16	(6)	13	(4)
Sinusitis	13	(5)	11	(4)
Leg Cramps	12	(4)	6	(2)
Dyspnea	11	(4)	7	(2)
Rash	11	(4)	5	(2)
Flu Syndrome	10	(3)	4	(1)
Peripheral Edema	8	(3)	7	(2)
Lung Disorder*	7	(2)	2	(1)

*Reported terms coded to "Lung Disorder" were predominantly pulmonary or chest congestion.

Adverse events occurring in patients treated with BROVANA 15 mcg twice daily with a frequency of <2%, but greater than placebo were as follows:

Body as a Whole: abscess, allergic reaction, digitalis intoxication, fever, hernia, injection site pain, neck rigidity, neoplasm, pelvic pain, retroperitoneal hemorrhage

Cardiovascular: arteriosclerosis, atrial flutter, AV block, congestive heart failure, heart block, myocardial infarct, QT interval prolonged, supraventricular tachycardia, inverted T-wave

Digestive: constipation, gastritis, melena, oral moniliasis, periodontal abscess, rectal hemorrhage

Metabolic and Nutritional Disorders: dehydration, edema, glucose tolerance decreased, gout, hyperglycemia, hyperlipemia, hypoglycemia, hypokalemia

Musculoskeletal: arthralgia, arthritis, bone disorder, rheumatoid arthritis, tendinous contracture

Nervous: agitation, cerebral infarct, circumoral paresthesia, hypokinesia, paralysis, somnolence, tremor

Respiratory: carcinoma of the lung, respiratory disorder, voice alteration

Skin and Appendages: dry skin, herpes simplex, herpes zoster, skin discoloration, skin hypertrophy

Special Senses: abnormal vision, glaucoma

Urogenital: breast neoplasm, calcium crystalluria, cystitis, glycosuria, hematuria, kidney calculus, nocturia, PSA increase, pyuria, urinary tract disorder, urine abnormality.

Overall, the frequency of all cardiovascular adverse events for BROVANA in the two placebo-controlled trials was low and comparable to placebo (6.9% in BROVANA 15 mcg twice daily and 13.3% in the placebo group). There were no frequently occurring specific cardiovascular adverse events for BROVANA (frequency ≥1% and greater than placebo). The rate of COPD exacerbations was also comparable between the BROVANA 15 mcg twice daily and placebo groups, 12.2% and 15.1%, respectively.

Other adverse reactions which may occur with selective beta$_2$-adrenoceptor agonists such as BROVANA include: angina, hypertension or hypotension, tachycardia, arrhythmias, nervousness, headache, tremor, dry mouth, palpitation, muscle cramps, nausea, dizziness, fatigue, malaise, hypokalemia, hyperglycemia, metabolic acidosis and insomnia.

Drug Abuse and Dependence

There were no reported cases of abuse or evidence of drug dependence with the use of BROVANA in the clinical trials.

OVERDOSAGE

The expected signs and symptoms associated with overdosage of BROVANA (arformoterol tartrate) Inhalation Solution are those of excessive beta-adrenergic stimulation and/or occurrence or exaggeration of any of the signs and symptoms listed under **ADVERSE REACTIONS**, e.g., angina, hypertension or hypotension, tachycardia, with rates up to 200 bpm, arrhythmias, nervousness, headache, tremor, dry mouth, palpitation, muscle cramps, nausea, dizziness, fatigue, malaise, hypokalemia, hyperglycemia, metabolic acidosis and insomnia. As with all inhaled sympathomimetic medications, cardiac arrest and even death may be associated with an overdose of BROVANA.

Treatment of overdosage consists of discontinuation of BROVANA together with institution of appropriate symptomatic and/or supportive therapy. The judicious use of a cardioselective beta-receptor blocker may be considered bearing in mind that such medication can produce bronchospasm. There is insufficient evidence to determine if dialysis is beneficial for overdosage of BROVANA. Cardiac monitoring is recommended in cases of overdosage.

Clinical signs in dogs included flushing of the body surface and facial area, reddening of the ears and gums, tremor, and increased heart rate. A death was reported in dogs after a single oral dose of 5 mg/kg (approximately 4500 times the maximum recommended daily inhalation dose in adults on a mg/m^2 basis). Death occurred for a rat that received arformoterol at a single inhalation dose of 1600 mcg/kg (approximately 430 times the maximum recommended daily inhalation dose in adults on a mg/m^2 basis).

SUNOVION

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AFM 2017
FOREWORD

Surgeons General Emphasize Readiness as Priority in Military Medicine

By Cheryl Pellerin DoD News, Defense Media Activity

Army Medicine

"Readiness, without question, remains my No. 1 priority," West said, noting that Army medicine over the past year launched aggressive efforts to expand access and improve quality for all it serves, including adding 836,000 more specialty care appointments in 2016.

Lieutenant General Nadja Y. West, Surgeon General of the United States Army

"Our most promising initiative to bring care closer to our patients is virtual health, … with services spanning 30 countries and territories over 30 clinical specialties," the Army surgeon general said.

Potential uses of virtual health capabilities include remotely monitoring patient vitals, providing virtual consultations, and letting medics provide combat casualty care or treat a combat casualty, West said, adding that virtual health also is a way to revolutionize access in garrison faculties, at patients' homes or at points of injury.

WBAMC employs state-of-the-art knee implant for first time in DoD Army Maj. (Dr.) E'Stephan Garcia, orthopedic sports medicine surgeon assigned to William Beaumont Army Medical Center, Fort Bliss, Texas, prepares a new Food and Drug Administration-approved implant for fitting during the Defense Department's first knee cartilage surgery of its kind, Feb. 9, 2017. The implant provides faster treatments, reduced impact and an additional treatment option for injuries that previously may have been treated with total or partial knee replacement. *Army photo by Marcy Sanchez*

Advances also have been made in preventing and treating infectious diseases such as Zika virus and treating physical and mental combat-related wounds, she said.

Army medicine also is preparing for the years ahead, West said, telling the subcommittee that "capabilities required to support the future operating environment are going to look much different than they do today."

In a multidomain battle environment, the Army may not have uninterrupted air superiority, affecting the ability to conduct on-demand patient medical evacuations, she said. In that case, she added, medics and other early responders may be called on to provide more complex, prolonged field care.

Providing an example of scaling and reconfiguring capabilities, West said that last year Army medicine assembled a damage-control surgical capability to support forces operating in widely dispersed environments in the U.S. Africa Command area of responsibility.

"Retaining this agility is key as we continue to work with our colleagues to implement the 2017 National Defense Authorization Act," West said. "Readiness is foremost, and we must maintain the ability to flex with our service to provide the right capability [and to continue] to meet or exceed national quality care standards in our garrison environment."

Navy Medicine

"Readiness also is a priority for Navy medicine," Faison said, "because on any given day Navy medical personnel are forward-deployed and supporting high operational tempos with the fleet, fleet marine forces, special warfare units, the joint force and overseas commands."

Vice Admiral C. Forrest Faison, III, Surgeon General US Navy

"In sustaining our readiness capabilities for the next conflict," the admiral said, "new approaches to training, preparation, equipment and support required by our operational and deployed medical personnel will be critical to realizing high combat survivability."

A primary reason for Navy medicine's high combat survivability rate is the work performed by Navy hospital corpsmen, which Faison called the Navy's largest enlisted rating.

"Corpsmen are responsible for delivering initial health care on the battlefield or in isolated assignments aboard a ship or submarine far from shore or any military treatment facility, … [and] we are changing and improving the training of our hospital corpsmen in [their training] in San Antonio," he said.

Curriculum changes focus on training that will prepare corpsmen to manage the continuum of care in the kinds of high-threat or complex environments that sea-based expeditionary Navy and Marine Corps forces encounter, the admiral added.

Navy Petty Officer 3rd Class Sherwin Mora, a hospital corpsman, conducts his weekly inspection of the pharmacy in the Branch Medical Clinic at Naval Base Guam. *Navy photo*

"We're also continuing to leverage private and academic partnerships in key areas such as trauma training at Los Angeles County [Department of Health Services and] the trauma and burn program at the Federal Health Center in Chicago," Faison said.

Navy medicine also is committed to global health engagement, he added, and these efforts complement innovative work in Navy research and development labs around the world where scientists address critical military-relevant research priorities such as malaria vaccine development.

Air Force Medicine

"In Air Force medicine we are adapting our capabilities to enhance the health and performance of airmen by taking our support directly to the airmen," Ediger told the panel.

The Air Force medicine readiness challenge today is to build the capacity to support agile military operations across broad expanses of geography while sustaining the ability to deploy field hospitals in support of large-scale combat operations, he said, noting that answering the challenge calls for increasing the flexibility of deployable medical teams.

"Operations in Central Command and Africa Command have expanded requirements for agile teams trained and equipped for forward trauma resuscitation, damage control surgery and critical care, performing near operating forces often without the benefit of a field hospital," Ediger said.

Lieutenant General (Dr.) Mark A. Ediger, Surgeon General of the US Air Force

In 2016, an Air Force medical team supported coalition forces under this construct and performed more than 120 trauma resuscitations in a seven-week period, he said.

And "while employing innovative trauma resuscitation techniques in a pre-hospital setting," the general said, "we recently adapted Air Force mobile-field surgical and critical-care teams to this requirement and completed successful operational tests."

As part of a joint effort, Ediger added, "we are training and equipping teams to be dually capable of this kind of austere agile support and at work within the Air Force expeditionary medical support, or EMED, structure."

This year, the Air Force will train and equip teams to deliver in-flight surgical resuscitation capability, he said.

Partnerships enable deployable medical professionals to work in institutions outside the military, including partnered trauma centers and academic medical centers in the United States and the United Kingdom, and these will grow in importance, Ediger noted.

Since 2012, he added, airmen have gained experience from embedded medical support in mission areas that include special operations, remotely piloted aircraft operations, intelligence operation centers and personnel recovery.

"We're now building plans to apply what we have learned in those areas more broadly across the Air Force," the general said, "with a focus on units and career fields under high stress and demand, such as aircraft maintenance."

The concept for such an adaptation, he said, involves multidisciplinary medical teams working beside airmen in their duty sections to enhance performance, improve fitness, improve health, build stress management skills and prevent injuries.

And implementing the new electronic health record at Fairchild Air Force Base, Washington, "is the first step of what will be a transformational tool for our health care teams, but also for all of those we serve," Ediger said.

defense.gov

Airmen from the 779th Aerospace Medicine Squadron's bioenvironmental flight change into suits for handling hazardous material during a training exercise at Joint Base Andrews, Md., Jan.18, 2017. The flight conducts routine training to remain proficient and ready to respond at a moment's notice. *Air Force photo by Senior Master Sgt. Adrian Cadiz*

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Active
SPECIAL FEATURES

Naval Hospital Jacksonville Again Receives Highest-Level Quality Recognition

By Yan Kennon, Naval Hospital Jacksonville Public Affairs

The National Committee for Quality Assurance (NCQA) again awarded Naval Hospital Jacksonville with Patient-Centered Medical Home Level III Recognition in January.

This is the highest level of recognition and was awarded to primary care clinics at the hospital — family medicine, internal medicine, and pediatrics — as well as at the hospital's branch health clinics in Albany, Jacksonville, Kings Bay, and Mayport.

"NCQA Patient-Centered Medical Home Recognition raises the bar in defining high-quality care by emphasizing access, health information technology, and coordinated care focused on patients," said NCQA President Margaret E. O'Kane. "Recognition shows that Naval Hospital Jacksonville (family medicine, internal medicine, pediatrics) and Branch Health Clinic Jacksonville (primary care) have the tools, systems, and resources to provide its patients with the right care at the right time."

The Navy's approach to the Patient-Centered Medical Home is Medical Home Port, which places patients in the center of a collaborative team of caregivers — from doctors to case managers — led by the primary care manager.

"NCQA is the nation's gold standard," said Capt. David Collins, NH Jacksonville commanding officer. "We're honored to be recognized for the excellent care that our Medical Home Port teams provide our patients every day."

To view the command's primary care doctors, download the free "NHJax" mobile app, or visit the command's website at www.med.navy.mil/sites/navalhospitaljax and select "Medical Home Port."

The NCQA Patient-Centered Medical Home standards emphasize the use of systematic, patient-centered, coordinated care which supports access, communication, and patient involvement.

NCQA is a private, nonprofit organization dedicated to improving health care quality. NCQA accredits and certifies a wide range of health care organizations. It also recognizes clinicians and practices in key areas of performance. NCQA's web site (http://www.ncqa.org) contains information to help consumers, employers, and others make more informed health care choices.

NH Jacksonville's priority since its founding in 1941 is to heal the nation's heroes and their families. The command is comprised of the Navy's third largest hospital and five branch health clinics across Florida and Georgia. Of its patient population — 163,000 active and retired Sailors, Soldiers, Marines, Airmen, guardsmen, and their families — about 85,000 are enrolled with a primary care manager and Medical Home Port team at one of its facilities.

Commanding Officer Captain David C. Collins, Medical Service Corps, U.S. Navy

Naval Hospital Jacksonville (family medicine, internal medicine, pediatrics) and Naval Branch Health Clinic Jacksonville (primary care) earned Patient-Centered Medical Home Recognition from the National Committee for Quality Assurance.

navy.mil

Active
SPECIAL FEATURES

New $57 Million Medical Facility Cares for Military Community

By Airman 1st Class Kathryn R.C. Reaves, 20th Fighter Wing Public Affairs

Air Force leaders and community members attended the new 20th Medical Group clinic ribbon cutting ceremony, February 24th at Shaw AFB, S.C.

Approximately 100 individuals attended, including Lt. Gen. (Dr.) Mark Ediger, Air Force surgeon general, and Brig. Gen. (Dr.) Sean Murphy, Air Combat Command surgeon general.

The new $57 million medical facility, in conjunction with local specialty providers, is now prepared to support the medical needs of approximately 31,000 eligible beneficiaries.

Of the region's eligible beneficiaries, there are approximately 12,500 active-duty service members, retirees and family members currently enrolled with the 20th MDG for primary care.

The new facility will provide the same services previously offered, to include: family health, women's health, mental health, physical therapy, optometry, pharmacy, and laboratory services. However, its design will be able to meet the functional needs of patients better than the past building by improving patient flow, said Lt. Col. James Ulrich, 20th MDG administrator.

The previous 1960's era facility was built as an in-patient hospital, but phased out in-patient functions, such as deliveries, by 2001. Since then, local military members and their families have used partnered providers for those services.

"We don't do in-patient surgeries or anything like that, so that's where we work with community partners," said Ulrich. "We work together to make sure all of our patients'needs are met. That's critical because that allows us to bring more people onto the base, which helps out the community."

Having these medical services available in the local area allows families that require specialty care, such as those enrolled in the Exceptional Family Member Program, to come to Shaw when they would otherwise not be able to.

U.S. Air Force, 9th Air Force, Air Combat Command and Team Shaw members participate in a ribbon cutting ceremony for the new 20th Medical Group clinic at Shaw Air Force Base, S.C., Feb. 24, 2017. The new facility will continue to provide services offered in the previous building, to include: family health, women's health, mental health, physical therapy, optometry, pharmacy, and laboratory services. *U.S. Air Force photo by Airman 1st Class Kathryn R.C. Reaves*

The local area providing a variety of medical services also helps the mission of the 20th Fighter Wing, said Ulrich. By referring individuals to medical services in the local area, Airmen spend less time commuting and more time impacting the mission.

"(Community providers) have been super supportive of the times where we have had to send our folks downtown," said Chief Master Sgt. Diena Mosely, 20th MDG superintendent. "They've received them with open arms with no interruption to patient care."

As the 20th MDG prepares for the second phase of the project, replacing the old building with a parking lot, they are prepared to provide care to Airmen, Soldiers, retirees and family members in a building tailored to patient needs.

airforcemedicine.af.mil

A crowd gathers at the 20th Medical Group clinic while awaiting a ribbon cutting ceremony at Shaw Air Force Base, S.C. The $57 million medical clinic serves approximately 12,500 active-duty service members, retirees and family members.
U.S. Air Force photo by Airman 1st Class Kathryn R.C. Reaves

U.S. Air Force Lt. Gen. (Dr.) Mark Ediger, Air Force surgeon general, left, and Lt. Col. Cecilia Sessions-Carpenter, 20th Medical Group chief of medical staff, right, converse after a ribbon cutting ceremony for the new 20th MDG clinic at Shaw Air Force Base, S.C. Ediger and other distinguished guests visited the base to see the new medical facility and learn more about the 20th MDG.
U.S. Air Force photo by Airman 1st Class Kathryn R.C. Reaves

U.S. Air Force Brig. Gen. (Dr.) Sean Murphy, Air Combat Command surgeon general, left, and Chaplain (Maj.) Richard Holmes, 20th Fighter Wing deputy chaplain, right, converse after a ribbon cutting ceremony for the new 20th Medical Group clinic at Shaw Air Force Base, S.C. Holmes participated in the ceremony by giving the invocation. *U.S. Air Force photo by Airman 1st Class Kathryn R.C. Reaves*

U.S. Air Force Capt. Aaron Eldridge, 20th Medical Group project health facilities officer, center, speaks to Team Shaw members and civilians during a tour of the new medical building at Shaw Air Force Base, S.C. The new facility was designed to improve patient flow and help the 20th Medical Group support the medical needs of approximately 31,000 eligible beneficiaries.
U.S. Air Force photo by Airman 1st Class Kathryn R.C. Reaves

Chinn to Navy League: Innovations Key to Medically Ready Force, Ready Medical Force

The Defense Health Agency is the newest combat support agency in all of the Department of Defense, standing up just a few years ago. But this newbie serves a vital mission: providing a medically ready force and ready medical force to combatant commands in both peace and war. Innovations in medical care help make that possible.

"We work very closely with the services to ensure that our medical personnel are ready to deploy, and just as importantly, our forces are medically ready to go into harm's way," said Navy Rear Adm. Colin Chinn, the acting deputy director of the Defense Health Agency.

Chinn spoke during a combat survivability panel at the Navy League's Sea-Air-Space exposition, April 5, 2017, at National Harbor just outside Washington, D.C. One discussion point during the session was that the survival rates of those injured during combat are the highest in the history of warfare due in part to developments in battlefield medicine that help warfighters survive and thrive after injury.

Navy Rear Adm. Colin Chinn, the acting deputy director of the Defense Health Agency, talked about battlefield medicine innovations as Rear Adm. Stephen Pachuta, Medical Officer of the Marine Corps watched, during a combat survivability panel at the Navy League's Sea-Air-Space exposition, April 5, 2017, at National Harbor just outside of Washington, D.C. Others on the panel (not pictured)included Navy Surgeon General Vice Adm. Forrest Faison; Rear Adm. Cathal O'Connor, commander, Expeditionary Strike Group THREE; and Rear Adm. Tina Davidson, director Medical Resources, Plans, and Policy at the Navy's Bureau of Medicine.

"We seek solutions to bridge medical capability gaps identified by the combatant commands and the services, and it cuts across the entire continuum of care," Chinn told the group. The admiral also oversees his agency's role in research and development efforts in military medicine. "It's a collaborative effort with researchers within the DoD, industry, and academia. Our goal is to turn novel and innovative ideas into fielded products that will help … at the point of injury on the battlefield all the way to our major medical centers."

Chinn cited work with the Defense Advanced Research Projects Agency on the next generation of prosthetics that are controlled directly by the brain. Another area of research includes the use of wearable sensors that inform medics and doctors about troop fatigue or bleeding. New applications of old techniques once thought to be outdated, such as tourniquets, help improve combat casualty care.

Chinn said 30 years ago as a young doctor in the military, he was told not to use tourniquets. Now, it can be one of the first measures taken to stop bleeding. Once new techniques or technologies are verified for efficacy, medical providers are trained to treat any injuries on the battlefield, he said.

All research and development keeps the warfighter in mind. "We want to make sure any of the products or knowledge we produce is of the highest standards of safety and efficacy," said Chinn.

Chinn thanked his fellow panel members, Navy Surgeon General Vice Adm. Forrest Faison; Rear Adm. Cathal O'Connor, commander, Expeditionary Strike Group THREE; Rear Adm. Stephen Pachuta, Medical Officer of the Marine Corps; and Rear Adm. Tina Davidson, director Medical Resources, Plans, and Policy at the Navy's Bureau of Medicine, for the issues they brought up that sparked more discussion and thought.

"For the last 15 years, we have had a significant amount of our [research and development] dollars go toward solving issues that have arisen," said Chinn. "We are making great strides, and this panel is opening up some issues about future conflicts."

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Active
ADDICTION

Military and Civilian Experts Came Together at AMSUS to Share Practices in Providing Best Care Possible

As technology improves and research advances, health care professionals across all specialties look to provide the best care possible for service members, veterans and their families. With a patient-centered focus in mind, they are often asking themselves how they can improve.

"Let's talk about prevention," said Boris Lushniak, department chair for the Department of Preventive Medicine and Biostatistics at Uniformed Services University of Health Sciences (USUHS).

Prevention is often given lip service as people say prevention is important, said Lushniak, adding that roughly 75 percent of health care needs attributed to behaviors and lifestyle choices are preventable.

"The real question is how do we actually make it alive?" said Lushniak.

The answer is the Centers for Disease Control and Prevention's 6/18 Initiative. This initiative takes aim at six health-related issues, including tobacco use, unintended pregnancies, high blood pressure and diabetes — and provides 18 evidence-based recommendations in how to address them. The prevalence of cigarette smoking, for example, is about 50 percent higher in the military than in the civilian population. This initiative has proposed recommendations to expand access to evidence-based treatments to stop tobacco use, encourage tobacco users to make use of covered treatment benefits and remove barriers, like cost sharing, for people to get these treatments.

Boris Lushniak, department chair for the department of preventive medicine and biostatistics at Uniformed Services University of Health Sciences in Bethesda, Maryland, spoke about raising the bar for preventive medicine at AMSUS (The Society of Federal Health Professionals) 2016 in National Harbor, near Washington D.C.

> "Cigarette smoking is about 50 percent higher in the military than in the civilian population."

"We should walk away from this experience and say 'I can see where we're heading now. […] I can see a goal,'" said Lushniak.

Reflecting this year's theme of "Raising the bar," many civilian and military leaders took to the podium at AMSUS (The Society of Federal Health Professionals) 2016 in National Harbor near Washington, D.C. to speak about recent or ongoing studies on a range of health-related issues, many directly affecting the military community.

Pain management, another major focus presented at AMSUS, can sometimes be a long-lasting issue for wounded service members and veterans. Retired Army Lt. Gen. Eric B. Schoomaker, director of the Uniformed Services University of Health Sciences LEAD program, said pain management is often managed inadequately and urged for a national strategy on the issue.

"We must change the focus to become a patient-centered and team-based multidisciplinary approach," said Schoomaker.

As part of a collaborative effort, MHS measures opioid use through the MHS Opioid Registry. By using the Carepoint MHS Population Health Portal, the registry provides access to data about opioid use in various categories, including demographic, clinical and pharmaceutical. This allows health care providers to get the information they need to make decisions with safety and quality of care in mind, and can also help guide safer opioid prescribing practices in the future.

"There are three distinct cogs [and] they will work together with DHA [which] often times integrates and facilitates," said Maj. Gen. Jeffrey Clark, director of Defense Health Agency's Operations Directorate, speaking of the Army, Navy and Air Force. "We can take a common challenge and figure out a way to move forward together."

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Active
CARDIOLOGY

Keesler Medical Center Surgeons Implant Air Force's 1st Micra Pacemaker

By Air Force Master Sgt. Tammie Moore

The Keesler Medical Center became the first Air Force hospital to implant the world's smallest pacemaker for patients with bradycardia April 13.

Bradycardia is a condition characterized by a slow or irregular heart rhythm, usually fewer than 60 beats per minute. At this rate, the heart is unable to pump enough oxygen-rich blood to the body during normal activity or exercise, causing dizziness, fatigue, shortness of breath or fainting spells.

"It's similar to driving a car without an accelerator," said Air Force Lt. Col. Matthew Hann, 81st Medical Operations Squadron interventional cardiologist. "You can coast along very slowly, but when it comes time to climb a hill, you don't have an accelerator to get the RPM's up to climb the hill and a heart rate is the same way. If (your) heart rate is too low you don't have the energy to do activities you once enjoyed."

Pacemakers are the most common way to treat bradycardia and restore the heart's normal rhythm by sending electrical impulses to increase heart rate. The Micra Transcatheter Pacing System is a new type of heart device that provides patients with the most advanced pacing technology at one-tenth the size of a traditional pacemaker.

"This revolutionary technology will greatly improve patient outcomes and satisfaction," said Air force Col. Louis Gallo, 81st MDOS commander.

Lt. Col. (Dr.) Matthew Hann, 81st Medical Operations Squadron interventional cardiologist, inserts a Micra Transcatheter Pacing System at the Keesler Medical Center April 13, 2017, on Keesler Air Force Base, Miss. The Micra Transcatheter Pacing System is a new type of heart device that provides patients with the most advanced pacing technology at one-tenth the size of a traditional pacemaker. Keesler is the first Air Force hospital to offer the world's smallest pacemaker for patients with bradycardia. *U.S. Air Force photo by Kemberly Groue*

Physicians at Keesler elected to use Medtronic's Micra TPS because, unlike traditional pacemakers, the device does not require cardiac wires (leads) or a surgical "pocket" under the skin to deliver pacing therapy.

Instead, the device is small enough to be delivered through a catheter and implanted directly into the heart with small tines, providing a safe alternative to conventional pacemakers without the complications associated with leads — all while being cosmetically invisible.

The Micra implant, which sits entirely in the heart, is about the size of a vitamin and the same weight as a penny, Hann said.

In addition to being undetectable and boasting a 12-year battery life, the breakthrough Micra TPS technology automatically adjusts pacing therapy based on a patient's activity levels.

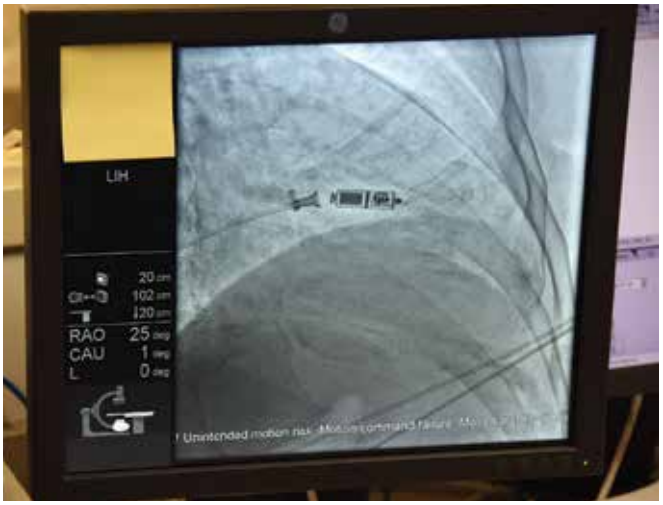
"Keesler cardiology has always been very advanced in our practices," Hann said. "We are very fortunate to be one of the first hospitals in the country to offer the smallest pacemaker in the world to our patients here at Keesler and also our Veterans Affairs patients who extend all the way from the Florida panhandle through to Alabama, Mississippi and Louisiana."

health.mil

Members of the 81st Medical Operations Squadron pose for a photo after a Micra Transcatheter Pacing System procedure at the Keesler Medical Center April 13, 2017, on Keesler Air Force Base, Miss. *U.S. Air Force photo by Kemberly Groue*

Members of the 81st Medical Operations Squadron insert a Micra Transcatheter Pacing System at the Keesler Medical Center. *U.S. Air Force photo by Kemberly Groue*

Medics prepare a Micra Transcatheter Pacing System for patient insertion at the Keesler Medical Center. The pacing system is about the size of a vitamin and the same weight as a penny. *U.S. Air Force photo by Katie Hursey*



Medical professionals insert a Micra Transcatheter Pacing System into a patient at the Keesler Medical Center April 13, 2017, on Keesler Air Force Base, Miss. *U.S. Air Force photo by Kemberly Groue*

Active
EMERGENCY

Aeromedical Evacuation Airmen Receive New Trainer

By Senior Airman Tristin English, 375th Air Mobility Wing Public Affairs

Airmen recently began using a new ground aeromedical evacuation fuselage trainer at Scott Air Force Base.

Through coordination with Air Mobility Command, the 375th Air Mobility Wing secured a C-130H aircraft that was scheduled for decommissioning from Little Rock Air Force Base, Arkansas, last year. The C-130 is the primary aircraft for this squadron and performs a large amount of patient evacuations while downrange, said Air Force Maj. Mark Hassett, 375th Aeromedical Evacuation Squadron operations flight commander.

"The C-130H FuT provides an innovative, cost effective, improved training platform for total force aeromedical evacuation and ground support personnel in terms of aircraft configuration familiarization and realistic, high-fidelity task training and mission simulation," said Hassett. "The C-130 FuT doubles the 375th AES simulation training capability."

The enroute care environment is dynamic and requires constant innovation to ensure the AE crews and ground support personnel are highly proficient in providing high quality, highly reliable, patient transport in support of its mission. "[The 375th] AES worked with AMC and C-130 training resources to determine what parts were needed to sustain a realistic training platform," said Hassett. "Critical components deemed unnecessary for AE training were removed from the aircraft and recycled so other agencies could use them."

The C-130H FuT provides a controlled environment where the 375th AES personnel can schedule realistic, high-fidelity task training and mission simulation. Ground support personnel and aeromedical evacuation crew members from any medical air force specialty code will be able to apply lessons learned. In addition, they will be able to sustain task proficiency to better support the AE crews and the Tactical Aeromedical Evacuation System mission.

Contractors worked with the 375th Aeromedical Evacuation Squadron to help move a C-130 fuselage trainer, or FuT, which is a platform where aeromedical evacuation crews can perform 100 percent of readiness skills.
Photo by Senior Airman Tristin English

"In conjunction with our KC-135 Simulation Learning Center/Cargo Compartment Trainer, both training platforms provide two of the three primary aircraft used for aeromedical evacuation in a low threat, hi-fidelity capacity for clinical as well as operational exposure."

The FuT also allows for hands-on muscle memory of configuration, placement of in-flight kits, electrical, oxygen, emergency exits, etc. Overall, 100 percent of required readiness skills are completed for the aeromedical evacuation technicians. Flight nurses have transitioned to foundational and operational skills as those are consistent with the semi-annual training requirements that are completed both in the CCT, FuT and flight, depending on training level.

"Any aeromedical evacuation squadron — Guard, Reserve, or active duty — are welcome to train on our FuT," said Hassett. "In fact, some already have trained with our simulation facility. In the future, we anticipate being a regional hub for AE training."

With the complexity of acquiring training missions for AE crews and ground support personnel, the addition of a C-130H FuT provides an innovative, cost effective training platform for the 375th AES to better sustain technically proficient, highly skilled, multi-functional AE crews and ground support personnel.

"When the FuT was temporarily parked on the flight line, it could only be partially used for AE training," said Air force Lt. Col. Catherine Bonhoff, 375th AES operations officer. "By moving it to a concrete pad with appropriate electrical support, the 502nd Training Development Squadron can restore and modify the interior so that it can be certified as an AE trainer.

"This means that aeromedical evacuation crew members can receive the same credit for designated training events on the FuT as they would for flying in the aircraft. If the FuT didn't move, then it would not have a stable power source and therefore could not be modified and used as a certified trainer."

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Active
EMERGENCY

Course Preps Army Doctors, Medics for Deployment

By Marcy Sanchez, William Beaumont Army Medical Center

William Beaumont Army Medical Center hosted the Army Trauma Training Center's Combat Extremity Surgery Course in coordination with Texas Tech University Health Sciences Center in El Paso, Texas, recently.

The course provided deploying surgeons, physician assistants, nurse practitioners and combat medics from all over the Army with the training and skills necessary to increase readiness and manage extremity trauma in a deployed environment.

"The course is specifically designed to prepare the Soldiers for the care of wounded while deployed," said Army Lt. Col. Mark McAndrew, director, CESC. "This is only the second iteration where we've practiced a specific model of removing tissue and cleaning debris that has blown into a wound from the ground."

In addition to providing healthcare providers improved ability to treat Soldiers in austere surroundings, the course instructs healthcare providers on the treatment of injuries ranging from blast trauma and burn management to external fixation and amputation.

"We teach them the basic surgical skills needed to take care of combat wounded," said Army Col. Mark Pallis, chairman, Department of Orthopaedic Surgery, WBAMC. "If they are out in some austere environment with limited equipment, they utilize this training to stabilize the patients and get them to a higher echelon of care."

Front-line medical providers often evacuate Soldiers to a higher echelon of care for more definitive treatment. While mode of evacuations for each casualty may differ, preventing further patient distress is important during evacuation.

Soldiers with Army Trauma Training Center's Combat Extremity Surgery Course prepare a cadaver limb for placement of an external fixator during the hands-on training portion of the two-day course hosted by William Beaumont Army Medical Center at Texas Tech University Health Sciences Center in El Paso, Texas. The course provides deploying surgeons, physician assistants, nurse practitioners and combat medics from all over the Army, the training and skills necessary to increase readiness and manage extremity trauma in a deployed environment. *U.S. Army photo by Marcy Sanchez*

"Over 80 percent of combat-injured patients have an extremity injury," said Pallis. "It's very important that our (medical) Soldiers know how to effectively manage extremity treatment."

The course also evaluated Soldiers' ability to utilize surgical field kits to apply external fixators to stabilize patients with fractures prior to evacuation. Real-life training to increase readiness on the battlefield was available to the Soldiers as they practiced wound debridement (cleaning) and external fixation procedures on cadaver limbs.

"(The hands-on training) included debridement of dirt and foreign material out of the wounds as well as using the external fixator to temporarily stabilize the patient's fracture to allow for some soft tissue rest during transfer," said Pallis. "This is for the austere, front-line, (first and second echelons of care) type of surgeries."

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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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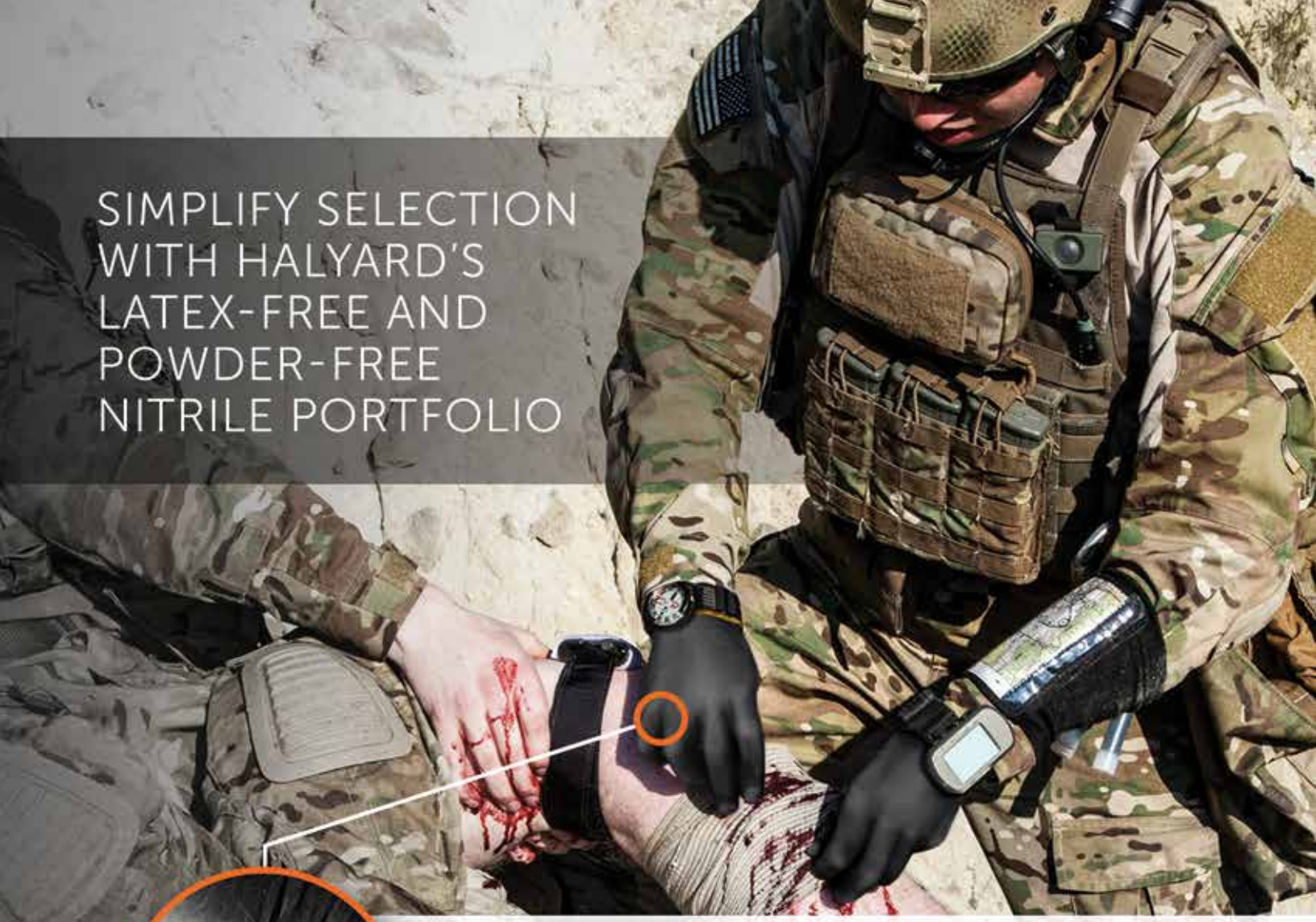

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- AQL of 1.0

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

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

Active
EMERGENCY

Always On Call – Active-Duty, Reserve Medevac Teams Train Together

By Air Force Staff Sgt. Daniel Phelps

The medical manikins were gently placed on litters and wrapped in blankets and bandages. Airmen shifted restlessly, inspecting bandages and triple-checking charts to ensure they were correct. The ambulance bus was backed up with its door open, as the service members waited for a phone call.

PFinally, the phone rang and the Airmen from the 60th Inpatient Squadron kicked into gear. The "patients" were efficiently loaded onto the bus and taken to the Travis flightline, where a C-130 Hercules aircraft from Pittsburgh Air Reserve Station, Pennsylvania, sat with running engines, ready to take the "injured" to their simulated final destination.

Patriot Delta Exercise

This was one of more than 700 events played out during Patriot Delta, an Air Force Reserve Command exercise designed for aeromedical evacuation squadrons. The key participants were from the 911th Airlift Wing at Pittsburgh Air Reserve Station, the 908th AW at Maxwell Air Force Base, Alabama; the 932nd Airlift Wing at Scott AFB, Illinois; and the 349th Air Mobility Wing here.

"Since all of our units are scheduled for deployment around the same time, Patriot Delta provided the opportunity for us to meet people we would work with and train on airframes we don't have at our home stations," said Air Force Maj. Kelly Rose, 349th Aeromedical Evacuation Squadron operations flight commander and planner for Patriot Delta.

Though most of those participating in Patriot Delta were reservists, there was a team of 10 active-duty Airmen from the 60th Inpatient Squadron that performed en route patient care in the exercise.

Patient Care

En route patient care consists of receiving a patient from a flight, taking them to a hospital via ambulance bus, coordinating a departure flight to the final destination, ensuring accuracy of the patient's paperwork, and keeping the patient as healthy as possible, until they deliver the patient on the departing flight.

The Airmen also staged all of the "patients" in Patriot Delta with a variety of injuries for the medical personnel to properly care for.

1st Lt. Andrea Nofi, 60th Inpatient Squadron nurse, stages a medical manikin at David Grant U.S. Air Force Medical Center at Travis Air Force Base, Calif., on March 24, 2017.
U.S. Air Force photo by Staff Sgt. Daniel Phelps

Patriot Delta participants carry a litter with a medical manikin patient onto a C-17 Globemaster III during Patriot Delta at Travis Air Force Base, Calif. on March 24, 2017. Patriot Delta brought in aeromedical evacuations squadrons from the from the 911th Airlift Wing at Pittsburgh Air Reserve Station, Penn., the 908th AW at Maxwell Air Force Base, Miss.; the 932d Airlift Wing at Scott AFB, Ill.; and the 349th Air Mobility Wing at Travis AFB. *U.S. Air Force photo by Staff Sgt. Daniel Phelps*

Air Force Capt. Erik Spiess, 349th Aeromedical Evacuations Squadron flight nurse (left), and Air Force Master Sgt. Rard Perkins, 911th Operations Group aircrew trainer, hand off a patient to members of the 60th Inpatient Squadron to secure on an ambulance bus for delivery to David Grant U.S. Air Force Medical Center at Travis Air Force Base, California. *U.S. Air Force photo by Staff Sgt. Daniel Phelps*

"We wanted to utilize all of our resources for this exercise," Rose said. "Not all bases have [en route patient staging facilities], and they are at deployed locations. Since we have them here at Travis, and have a great relationship with them, we reached out to them."

Reserve, Active Duty Partnership

The partnership for this exercise was mutually beneficial for both reservists and active duty participants, said Air Force Maj. David Whitehorn, 60th IPTS commander.

"We have a lot of new folks in our squadron," Whitehorn said. "Patriot Delta provided an excellent training opportunity for them."

The 60th IPTS is often very busy with real-world en route patient care, so new Airmen often don't have time to receive training where they can make mistakes, learn and ask questions, he added.

"Their ERPSF is always on call, so they don't always have training time," Rose said.

The partnership between the reservists and active duty members was important to this exercise. "This is real world," Whitehorn said. "When deployed, we do this together. There is no difference between active duty and reserves."

Increased collaboration was a key component to this exercise, Rose said. Once the patients were delivered onto the C-130, the Airmen jumped back onto the ambulance bus, skirting around the flightline to a KC-135 Stratotanker where they received more patients and delivered them to the hospital.

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Active
GASTROENTEROLOGY

New GERD Treatment – First in DoD – Performed at WBAMC

By Marcy Sanchez, William Beaumont Army Medical Center Public Affairs Office

A new Food and Drug Administration approved incisionless fundoplication procedure to treat gastroesophageal reflux disease (GERD) was performed for the first time in a Department of Defense Military Treatment Facility at William Beaumont Army Medical Center, Feb. 2.

The procedure is an alternative for eligible patients looking to relieve symptoms associated with GERD through a non-surgical and possibly non-medicated approach.

"It's a new procedure we've been trained on," said Maj. Michael Goldberg, chief, Gastroenterology, WBAMC, who operated on the patient. "The benefits for the patient include a quicker recovery, no incisions, less of a chance of infection and less post-operation side effects such as pain."

The introduction of the procedure was a relief for Staff Sgt. Mario Talavera who started suffering from GERD in 2008. "(Nausea) was a daily event. Even if I just drank water, anything," said Talavera.

The disease was impacting Talavera's life both at work and with his family. Talavera underwent a laparoscopic surgical procedure which wrapped his stomach lining completely around his esophagus to prevent the reflux of gastric acid. Unfortunately, after years of relief, the wrap slipped.

Talavera tried different strategies to combat GERD from medication to changing his diet, nothing helped. When WBAMC doctors informed Talavera of the new incisionless procedure he agreed to the treatment.

"They walked me through everything that was going to happen and explained it to a T," said Talavera, a native of Phoenix.

"The difference is, in surgery they need to go in (laparoscopically) and wrap the esophagus from the outside, but with (the new procedure) we can go through the mouth into the stomach, grab the top part of the stomach and fasten it around the esophagus," said Goldberg. "(Talavera) was a good candidate because he continued to have heartburn symptoms and has had a prior surgery that he responded well to."

According to Maj. Christopher Calcagno, gastroenterologist, WBAMC, while there are other procedures available to treat GERD, the new procedure is the most effective evidence-based procedure available for patients who meet certain criteria.

Maj. Michael Goldberg (left), chief, Gastroenterology, William Beaumont Army Medical Center, and Maj. Christopher Calcagno, gastroenterologist, WBAMC, speak to Staff Sgt. Mario Talavera, motor transport operator, 377th Transportation Company, 1st Armored Division Sustainment Brigade, following the first incisionless fundoplication procedure to treat gastroesophageal reflux disease (GERD) performed in the Department of Defense, at WBAMC, Feb. 3.

"Before this procedure there were only a few options, one was medications, another was surgery," said Calcagno. "It's another tool in treating reflux for the right patients and a good option."

According to Goldberg, other differences include the ability to belch, where those who have had surgery may not be able to burp anymore and those with the new procedure may still do so.

"There's a whole gap in the middle (of treatment options) where people didn't want either medications or surgery, but still had symptoms that needed to be controlled," said Calcagno. "This procedure fills in that gap."

When asked if he felt any difference with his symptoms a day after the procedure, Talavera responded, "Oh yeah. It's a whole lot of relief."

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A Surgical Solution for Heartburn Without Incisions Now Being Performed at William Beaumont Army Medical Center in El Paso, TX

TIF® procedure for reflux to be available soon at Womack Army Medical Center in Fort Bragg, NC

What may have seemed like science fiction, surgery without an incision, is now a reality that is giving patients suffering from chronic acid reflux or gastroesophageal reflux disease (GERD) a normal life. Doctors at William Beaumont Army Medical Center performed their first TIF procedure for the treatment of GERD on February 2, 2017. Womack Army Medical Center will begin offering the TIF procedure in the coming months.

In a healthy patient, there is a natural valve between the esophagus and the stomach that forms a physical barrier preventing stomach fluids from backwashing, or "refluxing," up into the esophagus. In a patient with chronic GERD, this valve has become dysfunctional. Many patients take reflux medications such as PPIs (proton pump inhibitors), which suppress acid production, to help relieve their heartburn symptoms. Even with PPIs, they are still unable to eat the foods they want or need to sleep sitting up to reduce nighttime reflux. In addition, recent studies have shown that long-term use of PPIs is linked to inadequate absorption of minerals[1], chronic kidney disease[2] and dementia[3]. GERD sufferers just want to get back to living normal lives.

TIF is an acronym for transoral incisionless fundoplication, and the advantage is that it is 'surgery from within' performed through the mouth. Based on the same well proven principles of conventional, more invasive laparoscopic GERD surgery, the TIF procedure reconstructs the valve between the esophagus and the stomach to prevent reflux. Because the procedure is incisionless, there is reduced pain, no visible scar and most patients can get back to their normal activities within a few days.

In a 2016 randomized controlled study reporting outcomes at three years after the TIF procedure[4], 90% of patients experienced a reduction of their symptoms below the LPR threshold. More than 88% of patients experienced elimination of all daily troublesome atypical symptoms. And 71% of patients could completely stop taking their PPIs after the TIF procedure[4].

With millions of Americans diagnosed with GERD and not fully satisfied with their treatment options, the TIF procedure with the EsophyX® device offers an excellent alternative.

1. http://www.fda.gov/drugs/drugsafety/informationbydrugclass ucm213259.htm
2. Lazarus B, et. al., JAMA Intern Med. 2016 Feb 1;176(2):238-46.
3. Gomm W et. al., JAMA Neurol. 2016 Feb 15. doi: 10.1001/jamaneurol.2015.4791.
4. Trad KS, et al; Surg Endosc. 2016 Sept 21 (TEMPO 3-Year follow-up)

Active
MENTAL HEALTH

Comprehensive Airman Fitness: Mental Stability

By Senior Airman Aaron J. Jenne, 436th Airlift Wing Public Affairs

For a machine to function properly, the screws must be set, balance maintained and gaskets must be in good condition. Maybe that's why mental instability is often characterized as having a loose screw, being out of balance or blowing a gasket.

If a machine malfunctions, a mechanic attempts to diagnose the problem by inspecting the parts — identifying missing, misaligned or broken items — and coming up with a plan. At its simplest, mental health care is very much like machine repair, but the way it is done is much more nuanced. The problem isn't mechanical or visible, and many times, the person seeking help doesn't know how to verbalize what's wrong.

Recognized as one of the four domains of Comprehensive Airman Fitness, the Air Force describes mental wellness as "the ability to effectively cope with unique mental stressors and challenges needed to ensure mission readiness."

"In CAF, all the domains are important," said Master Sgt. Kevin Burke, the 436th Airlift Wing CAF and Resilience Program manager. "You can think of each domain as a leg. If you knock out one of the legs, we're going to be unstable. The mind is special, because it drives everything. If we don't have a good grasp on what's going on inside our heads, we get lost pretty easily."

While the mental domain is one of four, each one is directly tied to the other three.

