



May is National Mental Health Month

By Kirk Frady
Army Medicine

After more than ten years of combat on two separate fronts necessitating multiple combat deployments by Soldiers and the associated Family separations, the Army is keenly aware of unique mental and physical stressors facing Soldiers and their Families. That is why the Army is joining the nation in recognizing National Mental Health Month throughout the month of May.

According to the Army database, 8% of the Soldiers deployed between 2001 and 2011 received a mental health diagnosis of post-traumatic stress disorder (PTSD). But, while not all Soldiers deployed received this diagnosis, many experienced related symptoms that could benefit from behavioral health treatment. Military researchers note that approximately 15% of Soldiers deployed during Operation Iraqi Freedom experienced post traumatic stress symptoms,

and another 10-15 % will experience other behavioral health-related problems.

Despite these statistics, overall, the total Army rate of Soldiers with a behavioral health diagnosis is consistent with that of the general US population, at 5.9% vs 6%.

“The Army is committed to decreasing the stigma associated with seeking behavioral healthcare,” assures Lt. Cdr. Kathleen Watkins, chief of the administrative branch, Behavioral Health Division, at the Office of the Surgeon General, and wants Soldiers and Families to get help when they need it. Watkins adds, “It is important that Soldiers and Families understand that issues resulting from deployment are treatable, usually curable and with proper treatment, the majority of people with behavioral health issues can return to productive and engaging lives.”

To help Soldiers and Family better cope

See **MENTAL HEALTH P3**

ARMY MEDICINE
Serving To Heal...Honored To Serve

BEHAVIORAL HEALTH MONTH
MENTAL HEALTH MONTH
MAY 2012

RESTORING BALANCE

BUILDING RESILIENCE

Behavioral health diagnoses and symptoms are treatable and seeking help is the first step towards recovery and overall resilience.

armymedicine.mil

Women’s Health Month 2012

By Kirk Frady
Army Medicine

May is National Women’s Health Month and the Army is taking this opportunity to promote regular checkups as critical to the early detection of various diseases and is encouraging women to visit their healthcare professionals to receive or schedule a checkup.

Recognizing the need to evaluate health issues faced by female Soldiers, the Army Surgeon General, in December 2011, established the Army Medicine’s Women’s Health Task Force. The Task Force combines talent from different disciplines: civilian and military, officer and enlisted, as well as private industry partners to assess the unique health needs and concerns of female Soldiers. As such it will conduct a thorough review of the care currently provided; identify best practices and gaps and revise, adapt and initiate practices so that healthcare providers may continue to provide and improve first class care to our female Warriors.

Maj. Brianna Perata, Executive Officer for the Army Medicine’s Women’s Health Task Force, said, “The Surgeon General’s

See **WOMEN P4**

Coley receives diversity award

The Secretary of the Army awarded the 2012 Secretary of the Army’s Diversity and Leadership Award to Herb Coley, the MEDCOM Chief of Staff on April 24.

Each year, the Secretary of Army recognizes people who have made substantial contributions to the accomplishment of Army’s Diversity and Leadership goals through unusually effective leadership, skill, imagination, innovation, and perseverance. Herb Coley Coley’s selection for this award was for his core leader competencies as evidenced by providing purpose, direction, and motivation while operating to accomplish the mission and improve the organization through executing policy, efficiencies, or business transformations that resulted in increasing awareness, education, and understanding of Diversity and Leadership initiatives and programs.



THE MERCURY

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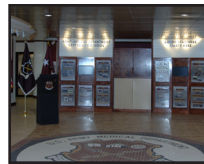
ON THE INSIDE

5 Innovative device



Working out the bugs 9

10 Technology transfer



New exhibit

11

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INSIDE THE BUBBLES: Understanding the balanced scorecard

Throughout the Mercury, our readers will notice interactive bubbles connecting issues and topics to the Army Medicine Balanced Scorecard (BSC). The BSC communicates the mission, strategic vision and goals of the AMEDD. The bubbles are the strategic objectives - the "means" and "ways" to accomplish the "ends." For more information, visit armymedicine.mil/about/BalancedScorecard.pdf.

MERCURY Comment

Why is MEDPROS important?

By Maj. Josh Stiltner

USAJFKSWCS HHC Commander

Why is MEDPROS important? Many Soldiers assigned to the U. S. Army John F. Kennedy Special Warfare Center and School (SWCS) have probably heard this question throughout the hallways and training areas across Fort Bragg and Camp Mackall. While many may associate the term with white noise and PowerPoint slides, I'm here to ensure you that MEDPROS -- formally known as the Medical Protection System -- is subject to significant command emphasis across the military because it helps us ensure that our most vital weapons are in top condition: our Soldiers.

MEDPROS is the Army's automated database designed to meet Department of Defense requirements in maintaining unit and individual medical readiness. It is designed to provide commanders with a real-time, world-wide operational system to manage the medical readiness and deployability of their unit. MEDPROS provides commanders at all levels with the capability to track medical and dental readiness by unit, individual or task force. MEDPROS captures data for Soldiers in all Army components -- active-duty, the National Guard and Army Reserve, and civilian personnel

-- as well as all sister services.

MEDPROS is a database that gives your doctor, your unit surgeon and your commander the ability to review your medical preparedness to deploy and serve your nation. For commanders it's extremely important, and helpful, to see if their Soldiers have, for example, had a dental exam in the last 12 months, need an eye exam or mask inserts, or have not gotten the most up-to-date immunizations.