According to Burke, the spiritual domain is each individual's core. It's what motivates them. When people strengthen their minds through learning, their

spiritual domain benefits through deeper understanding.

As a person strengthens their physical body, their mental strength and fortitude also increase. Chemicals are released through exercise that help ease the mental stress, and achieving personal goals is rewarding.

People who can't control themselves mentally often find it hard to keep friends, so it's easy to see how mental stability affects the social domain. Friends and family can also help people thrive in trying times when they form a strong support network and offer good advice.

Burke and other master resilience trainers teach four main principles that impact mental resilience: awareness, decision making, adaptability and positive thinking. He described them as:

Awareness is being aware of one's self and others, or social awareness. It takes effort; nobody is automatically an expert at dealing with themselves or others.

Decision making is important in the Air Force, because young Airmen are often trusted to make life-or-death decisions, or charged with expensive aircrafts and equipment. Leaders need to know they can make sound decisions.

Adaptability is the ability to cope with change. In the military, change is the only constant. At any moment an Airman could receive orders or be assigned a new position. How they deal with stress is extremely important.

Positive thinking is the ability to find the positives in any situation. Few people wake up every morning in a good mood. It takes time and effort to stay positive.

Through these four principles, Burke urges Airmen to observe and evaluate their ABCs: activating event, beliefs and consequences.

"It's about slowing down and analyzing the consequences of your actions," Burke said. "Is how you're acting getting you where you want to go, or is it interfering with your performance, values, goals or your relationships? If so, you might need to look at your playbook and pick a new play. You need to try something else to get a different result."

Mental stability also significantly impacts one's success and ability to cope in the military.

This not only applies to the "stressors and challenges" associated with the Air Force mission, but also the unique impacts it can have on other aspects of Airmen's lives, said Tech. Sgt. Rouven Sefcik, the 436th Medical Operations Squadron mental health flight chief.

Oregon Air National Guard Master Sgt. Shelly Davison, a public affairs specialist, left, and DeAnn Smetana, Director of Psychological Health, assigned to the 142nd Fighter Wing Headquarters, discuss upcoming classes and activates during a Comprehensive Airman Fitness working group meeting.

For a machine to function properly, the screws must be set, balance maintained and gaskets must be in good condition. Maybe that's why mental instability is often characterized as having a loose screw, being out of balance or blowing a gasket.

"When a person deploys, it puts a lot of stress on the whole family," Sefcik said. "You might be the one deploying, but the rest of the family needs to pick up the slack. When you get back, things may be different. You might not feel at home anymore. Somebody else may have the job you used to do. It's easy to feel lost, and it's hard to find your way back."

Sefcik said the process of re-assimilation often brings people to their 'rock-bottom,' which can be a good place to be if it urges a person to reach out for help. Mental health, Military Family Life Counselors and Military One Source are all agencies or people that can provide mental healthcare.

Perhaps one of the most important factors of mental health is simply identifying the feelings, thoughts and emotions an individual is experiencing, Sefcik said.

"A lot of times we feel a certain way but we can't explain exactly what we're experiencing," Sefcik said. "If you don't know what it's called that you're experiencing, how do you care for it? Knowing is the key to resilience. Once you realize you aren't alone, and you aren't the only one feeling how you feel, you can start building that resilience."

Resilience is the ultimate goal of CAF, and each domain lends to the overall resilience of an individual, said Master Sgt. Kevin Burke, the 436th Airlift Wing CAF and Resilience Program manager.

"You're going to fail," Burke said. "What separates resilient people from the rest is how they react when they fail. Some people give up and never try again. Other people learn a lesson and try a different way. When they hit a wall, they try to find a way around the wall, over it or under it. There's a value in failure. I've heard it said: 'knowledge comes from experience, and experience comes from failure.' You've got to put yourself out there. When I do, I realize I could fail, or I could succeed, but either way, I'm going to grow."

Burke said he set out on a life journey to improve himself years ago. He didn't realize at the time that he was developing resilience through the principles of CAF, but now he sees how it is all in line with what he teaches now.

"I thrive now," Burke said. "I don't exist, I thrive. Anyone can get there. You don't have to be who you are now. You can work on it, but you have to accept it and work at it. When I look back at myself ten years ago, I see a completely different person. I don't do the same things. I don't treat people the same way. I have different facial expressions. I've learned and fallen in love with learning. In ten years, when you look back, will you see a difference?"

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Active
MENTAL HEALTH

Taking Care of Airmen: How Air Force Mental Health Services Helped an Academy Leader

By Ray Bowden, U.S. Air Force Academy Public Affairs

Chief Master Sgt. Max Grindstaff, the Academy's command chief, said taking advantage of Air Force mental health support services helps him cope today with the deaths of nine Americans he served with in Kabul, Afghanistan.

"I sought counseling because I needed it," the chief said. "If I feel like I still need it, I'm going back. I owe it to my fellow Airmen. I owe it to my family."

Grindstaff served as the NATO Air Training Command and 438th Air Expeditionary Wing command chief at the Kabul International Airport from May 2010 to May 2011.

He speaks fondly of his nine coworkers, two of whom were Academy grads.

"We all got there at different times in our tours and many were due to depart within a few months of me," he said. "We all talked about how it would be to leave together. I was as close to them as I was to any Airman. Some of them I lived next door to in the dorm."

Grindstaff was nearing the end of his deployment and "everything was going smoothly," he said, until April 27, 2011, when an Afghan pilot killed all nine with a firearm. The chief's eyes filled with emotion when describing this inside attack and the loss the victims' families must still feel.

That morning, Grindstaff was in an office a few doors down from a first-floor operations center in the Afghan Air Force Headquarters building. On his way into this office, he passed the group as they headed into operations center.

"It was 10:11 a.m.," he said. "I remember looking at my watch."

The group included Lt. Col. Frank Bryant of Knoxville, Tennessee, an Academy graduate and F-16 Fighting Falcon pilot.

"Lt. Col. Bryant was an air operations guy," Grindstaff said. "He had the most beautiful deep southern voice. He was a complete southern gentleman."

The chief went to his office, about 100 yards from the operations center. Soon, "things got chaotic," he said.

"We got a text from someone inside the (command center)," Grindstaff said. "We hunkered down for a bit and established security on the building. Gunfire was reported and I ran outside. I ran back to the operations center and a medic stopped me. He said 'Chief, there's nine dead in there.' I asked him, 'Nine Afghans, nine contractors, nine what?' He said, 'Nine Airmen.'"

Later that day, the chief identified the victims' bodies and moved their gear into his room.

"You could tell from their positions some died defending each other," he said. "It was terrible. I had the personal effects of all these guys in my room. Their bloodied gear was a somber reminder of the tragedy."

Also killed were Maj. Philip Ambard, a Venezuelan immigrant and a former Academy Language Department assistant; Majs. Jeffrey Ausborn of Randolph Air Force Base, Texas; David Brodeur of Joint Base Elmendorf-Richardson, Alaska; Raymond Estelle II and Charles Ransom of Joint Base Langley-Eustis, Virginia; Capt. Nathan Nylander of Davis-Monthan AFB, Arizona; Master Sgt. Tara Brown of Joint Base Andrews-Naval Air Facility Washington, Maryland; and retired Army Lt. Col. James McLaughlin, a contractor from Santa Rosa, California.

Five Afghan soldiers were injured. According to Associated Press reports, at least one was shot in the wrist and the others suffered broken bones and cuts.

Though he knew the tragedy would affect him, Grindstaff pushed the thought aside in the immediate aftermath of the attack.

"I remember thinking, 'You've got to take care of your people,'" he said. "You keep telling yourself, 'You've got to take care of your friends. We've got to get them home to their families.' You just focus on the situation and the things you've got to do."

Still, for all the initial commotion, the chief knew he would eventually have to take care of himself. He met with an Army combat stress team chaplain three days after the attack.

Chief Master Sgt. Max Grindstaff is among the many Airmen who have benefited from the Air Force's mental health services. He took advantage of the mental health services in 2011 to help him cope with the aftermath of an inside attack while he was deployed to Afghanistan. The chief hopes his story encourages Airmen who witness or experience trauma to take advantage of the Air Force's numerous support programs and get help themselves. Grindstaff is the Air Force Academy's command chief. *U.S. Air Force/Carol Lawrence*

"I was still in shock in a lot of ways, but knew I had to see someone," Grindstaff said. "I didn't want to bring this home. After meeting with the chaplain, I knew I'd be better off if I was seen again after I got home and was able to put some distance between myself and the date of the attack."

Grindstaff said everyone kept a close eye on each other after the shooting.

"We tried to care for each other as best we could," he said. "I'm telling everyone to get help, to get seen, and the Airmen are checking on me saying, 'Chief, you too.' After this happened, they all said, 'Don't let this follow you. Get seen.' What Airmen do naturally is take care of other Airmen before they take care of themselves, so getting help for ourselves can often be the last thing on our mind."

Later, Grindstaff thought of Bryant.

"I heard his voice in my head saying, 'Get seen Max. Don't let this keep you down. You've tried to take care of everyone else, but now you do it. Get help,'" he said.

When the chief returned to his home station at Hill AFB, Utah, a few weeks after the attack, he took an Air Force post-deployment survey and within days, received a call from a mental health clinician assigned to the 75th Medical Group there.

"I answered that survey honestly, so I knew I would get a call. It was expected," he said. "So I went to mental health. I got help. I did not want to have to deal with the effects of this tragedy in 10 years. I did not want to have this yoke around my neck for the rest of my life. I did not want to increase the sphere of evil influence this attack could have on my life."

The chief visited a mental health clinician every two weeks for six months.

"It was very easy," he said. "When I first walked in, the staff asked if I wanted to use the (distinguished visitor entrance) because I was a chief. I said 'Heck no!' What kind of hypocrite would I be if I used a DV entrance? I'm not ashamed to admit I needed help."

The chief said he wasn't worried about being stigmatized for seeking help.

"There was a stigma back in the '80s when I came in, but 20 years of being on the battlefield has driven Airmen to be more

pragmatic," he said. "Leaders are much more comfortable with getting the help they need and encouraging their Airmen to get help. It's an issue of integrity. If Airmen see their leaders getting help, they're more likely to get it themselves."

While some argue this stigma still exists, a mental health clinician here argues strongly against that stereotype.

"Historically, there has been an inappropriate and undeserved stigma associated with mental health care — an impact on one's career, an indication of weakness, perception that only 'crazy people' go to mental health," said Maj. (Dr.) Chad Ackison, a clinical psychologist assigned to the 10th Medical Operations Squadron. "In reality, mental health is just that — health focused on wellbeing and improving the patient's quality of life. Although a diagnosis may be used by a clinician to identify symptoms that may inform treatment, ultimately we look at how these symptoms negatively impact someone's life and assist Airmen (to) create a plan to hopefully improve their wellness."

The goal of the Air Force's mental health services is to improve an Airman's wellbeing, Ackison said.

"Many no longer think in terms of mind-body dualism, meaning the mind is separate from the body, but rather embrace a holistic approach to health and wellbeing that assumes there's a connection between physical, emotional, behavior and the environment," he said. "This notion is referred to as the bio-psychosocial model and some clinicians would even add bio-psychosocial-spiritual model. By addressing all aspects of the person, we hope to make small changes in each of these areas to collectively improve overall wellbeing."

Airmen needing mental health support are not alone, Grindstaff said. "With every champion we have who has been helped, we know there are 10 Airmen privately battling problems," he said. "If you stepped into a room of 50 Airmen, I guarantee you at least half have seen trauma. So they are not the minority. The great preponderance of Airmen experience significant trauma in combat and our mental health clinicians are so very well equipped to help. You are absolutely not alone."

There's still work to be done, but mental health support services here and across the Air Force continue to improve, Grindstaff said. "We're almost there, but we can never rest on our laurels," he said. "You don't need a command chief to say they've gotten help for you to get help. Our services are more than credible in themselves."

The 10th Medical Group Mental Health Clinic offers comprehensive mental health services to include individual and couples counseling, psychological testing, educational classes, substance abuse education and treatment through the Alcohol and Drug Abuse Prevention and Treatment Program, and family services through family advocacy.

"The mental health clinic also oversees the Behavioral Health Optimization Program (BHOP) in Family Health, where behavioral health services are also offered," Ackison said.

"Services in the BHOP model focus on specific issues such as mild mood issues, partner relational issues, sleep, stress and etc., and can usually be resolved within four sessions."

Ackison said Airmen can expect a comfortable counseling environment but suggested they keep track of their medical documentation.

"In many cases, it benefits the patient to have medical or mental health issues documented for continuity of care between providers, ensuring they receive the highest quality of care," he said. "Documentation establishes a record that any issue that has developed has been treated, making mission-essential questions concerning worldwide qualification, clearance, cross training and etc., often more easily answered by the medical community."

Ackison said only limited information can be shared with an Airman's command unless a release of information is signed by the patient.

"Rare is the case in which a provider would need to speak with command; those cases are limited to safety issues, mission essential questions concerning deployment and weapons status and etc.," he said. "The majority of the issues mental health sees are quite amenable to treatment so it's truly in the Airman's best interest to seek help for an issue prior it escalates into something much bigger."

Grindstaff recommends Academy supervisors familiarize themselves with Academy mental health services.

"If you're genuinely committed to your people, seek out our mental health clinicians and services so you can help your Airmen and their families," he said. "Visit the organizations. If you lead Airmen, find out where to take them, arrange a visit, organize a commander's call attended by a clinician and tell your family how to get help. Seeing these clinicians face to face is so much better than an email or phone call."

Grindstaff credits the mental health counseling he received with helping him come to terms with the death of his friends and coworkers.

He's now able to share his story and think of these Airmen without being overcome with debilitating sadness, he said.

"I feel better every time I tell my story about getting help," Grindstaff said. "It makes me feel good. If I share this story with anyone and it encourages them to get help, it will be worth it."

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Active
MENTAL HEALTH

Depression Symptoms Can Increase with Concussion

Many service members who sustain a concussion also cope with depression. There is a distinct connection between depression and traumatic brain injury. In fact, depression diagnoses increase after a brain injury.

"Sometimes the challenge is [that] post-concussive syndrome can sound the same as depression," said Kelvin Lim, principal investigator for the Defense and Veterans Brain Injury Center location at the Minneapolis Veterans Affairs Health Care System. "It is important to be aware of overlap between the two."

TBI and Depression

Defense and Veterans Brain Injury Center research found that depression can strongly influence post-concussion symptoms following a concussion. The study shows that patients who are diagnosed with both a concussion and depression report more severe symptoms than patients with only a concussion.

Asking the right questions can help providers prescribe the right treatment. Through targeted questioning a provider can distinguish if the patient's post-concussive symptoms are similar to depression, or if the patient is experiencing co-occurring conditions. The right questions can lead to the right diagnosis. The right diagnosis leads to the right treatment.

Service Member Seeks Treatment

Air Force Master Sgt. Daniel Waugh noticed some things about himself right away after his TBI, including depression. Before the injury, he enjoyed hunting, fishing, working out and spending time with friends and family. All of that changed after his brain injury.

Both concussion and depression are treatable conditions. Staying engaged in treatment, and with a provider, is vital to successful treatment of TBI and depression. It is also important to remember that treatment may look different for each patient.

U.S. Army Sgt. Eric Puglio, right, of Foxtrot Battery, 1st Battalion, 41st Field Artillery Regiment, 1st Armored Brigade bandages Army Sgt. Derrick Rouse's head after he received a simulated injury.
U.S. Army photo by Staff Sgt. Carol A. Lehman

"I found myself not wanting to do things I enjoyed prior," Waugh said.

Treatment helped Waugh recover. At first, Waugh said he wasn't sure where to turn for treatment. He was skeptical about medicines until he gave them a chance and found that they worked. He also gave therapy a try.

"I started seeing mental health (providers)," he said. "It helped immensely to get things off my chest and out of my mind, and to get a fresh outlook at things."

Treatment Works

Both concussion and depression are treatable conditions. Lim stressed that staying engaged in treatment, and with a provider, is vital to successful treatment of TBI and depression.

It is also important to remember that treatment may look different for each patient.

"Effective use of different types of therapies (is helpful). In many cases different treatments are combined," Lin said. "As we know, no two people are the same."

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Active
NEPHROLOGY

New York Guardsman Says Deployments Make Him a Better Doctor

By Eric Durr New York National Guard

Ebola and malaria aren't diseases that doctors working here in the hometown of the Baseball Hall of Fame normally expect to deal with.

But Dr. William LeCates, a kidney specialist and medical director of Bassett Healthcare Center here, has experience with both diseases, as well as battlefield medicine, as a result of his other career as Lt. Col. William LeCates, a New York Army National Guard doctor.

His work in the military, LeCates said, has served to make him a better physician.

"It is difficult for me to be absent from my civilian work, but I come home again with a better appreciation for my own civilian role," LeCates said.

LeCates specializes in internal medicine. He joined the New York Army National Guard in 2009, putting the knowledge and skills he gained at Johns Hopkins University School of Medicine in Baltimore to work for American and allied military personnel.

Army Lt. Col. (Dr.) William LeCates, left, who serves as a doctor in the New York Army National Guard and a kidney specialist in private practice, said that his service in the New York National Guard has given him a greater breadth of medical knowledge that benefits his civilian and military patients.
New York Army National Guard photo

He said he always had an interest in serving in the military. However, attending medical school, establishing himself in a practice and having three kids along the way meant putting off that aspiration, LeCates said.

Finally, with his family settled in Cooperstown, his practice established and the realization that at age 39 he needed to join the military now or never, LeCates decided to seek a commission in the Army Medical Corps.

"The Guard was a perfect fit for me," he said. "I knew we could have our home, we could stay in our home. Debbie [his wife] and my kids could be secure and fixed in our schools and the community and I could carry out my military duties."

LeCates serves as a member of the New York Army National Guard's Medical Command. LeCates conducts medical readiness assessments at Camp Smith Training Site or Fort Drum along with treating soldiers during training periods.

Overseas Deployments

But his service has also meant deploying overseas, including twice to Afghanistan and once to Liberia. His first deployment in 2010 was with the Iowa Army National Guard's 334th Brigade Support Battalion at Camp Blackhorse, Afghanistan, as an augmentee to the battalion's medical company.

U.S. soldiers from the unit trained Afghan soldiers, and LeCates said he was the doctor charged with keeping them healthy while also working with the Afghan army medics.

It was a barebones medical clinic —"Role 1" in military parlance — where the job was to provide basic primary care, emergency treatment for injuries and wounds, and stabilize patients so they could be transported to more sophisticated treatment facilities, LeCates said.

His second three-month deployment, the standard for reserve component doctors, was in New Kabul Compound — an American military facility in the heart of Afghanistan's capital city — in 2013.

This time he worked at a major U.S. headquarters as one of the physicians for 800 American personnel. The compound was

also adjacent to an Afghan military hospital, where he worked with Afghan medical personnel to treat arriving casualties.

"I had a chance to do some mentoring with the Afghan military physicians," he said.

Service in Liberia

LeCates' most-recent deployment was a six-month mission to the West African country of Liberia with a 14-member detachment from the Michigan Army National Guard.

The Michigan Guard soldiers were in Liberia as part of Operation Onward Liberty, a mission to train and mentor the country's armed forces. LeCates volunteered for a six-month deployment, filling two three-month reserve physician deployment slots.

"We lived and traveled with the Liberians. Wherever they traveled, we traveled," he said. "They were always gracious hosts, but some of the areas were very rural. It was really hands-on."

As a doctor, the deployment offered an opportunity to see medical care at both the individual and large-scale levels, as the country dealt with the aftermath of the Ebola outbreak, LeCates said.

"The country is small enough, and the cities are close enough, that in a single day I could be in a Liberian clinic looking at young kids that are getting malaria, and in the evening I could be working at the ministry of health and helping to understand their Ebola response efforts," LeCates said.

He added, "In Liberia the medical experience, the diseases and diagnoses I saw, are ones I will never see in the United States."

LeCates said his military experience has been a tremendous benefit to his work as a doctor back home in Cooperstown, a place he chose for his career because he gets to perform complicated, challenging medicine in a small-town setting.

Military Leadership Training

"I think military leadership training is the best type of leadership training available," he said. "I am fortunate in my civilian job to have an opportunity for a medical administrative role here at the hospital, and that [military] training in mentoring and motivating helps."

The military medical system is also very effective at using lessons learned and making on-the-spot improvements in clinical care, he added.

"The civilian sector is slower at those changes. It has given me a chance to look at how a big system can bring about changes to make improvements," LeCates said. Military doctors, he added, have pioneered new trauma care techniques on the battlefields in Iraq and Afghanistan, and knowing those skills is always useful.

Army Lt. Col. (Dr.) William LeCates, left, shown on deployment, serves as a doctor in the New York Army National Guard and as a kidney specialist in private practice in Cooperstown, N.Y. He said that his service in the Army Guard has given him a greater breadth of medical knowledge that benefits his civilian and military patients. *New York Army National Guard photo*

"The Army is very good at training its deploying doctors to understand the basics of point-of-injury care, and how to keep the soldier safe," he said.

LeCates said he values his military medical duty, but he couldn't serve if he didn't have the support of his fellow doctors in Cooperstown as well as his family.

"They are very supportive," LeCates said of his family. "I think every time I come back from deployment, we as a family have to reassess. I have to pause and learn to be part of the family again."

Still, LeCates said he is proud of the part that he and other reserve component medical personnel play in taking care of American service members.

"I think it is a strength of the military medical system that many of the deploying physicians are Reserve and Guard," LeCates said. "They bring skills learned at home to benefit the soldiers."

defense.gov

Active
NEUROLOGY

Belvoir Hospital Opens Sleep Medicine Clinic

By Chris Walz

After more than a year of planning, budgeting, and forecasting, Fort Belvoir Community Hospital opened a Sleep Medicine Clinic March 1 to diagnose and treat active duty service members with sleep-related ailments.

The four-bed clinic, located on 6 South in the hospital's Oaks Pavilion, will work in coordination with the 10-bed Sleep Medicine Clinic at Walter Reed National Military Medical Center and provide a convenient location for patients who reside in the Northern Virginia and Southern Maryland parts of the National Capital Region.

The National Capital Region has long been a leader in collaboration and the sharing of medical resources. Cmdr. Alex Bustamante, Belvoir Hospital's director of Medicine, said one of the primary goals of enhanced multiservice markets — the joint service and regional approach to military health care — is to ensure patients receive the appropriate care when they need it, where they need it.

Providing Sleep Medicine and a Sleep Laboratory at Fort Belvoir Community Hospital for patients' convenience was a logical next step in the hospital's evolution, he said.

"This new clinic service was created in close cooperation with Walter Reed," Bustamante said. "Through our mutual efforts, we will be able to care for a large patient population here in Northern Virginia that we did not have the capability for in the past."

Melissa Mitravich, the officer-in-charge of Belvoir Hospital's new Sleep Medicine

Fort Belvoir Community Hospital sleep technician Twan McKnight applies conductive gel to simulated patient Sgt. 1st Class Tarik Outram, noncommissioned officer in charge of Belvoir Hospital's Department of Medicine, during the Sleep Medicine Clinic's "Day in the Life" exercise Feb. 27, 2017. Conductive gel is a substance applied to the skin prior to applying an electrode to help transmit the electrical signal transdermally. The exercise is designed to simulate the clinic's first patients, test its equipment, ensure its staff members are prepared for real patients, and iron out any kinks that may arise.
Photo Credit: Chris Walz

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PHILIPS
"With the **simplicity of these masks**, it really helps patients accept the therapy and treatment much better."
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continued from page 36

Fort Belvoir Community Hospital sleep technicians Hewan Worku and Michael Selassie prepare simulated patient Kendra Cheeks, administrator for Belvoir Hospital's Department of Medicine, during the Sleep Medicine Clinic's "Day in the Life" exercise Feb. 27, 2017. *Photo Credit: Chris Walz*

Clinic, said good sleep is an overlooked aspect to health and wellness that many military members often take for granted.

"Sleep is needed for a [service member] to perform to the best of his or her ability, and that means physically, mentally, and emotionally," Mitravich said. "If that [service member] is not at his or her best, it could compromise that person's safety, their teammates' safety, it could compromise the mission … Sleep is a critical cog in maintaining optimal health."

Mitravich, a lieutenant colonel in the Army Reserves, cited Army Medicine's Performance Triad — get quality sleep, engage in activity, and improve nutrition — as three keys to better wellness. She said exercise and eating a well-balanced diet are topics seen frequently on flyers or commercials and in various other campaigns. Sleep, though, tends to be ignored or sacrificed, she said.

It is purely by coincidence, but perhaps serendipitously so, that March 6 through 13 is National Sleep Awareness Week.

The Sleep Medicine Clinic is a referral service, meaning a patient will need a referral from his or her Primary Care Manager (PCM) to receive a sleep study. And, due to high number of service members needing sleep studies, the clinic is only for active duty personnel at the moment.

Mitravich acknowledged service members tend to be inherently healthier than civilians, and providing care to eligible civilian beneficiaries may provide more "bang for the buck," but emphasized the Sleep Medicine Clinic is still limited at only four beds and the primary focus is ensuring the medical readiness of the warfighter.

"Sleep Medicine shows how much [Belvoir Hospital] has grown since [it] opened [its] doors back in 2011. There's that natural walk-run phase and there's no doubt that we are running," said Mitravich, who most recently served as the medical director of the Fort Belvoir Warrior Transition Unit. "I can foresee the sleep services here expanding in the future, probably sooner than later."

Ebony Smith, the health system specialist for the department of Medicine, said she has worked on the project for past 10 months and the clinic's opening is the culmination of efforts from Facilities, Logistics, Information Management and Information Technology, and Walter Reed's Sleep Medicine service.

The sleep laboratory is carved out of existing inpatient rooms in the hospital's Oaks Pavilion, meaning the hospital did not need to perform a lot of construction or renovation to prepare the space. However, that doesn't mean there wasn't work to be done.

Notwithstanding the need to procure specialized equipment, like a continuous positive airway pressure machine, commonly called a CPAP machine primarily used by obstructed sleep apnea sufferers, the clinic utilized existing furniture to outfit its area.

"I am excited that through all the persistence hard work and dedication, that we are finally opening a sleep laboratory at [Fort Belvoir Community Hospital]," Smith said.

On Feb. 27, the Sleep Medicine Clinic held a "Day in the Life" event to simulate its first patients, test its equipment, ensure its staff members are prepared for real patients, and iron out any kinks that may arise.

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Karen Robbins, registered respiratory therapist, prepares her patient, Tech. Sgt. Robert Stelly, for a sleep study at Wilford Hall Ambulatory Service Center. *U.S. Air Force photo by Harold China*

Obstructive Sleep Apnea is the most common sleep disorder, explained Army Col. (Dr.) William Frey, Brooke Army Medical Center sleep expert and consultant to the Surgeon General sleep medicine.

Individuals with OSA often wake up choking due to lack of breath. Sleep clinics prescribe Positive Airway Pressure devices to open airways and allow patients to breath regularly – ensuring a full night's rest.

Active
NEUROLOGY

Can You Get a Good Night's Sleep in the Military?

By Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury

Getting a good night's sleep can be difficult for service members. The demands of military life are often at odds with proper rest, but even on active duty, you have options to improve your sleep.

Studies of service members by the Rand Corporation show that poor sleep can lead to a variety of mental and physical health concerns, including increased risk of posttraumatic stress disorder or depression. Poor sleep can also cause problems such as fatigue or daytime impairment during daily tasks.

Many strategies for getting enough rest involve altering your sleep environment, your bedtime or wake-up time. These strategies assume you have control over your schedule and quarters. Often, you don't control these factors, especially while deployed. Issues such as low manpower, fast-paced work and frequent shift jobs can increase fatigue. What's more, noise and light may be impossible to regulate.

Although these factors make it difficult to get enough sleep, service members do have some options, said Capt. Anne Dobmeyer, a clinical health psychologist with the Deployment Health Clinical Center:

- Sleep masks and ear plugs can help service members cope with environments they are unable to control.
- Avoid electronic use and blue light. Light from screens and electronic devices can interfere with sleep.
- Don't exercise, eat, or drink in excess in the two hours before bed.
- Be careful with alcohol, nicotine and drug use. Though these substances might help you relax, they inhibit sound sleep.
- Use the bed for sleep and sex only. Avoid reading or doing other activities in bed.

Though napping isn't usually encouraged, it's a way to cope when your schedule doesn't allow for regular rest. "Naps can be used when needed if there is diminished opportunity for sleep due to duty requirements," Dobmeyer said. "However, in most cases, eliminating naps and focusing on having a regular bedtime and waking time lead to better sleep."

Soldiers from the 509th Parachute Infantry Regiment try to sleep during a 19-hour flight from Alaska to Australia.
U.S. Army photo by David Vergun

Service members can also take advantage of sleep resources from AfterDeployment and the Dream EZ app for help with better sleep habits.

Involve Your Commander

Communicating with your leadership can make a difference for everyone in the unit. Educating leaders on sleep health is an important part of sleep wellness, because poor sleep makes it harder for everyone to accomplish the mission. A recent study determined that there is a direct link between "sleep leadership" and soldier morale.

"Eliminating naps and focusing on having a regular bedtime and waking time lead to better sleep."

"Consultation with leaders related to sleep could include recommendations regarding how frequently shifts are changed, or housing same-shift members in the same section of the dorms or barracks," Dobmeyer said.

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Active
OBSTETRICS & GYNECOLOGY

Providing TLC for ICU Babies

By Ms. Suzanne Ovel (Army Medicine)

Some babies are born too early, before their bodies are ready to keep their breathing or their temperatures steady. Others may have a birth defect like a cleft palate which requires specialized feeding before surgery. Still others may be born with a narcotics addiction, or with an infection, or with heart disease.

Whenever the hospital's tiniest babies need specialized treatment, they're placed in the care of the highly-trained nurses of Madigan Army Medical Center's Neonatal Intensive Care Unit.

The staff knows just how harrowing having an ill or premature baby can be, so they strive to make the NICU a welcoming place for parents to be with and even help care for their babies.

"Whenever they want to come in, even if it's 3 o'clock in the morning to visit their baby, the nurse is at the bedside," said Kristy Rowland, the clinical nurse officer-in-charge of the NICU.

While the NICU cares for anywhere from 6 to 16 babies a day, the NICU nurses realize that the parents need some extra care as well.

"You give the babies the TLC, but the parents need emotional support," said Carmelita Rivero, the unit's assistant CNOIC.

Much like an adult ICU, needing the care of a neonatal ICU is not something most families anticipate. "I don't think any parent or family who goes into being excited about a pregnancy ever thinks about being in the NICU, so it's a very hard deviation from the idea of the birth plan," said Rowland.

New mom Kimberly Neifert watches NICU Nurse Brandy Lor check the breathing rate of her daughter Ruelyn at Madigan Army Medical Center. Premature babies experience faster heart rates than adults and may also pause longer between breaths due to immature breathing patterns. *U.S. Army photo by Suzanne Ovel*

While the NICU staff offers emotional support to families — bringing in social workers and chaplains as well — they also provide individualized training for parents on everything from gavage (or tube) feeding to changing diapers to explaining complicated medical care.

Care for infants gets even more complicated because the physiology of infants can be markedly different than adults; breathing rates are faster, blood pressure is lower, and the healthy range of lab results such as pH blood gasses can vary more safely in infants than adults.

"Things that we might see in adult labs or procedures might be opposite in neonates, so it's very different for how you care for the entire patient," said Rowland.

Likewise, whenever babies are given medications the NICU staff is meticulous on how they dole it out, said Rivero.

Despite the years of experience each NICU nurse brings, two nurses pair up to give every single medication to ensure they give the appropriate dosage based on the baby's weight at the right time and in the best way.

The NICU's ability to provide Level III care means they can provide nearly all of the highly specialized care that infants might need; in fact, Madigan sees regional naval patients as well as transfers from Korea and Hawaii whose parents often come here as compassionate reassignments.

Babies stay as short as 24 hours when they're being observed for reaction to a medication, for instance, and as long as several months; premature infants can be cared for at the NICU as early gestation as 23 or 24 weeks.

"Madigan's NICU in particular has some of the highest outcomes across the nation" in areas such as infection, chronic lung disease and more, said Rowland.

Rivero credits those high rates to the experience of the NICU staff; most NICU nurses here average about 10 years' experience in the NICU and served prior as maternal child nurses before that.

Rowland also points to the culture of using evidence-based practice to provide the best patient care.

"There is a passion in here to do what's best for the baby," said Rowland. "It's really a community; people stay here because we love this job. Taking care of Soldiers and their babies means a lot to us."

While Rivero got her start in the field as a military pediatrics nurse who transitioned to NICU nursing in the 1990s, Rowland grew up watching her mom, also a NICU nurse, make a difference in the lives of some of the most vulnerable patients. She went into NICU nursing to give families that same hope herself. The best outcome, she said, is when parents come back to visit with the staff and show off their healthy babies.

"It's amazing to know that you can make a difference," said Rowland.

army.mil

Womack Tops Quality Ratings in Care for New Moms, Babies

By Eve Meinhardt WAMC

According to numbers collected by the National Perinatal Information Center in 2015, Womack Army Medical Center's rates are better than both National and Department of Defense hospital averages in perinatal quality measures of the care associated with delivering babies.

Jamie Smith, left, an ultrasound technician at Womack Army Medical Center, performs an ultrasound on first-time mom, Jennifer Meilicke.
U.S. Army photo by Eve Meinhardt

The NPIC is a non-profit organization with expertise in analyzing large data sets. As a third party, hired by the Joint Commission and the Military Health System, they collect data at civilian and military hospitals to establish benchmarks.

With one of the busiest Labor and Delivery sections in the Department of Defense, Womack Army Medical Center knows the importance of providing safe, quality care to new moms and their babies. Army Lt. Col. (Dr.) Mark F. Sewell, Maternal Fetal Medicine, WAMC, said that the hospital has statistically better rates than DoD and national averages in five key areas that indicate perinatal quality.

The key areas are the postpartum hemorrhage rate, the primary cesarean rate, shoulder dystocia, the birth trauma rate and the unexpected newborn complication rate.

"Postpartum hemorrhage is when the mother loses a greater than average amount of blood, usually more than one liter, during delivery," said Sewell. "That rate in the overall NPIC database is 3.6 percent and the DoD rate is 3.4 percent. Womack's rate is well below both those numbers, with a rate of 2.6 percent."

The numbers in the other categories show similar results. The primary cesarean rate refers to the number of moms who have never had a cesarean section before requiring one. The cesarean rate is seen as a measure of perinatal quality. Womack's rate was the same as the DoD rate of 13.8 percent, both besting the NPIC database rate of 18.2 percent.

Shoulder dystocia is a life-threatening delivery complication associated with poorly controlled gestational diabetes and obesity. The WAMC rate, one percent, is significantly better than the NPIC (2.4 percent) and DoD (2 percent) averages.

"Womack's rate of shoulder dystocia is the lowest rate in all of the Department of Defense medical centers," said Sewell.

The unexpected newborn complication rate addresses newborn complications from "low risk" deliveries. This measure is one evaluated by the Joint Commission. Once again, WAMC has the best rate in DoD, with a rate of 3.1 percent compared to the DoD rate of 3.8 percent. Both rates best the NPIC database national average of 5 percent.

"Birth trauma covers injuries to the baby during delivery," said Sewell. "This could include fractures and lacerations. It's multifactorial, but it's still an indirect measure of prenatal quality and a direct measure of obstetric quality.

"Womack has the lowest rate in the Department of Defense in birth trauma, as well," he continued. "The rate here is .11 percent. It's statistically better than the national average of .17 percent and the DoD average of .37 percent."

Sewell said that there many factors in the delivery success at WAMC, but that it really comes down to the staff.

"We practice multidisciplinary obstetrics," he said. "The nurses, nurse midwives, nurse practitioners and physicians work together as a team to provide care. We also have a robust residency program where we use evidence-based best practices that continue to improve our outcomes."

While the numbers show a broad view of the quality care provided by the WAMC team, Sewell said, it really comes down to ensuring each individual patient gets the treatment they need.

"We provide good care and that shows in our birth outcomes," he said. "However, it's really about taking the best possible care of each pregnant mom that comes through our doors."

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Active
OBSTETRICS & GYNECOLOGY

WBAMC Provides Newborn Blanket to Minimize SIDS

By Marcy Sanchez, William Beaumont Army Medical Center

William Beaumont Army Medical Center, as part of its Healthy Baby Campaign, began issuing a safe sleep blanket, a toe-to-neck zip-up blanket with cutoff sleeves, designed to help newborns stay warm while reducing the risk of Sudden Infant Death Syndrome for all newborn babies, recently.

"When babies roll over they might pull the blanket over their head, and can't get the blanket off, increasing the risk for suffocation," said Dr. Stacey Frazier, chief, Inpatient Pediatrics, WBAMC. "The blanket keeps the baby from being able to pull over their face so the baby can stay warm and sleep comfortably in their cribs."

According to the American Sudden Infant Death Syndrome Institute, there are about 4,000 sleep-related infant deaths occurring each year in the United States. Asphyxiation, or accidental suffocation, caused by loose blankets or items that may fully or partially obstruct the airway from oxygen is included in the sleep-related SIDS figures.

The first safe sleep blanket was issued to newborn Karson Winters, son of Army Spcs. Samiya and Deshau Winters.

"(The safe sleep blanket) was a big help to me," said first-time mom, Samiya, aviation operations specialist, Headquarters and Headquarters Battalion, 1st Armored Division. "I went to sleep without worrying that he'd suffocate himself."

According to the American Sudden Infant Death Syndrome Institute, there are about 4,000 sleep-related infant deaths occurring each year in the United States.

During her second night at WBAMC's post-partum ward, Samiya, said she tried swaddling Karson with a regular blanket but kept having to wake up to check on him and swaddle again.

"At one point he had the (regular) blanket over his nose and it scared me," said Samiya. "With the (safe sleep blanket), he would still move his arms but that's normal. He didn't have the loose blanket and in danger of suffocating himself."

Karson Winters, son of Army Spc. Samiya Winters and Spc. Deshau Winters, naps while wrapped with a safe sleep blanket, a toe-to-neck zip-up blanket designed to help newborns stay warm while reducing the risk of Sudden Infant Death Syndrome, at William Beaumont Army Medical Center.
U.S. Army photo by Marcy Sanchez

"If you use a (regular) blanket to swaddle, the baby can work their way out of them and then it's a loose blanket," said Frazier.

Other recommendations to reduce the risk of SIDS include placing a newborn on a firm, flat surface, avoiding soft surfaces such as adult beds, sofas, chairs, and quilts, and avoiding smoking near the baby.

The safe sleep blanket also allows for movement of legs and prevents infant hip dysplasia, an instability or looseness of the hip joint which is sometimes caused by swaddling too tight.

"We want babies to be able to move their legs, it's good for their hip development," said Frazier. "If you swaddle too tightly, the hips may not develop normally, this is safer because their legs are free to move and still keeping them warm."

Each newborn at WBAMC is now being issued a safe sleep blanket for parents to take home with them.

"We're promoting the safe sleep regimen we want parents to use at home and setting them up for success," said Frazier.

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OBSTETRICS & GYNECOLOGY

David Grant Medical Center First Air Force Hospital to Receive Advanced Birthing Simulator

By Louis Briscese, 60th Air Mobility Wing Public Affairs

David Grant United States Air Force Medical Center here, is debuting a state-of-the-art birth simulator that will enhance the obstetric capabilities of its nurses, providers and technicians.

Providers and staff at DGMC's Maternal Child Flight, part of the 60th Inpatient Squadron, will now use the Complicated OB Emergency Simulator, which replaces the previous simulator, called the Mobile Obstetric Emergency Simulator. The COES is an improved training platform that will enhance the quality of analysis and feedback available from training sessions.

"The Defense Health Agency purchased five of the COES for the Department of Defense and chose Travis as the pilot base for the Air Force to provide the training and necessary feedback," said Air Force Maj. Jeanette Brogan, a clinical nurse specialist with the 60th IPTS.

If successful, the COES will be a standardized training platform that all clinical staff can train on to improve their obstetric skills.

One of the main capabilities of the new COES is the data reporting and tracking system it now features.

"We now can provide a standardized training platform for all clinical staff, which promotes a standardization for patient safety," said Theresa Hart, a nurse consultant and the program manager for perinatal, pediatrics and special medical programs within the DHA.

It will also help Travis document how they perform as a team.

"The computer instantly gathers data on how we work as a team and sends that information to the Air Force Medical Operations Agency and DHA," said Air Force Capt. Tamara Grimaud, the MCF commander and a clinical nurse specialist with the 60th IPTS.

The new equipment sends the data automatically, so evaluators get real-time updates on which providers are doing what tasks as well as an immediate after action report, she added.

Under the MOES, data was sent manually through an email and contained information about the type of training

conducted, who attended and training results. The new system helps providers and staff achieve the overall goal to increase patient safety while standardizing clinical processes.

The MCF conducts weekly trainings to hone their skills and prepare for emergencies. The scenarios are mandatory for all nurses and technicians assigned to the unit.

"All the scenarios we perform are considered high risk and low volume," said Brogan. "They're not things that happen every day but when they do, we need to know what to do and do it right away. It's important to know how the scenario goes, how quickly we respond to the emergency, and the actions we've taken to resolve the emergency."

The COES also comes with an infant and birthing simulator, a feature not available with the previous MOES simulator. The advantage of this is that scenario-based training can now be conducted on newborns, such as respiratory failure and the amount of pressure being applied when providing care.

"The infant and birthing simulator enhances the system's capabilities by providing necessary training that wasn't possible under the MOES," said Lt. Col. Barton Staat, the Air Force Surgeon General consultant for obstetrics and maternal-fetal medicine. "You can actually record the amount of force and

Medical staff conduct training on the new Complicated OB Emergency Simulator at Travis Air Force Base, Calif., April 10, 2017. Travis has been selected by the Defense Health Agency as one of five installations within DOD to be a pilot base for the new system. The system will provide a standardized platform for training for all levels of clinical staff to promote standardization on patient safety.
U.S. Air Force photo by Louis Briscese

pressure being applied during unusual birthing scenarios, like a shoulder dystocia delivery, for example."

The MCF has been at the forefront of advanced obstetrics training, even before receiving the COES. More frequent training by the flight led to the development of an improved algorithm used to help newborns breathe after delivery.

"We've had a lot of success with the training and improved the way we resuscitate babies by eliminating compressions," said Brogan. "Most of the time it is a respiratory issue that gives a newborn breathing problems; because of the frequency of the training and how skilled we've become, we don't even get to the compression stage anymore."

Because of these results, Travis plans to share information and best practices with other OB units around the Air Force.

The DoD performs more than 50,000 deliveries every year in its medical facilities worldwide, with Travis performing 30 to 35 deliveries each month on average.

"Most of the patients we see at this facility are low risk," said Air Force Capt. Danielle Siler, an element leader with the 60th IPTS. "Occasionally you have an emergency situation, and those are the ones we practice for.

It might not be something we're anticipating, but at delivery something shows up and we have to be ready to respond."

The new high-tech simulation equipment and training objectives are invaluable in helping prepare for each and every situation, said Siler.

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OBSTETRICS & GYNECOLOGY

Maternal Child Care Flight Welcomes Moms and Babies

By Kimberly Gaither, 88th Air Base Wing Public Affairs

More than 40 tiny bundles of joy are delivered every month in the Maternal Child Care Flight, located within the Wright-Patterson Medical Center.

The MCCF, formally known as the Family Birthing Center, is dedicated to aiding mothers and babies in the best possible delivery. It is the hospitals labor and delivery floor that delivers babies that are at least 36 weeks in gestational age. Pregnancies younger than 36 weeks are usually referred to a local high-risk medical center.

"The MCCF is highly equipped to deliver twins and care for Obstetrical emergencies. Mothers delivering triplets or premature infants, would be admitted to a local high-risk facility," said Major Tina Bradford, flight commander of Maternal Child Care Flight.

MCCF encourages family centered care which welcomes the husband and other support persons into the room of the mother and baby during delivery. Siblings are also welcome upon request of the mother. Although it may resemble a birthing center, the MCCF is a full-functioning hospital facility consisting of physicians, midwives, anesthesia staff, surgical staff, labor nurses and technicians, as well as a hands-on lactation consultant.

"It's your birthing experience. We're on the same team as the patient and have the same goal of a healthy mom and a healthy baby," said Bradford.

MCCF has four labor and delivery rooms, four post-partum rooms, and one triage room. The unit also houses two full-functioning operating rooms for mothers requiring a cesarean delivery. Each labor and post-partum room is equip with a private bathroom, shower, rocking chair and foldout bed for anyone who would like to stay overnight. Rooming-in is implemented with our babies, where the baby stays in the room all night with the mother after delivery.

The flight offers Lamaze classes and other child birth education courses. A lactation consultant is available to talk with mothers about feeding their baby and to inform them of the availability of breast pumps. They also take time to give expecting parents tours of the unit to help give them a feel of the floor and to help lower anxiety.

"Our staff is what makes this Maternal Child Care Flight special. We have phenomenal nurses and technicians, who focus on what is best for mom and baby," said Bradford.

wpafb.af.mil

Airman 1st Class Hannah Mahler simulates an expectant mother by using the MCCF simulation belly, while Capt. Krisha Prentice, R.N. and Capt. Laura Nowlin, R.N. help demonstrate the care mother and baby receive while admitted. *U.S. Air Force photo/Kimberly Gaither*

Active
ONCOLOGY

Lung Cancer Screening Saves Lives

By Jason Bortz, Naval Hospital Pensacola

Naval Hospital Pensacola has a new program to screen at risk patients for lung cancer, which is the leading cause of cancer-related deaths among men and women according to the American Cancer Society. Lung cancer can be very hard to cure, but early detection can lower the risk of dying from this disease.

"If we can find the cancer before symptoms appear, life expectancy is much better," said Navy Cmdr. Mark Seigh, radiologist, Naval Hospital Pensacola.

A patient at Naval Hospital Pensacola prepares to have a low-dose computed tomography test done to screen for lung cancer. Lung cancer is the leading cause of cancer-related deaths among men and women. Early detection can lower the risk of dying from this disease. *U.S. Navy photo by Jason Bortz*

Lung cancer is often preventable because it is related to smoking or second hand smoke. It is possible to develop lung cancer from exposure to radon or other environmental factors, but these are far less common. Screenings are usually done for patients who are between the age of 55 and 80, smoked at least 30 pack years and currently smoke or quit smoking less than 15 years ago. Pack years is the number of cigarette packs smoked every day multiplied by the number of years smoking.

"If you have a history of smoking, you should talk to your provider about whether a lung cancer screening is necessary or not," said Navy Lt. Harry Calisch, a physician at NHP.

The lung cancer screening program at NHP is currently for patients enrolled to care at one of the hospital's Medical Home Port Teams. If a patient is determined to be at risk for lung cancer, their primary care manager will refer them to the Radiology Department to have a low-dose computed tomography test done. The LDCT makes pictures of the insides of a person's lungs.

Petty Officer 1st Class Rodel Simon, a radiologic technologist at Naval Hospital Pensacola, monitors a low-dose computed tomography test on a patient to screen for lung cancer. The LDCT makes pictures of the insides of a person's lungs.

"The LDCT is similar to an x-ray and is the study of choice for lung cancer," said Seigh. "It only takes a couple of minutes and the results will usually be available to the physician that day." The results of the test will be analyzed for signs of cancer and a biopsy may be performed. If cancer cells are found, a treatment plan will be developed between the physician and patient.

"If cancer is discovered after the screening, the patient's provider will work with them to develop an appropriate treatment plan," said Calisch. "If discovered early, the chances for beating the cancer are significantly better than if it is discovered later." The screening program is not a substitute for prevention. The best way to reduce the risk of lung cancer is to not smoke. Quitting smoking can be very difficult, but help is available through your health care provider.

Each year, there are over 150,000 lung cancer deaths in the United States according to the American Cancer Society. If you think you may be at risk, contact your health care provider today.

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Overcoming Cancer, Embracing Life

By Tech. Sgt. Robert Barnett, Secretary of the Air Force Public Affairs

She placed a pillow under her right shoulder and put her right arm behind her head on the bed. Using her left hand, she pressed the pads of her fingers around her right breast gently in small circular motions, covering the entire breast area and armpit.

These routine checks only took a few moments of her time. But her eyes widened as her fingertips suddenly found a lump on her left breast, and her breath caught in her throat as she realized what it might mean.

"I make it a practice to check myself," said Lt. Col. Felicia Burks. "I had discovered a lump that felt like a marble in my left breast as I lay in bed one night. The lump … was hard and appeared mobile. … It's unusual when you're under 40 and don't have a history of breast cancer."

It was May 2014, and she was a health services administrator finishing a tour in the 673rd Medical Support Squadron at Joint Base Elmendorf-Richardson, Alaska, only six weeks shy of assuming a command position at Royal Air Force Lakenheath, England.

"I was beyond stoked to have that opportunity," the medical professional said. "Command is a privilege."

She went to the hospital and was diagnosed with "triple negative" breast cancer.

Breast cancer is called triple negative when it does not grow in the presence of three known receptors – the estrogen receptor, the progesterone receptor and the HER2, or human epidermal growth factor receptor 2. Approximately 15 to 20 percent of breast cancers are triple negative.

"When breast cancer interrupted my life, all those plans went out the window," Burks said. "I was devastated. There were times of uncertainty, and I was still determined to go (to Lakenheath) but that just wasn't the divine plan for me at the time. I started thinking about how to fight through this. I wanted to learn more about what had interrupted my life. I had to go to a medical board, and then go through surgery to remove the cancer."

With no family in Alaska, she said the prospect of going at it alone was nerve-wrecking.

Burks' Mother's Day gift to her mother that year was the disturbing news she (Burks) had breast cancer. "It shook something in me for a moment, but I realized I had to reach out so she could be a source of strength and support for me," she said.

Unfortunately, her parents were unable to travel, but her sister was able to be with her for the surgery.

Coming to terms with the disease, Burks said she wondered how it would affect her 23-year-long career. Growing up in Grady, Alabama, Burks wanted to enlist after being inspired by her uncle's service in the Army Reserves. "I was 17 at the time, my mom actually signed the papers for me to join the military," she said.

The multi-service veteran served in the Army Reserves as an automated logistics specialist from 1993 to 1999 before being commissioned into the active-duty Army, where she spent several years in various roles including an executive officer, administrative officer and a company commander.

But she said she dreamed of a different path, one of putting others before herself by helping people heal as a health services administrator.

"I wanted to be a medical professional, to give back and help make a difference in the lives of others," the lieutenant colonel said. "It's amazing; it's what I was born to do. It's the best job I could have had, I'm really having the time of my life."

After years of serving her country, it was her turn to be served.

Surgery to remove the cancer took place only five days after diagnosis. The surgery was followed by six weeks of fertility preservation and then four-and-a-half months of chemotherapy.

The chemotherapy took its toll. Burks was exhausted. She lost most of her eye brows. Her nails became brittle and dark. Her skin appeared dehydrated.

"When faced with anything, we can either fight it, or run from it," she said.

She shaved her head, rather than watch her hair shed away. Combating the effects of the therapy, she took vitamins and monitored her diet — she was determined to win.

In addition to her sister, Burks also found support through her wingman and church families.

Burks and Maj. Jennifer Pearl, a colleague in the same field, had been friends since 2006 when they met at Health Service Administration School at Sheppard Air Force Base, Texas. They re-connected at Elmendorf in 2012.

Lt. Col. Felicia Burks, the 92nd Medical Support Squadron commander, drops a pair of boxing gloves Oct. 21, 2016, at Fairchild Air Force Base, Wash. During her fight with cancer, Burks took up boxing as a way of staying physically fit. To her, the dropped gloves signify the end of her fight with cancer. *U.S. Air Force photo/Senior Airman Nick J. Daniello*

"I did what any friend would do — (I was) just a shoulder for her to cry on," Pearl said, who also served with Burks in the 673rd MSS. "She didn't have any family there, just a church nearby. She's one of the strongest people I've ever known. If you didn't know she was going through cancer, you wouldn't have been able to tell."

Pearl became Burks' rock. "My period of adversity drew us closer and she taught me wingmanship on the next level," Burks explained.

The believer also said she found support through a non-military community she held close to her heart. Burks will always consider Shiloh Mission Baptist Church in Anchorage to be her church home. They became her extended family.

"It was shocking and a surprise for her," said Edwenia Brown, the executive pastor for the church. "We prayed for her in the services, and then we just listened to what she needed. Whatever she needed, (whether) at home or in the hospital, we had a team that would respond, but mostly we were there to listen and walk with her."

The treatments took place in medical facilities including the military treatment facility, Mat-Su Regional Medical Center, Providence Alaska Medical Center and Alaska Regional Hospital. "It was an amazing dynamic, from my Air Force medical service providers, the whole medical team all the way to the providers within the community of Anchorage," Burks said. "It was outstanding, I was very impressed by the compassion, their professionalism and excellence."

Burks said the overall process developed her, and made her view life differently.

"I'll always reference the quote of Winston Churchill, 'Mountaintops inspire leaders but valleys mature them' because it reminds me that adversity almost always primes one for purpose," Burks said.

Burks advises women to pay careful attention to their bodies, to know when something isn't normal. She also stressed that its important people understand what resources are out there to help.

The Air Force officer and cancer survivor hopes people understand what resources are available. There are services to help patients get a wig or prosthetic, clean their house, or provide meals. There are a lot of options out there to help get through these difficult moments, she said.

"We're already trained to fight to overcome adversity, especially in the military," Burks said, sitting in her office at Fairchild AFB, Washington.

As a survivor, she hopes others will not quit, and will continue to believe in themselves and their purpose. "As I look at myself today, I can clearly see the difference," Burks explained she finally feels normal again as she adjusted her hair bun, perfecting her professional appearance as she prepared for another day as commander of the 92nd Medical Support Squadron.

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ONCOLOGY

Belvoir Hospital Becomes Second Military Hospital in the U.S. to Offer Cutting-Edge Liver Cancer Treatment

By Alexandra Snyder, Fort Belvoir Community Hospital Public Affairs

For patients battling cancer, quality of life is most often achieved through treatment options. At Belvoir Hospital, a new localized option — the first of its kind for any military hospital on the East Coast — is giving patients with liver tumors another choice to enhance their quality of life.

The targeted treatment delivers millions of the tiny beads to fight the tumor's growth and is injected directly into the liver artery. The process to insert the beads takes about 30 minutes and is minimally invasive. Following the insertion, patients are typically discharged within 4 to 6 hours. Side effects from the treatment can include flu-like symptoms in some patients, said Army Lt. Col. Llewellyn Lee, chief of Radiology at Belvoir Hospital.

Called SIR-Spheres Y-90 resin microspheres, the microscopic resin beads contain the radioactive isotope Yttrium-90 (Y-90) and emit radiation to kill cancer cells.

Due to their small size — about 1/3 the width of a human hair — they travel easily with the bloodstream directly to the liver tumors. The microspheres become lodged inside the microvasculature that supplies the tumor and kills the cancer cells through radiation, said Lee.

"This technology allows us to administer high doses of radiation directly to liver tumors without affecting other organs," he said.

> "This treatment is another tool for us to give patients diagnosed with liver cancer something invaluable — time," said Lee.

The localized therapy won't impact other parts of the body and works to control the progression of the disease. "This treatment is for patients who have disease or tumors in their livers and specifically tumors that have metastasized, or grown out from colon cancer," said Lee, who noted because the liver has a unique blood supply, doctors can target the tumors and preserve more healthy tissue.

We recently became the 1st military facility in the mid-atlantic to perform Y-90 liver cancer treatment! The palliative treatment is delivered through microscopic beads injected into arteries feeding the tumor. *Department of Defense photo by Reese Brown*

While the treatment improves quality of life, it isn't curative.

"This procedure is palliative," said Army Lt. Col. Shahnin Nassirkani, a Nuclear Medicine Fellow at Walter Reed National Military Medical Center on hand to watch the procedure at Belvoir Hospital. "But the beads can cause some tumors to shrink, extending patients' lives and the quality of them, with research showing improvements in patients are statistically significant."

Using only chemotherapy, analysts found that liver tumors progressed within about 14 to 15 months. Adding Y90, bumped that time up to around 22 months.

"This treatment is another tool for us to give patients diagnosed with liver cancer something invaluable — time," said Lee. "I'm thrilled to offer it at Belvoir Hospital to our patients who can benefit from it."

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Common adverse effects include fatigue, pain, and nausea. The majority of adverse effects are mild to moderate in severity and are manageable or resolve over time. For details on rare or more severe adverse effects, please refer to the TheraSphere® Package Insert at www.therasphere.com.[2,5,15]

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ONCOLOGY

Army Captain Defeats Cancer

By Stephen Standifird

At age 25, Monica Rosario was diagnosed with stage three colon cancer, a diagnosis that would start her on a personal battle, not only for her future as a Soldier, but for her life.

"When they told me, I felt very numb," Rosario remembered. She was a first lieutenant serving as a company executive officer in the Warrior Transition Battalion at Fort Bragg, North Carolina at the time.

Rosario's mentor and commanding officer at the time, Capt. Chinyere Asoh, said she understood what Rosario was about to endure.

"I served as a commander and, each day, I heard news of Soldiers going through the worst unimaginable concerns of their lives, but I stayed strong for them and their families," Asoh said.

"Whenever you are going through it, you don't feel like you are doing anything extraordinary because you are only doing what you have to do to survive," Rosario said.

Rosario confessed that, while she was undergoing treatment, it made her uncomfortable when people called her a hero. There was nothing she was doing that made her special, she believed.

"When you have to be strong and you have to survive, you don't feel like you are doing anything special," she said.

The Army provided Rosario with the time and support she needed in order to devote herself to recovery, she said.

"I can say the Army served me when I needed it most, and I am forever grateful," she said. "I know there were many times I could have quit. I could have settled for someone telling me I should medically retire. But I knew the Army had more in store for me."

Capt. Monica Rosario, a cancer survivor, is at Fort Leonard Wood awaiting her pick-up for Engineer Captain's Career Course. *Photo Credit: Stephen Standifird*

Rosario said it took about two weeks to recover from her surgery before she could start chemotherapy. Following six months of chemo, it took another two months before she was able to resume her physical training.

She fought hard to keep herself ready to return to full-duty so she could continue her career. Her will to fight was an inspiration to her husband.

"My wife is literally the strongest person I know," said Bernard McGee, a former military police officer. "She has been through it all and has mustered the strength to take on even more challenges. She is a true warrior."

Asoh agreed.

"Monica is a true fighter, and I am happy to state that she is a survivor," Asoh said. "Her illness did not define her. Rather, it broadened her view of life."

Rosario credits positive thinking and the support of her Army family for keeping her in the Army so that she could make it to Fort Leonard Wood to complete the Engineer Captain's Career Course.

"The Army's resiliency training has instilled in me the ability to stay strong and stay resilient in all aspects of life," she said. "Being resilient has helped me and still helps me on a daily basis. Seeking positive thought, and staying away from negative thoughts impact how we feel and how we live every day."

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Indication

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Important Safety Information

Warnings and Precautions

- Hypersensitivity reactions, including anaphylaxis, have been reported with or without known hypersensitivity to other 5-HT3 receptor antagonists
- Serotonin syndrome has been reported with 5-HT3 receptor antagonists alone but particularly with concomitant use of serotonergic drugs. Serotonin syndrome can be life threatening. Symptoms associated with serotonin syndrome may include the following combination of signs and symptoms: mental status changes, autonomic instability, neuromuscular symptoms, seizures, and gastrointestinal symptoms. Patients should be monitored for the emergence of serotonin syndrome, and if symptoms occur, discontinue AKYNZEO and initiate supportive treatment. Patients should be informed of the increased risk of serotonin syndrome, especially if AKYNZEO is used concomitantly with other serotonergic drugs

Adverse Reactions

- Most common adverse reactions: headache, asthenia, dyspepsia, fatigue, constipation and erythema

Drug Interactions

- Use with caution in patients receiving concomitant medications primarily metabolized by CYP3A4. The plasma concentrations of CYP3A4 substrates can increase when co-administered with AKYNZEO. The inhibitory effect on CYP3A4 can last for multiple days
  - Dexamethasone doses should be reduced when given with AKYNZEO. A two-fold increase in the systemic exposure of dexamethasone was observed 4 days after single dose of netupitant
    - Consider the potential effects of increased plasma concentrations of midazolam or other benzodiazepines metabolize via CYP3A4 (alprazolam, triazolam) when administering with AKYNZEO. When administered with netupitant, the systemic exposure to midazolam was significantly increased
- Avoid concomitant use of AKYNZEO in patients on chronic use of a strong CYP3A4 inducer such as rifampin as this may decrease the efficacy of AKYNZEO

Use in Specific Populations

- Avoid use of AKYNZEO in patients with severe hepatic impairment, severe renal impairment, or end-stage renal disease

*Multicenter, randomized, double-blind, double-dummy, parallel-group study. Primary endpoint: complete response (no emesis and no use of rescue medication) in the overall phase (0-120 hours). Patients received cisplatin (≥50 mg/m2 either alone or in combination with other chemotherapy agents). Randomization: AKYNZEO plus oral dexamethasone (dex) 12 mg Day 1 followed by oral dex 8 mg once daily on Days 2-4, or oral palonosetron 0.5 mg plus oral dex 20 mg on Day 1 followed by oral dex 8 mg twice daily on Days 2-4.
NCCN=National Comprehensive Cancer Network.
CINV=chemotherapy-induced nausea and vomiting.

Please see brief summary of Full Prescribing Information on the following page.

References: 1. AKYNZEO (netupitant/palonosetron) capsules. Full Prescribing Information. 2. The NCCN Clinical Practice Guidelines in Oncology®. Antiemesis (Version 2.2016). © 2016 National Comprehensive Cancer Network, Inc. http://www.nccn.org. Accessed July 22, 2016.

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BRIEF SUMMARY OF PRESCRIBING INFORMATION

DOSAGE AND ADMINISTRATION

Highly Emetogenic Chemotherapy, including Cisplatin Based Chemotherapy

The recommended dosage in adults is one capsule of AKYNZEO administered approximately 1 hour prior to the start of chemotherapy with dexamethasone 12 mg administered orally 30 minutes prior to chemotherapy on day 1 and 8 mg orally once daily on days 2 to 4.

Anthracyclines and Cyclophosphamide Based Chemotherapy and Chemotherapy Not Considered Highly Emetogenic

The recommended dosage in adults is one capsule of AKYNZEO approximately 1 hour prior to the start of chemotherapy with dexamethasone 12 mg administered orally 30 minutes prior to chemotherapy on day 1. Administration of dexamethasone on days 2 to 4 is not necessary.

AKYNZEO can be taken with or without food.

WARNINGS AND PRECAUTIONS

Hypersensitivity: Hypersensitivity reactions, including anaphylaxis, have been reported with or without known hypersensitivity to other 5-HT_3 receptor antagonists.

Serotonin Syndrome: The development of serotonin syndrome has been reported with 5-HT_3 receptor antagonists. Most reports have been associated with concomitant use of serotonergic drugs (e.g., selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs), monoamine oxidase inhibitors, mirtazapine, fentanyl, lithium, tramadol, and intravenous methylene blue). Some of the reported cases were fatal. Serotonin syndrome occurring with overdose of another 5-HT_3 receptor antagonist alone has also been reported. The majority of reports of serotonin syndrome related to 5-HT_3 receptor antagonist use occurred in a post-anesthesia care unit or an infusion center.

Symptoms associated with serotonin syndrome may include the following combination of signs and symptoms: mental status changes (e.g., agitation, hallucinations, delirium, and coma), autonomic instability (e.g., tachycardia, labile blood pressure, dizziness, diaphoresis, flushing, hyperthermia), neuromuscular symptoms (e.g., tremor, rigidity, myoclonus, hyperreflexia, incoordination), seizures, with or without gastrointestinal symptoms (e.g., nausea, vomiting, diarrhea). Patients should be monitored for the emergence of serotonin syndrome, especially with concomitant use of AKYNZEO and other serotonergic drugs. If symptoms of serotonin syndrome occur, discontinue AKYNZEO and initiate supportive treatment. Patients should be informed of the increased risk of serotonin syndrome, especially if AKYNZEO is used concomitantly with other serotonergic drugs.

ADVERSE REACTIONS

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.

The overall safety of AKYNZEO was evaluated in 1538 cancer patients and healthy volunteers in clinical trials. The data described below reflect exposure to AKYNZEO in 1169 cancer patients, receiving at least one cycle of cancer chemotherapy in 3 active-controlled trials, including 782 exposed to AKYNZEO for at least 4 cycles and 321 exposed for at least 6 cycles, up to a maximum of 12 cycles of chemotherapy. The median age was 55, 79% were female, 83% were White, 13% were Asian, and 4% were Hispanic. All patients received a single oral dose of AKYNZEO 1 hour prior to the start of each chemotherapy cycle. In all studies, dexamethasone was co-administered with AKYNZEO.

Cisplatin Based Highly Emetogenic Chemotherapy: In a single-cycle study of patients receiving cisplatin-based highly emetogenic chemotherapy, 136 patients were treated with AKYNZEO. Table 1 shows adverse reactions defined as adverse events reported at an incidence of at least 3% and for which the AKYNZEO rate exceeded palonosetron alone.

Table 1: Adverse Reactions Occurring in ≥3% of Cancer Patients Receiving AKYNZEO and Cisplatin Based Highly Emetogenic Chemotherapy (Cycle 1)

Adverse Reactions	AKYNZEO netupitant 300 mg/ palonosetron 0.5 mg (N=136)	Palonosetron 0.5 mg (N=136)
Dyspepsia	4%	2%
Fatigue	4%	2%
Constipation	3%	1%
Erythema	3%	2%

Anthracyclines and Cyclophosphamide Based Chemotherapy: In a study of patients receiving anthracycline and cyclophosphamide based chemotherapy, 725 patients were treated with AKYNZEO during Cycle 1, and 635 of these patients continued for up to 8 cycles in a multiple-cycle extension. Table 2 shows adverse reactions defined as adverse events reported at an incidence of at least 3% and for which the AKYNZEO rate exceeded palonosetron alone during Cycle 1. The adverse reaction profile in subsequent cycles was similar to that observed in Cycle 1.

Table 2: Adverse Reactions Occurring in ≥3% of Cancer Patients Receiving AKYNZEO and Anthracyclines and Cyclophosphamide Based Chemotherapy (Cycle 1)

Adverse Reactions	AKYNZEO netupitant 300 mg/ palonosetron 0.5 mg (N=725)	Palonosetron 0.5 mg (N=725)
Headache	9%	7%
Asthenia	8%	7%
Fatigue	7%	5%

In addition to the adverse reactions shown above, there were reports of concomitant elevations of transaminases > 3 x ULN and total bilirubin in both arms of the two trials that compared AKYNZEO to oral palonosetron, and the frequency of these elevations was comparable between treatment groups. See Table 3.

Table 3: Liver Function Laboratory Abnormalities

Laboratory Changes	AKYNZEO netupitant 300 mg/palonosetron 0.5 mg (N=861)	Palonosetron 0.5 mg (N=861)
AST > 3 x ULN and/or ALT > 3 x ULN with Total Bilirubin > ULN	3 (0.3%)	5 (0.6%)
AST > 10 x ULN and/or ALT > 10 x ULN with Total Bilirubin > ULN	–	2 (0.2%)
AST > 3 x ULN and/or ALT > 3 x ULN with Total Bilirubin ≥ 2 x ULN	1 (0.1%)	1 (0.1%)

In a multi-cycle safety study of 412 patients, the safety profile of AKYNZEO (n = 308) was comparable to aprepitant and palonosetron (n = 104) in patients undergoing initial and repeat cycles (median 5 cycles, range of 1-14 cycles) of chemotherapy, including carboplatin, cisplatin, oxaliplatin, and doxorubicin regimens. There were no reports of concomitant elevations of transaminases > 3 x ULN and total bilirubin in this study in either arm.

In a randomized, clinical non-inferiority study, that compared oral palonosetron 0.5 mg to intravenous palonosetron 0.25 mg in cancer patients scheduled to receive highly emetogenic cisplatin (≥70 mg/m²) based chemotherapy, there were two patients (0.5%; 2/369) in the intravenous palonosetron arm who had concomitant elevations of transaminases and total bilirubin. Neither experienced transaminase elevations of > 10 x ULN.

DRUG INTERACTIONS

Effects of AKYNZEO on other drugs

Interaction with CYP3A4 substrates:

Netupitant, a component of AKYNZEO is a moderate inhibitor of CYP3A4.

AKYNZEO should be used with caution in patients receiving concomitant medications that are primarily metabolized through CYP3A4. The plasma concentrations of CYP3A4 substrates can increase when co-administered with AKYNZEO. The inhibitory effect on CYP3A4 can last for multiple days.

Dexamethasone: A two-fold increase in the systemic exposure of dexamethasone was observed 4 days after single dose of netupitant. The duration of the effect was not studied beyond 4 days. Administer a reduced dose of dexamethasone with AKYNZEO.

Midazolam: When administered with netupitant, the systemic exposure to midazolam was significantly increased. Consider the potential effects of increased plasma concentrations of midazolam or other benzodiazepines metabolized via CYP3A4 (alprazolam, triazolam) when administering these drugs with AKYNZEO.

Interaction with chemotherapeutic agents: The systemic exposure of chemotherapy agents metabolized by CYP3A4 can increase when administered with AKYNZEO. Chemotherapy agents that are known to be metabolized by CYP3A4 include docetaxel, paclitaxel, etoposide, irinotecan, cyclophosphamide, ifosfamide, imatinib, vinorelbine, vinblastine, and vincristine. Caution and monitoring for chemotherapeutic related adverse reactions are advised in patients receiving chemotherapy agents metabolized primarily by CYP3A4.

Interaction with oral contraceptives: Clinically significant effect of AKYNZEO on the efficacy of the oral contraceptive containing levonorgestrel and ethinyl estradiol is unlikely.

Effects of other drugs on AKYNZEO

Netupitant, a component of AKYNZEO is mainly metabolized by CYP3A4.

In vitro metabolism studies have suggested that CYP2D6 and to a lesser extent, CYP3A4 and CYP1A2 are involved in the metabolism of palonosetron.

CYP3A4 Inducers: Avoid concomitant use of AKYNZEO in patients who are chronically using a strong CYP3A4 inducer such as rifampin. A strong CYP3A inducer can decrease the efficacy of AKYNZEO by substantially reducing plasma concentrations of the netupitant component.

CYP3A4 Inhibitors: Concomitant use of AKYNZEO with a strong CYP3A4 inhibitor (e.g., ketoconazole) can significantly increase the systemic exposure to the netupitant component of AKYNZEO. However, no dosage adjustment is necessary for single dose administration of AKYNZEO.

Serotonergic Drugs: Serotonin syndrome (including altered mental status, autonomic instability, and neuromuscular symptoms) has been described following the concomitant use of 5-HT_3 receptor antagonists and other serotonergic drugs, including selective serotonin reuptake inhibitors (SSRIs) and serotonin and noradrenaline reuptake inhibitors (SNRIs)

USE IN SPECIFIC POPULATIONS

Pregnancy

Pregnancy Category C

Risk Summary: Adequate and well-controlled studies with AKYNZEO have not been conducted in pregnant women. In animal reproduction studies, no effects on embryo-fetal development were observed following daily administration of netupitant in pregnant rats during the period of organogenesis at doses up to 3.7 times the human AUC (area under the plasma concentration-time curve) at the recommended single human dose to be given with each cycle of chemotherapy. However, a dose-dependent increase in adverse effects on embryo-fetal development was observed following daily administration of netupitant in pregnant rabbits during the period of organogenesis with doses at least 0.2 times the human AUC at the recommended single human dose to be given with each cycle of chemotherapy. Daily administration of netupitant in rats up to 3.7 times the human AUC at the recommended human dose during organogenesis through lactation produced no adverse effects in the offspring. In animal reproduction studies with palonosetron, no effects on embryo-fetal development were observed following oral administration during the period of organogenesis at doses up to 921 and 1841 times the recommended human oral dose in rats and rabbits, respectively. AKYNZEO should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Animal Data: Daily administration of up to 30 mg/kg netupitant in rats (3.7 times the human AUC at the recommended single human dose to be given with each cycle of chemotherapy) during the period of organogenesis produced no effects on embryo-fetal development. However, an increased incidence of external and skeletal abnormalities in rabbit fetuses was observed following daily administration of netupitant in rabbits at 10 mg/kg/day and higher (0.2 times the human AUC at the recommended single human dose to be given with each cycle of chemotherapy) during the period of organogenesis. These abnormalities included positional abnormalities in the limbs and paws, and fused sternebrae. Reduction in fetal rabbit weight occurred at 30 mg/kg/day. Maternal toxicity in rabbits (i.e. loss of bodyweight during the treatment period) was also observed at 30 mg/kg/day. Daily administration of up to 30 mg/kg netupitant (3.7 times the human AUC at the recommended human dose) in rats during organogenesis through lactation produced no adverse effects in the offspring.

In animal reproduction studies with palonosetron, no effects on embryo-fetal development were observed in pregnant rats given oral doses up to 60 mg/kg/day (921 times the recommended human oral dose based on body surface area) or pregnant rabbits given oral doses up to 60 mg/kg/day (1841 times the recommended human oral dose based on body surface area) during the period of organogenesis.

Nursing Mothers: It is not known whether AKYNZEO is present in human milk. Because many drugs are present in human milk and because of the potential for tumorigenicity shown for palonosetron in the rat carcinogenicity study, a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.

Pediatric Use: Safety and effectiveness in patients below the age of 18 years have not been established.

Geriatric Use: Of the 1169 adult cancer patients treated with AKYNZEO in clinical studies, 18% were aged 65 and over, while 2% were aged 75 years and over. The nature and frequency of adverse reactions were similar in elderly and younger patients. Exploratory analyses of the impact of age on efficacy were performed in the two trials that compared AKYNZEO to palonosetron. In Study 1 in patients treated with cisplatin chemotherapy, among the patients less than age 65 years, 115 were treated with AKYNZEO and 116 were treated with palonosetron alone. Among the patients 65 years or older, 20 were treated with AKYNZEO and 20 were treated with palonosetron alone. The difference in Complete Response (CR) rates between AKYNZEO and palonosetron alone was similar between the two age groups in both the acute and delayed phases. In Study 2 in patients treated with anthracyclines plus cyclophosphamide chemotherapy, among the patients less than age 65 years, 608 were treated with AKYNZEO and 602 were treated with palonosetron alone. Among the patients 65 years or older, 116 were treated with AKYNZEO and 123 were treated with palonosetron alone. The difference in CR rates between AKYNZEO and palonosetron alone (4% in <65 years and 2% in ≥65 years) was similar between the two age groups in the acute phase. In the delayed phase, the difference in CR rates between AKYNZEO and palonosetron alone (9% in <65 years and 1% in ≥ 65 years) was numerically higher in patients <65 years. This difference between age groups in the delayed phase of Study 2 may be explained, in part, by higher CR in the delayed phase associated with palonosetron alone in the older age group (81%) relative to the younger patients treated with palonosetron alone (67%).

In general, use caution when dosing elderly patients as they have a greater frequency of decreased hepatic, renal or cardiac function and concomitant disease or other drug therapy.

Hepatic Impairment: No dosage adjustment for AKYNZEO is necessary for patients with mild to moderate hepatic impairment (Child-Pugh score 5 to 8). Limited data are available with AKYNZEO in patients with severe hepatic impairment (Child-Pugh score >9)/ Avoid use of AKYNZEO in patients with severe hepatic impairment.

Renal Impairment: No dosage adjustment for AKYNZEO is necessary in patients with mild to moderate renal impairment. The pharmacokinetics and safety of netupitant has not been studied in patients with severe renal impairment, although severe renal impairment did not substantially affect pharmacokinetics of palonosetron. The pharmacokinetics for netupitant and palonosetron was not studied in patients with end-stage renal disease requiring hemodialysis.

OVERDOSAGE: No specific information is available on the treatment of overdosage with AKYNZEO. In the event of overdose, AKYNZEO should be discontinued and general supportive treatment and monitoring should be provided. Because of the antiemetic activity of AKYNZEO, drug-induced emesis may not be effective. Dialysis studies have not been performed; due to the large volume of distribution, dialysis is unlikely to be an effective treatment for AKYNZEO overdose.

A total of 33 adult cancer patients were administered oral palonosetron at a dose of 90 µg/kg (equivalent to 6 mg fixed dose), as part of a dose ranging study. This is approximately 12 times the recommended oral dose of 0.5 mg palonosetron. This dose group had a similar incidence of adverse events compared to the other dose groups and no dose response effects were observed. The highest dose of netupitant administered to 1169 cancer patients was 300 mg. The highest dose of netupitant administered to 49 healthy subjects was 600 mg. A similar incidence of adverse events was observed when compared to lower doses of netupitant in the respective populations of cancer patients and healthy subjects.

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ONCOLOGY

Air Force Veteran Embodies Personal Motto after Overcoming Cancer

By Tech. Sgt. Jim Araos, U.S. Air Forces Central Command Public Affairs

A Boston native assigned to U.S. Air Forces Central Command embodies the motto "Boston Strong" every day by living his personal mantra of "Never Quit. Never Stop. Not Today. Not Ever."

Retired Lt. Col. Gary Rudman, the AFCENT Safety deputy director, was diagnosed with cancer in 2014.

Rudman retired from the Air Force May 1, 2011, as the USAFCENT Safety director and continued his service as a civilian at Shaw AFB.

Rudman said he soon began feeling frequent three-hour episodes of pain in his lower back region in January 2013. Doctors diagnosed the pain as a bulging spinal disc, and he continued to receive treatments for more than a year.

He said he sought additional consultation in May 2014 from a pain management doctor when the pain in his back didn't lessen. That doctor thought an object could be pushing against his nerves near the piriformis muscle, and when an MRI was ordered, it showed an inoperable, softball-sized tumor in his pelvic region.

He then went to the Medical University of South Carolina in Charleston to have a CT scan and a needle biopsy to confirm if the tumor was cancerous. The biopsy confirmed cancer.

He underwent two rounds of radiation at the South Carolina Oncology Associates in Columbia in an effort to shrink the tumor, but there was no change in its size since discovery. Rudman said protocol was then to wait until his condition worsened before doctors could aggressively treat the tumor.

However, Rudman was not willing to wait and said he decided to pack his bags for the University of Texas MD Anderson Cancer Center in Houston for a third opinion in March 2015.

Doctors confirmed his tumor to be multiple myeloma after further testing and were able to treat him sooner in an effort to stop the cancer from spreading.

Rudman was prescribed monthly cycles of chemotherapy pills for 28 days, a monthly steroid pill and a Velcade shot which is used to treat this type of cancer. There were days when he said the chemotherapy zapped his strength, but through sheer determination, he never let cancer take away his positive outlook on life.

U.S. Air Force Lt. Col. retired Gary Rudman, United States Air Forces Central Command Safety deputy director, performs safety duties at Shaw Air Force Base, S.C., Jan. 9, 2017. Rudman applies safety measures throughout the USAFCENT area of responsibility to prevent personnel and equipment mishaps.
U.S. Air Force photo by Tech. Sgt. Jim Araos/Released

"He decided the cancer is not going to change his life," said Robin Rudman, his wife. "The diagnoses helped him push

aside the little stuff to focus on the bigger picture of life and what is important."

Rudman said he brought a bike and cycling trainer stand to work on his physical fitness while waiting for a stem cell transplant August 2015. He also provided Multiple Myeloma Research Foundation jerseys and bracelets to patients and hospital staff between treatments.

"When I handed them free jerseys and bracelets, I saw the smiles glow on their faces," he said. "If I can put a smile on somebody's face or cut out some of the pain, it would be what I want to do with the rest of my life."

He heard two words he wasn't expecting Aug. 28, 2015 — complete remission. Although multiple myeloma is an incurable cancer of the plasma cells in the bone marrow and will inevitably return, he said he has never let the illness prevent him from doing what he enjoys most — helping others — something he and Robin are determined to do.

"We put our heart and soul into fundraising efforts to raise money so people like me and [those] in the future gain the benefits," Rudman said.

The Rudmans have raised more than $21,000 by participating in fundraising events for the MMRF. He has spent more than 256 hours improving his fitness and has traveled 2,348 miles on his bike.

Rudman said he also served as a keynote speaker during competitive events such as Ironman triathlons, MMRF fundraisers and Air Force events to share his inspirational story.

"I remember telling my wife and kids, if I make it through this, it will be a miracle," he said prior to his speech at an Ironman Arizona competition. "When I got to the end, everyone stood up. It was one of those weird things where you could tell your message definitely reached out to different folks."

Rudman is challenging himself by climbing Mount Kilimanjaro in February. Rudman will be making the climb with a team of medical professionals, patients, caregivers, and Multiple Myeloma Research Foundation supporters.

Located in Tanzania, Mount Kilimanjaro is the highest point in Africa at an elevation of 19,341 feet. Rudman said he is taking on this challenge in the hopes of raising more than $200,000 for multiple myeloma patients.

"He has done a good job of fighting cancer and pursuing his goals with an indomitable spirit," said Lt. Col. Joel Dopson, 9th Air Force chief of flight safety. "As a pre-training climb, he climbed a 14,000-foot mountain in Colorado. He will be able to do it again. He is tenacious and can overcome any circumstance."

U.S. Air Force Lt. Col. retired Gary Rudman, United States Air Forces Central Command Safety deputy director, climbs a stair machine at Shaw Air Force Base, S.C., Dec. 14, 2016. Rudman is conditioning his body to prepare for his climb in February to Mount Kilimanjaro, Tanzania. *U.S. Air Force photo by Tech. Sgt. Jim Araos/Released*

As Rudman prepares for his upcoming Mount Kilimanjaro hike, he has been taking pictures of current patients and those who have passed away from multiple myeloma and making a cloth banner.

"At the summit, I'm going to unfurl the banner out and take them with me to the top of the world," he added.

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Active
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MACH Spotlights Refractive Eye Surgery Program

By Vince Little, The Bayonet

Martin Army Community Hospital has streamlined the application process for Soldiers seeking refractive eye surgery.

Officials said active-duty service members looking to eliminate their dependency on eyeglasses or contact lenses no longer have to apply through Winn Army Community Hospital at Fort Stewart, Ga. While the surgery is still performed there, MACH now manages the entire course of action, including preoperative evaluations and post-op care.

"Fort Stewart used to track all of that. Soldiers would send in their application packet and hope to hear back from someone," said Dr. (Capt.) Steve Gutierrez, an optometrist at MACH's Eyes, Ears, Nose and Throat Clinic. "We can set up a pre-op date here. That's where we decide if they're a good candidate for the surgery."

Sgt. Sergio Rodriguez of 1st Squadron, 16th Cavalry Regiment, undergoes a comprehensive eye exam Wednesday at Martin Army Community Hospital while being tested for the Warfighter Refractive Eye Surgery Program. *Photo Credit: Vince Little*

The Armywide Warfighter Refractive Eye Surgery Program is primarily designed for combat-arms Soldiers facing deployments, he said. All active-duty personnel are eligible, but mission requirements dictate a candidate's priority.

In war zones, Soldiers often complain about the prescription inserts they wear in eye protection. Gutierrez said frames break, lenses crack, they fog up and get lost.

"If their glasses fall off or get broken during a firefight or other mission, it could render them combat-ineffective, jeopardize the mission or increase their risk of becoming a casualty," he said.

Some patients, however, are under a common misconception about the procedure, Gutierrez said. It doesn't completely do away with the need for glasses in the future. Between ages 40 and 50, an individual is still likely to be prescribed reading glasses.

He said Fort Benning ophthalmologists travel to Fort Stewart to perform the refractive eye surgeries. A laser center is planned for the new Martin Army Community Hospital, which is expected to open in 2014.

Clear success

The Army's Warfighter Refractive Eye Surgery Program has yielded strong success rates. A look at results two months after the procedure is performed:

- 96 percent of patients are at 20/20 vision or better.
- 98.5 percent will be 20/25 or better.
- 100 percent are 20/30 or better

Source: MACH eye clinic

Basic eligibility

All active-duty and activated National Guard and Reserve troops (Army, Navy, Air Force, Coast Guard or Marines) are eligible for refractive surgery under the WRESP program if they meet the following criteria:

- Approval by commanding officer (rank of O-5 or above)
- Army candidates must have at least 18 months remaining on active duty after surgery (or in conjunction with an executed re-enlistment action)
- No adverse personnel actions pending
- Be at least 21 years of age
- Able to meet all preoperative and postoperative appointments
- If you do not need glasses or contact lenses to drive a car, you are not a candidate for refractive eye surgery because your uncorrected vision is too good. Certain individuals are poor candidates for refractive surgery and will be advised so after the preoperative evaluation. Family members and retirees currently are not eligible for laser eye surgery.

For more information, visit www.winn.amedd.army.mil and click on the "Warfighter Refractive Eye Surgery Program" link, where an application form can be downloaded.

army.mil

Active
OPHTHALMOLOGY

David Grant USAF Medical Center — Warfighter Refractive Surgery Center

The Warfighter Refractive Surgery Center, located on Level 4 at David Grant USAF Medical Center is a state-of-the-art clinic designed to reduce the active duty warfighter's dependence on eyeglasses and contact lenses.

Members interested in refractive surgery must be at least 21 years old and need to be referred to the Warfighter laser surgery center by their local MTF eye doctor who is responsible for completing a referral form (see documents section below). In addition, flying personnel will also need approval from their flight surgeon and the Aeromedical Consultation Service at Brooks AFB, located at Wright Patterson AFB.

Additional information on refractive surgery and Air Force policy can be found at the Air Force Medical Service's Warfighter Corneal Refractive Surgery Program link below and additional information on the other links listed. Please take the time to read the information on the CRSP link first.

About the Warfighter Refractive Surgery Center

We are privileged to be members of the greatest air and space force in the history of mankind. Our Air Force has leveraged this nation's technological strengths to give us an overwhelming advantage over any potential enemy.

It is truly awe inspiring to witness the performance of our newest generation of weapons — capable of being delivered precisely on target at any time, at any place on the globe, and under any conditions of weather or environmental challenge.

Despite these dazzling capabilities, commanders would undoubtedly agree that the most potent weapon in our Air Force inventory has been , and always will be — the individual Airman.

Dr. Christopher Kurz, a cornea and refractive surgeon, demonstrates the capabilities of the refractive surgery VISX Star S4 laser at David Grant USAF Medical Center, Dec. 7. *U.S. Air Force photo/Staff Sgt. Liliana Moreno*

Col. (Dr.) Dianne Harris (center), 60th Surgical Operations Squadron, treats a laser eye surgery patient. The DoD's Corneal Refractive Surgery program at David Grant USAF Medical Center is one of four programs in the Air Force that provides Refractive surgery procedures to active duty members. Care for active duty members is on a priority basis, as well as being based on the needs of the mission program. Current services available include PRK and LASIK, either with or without Custom Vue.

Our foremost mission at DGMC is to support that Airman, whether deployed or in garrison. As an organization that also prides itself on utilizing the latest advances in technology, we have some pretty interesting "toys" of our own!

The eyes are arguably the most important sensor of today's modern Airman. However, a fairly large number of our troops require the use of glasses or contact lenses in order to see clearly. Having to use these devices in various extremes of temperature, or in dusty, windy, or rainy conditions on the modern battlefield can be problematic. Imagine having your glass inserts fog up inside a gas mask, and being unable to see well enough to fight (or survive!) in lethal surroundings.

To address this deficiency, the Air Force Medical Service established five sites for laser corneal refractive surgery. Opened in 2002, DGMC's own Warfighter Refractive Surgery Center, like the other four locations, functions for the express purpose of enhancing the Air Force's readiness platform by yielding good vision for members, without having to rely on their glasses.

The VISX Star S4 laser, which has the capability of performing CustomVue treatments, is our laser of choice. CustomVue treatments provide an even more customized laser pattern to correct for an individual's unique corneal irregularities that contribute to his/her vision.

To achieve correction of vision, the laser reshapes the cornea of the eye, which is the clear area in front of the pupil.

Two different techniques are used to prepare the cornea:

In PRK, the surface layer of the cornea (called the epithelium) is removed before proceeding with the laser treatment. A protective soft contact lens is applied after the laser treatment and left in place several days for comfort, while the epithelium heals.

In LASIK, the epithelium is left intact. A flap (a layer of tissue hinged like a trap door) is made through the outer layer of the cornea, followed by application of the laser to the exposed surface. The flap is then replaced.

The healing rate, post-operative discomfort level, and the risks associated with each procedure (remember, every medical procedure has risks!) are partially related to these differences in technique. Corneal refractive surgery at DGMC is currently limited to active duty members. Evaluation for this procedure starts with an optometry assessment.

Not everyone is a candidate for refractive surgery, as there are many conditions affecting vision that are not correctable by the laser.

Active duty members must also have their commander's approval before undergoing the treatment, since the member will be placed on convalescent leave for one week, and is not deployable from one to four months following treatment.

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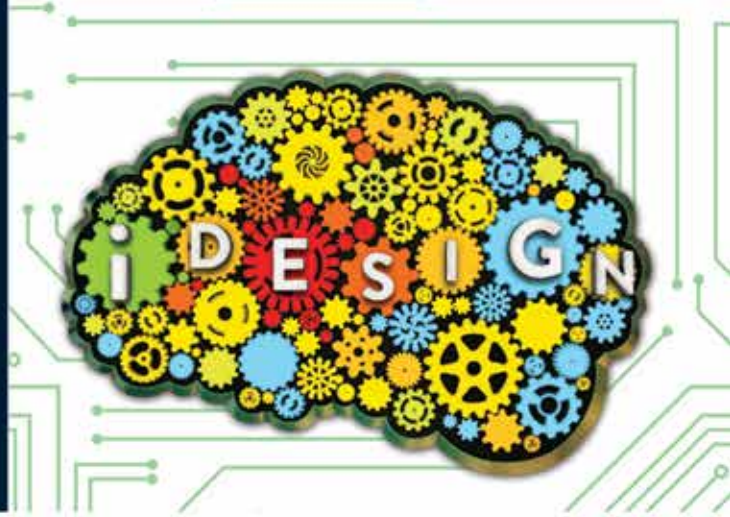

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TO HELP YOU SEE CLEARLY WITHOUT THE HASSLE OF CONTACTS OR GLASSES.*

Your 100% personalized LASIK procedure begins with a custom treatment plan with the ***iDESIGN***® System. So no matter where your day takes you or what you do, you too can experience significant improvements in ALL measures of visual functioning and well-being, including[1]:

- Clarity of Vision
- Satisfaction with Correction
- Near Vision
- Far Vision
- Activity Limitations
- Difficulty Driving at Night

* You may need reading glasses after laser surgery even if you did not wear them before. Your vision may not be perfect, and you may need to wear glasses or contact lenses for some activities even after laser vision correction.

1. Clinical study of nearsighted patients at six months after surgery.

INDICATIONS AND IMPORTANT SAFETY INFORMATION

INDICATIONS: ***Advanced CustomVue***® LASIK (laser assisted in situ keratomileusis) is a customized wavefront-guided laser surgery procedure that uses the ***iDESIGN***® ***Advanced WaveScan Studio*** System to measure visual imperfections of your eye and the ***STAR S4 IR***® Excimer Laser to permanently reshape the cornea. ***Advanced CustomVue***® LASIK treatment is used to correct, or reduce myopia (nearsightedness) with and without astigmatism as well as mixed astigmatism for patients 18 years of age and older and whose vision has been stable for at least one year. Only eye care professionals trained in laser vision correction can determine whether you are a suitable candidate. **CONTRAINDICATIONS**: You should not have LASIK if you have collagen vascular (e.g., rheumatoid arthritis), autoimmune (e.g., lupus), or immunodeficiency diseases (e.g., AIDS) because they affect the body's ability to heal. You should not have this procedure if you are pregnant or nursing; show signs of corneal abnormalities or corneal thinning; have symptoms of significant dry eyes; advanced glaucoma; and uncontrolled diabetes. If you have severely dry eyes, LASIK may increase the dryness, may delay healing after surgery, may or may not go away and it may result in poor vision after LASIK.

See next page for complete indications and important safety information.

THE BRAIN POWERING YOUR PERSONALIZED TREATMENT PLAN

iDesign

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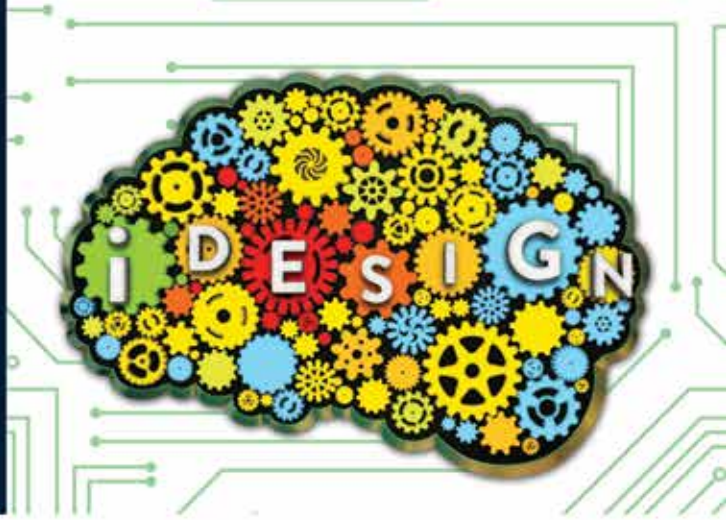

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ABOUT THE *iDESIGN*® SYSTEM-DRIVEN LASIK PROCEDURE TODAY.

INDICATIONS AND IMPORTANT SAFETY INFORMATION (CONTINUED)

The *STAR S4 IR*® Excimer Laser and *iDESIGN*® *Advanced WaveScan Studio* System for wavefront-guided LASIK in patients with myopia.

CAUTION: U.S. Federal Law restricts this device to sale, distribution, and use by or on the order of a physician or other licensed eye care practitioner.

WARNINGS AND PRECAUTIONS: LASIK is not recommended if you have cataracts, corneal scars, or dry eye syndrome; glaucoma; diabetes; severe allergies; history of Herpes simplex or Herpes zoster keratitis; are taking Isotretinoin (Accutane®), Sumatriptan (Imitrex®), Amiodarone hydrochloride (Cordarone®) or antimetabolites for any medical conditions; history of crossed eyes; previous corneal, intraocular surgery, LASIK or refractive surgery; family history of degenerative corneal disease; and history of inflammation of the eye. Your doctor will examine your eyes to determine if you are a candidate for this procedure. Talk to your doctor about any eye-related conditions, injuries, or surgeries you have had, any medications you are taking, and any changes to your vision in the past year. After surgery, you may find it more difficult to see in conditions such as dim light, rain, snow, fog, or glare from bright lights at night. Future measurements of your eye pressure or future cataract surgery can be affected by this procedure. Tell your future doctor you've had ***Advanced CustomVue***® LASIK surgery. **RISKS**: As with any surgical procedure there are risks associated with ***Advanced CustomVue***® LASIK treatments. It is important to discuss these risks with your doctor before you make any decision to have the surgery. If the results of the surgery are not satisfactory, your doctor may want to perform additional laser treatment in either one or both eyes. Talk to your doctor about what is best for you. Some risks are related to the creation of the corneal flap. Corneal flap complications include but are not limited to: cutting an incomplete, irregular flap or free flap; misalignment of the flap; and perforation of the cornea. Corneal flap complications range in severity from those that simply require the treatment to be postponed for several months, to those which create corneal irregularities resulting in permanently blurred vision. You may need reading glasses even if you did not wear them before. Your vision may not be perfect, and you may need to wear glasses or contact lenses for some activities even after laser vision correction. **SIDE EFFECTS**: Possible side effects include loss of vision and visual disturbances such as double vision, sensitivity to bright lights, increased difficulty with night vision, fluctuations in vision, and other visual irregularities that may be debilitating.

Please consult with your eye care professional and carefully review the *Patient Information Booklet* regarding the potential risks and benefits of this procedure. Results may vary for each individual patient.

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Protect Your Vision

By Maj. Kayla Vickers, Chief, Optometry Clinic, Kenner Army Health Clinic

Digital devices — such as computers, smart phones, tablets and other handhelds — are increasingly found in every aspect of our lives, whether reading, shopping, banking or being entertained online. According to the American Optometric Association's 2014 American Eye-Q? survey, 55 percent of adults use electronic devices for five or more hours a day. A separate AOA survey showed that 83 percent of children between the ages of 10 and 17 use an electronic device for more than three hours a day.

Digital use will continue to increase, making it more important than ever for consumers to make smart eye care choices and to see an eye doctor for yearly comprehensive eye exams.

In observance of AOA's Save Your Vision Month in March, here are several tips:

Give Your Eyes a Break

Follow a 20-20-20 rule to ward off digital eye strain by taking a 20-second break every 20 minutes and view something 20 feet away.

"Although ongoing technology use doesn't permanently damage vision, regular, lengthy use of technology may lead to a temporary condition called digital eye strain," said Dr. John Press, an optometrist at Fort Lee. "Symptoms can include burning or tired eyes, headaches, fatigue, loss of focus, blurred vision, double vision or head and neck pain."

Early research also has shown that overexposure to high-energy, short-wavelength blue and violet light emitted from electronic devices may contribute to digital eye strain. Blue light also could increase the likelihood of developing serious eye conditions such as age-related macular degeneration. Optometrists offer options including non-glare or filtering lenses to help protect vision from harmful blue light.

Be a Savvy Shopper

Shopping online can be great for some products that aren't individually custom-made like prescription eyeglasses are; health and safety trump convenience when it comes to eyewear. Internet orders often result in incorrect prescriptions or other problems with products that get sent through the mail, costing consumers more time and money in the long run.

Follow a 20-20-20 rule to ward off digital eye strain by taking a 20-second break every 20 minutes and view something 20 feet away. *U.S. Army photo illustration*

According to a 2011 study conducted by the AOA, the Optical Laboratories Association and The Vision Council, nearly half of all glasses ordered online had either prescription errors or failed to meet minimum safety standards.

"Eyeglasses are an investment in your health and must be custom-fitted not only to be comfortable, but also to be sure precise prescription needs are met so that you're actually seeing your best," said Press.

Skip Shortcuts

When it comes to really seeing what's going on with your eyes, there is no substitute for a comprehensive, yearly eye exam by an eye doctor. Despite catchy claims, there is truly no 'app' for that. While a variety of new mobile applications claim to evaluate vision or the fit of eyeglasses, often these apps give inaccurate or misleading information, and misinformed consumers end up delaying essential, sight-saving exams. Early diagnosis and treatment are critical and can often prevent a total loss of vision and improve quality of life.

"Comprehensive, yearly eye exams are one of the most important, preventive ways to preserve vision, and the only way to accurately assess eye health, diagnose an eye disorder or disease, and determine if you need corrective lenses," said Press.

army.mil

Active
ORAL HEALTH

Military Dentists Do Much More than "Drill and Fill"

By Military Health System Communications Office

It's easy to look at dentists as specialists at "drilling and filling," but dentists serve vital roles, educating about oral health and acting as advance scouts for problems with a patient's overall physical well-being.

"Our prime goals are to preserve the natural teeth for as long as possible, stop the progress of the disease that causes cavities, and provide patients with the information and equipment to ensure they can keep teeth healthy throughout their life," said Army Capt. George Hauser, Officer in Charge at the Fort Detrick Dental Clinic in Frederick, Maryland.

Hauser described one patient who was so afraid of receiving dental care that she avoided seeing a dentist for years. Decay had become so extensive that her front teeth were mottled black.

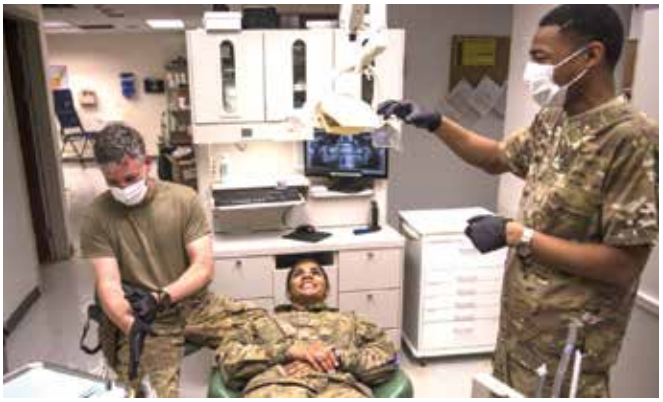
"After I removed the decay and restored her front teeth, she looked in the mirror and started crying," said Hauser. For years she had been covering her mouth with her hand when she spoke with people to mask the shame she felt about her diseased teeth.

"This is the true reward in the profession of dentistry," said Hauser, "the ability to affect a profound change in another person."

General dentistry involves many tasks, including cleaning, examining, repairing teeth and surrounding areas, filling cavities, administering anesthetics, and prescribing medication. Most importantly, dental providers educate patients about diets, flossing, using fluoride, and overall oral health.

"We work the hardest of any profession to put ourselves out of business because if everybody did what we asked them to do, we wouldn't be as busy as we are," said Air Force Col. Nancy Motyka, program director of the two-year Comprehensive Dentistry Residency at Lackland Air Force Base in San Antonio, Texas. Even so, many patients can be intimidated or nervous to go to a dental appointment.

"Our prime goals are to preserve the natural teeth for as long as possible, stop the progress of the disease that causes cavities, and provide patients with the information and equipment to ensure they can keep teeth healthy throughout their life."



U.S. Army Capt. John Mann (left), 129th Area Support Medical Company dentist, prepares dental instruments for an exam at Bagram Airfield, Afghanistan. Dental technicians perform oral cleanings, prepare dental instruments and assist dentists with procedures. *U.S. Air Force photo by Senior Airman Justyn M. Freeman*

In addition to oral medicine, dentists receive training in general medicine, so they often know what conditions in a patient's mouth can reveal about overall health. For example, one of Motyka's patients came in with white spots on the gums. Motyka suspected a yeast or Candida infection, and suggested the patient get his blood sugar level checked. Her suspicions were later confirmed through testing, and the patient's physician prescribed medication for diabetes.

Motyka, who served 20 years as a civilian dentist before joining the Air Force, places the highest priority on the comfort of her patients. She stresses the importance of helping them understand what will be done and explaining why a procedure is necessary before beginning any work. As with Hauser, Motyka said that seeing the gratification on patients' faces after alleviating pain or improving a smile is her reward.

"As a dentist," said Hauser, "you can truly make a difference in a patient's life."

health.mil

Active
ORAL HEALTH

Poor Dental Health Leading Cause of Readiness Issues

By Military Health System Communications Office

In 2008, 40 percent of DoD Selected Reserve troops were classified as unfit for duty for a surprising reason: dental readiness. Many others sent downrange developed dental problems during deployment.

"When they reported to their deployment centers before leaving the U.S., they said their teeth didn't hurt and were told they were deployable, said Army Col. David DuBois, dental surgeon for the U.S. Army's Reserve Command. "When they got to their destination, it turned into a disaster."

To correct the situation, the services put new dental programs in place. In the past eight years, the services have reduced the proportion of unfit troops due to dental problems from 40 percent of all military reservists to 10 percent.

"Historically, dental readiness was the most problematic Department of Defense individual medical readiness requirement," said Army Col. James Honey, chief of TRICARE dental care section. "But we put more resources on the problem and now see better dental readiness within the services."

One such program, the Army Selected Reserve Dental Readiness System, which uses the Reserve Health Readiness Program as the primary contract vehicle, allows soldiers to receive no-cost examinations, as well as treatment of Dental Fitness Classification (DFC) 3 conditions at no cost, helping commanders at all levels reach unit dental ready status.

It also sends reminders to soldiers about upcoming dental appointments and tracks dental readiness to prevent the need for

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examination and DFC 3 treatment when the unit is alerted and arrives at the mobilization station.

Honey said enhancements to prevention and access to dental care help increase readiness for all service members.

"We see this as the same as any physical fitness requirement or wearing the uniform properly," said Honey. "We expect everyone to have dental readiness."

Teeth have to be as healthy as possible before deployment because rough conditions in deployed locations can tax the body's abilities to respond to health issues, including dental problems. DuBois said the choice between dental care at home and dental care downrange is obvious.

"If I had to choose between a nice, air-conditioned office or a makeshift clinic in tough conditions, I know which one I would want," said DuBois. "It's much better to take care for this stuff at home."

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Oral Health Matters

By Human Performance Resource Center Staff

Poor oral health adversely affects readiness and could cost you your career, but it's something you can prevent. Despite advances in dental care and hygiene, deployed service members are still at risk of trench mouth — technically referred to as necrotizing periodontal disease (NPD).

This condition can lead to painful ulcers, spontaneous gum bleeding and a foul taste in your mouth.

The good news is there are things you can do to reduce your risk of trench mouth. Learn how to be proactive and prevent NPD. Also, schedule regular visits to your dentist when possible.

Poor Hygiene

- You might have little to no time for oral hygiene when you're deployed, which can cause you to fall out of your normal routine of brushing and flossing.
- **Solution:** Pack a few travel-size tubes of toothpaste, dental floss, and a travel toothbrush in your kit, and establish a routine as quickly as possible.

Tobacco Use

- Using tobacco products can lead to gum disease by reducing blood flow to your gums, which can lead to tooth loss and mouth infections.
- **Solution:** It's never too late to quit. Check out these great tips to become tobacco-free.

Poor Nutrition

- Eating right can be challenging in the field. But not eating enough food or the right foods can cause vitamin and mineral deficiencies that reduce your ability to fight oral infections.

A Soldier with C Company, 1st Battalion, 61st Infantry Regiment brushes his teeth on a cold morning at the Victory Forge field training exercise on Fort Jackson, South Carolina. *U.S. Army photo by Sgt. 1st Class Brian Hamilton*

- **Solution:** Although MREs can't replicate the tastes of a home-cooked meal, they're nutritionally balanced to prevent vitamin and mineral deficiencies. Eat a variety of MREs and as many of the components as you can to make sure you get all the nutrients they provide.

Stress

- Too much stress can adversely affect your performance and overall health, including dental health. Stress can cause dry mouth and sore, inflamed gums.
- **Solution:** Check out HPRC's Stress Management section for ways to manage your stress. While activities like yoga, meditation, or journaling are very calming, try exercise, reading, or playing card games to help reduce stress too.

health.mil

Active
ORAL HEALTH

February is National Children's Dental Health Month

By Maj. Casey Slack

This February marks the American Dental Association's 36th annual National Children's Dental Health Month. Dental professionals across the nation are coming together to promote oral health to our nation's youth.

Members of the dental community are also reaching out and educating teachers and parents on the importance of establishing good oral habits and hygiene.

The ADA recommends all children receive their first dental exam by their first birthday. In addition to looking at your child's teeth, the dentist will also evaluate their cheeks, gums and tongue among other structures.

Your child may have only a few teeth by his first birthday and that's OK. The first visit gets children familiar and comfortable with a dental office while giving parents important information regarding their child's teeth and oral hygiene.

Parents should start brushing their child's teeth as soon as the first tooth erupts. By doing so, your child will become familiar with the toothbrush and more readily accept the routine. You can use a children's toothbrush or a soft wet towel for infants. Some young children like holding their own toothbrush while their parents work inside with another.

By age 7, most children have developed the manual dexterity to brush their own teeth. However, that does not mean they will do a great job of brushing yet. Parents should supervise and help with the back teeth. Mom and dad are still in charge.

From left, Staff Sgt. Soohwa Ono, Senior Airman Vanessa Rivas, and Capt. Daniel Chartrand promote pediatric oral hygiene Feb. 2 at the Kelly Child Development Center. Throughout February, the 59th Dental Group is holding outreach events at the Joint Base San Antonio-Lackland Elementary School and child development centers. Ono and Rivas are 59th DG dental technicians; Chartrand is a 59th DG dentist. *U.S. Air Force photo/Staff Sgt. Kevin Iinuma*

No matter who is doing the brushing, try to make it fun. Sing a song while you brush, or buy a toothbrush with your child's favorite cartoon character on it. Some young ones enjoy timing themselves while they brush.

Children under the age of three will only need a small smear of toothpaste on their toothbrush. A pea sized amount of fluoridated toothpaste is recommended for children over three. Brush your child's teeth twice a day. This will help prevent dental plaque and tartar from growing on their teeth.

While fluoridated toothpaste is beneficial to oral health, if swallowed in large quantities it can be harmful to young children. Keep all toothpaste safely out of reach, especially if it tastes good.

While hygiene is important to the prevention of dental decay, so is your child's diet. Snacking should be healthy. Replace refined sugar and simple carbohydrates with whole grains, fruits and cheeses.

Furthermore, never put babies to bed with a bottle of milk or juice. Frequent sipping on any sugary or non-water substance can quickly lead to cavities. This includes juices, sports drinks, sodas and teas. Water is always the best beverage choice.

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Active
ORAL HEALTH

Med Wing Dental Clinics Host "Give Kids A Smile" Day

Both 59th Medical Wing dental clinics on Joint Base San Antonio will provide free dental services for uninsured military children during "Give Kids A Smile Day" events in February.

Offering children a free dental exam and cleaning, "the events are part of the American Dental Association's Give Kids a Smile Program, a nationwide initiative intended to provide free, desperately-needed dental services to children," said Lt. Col. (Dr.) Stephen Gasparovich, a pediatric dentist with the 359th Medical Group.

"Last year, more than 46,000 dental team members nationwide participated," he said.

- The Randolph Dental Clinic event is Feb. 10 from 7:30 to 11:30am. The event is open to 1- to 13-year-old children of active-duty and retired military; call the clinic at 210-652-1846 to sign up.
- The Dunn Dental Clinic event at Joint Base San Antonio-Lackland is Feb. 24 from 7-11am. The event is open to children, 6 months to 17 years old, who are dependents of active duty, retirees, Reservists or guard members on active-duty orders, and children of Department of Defense and Air Force civilian employees.

Nearly one in four children, ages 2 to 11, has untreated cavities in their baby teeth, according to the Centers for Disease Control and Prevention. Additionally, the National Institutes of Health reports that 80 percent of tooth decay is found in just 25 percent of children, primarily from low-income families.

Both 59th Medical Wing dental clinics on Joint Base San Antonio will provide free dental services for uninsured military children during "Give Kids a Smile Day" events in February.

"This event will raise awareness of the epidemic of untreated dental disease occurring here and across the country and raise awareness of the need to build local and public partnerships to increase access to oral health care to solve this crisis," Gasparovich said.

Space is limited; event organizers encourage parents to sign up early.

59mdw.af.mil

Active
ORTHOPEDICS

Orthotics Program Training at a Glance

By Staff Sgt. Jerilyn Quintanilla, 59th Medical Wing Public Affairs

The Air Force's only orthotics training program is conducted at the Wilford Hall Ambulatory Surgical Center on Joint Base San Antonio-Lackland, Texas. Established in the 1970s, the program is dedicated to providing the highest level of training and graduating world-class orthotics technicians. The course is accredited by the Community College of the Air Force and spans seven months, with 1,160 dedicated training hours.

A key component of the program is the hands-on experience students gain. Working with various tools and materials such as plaster, metal, plastic and leather, helps students develop the skills and techniques to fabricate orthoses. Upon graduation, the Airmen go back into the operational Air Force as fully-qualified orthotics technicians.

airforcemedicine.af.mil

Staff Sgt. Devin Rudd, a student in the orthotics program, checks to see if the plastic for a foot orthoses has settled at the Wilford Hall Ambulatory Surgical Center, Joint Base San Antonio-Lackland, Texas, Aug. 24, 2016. *U.S. Air Force photo/Staff Sgt. Jerilyn Quintanilla*

Staff Sgt. Devin Rudd, (left) a student in the orthotics program, and Lawrence New, (right) a 59th Medical Wing orthotist and orthotics instructor, use plaster to create a mold for a body jacket orthoses at the Wilford Hall Ambulatory Surgical Center, Joint Base San Antonio-Lackland, Texas, Aug. 24, 2016. Staff Sgt. Kenneth Rivera, (center), is also a student in the orthotics program and served as the patient for the lesson. *U.S. Air Force photo/Staff Sgt. Jerilyn Quintanilla*

Active
ORTHOPEDICS

Army Orthopaedic Residents Fix Breaks, Break the Mold

By Marcy Sanchez, William Beaumont Army Medical Center

With 25 residents on rotation and 12 staff surgeons, the Orthopaedic Residency Program here is one of the largest in the Department of Defense. The program is also the only true combined military and civilian orthopedic surgery residency program.

According to the Accreditation Council for Graduate Medical Education in 2016, the program ranked in the 96th percentile for Orthopaedic In-Training Examination scores among 239 programs across the nation, both military and civilian.

"That was unheard of 10 years ago for WBAMC," said Army Lt. Col. Justin Orr, orthopaedic residency program director.

Orr gives credit to the program's leadership for exposing residents to the experience needed for across-the-board proficiency.

Army Capt. Marina Rodriguez (right), a third year resident with William Beaumont Army Medical Center's Orthopaedic Residency Program, assists Army Lt. Col. Justin Orr, orthopaedic residency program director, during a total ankle replacement on a beneficiary. *U.S. Army photo by Marcy Sanchez*

Exposure includes spending 30 percent of their residency at Texas Tech University Health Sciences Center-El Paso/University Medical Center Medical Center, a level I trauma center, and three-month rotations at the both the University of Utah in Salt Lake City and Rush University Medical Center in Chicago to augment pediatric and total joint reconstructive exposure.

Another important aspect of WBAMC's program is the attention each resident receives throughout his or her residency.

"It's important to note that there is one-to-one training, a surgeon to a resident," said Army Col. Mark P. Pallis, chairman of WBAMC's Orthopaedic Residency Program. "Everybody is one-on-one."

The majority of the program's residency is spent at WBAMC, a level III trauma center, providing orthopedic surgery services which cover musculoskeletal and rehabilitative needs of all service members, military dependents, retirees, and eligible veterans in the El Paso metropolitan area. Services include outpatient orthopedic clinics in adult reconstruction, foot and ankle, hand and microsurgery, pediatrics, spine and sports medicine.

"We work very hard, enjoy working, enjoy what we do and enjoy being around one another," said Army Capt. John Dunn, chief resident. "The different experiences we would have during our outside rotations are slightly different from what we see at WBAMC, and allow residents to broaden their skills."

Besides full schedules at the medical centers, residents kept busy by contributing more than 40 peer-reviewed publications to multiple orthopaedic surgery journals, in addition to countless national conference presentations.

Residents also earned bragging rights winning the 2016 Texas Orthopaedic Association Quiz Bowl, surpassing all other Texas military and civilian residencies.

"Another aspect that is important to us is

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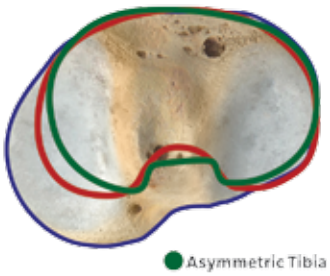
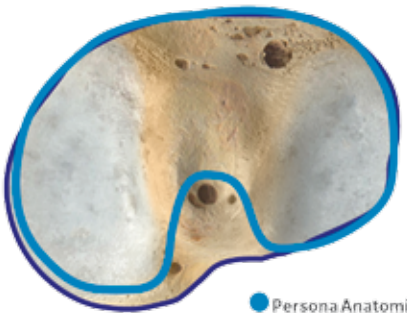
SHAPE MATTERS

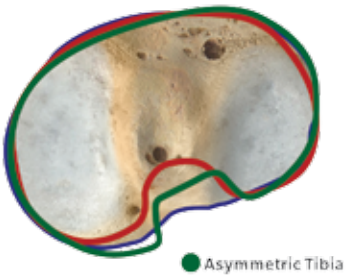
Achieve Both

Proper Rotation





Maximum Coverage



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to make sure morale is good," said Army Capt. Jeffrey Hoffman, chief resident. "It's good to have production in your residency but we also want to make sure that people enjoy their residency."

Other accolades include the program's total case volume which is rated by the ACGME in the 93rd percentile in the nation along with a 91st percentile rating for trauma experience, due mostly to the unique relationship the program has with Texas Tech/UMC.

The exposure to a military medical center, civilian trauma center, major civilian medical centers and private practices is what prepares the residents, said Pallis.

The addition of 1st Armored Division to Fort Bliss in 2011 also provided residents with more surgery options, adding tens of thousands of Soldiers and dependents to WBAMC's beneficiary population, thereby increasing case volume and opportunities for residents.

A testament to the success of WBAMC's residency program is the desire of medical school applicants to attend the program. Last year, out of 30 applicants, one third chose WBAMC as their program of choice.

"A lot of it comes from the top. Recruiting the right type of staff, getting the right type of faculty who want to train residents," said Orr. "Colonel Pallis has done a good job at bringing those assets to WBAMC and developing a setting that breeds an environment of success."

This is demonstrated by the fact that WBAMC orthopaedic surgeons and residents serve on several committees and task forces in many national organizations, including the American Academy of Orthopaedic Surgeons, the Society of Military Orthopaedic Surgeons, the Arthroscopy Association of North America, and the American Orthopaedic Association.

Several surgeons also hold significant leadership positions in these organizations, helping to drive the quality of care afforded to patients across the country.

Orr also gives credit for the program's success to the Soldiers and civilians of the orthopaedic clinic at WBAMC.

"It's not just us, it's the Soldiers too," said Orr. "We're a team. It's an atmosphere of excellence and we build upon each other."

Army Capt. Marina Rodriguez, a third year resident with William Beaumont Army Medical Center's Orthopaedic Residency Program, assists with a total ankle replacement on a beneficiary. *U.S. Army photo by Marcy Sanchez*

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Stop Shin Splints

By Human Performance Resource Center Staff

Shin splints can sideline you from your regular workouts, but there are things you can do to help relieve the pain and quickly resume your exercise routine. Shin splints — a common injury among athletes, particularly runners — refers to pain in the leg below the knee, usually on the medial (inside) part of your shin. This pain can be caused by micro-tears at the bone tissue, possibly caused by overuse or repetitive stress. The best way to prevent shin splints is: Don't do too much, too soon.

Shin splints usually occur after sudden changes in exercise or physical activity, such as rapidly increasing your running mileage, boosting your workout frequency or intensity, or even varying changes in surface, such as running more hills. To help reduce your risk for shin splints, you can follow the 10% rule: Increase your workout no more than 10% per week. That applies to the number of miles you run and how often and how hard you work out.

Other factors that can influence your risk include worn-out shoes, over-pronation, and excessive stress on one leg from running on a cambered road (the curved, downward slope from the middle of a road to the edge for drainage). If you run an out-and-back route, while not always safest in street traffic, you can run on the same side of the road each way. Or use the sidewalk instead. If you often run on a track, switch the direction you run.

Shin splints will usually heal themselves with proper rest. Consider taking a break from your regular workout routine and cross train with lower-impact workouts such as swimming, pool running, or biking instead. Basic self-care treatments such as stretching, ice, and anti-inflammatories can help relieve pain. If the pain doesn't improve with rest, or if the skin is hot and inflamed, see your doctor to make sure you don't have a more serious injury such as a stress fracture or tendonitis.

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Active
PHYSICAL THERAPY

New Air Force Physical Therapy Fellowship to Offer "Pinnacle of Training"

By Peter Holstein, Air Force Surgeon General Public Affairs

A new Air Force Academy fellowship that trains Airmen to be embedded physical therapists recently received accreditation from the American Physical Therapy Association as an Orthopedic Manual Physical Therapy Fellowship, in time for the program's first students to graduate this summer.

The first of its kind in the U.S. military, the Air Force Tactical Sports and Orthopedic Manual Physical Therapy Fellowship is an intensive, mentoring based training program that will increase the number of Air Force physical therapists available to embed in Air Force units worldwide.

"The Air Force began embedding PTs in battlefield Airman squadrons in 2011," said Dr. Eric Wilson, the fellowship director, and a retired Air Force officer. "By 2016 there were 16 embedded PTs, supporting units from Air Force Special Operations Command, Air Combat Command, Air Education and Training Command and Joint Special Operations Command."

Recognizing that there would be an ongoing and increasing need for embedded PTs, the Air Force asked a team led by Wilson to examine courses of action to prepare more PTs with advanced training.

After determining that current military and civilian programs didn't meet the requirements of embedded Air Force PTs, Wilson and his team began designing a new PT fellowship program.

"Embedded Air Force PTs need training

The Air Force Tactical Sports and Orthopedic Manual Physical Therapy Fellowship staff, faculty and current fellows. From left to right: Lt. Col. Joel Dixon (Assistant Fellowship Program Director), Capt. (Dr.) Joshua Shumway (Fellow in Training), Dr. Eric Wilson (Fellowship Program Director), Maj. (Dr.) Ronald Miller (Fellow in Training), Dave The Skeleton (Fellowship Senior Training Aid), Dr. Derek Vraa (Fellowship Senior Faculty Member)

across a broader spectrum than is available in conventional programs," said Wilson. "We developed a hybrid training platform focused on advanced clinical decision making, orthopedic manual physical therapy, sports physical therapy, human performance optimization, injury prevention, and military acclimation."

Wilson said embedded PTs need to develop similar relationships to their units as successful flight surgeons.

"Just being assigned to a battlefield Airman unit doesn't really mean anything, unless the physical therapist goes out, watches some training, participates when appropriate, and really gains the trust of those Airmen."

"Being embedded also helps the therapist understand what the end state of a rehab is supposed to be," said Wilson. "It's much more difficult to rehab someone carrying 90 pounds of gear versus someone who sits at a desk."

The U.S. Air Force Academy in Colorado Springs, Colo. provided an excellent venue to develop such a program. With many NCAA Division I student athletes on hand, fellows are able to develop their PT skills on elite athletes, similar to the elite Special Forces operators and other battlefield Airmen they encounter when embedded.

"Most advanced PT education opportunities work with college club sport or high school athletes," said Wilson. "We are one of the few fellowship programs to actually work with Division I athletes."

"The rational is they are going to be working with elite level tactical athletes when they are embedded," continued Wilson. "Whether these are combat controllers, or special operations weather, or para-rescue, or Tactical Air Control Party specialists, these men and women are absolutely the best at what they do, they have got to get back to an elite level of performance. Having our PT fellows practice on Division I athletes and work with the strength and conditioning coaches from the Academy's athletic department, really sets them up in a way that most other programs don't."

The first cohort of fellows began the program in June 2016, with an expected graduation in August 2017. The success in completing the accreditation process means they will graduate from an accredited program. The second cohort of fellows starts in June 2017.

"Getting accredited was our first major hurdle," said Lt. Col. Joel Dixon, the assistant director for the fellowship. "We are indebted to the 10th Medical Group and the Air Force Academy athletic department. We had no assigned budget or space, and they have gone above and beyond to support us with funds and space. Without both of them, this fellowship never would have succeeded."

Even with that support, success was by no means assured when Dr. Wilson and his team started. Orthopedic Manual Physical Therapy fellowships have rigorous accreditation standards, with program requirements that include extensive one-on-one mentoring and cover a broader group of topics.

"The fellowship we developed actually features significantly more mentoring hours than required," said Dixon "The one-on-one mentoring is where the rubber meets the road. You sit in front of a real, live patient, and have to do the technique, with someone there to instruct, critique and later test you in the same setting. That's where you really learn."

Dr. Wilson's team developed the fellowship in a very short time. Curriculum development, program infrastructure, faculty hiring, and the accreditation process all had to happen simultaneously. The program attained provisional accreditation just in time for the first cohort to begin last year.

"This program went from bar napkin to a fully accredited fellowship in 25 months," said Wilson. "We want the Air Force PT fellowship to be the pinnacle of training, and we think we're well on the way to accomplishing that."

"Our entire reason for having embedded PTs is to get those combat mission readiness rates up, to give that commander as many deployable assets as possible," said Wilson. "It's the same sports medicine approach used by sports team. If a coach can't put their best assets on the field, they can't win. We want our PT fellows to graduate and do the same things for their squadron commanders."

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"The rational is they are going to be working with elite level tactical athletes when they are embedded," continued Wilson.

"Whether these are combat controllers, or special operations weather, or para-rescue, or Tactical Air Control Party specialists, these men and women are absolutely the best at what they do, they have got to get back to an elite level of performance.

Having our PT fellows practice on Division I athletes and work with the strength and conditioning coaches from the Academy's athletic department, really sets them up in a way that most other programs don't."

Active
RADIOLOGY

X-ray Technologists Put People First

By Senior Airman Areca T. Bell, 633rd Air Base Wing Public Affairs

A U.S. Air Force Airman shuffles into the emergency room gripping his thigh, which is radiating with pain, but he is told, "We don't know what's wrong and there's no way we can help you."

With a furrowed brow, his eyes begin to shift from side to side rapidly. In his shaken state, he questions if there is some way of seeing beneath the surface, maybe a superhero with x-ray vision.

Lucky for him, sending a distress signal wouldn't be necessary because of the Airmen assigned to the 633rd Surgical Operations Squadron Radiology department at Joint Base Langley-Eustis.

They are equipped with the technology needed to provide images that assist doctors in performing diagnosis and giving trusted care to patients in the medical clinic, surgical department and emergency room, 24-hours a day.

"We have a great radiology team here," said U.S. Air Force Master Sgt. Matthew Knoll, 633rd SGCS diagnostic imaging flight chief, "We have a great combination of knowledge, expertise, ingenuity and motivation. When we get together and have our morning meeting my techs are coming up to me and saying 'Hey, I think we can do this, maybe we can make this better.' A lot of it is focused on patient safety or trying to make things better for the customers — they are a really motivated and dedicated group of folks."

During a patient's visit to the radiology department, they are brought back to a room, where they are informed of and positioned for their procedure. The decision on the appropriate technique, as far as how much radiation and radiation power to use, is made by the technologist.

Like many comic book heroes, these Airmen use technology to strengthen their capabilities, to help doctors fight the forces of illness and provide quality health care to members who visit the U.S. Air Force Hospital Langley.

The x-ray process takes roughly three seconds; however, back in the day, it was a more lengthy method since the images were not digital and had to be developed, much like a photograph in a dark room.

"When I first joined, we had cassettes and inside of them we had actual film," explained Knoll, who joined the Air Force in August, 1994. "After exposing the cassettes to x-ray, we would take it to a dark room, feed the film into a machine, then go through two different chemicals and a water wash. The machine would produce an actual hard copy that we would keep in a folder and hang up for the radiologist to look at. All of this time, the patient would wait. Sometimes the radiologist would look at it and not see what he was looking for and we'd have to call the patient back again."

According to Knoll, this process would add an additional ten minutes to the patient's visit, per exam. Without today's technology and an average of 2,000 patients per month, the time for each would add up.

In addition to cutting down the quantity of time it takes to service each patient, current technology also reduces the amount of radiation patients are exposed to.

"Now we have intensifying screens, which turn the x-rays into light before it turns it into an image, which allows you to use a lot less radiation than we did 20 years ago," said Knoll. "Though we're very careful about how much radiation we give to our patients — it's such a minor amount now, people don't think about it. It's actually about the same amount as a chest x-ray, if you fly across country and back again. So, we're down to very small amount, but we're always trying to make it even less."

While the digital age improves the speed of the process, it's the technologists that serve and comfort patients as they are put under the lens in a dark room that echoes the sound of the x-ray machine scanning their body.

"Even with technology, mentorship is still very important," said Knoll. "You still need to have a good program to link the experienced techs with the new folks, who are coming right out of

U.S. Air Force Airman 1st Class John Dennis, 633rd Surgical Operations Squadron diagnostics imaging technologist, performs an x-ray on a patient, at Joint Base Langley-Eustis, Va., Feb. 21, 2017. Airmen assigned to the 633rd SGCS radiology department are equipped with the technology needed to provide images, assisting doctors in performing diagnosis and giving trusted care to patients in the medical clinic, surgical department and emergency room, 24 hours a day.

technical school. The people who are right out of tech school know [knowledge based] answers right off of the top of their heads, but the people who've been doing it for several years, know when they position a patient who's hurting, they can't put them in the position the text book tells you to — that's the human life experience and being more than a button pusher."

U.S. Air Force Airman 1st Class John Dennis, 633rd SGCS diagnostic imaging technologist, expressed similar sentiments, as he described what drives him to do his job to the best of his ability every day and to continue developing to provide the care to patients.

"Each person in the Air Force plays a part in the mission, and we ensure patients can get the healthcare they need," said Dennis. "It breaks your heart when you see patients [who are severely injured] and it's heartwarming to see them recover and be back with their family — it's very fulfilling."

Like many comic book heroes, these Airmen use technology to strengthen their capabilities, to help doctors fight the forces of illness and provide quality health care to members who visit the U.S. Air Force Hospital Langley.

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Active
RADIOLOGY

Army Modernizes Portable Battlefield Radiography System

By Ellen Crown, USAMRMC Public Affairs

Soldiers on the battlefield will soon use a new portable digital radiography system (PDRS) that is smaller, lighter, less expensive and more cyber-secure than previously fielded systems.

The U.S. Army Medical Materiel Agency will soon field the PDRS to the Army to replace two aging devices, including an X-ray generator and an accompanying computerized reader system. The PDRS combines these capabilities into a single lightweight X-ray unit intended for use by deployed medical, special operations and mortuary affairs Army units.

According to USAMMA equipment specialist Diego Gomez-Morales, the move to the PDRS will significantly reduce the cost per system and overall logistical footprint.

"The change will save the Army about $55,000 per system," said Gomez-Morales. "It will also reduce shipping weight by about 60 pounds per system and reduce the number of shipping containers from three to one."

Gomez-Morales said the PDRS will be fielded with a complete training support package, including guides for operators and maintainers. Additionally, all parts are cataloged and sourced, which will expedite future repairs.

"The issue is that, without operator and maintainer manuals to guide us, we risk doing more damage than good when we try to work on this equipment in the field," he continued. "Integrated product support is an essential part of the acquisition and fielding of medical solutions. We are not solely focused on just putting out new materiel; we must think about the entire lifespan of these devices."

Replacing two aging devices, including an X-ray generator and an accompanying computerized reader system, the PDRS combines these capabilities into a single lightweight X-ray unit intended for use by deployed medical, Special Operations and Mortuary Affair Army units.
U.S. Army photo by Ellen Crown

Additionally, the Navy and Marine Corps will also field the same system, according to Gomez-Morales, to move the military health system toward greater medical system standardization.

"Having the same system or device used across the military is easier for trainers, operators and maintainers," he said.

Modernizing medical devices also means ensuring they meet stringent Army cybersecurity requirements. Many modern medical devices need to connect to military computer networks to operate properly. In an effort to ensure medical devices purchased by the government do not introduce security vulnerabilities, each device must pass a robust security certification process.

The PDRS is the first Army medical device to receive its Authority to Operate (ATO) under the new Risk Management Framework (RMF) — a process that took more than a year to complete. RMF integrates security and risk management activities into the system development life cycle. The risk-based approach to security control considers effectiveness, efficiency and constraints due to applicable laws, directives, executive orders, policies, standards or regulations.

"Achieving an ATO under RMF gives us peace of mind that this device complies with all of the current cybersecurity requirements, ensuring patients' private health information remains secure at all times," said Andrew McGraw, chief of USAMMA's Cybersecurity Division, Integrated Clinical Systems Program Management Office.

The PDRS received cybersecurity testing at the Information Security and Engineering Command; environmental testing at the Aberdeen Test and Evaluation Center; and operational testing at the U.S. Army Medical Center Department Center and School.

The PDRS was developed with support from the U.S. Army Medical Center Department Center and School's Capabilities Development Integration Directorate (CDID). The PDRS's integrated product team included members from the Navy and U.S. Marine Corps, CDID, the USAMMA National Maintenance Program, the USAMMA Cybersecurity Division and the Defense Logistics Agency Troop Support.

"The PDRS IPT did a great job of working together to get through the final steps of the acquisition process," Gomez-Morales said. "They really demonstrated strong teamwork, which was ultimately why this project is a success."

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Active
SURGERY

Special Operations Surgical Team Saves Hundreds During Deployment

By J.D. Levite

If they stood on the roof of the abandoned one-story home they were working out of, at night they could see bombs dropping on the city three kilometers north.

Limited resources, limited manpower, limited backup, and limited time didn't stop this Air Force Special Operations Surgical Team from treating more than 750 patients in eight weeks during a recent deployment to the Middle East.

SOSTs are teams of mobile surgical specialists with advanced medical and tactical training, with the mission of reducing time between the point of injury and the inevitable surgery.

In medical terms, a mass casualty is anything that overwhelms the team's capabilities and resources. This team dealt with 19 mass casualty events during that two-month period.

Lt. Col. Benjamin Mitchell, the team leader, said "We had one surgeon and five other guys. If we had three or four critically injured patients show up, that's too many for us to give them all the best care if they were there by themselves."

At that point, they go into a "crisis mode" to try and do the best they can for everyone and determine the best way to treat each patient as quickly as possible.

Mitchell and one of the other doctors on his team, Maj. Justin Manley, spoke at the 2016 Air Force Medical Service Senior Leadership Workshop on Nov. 17. Their presentation focused on many of the injuries they saw during their deployment, including knife and bullet wounds,

U.S. Air Force Special Operations Surgical Teams practiced integration operations with a special operations partner force during a Special Tactics exercise, Hurlburt Field, Fla., Oct. 16, 2015. SOST members are military medical professionals selected to provide battlefield trauma and other surgical support in a special operations mission set. SOST members often forward deploy to austere or hostile areas to perform life-saving trauma surgery for special operators with little to no facility support. *U.S. Air Force photo/Released*

U.S. Air Force Special Operations Surgical Teams practiced integration operations with a special operations partner force during a Special Tactics exercise, Hurlburt Field, Fla., Oct. 16, 2015. SOST members are military medical professionals selected to provide battlefield trauma and other surgical support in a special operations mission set. SOST members often forward deploy to austere or hostile areas to perform life-saving trauma surgery for special operators with little to no facility support. *U.S. Air Force photo/Released*

explosion damage and chemical burns.

SOST Airmen often carry specialized equipment and gear designed to support a wide spectrum of operations and mission sets from cities to remote areas. This flexibility enables them to be highly adaptable and operate with a smaller footprint than most conventional surgery teams. So while they had some of their own equipment and a small supply line that could bring them some resources, they had to rely on a local hospital for help sometimes as well.

"I was blown away and awed by the support the locals gave us," Mitchell said. "Here's this war-torn country that doesn't have a whole lot, and when we told them we're running out of gloves, they brought us gloves."

He said the local hospital also supplied the team with morphine for the patients and as much as 90 units of whole blood with a cooler to store it in. "It was just amazing. They don't have a lot, but they gave us what they had because they saw our capabilities."

And they needed as many resources as they could get because many of their patients were dealing with pretty serious injuries, including more than 400 gunshot wounds or blast injuries.

Mitchell described one patient who had a gunshot wound that entered his collarbone and exited through his chest. He was hypotensive and bleeding to death in the emergency room. They started blood resuscitation on him, but needed to pull blood from the men who had brought him in just to keep him alive.

He said it didn't end up being enough because while they were operating he started to bleed out again, which basically reversed all the work they had done before.

"I thought we were going to lose this guy," Mitchell said. "But Justin (Manley) stayed cool and tied off the artery. We didn't have any of the local supply of blood that was a match, and all the guy's buddies were gone because we had been in the operating room for 45 minutes to an hour at that point."

Mitchell said in order to save the patient's life he had to pull blood from one of the nurses on his team who happened to be a match. They gave it to the patient, finished their work, and sent him on his way.

"We'd had a lot of hard days. The mass casualties took a toll on my team. But one of our best days was about 11 days later, when this guy walked in and said 'Thanks for saving my life.'"

With no access to any of the tools and devices you'd find in a modern hospital, the SOST had to rely on a little innovation. He said the best diagnostic tool at their disposal was a handheld ultrasound device.

"When I had six patients show up with injuries in the chest and belly, I could use

U.S. Air Force Special Operations Surgical Teams practiced integration operations with a special operations partner force during a Special Tactics exercise, Hurlburt Field, Fla., Oct. 16, 2015. SOST members are military medical professionals selected to provide battlefield trauma and other surgical support in a special operations mission set. SOST members often forward deploy to austere or hostile areas to perform life-saving trauma surgery for special operators with little to no facility support. *U.S. Air Force photo/Released*

the ultrasound to triage them. I can tell which of those six needs surgery right now," he said. "It's a must-have for teams trying to do similar type of care in an austere environment."

Manley also relied on the unusual, but instead of using a modern tool for a modern age he used a technique first described to treat soldiers during the Korean War called REBOA, or Resuscitative Endovascular Balloon Occlusion of the Aorta.

"It's a minimally invasive technique to occlude bloodflow," Manley said. "Using an artery in the groin, you place the balloon up into the aorta, inflate it and occlude the blood flow."

According to Manley, this is a technique that had fallen out of favor until recent technological developments, like smaller catheters, helped military officials recognize its strength in downrange situations.

He said using the REBOA catheter during damage control surgeries showed immediate response from the patients and allowed his team to catch their breath and catch up to what was happening.

The work they were doing was intense and stressful, and there wasn't always a lot of time to think about the gravity of the situation unfolding around them.

"You put it in the back of your head during the trauma, but any moment your brain starts to slow down it jumps right back in the forefront of your mind and can be overwhelming," Manley said. "There were several times I reached a point where I had to walk away. I knew everything was under control with the rest of the team, so I could walk away, compose myself, and get right back into it."

Mitchell said, "I specifically remember one of the pediatric mass casualties. We got through all the patients and got them transported out and two of our team just broke down crying. Sitting there, spent. Sometimes being the team leader I was more worried about having that responsibility of keeping the team functioning."

Despite the difficulties, both Airmen said it was a time they never want to forget. They called it the "pinnacle" of their career so far.

Mitchell said, "I think I'll always look back on it as... I don't know…"

His voice started to crack as Manley finished his sentence for him: "Amazing. Humbling."

"Probably one of the most important things I'll ever do. I try to focus on the good we did, the lives we saved. We changed the course of their lives."

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Active
SURGERY

Capt. Cleveland Bryant Takes Command of the U.S. Army Institute of Surgical Research Company

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

"The best thing about my position is that I believe that I can affect positive change in the lives or our Soldiers," said Capt. Cleveland Bryant, U.S. Army Institute of Surgical Research Company commander. Bryant took command of the USAISR Company July 15 and said that he believes is new position will bring about its challenges as well as great opportunity for personal and professional development.

"I am very excited and eager to witness the innovative research the Soldiers at this Institute are involved in," he said. "Given my prior service as a 68K [Medical Laboratory Specialist], I find it really exciting to have the opportunity to mentor as well as learn of these Soldiers within such a phenomenal organization."

With 15 years of service in the Army, Bryant said that he initially joined the Army to participate in the loan repayment program to pay off the student loans he accrued in college. However, he found it more gratifying that the Army provided a firm foundation of personal growth, challenge and honorable living.

> "I want to produce a more cohesive and productive working environment."

"I also sought for a better way of life," he said. "The Army has been a great blessing in my life since joining."

Bryant attributes his success thus far in the Army to the support and love of his family.

"My family has been flexible, patient and understanding regarding the demands of military life for the past 12 years," said Bryant. "Their unconditional love and support, as well as my faith in my Lord and savior, Jesus Christ, have been the critical factor in my life and career. I'm grateful for my family."

Some of the things that Bryant would like the ISR Soldiers and staff to know about him is that he's approachable and amiable.

Capt. Cleveland Bryant, U.S. Army Institute of Surgical Research Company Commander. *Photo by Steven Galvan, DBA*

"I also love to listen to classical, jazz and choral music," he added.

Bryant has some personal and professional goals that he'd like to accomplish while commanding the USAISR Company. Personally, he wants to compete in a Tough Mudder and/or Spartan Race. He would also like to spend more quality time with his wife and two children, panoramic tour South America, write a book and volunteer humanitarian assistance overseas. Professionally, he wants to improve Soldiers' physical training, bridge communication gaps between civilians and military, as well as communication between officers and enlisted personnel.

"But most importantly, I want to produce a more cohesive and productive working environment," he said.

For now he is looking forward to visiting every task area throughout the Institute and getting acquainted the Soldiers and staff at the Institute.

"I am very honored and privileged to assume command of this company," said Bryant.

usaisr.amedd.army.mil

The U.S. Army Institute of Surgical Research Receives Force Health Protection Award

By Mike Feeley, ISR Public Affairs Officer

The U.S. Army Institute of Surgical Research received its first ever Force Health Protection Award in 2009. The award was presented to the USAISR in recognition of its "significant contributions in delivering lifesaving care, advanced trauma systems and innovative research products to America's Warriors."

The Force Health Protection Award is a group award recognizing an organization or team that has made the greatest contribution to assure that the men and women of the armed services and/or veterans are provided health services to assure mission readiness or optimal health functionality at all times. The concept of force health protection goes beyond the military and includes humanitarian and disaster relief, physical and occupational rehabilitation, as well as the work of the Public Health Service to provide force health protection to the nation threatened by disease, a natural disaster, or acts of terrorism or war.

The Institute of Surgical Research (USAISR), originally named the Surgical Research Unit, was established in 1943 at Halloran General Hospital, Staten Island, New York. Its mission was to evaluate the role of newly discovered antibiotics in the treatment of war wounds.

In 1947, the Institute, with its 12 assigned personnel, moved to Brooke General Hospital, Brooke Army Medical Center, Fort Sam Houston, Texas. At that time, in addition to the study of antibiotics, the Institute was also charged with the study of innovative new surgical techniques and developments.

Then in 1949, due to concern regarding the large number of possible casualties generated by nuclear weapons, the Institute's mission was further expanded to include the study of thermal injury. The advent of improved grafting procedures and continued use of antibiotics in new applications grew with this mission.

In May 1953, the Institute became a Class II activity of the Surgeon General. It was later assigned to Headquarters, United States Army Medical Research and Development Command in September 1958. During this period the Institute evaluated forward thinking medical research initiatives, including the use of plasma extenders, grafting and preservation of blood vessels, and the use of an "artificial kidney."

As the "Army's Burn Unit," this unit served as a prototype and model for civilian burn units all over the world and was a premier dialysis research center serving South Central Texas and neighboring states.

In March 1994, the Institute became a subordinate command of the Medical Research and Materiel Command, itself a major subordinate command of the newly formed Medical Command (MEDCOM).

In 1996, the Institute moved to its current location adjacent to the newly constructed Brooke Army Medical Center. At this time, the research focus of the mission changed from thermal injury to the full spectrum of combat casualty care.

The Institute of Surgical Research is a highly decorated and celebrated unit. The Institute has been involved in humanitarian missions to foreign countries such as the Union of Soviet Socialist Republics in 1989, Guam in 1997, and Honduras from 1999 to present.

The Institute has utilized its expertise by caring for burn casualties from every conflict since World War II to Operation Iraqi Freedom and Operation Enduring Freedom, including the 1979 Marine Base fire in Camp Fuji, the 1983 bombing in Beirut, and the 1994 Pope Air Force Base plane crash, as well as dozens of other medical emergencies.

]As a result of the 2005 Base Realignment and Closure, in 2010, the combat casualty care research sub-function of Walter Reed Army Institute of Research (from Forest Glen, Maryland) and the Army Medical Research Detachment (from Brooks City-Base, Texas), were co-located and integrated into the USAISR. In addition, the Army Dental and Trauma Research Detachment from Great Lakes, Illinois, became a subordinate unit of the USAISR.

With the addition of these units, the Institute has grown from a 12 person staff in 1943 to over 700 military and civilian personnel at present. It continues to serve as the primary Combat Casualty Care research facility for the Army.

Moreover, while continuing its excellence in the field of burn care management, the Institute has expanded and placed equal emphasis in providing medical solutions for the injured warfighter on the battlefield.

As a result of the 2005 Base Realignment and Closure, the Battlefield Health and Trauma Research Institute (BHT) was formed. This included the construction of a new building adjacent to San Antonio Military Medical Center (SAMMC) and connected to the USAISR building, permitting all Department of Defense (DoD) combat casualty care research (minus neuroprotection) to be co-located with the USAISR. This in turn allowed the following Navy and Air Force activities to be added to the BHT:

- The Naval Medical Research Unit-San Antonio (NAMRU-SA), received the combat casualty and research sub-function of the Naval Medical Research Center from Forest Glen, MD, and the Naval Institute for Dental and Biomedical Research from Great Lakes, IL.
- The United States Air Force Dental Evaluation and Consultation Service (DECS) from Great Lakes, IL.

Active
SURGERY

Belvoir Hospital "Glues" its Status as Innovative Facility with New Varicose Vein Procedure

By Alexandra Snyder, Fort Belvoir Community Hospital Public Affairs

Fort Belvoir Community Hospital recently made history as the first military treatment facility to perform varicose vein correction using medical-grade glue.

The adhesive was recently approved for use in the U.S., and Belvoir Hospital is the sixth facility in the country to perform the procedure.

Taking an average of 30 minutes and involving just one injection of local anesthetic, the procedure requires significantly less recovery time than traditional varicose vein surgeries. In traditional procedures, the vein is either pulled out of the body via an incision in the groin — a procedure known as "vein stripping," or soldered closed using high temperatures, said Army Lt. Col. Llewellyn Lee, chief of Cardiovascular and Interventional Radiology at Belvoir Hospital.

Lee led the multi-disciplinary team that performed the vein glue procedures.

"Vein stripping is performed under general anesthesia and usually involves two weeks' recovery time," Lee said. "By comparison, the glue adhesive treatment offers a minimally invasive alternative and no hospital stay."

During a vein glue procedure, glue is inserted into the diseased vein via a fine catheter tube, which seals the vein shut. Blood flow is then naturally redirected through other healthy veins in the leg. Patients are typically able to leave the hospital within shortly after the surgery is complete and can resume minor activity within a few hours.

"This is an exciting new technique to treat varicose veins, with very little pain and almost no down time," Lee said. "That is very important to our patients, some of whom are active-duty and suffering from varicose veins due to the frequent hours of standing watch and hiking with heavy equipment."

Varicose veins are a common problem, affecting up to 30 percent of adults in the U.S. While most develop in the legs, varicose veins can also appear in the groin. They affect men and women of all ages and ethnicities.

"When the small valves inside the veins stop working properly, blood flows in reverse and pools in the vein, making it swell," he said. "For some sufferers this causes painful, aching legs. But, it can also have other, more serious complications, such as ulcers, caused by long-term fluid buildup in the tissues."

For many years, vein stripping was the only corrective option.

"Stripping isn't an effective treatment, as research shows that the vein grows back over time," Lee said. "Additionally, it can be very painful and lead to excessive scarring."

For the past decade, doctors have tried other treatment techniques to find better options for their patients, including using heat to seal varicose veins shut.

"[Heat] is more effective than stripping, but still requires multiple injections of local anesthetic and significantly more down-time than using the new glue," he said.

The low recovery period is what convinced Marine Corps Capt. Brett Disher to undergo the procedure, after a large infected vein near his groin ruptured.

Marine Corps Capt. Brett Disher receives an ultrasound of his affected blood vessel prior to varicose vein correction surgery. Disher was the first active-duty service member and one of the first Americans to receive the surgery, which involves using medical-grade adhesive to close affected veins. *Department of Defense photo by Reese Brown*

"I've always been really active, and being able to stay that way was important," said Disher, who is stationed at Marine Corps Base Quantico. "The surgery didn't hurt at all and my leg already feels lighter, better. They've said I should stay as active as possible. I'm glad I don't have to worry about this anymore."

Retired Army Capt. Neal Prestridge had the procedure done on both legs, and said the effects were immediate.

"I feel great. I can already feel a difference in the amount of swelling," he said, just five minutes after leaving the operating room. "When I stand, there is a very noticeable difference. I don't have the pain I did before the procedure. I used to say I was 'alive and kicking' when people asked me how I was, but now I can actually kick."

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Active
UROLOGY

BAMC Docs Perform Robot-assisted Pediatric Surgery

By Elaine Sanchez, Brooke Army Medical Center Public Affairs

A 2-year-old boy has a shot at a better quality of life, thanks to a robot and a few skilled surgeons here.

Doctors here performed surgery on Jose Collado Jr., son of Army Maj. Jose and Alma Collado, last month to remove a large cyst from behind his bladder. The procedure marks Brooke Army Medical Center's first robot-assisted pediatric surgery.

"The surgery was very successful," said Army Lt. Col. (Dr.) Thomas Novak, BAMC's chief of pediatric urology. "We were incredibly pleased at the outcome and at the impact we made on Jose's future quality of life."

The Collados first brought their infant son to Brooke two years ago, hoping to pave a better future for Jose.

Jose had been diagnosed shortly after birth with polymicrogyria, a rare brain malformation that can cause problems with eyesight, seizures and developmental and motor delays. Along with these issues, which include legal blindness, Jose also had a cyst behind his bladder.

As a number of specialists addressed Jose's eyesight, seizures and development, Novak focused on his cyst. Due to the size, the mass was likely to cause bladder and bowel problems later in life, he explained. However, he was hesitant to perform surgery while Jose was still an infant, particularly in the absence of symptoms. The doctor advised the concerned parents to hold off on surgery until their baby had an opportunity to grow.

Robotic Technology

From the beginning, the doctor said, he thought a robotic approach would be ideal.

Robotic technology has been a surgery staple at BAMC for several years, but until now, was reserved solely for adults. Novak had long since noted the success of robot-aided pediatric surgery in other parts of the country, particularly for urologic cases, and felt it could have a place at BAMC.

"It's definitely not mainstream," he said. "But there are a handful of people who have practices focused on pediatric robotic urology."

The Collado family poses for a photo at San Antonio Military Medical Center

Robotic technology, he explained, offers numerous benefits: it's minimally invasive, more agile in small spaces, offers 3D high resolution magnification for better views of the surgical site, and typically involves a quicker recovery time.

"The robot has movements analogous to a hand," he said. "You can move with complete free range of motion and obtain a much better visual as you go deeper and into tighter spaces."

Open Incision Would Be Difficult

In Jose's case, Novak saw the potential to move toward the deep-seated mass with better visibility. "The mass was in an area where open surgical incision would be difficult," he explained, "and risky with vital structures in the way."

Novak patiently followed Jose closely for two years. However, with a potential military move for the family looming, the Collados asked Novak to perform the surgery before they left. Confident that Jose was ready, the doctor quickly enlisted the help of Army Maj. (Dr.) George Kallingal, a urologic oncologist and robot-assisted surgery expert, and Air Force Maj. (Dr.) Michelle Marino, a pediatric anesthesiologist. "We took a team approach to gain experience and comfort for everyone involved," Novak said.

Because robot-assisted pediatric surgery had never been performed here, Novak garnered support at the highest echelons

of his command. "Everyone was very supportive," he said. "I felt strongly Jose was the right candidate who could greatly benefit from the surgery."

Novak and his team performed the surgery June 30. "It was highly successful," he said. "We removed the cyst without any complications."

Quick Recovery

Jose's father noted his son's quick recovery. "We were home after two nights at the hospital, and Jose was fine," Collado said. "He's up and about like nothing ever happened.

"We are ridiculously happy with the doctors here," he added, noting special gratitude for Jose's neurologist, Army Lt. Col. (Dr.) Richard Hussey, and for Novak. "It's one of the reasons we wanted to come here; the pediatric care was very well known."

Collado was so pleased with the care that he volunteered for an assignment in Korea rather than move his family away. "I wasn't comfortable with a break in care," he said. "Jose's progress here has been unbelievable."

Novak said he couldn't be more pleased with the outcome.

"Everything came together: the right patient, right family, right problem, right team," he said. "We hope to do more surgeries of this type in the future, but in the meantime, it's just very rewarding to have made a difference in Jose's life."

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Military Children's Health Month: Taking Care of our Youngest Beneficiaries

The Military Health System is dedicated to making sure we provide good care to our service members, retirees, and families. As a pediatric emergency physician for more than 20 years, I have witnessed heartbreaking scenes of children brought in for treatment after some terrible accident or illness, so I know firsthand how important it is to do our best for our most vulnerable. During April's focus on Military Children's Health, I'd like to spend a few minutes drawing attention to our youngest beneficiaries.

Parents go off to war leaving their children behind. We know that if a child of a deployed service member experiences health care issues, that service member thousands of miles away also has trouble. Our duty in the Military Health System is to provide peace of mind by guaranteeing health care for children.

One of the advantages we have in the MHS is a patient-centered medical home model, which came from the pediatrics field. These models include physicians, nurses, medics, medical technicians, social workers, and case managers, just to name a few. Providers and patients are able to take a more proactive approach to health care and focus on prevention. Having a single "home" as the center for primary care gives us a template for better coordination.

Despite the challenge of frequent moves for families, the military offers several avenues to ensure no one falls through the cracks. One such path is the Exceptional Family Member Program, which helps families gain assignments where appropriate care is available and navigate the medical and educational systems to try to match the needs of the military and its family members. TRICARE's Extended Care Health Option provides supplemental services to active duty family members with unique needs to ensure an integrated set of services and supplies, such as special education, assistive technology devices, and home health care. In recent years enhancements expanded or added new benefits based on feedback from families. The Department of Defense Office of Military Family Readiness provides resources through Military OneSource, a one-stop shop for answers to military life questions, including parenting tips and children's health. All of these programs recognize that children's health is more than making sure a case of the sniffles is cared for; it goes into the social realm of children's well-being.

We don't rest on our laurels and work in a vacuum when it comes to military children's health. We continuously review our policies to see what changes are needed so children receive evidence-based services. The MHS leadership is committed to the health of all family members.

According to Military OneSource, about 40 percent of service members have children, so it's important to pay attention to this large segment of our beneficiary population. Surveys indicate that many children of service members follow their parents into the military. Taking care of them today is an investment in the future.

The bottom line: Good health for military children supports the readiness of our warfighters and makes it easier to accept those family members if they decide to volunteer to be part of our great military. But the simplest and most important point is one on which we can all agree: It's the right thing to do.

health.mil

Active
UROLOGY

Helping People is its Own Reward

By Tech. Sgt. Kali Gradishar, 12th Air Force (Air Forces Southern)

For U.S. Staff Sgt. Nicholasa Partida, New Horizons surgical service technician, "helping people, in general, is its own reward," she said.

As a surgical service technician, Partida finds herself in operating rooms assisting surgeons and specialists as they perform necessary, and sometimes life-saving, procedures. In Belize, she is doing the same as part of New Horizons Belize 2014, a multi-faceted exercise that provides valuable training experiences for Belizean and U.S. medical providers.

"This is my first humanitarian mission, and it's pretty awesome," said Partida, a native of Victoria, Texas. "I'm here helping patients. I'm here helping the urologists.

"Back home, everything can seem real routine, but it's not routine here at all," she said of the opportunity to train and learn in her field. "There are a lot of things you would normally not see in the states. Here, we're going back to the basics."

The technician has found that flexibility is imperative when conducting operations in an unfamiliar environment.

"The equipment here is different, so we adjust," she said. "You have a big sense of adrenaline because you have to think on your toes, utilizing everything we have in any way we can."

"This is my first humanitarian mission, and it's pretty awesome," said Partida,

U.S. Air Force Staff Sgt. Nicholasa Partida, surgical service technician, prepares a room for a urology procedure during a New Horizons Belize medical readiness training exercise at the Karl Heusner Memorial Hospital in Belize City, Belize. A U.S. Air Force surgical team arrived in Belize to spend two weeks conducting urology procedures and surgeries in coordination with the KHMH urologist. Approximately 40 patients were screened through the KHMH, and about 20 procedures are planned during this phase of the training exercise. *U.S. Air Force photo by Tech. Sgt. Kali L. Gradishar*

With more than nine years in the Air Force, Partida still finds great job satisfaction in her work.

"I mainly joined the military for the education," she said, noting her plans did not involve remaining in the Air Force for long. "But then I really loved my job.

"I even went back to school to specialize in urology," she said, "and I've been doing that for the last four years."

Currently stationed at Wright-Patterson Air Force Base, Ohio, Partida serves as the NCO in charge of the urology clinic. She applies her vast knowledge to her experiences in Belize while remaining accommodating to whatever the day throws her way.

"I've really learned to go with the flow," she said. "We'll use whatever we have and whatever we can use that's best for the patient."

af.mil

VA Establishes Commission to Recommend New Under Secretary for Its Veterans Health Administration

The Department of Veterans Affairs (VA) has announced the establishment of a search commission to help identify candidates for the position of Under Secretary for Health of its Veterans Health Administration (VHA).

The Under Secretary for Health manages VHA, the nation's largest health-care system, which has an annual budget of approximately $61 billion and oversees the delivery of care to more than 9 million enrolled Veterans.

Candidates for the Under Secretary position must be visionary leaders who have demonstrated an ability to conceptualize and implement the VA Secretary's vision, and are dynamic advocates who can move an ambitious agenda forward to meet the needs of Veterans.

By law, the appointment is made without regard to political affiliation and solely on the basis of demonstrated ability in the medical profession, in health-care administration and policy formulation, or in health-care fiscal management. Additionally, the candidate must possess substantial experience in connection with the programs of VHA or similar content and scope.

By law, the appointment is made without regard to political affiliation and solely on the basis of demonstrated ability in the medical profession, in health-care administration and policy formulation, or in health-care fiscal management.

Dr. David J. Shulkin, Under Secretary, Veterans Health Administration

The Under Secretary will also be responsible for overseeing the operation of VA's more than 1,200 sites of care, including hospitals; community based outpatient clinics; nursing homes; domiciliaries; and 300 Vet Centers. VHA is the nation's largest provider of graduate medical education and a major contributor to medical and scientific research.

More than 73,000 active volunteers, 123,000 health professions trainees, and 306,000 full-time, health-care professionals and support staff are an integral part of the VHA community.

The commission, once named, is expected to complete its work by May 22.

For more information about this position, visit www.usajobs.gov/GetJob/ViewDetails/467194800

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Veterans
SPECIAL FEATURES

VA Names New Executive Director of Spinal Cord Injury System of Care

Secretary Shulkin has appointed Itala Manosha Wickremasinghe, MD to the position of Executive Director for the VA's Spinal Cord Injuries and Disorders System of Care.

Dr. Wickremasinghe served as the Chief of the Spinal Cord Injury (SCI) Center at VA North Texas Health Care System (VANTHCS), and was SCI Medical Director for three years after practicing as a staff physician in the Center. She also holds an appointment as Assistant Professor in the Department of Physical Medicine and Rehabilitation at UT Southwestern Medical Center, and board certification in Physical Medicine & Rehabilitation and sub-specialty certification in Spinal Cord Injury Medicine.

"My vision is for every veteran with a spinal cord injury or disorder (SCI/D) to have the support of the Veterans Health Administration (VHA) SCI/D System of Care in optimizing their health and well-being," stated Dr. Wickremasinghe. "The VHA SCI/D System of Care will support each veteran to participate in life's activities as fully as possible."

The VA has the largest system of care for spinal cord injuries and disorders in the United States. VHA system of care is comprised of 23 designated acute Spinal Cord Injury Centers, 7 Spinal Cord Injury Long term care units and trained SCI Primary Care Teams located at more than 100 VA facilities. It is the only healthcare system in the United States that provides lifetime care for persons with SCI/D, expanding the continuum from the time of new injury to end of life care.

VA's Spinal Cord Injuries and Disorders System of Care is designed around a system of "Hub and Spokes." The 24 SCI/D Centers are the Hubs. Each Center has highly trained and experienced providers including doctors, nurses, social workers, therapists, psychologists, and others who can deal with the unique problems that can affect people with a spinal cord injury or disorder.

SCI/D Centers work closely with other designated medical facilities that do not have SCI/D Centers (called Spokes) located around the country to provide excellent care as close to home as possible. At SCI/D Spokes, health care providers work closely with the Centers to ensure that comprehensive primary and specialized care needs are addressed.

It is important to get primary care from providers that have SCI/D training so that they can check for the development of problems unique to SCI/D.

Spinal Cord Injuries and Disorders Centers.

There are 24 Spinal Cord Injuries and Disorders Centers (SCI/D Centers) located around the country.

> "The VA has the largest system of care for spinal cord injuries and disorders in the United States. If you are dedicated to serving those who have served our country, please consider working for Veterans with spinal cord injuries and disorders."

Itala Manosha Wickremasinghe, MD

VA provides care for approximately 26% of individuals with spinal cord injury and disorders (SCI/D) in the United States, making it the single largest network of care for persons with SCI/D. In 2011, VA provided a full range of care to more than 27,000 Veterans with SCI/D. Although the number of SCI/D cases is relatively small compared to many other chronic conditions, it is a complex condition with costs 6.5 times greater than the average Veteran receiving VA healthcare. The annual cost per VA patient with SCI/D is $44,696; however, new onset SCI/D and higher level injuries (especially ventilator dependent tetraplegia, and institutional long-term care) are much more costly. For example, the average cost for a Veteran with high tetraplegia (C1-C4) is $801,161 in the first year, and $143,507 in each subsequent year.

Complications and Clinical Conditions

The Spinal Cord Injury Quality Enhancement Research Initiative (SCI-QUERI) focuses on several complications and comorbidities associated with SCI/D. Prevention and management of infections has been one critical and ongoing area of research and implementation efforts for SCI-QUERI due to their impact on morbidity and mortality among Veterans with SCI/D.

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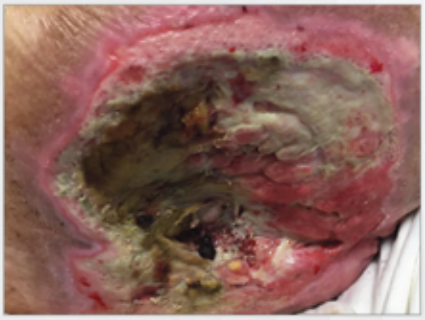
AN EPIPHANY IN WOUND MANAGEMENT

WHY NOT TRY V.A.C. VERAFLO™ THERAPY?

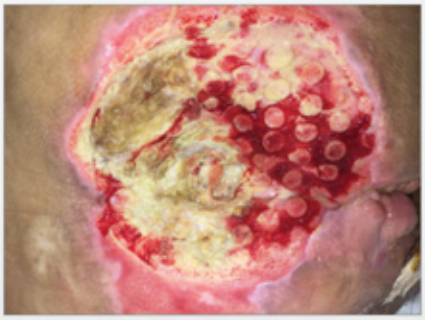
A 64-year-old male presented with a stage 4 pressure ulcer of the sacrum present for more than 4 years.*

Day 0



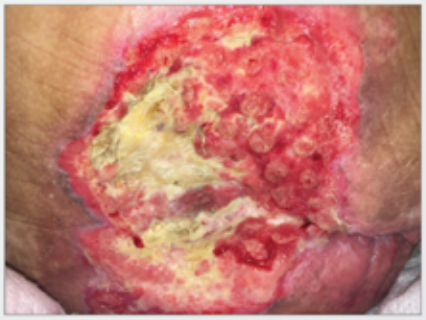
Wound following bedside sharp debridement. V.A.C. VERAFLO™ Therapy with V.A.C. VERAFLO CLEANSE CHOICE™ Dressing applied.

Day 3



Wound after first V.A.C. VERAFLO CLEANSE CHOICE™ Dressing change.

Day 17



Wound after a total of 15 non-continuous days of V.A.C. VERAFLO™ Therapy with V.A.C. VERAFLO CLEANSE CHOICE™ Dressing.**

Solution: Saline
Dwell: 1 minute
Cycle Frequency: 30 minutes
Pressure: -150mmHg

Patient data and photos courtesy of Kimberly D. Hall, DNP, RN, CCNS-BC, CWCN-AP, COCN
Jessica Patterson, BSN, RN, CWOCN

*Patient comorbidities included former tobacco use, poor nutritional status, hypertension, chronic paraplegia (present for more than 15 years), leukocytosis, multiple previous pressure ulcers, and osteomyelitis of the sacrum. The wound had been previously treated with negative pressure wound therapy (NPWT), offloading, silver dressings, air mattress use, hydrofiber dressings, alginate dressings, and wound debridement.

**V.A.C. VERAFLO™ Therapy was discontinued and V.A.C.® Therapy was initiated at continuous negative pressure at -125mmHg for 9 days at which time patient was discharged to a skilled nursing facility.

As with any case study, the results and outcomes should not be interpreted as a guarantee or warranty of similar results. Individual results may vary depending on the patient's circumstances and condition.

NOTE: Specific indications, contraindications, warnings, precautions and safety information exist for KCI products and therapies. Please consult a physician and product instructions for use prior to application. Rx only.

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Veterans
SPECIAL FEATURES

VA Helps Vietnam Veteran Get His Life Back

By Tom Cramer, VHA Communications

Dale Herb knew something was going terribly wrong with him, but he couldn't figure out what it was.

"Eleven years ago I had to stop working because of my health," said the 67-year-old Vietnam Veteran. "I was getting weaker and weaker. I was breaking down physically. So I went to the VA because I thought they might have an idea what was wrong with me. And they did."

Not Good News

Herb's doctors at the Chillicothe VA Medical Center told him he had Parkinson's disease, a long-term degenerative disorder of the central nervous system.

"I got exposed to a lot of chemicals in Vietnam," said the Army Veteran, who lives with his wife Deborah in Marietta, Ohio. "I guess I'm paying the price for serving my country, but I'd do it again in a heartbeat. I went out into the jungle and did what I was supposed to do. All of us did. We did our jobs."

Herb said he's glad he turned to the VA for help.

"I found out I had benefits I wasn't aware of, so that's been very helpful to me," he said. "The VA has been taking care of me. I'm lucky, because there's no way I could have paid for the medicine they're giving me. It's very expensive. Without the VA I would have had to choose between food or medicine."

But no amount of medicine can permanently halt Parkinson's in its tracks. It's a relentless disease that just keeps progressing.

"About a year ago I lost the use of my legs," Herb said. "I was homebound. I couldn't go anywhere. It was hard on me and hard on my family. It was hard on my wife because of all the strain it put on her. She has health issues too."

That's when the VA stepped in once again with a solution.

On the Road Again

"They gave me a special van* that I could drive using just my hands," he said. "They paid for six driver rehab lessons so I could learn how to drive my new van. Then they gave me a powered wheelchair so I can go up the ramp and into my van. I can get around now. I've got my independence again. After a year at home I'm getting reacquainted with my community."

Dale Herb of Marietta, Ohio, prepares to enter his new van, which he can drive himself using hand controls. *Photo by Peyton Neely*

"The quality of his life will be so much better now," said Herb's wife, Deborah. "This is exciting. I can't explain what this means to us."

"They all live within four miles of us," he said, "so we're blessed. Just last week I went to see my oldest grandson play in a basketball game."

Good People

The Army Veteran said he's also grateful to the VA for helping him out with yet another health issue: the post traumatic stress he developed as a result of his service in Vietnam.

"I had a very good doctor at the Chillicothe VA who helped me through some rough times," he said. "She's an extraordinary person, and she's the reason I'm alive today. There were times when I was ready to give up, but she made all the difference in the world. And she does this for Veterans on a day-to-day basis.

"I believe there are some people who don't just have a job… they have a gift," he continued. "She has a gift."

He reflected for a few moments, then added: "There are a lot of good people at the VA."

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Spokane VA Anesthetist is a Shining Example

By Bret Bowers, Public Affairs Officer

VA Nurse Anesthetist John Givens has just earned a promotion, 20-plus years in the making. "I have the best job in Spokane," says the husband and father of two, who chose to forfeit the higher salary he could be earning in the private sector, to proudly serve military Veterans enrolled in the nation's VA health care system.

As a CRNA, John Givens has become a key member of the medical surgical team at the Mann-Grandstaff VA Medical Center since 2010. "John is always looking to improve efficiencies and the Veterans' experience. Everybody loves his enthusiasm, from leadership on down to the housekeepers who keep the operating rooms sterile and functional," said Dr. Wayne Gerard, Chief of Surgery.

To Givens, the accolades and support are the result of a persistent drive to ensure his faith guides success for himself and others. In December, Givens stood before family, close friends, and medical center leadership as his wife Deb pinned on his Navy Captain insignia during a reception that followed the reaffirmation of his Military Officer's oath and promotion to Captain in the U.S. Navy Reserves.

His journey has been long, including completing his first military deployment to war-torn Afghanistan in 2013. He volunteered for that assignment, not realizing at the time, how much the experience of war, including operating on enemy combatants and innocent child victims of war, would test his emotions. "I am so thankful to God who opened up this door for me and my family [of coworkers] at the VA," explained Givens. "This personal achievement [promotion to Captain] is not a destination, but

CRNA, John Givens

rather a responsibility given to me to invest in others," he said.

By volunteering to go to war, Givens' story caught the attention of VA's national magazine "VAnguard" in its September/October 2012 edition. One reader, a private sector health care physician in Baltimore, MD was so inspired by John, he reportedly joined the reserves to commit to helping America's military men and women receive the best health care possible — like John.

Because he's a humble man who professes all the glory to his strong faith, Givens doesn't boast about achieving the rank of Captain as a Navy Reservist. "For him to do it as a member of the Nursing Corps in the Reserves is a huge accomplishment," said former Navy Commander Dr. Quinn Bastian, currently a VA Psychologist and Chief of Behavioral Health Service at MG-VAMC. Dr. Bastian says Givens is one of only 71 Captains among more than 65,000 Navy Reservists.

Givens convictions aren't new to those who truly know him. As a young boy growing up in Clarkston, WA, John volunteered at the local hospital, by painting and landscaping, and even stitching up patients when needed. "Yes, that's right," explained his father John, "I recall a time when a patient asked John if he was the same guy he saw outside mowing that morning, but was then stitching up an open wound later that day," said the elder Givens. "My son is my hero. He didn't grow up with a silver spoon and has surpassed me in so many ways and outgrown any expectation a Father could have for his son."

John and his wife Deb raised two boys. The oldest Gil, graduated from the Naval Academy in 2014 and is currently seeking his flight wings as a naval aviator in Florida. Their youngest son, Thatcher, is a cadet at Annapolis, like his brother before him. "We are so lucky to have military Veterans, like John, who are willing to be employed at our VA Medical Center," explained Jerry Anderson (USN Ret.) who performed the Officer's Oath and is a member of the Naval Academy's "Blue & Gold Officers" helping new cadets commit to the rigorous discipline and structure of becoming an officer in the U.S. Navy.

Anderson and Givens have served together at the Academy training cadets. "John earned this on merit," explained Anderson, a human resources specialist at MG-VAMC. "Once he was able to take a hard assignment and served in Afghanistan, it enhanced his opportunity for promotion.

Both his service to the Navy and the VA are commendable and the promotion [ceremony] allowed me an opportunity to thank John for his service." "John is exactly the type of health care professional we're looking for at the VA," explained Dr. Scott Nye, Chief of Staff, who with all of the medical center leadership team, is committed to finding talented physicians and nurses who look at the health care profession, "not for

the money, but the ethical value and personal growth of fulfilling what America's Veterans want and need through the VA." Fellow CRNA Mel Waller met Givens on their first day assigned to Spokane's VA Medical Center in 2010.

"We have a great group and John's a strong part of it. He's very honest and works at a high competency level in all facets of his job." Co-worker Bob Bond at the VA jokes how John learned the mastery of running the "Fournier Gangrene Center of Excellence" since arriving at the VA.

Many in attendance at the ceremony say they believe Captain John Givens' story is beneficial to others, simply because, "it shows how hard work, dedication, and service to others can make dreams come true," explained his Mother Cathy.

After meeting his wife Deb at Washington State University, John went on to graduate from the University of Washington Medical School and later, Gonzaga University, earning his Graduate Degree in Anesthesia. Currently, Givens is pursuing his PhD in Executive Leadership and Communications at the Jesuit University that has since become nationally known. His goal is to someday teach at the university level.

As parents, he and Deb helped their boys become "Eagle Scouts." John has served as an elder at Real Life Ministries and Genesis Prep Christian Academy in Post Falls, Idaho. He has also served his community by helping raise funds to rebuild the local ice-rink after it collapsed as a total loss under heavy snow during the winter of 1997-'98 in Northern Idaho.

In May of 2016, with just weeks before the race, John committed to another personal challenge, competing in a USA Ironman Triathlon in nearby Coeur d'Alene, Idaho. He and a fellow co-worker at the VA both completed the grueling race that includes a 2.4 mile swim, 112 mile bike-ride, and a 26.2 mile run — all in under 17 hours! "John has always been driven, determined, loyal, committed, and extremely interested and compassionate in people," explained Deb Givens.

She freely shared advice for other spouses concerned about their Veteran's anguish and troubles after returning from war. "Recognize it first, be flexible, and pray!" John Givens says his Wife is a tremendous blessing on his life and their family together. He also says, "taking care of Veterans is not simply a "job", it is a ministry.

To those who are given much, much is expected," said Givens. "I am striving to become a generous giver and that means sharing all 'God has given to me'. That is my purpose, to use all that God has given me to motivate and support others in reaching their personal and professional goals." Godspeed Captain John Givens… Godspeed to you and all those you serve in your community, in the military, and the Veterans at the VA.

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Perianesthesia Nurses Week

If you've undergone anesthesia lately for surgery or a diagnostic procedure, chances are, a Perianesthesia nurse cared for you before and after your surgery (and you never even knew it).

These highly-skilled nurses, who care for Veterans in their most vulnerable states, are trained to administer life-saving care should one have an adverse reaction from anesthesia.

Feb. 6-12 is Perianesthesia Nurses Week, a time to pay tribute to the nurses who are an integral part of the surgery team working alongside surgeons, anesthetists and surgery nurses.

Perianesthesia nurses are RNs with Critical Care experience, Advanced Cardiac Life Support Training, Basic Life Support Training and most are nationally certified in Certified Ambulatory Perianesthesia Nurse (CAPA) and Certified Post Anesthesia Nurse (CPAN).

The Perianesthesia nurse provides care for individuals who have had sedation/analgesia and or anesthesia. Patients under general anesthesia are usually still unconscious when they are transferred to the Post Anesthesia Care Unit.

The Perianesthesia nurse monitors vital signs, including blood pressure, pulse, heart rate and rhythm, and oxygen supply, and the surgical site for bleeding and provides appropriate management.

There are four phases of Perianesthesia:

a. Pre-anesthesia Phase: focuses on physical, psychological, sociocultural and spiritual preparation for the experience. Interview and assessment used to identify potential or actual problems prior to surgery and to optimize best outcome. These patients are seen in Pre-Testing Unit and Same Day Procedure Unit/SDPU.

b. Post- anesthesia phase I: focus on providing care immediate post-anesthesia period, with basic life sustaining needs are the highest priority. These patients are admitted to PACU/Post Anesthesia Care Unit.)

c. Post-anesthesia phase II: focuses on preparation for the care in the home or an extended care environment.

d. Extended care: focus on providing care when extended observation/intervention after discharge from phase I or II is required.

This week, thank a Perianesthesia nurse for providing quality care to Veterans, and making them comfortable and educating them about their care as they transition to home or extended care.

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Veterans
SPECIAL FEATURES

Roseburg Home Based Primary Care

By Carrie Boothe, Public Affairs Specialist, VA Roseburg Healthcare System

This is where the VA presents options that are not always available in the private sector. The program is called Home Based Primary Care (HBPC) and VARHS has offered this service in Eugene for several years with great success.

Initially in Eugene, Veterans who lived within 25 miles of the Eugene Based Outpatient Clinic were eligible for the service. VA has enhanced the program by increasing the mileage range to 50 miles. Recently, VARHS stood up the same program in Roseburg by hiring a team of professionals to provide the same service in and around the Roseburg area.

HBPC is unique in that it necessitates care by a complete interdisciplinary team of professionals within the home. HBPC is different from Medicare Skilled home care in that the Veteran is not necessarily homebound, but for a variety of potential reasons such as impaired mobility due to functional limitations or an inability to cope with the clinic environment may deem them eligible for the program.

Once a Veterans Primary Care professional refers them to the HBPC team, an evaluation will take place and eligibility will be determined.

Once a Veteran has entered into the program, they are involved in a complete patient centered care design set which involves complete continuity of care. The team consists of a program director, a medical director, a nurse practitioner, an RN case manager, a social worker, a dietitian, a physical therapist, a psychologist and a pharmacist.

The team spends their days in the field. They travel to the home of the Veteran and depending on the health situation of the patient they provide the appropriate care. One example might be that the patient may be in need of a change in medication. The pharmacist on the team will see the patient and review his/her medications and work directly with the team. Decisions are made based on their assessments paying close attention to what the patient wants to do.

Any Veteran involved in the program has agreed to accept HBPC as their VA primary care provider, so a relationship is developed between the patient and the team members. Each member of the team has a rapport with the patient and the focus is on a whole-health patient centered care experience for the Veteran.

The nurses schedule their own appointments and coordinate their daily patient visits. They even do lab draws so the patient does not have to leave his/her home. They chart their patients' care and the team members all have access to medical information. Each week, or more often as needed, the team gets together and discusses the needs of each of their patients, creating a link and knowledge of each patient's situation and circumstances.

With the great care and success of the HBPC in Eugene, the VA leadership recognized the need to increase the program to make it available in Roseburg. It took some time to hire all the staff and acquire all the equipment to build the program. A design for office space and an area in the hospital was needed for the team and had to be created with the intention of the program growing also carefully considered. At this time, Roseburg has one complete PACT team serving Veterans within the 50 mile radius of the hospital. That means a team member may travel almost as far as the coast, south down the I-5 corridor and all points between the 50 mile radiuses. As the need increases, more staff members will be hired to accommodate the demand. The program was so successful in Eugene, VARHS anticipates a continued growth in the program.

We are excited and pleased to be able to offer this new service in Roseburg to our Veteran patients. There are details in the eligibility process, so the best course of action for Veterans or their care giver is to talk with their current VA primary care provider (PCP). The PCP understands the basic eligibility so they would refer the potential patient to the HBPC team and the team provides the final assessment to determine eligibility.

HBPC provides an opportunity for Veterans to receive the highest quality care with a team of professionals' right in their home. The team serves Veterans with a continuous provision of routine care and services involving ongoing monitoring, routine comprehensive assessments and coordination of care.

This group of health care providers is dedicated to best serve Veterans with complex, chronic, or those with a disabling disease when routine primary care hospital visits are too challenging for the patient. That is their goal and their commitment. Plain and simple.

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Veterans
SPECIAL FEATURES

VA's End of Life Program Receives National Honor

By Hans Petersen, VA Staff Writer

The American Hospital Association has awarded a Citation of Honor to the Veterans Health Administration for building and expanding the infrastructure to provide palliative and end-of-life care services to Veterans throughout the country and working with community-based providers to complement its services.

VHA exemplifies the best in health care, providing compassionate care and helping patients and families facing complex health challenges, according to the American Hospital Association.

Dramatic Progress in Palliative Care

In 2002, nearly a third of VA's medical centers were making no referrals to community hospices, and most centers had no palliative care team. Today, VA has a wide-ranging, innovative palliative care program that builds on the nation's largest integrated health system's advanced information technology capabilities and culture of performance improvement to care for Veterans with serious illness and their families.

Each of the VA's 21 regions has a palliative care program manager and clinical champion, and each of its 152 medical centers has an interdisciplinary palliative care team. All are supported by three national quality centers.

"The program began with a small nucleus of committed people," says Scott T. Shreve, National Director, VA Hospice and Palliative Care, "and grew by focusing on what worked rather than what didn't. We identified regional champions and we gave them the resources to really make things happen."

Veterans, family members, volunteers, the massage therapist, and the hospice unit team with Dr. Scott Shreve, send an important reminder from the Lebanon, Pennsylvania, VA Medical Center hospice unit.

Understanding Veterans' Special Problems

Because Veterans also receive care from community providers, it's not enough to change the VA system itself. Ensuring non-VA providers understand the special problems faced by Veterans at the end of life — such as when traumatic memories from combat come to light — is critical. Through the VA's collaboration with the National Hospice and Palliative Care Organization, the We Honor Veterans program creates collaborative models to increase all Veterans' access to community hospice and palliative services designed to meet their needs.

A powerful tool for internal improvement is the nationwide Bereaved Family Survey, which offers leaders of VA's 21 regional networks feedback on how end-of-life care services are satisfying families. Mary Zuccaro, who oversees VA palliative and hospice services in northern California, northwest Nevada and Hawaii, depends on those metrics to "take the temperature" of the program.

"I look through it for themes of where did we make a difference and where did we miss the boat. I disseminate that through all our programs."

The VA program focuses on both technology and simple human kindness.

The Care Assessment Need score, for instance, is a robust predictive model that scans the electronic medical record to identify Veterans "at-risk" for needing supportive services rather than waiting for a clinician to notice the need.

Scott T. Shreve, National Director, VA Hospice and Palliative Care

The VA Medical Foster Home program is a lower tech solution to keep Veterans out of nursing homes.

In this program, families "adopt" a seriously ill Veteran under the close watch of VA clinicians.

"The future for VA is proactive, personalized and patient-driven care," says Dr. Madhulika Agarwal, Deputy Under Secretary for Health Policy and Services for the Veterans Health Administration. "It's about proactively meeting the needs of an individual patient, which is based on their preferences and their goals. That is what our focus needs to be."

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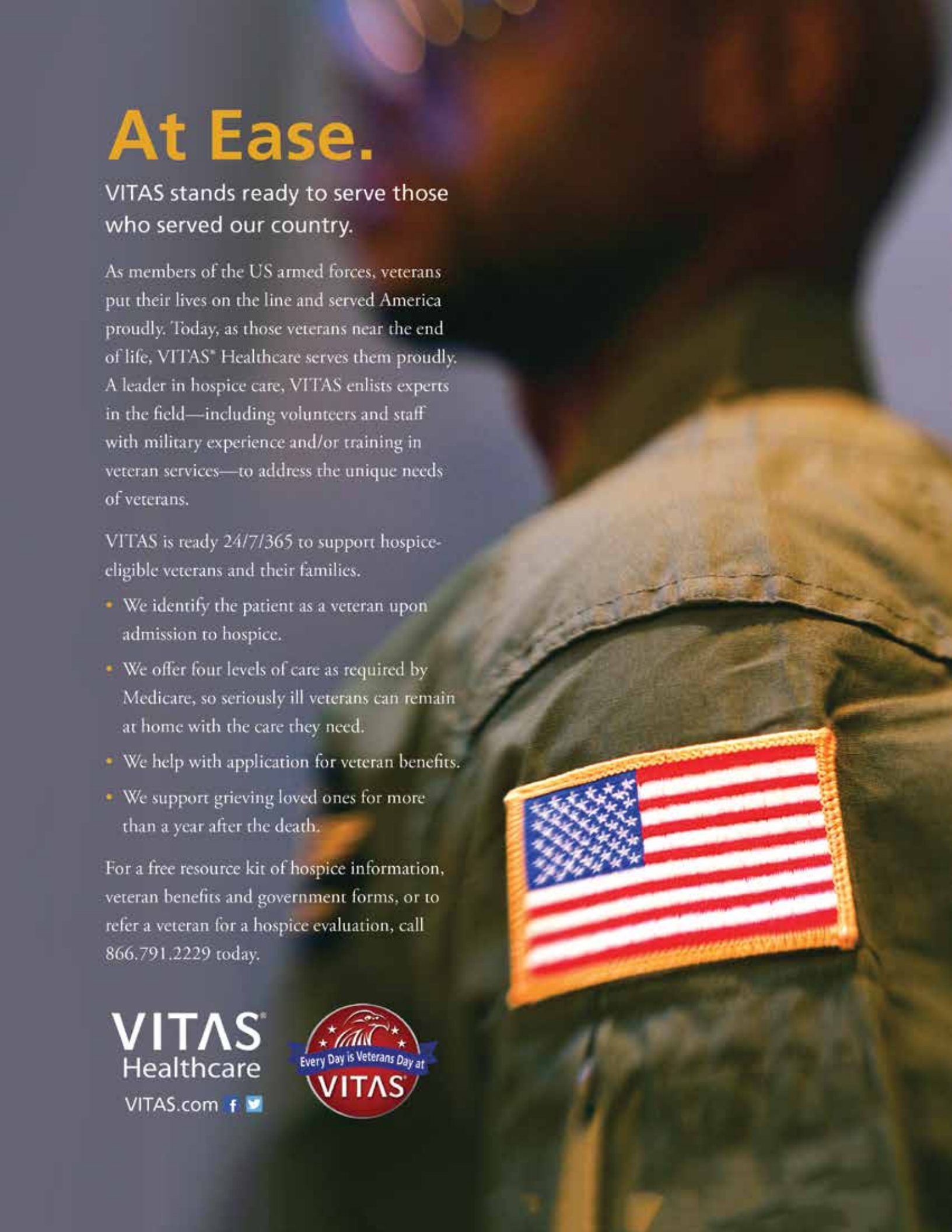

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Veterans
SPECIAL FEATURES

Care Options at the End of Life — Tom's Story

Tom, who retired from the U.S. Air Force, was diagnosed with lung cancer at age 70. As his disease progressed and breathing became more difficult, he wanted to explore experimental treatments to slow the disease. Through the palliative care provided by the Veterans Health Administration, Tom got treatment for his disease and was able to receive the care and emotional support he needed to cope with his health problems. The palliative care program also helped arrange for assistance around the house and other support for Tom's wife, making it easier for her to care for him at home. When the experimental treatments were no longer helping, Tom enrolled in hospice. He died comfortably at home 3 months later.

At some point, it may not be possible to cure a serious illness, or a patient may choose not to undergo certain treatments. Hospice is designed for this situation. The patient beginning hospice care understands that his or her illness is not responding to medical attempts to cure it or to slow the disease's progress.

Like palliative care, hospice provides comprehensive comfort care as well as support for the family, but, in hospice, attempts to cure the person's illness are stopped. Hospice is provided for a person with a terminal illness whose doctor believes he or she has 6 months or less to live if the illness runs its natural course.

Hospice is an approach to care, so it is not tied to a specific place. It can be offered in two types of settings — at home or in a facility such as a nursing home, hospital, or even in a separate hospice center.

Hospice care brings together a team of people with special skills — among them nurses, doctors, social workers, spiritual advisors, and trained volunteers. Everyone works together with the person who is dying, the caregiver, and/or the family to provide the medical, emotional, and spiritual support needed.

A member of the hospice team visits regularly, and someone is always available by phone — 24 hours a day, 7 days a week. Hospice may be covered by Medicare and other insurance companies; check to see if insurance will cover your particular situation.

nia.nih.gov

Who Can Benefit from Palliative Care?

Palliative care is a resource for anyone living with a serious illness, such as heart failure, chronic obstructive pulmonary disease, cancer, dementia, Parkinson's disease, and many others. Palliative care can be helpful at any stage of illness and is best provided from the point of diagnosis.

In addition to improving quality of life and helping with symptoms, palliative care can help patients understand their choices for medical treatment. The organized services available through palliative care may be helpful to any older person having a lot of general discomfort and disability very late in life. Palliative care can be provided along with curative treatment and does not depend on prognosis.

A palliative care consultation team is a multidisciplinary team that works with the patient, family, and the patient's other doctors to provide medical, social, emotional, and practical support. The team is made of palliative care specialist doctors and nurses, and includes others such as social workers, nutritionists, and chaplains.

Palliative care can be provided in hospitals, nursing homes, outpatient palliative care clinics and certain other specialized clinics, or at home. Medicare, Medicaid, and insurance policies may cover palliative care. Veterans may be eligible for palliative care through the Department of Veterans Affairs. Private health insurance might pay for some services. Health insurance providers can answer questions about what they will cover.

Who pays for care at the end of life?

It depends on the type and place of care and the kind of insurance. Medicare, Medicaid, private medical insurance, long-term care insurance, Veterans Health Administration (if VA-eligible), or the patient and his or her family are common sources of payment.

nia.nih.gov

Dr. Eloise Harman — One of VA's Top Doctors

By Hans Petersen

Dr. Eloise Harman never knew her father but his legacy serves as her motivation and inspiration.

"My father was a doctor who died when I was an infant. I always heard stories about how he went the extra mile for his patients. My mother was a teacher and did the same for her students. She was also very generous in helping people in need. I try to follow in their footsteps."

Going the extra mile for her Veteran patients is just one of the reasons she was selected as the 2016 recipient of the "Richard R. Streiff Award for Clinical Excellence" at the North Florida/South Georgia Veterans Health System.

Harman was selected as this year's Streiff Award recipient for her decades-long track record of excellence as a clinician, an educator, and for her community service and volunteerism. She has been recognized locally, regionally, and nationally as an outstanding clinician and is appreciated at her medical center as a model of patient advocacy and clinical expertise to the medical staff.

A native of Hanover, Pa., she graduated from medical school at Johns Hopkins in Baltimore, served her internal medicine residency there and also a pulmonary fellowship at New York Hospital Cornell. In addition to her specialties in internal medicine, pulmonary medicine and critical care medicine, she also has an interest in Medical Ethics and chairs the ethics consultation committee.

Harman has two daughters and a two-year-old grandson she visits in Chicago "as often as possible."

Dr. Eloise Harman

A professor emeritus at the University of Florida, Harman has published 63 peer reviewed articles in the scientific literature, seven book chapters and 42 abstract presentations. She has accumulated numerous honors, distinctions, and accolades over her career, including no fewer than 13 clinical teaching awards. She has also received seven different professional and community service awards.

One example of her commitment to care is her annual trip to Haiti to provide medical care, a trip she has made with medical students and doctors for 20 years.

Harman also volunteers at Camp Boggy Creek for seriously ill children and does other volunteer work including service projects with her place of worship such as feeding the homeless.

Her award states: "Dr. Harman has done an outstanding job as Medical Intensive Care Unit Director. She is often on call in the MICU, and is well known to rarely leave the unit out of dedication to the patients, residents, and nurses in the unit who benefit from her involvement and close oversight of the unit. When the facility needed physician volunteers to work in-house overnight for a pilot project to improve ICU safety and quality, Dr. Harman was one of the first to volunteer."

Harman loves to cook and bake and follows a vegan diet most of the time.

About her job, she says, "I love to work with the Veterans and to hear their stories. I was honored to receive the award named for Dr. Streiff, a role model for his dedication to Veterans and for providing patient centered care."

> "I love to work with Veterans and to hear their stories."

The reason her Veteran patients are always happy to see her is summed up in her award: "Dr. Harman is a tireless advocate for her patients and she consistently goes the extra mile to make sure her patients receive the care they need. She is often complimented by patients and families for going above and beyond the call of duty.

"Dr. Harman has often seen outpatients at any time necessary, making space in her own administrative office for patient visits outside of regularly scheduled clinic hours. In the realm of patient care, Dr. Harman is often the "go to" person to help make difficult or challenging diagnoses and is personally sought out by physicians seeking help."

va.gov

Veterans
ADDICTION

Resources are Available to Assist Veterans with Alcohol Dependence and Abuse

April is Alcohol Awareness Month and the Veterans Administration encourages medical professionals to make their patients aware of resources available to assist Veterans with alcohol dependence and abuse.

Many veterans have problems with use of alcohol, tobacco, or drugs. This can include use of street drugs as well as using prescription medications in ways they weren't prescribed. Such substance use can harm health, cause mood and behavior problems, hurt social relationships, and cause financial problems. Many people find it difficult to cut down or stop using substances on their own. Effective treatments for substance use problems are available at VA. Available treatments address all types of problems related to substance use, from unhealthy use of alcohol to life-threatening addictions.

The VA provides effective, scientifically proven services for all eligible veterans, no matter where they come for services. VA providers know that in many cases substance use problems are continuing conditions that require care over a long period of time. For other veterans, the substance use problems may be resolved more quickly with attention paid to related problems. Such related problems could be posttraumatic stress disorder (PTSD), depression, pain, disturbed sleep, irritability, and/or relationship problems.

The VA offers a number of options for those seeking treatment for substance use problems. These options include therapy, either alone with the therapist or in a group, as well as medications to help veterans reduce their use of alcohol, tobacco and drugs.

Treatments that do not involve medications involve one or more of the following:

- increasing and making clearer the veteran's motivation for change
- helping veterans to improve their skills for spotting and dealing with triggers and relapse risks
- counseling couples together on how to recover from substance abuse and how to improve relationships
- getting outside support for recovery, including programs like Alcoholics Anonymous (AA)
- looking at how substance use problems may relate to other problems such as PTSD and depression.

VA providers may use medications to treat alcohol dependence. Effective medications can help manage withdrawal symptoms, reduce craving, and promote abstinence, which is not drinking any alcohol.

Several medications for stopping tobacco can be effective alone or in combination:

- a nicotine replacement skin patch, gum or lozenge
- the medication bupropion, that has also been effective with depression
- the newest choice, varenicline, that has a very different way of working than the other medicines.

There are three different medications to treat addiction to opioid drugs like heroin, oxycodone or other pain killers. Methadone is an effective approach for chronic opioid addiction that can be provided only within a special program.

To help make sure that veterans can attend VA treatment services, programs offer evening and weekend hours. Residential (live-in) options are available for veterans who live far away from a VA clinic or have unstable housing. Special programs are often offered for patients with special concerns, such as women, OEF/OIF veterans, and homeless patients.

A patient coming to VA can expect to find the following types of care:

- first-time screening for alcohol or tobacco use in all care locations
- short outpatient counseling including focus on motivation
- intensive outpatient treatment
- residential (live-in) care
- medically managed detoxification (stopping substance use safely) and services to get stable
- continuing care and relapse prevention
- marriage and family counseling
- self-help groups
- drug substitution therapies and newer medicines to reduce craving

Decisions as to which services are provided and how intense they are will be based on the patient's needs and desires.

A list of VA and Vet Center facilities can be found online at www.va.gov and www.vetcenter.va.gov

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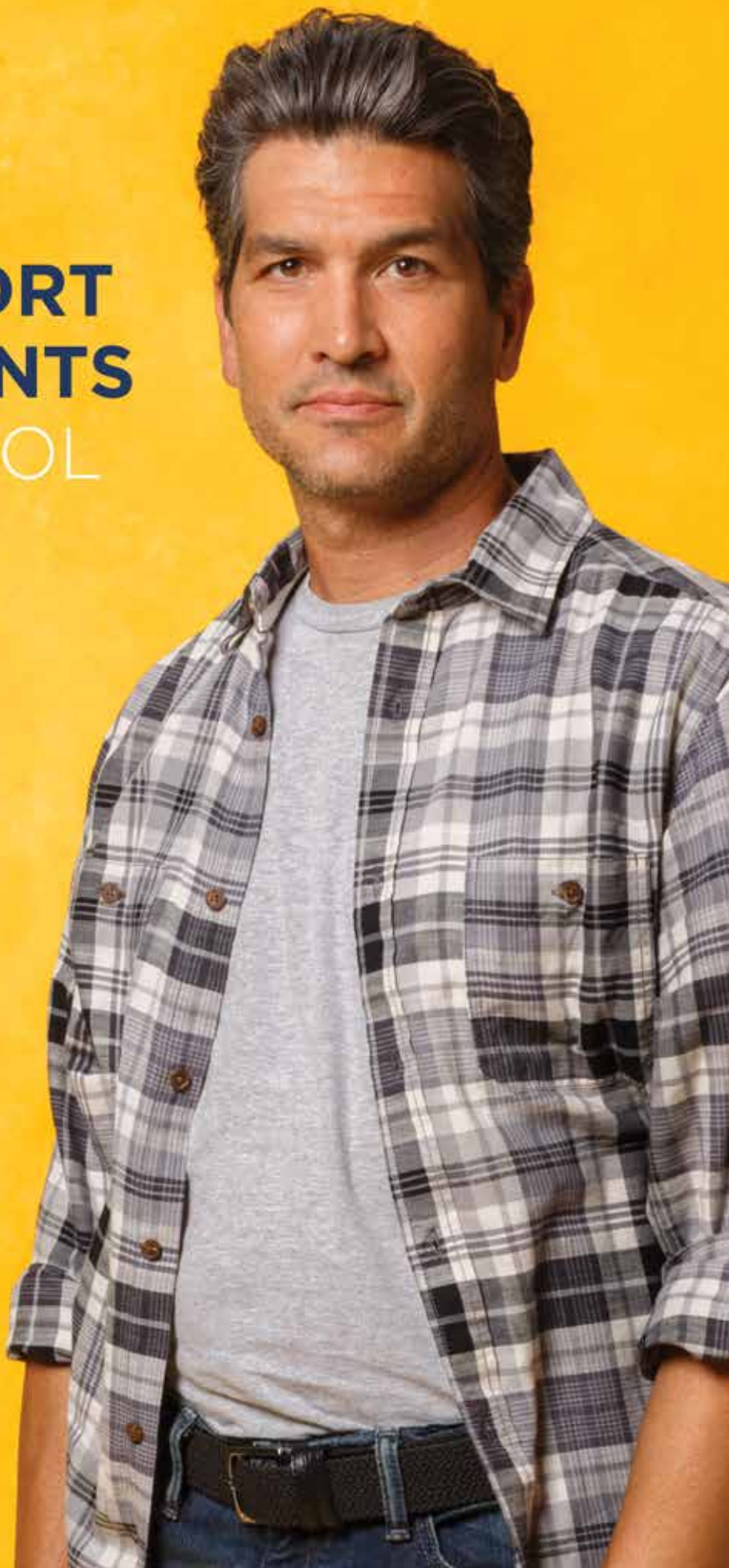

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Veterans
ADDICTION

To Drink or Not to Drink: Have a Plan

By Mikelle D. Smith, DCoE Public Affairs

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.

The first step to understanding your alcohol limits is to know the facts, signs and symptoms about alcohol abuse. The Deployment Health Clinical Center 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

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, 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.

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.

Having a wingman can change the way you see situations. The Real Warriors Campaign gives insight on the importance of an accountability partner. An accountability partner is someone who can help you monitor you efforts and support your goals.

Good accountability partners will:

- Offer sympathy and support
- Actively listen to your concerns
- Recognize concerning behaviors
- Assist you with chosen treatment

They also learn about the stressors and emotions you may experience to help you cope with overcoming substance abuse. Invite your accountability partner along with you to your holiday gatherings or let him know where you are going if you know alcohol is there.

The National Center for Telehealth and Technology has an online alcohol awareness kit that also offers information on other types of substance abuse such as:

- Overusing prescription drugs
- Mixing alcohol and medication
- Smoking tobacco

Mobile applications, such as Virtual Hope Box, can help you relax and uplift your mood.

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.

health.mil

Veterans
CARDIOLOGY

Specialized Cardiovascular Career Opportunities

Join VA in advancing Veteran heart health

When it comes to the cardiovascular health of America's Veterans, there are many ways to make a positive impact. But you may not be aware of all the professional opportunities available. So in the spirit of American Heart Awareness Month, we're highlighting a couple of the lesser-known cardiac subspecialties.

Nuclear Cardiology

Using non-invasive techniques such as myocardial perfusion imaging, people in this career area perform duties that are essential to the diagnosis, assessment and treatment of cardiovascular diseases at various stages. Responsibilities include conducting cardiac stress tests, evaluating heart function and blood flow, and determining the size and location of heart attacks. Through these and other crucial contributions, nuclear cardiologists improve outcomes in cardiac care every day.

Electrophysiology (EP)

Focusing on the heart's electrical activities, this subspecialty is dedicated to the diagnosis and treatment of heart rhythm disorders. It involves a range of complex procedures, from catheter ablation to the implantation of cardiac devices like pacemakers and defibrillators. And to guide this work, Cath/EP Lab professionals administer studies that help doctors understand the nature of abnormal heart rhythms.

Keep in mind that careers in these subspecialties may require specialized experience, licensure and/or certification, so consider the time and energy you spend obtaining those qualifications as an investment in your future.

If you're already qualified for one of these cardiology positions or are interested in opportunities in other departments, explore our current openings and apply today at http://www.vacareers.va.gov/

va.gov

National Conference Center Workshop in Leesburg, VA

Veterans
CARDIOLOGY

Iowa City VA Receives Bronze Award from the American Heart Association

The Iowa City VA Health Care System was presented with the *Get With The Guidelines® — Heart Failure* Bronze Quality Achievement Award for implementing specific quality improvement measures outlined by the American Heart Association/American College of Cardiology Foundation's (ACC/AHA) secondary prevention guidelines for the treatment of their Veteran patients with heart failure.

The Bronze award is the first level of achievement for the Iowa City VA Health Care System being recognized as an AHA/ACC center of excellence by the for the care of Heart Failure.

Get With The Guidelines–Heart Failure is a quality improvement program that helps hospital teams provide the most up-to-date, research-based guidelines with the goal of speeding recovery and reducing hospital readmissions for heart failure patients.

Launched in 2005, numerous published studies have demonstrated the program's success in achieving patient outcome improvements, including reductions in 30-day readmissions.

Dr. John Chase, Director, Iowa City VA Heart Failure Clinic

\The Iowa City VA earned the award by meeting specific quality achievement measures for the diagnosis and treatment of heart failure patients at a set level for a designated period.

These measures include evaluation of the patient, proper use of medications, and aggressive risk-reduction therapies.

These would include ACE inhibitors/ARBs, beta-blockers, diuretics, anticoagulants, and other appropriate therapies. Before patients are discharged, they also receive education on managing their heart failure and overall health, get a follow-up visit scheduled, as well as other care transition interventions.

The Iowa City VA is the second VA in the country and the only heart failure clinic in Iowa to achieve this award.

"The Iowa City VA is dedicated to improving the quality of care for our Veteran heart failure patients, and implementing the American Heart Association's *Get With The Guidelines–Heart Failure* program helps us accomplish this goal by being tracking and measuring our success in meeting internationally-respected clinical guidelines," said Dr. John Chase, Director, Iowa City VA Heart Failure Clinic.

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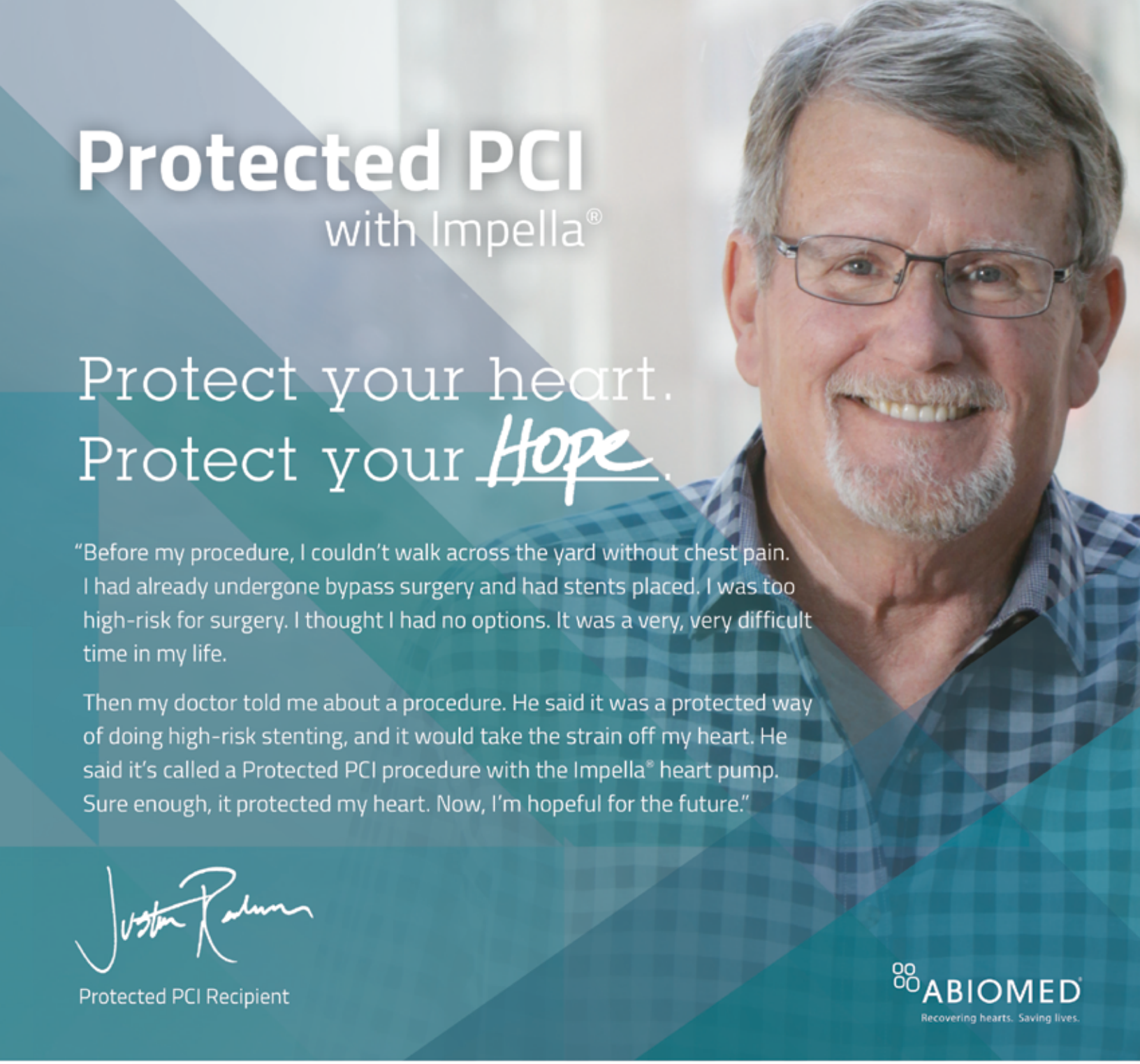

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Important Risk Information for the Impella 2.5 and Impella CP Devices Protected PCI is not right for everyone.
You should NOT be treated with the Impella 2.5 or Impella CP if your doctor determines you have certain pre-existing conditions, such as: Severe narrowing of your heart valves; Clots in your blood vessels; Replacement heart valve or; Certain deficiencies in your heart valve. Many of the risks related to the Impella 2.5 and Impella CP devices are the same as those with the procedure being completed and the placement of any pump used to help the heart. Risks related to use of the Impella 2.5 and Impella CP can include certain allergic reactions to medications, infections, blood clots, injury to heart tissue, valves or blood vessels, bleeding, low blood pressure, low platelet count and/or damage to red blood cells. Some of these conditions could be life threatening.

To learn more about **additional risk information** associated with the use of the Impella 2.5 and Impella CP, speak with your doctor and visit *http://www.protectedpci.com/patient/information/isi*.

IM2-197-17

Veterans
CARDIOLOGY

Here's What Your Cardiologist Wants You to Take to Heart

By Dr. Salim S. Virani, Cardiologist at Michael E. DeBakey VA Houston, TX

Although VA does extremely well when it comes to prescribing evidence-based medications for patients hospitalized for heart attacks or heart failure, we do know that a large number of patients are not able to take these medications as prescribed.

This is not a problem specific to the VA health care system; it is prevalent throughout the United States. Studies show that 20 to 30 percent of medication prescriptions are never filled by patients, and roughly 50 percent of medications prescribed for chronic disease are not taken by patients the way they are prescribed.

It is intuitive that a prescribed medication will work only when a patient is able to take it the way it was administered in large clinical studies leading to its FDA approval. The dynamics of these large clinical trials, and the patients enrolled in them, differ from what we see in everyday clinical practice. Therefore, both patients and health care providers need to constantly ask what they can do to ensure that maximum benefit is obtained from these medications.

With February being American Heart Month, now is a good time to look at what patients can do to improve their chances of taking medications as prescribed. The tips below will apply to other types of medications, as well.

First, it is extremely important to know why you are taking a medication. Understanding the potential benefits of a prescribed medication will increase the chances that you will take it as prescribed. Most of our patients with heart disease are on many medications, which makes it even more important to understand what each medication does with regard to the body in general, and heart health in particular.

Second, it is equally important to know about the risks and possible side effects of any medication you are prescribed. Be proactive and ask your health care provider about this. And if you encounter any side effects from a medication, or you believe some of your symptoms are related to a prescribed medication, bring the issue to your provider's attention.

These days, health care providers have several alternatives that could be used if a patient has a side effect from a particular medication, or a particular class of medications.

Dr. Salim S. Virani. *Photo by Baylor College of Medicine*

Third, let your health care providers know if you are having difficulty refilling your prescriptions. This can be a real problem if you are on multiple medications, with each medication refill falling at a different time of the month. This can be synchronized by your health care team, including pharmacists.

Other strategies, like pill boxes and reminders, can also be offered to help you take medications as prescribed.

Last but not least, you will likely need to take most heart medications on a lifelong basis. Therefore, the discussion about these medications (to include their benefits, risks, and side effects) should not be a one-time event.

Periodic discussion with your health care provider about why you are taking a medication will not only increase your chances of being able to take a medication as prescribed, but also make you an equal partner in your health care!

va.gov

Veterans
ENDOCRINOLOGY

Don't Tiptoe around Diabetes

Diabetes is a condition in which the body does not effectively use sugar. According to the Centers for Disease Control and Prevention, more than 29 million Americans have diabetes. Of those, more than 8 million have not yet been diagnosed.

Diabetes occurs when you have too much glucose, or sugar, in your blood. Glucose comes from the foods you eat. Insulin is a hormone that helps glucose get into your cells to give them energy.

With Type 1 diabetes, your body does not make sufficient insulin. With Type 2 diabetes, the more common type, your body does not make or use insulin well. Without enough insulin, the glucose stays in your blood.

Signs of early diabetes include increased thirst and urination, unexplained weight loss, blurred vision, and numbness or tingling in your hands or feet. Diabetes is not contagious. People cannot "catch" it from each other.

Over time, uncontrolled diabetes can cause nerve damage, blindness, kidney damage, and heart disease that can lead to death. High blood sugar also causes blood vessels to narrow and harden, reducing blood flow essential to the healing process.

Poor circulation damages peripheral nerves, causing a condition known as diabetic neuropathy or the loss of sensation in the arms and legs. The loss of feeling — including the ability to feel pain — means a small cut on your leg or a blister on your foot can go unnoticed and untreated until it has become infected.

Adults with diabetes need to take special care of their feet. They are at risk for foot injuries due to numbness caused by nerve damage and low blood flow to the legs and feet," said Dr. Elizabeth George-Ninan, examining Army Veteran Walter R. Brown's feet for complications from diabetes.

"No matter how small or superficial a wound is, you should not ignore it if you have diabetes," said Associate Chief of Staff for Ambulatory Care Raul A. Rivera, MD. "Often, the first sign of a diabetic foot ulcer that patients notice is drainage on their socks. Redness and swelling may also be indications. If you suspect you have an ulcer, contact your doctor right away."

People with diabetes are far more likely to have a foot or leg amputated than other people. As a diabetic, you should check your feet every day for any sores or redness.

> Signs of early diabetes include increased thirst and urination, unexplained weight loss, blurred vision, and numbness or tingling in your hands or feet.

Always wear properly fitting shoes, never go barefoot, report foot problems immediately to your VA North Texas Health Care System health care provider, and at least once a year, have them check your feet.

If you have diabetes in your family or suspect you might have symptoms of diabetes, talk with your health care provider at VA North Texas Health Care System about a Blood Glucose Test.

This is a laboratory test that tells exactly how much glucose, or sugar, you have in your blood when it is drawn. Normal blood glucose levels should be between 70 and 110.

Another test used to measure the glucose level in your blood is a Glycosylated Hemoglobin Test (HgbA1C).

This test is used to check how much glucose has been in your bloodstream over the past two to three months, and is useful to check how well your diabetes has been controlled with treatment.

Medication such as pills and/or insulin may be needed to lower your blood glucose level, but the most important treatment for diabetes is a proper diet, adjusted to your body needs and activity level.

Talk with your VA North Texas Health Care System health care provider or registered dietitian for advice.

va.gov

Veterans
ENDOCRINOLOGY

Diabetes Among Veterans

Working to Achieve Safe Care for Veterans

By Tom Cramer, VA Staff Writer

Department of Veterans Affairs researchers are locked in battle with an enemy that is quietly maiming and killing thousands of Americans who have served their country.

It's not posttraumatic stress, depression or traumatic brain injury.

The Culprit

"Type 2 diabetes is at epidemic proportions among the Veteran population," noted Dr. Tim O'Leary, acting director of VA's Office of Research and Development. "It affects nearly 20 percent of Veterans who use the VA health care system, compared to 8.3 percent of the general population. This means that diabetes — and with it, the risk of heart disease, stroke, blindness, renal disease and amputation — affects more than one million Veterans at any given time."

To make matters worse, millions of people don't even realize they have the disease, since it can start out so subtly.

"This is of tremendous concern for us at VA," O'Leary said, "and why we're doing research that not only helps Veterans avoid developing diabetes in the first place, but also helps them avoid developing those several other conditions I just mentioned."

> "Millions of Americans are unaware that they have diabetes, because there may be no warning signs"

If you experience symptoms like increased thirst, frequent urination, unexplained weight loss, increased hunger or tingling in your hands or feet — your doctor may decide to run a test for diabetes.

The physician noted that VA already has an extensive research portfolio when it comes to diabetes, and is adding to it all the time.

What are some of the risk factors of diabetes?

- Family history of diabetes
- Being overweight
- Being over age 40
- Have had gestational diabetes
- Not enough physical activity

A Weighty Issue

"Let me tell you about a few of the hundreds of studies we have underway," O'Leary said. "Many of our researchers are studying weight management, since being overweight or obese are significant risk factors for developing diabetes and are also epidemic among the Veteran population. Approximately three-quarters of Veterans are overweight," he observed, "and nearly 40 percent are obese."

O'Leary said VA has participated in a number of large clinical trials, such as the Diabetes Prevention Program, where it was shown that losing weight and increasing exercise can reduce the progression from pre-diabetes to type 2 diabetes.

VA researchers are taking a close look at the role diet plays with regard to insulin resistance. "In one study, researchers found that having too much iron in the diet can lead to insulin resistance. In another study, they found that fish oils — those omega 3 fatty acids we hear about so much — may help improve your insulin resistance."

"This effort," he said, "has contributed to VA's national weight management program, called MOVE, and has also been used beyond VA to improve the health of all Americans."

You Are What You Eat

O'Leary said that while weight management is critical, diabetes isn't entirely about how much we eat, but what we eat.

VA researchers are taking a close look at the role diet plays with regard to insulin resistance (the body's inability to efficiently process the hormone insulin). "In one study," O'Leary said, "researchers found that having too much iron in the diet can lead to insulin resistance. In another study, they found that fish oils — those omega 3 fatty acids we hear about so much — may help improve your insulin resistance." (Fatty fish include salmon, mackerel, herring, sardines and albacore tuna.)

But what if you already have diabetes?

Work on Your Social Skills

"Our researchers have found that social networking — that is, in-person counseling and support groups — are highly effective at helping Veterans manage their diabetes," said Dr. David Atkins, director of Health Services Research at VA's Office of Research and Development.

"In one VA study in particular," he said, "our researchers found that group educational meetings — led by a pharmacist — can help patients with diabetes and depression get better control over their blood sugar levels.

In another study, we found that patients with diabetes were better able to control their blood sugar if they simply talked with other diabetics, as well as their nurses, about their condition.

"And in a very recent study, we found that African Americans with hard-to-control diabetes made significant gains in keeping their blood sugar under control after working with mentors who had similar health problems," explained Atkins.

"In other words," Atkins concluded, "support and encouragement from other people can make a big difference in your motivation to stay healthy. The more people you connect with, the better off you'll be."

Feeling Isolated?

But what if you happen to live in a rural or isolated area or you can't drive, or it's really difficult for you to leave your house?

"We have robust telehealth and eHEALTH programs here at VA," Atkins said. "No matter where you are, we can connect with you and give you the support you need. You're never alone."

va.gov

Veterans
INFECTION PREVENTION

Eight Years of Decreased MRSA Infections Associated with a Veterans Affairs Prevention Initiative

Martin Evans, MD, Director of the VHA MRSA/MDRO Program

Significant progress to limit healthcare facility-associated infections (HAIs) of methicillin-resistant Staphylococcus aureus (MRSA) continues according to a new study by Martin E. Evans, MD, and colleagues from the Veterans Health Administration.

Monthly HAI rates dropped 87 percent between October 2007 and September 2015 in intensive care units (ICUs), 80.1 percent in non-ICUs, and 80.9 percent in spinal cord injury units (SCIUs).

In long-term care facilities (LTCFs), rates fell 49.4 percent during the period of July 2009 to September 2015.

During September 2015, only two MRSA HAIs were reported in ICUs, 20 in non-ICUs (with three in SCIUs), and 31 in LTCFs nationwide.

"Understanding how and why rates of MRSA have diminished in recent years is essential for the continued progress of effective prevention programs," said lead study author Martin E. Evans, MD.

"As we seek to protect patients from MRSA and other resistant organisms, our study supports the need for strong infection prevention programs at every healthcare facility."

The program includes a dedicated MRSA prevention coordinator at each facility to oversee several interventions including universal active surveillance (screening) on admission, unit-to-unit transfer and discharge, contact precautions for those colonized or infected with MRSA, adherence to hand hygiene, and institutional culture change overall.

The authors of the study concluded the focused attention on MRSA infections helped motivate healthcare workers to practice better infection prevention and control measures.

"We speculate that active surveillance was the primary driver of the downward trends seen in the VA, because MRSA HAI rates had not changed prior to October 2007 when the initiative was fully implemented, even though formal recommendations for hand hygiene and device-related infection control bundles had been in place for several years."

psnet.ahrq.gov

Infection: Don't Pass It On

IDPIO is an ongoing public health campaign to involve VA staff, Veterans, their families and visitors in preventing the transmission of infection.

The campaign develops and distributes education and communication materials for the VA community that promote:

- Hand hygiene and respiratory etiquette
- Annual seasonal influenza vaccination
- Correct and appropriate use of personal protective equipment
- Pandemic influenza preparedness and response
- Basic public health measures to prevent transmission of infection

What you can do to reduce the spread of infection

- Avoid close contact with people who are sick.
- Wash your hands often with soap and water, especially after you cough or sneeze. Alcohol-based hand cleaners are also effective.
- Avoid touching your eyes, nose or mouth.
- Stay home when you are sick and limit contact with others.
- Cover your nose and mouth with a tissue when coughing or sneezing. Throw the tissue in the trash after you use it.
- Get your seasonal flu shot.

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Veterans
INFECTION PREVENTION

Nationwide Program to Reduce Hospital-Associated Infections

Central Line Infections Reduced by More Than Half in VA Intensive Care Units

The fact is, when you get admitted to the hospital — any hospital — your chances of developing some kind of infection go way up. Sad but true.

In a lot of cases, these infections are avoidable.

"Of the 1.7 million hospital patients who annually experience a health care-acquired infection, one third likely could have been prevented," said Dr. Marta Render of the Department of Veterans Affairs.

Render, who is chief of VA's Inpatient Evaluation Center in Cincinnati, said the three health care-associated infections that are most common — and most serious — are those caused by a catheter in the bladder, a mechanical ventilator (also known as a breathing machine), and what medical professionals call a 'central line' — a long catheter inserted into a large vein in the neck, chest, or groin. Central lines are used to administer medication or fluids, obtain blood tests, or directly obtain cardiovascular measurements.

"At VA we figured out a fairly simple way to reduce central line infections," Render explained. "In fact, we've reduced them by more than half in all 174 intensive care units, or ICUs, throughout VA."

So how'd they do it?

"We went into all our ICUs and gave them a protocol to follow," Render explained. "It's a checklist of things doctors and nurses need to do before they insert a central line into a patient. Most importantly, we trained our ICU medical teams how to do these things, and we measured how well each ICU stuck to the program."

"You can't just tell people to do things a certain way," observed Dr. Peter Almenoff, VA's Assistant Under Secretary for Health for Quality and Safety. "You have to show them how to do it. At first, our medical teams regarded the checklist as just one more bureaucratic chore. But then, once they started seeing positive results from following the checklist, they wanted to keep doing it. Success is a powerful incentive for continuing to do something."

"When ICU nurses saw their infection rates drop by more than 50 percent, they enforced use of the protocol," Render added. "ICU nurses are incredibly protective of their patients."

So what's on the checklist, anyway? Here are the highlights:

- **Wash your hands.** "ICUs are busy places," Almenoff said. "A lot of things are going on at once. Even seasoned professionals in a hurry can sometimes forget to do something as basic as washing their hands before they touch a patient. But when there's a checklist, your team helps you remember to do it."
- **Dress appropriately:** put on your cap, your mask, your sterile gown, your sterile gloves.
- **Use the correct antiseptic to sterilize the incision site:** the one that works best, and quickly. "We want all our ICUs using the exact same product," Render noted. "We want uniformity."
- Finally, **avoid inserting the central line in the femoral area, if possible.** "The femoral vein is located in the groin area," said Almenoff. "The femoral vein is nice and big, and therefore tempting as a point of entry. But the groin area is not exactly the cleanest place on the human body. Better to go for a large vein in the chest, or neck. It's a cleaner area."

> By following a simple checklist when inserting a central line into a patient, VA medical teams have reduced central line infections by more than half.

Render said that in addition to its ICUs, VA is now implementing its central line insertion 'checklist' at all of its nursing homes, community living centers, acute care facilities, and dialysis centers

"None of this would have happened without support from our leadership," she noted. "We had total commitment from leadership on this — at the ICU level, the hospital level, the VISN [Veteran Integrated Service Network] level, all the way up to the Under Secretary. Buy-in from leadership is essential. Thankfully, our VA leadership is 100 percent committed to patient safety."

A scientific paper explaining how VA reduced central line infections appeared in the British Medical Journal (online version) on April 2. It was written by Render and Almenoff, along with Rachael Hasselbeck and Ron Freyberg of the VA Inpatient Evaluation Center in Cincinnati, Ohio; and Timothy Hofer and Anne Sales of the VA Health Services Research Center of Excellence in Ann Arbor, Mich.

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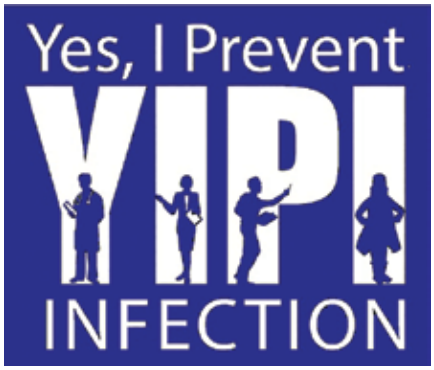
Veterans
INFECTION PREVENTION

VA Reducing and Preventing Infections

Infection Rates Decreasing

By Gary Roselle, MD, FACP is the Director of the VHA National Infectious Disease Service (NIDS)



"YIPI" It's an acronym most people outside of the healthcare community don't know. But it's one all VA health clinician knows very well. They are working hard every day to keep it out of their hospital.

HAI – it stands for Healthcare Associated Infections. VA has numerous national programs and local efforts addressing and reducing the incidence of HAIs.

Healthcare Associated Infections can have devastating emotional, medical and financial consequences, which is why VA stresses the importance of continual prevention efforts.

There are many ways infections can threaten the health of hospital patients. The CDC provides preventive information on the following HAIs at their website.

- Central Line-associated Bloodstream Infection
- Catheter-associated Urinary Tract Infections
- Surgical Site Infection
- Ventilator-associated Pneumonia

In a recent webinar, VA marked International Infection Prevention and Control Week with reports on the success of VHA programs related to infection prevention and control. It was an excellent opportunity to increase awareness of everyone's role in infection prevention and control and celebrate the work being done in VA to prevent and reduce HAIs.

Some of the good news highlights from the webinar:

- At VA, the rate of Surgical Site Infections, which was already low, has steadily declined.
- VA's Initiative to Reduce Outpatient Hemodialysis Infectious Events has yielded a significant decrease in total bloodstream infections, access-related infections, and vascular access infections.
- VHA Employee Health continues to successfully coordinate, collaborate and provide VHA employees with tuberculosis screening, sharps injury prevention, immunizations, exposure incident prevention, and education related to infection prevention and control.
- VA is recognized as a leader in implementing Legionella Prevention practices in U.S. healthcare. A VA Directive is cited as an example of Legionella prevention policy on the CDC website.
- VA Community Living Centers have seen a steady decline in methicillin-resistant Staphylococcus aureus (MRSA) infections. There are active programs to prevent catheter-associated urinary tract infections and other infections. The central line-associated blood stream infection rate has decreased significantly.
- The VHA Antimicrobial Stewardship Program was chartered in May, 2011 and is co-chaired by Pharmacy Benefits Management & National Infectious Diseases Service. This program has developed a highly active National Antimicrobial Stewardship Taskforce and national resources to help guide clinicians concerning antimicrobial use.
- The Multidrug Resistant Organism (MDRO) Prevention Initiative began in 2007 as the MRSA Prevention program, expanding to include other MDRO. From 2007 to 2015 MRSA infection rates in ICUs and non-ICUs nationwide dropped significantly. Clostridium difficile infection (C. diff) hospital onset infection rates from 2012 through June 2015 have been reduced overall since the start of the program in 2012.
- In 2006, VA began introducing initiatives to reduce device-associated infection (DAI) rates. The implementation of infection prevention bundles for DAIs has resulted in a statistically significant reduction in these infections in VA healthcare facilities nationwide.
- Our campaign titled "Infection: Don't Pass It On!" provides products, guidance, communications, continuing education, on-line resources concerning infection prevention, flu vaccinations, hand hygiene, prevention of flu and other respiratory illnesses, pandemic flu, and an annual VA Influenza Manual.

Infection prevention and control is everyone's responsibility. It is one of our most important goals and successes like these demonstrate that we are striving every day to keep our Veterans healthy and safe.

va.gov

Veterans
INFECTIOUS DISEASES

VA Researcher Working to Improve HIV Care for Rural Veterans

Telehealth option connects rural Veterans with HIV specialists

Dr. Michael Ohl of the Department of Veterans Affairs' (VA) Iowa City VA Health Care System is creating a model titled Telehealth Collaborative Care to improve the quality of care for Veterans who live far from specialty clinics. Telehealth Collaborative Care uses videoconferencing to connect rural Veterans with human immunodeficiency virus (HIV) with VA specialists.

HIV is a chronic condition that can result in serious outcomes for patients lacking access to quality treatment. The illness attacks the body's immune system and can cause acquired immune deficiency syndrome, or AIDS, a potentially life-threatening disease. Approximately 18 percent of the 26,000 Veterans under VA care for HIV live in rural areas. These Veterans have limited access to high-quality, HIV specialty clinics.

"Veterans should have easy access to HIV testing and state-of-the-art HIV care regardless of where they live," said Ohl, an infectious disease specialist. "We know that compared to their urban counterparts, rural Veterans with HIV enter care with more advanced illness, are less likely to receive the latest advances in HIV treatment, and have lower survival rates. We want to change that."

continued on page 114

continued from page 113

Ohl's study explores rural Veterans' interest in using video telehealth at close-by, VA community-based outpatient clinics, (CBOCs) to maintain their ongoing care. CBOCs serve as satellite clinics for large VA medical centers. Veterans can telecommunicate, via video at CBOCs, with an HIV specialist at the larger facility.

HIV pharmacists, psychologists, and nurse-care managers may also be included in video conferences. A nurse onsite with the Veteran at the outpatient clinic can administer treatment if prescribed by the specialist. V

eterans can also meet with their primary care physician onsite. The primary care clinic and specialty care clinic can then communicate to determine how best to co-manage the Veteran's care.

The coordinated process lifts a major travel burden off rural Veterans. In 2010, rural Veterans with HIV were an average of 86 minutes by car from the closest infectious disease clinic versus 23 minutes on average for urban Veterans. Rural Veterans were also less likely than their urban counterparts to use specialty care.

The Telehealth Collaborative Care study, which involves approximately 800 Veterans, is focusing on rural areas near San Antonio, Houston, Dallas and Atlanta, each of which has a VA hospital with an HIV specialty clinic.

Veterans with HIV who live closer to a primary care clinic or CBOC than to a specialty clinic and who have at least a 90-minute drive to one of these cities are being offered the telehealth option.

Through interviews with the Veterans, Ohl and his team are finding that most of those offered telehealth are choosing to take advantage of the option. VA offers close to 50 telehealth specialties. During fiscal year 2016, more than 700,000 Veterans completed approximately 2 million telehealth appointments.

aids.gov

Veterans
MENTAL HEALTH

New Annual Report Highlights Joint DoD/VA/ HHS Efforts to Provide Mental Health Services

By Military Health System Communications Office

The military and two federal agencies released their yearly report on how to improve access to mental health services for veterans, service members and their families. The Departments of Defense (DoD), Health and Human Services (HHS), and Veterans Affairs (VA) released the 2016 Annual Report of the Interagency Task Force on Military and Veterans Mental Health.

It addresses several key areas in care, including how to improve the transition from military health care to the VA. In addition, the report looked at how to better share information between the HHS and its state and community-level partners and how to improve training for community providers who deliver services to veterans, service members and their families.

U.S. Air Force photo by Master Sgt. Cohen A. Young

"The mental health of those who have and continue to serve, as well as their families, is of utmost important to us," said Dr. John Davison, chief of the Condition-Based Specialty Care Section of the Defense Health Agency's Clinical Support Division and member of the task force.

"We want to build an environment that addresses the issues of suicide and its causes, and provide the best possible access to the best possible care."

The report details progress across eight key policy areas. Some of these include: suicide prevention, joint clinical and outcome measures, and partnerships with local communities.

"The mental health of those who have and continue to serve, as well as their families, is of utmost important to us," said Dr. John Davison.

"We want to build an environment that addresses the issues of suicide and its causes, and provide the best possible access to the best possible care."

It also highlights recent accomplishments and ongoing initiatives, including:

- Providing a single, national toll-free phone number (1-800-273-TALK) to have anytime telephone support to individuals in crisis.
- Enhancing access to mental health care by building partnerships between VA and community providers. This included establishing a one-stop, web-based repository of DoD, VA and HHS tools to provide community organizations and clinicians with information and resources to support their work with veterans.
- Updating TRICARE coverage to eliminate mental health treatment limitations and excess out of pocket costs. This ensures parity between the mental health and medical/ surgical benefit for service members, retirees and their families.

"What we've been able to accomplish so far, and will continue to accomplish, will only be possible through continued close cooperation between the DoD, HHS and VA," said U.S. Public Health Service Capt. Robert DeMartino, director of Mental Health Policy for the assistant secretary of Defense for Health Affairs and task force member. "We are collectively advancing mental health and substance use care across the federal enterprise utilizing joint resources and best practices."

health.mil

Veterans
MENTAL HEALTH

27 Things You Should Know about PTSD

By Rebecca Matteo, PhD, Director VA's National Center for PTSD

June 27 is PTSD Awareness Day, and to mark this recognition, here is a list of "27 Things to Know" about post-traumatic stress disorder. The list is compiled from our experts at VA's National Center for PTSD. The Center conducts research and provides education on trauma and PTSD.

1. Just because someone experiences a traumatic event does not mean they have PTSD.
2. No matter how long it's been since your trauma, treatment can help.
3. To know whether you have PTSD, you should get an assessment from a clinician.
4. Sexual assault is more likely to result in symptoms of PTSD than are other types of trauma, including combat.
5. Social support is one of the greatest protective factors against developing PTSD after trauma.
6. Research suggests that social support is an even more important resilience factor for women than men.
7. Trouble sleeping is a core feature of PTSD, so it is important to address sleep problems in PTSD treatment.
8. Getting help for PTSD early can prevent problems from expanding to other parts of your life.
9. Evidence-based treatments for PTSD include psychotherapy (or "counseling") and medications.
10. Many people with PTSD also experience chronic pain or other physical health symptoms.
11. PTSD often co-occurs with depression or other mental health symptoms.

VA Can Help with the Answers to These Questions

12. Having PTSD does not mean you're "crazy."
13. PTSD does not cause someone to be violent.
14. If you have PTSD, you are not alone. With treatment, you can get better.
15. In the general population, women are twice as likely as men to experience PTSD at some point in their lifetime.
16. Recent research shows that men and women who served in Iraq (OIF) or Afghanistan (OEF) have similar rates of PTSD.
17. Many people recover completely from PTSD with treatment.
18. If someone in your family has PTSD, family therapy can help you learn to communicate and cope together.
19. People who have PTSD also have a higher risk for substance use disorders.
20. PTSD treatment has been shown to decrease suicidal ideation.

A woman therapist counseling a man on the topic of PTSD

21. Treatment is important for the person experiencing PTSD, but it also helps the family and improves relationships.
22. PTSD therapists help you understand your thoughts and feelings so you have more control over them.
23. Research suggests that variations in a number of genes may be risk factors for developing PTSD after trauma.
24. Traumatic brain injury (TBI) and PTSD have some common symptoms, but they are different diagnoses.
25. Technology, like the PTSD Coach mobile app, can help you manage PTSD symptoms.
26. VA provides PTSD care at every VA medical center and at many of the larger community-based clinics.
27. Getting help for PTSD is problem solving, not a sign of weakness. Take the step.

Getting help for PTSD is problem solving, not a sign of weakness. Take the step.

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PROMOTIONAL AD

Freespira: Safe and effective treatment for panic attacks with long lasting results

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Panic attacks and panic disorder are common conditions with significant impact on quality of life, over-utilization of health resources, and workplace productivity. Panic attacks occur in individuals that suffer from PTSD, Generalized Anxiety Disorder, Social Anxiety and other anxiety disorders. Nearly 30 million Americans will experience a panic attack annually while 6.7 million meet the diagnostic criteria for panic disorder, characterized by frequent panic attacks leading to fear of subsequent attacks and avoidance behaviors that restrict day-to-day activities. Individuals with panic repeatedly seek medical attention for their symptoms such as shortness of breath, chest pain, racing heartbeat, feelings of dizziness or fainting, nausea, and trembling. Care is sought in the Emergency Department, in primary care and specialties such as cardiology, neurology, and gastroenterology and typically includes extensive tests to rule out other medical causes. Psychological distress may include fear of dying, fear of 'going crazy' or losing control, or feelings of unreality or depersonalization.

> "At the VA, we are always looking for new, effective PTSD treatments..."

Within the past decade, clinical research has linked dysfunctional respiratory physiology and panic attacks. Multiple clinical trials have utilized a common protocol to address dysfunctional respiratory physiology by training patients to normalize their levels of exhaled carbon dioxide ($EtCO_2$) at specified paced breathing rates. This protocol is now available for use in clinical practice in the form of Freespira, a digital therapeutic device developed by Palo Alto Health Sciences, Inc. Freespira is FDA-cleared for the treatment of panic disorder and symptoms of panic, including panic attacks. Freespira teaches the patient to stabilize their breathing patterns and increase their exhaled CO_2 levels into the normal range. Freespira includes a tablet with a custom application (App) and a sensor that measures exhaled CO_2 levels and respiration rate via a nasal cannula. Breathing data is sent to the tablet and the App then provides audio and visual feedback to guide the patient in adjusting their breathing to optimize exhaled CO_2 levels. After one session of coaching by a trained clinician, the client uses Freespira at-home for four weeks of twice-daily 17-minute training sessions, then treatment is complete.

A recent published multi-center clinical trial demonstrated that immediately post-treatment, 71% of treated patients were free of panic attacks and 85% had symptom reduction. In addition, at 12 months post-treatment, 79% of treated patients were free of panic attacks and 82% had symptom reduction. A low rate of transient side effects (dizziness or lightheadedness) were reported during early sessions.

Palo Alto VA and Freespira

While the original research on this treatment focused on panic disorder, new trials are underway to assess efficacy in related conditions with significant symptom overlap. For example, the physiological over-reactivity, avoidance behaviors, and psychological symptoms such as emotional numbing and feelings of de-personalization associated with Post-Traumatic Stress Disorder (PTSD) have kinship with panic symptoms. Like panic, PTSD 'episodes' many be spontaneous or cued. While enclosed spaces, airplane travel, or performance anxiety are common cues for panic attacks, PTSD is typically cued by reminders or memories of a traumatic event such as combat. Reflecting this etiology, the Palo Alto VA has initiated a clinical trial to evaluate Freespira as a treatment option for PTSD.

Current evidence-based treatments for both panic and PTSD, while effective for many individuals, have significant limitations. Pharmacotherapy and cognitive-behavioral therapy (CBT) are the current front-line evidence-based treatments. While response rates for CBT are impressive in clinical trials, substantial numbers of patients fail to achieve full remission. In addition, access to therapists who offer CBT are limited, particularly outside of major metropolitan areas or centers of excellence. In the case of pharmacologic approaches, benzodiazepines carry a risk of abuse and/or dependence in both populations. For the anti-depressants, tolerability is a significant problem, resulting in frequent discontinuation of prescribed medications while leaving many individuals in only partial remission.

Both PTSD and panic disorder are in significant need of new approaches that improve access to care and provide symptomatic relief and enhanced life functioning. The PTSD study's Principal Investigator, Michael Ostacher, MD, MPH, MMSc, Staff Psychiatrist at the VA Palo Alto and Associate Professor of Psychiatry and Behavioral Sciences at the Stanford University School of Medicine said, "At the VA, we are always looking for new, effective PTSD treatments that are easy to access and safe for our Veterans. Medications are often limited in their effectiveness for PTSD. This study will determine the effectiveness of this novel digital therapeutic. Freespira is easy to administer, does not require much staff time to train the patient and can be used with other treatments, including medications."

"Palo Alto Health Sciences provides evidence-based, non-invasive, drug-free solutions for behavioral health conditions," said Debra Reisenthel, CEO of Palo Alto Health Sciences, Inc. "PTSD is a debilitating condition affecting many veterans and we are excited to partner with the Palo Alto VA to evaluate this innovative treatment."

Treatment Summary: Two 17-minute daily Freespira sessions for four weeks.

Reference: Tolin, D.F., et al. (2017). A Multisite Benchmarking Trial of Capnometry Guided Respiratory Intervention for Panic Disorder in Naturalistic Treatment Settings. Journal of Applied Psychophysiology and Biofeedback. Advanced online publication. doi 10.1007/s10484-017-9354-4

Freespira is commercially available in the USA as a treatment option for panic symptoms, including panic attacks. To learn more about Freespira, visit www.freespira.com or email freespira@pahealthsciences.com.

MK-4221 Feb 2017

Veterans
NEUROLOGY

Parkinson's Patient Finds Relief from Pain through Exercise

By Erin Curran

April is designated as Parkinson's Disease Awareness Month — a time set aside each year to educate Veterans and the public about this disease. Parkinson's is one of the most common neurologic disorders with symptoms and signs that include tremors, stiffness of the body, slowness of movement and difficulty with balance. Nationally VA treats approximately 40,000 Veterans with Parkinson's.

One Veteran being treated by for this disease at the Ralph H. Johnson VA Medical Center is Gary Pauley of Savannah, Georgia, who served 20 years in the U.S. Army. Pauley was diagnosed with Parkinson's in 2009 and the effects of the disease left him with hip pain. Initially, he sought relief from anti-inflammatory drugs, rest and physical therapy — but nothing was working.

Then, in December 2015, while in a Savannah area Parkinson's support group, Pauley heard about a new community program called GEMS — Get Excited and Move —run by former Olympian and Olympic coach Michael Cohen. The program is designed to enhance and improve muscular strength and endurance, coordination, agility, flexibility, speed work, and voice command for those with Parkinson's and other movement disorders. Pauley started as one of the initial 19 participants in the group the following February.

"At GEMS we were not treated like patients or clients," said Pauley. "We were treated like athletes. It didn't feel like a program for people with a debilitating disease like Parkinson's."

Pauley started in the program after consulting his health care team and Dr. Robert Friedman, Charleston VAMC pain director.

"Dr. Friedman was very frank with me and told me that [pain relief] wouldn't happen overnight," said Pauley. "He was right — it took about five or six months for me to feel the pain relief in my hips, but it was great because I wasn't using any medications to manage my pain."

Friedman has been running Charleston VAMC's pain clinic since 2009. He explained that you only get about 10 to 20 percent of pain relief from opioids for chronic illnesses and that's why incorporating alternative methods are so important for pain management.

"My pain is not completely gone, but it's much more manageable now," said Pauley. "My pain level was probably at a six before, and now most days I'd say my pain is at about a one — and that's with more activity and a better quality of life!"

"When you get sedentary and don't move your body, you can develop pain symptoms," said Friedman. "When you train your brain to do certain movements, you are training your brain to decrease the pain."

Friedman confirmed that it takes some time for the brain to change, so it can be a while before a patient sees results.

"With a pill you might see effects in six hours or so, but pain relief from opioids isn't sustainable," said Friedman. "In fact after 30 to 60 days you can start to experience adverse effects. Switching away from pain management with opioids brings about the best long-term sustained results. You just have to stick with it."

Pauley started experiencing pain relief about six months after connecting with GEMS.

He believes so firmly in the program that he is now a certified level-one weightlifting coach, either leading or assisting in

each of the daily classes. GEMS has now grown to include 284 participants, offering 12 classes per week.

A personal goal of Pauley's is to increase Veteran participation. There are currently about 10 Veterans in the group, ranging in age from their mid 50s to 90 years old.

"It's a different connection when I'm training a Veteran," said Pauley. "Maybe it's because we have a similar mindset and determination.

I can always tell when I have a Veteran in the group because they are open to try new things. People are going to try some things in this class that are new to them and an open mind is important."

Pauley explains that after a Veteran or community member is seen for the recommended time by a physical therapist, like eight to 10 weeks, they are typically left to their own devices to maintain their movement goals. GEMS is that next step to support those with Parkinson's and other movement disorders during that maintenance phase of their diagnosis.

"Gary is a walking, talking example that Parkinson's doesn't have to be a debilitating disease," said Friedman. "It's incredible to also see his desire to help other Veterans through their journey."

For any Veteran looking to start an exercise routine to help relieve pain, first check with your doctor and make sure your heart is healthy enough for exercise and that fall prevention precautions are taken.

About the Author:

Erin Curran is public affairs specialist at the Ralph H. Johnson VA Medical Center in Charleston, South Carolina. She has been with the VA for three and a half years and is passionate about sharing Veterans' stories that highlight the strength of these national heroes.

va.gov

National VA Parkinson's Disease CONSORTIUM

Education • Collaboration • Advocacy

The National VA PD Consortium is a professional society comprised of VA physicians, nurses, therapists, and pharmacists with interest and expertise in the field of movement disorders. The Consortium was launched in 2003 by the PADRECCs to expand PD awareness and education across the VA Healthcare System. The Consortium offers peers networking, mentorship, education and training.

A Consortium Center is a VA clinic that offers specialized PD and movement disorder specialty care to veterans who cannot travel to a PADRECC. These Centers are staffed by movement disorder specialists or clinicians with vast experience and/or interest in the field of movement disorders. Currently, 51 Consortium Centers work collaboratively with the PADRECCs to ensure the highest level of care for all veterans.

Locate a list of centers at parkinsons.va.gov/Care.asp

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Precautions: Safety and effectiveness for use in pediatric patients under 22 years old have not been investigated or established.

Caution: Federal Law (USA) restricts this device to sale by or on the order of a physician. Complete Prometra Instructions for Use and Infumorph drug labeling must be reviewed before use. In rare instances, the development of an inflammatory mass at the tip of the implanted catheter may occur, which can result in serious neurological impairment. Patients should be monitored carefully at each visit for any new neurological signs or symptoms, including: (1) progressive change in the character, quality, or intensity of pain (2) an increase in the level and degree of pain despite dose escalation (3) sensory changes (i.e., numbness, tingling, burning) (4) hyperesthesia and/or hyperalgesia.

Presentations that require immediate diagnosis include (1) bowel and/or bladder dysfunction (2) myelopathy (3) conus syndrome (4) gait disturbances or difficulty ambulating (5) paraparesis or paralysis. If the presence of an inflammatory mass is suspected, recommended evaluation should include a review of the patient history and neurological evaluation, radiological diagnostic procedures (such as a CT scan with contrast) and appropriate clinical consultation. Inflammatory mass has been associated with a wide range of doses and concentrations of opioids. No dose or concentration of Infumorph can be considered completely free of risk from an inflammatory mass. The risk of inflammatory mass occurrence appears to be cumulative over time and increases with higher concentrations and doses of opioids.

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Veterans
NEUROLOGY

Chief of Neurosurgery at the Richmond VA Medical Center Performs over 500 Brain Surgeries

By David J. Hodge is the Public Affairs Specialist at McGuire VA Medical Center

VA's Top Doctors series recognizes Dr. Kathryn Holloway, Chief of Neurosurgery at the Richmond VA Medical Center.

Dr. Holloway recently hit a significant milestone: 500 Deep Brain Stimulation (DBS) surgeries in the past 18 years.

A native of Clifton, N.J., Holloway graduated from Rutgers Medical School and has been in Richmond for 32 years. She has a 17-year-old son and enjoys mountain biking and skiing with her husband and son.

Why she enjoys working for VA: "The best reasons to work at the VA are the patients. Veterans are an amazing group of very special people and it is pleasure and an honor to care for them.

"The second reason is that the VA system provides the ability to work effectively within a multidisciplinary care environment to provide optimum care without having the impedance of insurance regulations that prevent this in the non-VA environment.

"The goal of our team is to continuously improve the care that we are providing to the Vets. I feel fortunate to work in a system that supports this goal."

The Veterans she serves agree. Veteran Charles Bryan is an oped columnist for the Richmond Times-Dispatch and had the DBS procedure done this summer.

"I am very fortunate to have had one of the country's leading deep brain stimulation neurosurgeons for my DBS. Not only is she skilled at her craft in the operating room, she obviously cares deeply about the welfare of her patients. Her winning smile and engaging personality helped dispel any nervousness I may have had leading up to my surgery.

"She is obviously greatly admired and respected by her fellow physicians and the skilled nurses on her team. She is a wonderful role model for up and coming neurosurgeons to follow. We are so fortunate to have someone of with her experience and abilities in our community." Bryan has chronicled his experiences in his newspaper column.

Holloway has a number of important achievements:

Dr. Kathryn Holloway

- She was instrumental in the design of the nexframe.
- She was the first neurosurgeon in the country to implant a Kinetra device
- She was also the first neurosurgeon in the country to implant an Activa RC.
- She was one of the first neurosurgeons in the country to use the O-Arm with DBS and continues to make advancements to enhance the DBS procedure.

Dr. Julie Beales, Chief of Staff at Richmond's McGuire VA Medical Center, adds, "Dr. Kathryn Holloway is an extremely talented surgeon. As the Chief of Neurosurgery, she specializes in treating patients with Parkinson's Disease and essential tremor.

"Her work truly changes our Veterans lives and can afford patients the opportunity for a new outlook on life. With more than 500 Deep Brain Stimulation surgeries completed, Dr. Holloway has proven, time and again, she is a valuable asset to our team!"

Dr. Holloway's achievements were so impressive she was featured in an extended interview on National Public Radio.

The 500 surgeries took place at the McGuire VA Medical Center and nearby Virginia Commonwealth University.

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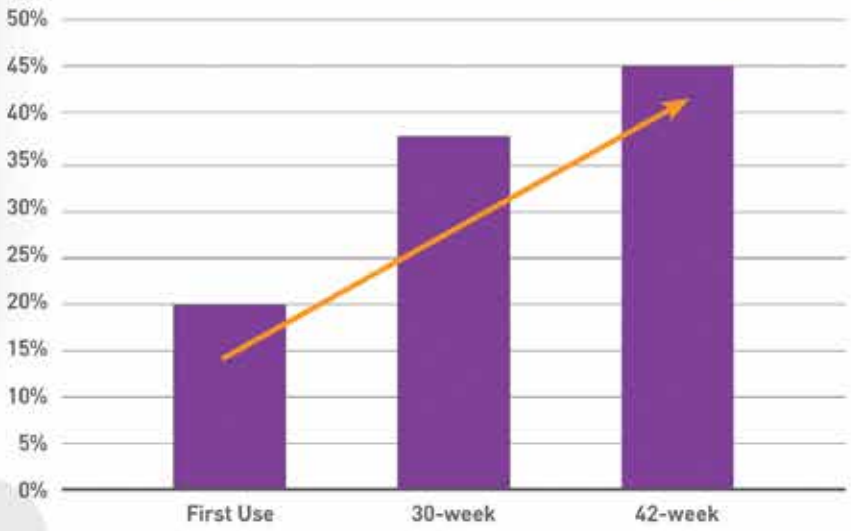

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Veterans
NEUROLOGY

VA Research in the Area of Traumatic Brain Injury is Leading to New discoveries, Treatment

By Stuart W. Hoffman, PhD, Scientific Program Manager and Senior Scientific Advisor for Brain Injury in VA's Office of Research and Development

National Brain Injury Awareness Month, observed in March, is an appropriate time to remember our Veterans, particularly the wounds they have sustained — both visible and invisible — through their service.

Nearly 1 in 5 among the 2.5 million service members and Veterans who have served in Iraq or Afghanistan since 2003 have sustained at least one traumatic brain injury. The overwhelming majority of these are classified as mild. VA stands committed to improve the lives and long-term health of Veterans with TBI, using a multipronged approach. The effort involves preclinical (lab) research; the development of appropriate therapies; treatment of symptoms such as pain, anxiety, sensory impairment, and memory loss; reintegration back into the community; and caregiver support. This work involves extensive partnerships between VA and both governmental and nongovernmental agencies, and the results can be expected to help not only Veterans, but all Americans affected by this condition.

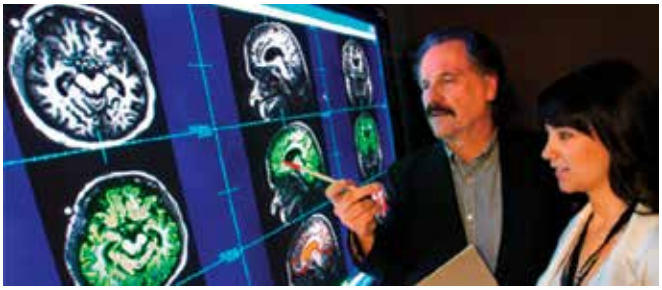
Transformation

Transformation is a powerful word. It denotes rapid, revolutionary change. It is an appropriate word to describe VA research on TBI in the past decade or so. As our nation came to recognize the scope of the TBI problem among service members and Veterans, and as we came to understand, in particular, how many of these brave men and women had incurred "invisible wounds" as a result of their exposure to blasts, VA transformed its small, unfocused TBI research program into a leading, Veteran-centric effort that works closely with many partners, such as the Department of Defense and the National Institutes of Health.

It is noteworthy that over the past 11 years, there has been more than a 15-fold increase in VA Research funding for TBI. The VA TBI research program is focused on service-connected TBI as a chronic condition that can have myriad of co-morbid conditions, ranging from pain and sensory dysfunction to behavioral health issues.

Seeing the invisible

TBI has been described as one of the invisible wounds of war, since the majority of these brain injuries are classified as "mild." The designation is based largely on whether the injury can be



detected on a CT scan, but the "mild" label can be misleading. A single mild TBI, or concussion, will cause lingering issues only in a small percentage of people, but many of our Veterans have been injured repeatedly, each incident increasing the risk for long-term symptoms.

VA Research has led the way in developing diagnostics that can detect TBIs that have occurred months or years previously. VA clinicians have been central in the development of neuropsychological tests, such as the Screen and Comprehensive TBI Evaluation, that are being used to help diagnose TBIs in Veterans that were previously undiagnosed, allowing these men and women to receive necessary clinical services to improve the quality of their lives.

However, VA clinicians have realized that there are still TBIs going undiagnosed. Thus, VA Research is funding studies on biomarkers, imaging, and other methods of measuring brain function that should bring better sensitivity and accuracy to brain injury diagnosis.

TBI treatment

There are many ways to treat TBI that do not involve drugs. VA Research has developed and validated a number of behavioral-based therapies that help resolve or reduce many co-morbid symptoms associated with the chronic effect of mild TBI. For instance, research has led to better control of pain and insomnia—for example, through cognitive behavioral therapies. This dramatically improves the quality of life in those with these persistent comorbid conditions.

One new area receiving a lot of attention is "electroceuticals." These treatments involve the use of electromagnetic energies — namely, electricity, magnetism, and light. The first two

continued on page 126

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1. Alon G, et al. 2007 *Neurorehabil Neur Repair*. 21(3)207-215.
2. Ring H, et. al. 2005. *J Rehabil Med*. 37:32-36.

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continued from page 124

energies stimulate the brain through classical physiological actions. Electricity is well-known to make neurons produce an action potential, or to "fire," thus stimulating other neurons and increasing brain activity. Magnetism can induce an electric current as a magnetic field is moved over a conductor.

Light, or phototherapy, can work by two different mechanisms. First, it is theorized that light can directly stimulate neurons, but differently from electricity or magnetism. The light-induced stimulation of neurons focuses on energy production, with the idea that increases in metabolism will result in more brain activity, whereas electricity directly drives neurons to fire, and magnetism induces an electric current that acts on the neurons. A second aspect of phototherapy involves the anatomical pathways between light-sensing cells in the eye's retina and the brain. A small proportion of these retinal cells extend their fibers not into the visual system, but instead to an area of the brain involved in our internal clocks and regulation of hormones. Use of phototherapy in this manner has been shown to improve sleep (sleep disruption is quite common in those with TBI), and improvement of sleep leads to improvements in other issues associated with TBI, such as anxiety and cognitive problems.

Other therapies do not involve drugs or devices, but rely on patients' learning or relearning skills so that independent living and reintegration back into the community is successful. This includes life skills such as managing a budget and paying bills, shopping, and, importantly, finding and keeping a job. VA Research has active programs to learn what works best in these areas.

As part of this work, we are exploring how to best offer services to Veterans who live in rural areas where specialized rehabilitation services are almost nonexistent, either through VA or private providers.

Some estimates claim that up to 35 percent of current service members are from rural areas. In these situations, telemedicine and telerehabilitation services are critical, and VA continues to lead in developing these systems. Further technological development will extend the reach of VA clinical expertise to Veterans who in areas where access to medical services is limited.

TBI as a chronic condition

Although the damage from a brain injury is permanent, the deficits and dysfunction can be overcome, to a large extent, with rehabilitation and time. That said, it's important to note that TBI is often not a one-time event. Certain lifestyle habits, such as playing contact sports, can lead to repeated concussions. Concussions can occur during military training, either before or after deployments. Repeated exposures to blasts, as well as motor vehicle and other accidents during military service, can result in a series of injuries over a lifespan that can have additive effects on cognition, behavior, and the ability to perceive sensory information.

As our nation came to recognize the scope of the TBI problem among service members and Veterans, and as we came to understand, in particular, how many of these brave men and women had incurred "invisible wounds" as a result of their exposure to blasts, VA transformed its small, unfocused TBI research program into a leading, Veteran-centric effort that works closely with many partners, such as the Department of Defense and the National Institutes of Health.

To determine if these injuries are having long-term, progressive effects on our service members and Veterans, VA and DoD came together under the auspices of the National Research Action Plan for the Mental Health of Veterans, Servicemembers and their Families to form the Chronic Effects of Neurotrauma Consortium.

One main goal of the consortium is to understand the implications that multiple mild TBIs can have on the brain, and to assess the long-term risks, especially as they relate to the progressive condition known as chronic traumatic encephalopathy.

The state of the current knowledge on CTE is still limited. Evidence is building that repetitive brain injury can be a leading factor in the development of this progressive dementia-like condition, which was popularized in the movie "Concussion." However, the percentage of athletes who play contact sports or combat-experienced Veterans who have been diagnosed with dementia or even mild cognitive impairment is relatively small.

With that said, rate of early-onset dementia in the civilian population is still smaller, therefore both the DoD and VA are being proactive in this situation by initiating this consortium to determine if this condition exists, what the cause is, who is most susceptible, and how it can be treated.

VA has come a long way over the past decade in brain-injury research. This work has led to improvements in clinical care, and in the methods we use to do the research itself. However, in the end this is not doing research for the sake of research. Rather, it is about restoring injured Veterans to their highest possible quality of life. We as a nation owe that to our Veterans and their families.

va.gov

Veterans
NEUROLOGY

DVBIC Releases New Clinical Recommendation for TBI-related Headaches

By Myron J. Goodman, DCoE Public Affairs

Imagine throbbing, burning and pressure in your head, or a tightening sensation around your head, neck and face. If you've ever experienced a severe headache, you don't have to imagine it. For people with a traumatic brain injury (TBI), headaches are the most common symptom.

To help patients get proper care, Defense and Veterans Brain Injury Center (DVBIC) collaborated with the Defense Department, Department of Veterans Affairs, civilian medical practitioners and researchers to create a clinical recommendation for headaches following a concussion. The recommendation titled "Management of Headache Following Concussion/Mild TBI: Guidance for Primary Care Management in Deployed and Non-Deployed Settings" is designed to help providers diagnose and treat headaches with a variety of options.

"Proper diagnosis is important because effective treatment varies depending on the type of headache," said Katie Stout, director of clinical affairs for DVBIC. According to Stout, this resource has the added benefit of providing additional resources for the treatment of other types of headaches not associated with TBI.

This headache clinical suite provides primary care providers with the latest information on headache classification and evidence-based treatment options, said Gary McKinney, chief of clinical recommendations for DVBIC.

The recommendation includes tables and graphics that make it an easy-to-use guide for recognizing headache types, including tension-type and migraine.

Photo courtesy of the National Intrepid Center of Excellence

Each headache type includes symptoms and recommended treatment, with drug and non-drug options.

In addition to headaches, people experience many other symptoms with concussion, McKinney said.

"A person with a concussion may have problems concentrating, focusing, poor memory and confusion," McKinney said. "The addition of a headache may amplify other functional and cognitive deficits, slowing recovery and reducing quality-of-life."

This clinical suite isn't only for medical providers; it includes information for patients. A patient information sheet highlights headache basics, treatment options and resources. It also gives an example of how to track headaches and identify triggers, which helps patients prepare for follow-up visits.

dcoe.mil

Veterans
NURSING

2016 VA Awardees for Excellence in Nursing

A Vital Role in Veteran Care

By Paula L. Pedene APR, Fellow PRSA for the VHA Office of Communications

Every year VA Secretary Robert McDonald hosts an "Excellence in Nursing" award to recognize the outstanding work of VA staff who play a vital role in providing and supporting nursing practice and care to Veterans.

This year's awardees are honored for compassionate care, contributions at the national level, improvements in nursing practice through education and training, and support for expanded nursing responsibilities.

They include:

Nurse Assistant: **Linda Gibson** from the Iliana VA Health Care System

Gibson is an outstanding staff member and particularly skilled with the care of elderly residents, addressing patients with dignity and respect, and promoting a therapeutic environment. She is observant to the smallest of changes and offers valuable information regarding changes in the Veteran's physical and behavioral conditions. Gibson is a true advocate for Veterans, providing a strong voice for them, ensuring their rights are maintained, their opinions are valued, and that they are treated with respect. She takes pride in the appearance and comfort of Veterans and her integrity in caring for Veterans is evident on a daily basis in her work.

Licensed Practical Nurse: **Arlene Imes** from the W.G. Heffner VA Medical Center, Salisbury, NC

Imes is highly regarded by her peers who say she is willing to go the extra mile to assist those who need care. She was instrumental and worked diligently to help the LPN Telehealth Clinical Technicians develop a functional statement that now provides them with the opportunity for demonstration of competency in their skill sets.

She received the VA Certificate of Pride in Public Service Award in recognition and appreciation for her personal commitment and dedication to patients. Through her participation in the Leadership Development Program, Imes' Action Learning Project focused on how Veterans receive information and how they prefer to receive information according to their era of service. The knowledge and insights derived from the Veterans who responded will be used by staff to provide information to Veterans.

Registered Nurse: **Gerard Hannibal**, Progressive Care Unit, Cleveland VA Medical Center

In the Progressive Care Unit, Hannibal collaborated with nursing management, pharmacy, physicians, information technology, nursing staff, patients and families to implement an evidence-based protocol to reduce phlebitis on the PCU. At the national level, Hannibal designed, developed and presented three educational sessions for the National Conference of Progressive Care Pathways.

He published several articles, including one entitled "Cardiac Monitoring

Revisited" in the Journal AACN Advanced Critical Care which shared best practices for cardiac Hannibal demonstrates supremely compassionate care for Veterans and advocates on their behalf through his efforts.

Registered Nurse in an Expanded Role: **Dr. Stefanie Coffey**, Roseburg VA Medical Center

Dr. Coffey is the Associate Chief Nurse Executive of Ambulatory Care at VA Roseburg, Oregon, When Dr. Coffey identifies a need, she institutes a plan to accomplish it, taking into consideration those impacted by each element of the decision. She engages all stakeholders to ensure their voices are heard and everyone is on the same page. She is able to get interdisciplinary team members on board to assist with needed changes and improvements.

Dr. Coffey encouraged and assisted her Nurse Managers to write grants for the Office for Rural Health including Home Telehealth, Home Based Primary Care (HBPC), Caregiver Support and Hospice and Palliative Care. Her efforts increased access to care evidenced by a doubling in HBPC enrollment.

Nurse Executive: **Alan Bernstein**, Associate Director for Patient Care Services, North Texas VA Health Care

Bernstein, recently appointed VA's Deputy Chief Nursing Officer, shares a vision of nursing excellence, patient safety, and Veteran-centered care in the advancement of nursing practice.

Under his leadership he re-organized nursing service positions to align with the terminology of other services to enable Associate Chief Nurses to be recognized as Chief Nurses.

He also proactively incorporated significant changes in facility design plans to accommodate obese patients, bedside charting, and on stage/off stage ambulatory care.

He changed the daily "Nursing Report" to "Clinical Report," resulting in the inclusion of staff from quality, safety value, the Chief of Staff, and all clinical services, allowing the multidisciplinary team to discuss how each area would be impacted by an anticipated change.

Advancement of Nursing Programs: Medical Center Director **Kaye Green**, VA Medical Center, Salisbury, NC

Director Green had a goal of establishing a nursing program that would be defined by professional excellence, guided by the precepts of shared governance, evidence based practice and VA's "I CARE" values. She committed clinical, financial and human resources and committed countless hours of her time to meet with nursing leadership, nurses and Veterans and their families.

Green recognized the need to invest in the education of the nursing staff and commissioned a facility education department with the goal of preparing professional nursing staff to succeed in their roles and to better equip them to operate within the existing and future challenges of the VHA health care system.

It is through her commitment to nursing education that the Salisbury VAMC is recognized for its increasingly healthy, evidence-based nursing practice.

blogs.va.gov

This year's awardees are honored for compassionate care, contributions at the national level, improvements in nursing practice through education and training, and support for expanded nursing responsibilities.

Veterans
NURSING

VALOR Program Gets Nurses Trained

By Bret Bowers, Public Affairs Officer

Four outstanding nurses, selected from a highly-qualified field of candidates all having an exceptional grade-point average and a core curriculum focus in a clinical service the VA provides for Veterans, completed VA's Learning Opportunities Residency (VALOR) program in July.

They performed more than 400 hours of didactic, classroom, conference and on-the-job training at the medical center in recent months.

"The advantage of this great VALOR program," explained Karen Saucier-Renner, MSN/ED, RN, VHA-CM and the medical center's VALOR Coordinator, "is that nurses are getting hands on experience in the privilege of serving Veterans.

At the same time, many begin to realize the VA is a great place to work and they end up staying with us."

Three of the four newest VALOR graduates attended Washington State University's Nursing program: Jade Faraca, Abigail Gilmore, and Keiran Kenneson. They were joined by Chelsie Shrope of Montana State University.

In addition to completing their 400 hours of service to Veterans and the VA, their "graduation ceremony" gave each the opportunity to share how their training and experience prepared them for future employment, but also how they applied some clinical applications they learned in a way that could benefit both Veterans and co-workers immediately.

Dr. Nancy Benton, Associate Director / Patient Care Services Nurse Executive

At center, Karen Saucier-Renner, MSN/ED, RN, VHA-CM is the VALOR Nurse Coordinator at Mann-Grandstaff VAMC in Spokane, WA.

welcomed the graduates and inspired them by providing facts showing that VA is leading provider of health care in the nation compared to the private sector.

"I have served as a VA Nurse for more than 23 years and there's not enough time to tell you how proud and rewarding my career has been with the VA."

For Keiran Kenneson, an Army Veteran who served as a medic and is now enrolled in VA Health Care, the accomplishment of completing the VALOR program, "confirmed my goal of hopefully becoming a VA Nurse," he said. "I cannot thank you enough for accepting me into this incredible program. I cannot speak highly enough about the VA and I hope to further my career with you someday in the future," shared a beaming Chelsie Shrope.

VALOR Nurse Abigail Gilmore, she spent time in the MGVAMC's Urgent Care Clinic and at the Veterans Outreach Center in Spokane Valley. She said, "this has been an amazing experience."

It is not uncommon for the MGVAMC's Education Service to receive more than 40 VALOR applications each year.

If additional funding is appropriated beginning in October, the students will have the opportunity to stay onboard for another 400-hours of paid training and work in their specialty area of nursing before applying for a position.

The VALOR program is open to students having a minimum cumulative grade point average of 3.0 or higher at the college level in Nursing, Pharmacy, or Medical Technician career paths.

For more information, contact the Mann-Grandstaff VA Medical Center's Education Service at 509-434-7663

va.gov

For Keiran Kenneson, an Army Veteran who served as a medic and is now enrolled in VA Health Care, the accomplishment of completing the VALOR program, "confirmed my goal of hopefully becoming a VA Nurse," he said.

Veterans
NURSING

Veteran Grateful His Nurse Made the Call

Back in November, a Veteran failed to show up for his appointment at the Las Cruces clinic in New Mexico. His nurse, Linda Perez, immediately got a bad feeling.

"He's pretty good about being here on time," said Perez, 47. "In fact, he's usually ahead of time. He's quite punctual, so when he didn't show up for his appointment I became concerned. He's diabetic, and he'd had a previous episode where his blood sugar level got very low and he went into diabetic shock. So I was worried about him. I decided to call him to make sure he was okay."

As it turned out, Perez's instincts were good. The Veteran wasn't okay. He was apparently in the midst of a serious diabetic episode.

"I called his cellphone and at first he didn't answer," she said. "But then he finally did, and he sounded confused. I asked him if he was okay and he told me he felt really sick. He was driving around in his car, but he couldn't tell me where he was. I felt so helpless, not being able to find him. I kept trying to get him to tell me where he was."

In the photo above Perez tries to comfort the patient who is in the midst of a medical crisis and unable to provide his exact location. Nurse Manager Crystal Davis-Whited listens in.

"It was scary," said Crystal Davis-Whited, the nurse manager at the Las Cruces VA clinic: "I was really worried that he was driving, and close to losing consciousness. So it wasn't just his life that was in danger, but everyone around him. The potential there was pretty bad. But Linda just kept talking to him. She was trying to get him to read street signs for her, but his vision was blurry and he couldn't see the signs."

After a few tense minutes, Linda's calm persistence paid off.

"Finally he was able to tell me what intersection he was at and what kind of car he was driving, and that's when I called 911," she said. "I stayed on the phone with him until the EMS people could get to him. I told him to find something to eat, so he found a peppermint candy and ate that."

Rushed to the Emergency Room

The local EMS squad rushed the Veteran to the nearest emergency room, where he was stabilized.

"Later they told me his blood sugar had dropped all the way down to 41," Perez said. "Apparently he had taken his insulin that morning but hadn't eaten breakfast."

Was it some kind of sixth sense that made Perez pick up the phone that morning and call her missing patient?

"That's kind of the culture around here," said Nurse Manager Crystal Davis-Whited. "We're a smaller clinic, so we know our patients. We're all kind of one big family."

Perez said being a nurse seems to be her true calling, a revelation that didn't come along right away.

"I was a hairdresser for 23 years," she said. "Now I wish I had skipped the hairdressing and gone right into nursing."

va.gov

Veterans
NUTRITION

VA Dietitians Outline their Roles at Various VA Facilities and Health Care Settings

By VA dietitian Becky Schlueter

This year, the Academy of Nutrition and Dietetics' theme for National Nutrition Month is "Put Your Best Fork Forward." This symbolizes how health can be achieved by making choices to have a healthy lifestyle, which includes smart food choices.

Registered dietitians have a passion for helping others make positive changes to their health. If you want help determining the best food choices based on your preferences, goals and medical conditions, a dietitian can help. If you know what to eat but just struggle staying on track or maintaining motivation, a dietitian is the perfect person to keep you focused.

Dietitians play an integral part in a Veteran's care at VA. Dietitians who work in the inpatient (in the acute-care hospital or community living centers) setting assess nutrition and educational needs of Veterans during their hospital stay and also once discharged home. Each Veteran is provided individual care that can include diet education and counseling or food preferences for their trays. The dietitian plays a key role for those needing specialized nutrition through tube feeding, altered textured diets (such as those with swallowing issues) or unique needs for particular vitamins, minerals or other nutrients. Proper nutrition is critical for wound healing, preventing and resolving dehydration and malnutrition, among other conditions.

Outpatient dietitians provide individual or group diet education and counseling. Examples include Veterans receiving dialysis, learning to manage diabetes, high blood pressure or their weight with the MOVE! ® weight management program. Outpatient dietitians work with Veterans for continued support, guidance and goal-setting through face-to-face appointments or through video conference. Dietitians are trained in motivational interviewing and behavior-change counseling to guide Veterans to discover reasons they may want to make changes. At some facilities, outpatient dietitians use Healthy Teaching Kitchen Demonstrations to prepare a healthy recipe that Veterans get to taste.

VA dietitians may also work in Home Based Primary Care (HBPC). HBPC dietitians have an exciting opportunity to work with Veterans in the Veterans' homes. These Veterans are unable to attend appointments at the VA so their healthcare team (including a dietitian) goes to them. They provide nutrition counseling and coordinate nutrition-related care in way similar to the inpatient and outpatient dietitians. At some VAs, home telehealth is another avenue for Veterans to come in contact with a dietitian. This is where the Veteran has medical equipment, such as a scale or blood pressure cuff, in their home and the information from those devises is sent electronically to the VA.

The dietitian, as a member of the team, monitors nutrition problems and calls and checks periodically to see how things are going. The dietitian gives additional nutrition-related insight and coaching to meet goals.

Joyce Tye, RD interacts with patients during a VA Nutrition Fair

Behind the scenes, dietitians fill other jobs that range from management, supervisory roles in the kitchen, and providing expertise on various committees such as Employee Wellness.

If you've never met with a dietitian but are interested in doing so, call your local VA to see how you can get a referral today! Here's to a Healthy and Happy National Nutrition Month.

va.gov

Veterans
ONCOLOGY

Agent Orange Registry Health Exam for Veterans

Referring patients to local VA Environmental Health Coordinator about getting an Agent Orange Registry health exam can save their lives.

VA's Agent Orange Registry health exam alerts Veterans to possible long-term health problems that may be related to Agent Orange exposure during their military service. The registry data helps VA understand and respond to these health problems more effectively.

This comprehensive health exam includes an exposure history, medical history, physical exam, and any tests if needed. A VA health professional will discuss the results face-to-face with the Veteran and in a follow-up letter.

It is free to eligible Veterans with no co-payment, and not a disability compensation exam or required for other VA benefits.

These Veterans are eligible for the Agent Orange Registry health exam:

- Vietnam Veterans who served in Vietnam between 1962 and 1975, regardless of length of time. Veterans who served aboard smaller river patrol and swift boats that operated on the inland waterways of Vietnam (also known as "Brown Water Veterans"). Check VA's list of U.S. Navy and Coast Guard ships that operated in Vietnam.
- Korea Veterans who served in a unit in or near the Korean Demilitarized Zone (DMZ) anytime between April 1, 1968 and August 31, 1971.

- Thailand U.S. Air Force Veterans who served on Royal Thai Air Force (RTAF) bases near U-Tapao, Ubon, Nakhon Phanom, Udorn, Takhli, Korat, and Don Muang, near the air base perimeter anytime between February 28, 1961 and May 7, 1975. U.S. Army Veterans who provided perimeter security on RTAF bases in Thailand anytime between February 28, 1961 and May 7, 1975. U.S. Army Veterans who were stationed on some small Army installations in Thailand anytime between February 28, 1961 and May 7, 1975.

> "VA has recognized certain cancers and other health problems as presumptive diseases associated with exposure to Agent Orange or other herbicides during military service."

Other potential Agent Orange exposures include Veterans who may have been exposed to herbicides during a military operation or as a result of testing, transporting, or spraying herbicides for military purposes.

va.gov

Veterans
ONCOLOGY

A Body's Own MicroRNA Could Prove the Best Weapon in the Fight Against Stubborn Bladder Cancer

By the VA Office of Research & Development

Bladder cancer is somewhat similar to a wildfire — it's easy to spot but difficult to eradicate. Sparks and hotspots always seem to pop back up. Case in point: While bladder cancer is relatively easy to detect, oftentimes quite early, some 150,000 people still die every year from the disease. It is the fourth most common cancer in men and the ninth in women.

"The non-invasive form of the disease is a treatable cancer, but it frequently recurs," says Dr. Maria Mudryj, a research biologist at the VA Northern California Health Care System in Mather, Calif. "The muscle-invasive form is far more serious, and once it gets outside the bladder and metastasizes, it's usually lethal."

Part of the problem, according to Mudryj, who is also a professor of microbiology and immunology at the University of California, Davis, School of Medicine, is that very little progress has been made in the development of new therapies. "This is an understudied cancer," she says, "and as a result, survival rates haven't really improved in the last 20 years."

New research, however, some of it conducted by Mudryj and her colleagues at UCD, suggests that certain microRNAs, small RNA molecules that help regulate genes in the body, can help suppress cancer. In a study published online in Molecular Carcinogenesis on April 11, 2015, Mudryj and her colleagues found that an overexpression of one microRNA, miR-148a, had a significant effect on bladder cancer cells. In short, it killed them.

Finding the right microRNAs to do the job

"MicroRNAs naturally occur and are encoded in the genome, with the job to tamper down the expression of various proteins," says Mudryj." One microRNA can target numerous proteins. The key is to find which ones are going to inhibit the growth of the tumor and which ones will promote the growth of the tumor. There are literally hundreds of these microRNAs scattered throughout the genome."

The team noticed that in the case of bladder cancer, there tended to be a shortage of miR-148a. "When you see any kind of shortage of a microRNA in a tumor, that is a hint the tumor, for whatever reason, is shutting something down," explains Mudryj. When they introduced it back, the cancer cells entered a state called apoptosis, or cell death. When you're treating cancer, says Mudryj, obviously this is what you want. The question was: How was miR-148a working, and what was it targeting?

Specialists at the Center for Cancer Research

"The most likely target we found was a gene called DNA methyltansferase 1," says Mudryj. "The protein this gene encodes changes the chromatin structure, which can have a global effect on the expression of genes. Targeting such a critical regulator is going to have great effect on the cell, and that's how we think this microRNA is working. It's targeting this particular gene."
Molecule can be made in the lab

The good news, says Mudryj, is that miR-148a can be produced artificially in a lab. "The technology to identify the shortage and to create the microRNA is perfectly doable," says Mudryj. "The challenge now is targeting. How do you deliver this package to the tumor, particularly if it's spread throughout the body? Targeting is a huge obstacle."

Fortunately, researchers are currently trying to overcome that challenge by exploring new methods to deliver targeted medicines throughout the body, such as research conducted at the Truman VA Medical Center in Missouri that uses a gold nanocage coated with chemicals from toad skin to target and penetrate certain cancer cells.

"If you can get this microRNA to the tumor," says Mudryj, "then this has the potential to be a really effective way of treating not just bladder cancer, but all manner of cancers."

research.va.gov

For previously treated locally advanced or metastatic urothelial carcinoma

TECENTRIQ®: THE FIRST AND ONLY FDA-APPROVED ANTI-PDL1 CANCER IMMUNOTHERAPY

THE NEXT ERA OF TREATMENT

Indication

TECENTRIQ (atezolizumab) is indicated for the treatment of patients with locally advanced or metastatic urothelial carcinoma who:

- Have disease progression during or following platinum-containing chemotherapy
- Have disease progression within 12 months of neoadjuvant or adjuvant treatment with platinum-containing chemotherapy

This indication is approved under accelerated approval based on tumor response rate and durability of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in confirmatory trials.

Important Safety Information

Serious Adverse Reactions

Please refer to the full Prescribing Information for important dose management information specific to adverse reactions.

Immune-Related Pneumonitis

- Immune-mediated pneumonitis or interstitial lung disease, including 2 fatal cases, occurred with TECENTRIQ treatment
- Across clinical trials, 2.6% of patients developed pneumonitis
- Monitor patients for signs with radiographic imaging and symptoms of pneumonitis. Administer steroids for ≥Grade 2 pneumonitis. Withhold TECENTRIQ until resolution of Grade 2 pneumonitis. Permanently discontinue for Grade 3 or 4 pneumonitis

Immune-Related Hepatitis

- Immune-mediated hepatitis, including a fatal case, and liver test abnormalities have occurred with TECENTRIQ treatment
- Across clinical trials, Grade 3 or 4 elevation occurred in ALT (2.5%), AST (2.3%), and total bilirubin (1.6%). In patients with urothelial carcinoma (UC), immune-mediated hepatitis occurred in 1.3% of patients
- Monitor patients for signs and symptoms of hepatitis. Monitor AST, ALT, and bilirubin prior to and periodically during treatment
- Administer corticosteroids for ≥Grade 2 transaminase elevations, with or without concomitant elevation in total bilirubin. Withhold TECENTRIQ for Grade 2 and permanently discontinue for Grade 3 or 4 immune-mediated hepatitis

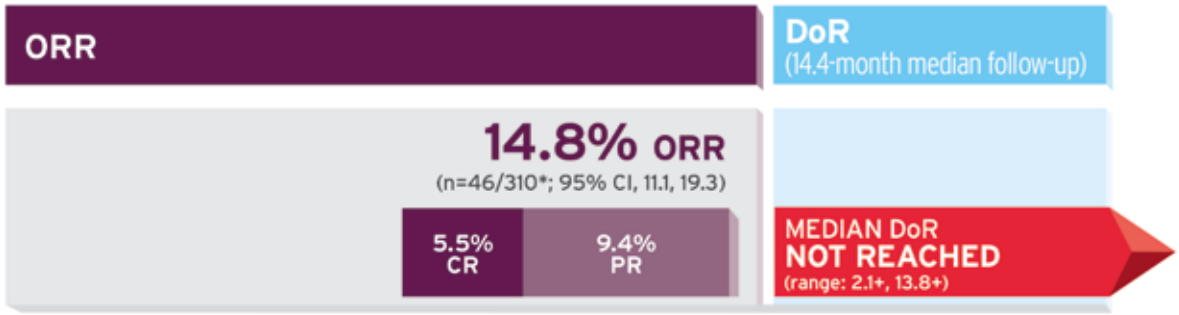
PD-L1=programmed death-ligand 1.

Please see additional Important Safety Information and Brief Summary of Prescribing Information on adjacent pages.

TECENTRIQ®
atezolizumab INJECTION FOR INTRAVENOUS USE 1200 mg

TECENTRIQ® DELIVERED DURABLE RESPONSES

Durable responses demonstrated across all patients (median follow-up: 14.4 months)[1]



- **22% ORR in patients with disease progression following prior neoadjuvant or adjuvant therapy** (n=13/59; 95% CI, 12.3, 34.7)

PD-L1 testing is not required to prescribe TECENTRIQ

IMvigor210 was a Phase II, multicenter, open-label, 2-cohort trial that included a cohort of 310 patients with locally advanced or metastatic urothelial carcinoma who had disease progression during or following a platinum-containing regimen, or within 12 months of treatment with a platinum-containing neoadjuvant or adjuvant regimen. Patients were treated with TECENTRIQ 1200 mg IV q3w. Major efficacy endpoints included ORR as assessed by IRF using RECIST v1.1 and DoR.[1,2]

CI=confidence interval; CR=complete response; DoR=duration of response; IRF=independent review facility; IV=intravenous; ORR=objective response rate; PR=partial response; q3w=every 3 weeks; RECIST=Response Evaluation Criteria In Solid Tumors.
+ denotes censored value.
*Number of IRF-assessed confirmed responders.

Important Safety Information (cont'd)

Immune-Related Colitis

- Immune-mediated colitis or diarrhea, including a fatal case of diarrhea-associated renal failure, have occurred with TECENTRIQ treatment
- Across clinical trials, colitis or diarrhea occurred in 19.7% of patients. In UC, immune-mediated colitis or diarrhea occurred in 0.8% of patients
- Monitor patients for signs and symptoms of diarrhea or colitis. Withhold TECENTRIQ for Grade 2 or Grade 3 diarrhea or colitis. Permanently discontinue for Grade 4 diarrhea or colitis

Immune-Related Endocrinopathies

- Immune-related thyroid disorders, adrenal insufficiency, hypophysitis, and type 1 diabetes mellitus, including diabetic ketoacidosis, have occurred in patients receiving TECENTRIQ. Monitor patients for clinical signs and symptoms of endocrinopathies
- Across clinical trials hypo- and hyperthyroidism occurred in 3.9% and 1.0% of patients, respectively. For symptomatic hypothyroidism, withhold TECENTRIQ and initiate hormone replacement as needed. Manage isolated hypothyroidism with replacement therapy and without corticosteroids. For symptomatic hyperthyroidism, withhold TECENTRIQ and initiate an anti-thyroid drug as needed
- Across clinical trials, adrenal insufficiency occurred in 0.4% of patients. For symptomatic adrenal insufficiency, withhold TECENTRIQ and administer corticosteroids
- Hypophysitis occurred in 0.2% of patients with UC. Administer corticosteroids and hormone replacement as clinically indicated. Withhold for Grade 2 or Grade 3, and permanently discontinue for Grade 4 hypophysitis
- New onset diabetes with ketoacidosis occurred in patients. Diabetes mellitus without an alternative etiology occurred in 0.2% of patients with urothelial carcinoma. Initiate treatment with insulin for type 1 diabetes mellitus. For >Grade 3 hyperglycemia (fasting glucose >250-500 mg/dL), withhold TECENTRIQ

Other Immune-Related Adverse Reactions

- Other immune-related adverse reactions, including meningoencephalitis, myasthenic syndrome/myasthenia gravis, Guillain-Barré syndrome, ocular inflammatory toxicity, and pancreatitis, including increases in serum amylase and lipase levels, have occurred in ≤1.0% of patients treated with TECENTRIQ
- Symptomatic pancreatitis without an alternative etiology occurred in 0.1% of patients across clinical trials
- Monitor patients for clinical signs and symptoms of meningitis or encephalitis, as well as symptoms of motor and sensory neuropathy. Permanently discontinue TECENTRIQ for any grade of meningitis or encephalitis or any grade of myasthenic syndrome/myasthenia gravis or Guillain-Barré syndrome
- Monitor patients for signs and symptoms of acute pancreatitis. Withhold TECENTRIQ for >Grade 3 serum amylase or lipase levels (>2.0 ULN), or Grade 2 or 3 pancreatitis. Permanently discontinue for Grade 4 or any grade of recurrent pancreatitis

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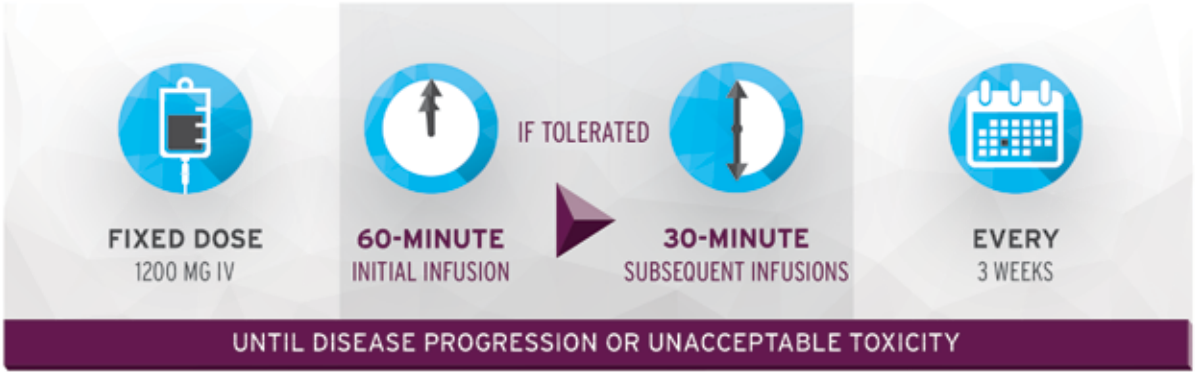
ONE FIXED DOSE, ONCE EVERY 3 WEEKS

Recommended dosing and administration[1]



- Do not administer as an IV push or bolus
- Do not co-administer other drugs through the same IV line

Most common adverse events[1]

- The most common adverse events (≥20%) included fatigue (52%), decreased appetite (26%), nausea (25%), urinary tract infection (22%), pyrexia (21%), and constipation (21%)
  - Incidence of grade 3 to 4 adverse events included fatigue (6%), decreased appetite (1%), nausea (2%), urinary tract infection (9%), pyrexia (1%), and constipation (0.3%)

Learn more at **TECENTRIQ.com/info**

Important Safety Information (cont'd)

Infection

- Severe infections, including sepsis, herpes encephalitis, and mycobacterial infection leading to retroperitoneal hemorrhage occurred in patients receiving TECENTRIQ
- Across clinical trials, infections occurred in 38.4% of patients
- In urothelial carcinoma, infection occurred in 37.7% of patients. Grade 3 or 4 infection occurred in 11.5% of patients, while 3 patients died due to infections. Urinary tract infections were the most common cause of Grade 3 or higher infection, occurring in 7.1% of patients
- Monitor patients for signs and symptoms of infection and treat with antibiotics for suspected or confirmed bacterial infections. Withhold TECENTRIQ for >Grade 3 infection

Infusion-Related Reactions

- Severe infusion reactions have occurred in patients in clinical trials of TECENTRIQ. Infusion-related reactions occurred in 1.7% in UC
- Interrupt or slow the rate of infusion in patients with mild or moderate infusion reactions. Permanently discontinue TECENTRIQ in patients with Grade 3 or 4 infusion reactions

Embryo-Fetal Toxicity

- Based on its mechanism of action, TECENTRIQ can cause fetal harm when administered to a pregnant woman. Advise pregnant women or women planning to become pregnant of the potential risk to the fetus. Advise females of reproductive potential to use effective contraception during treatment with TECENTRIQ and for at least 5 months after the last dose of TECENTRIQ

Nursing Mothers

- Because of the potential for serious adverse reactions in breastfed infants from TECENTRIQ, advise female patients not to breastfeed while taking TECENTRIQ and for at least 5 months after the last dose

Most Common Adverse Reactions

The most common adverse reactions (rate ≥20%) in UC included fatigue (52%), decreased appetite (26%), nausea (25%), urinary tract infection (22%), pyrexia (21%), and constipation (21%).

You may report side effects to the FDA at 1-800-FDA-1088 or www.fda.gov/medwatch. You may also report side effects to Genentech at 1-888-835-2555.

Please see Brief Summary of Prescribing Information on adjacent pages.

References: 1. TECENTRIQ Prescribing Information. Genentech, Inc. May 2016. **2.** US National Institutes of Health. ClinicalTrials.gov. https://www.clinicaltrials.gov/ct2/show/NCT02108652. Accessed August 26, 2016.

TECENTRIQ®
atezolizumab
INJECTION FOR INTRAVENOUS USE 1200 mg

TECENTRIQ™ (atezolizumab)

Initial U.S. Approval: 2016

This is a brief summary of information about TECENTRIQ. Before prescribing, please see full Prescribing Information.

1 INDICATIONS AND USAGE

TECENTRIQ (atezolizumab) is indicated for the treatment of patients with locally advanced or metastatic urothelial carcinoma who:

- Have disease progression during or following platinum-containing chemotherapy
- Have disease progression within 12 months of neoadjuvant or adjuvant treatment with platinum-containing chemotherapy

This indication is approved under accelerated approval based on tumor response rate and durability of response. Continued approval for this indication may be contingent upon verification and description of clinical benefit in confirmatory trials *[see Clinical Studies (14.1)]*.

4 CONTRAINDICATIONS

None.

5 WARNINGS AND PRECAUTIONS

5.1 Immune-Related Pneumonitis

Immune-mediated pneumonitis or interstitial lung disease, defined as requiring use of corticosteroids and with no clear alternate etiology, occurred in patients receiving TECENTRIQ. Across clinical trials, 2.6% (51/1978) of patients developed pneumonitis. Fatal pneumonitis occurred in two patients. In 523 patients with urothelial carcinoma who received TECENTRIQ, pneumonitis occurred in 6 (1.1%) patients. Of these patients, there was one patient with fatal pneumonitis, one patient with Grade 3, three patients with Grade 2, and one patient with Grade 1 pneumonitis. TECENTRIQ was held in all cases and five patients were treated with corticosteroids. Pneumonitis resolved in three patients. The median time to onset was 2.6 months (range: 15 days to 4.2 months). The median duration was 15 days (range: 6 days to 3.1+ months).

Monitor patients for signs with radiographic imaging and symptoms of pneumonitis. Administer steroids at a dose of 1 to 2 mg/kg/day prednisone equivalents for Grade 2 or greater pneumonitis, followed by corticosteroid taper. Withhold TECENTRIQ until resolution for Grade 2 pneumonitis. Permanently discontinue TECENTRIQ for Grade 3 or 4 pneumonitis *[see Dosage and Administration (2.2)]*.

5.2 Immune-Related Hepatitis

Immune-mediated hepatitis, defined as requiring use of corticosteroids and with no clear alternate etiology, occurred in patients receiving TECENTRIQ. Liver test abnormalities occurred in patients who received TECENTRIQ. Across clinical trials (n=1978), Grade 3 or 4 elevation occurred in ALT (2.5%), AST (2.3%), and total bilirubin (1.6%). In patients with urothelial carcinoma (n=523) Grade 3 or 4 elevation occurred in ALT (2.5%), AST (2.5%), and total bilirubin (2.1%). Immune-mediated hepatitis occurred in 1.3% of patients. Of these cases, one patient died from hepatitis, five patients had Grade 3, and one patient had Grade 2 hepatitis. The median time to onset was 1.1 months (range: 0.4 to 7.7 months). Of the seven patients with immune-mediated hepatitis, TECENTRIQ was temporarily interrupted in four patients; none of these patients developed recurrence of hepatitis after resuming TECENTRIQ.

Monitor patients for signs and symptoms of hepatitis. Monitor AST, ALT, and bilirubin prior to and periodically during treatment with TECENTRIQ. Administer corticosteroids at a dose of 1-2 mg/kg/day prednisone equivalents for Grade 2 or greater transaminase elevations, with or without concomitant elevation in total bilirubin, followed by corticosteroid taper. Withhold TECENTRIQ for Grade 2 and permanently discontinue TECENTRIQ for Grade 3 or 4 immune-mediated hepatitis *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.3 Immune-Related Colitis

Immune-mediated colitis or diarrhea, defined as requiring use of corticosteroids and with no clear alternate etiology, occurred in patients receiving TECENTRIQ. Across clinical trials, colitis or diarrhea occurred in 19.7% (389/1978) of all patients and in 18.7% (98/523) of patients with urothelial carcinoma. Ten patients (1.9%) developed Grade 3 or 4 diarrhea. Four patients (0.8%) had immune-mediated colitis or diarrhea with a median time to onset of 1.7 months (range: 1.1 to 3.1 months). Immune-mediated colitis resolved with corticosteroid administration in three of these patients, while the other patient died without resolution of colitis in the setting of diarrhea-associated renal failure.

Monitor patients for signs and symptoms of diarrhea or colitis. Withhold treatment with TECENTRIQ for Grade 2 diarrhea or colitis. If symptoms persist for longer than 5 days or recur, administer 1–2 mg/kg prednisone or equivalent per day. Withhold treatment with TECENTRIQ for Grade 3 diarrhea or colitis. Treat with IV methylprednisolone 1–2 mg/kg per day and convert to oral steroids once the patient has improved. For both Grade 2 and Grade 3 diarrhea or colitis, when symptoms improve to Grade 0 or Grade 1, taper steroids over ≥ 1 month. Resume treatment with TECENTRIQ if the event improves to Grade 0 or 1 within 12 weeks and corticosteroids have been reduced to the equivalent of ≤ 10 mg oral prednisone per day. Permanently discontinue TECENTRIQ for Grade 4 diarrhea or colitis *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.4 Immune-Related Endocrinopathies

Immune-related thyroid disorders, adrenal insufficiency, hypophysitis, and type 1 diabetes mellitus, including diabetic ketoacidosis, have occurred in patients receiving TECENTRIQ. Monitor patients for clinical signs and symptoms of endocrinopathies.

Hypophysitis

Hypophysitis occurred in 0.2% (1/523) of patients with urothelial cancer receiving TECENTRIQ. Monitor for signs and symptoms of hypophysitis. Administer corticosteroids and hormone replacement as clinically indicated. Withhold TECENTRIQ for Grade 2 or Grade 3 and permanently discontinue for Grade 4 hypophysitis *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

Thyroid Disorders

Thyroid function was assessed routinely only at baseline and the end of the study. Across clinical trials, hypothyroidism occurred in 3.9% (77/1978) of patients and in 2.5% (13/523) of patients with urothelial carcinoma. One patient had Grade 3 and twelve patients had Grade 1–2 hypothyroidism. The median time to first onset was 5.4 months (range: 21 days to 11.3 months). Thyroid stimulating hormone (TSH) was elevated and above the patient's baseline in 16% (21/131) of patients with a follow-up measurement.

Hyperthyroidism occurred in 1.0% (20/1978) of patients across clinical trials and in 0.6% (3/523) of patients with urothelial carcinoma. Of the three urothelial carcinoma patients, one patient had Grade 2 and two patients had Grade 1 hyperthyroidism. The median time to onset was 3.2 months (range: 1.4 to 5.8 months). TSH was decreased and below the patient's baseline in 3.8% (5/131) of patients with a follow-up measurement.

Monitor thyroid function prior to and periodically during treatment with TECENTRIQ. Asymptomatic patients with abnormal thyroid function tests can receive TECENTRIQ. For symptomatic hypothyroidism, withhold TECENTRIQ and initiate thyroid hormone replacement as needed. Manage isolated hypothyroidism with replacement therapy and without corticosteroids. For symptomatic hyperthyroidism, withhold TECENTRIQ and initiate an anti-thyroid drug as needed. Resume treatment with TECENTRIQ when symptoms of hypothyroidism or hyperthyroidism are controlled and thyroid function is improving *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

Adrenal Insufficiency

Adrenal insufficiency occurred in 0.4% (7/1978) of patients across clinical trials, including two patients with Grade 3, four patients with Grade 2, and one patient with Grade 1. Adrenal insufficiency resolved in two patients.

For symptomatic adrenal insufficiency, withhold TECENTRIQ and administer methylprednisolone 1–2 mg/kg per day IV followed by oral prednisone 1–2 mg/kg per day or equivalent once symptoms improve. Start steroid taper when symptoms improve to ≤ Grade 1 and taper steroids over ≥ 1 month. Resume treatment with TECENTRIQ if the event improves to ≤ Grade 1 within 12 weeks and corticosteroids have been reduced to the equivalent of ≤ 10 mg oral prednisone per day and the patient is stable on replacement therapy, if required *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

Diabetes Mellitus

New onset diabetes with ketoacidosis has occurred in patients receiving TECENTRIQ. Diabetes mellitus without an alternative etiology occurred in one (0.2%) patient with urothelial carcinoma.

Initiate treatment with insulin for type 1 diabetes mellitus. For ≥ Grade 3 hyperglycemia (fasting glucose >250–500 mg/dL), withhold TECENTRIQ. Resume treatment with TECENTRIQ when metabolic control is achieved on insulin replacement therapy *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.5 Other Immune-Related Adverse Reactions

Other immune-related adverse reactions including meningoencephalitis, myasthenic syndrome/myasthenia gravis, Guillain-Barré, ocular inflammatory toxicity, and pancreatitis, including increases in serum amylase and lipase levels, have occurred in ≤ 1.0% of patients treated with TECENTRIQ.

Meningitis / Encephalitis

Monitor patients for clinical signs and symptoms of meningitis or encephalitis. Permanently discontinue TECENTRIQ for any grade of meningitis or encephalitis. Treat with IV steroids (1–2 mg/kg/day methylprednisolone or equivalent) and convert to oral steroids (prednisone 60 mg/day or equivalent) once the patient has improved. When symptoms improve to ≤ Grade 1, taper steroids over ≥ 1 month *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

Motor and Sensory Neuropathy

Monitor patients for symptoms of motor and sensory neuropathy. Permanently discontinue TECENTRIQ for any grade of myasthenic syndrome/myasthenia gravis or Guillain-Barré syndrome. Institute medical intervention as appropriate. Consider initiation of systemic corticosteroids at a dose of 1–2 mg/kg/day prednisone *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

Pancreatitis

Symptomatic pancreatitis without an alternative etiology occurred in 0.1% (2/1978) of patients across clinical trials. Monitor patients for signs and symptoms of acute pancreatitis. Withhold TECENTRIQ for ≥ Grade 3 serum amylase or lipase levels (> 2.0 ULN), or Grade 2 or 3 pancreatitis. Treat with 1–2 mg/kg IV methylprednisolone or equivalent per day. Once symptoms improve, follow with 1–2 mg/kg of oral prednisone or equivalent per day. Resume treatment with TECENTRIQ if serum amylase and lipase levels improve to ≤ Grade 1 within 12 weeks, symptoms of pancreatitis have resolved, and corticosteroids have been reduced to ≤ 10 mg oral prednisone or equivalent per day. Permanently discontinue TECENTRIQ for Grade 4 or any grade of recurrent pancreatitis *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.6 Infection

Severe infections, including sepsis, herpes encephalitis, and mycobacterial infection leading to retroperitoneal hemorrhage occurred in patients receiving TECENTRIQ. Across clinical trials, infections occurred in 38.4% (759/1978) of patients. In 523 patients with urothelial carcinoma who received TECENTRIQ, infection occurred in 197 (37.7%) patients. Grade 3 or 4 infection occurred in 60 (11.5%) patients, while three patients died due to infections. Urinary tract infections were the most common cause of Grade 3 or higher infection, occurring in 37 (7.1%) patients.

In a randomized trial in patients with non-small cell lung cancer, infections were more common in patients treated with TECENTRIQ (42%) compared with those treated with docetaxel (33%). Grade 3 or 4 infections occurred in 9.2% of patients treated with TECENTRIQ compared with 2.2% in patients treated with docetaxel. One patient (0.7%) treated with TECENTRIQ died due to infection, compared to two patients (1.5%) treated with docetaxel. Pneumonia was the most common cause of Grade 3 or higher infection, occurring in 6.3% of patients treated with TECENTRIQ.

Monitor patients for signs and symptoms of infection and treat with antibiotics for suspected or confirmed bacterial infections. Withhold TECENTRIQ for ≥ Grade 3 infection *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.7 Infusion-Related Reactions

Severe infusion reactions have occurred in patients in clinical trials of TECENTRIQ. Infusion-related reactions occurred in 1.3% (25/1978) of patients across clinical trials and in 1.7% (9/523) of patients with urothelial carcinoma. Interrupt or slow the rate of infusion in patients with mild or moderate infusion reactions. Permanently discontinue TECENTRIQ in patients with Grade 3 or 4 infusion reactions *[see Dosage and Administration (2.2) and Adverse Reactions (6.1)]*.

5.8 Embryo-Fetal Toxicity

Based on its mechanism of action, TECENTRIQ can cause fetal harm when administered to a pregnant woman. Animal studies have demonstrated that inhibition of the PD-L1/PD-1 pathway can lead to increased risk of immune-related rejection of the developing fetus resulting in fetal death. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, advise the patient of the potential risk to a fetus. Advise females of reproductive potential to use effective contraception during treatment with TECENTRIQ and for at least 5 months after the last dose *[see Use in Specific Populations (8.1, 8.3)]*.

6 ADVERSE REACTIONS

The following adverse reactions are discussed in greater detail in other sections of the label:

- Immune-Related Pneumonitis *[see Warnings and Precautions (5.1)]*
- Immune-Related Hepatitis *[see Warnings and Precautions (5.2)]*
- Immune-Related Colitis *[see Warnings and Precautions (5.3)]*
- Immune-Related Endocrinopathies *[see Warnings and Precautions (5.4)]*
- Other Immune-Related Adverse Reactions *[see Warnings and Precautions (5.5)]*
- Infection *[see Warnings and Precautions (5.6)]*
- Infusion-Related Reactions *[see Warnings and Precautions (5.7)]*

6.1 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.

The data described in Table 1 reflects exposure to TECENTRIQ in Cohort 2 of Study 1. This cohort enrolled 310 patients in a single arm trial with locally advanced or metastatic urothelial carcinoma who had disease progression during or following at least one platinum-containing chemotherapy regimen or who had disease progression within 12 months of treatment with a platinum-containing neoadjuvant or adjuvant chemotherapy regimen *[see Clinical Studies (14.1)]*. Patients received 1200 mg of TECENTRIQ intravenously every 3 weeks until unacceptable toxicity or either radiographic or clinical progression. The median duration of exposure was 12.3 weeks (range: 0.1, 46 weeks).

The most common adverse reactions (≥ 20%) were fatigue (52%), decreased appetite (26%), nausea (25%), urinary tract infection (22%), pyrexia (21%), and constipation (21%). The most

common Grade 3–4 adverse reactions (≥ 2%) were urinary tract infection, anemia, fatigue, dehydration, intestinal obstruction, urinary obstruction, hematuria, dyspnea, acute kidney injury, abdominal pain, venous thromboembolism, sepsis, and pneumonia.

Three patients (0.9%) who were treated with TECENTRIQ experienced either sepsis, pneumonitis, or intestinal obstruction which led to death. TECENTRIQ was discontinued for adverse reactions in 3.2% (10/310) of the 310 patients. Sepsis led to discontinuation in 0.6% (2/310) of patients. Adverse reactions leading to interruption of TECENTRIQ occurred in 27% of patients; the most common (> 1%) were liver enzyme increase, urinary tract infection, diarrhea, fatigue, confusional state, urinary obstruction, pyrexia, dyspnea, venous thromboembolism, and pneumonitis. Serious adverse reactions occurred in 45% of patients. The most frequent serious adverse reactions (> 2%) were urinary tract infection, hematuria, acute kidney injury, intestinal obstruction, pyrexia, venous thromboembolism, urinary obstruction, pneumonia, dyspnea, abdominal pain, sepsis, and confusional state.

Table 1 summarizes the adverse reactions that occurred in ≥ 10% of patients while Table 2 summarizes Grade 3–4 selected laboratory abnormalities that occurred in ≥ 1% of patients treated with TECENTRIQ in Cohort 2 of Study 1.

Table 1: All Grade Adverse Reactions in ≥ 10% of Patients with Urothelial Carcinoma in Study 1

	TECENTRIQ N = 310	
Adverse Reaction	All Grades (%)	Grades 3 – 4 (%)
All Adverse Reactions	96	50
Gastrointestinal Disorders		
Nausea	25	2
Constipation	21	0.3
Diarrhea	18	1
Abdominal pain	17	4
Vomiting	17	1
General Disorders and Administration		
Fatigue	52	6
Pyrexia	21	1
Peripheral edema	18	1
Infections and Infestations		
Urinary tract infection	22	9
Metabolism and Nutrition Disorders		
Decreased appetite	26	1
Musculoskeletal and Connective Tissue Disorders		
Back/Neck pain	15	2
Arthralgia	14	1
Renal and urinary disorders		
Hematuria	14	3
Respiratory, Thoracic, and Mediastinal Disorders		
Dyspnea	16	4
Cough	14	0.3
Skin and Subcutaneous Tissue Disorders		
Rash	15	0.3
Pruritus	13	0.3

Table 2: Grade 3–4 Laboratory Abnormalities in Patients with Urothelial Carcinoma in Study 1 in ≥ 1% of Patients

Laboratory Test	Grades 3–4 (%)
Lymphopenia	10
Hyponatremia	10
Anemia	8
Hyperglycemia	5
Increased Alkaline phosphatase	4
Increased Creatinine	3
Increased ALT	2
Increased AST	2
Hypoalbuminemia	1

6.2 Immunogenicity

As with all therapeutic proteins, there is a potential for immunogenicity. Among 275 patients in Study 1, 114 patients (41.5%) tested positive for treatment-emergent (treatment-induced or treatment-enhanced) anti-therapeutic antibodies (ATA) at one or more post-dose time points. In Study 1, the presence of ATAs did not appear to have a clinically significant impact on pharmacokinetics, safety or efficacy.

Immunogenicity assay results are highly dependent on several factors, including assay sensitivity and specificity, assay methodology, sample handling, timing of sample collection, concomitant medications and underlying disease. For these reasons, comparison of incidence of ATAs to TECENTRIQ with the incidence of antibodies to other products may be misleading.

8 USE IN SPECIFIC POPULATIONS

8.1 Pregnancy

Risk Summary

Based on its mechanism of action, TECENTRIQ can cause fetal harm when administered to a pregnant woman *[see Clinical Pharmacology (12.1)]*. There are no available data on the use of TECENTRIQ in pregnant women. Animal studies have demonstrated that inhibition of the PD-L1/PD-1 pathway can lead to increased risk of immune-related rejection of the developing fetus resulting in fetal death *[see Data]*. If this drug is used during pregnancy, or if the patient becomes pregnant while taking this drug, advise the patient of the potential risk to a fetus.

In the U.S. general population, the estimated background risk of major birth defects and miscarriage in clinically recognized pregnancies is 2% to 4% and 15% to 20%, respectively.

Data

Animal Data

Animal reproduction studies have not been conducted with TECENTRIQ to evaluate its effect on reproduction and fetal development. A literature-based assessment of the effects on reproduction demonstrated that a central function of the PD-L1/PD-1 pathway is to preserve pregnancy by maintaining maternal immune tolerance to a fetus. Blockage of PD-L1 signaling has been shown in murine models of pregnancy to disrupt tolerance to a fetus and to result in an increase in fetal loss; therefore, potential risks of administering TECENTRIQ during pregnancy include increased rates of abortion or stillbirth. As reported in the literature, there were no malformations related to the blockade of PD-L1/PD-1 signaling in the offspring of these animals; however, immune-mediated disorders occurred in PD-1 and PD-L1 knockout mice. Based on its mechanism of action, fetal exposure to atezolizumab may increase the risk of developing immune-mediated disorders or altering the normal immune response.

8.2 Lactation

Risk Summary

There is no information regarding the presence of atezolizumab in human milk, the effects on the breastfed infant, or the effects on milk production. As human IgG is excreted in human milk, the potential for absorption and harm to the infant is unknown. Because of the potential for serious adverse reactions in breastfed infants from TECENTRIQ, advise a lactating woman not to breastfeed during treatment and for at least 5 months after the last dose.

8.3 Females and Males of Reproductive Potential

Contraception

Females

Based on its mechanism of action, TECENTRIQ can cause fetal harm when administered to a pregnant woman *[see Use in Specific Populations (8.1)]*. Advise females of reproductive potential to use effective contraception during treatment with TECENTRIQ and for at least 5 months following the last dose.

Infertility

Females

Based on animal studies, TECENTRIQ may impair fertility in females of reproductive potential while receiving treatment *[see Nonclinical Toxicology (13.1)]*.

8.4 Pediatric Use

The safety and effectiveness of TECENTRIQ have not been established in pediatric patients.

8.5 Geriatric Use

Of the 310 patients with urothelial carcinoma treated with TECENTRIQ in Study 1, 59% were 65 years or older. No overall differences in safety or efficacy were observed between patients ≥ 65 years of age and younger patients.

8.6 Renal Impairment

Based on a population pharmacokinetic analysis, no dose adjustment of TECENTRIQ is recommended for patients with renal impairment *[see Clinical Pharmacology (12.3)]*.

8.7 Hepatic Impairment

Based on a population pharmacokinetic analysis, no dose adjustment of TECENTRIQ is recommended for patients with mild hepatic impairment. TECENTRIQ has not been studied in patients with moderate or severe hepatic impairment *[see Clinical Pharmacology (12.3)]*.

10 OVERDOSAGE

There is no information on overdose with TECENTRIQ.

17 PATIENT COUNSELING INFORMATION

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

Inform patients of the risk of immune-related adverse reactions that may require corticosteroid treatment and interruption or discontinuation of TECENTRIQ, including:

- Pneumonitis: Advise patients to contact their healthcare provider immediately for any new or worsening cough, chest pain, or shortness of breath *[see Warnings and Precautions (5.1)]*.
- Hepatitis: Advise patients to contact their healthcare provider immediately for jaundice, severe nausea or vomiting, pain on the right side of abdomen, lethargy, or easy bruising or bleeding *[see Warnings and Precautions (5.2)]*.
- Colitis: Advise patients to contact their healthcare provider immediately for diarrhea or severe abdominal pain *[see Warnings and Precautions (5.3)]*.
- Endocrinopathies: Advise patients to contact their healthcare provider immediately for signs or symptoms of hypophysitis, hyperthyroidism, hypothyroidism, adrenal insufficiency, or type 1 diabetes mellitus, including diabetic ketoacidosis *[see Warnings and Precautions (5.4)]*
- Meningoencephalitis, myasthenic syndrome/myasthenia gravis, and Guillain-Barré syndrome: Advise patients to contact their healthcare provider immediately for signs or symptoms of meningitis, myasthenic syndrome/myasthenia gravis, or Guillain-Barré syndrome *[see Warnings and Precautions (5.5)]*.
- Ocular Inflammatory Toxicity: Advise patients to contact their healthcare provider immediately for signs or symptoms of ocular inflammatory toxicity *[see Warnings and Precautions (5.5)]*.
- Pancreatitis: Advise patients to contact their healthcare provider immediately for signs and symptoms of pancreatitis *[see Warnings and Precautions (5.5)]*.
- Infection: Advise patients to contact their healthcare provider immediately for signs or symptoms of infection *[see Warnings and Precautions (5.6)]*.
- Infusion-Related Reactions: Advise patients to contact their healthcare provider immediately for signs or symptoms of infusion-related reactions *[see Warnings and Precautions (5.7)]*.
- Rash: Advise patients to contact their healthcare provider immediately for signs or symptoms of rash *[see Dosage and Administration (2.2)]*.

Embryo-Fetal Toxicity

Advise female patients that TECENTRIQ can cause fetal harm. Instruct females of reproductive potential to use effective contraception during treatment and for at least 5 months after the last dose of TECENTRIQ *[see Use in Specific Populations (8.1, 8.3)]*.

Lactation

Advise female patients not to breastfeed while taking TECENTRIQ and for at least 5 months after the last dose *[see Use in Specific Populations (8.2)]*.

Genentech
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TECENTRIQ™ (atezolizumab)

Manufactured by:
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A Member of the Roche Group
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PDL/121615/0161
Initial U.S. Approval: May 2016

Veterans
ONCOLOGY

Researchers Continue to Forge Ahead on Innovative Cancer Research

When Vice President Joe Biden announced his vision for a "Cancer Moonshot" in the United States earlier this year, it served as a rallying cry for scientists and researchers across the federal government, private sector and academia. But within the Military Health System, there is already a longstanding commitment to science studying the causes, prevention, diagnosis and treatment of cancer.

At a recent "Review and Analysis" meeting facilitated by the Research, Development, & Acquisition directorate within the Defense Health Agency, military medical researchers came together to share the scope of their work as well as update colleagues on their recent successes and challenges for the future. Representatives from a variety of cancer research programs within the Congressionally Directed Medical Research Programs (CDMRP), Murtha Cancer Center at Walter Reed National Military Medical Center, and Cancer Centers of Excellence presented findings on the unique difficulties that the diseases poses for both doctors and patients.

The meeting's insights spanned the entire continuum of care, from prevention to diagnosis on to treatment and recovery. Researchers highlighted how they have found increasing success in identifying numerous "biomarkers," that can indicate potential cancer risks or even the presence of cancer within an individual.

Scientists and doctors are also exploring ways to use knowledge gained elsewhere in military medical research to their benefit: techniques and clinical practices that were originally developed for the treatment of traumatic brain injury (TBI) are being studied for the potential they may have to help treat conditions like "chemo brain," a debilitating side effect of chemotherapy that can lead to cognitive impairment in patients.

Researchers noted how their work fits into the larger context of military medicine and efforts to fight cancer across the nation. They stressed that cancer research is influenced by the emerging focus on "precision medicine," a patient-centric approach that emphasizes genetic analysis to identify health risks and optimal treatment strategies for each individual. The Breast Cancer Center of Excellence's research program, for example, has collected one of the world's largest repositories of biological specimens related to cancer, and has been one of the most prolific contributors of sample tumors to the National Institutes of Health (NIH)'s Cancer Genome Atlas.

"The breadth and depth of the Military Health System's investment in studying cancer can't be overstated," says Dr. Kelley Brix of the RDA directorate, who helped organize the meeting. "There's still a lot that we need to learn about how to treat the disease, but the findings shared at this meeting show that we've made great progress, and that the MHS is already a leader in working toward the goals outlined by the Cancer Moonshot program."

"The five most frequently diagnosed cancers among VA cancer patients were prostate, lung and bronchial, colorectal, urinary and bladder cancers, and skin melanomas."

Researchers examine biological specimens *(Courtesy photo)*

The commitment to cancer research is just one element of the MHS' larger drive to provide cutting-edge, comprehensive care to Service members and beneficiaries. But it's also an important effort for ensuring military medical readiness. More than 1,000 active duty Service members die from complications related to cancer each year. Thousands more receive cancer diagnoses that can prevent them from performing their duties for significant amounts of time. And Service members' deployments to diverse environments around the world mean they face exposure to risk factors that civilians do not, making focused research essential.

New challenges in military medicine are appearing every day, but expanding our knowledge of cancer prevention, treatment and rehabilitation will continue to be a priority for the Military Health System as researchers continue to build on achievements that have already been made.

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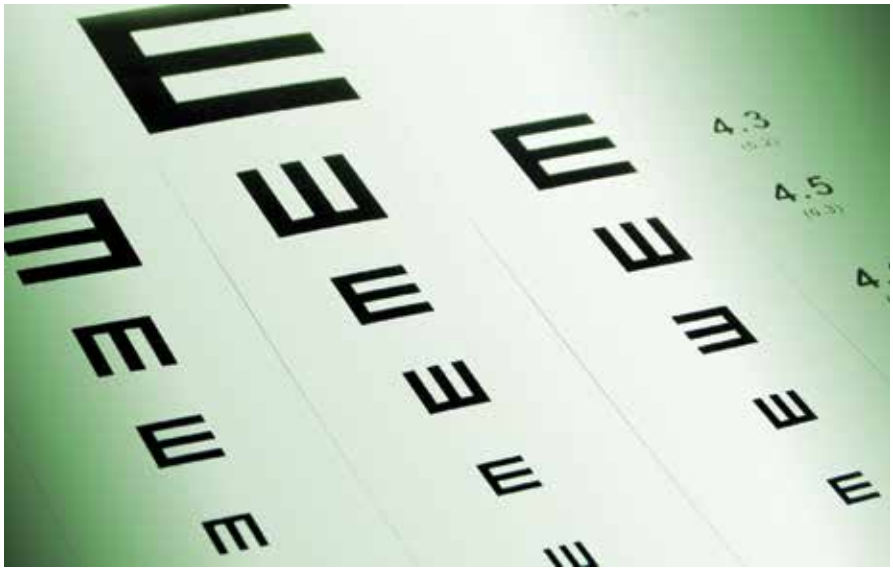
Veterans
OPHTHALMOLOGY

VA Tennessee Valley Healthcare System Ophthalmologists Make History

By Anna-Marie Ward, Acting Public Affairs Officer

For more than a decade, Veterans with severe vision problems who were eligible for corneal transplant surgery were forced to receive the procedure in the community. Now, with the help of a dedicated team of nurses and surgical technicians, two VA Tennessee Valley Healthcare System ophthalmologists are changing that.



"[Recently], we were authorized to hire several additional ophthalmologists," said Dr. Jennifer Lindsey, Attending Physician (Ophthalmologist) for TVHS. "Two were cornea experts … we wanted to be able to fully utilize their skill sets."

Although many Veterans face vision problems, a handful of them are so severe that glasses or contact lenses cannot correct their sight. Through injury, disease or other complications, the cornea can become too damaged to see through. In these cases, a transplant — replacing the diseased eye tissue with healthy tissue from a donor — is the only solution.

"We have been seeing about one [transplant patient] a quarter," Lindsey said. "Many had been sent out on non-VA care or Choice since we did not offer this service in the past."

Lindsey added that a plan nearly five years in the making was revived to bring corneal transplant surgery, a delicate procedure that had not been performed inside TVHS in nearly 15 years, back to the medical center.

More than a year ago, Drs. Gioconda Mojica and Bina Patel began working with surgical staff, nursing, contracting, prosthetics, sterile processing and surgical leadership to coordinate the introduction of corneal transplants tothe VA TVHS Alvin C. York Operating Room.

From equipment and specialized instruments to working out kinks in tissue delivery, VA personnel worked diligently to ensure that no detail was overlooked prior to scheduling the first patient.

Through injury, disease or other complications, the cornea can become too damaged to see through. In these cases, a transplant — replacing the diseased eye tissue with healthy tissue from a donor — is the only solution.

Lindsey noted that one of the hurdles they faced involved making sure the donor eye — a rather perishable item — was delivered directly to the operating area, as opposed to a medical supply warehouse. She also added that the surgical team performed several "dry runs" of the operation using practice tissue.

"We had to know how to handle the tissue properly," she said. "It is very delicate and we needed to make sure the entire team was ready … you only get one shot at it."

And when the first live case was brought into the operating room, Lindsey said that the energy was electric.

"They did fantastic," she said. "I was really excited in the OR. Everybody knew that we were sort of making history."

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INDICATIONS AND USAGE: RESTASIS® and *RESTASIS MultiDose™* ophthalmic emulsion are indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca. Increased tear production was not seen in patients currently taking topical anti-inflammatory drugs or using punctal plugs.

IMPORTANT SAFETY INFORMATION

CONTRAINDICATIONS: RESTASIS® and *RESTASIS MultiDose™* are contraindicated in patients with known or suspected hypersensitivity to any of the ingredients in the formulation.

WARNINGS AND PRECAUTIONS

POTENTIAL FOR EYE INJURY AND CONTAMINATION: Be careful not to touch the container tip to your eye or other surfaces to avoid potential for eye injury and contamination.

USE WITH CONTACT LENSES: RESTASIS® and *RESTASIS MultiDose™* should not be administered while wearing contact lenses. If contact lenses are worn, they should be removed prior to the administration of the emulsion. Lenses may be reinserted 15 minutes following administration of RESTASIS® and *RESTASIS MultiDose™* ophthalmic emulsion.

ADVERSE REACTIONS: In clinical trials, the most common adverse reaction following the use of cyclosporine ophthalmic emulsion 0.05% was ocular burning (upon instillation)—17%. Other reactions reported in 1% to 5% of patients included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often blurring).

PLEASE SEE NEXT PAGE FOR A BRIEF SUMMARY OF THE FULL PRODUCT INFORMATION

REFERENCE: 1. RESTASIS® Prescribing Information, June 2013.

Allergan

RESTASIS® and RESTASIS MULTIDOSE™ (Cyclosporine Ophthalmic Emulsion) 0.05%

BRIEF SUMMARY—PLEASE SEE THE RESTASIS® AND RESTASIS MULTIDOSE™ PACKAGE INSERTS FOR FULL PRESCRIBING INFORMATION.

INDICATION AND USAGE
RESTASIS® and **RESTASIS MULTIDOSE™** ophthalmic emulsion are indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca. Increased tear production was not seen in patients currently taking topical anti-inflammatory drugs or using punctal plugs.

CONTRAINDICATIONS
RESTASIS® and **RESTASIS MULTIDOSE™** are contraindicated in patients with known or suspected hypersensitivity to any of the ingredients in the formulation.

WARNINGS AND PRECAUTIONS
Potential for Eye Injury and Contamination
Be careful not to touch the container tip to your eye or other surfaces to avoid potential for eye injury and contamination.

Use with Contact Lenses
RESTASIS® and **RESTASIS MULTIDOSE™** should not be administered while wearing contact lenses. Patients with decreased tear production typically should not wear contact lenses. If contact lenses are worn, they should be removed prior to the administration of the emulsion. Lenses may be reinserted 15 minutes following administration of **RESTASIS®** and **RESTASIS MULTIDOSE™** ophthalmic emulsion.

ADVERSE REACTIONS
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 clinical trials, the most common adverse reaction following the use of cyclosporine ophthalmic emulsion 0.05% was ocular burning (17%).

Other reactions reported in 1% to 5% of patients included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often blurring).

Post-marketing Experience
The following adverse reactions have been identified during post approval use of cyclosporine ophthalmic emulsion 0.05%. Because these reactions are reported voluntarily from a population of uncertain size, it is not always possible to reliably estimate their frequency or establish a causal relationship to drug exposure.

Reported reactions have included: hypersensitivity (including eye swelling, urticaria, rare cases of severe angioedema, face swelling, tongue swelling, pharyngeal edema, and dyspnea); and superficial injury of the eye (from the container tip touching the eye during administration).

USE IN SPECIFIC POPULATIONS
Pregnancy
Risk Summary: Clinical administration of cyclosporine ophthalmic emulsion 0.05% is not detected systemically following topical ocular administration *[see Clinical Pharmacology (12.3)]*, and maternal use is not expected to result in fetal exposure to the drug. Oral administration of cyclosporine to pregnant rats or rabbits did not produce teratogenicity at clinically relevant doses *[see Data]*.

Data
Animal Data: At maternally toxic doses (30 mg/kg/day in rats and 100 mg/kg/day in rabbits), cyclosporine oral solution (USP) was teratogenic as indicated by increased pre- and postnatal mortality, reduced fetal weight and skeletal retardations. These doses (normalized to body surface area) are 5,000 and 32,000 times greater, respectively, than the daily recommended human dose of one drop (approximately 28 mcL) of cyclosporine ophthalmic emulsion 0.05% twice daily into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed. No evidence of embryofetal toxicity was observed in rats or rabbits receiving cyclosporine during organogenesis at oral doses up to 17 mg/kg/day or 30 mg/kg/day, respectively. These doses in rats and rabbits are approximately 3,000 and 10,000 times greater, respectively, than the daily recommended human dose.

An oral dose of 45 mg/kg/day cyclosporine administered to rats from Day 15 of pregnancy until Day 21 postpartum produced maternal toxicity and an increase in postnatal mortality in offspring. This dose is 7,000 times greater than the daily recommended human dose. No adverse effects in dams or offspring were observed at oral doses up to 15 mg/kg/day (2,000 times greater than the daily recommended human dose).

There are no adequate and well-controlled studies of **RESTASIS®** and **RESTASIS MULTIDOSE™** in pregnant women. **RESTASIS®** and **RESTASIS MULTIDOSE™** should be administered to a pregnant woman only if clearly needed.

Lactation
Risk Summary
Cyclosporine is known to appear in human milk following systemic administration, but its presence in human milk following topical treatment has not been investigated. Although blood concentrations are undetectable following topical administration of cyclosporine ophthalmic emulsion 0.05% *[see Clinical Pharmacology (12.3)]*, caution should be exercised when **RESTASIS®** and **RESTASIS MULTIDOSE™** are administered to a nursing woman. The developmental and health benefits of breastfeeding should be considered along with the mother's clinical need for **RESTASIS®** and **RESTASIS MULTIDOSE™** and any potential adverse effects on the breast-fed child from cyclosporine.

Pediatric Use
Safety and efficacy have not been established in pediatric patients below the age of 16.

Geriatric Use
No overall difference in safety or effectiveness has been observed between elderly and younger patients.

NONCLINICAL TOXICOLOGY
Carcinogenesis, Mutagenesis, Impairment of Fertility
Carcinogenesis: Systemic carcinogenicity studies were carried out in male and female mice and rats. In the 78-week oral (diet) mouse study, at doses of 1, 4, and 16 mg/kg/day, evidence of a statistically significant trend was found for lymphocytic lymphomas in females, and the incidence of hepatocellular carcinomas in mid-dose males significantly exceeded the control value.

In the 24-month oral (diet) rat study, conducted at 0.5, 2, and 8 mg/kg/day, pancreatic islet cell adenomas significantly exceeded the control rate in the low-dose level. The hepatocellular carcinomas and pancreatic islet cell adenomas were not dose related. The low doses in mice and rats are approximately 80 times greater (normalized to body surface area) than the daily human dose of one drop (approximately 28 mcL) of 0.05% **RESTASIS®** and **RESTASIS MULTIDOSE™** twice daily into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed.

Mutagenesis: Cyclosporine has not been found to be mutagenic/genotoxic in the Ames Test, the V79-HGPRT Test, the micronucleus test in mice and Chinese hamsters, the chromosome-aberration tests in Chinese hamster bone-marrow, the mouse dominant lethal assay, and the DNA-repair test in sperm from treated mice. A study analyzing sister chromatid exchange (SCE) induction by cyclosporine using human lymphocytes *in vitro* gave indication of a positive effect (i.e., induction of SCE).

Impairment of Fertility: No impairment in fertility was demonstrated in studies in male and female rats receiving oral doses of cyclosporine up to 15 mg/kg/day (approximately 2,000 times the human daily dose of 0.001 mg/kg/day normalized to body surface area) for 9 weeks (male) and 2 weeks (female) prior to mating.

PATIENT COUNSELING INFORMATION
Handling the Container
Advise patients to not allow the tip of the container to touch the eye or any surface, as this may contaminate the emulsion. Advise patients to not touch the container to their eye to avoid the potential for injury to the eye.

Use with Contact Lenses
RESTASIS® and **RESTASIS MULTIDOSE™** should not be administered while wearing contact lenses. Patients with decreased tear production typically should not wear contact lenses. Advise patients that if contact lenses are worn, they should be removed prior to the administration of the emulsion. Lenses may be reinserted 15 minutes following administration of **RESTASIS®** and **RESTASIS MULTIDOSE™** ophthalmic emulsion.

Administration
Advise patients that the emulsion from one individual single-use vial is to be used immediately after opening for administration to one or both eyes, and the remaining contents should be discarded immediately after administration.

Advise patients to read the Instructions for Use for detailed first-time use instructions for the multidose bottle.

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Veterans
OPHTHALMOLOGY

Glaucoma: Silent Cause of Vision Loss

By Hans Petersen, VA Staff Writer

January is Glaucoma Awareness Month, a time to remind all Veterans to take action now to prevent this sight-stealing disease. One-and-a-half million Veterans have a vision threatening eye disease, including 285,000 with glaucoma.

African-American Veterans should especially get their eyes checked regularly as glaucoma is six-to-eight times more common in African-Americans than Caucasians. Also, among Hispanic populations, glaucoma is the leadingcause of blindness.

Starts without Symptoms

Glaucoma is a group of eye diseases in which the optic nerve, a bundle of over one million nerves that convey vision from the eye to the brain, slowly becomes damaged over time. In many cases, blood flow to the optic nerve is reduced and may be further reduced by increased fluid pressure inside the eyes slowly rising, leading to vision loss or even blindness.

The highest risk group is those Veterans over 60. Other risk factors include hypertension, but also too-low blood pressure, especially during the hours of sleep. Some patients who take blood pressure medicine at bedtime, may be at risk of dropping their blood pressure too low during sleep, reducing blood flow to the optic nerves. In addition, patients with obstructive sleep apnea who are untreated may have further risk for glaucoma-related damage to their optic nerves due to drops in oxygenation when they momentarily stop breathing during sleep.

Glaucoma usually starts without any symptoms. Later, there is some loss of side vision, where objects straight ahead are seen clearly, but objects to the side are missed. As the disease worsens, the ability to see objects on the side is increasingly lost and eventually the center of vision is affected.

The test for glaucoma is painless. Your VA doctor will test the pressure in your eye by placing an instrument on its surface. If there is a suspicion for glaucoma, the appearance and function of the optic nerve are tested with a visual field test and a special retina camera both of which can detect damage to the optic nerves.

Glaucoma is treated with eye drops, but in some cases, eye surgery is necessary to optimally lower the eye pressure. These treatments work to either make less fluid or to improve its drainage out of the eye.

Glaucoma is a life-long problem. Veterans should have regular check-ups by an ophthalmologist or optometrist to watch for changes in pressure and side vision.

Cutting Edge Research

VA is working hard to help prevent Veterans' eye problems at the VA Center for the Prevention and Treatment of Visual Loss based at the Iowa City VA.

The Center conducts innovative research in the diagnosis of visual loss and works to understand the underlying mechanisms and causes of visual loss. With this research, the center can study new approaches toward rehabilitation and treatment of visual loss, while improving education and clinical care of our nation's Veterans.

According to Dr. Randy H. Kardon, director of the center, "Glaucoma is one of the silent causes of vision loss. Patients are unaware that they are slowly losing vision until it is too late, at which time the loss is permanent. That is why it is so important for Veterans to have regular eye exams to check for any sign that glaucoma is developing and to be treated, if glaucoma is detected."

VA spends a significant portion of its medical care dollars toward detecting and monitoring of treatment of vision loss. Last year there were more than 2.9 million Veteran visits in VA eye care optometry and ophthalmology clinics.

Remote Monitoring of Optic Nerve Structure and Function

The Center of Excellence for the Prevention and Treatment of Visual Loss is working to reduce the cost of monitoring through new methods of detection, understanding the underlying mechanisms of disease, developing new molecular treatments to preserve vision, and telemedicine initiatives.

Center Associate Director Dr. Michael Abramoff and his colleagues, including investigator Mona Garvin, PhD, are developing portable digital eye cameras along with cutting-edge software that automatically analyze images of the optic nerve to diagnose glaucoma and determine if it is changing with time. Investigators from the Center are recording blood flow to the retina and optic nerve using a new research eye camera utilizing non-invasive imaging to quantify the blood supply to the optic nerve.

Center investigators are also developing computerized methods of testing optic nerve function using the eye's pupil contraction to light, termed the "pupillary light reflex." Remote pupil testing is being developed to monitor optic nerve function and status of glaucoma outside of the eye clinic setting.

va.gov

Veterans
RHEUMATOLOGY

VA Research Leads to Concerted Effort to Improve Gout Care

With an estimated three million Americans afflicted, researchers have compiled a set list of quality indicators to judge how well a patients are being treated for gout.

Veterans Affairs databases for gout-related health care utilization, are accurate in accordance with a validation study to assess the accuracy of Veterans Affairs (VA) databases for gout-related health care utilization.

Jasvinder Singh, MD, a Professor of Medicine and Epidemiology and Rheumatologist at the Birmingham VA, has worked with Veterans for the majority of his career, treating them in clinics during residency at the University of New York, Syracuse, and fellowship training at Washington University in St. Louis.

During that time, he estimates the prevalence at 5 percent of all patients treated at the facility by looking at ICD-9 codes for gout recorded in the electronic health record. He noted this only represented a single facility during a short period of time.

"I saw so much of it in the inpatient and outpatient setting," said Singh, referring to cases at the Minneapolis VA. "During my fellowship, I became interested in doing research using the national data systems within VA,", he said. "It provides a unique opportunity that no other health care system has. And with gout, there were lots of opportunities to look at care patterns, and see how we could look at the impact of improving care."

In 2002, Singh began looking for patterns at the Minneapolis VA to see if physicians were monitoring blood tests. "I wanted to see if physicians were tracking things that are now considered quality indicators. I started looking at this, and while we were in the process of compiling that data, researchers from Birmingham and UCLA published quality indicators for gout."

The gold standard for one study was whether the visit was gout-related as determined by the review of the medical records. Gout-related visit was defined a priori as the mention of gout or gout-related terms (gouty arthritis, tophaceous gout, tophus/tophi, acute gout, chronic gout, podagra, urate stones, urate or uric acid crystals) in the chief complaint, history of the present illness or assessment and plan for the index visit in the medical records.

Jasvinder Singh, MD, MPH

This indicated that gout was the main reason or one of the main reasons for the index visit. The test standard was the presence of an ICD-9-CM code for gout (274.x or 274.xx) in VA inpatient or outpatient databases for the index patient visit.

The author, a senior epidemiologist, experienced in data abstraction [13,14] and blinded to the test standard (that is, gout diagnosis for the visit from VA databases), abstracted the data from the VA electronic health records.

He considered limiting the study cohort to only those gout patients who have demonstration of urate crystals in joint/bursa fluid or mass, but decided to look for all patients with gout, given that <5% of patients with gout have crystal-proven gout [15].

When a visit listed in the databases was missing from the medical records, the abstractor reviewed notes in the immediate period (before and after) to assess if the visit date was miscoded.

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- The Mitigare® True Blue Savings card offers the first month's Rx free* — and each refill is just $5.*
- When Mitigare® is prescribed, the authorized generic colchicine 0.6 mg capsules may be dispensed and may provide a more cost-effective option for your patients.

*Maximum savings of $65 on first fill, $50 on refills. Patients must meet eligibility requirements.

Visit www.mitigare.com to learn more.

Important Safety Information

- Colchicine 0.6 mg capsules are contraindicated in patients with renal or hepatic impairment who are currently prescribed drugs that inhibit both P-gp and CYP3A4. Combining these dual inhibitors with colchicine in patients with renal or hepatic impairment has resulted in life-threatening or fatal colchicine toxicity. Patients with both renal and hepatic impairment should not be given Mitigare®.
- Fatal overdoses have been reported with colchicine in adults and children. Keep Mitigare® out of the reach of children.
- Blood dyscrasias such as myelosuppression, leukopenia, granulocytopenia, thrombocytopenia and aplastic anemia have been reported with colchicine used in therapeutic doses.
- Monitor for toxicity and, if present, consider temporary interruption or discontinuation of colchicine.
- Drug interaction with dual P-gp and CYP3A4 inhibitors: Co-administration of colchicine with dual P-gp and CYP3A4 inhibitors has resulted in life-threatening interactions and death.
- Neuromuscular toxicity and rhabdomyolysis may occur with chronic treatment with colchicine in therapeutic doses, especially in combination with other drugs known to cause this effect. Patients with impaired renal function and elderly patients (including those with normal renal and hepatic function) are at increased risk. Consider temporary interruption or discontinuation of Mitigare®.
- The most commonly reported adverse reactions with colchicine are gastrointestinal symptoms, including diarrhea, nausea, vomiting and abdominal pain.

Indication

Mitigare® is indicated for prophylaxis of gout flares in adults. The safety and effectiveness of Mitigare® for acute treatment of gout flares during prophylaxis has not been studied. Mitigare® is not an analgesic medication and should not be used to treat pain from other causes.

Please visit www.mitigare.com for Full Prescribing Information and Medication Guide.

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*Eligibility restrictions apply.

1. White Paper—What Is the Significance of the Color of a Pill. *Wallcur, LLC.* http://www.wallcur.com/whitepaper-pill-color.aspx. Accessed June 28, 2016.

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EPILOGUE

A Debt of Gratitude to Organ Transplant Pioneer Dr. Thomas E. Starzl

By VA Secretary Dr. David J. Shulkin

The world of medical science lost a giant earlier this month. Dr. Thomas E. Starzl, who was a VA transplant surgeon and research scientist for more than 50 years, died March 4 at age 90.

Dr. Starzl was widely regarded as the "father of transplantation." He is credited with performing the first successful liver transplant on May 5, 1963. No patient had survived the operation previously. While Dr. Starzl's patient did succumb to pneumonia weeks after the transplant, it was still considered a groundbreaking success and paved the way for life-saving procedures for others in the years to come.

Dr. Starzl, a Navy Veteran, would go on to perform the first series of repetitively successful kidney transplants, also starting in the early 1960s. As a VA researcher, he greatly advanced the science of organ transplantation on the whole.

Dr. Starzl began his VA career in the 1950s as a resident surgeon in the Chicago VA Medical Center. In 1962, while serving as chief of surgery at the Denver VA Medical Center and as a faculty member at the University of Colorado Medical Center, he would perform the first in a series of successful kidney transplants, with patients surviving longer than had previously been possible.

It should be noted that it was Dr. Joseph Murray, from Harvard Medical School, who is credited with the first-ever successful kidney transplant, in 1954. That patient went on to survive eight years.

In 1963, Dr. Starzl attempted the first, human liver transplant. The patient died during the operation. Several subsequent operations proved that transplanted livers could function, and were considered successful in some regards, but they did not result in long-term survival.

A dedicated and determined scientist and compassionate physician, Dr. Starzl worked to improve the procedure and began transplanting livers again in 1967. This time, he treated patients with three drugs, including an antibody, anti-lymphocyte globulin, which curbs rejection. Survival times began to exceed one year, and eventually stretched to decades. Dr. Starzl would follow up with further enhancements to the regimen in future years, such as the introduction in 1980 of cyclosporine, a new anti-rejection medication.

In 2011, Dr. Starzl received the Lasker-DeBakey Clinical Medical Research Award, one of the most respected science prizes in the world. He is one of seven VA researchers to have earned the award.

The transplant pioneer joined what is now the VA Pittsburgh Health Care System and the University of Pittsburgh School of Medicine in 1981. The university named one of its medical research buildings and its transplantation program after him. Even into his late 80s, he remained active in research at the university, finding new ways to further lessen the risk of organ rejection and prevent the harmful side effects of immunosuppressive therapy.

Dr. Thomas E. Starzl. *Photo courtesy of research.va.gov*

Today, VA has a coast-to-coast network of transplantation sites, encompassing more than a dozen sites in all. VA surgeons, still relying on many of the approaches and techniques that Dr. Starzl developed, perform solid organ transplants — of the kidney, liver, heart, lung and pancreas — as well as bone marrow and stem cell transplants. In some respects, VA's system has become a model for others — for example, in reducing racial disparities in the processes leading up to transplants.

In short, every organ transplant performed by surgeons within VA or anywhere else still relies, to an extent, on the brilliant pioneering research and clinical work of Dr. Thomas Starzl. For that, we owe him a debt of gratitude.

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