At SWCS, this is particularly essential. As an organization, we're proud to maintain a close relationship with the active special-operations units within the U.S. Special Operations Command. One of the reasons our training and education stays relevant is because our instructors frequently rotate in and out of the operational force. When it comes time for each of our instructors to return to a team or unit, it's important that they go fully prepared to conduct their missions; this includes medical preparedness.

Special-operations teams are small, and each assigned Soldier must be in peak physical condition. For example, one Soldier could make up as much as 33 percent of a tactical military information support team's strength--and because of how and where Army special-operations forces conduct their

missions, if you haven't taken care of yourself when the time was right, you are up a specific kind of creek without a paddle when a toothache knocks you out of commission half-way through a deployment.

Similarly, the work done within SWCS is crucially important to maintaining and building our Army's special-operations force. MEDPROS allows us to track Soldiers' check-ups, and apply preventative measures now to avoid extended period of absence in the future. It is each individual Soldier's responsibility to maintain their health, and it is each leader's responsibility to monitor their unit's readiness--MEDPROS is the way Army leaders, and their leaders, and their leaders' leaders, do this.

So, the next time you think, "I don't have time to go to the dentist right now," remember that to an extent it's not about you or your time--it's about your professional responsibility as a Soldier. It's about being part of a team and not putting your brothers and sisters at risk. It's about trust, loyalty, leadership and selflessness. Leaders and commanders must ensure their Soldiers are ready to deploy, fight and win, and the individual must have the maturity to take care of themselves. Otherwise, what good are we to our Nation, our Army and each other?

**IP 1.0
Optimize
Medical
Readiness**

MENTAL HEALTH from P1

with these stressors associated with combat and Family separations, the Army offers an array of mental health services at military treatment facilities across the Army and as well as in the theaters of operations. In theater, combat and operational stress control teams are forward-deployed to provide psychological care to combatants as close to the battle as possible. Additionally, behavioral health professionals are assigned to MTFs wherever Soldiers are deployed.

"In FY12," Watkins pointed out, "the Army is increasing behavioral health teams assigned to all its brigade size operational units that will provide two behavioral health providers and two behavioral health technicians assigned to every Brigade Combat Team, Support Brigade and Sustainment Brigade in the Active, Reserve and National Guard Army inventory. This increase will be complete by FY17 and increase the total available uniformed behavioral health force by more than 1,000 additional personnel."

There's help for Soldiers no matter where they may be stationed. Watkins says, "The Army is improving access to care by offering tele-behavioral health services in 51 countries/territories across 19 time zones, allowing Soldiers and Family members in remote locations the

ability to link to behavioral health providers at different locations."

Tele-behavioral health provides high-quality, cost-effective, timely access to outpatient behavioral healthcare, regardless of the location. This resource aids in overcoming limited provider availability, geographic distance, scheduling difficulties and the social stigma that sometimes surrounds seeking behavioral healthcare.

The Army also provides routine behavioral healthcare, periodic assessments, and suicide prevention programs. Chaplains, Military OneSource, and Family Morale Welfare Recreation Command also offer substantial support to Soldiers and Families.

A wide assortment of behavioral health services are available to Soldiers and their Families at: <http://www.behavioralhealth.army.mil/>

In addition to tele-behavioral health, the Army implemented the Behavioral Health System of Care Campaign Plan intended to standardize and further enhance the effectiveness of behavioral health policies and procedures across Army Medicine and to ensure a seamless continuity of care to better identify, prevent, treat and track behavioral health issues affecting Soldiers and Families during every phase of the Army Force Generation cycle.

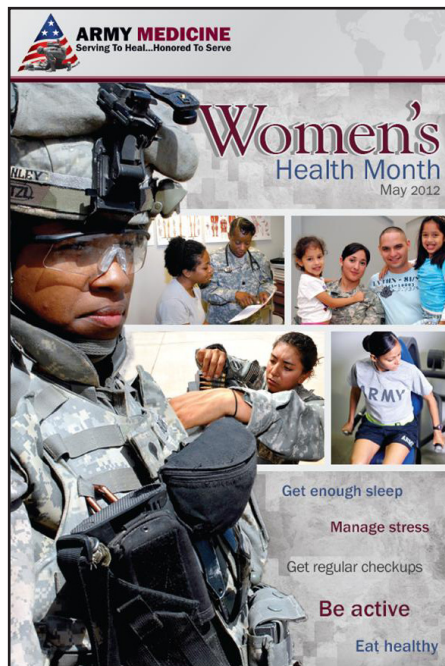
WOMEN from P1

establishment of the Women's Health Task Force speaks volumes and clearly identifies women's health as a priority for Army Medicine... and reminds women to take care of their health 365 days a year."

Representing 14 percent of the Army's active duty fighting force and 46% of the eligible (Army affiliated) TRICARE beneficiaries, the health of these women plays a vital role in the Army's overall readiness.

In order for women to be fully integrated and effective members of the team, Army Medicine strives to ensure their unique health needs are being considered and met, whether they are deployed or in garrison.

"Having been in the Army nearly twelve years myself, I have seen how critical women's health is to our Army," said Perata. "From serving as Soldiers and professionals, to caring for children and Families, if our women aren't healthy, the mission is dramatically impacted." She added, "And I



am not just speaking about women's health while they are young, being healthy across one's lifespan is key as women play a fun-

damental role in the health of their Families and communities as well."

Army Medicine continues to research various health issues with specific focus on female Soldiers. Among current studies are health interventions designed to decrease gynecologic problems in the deployed environment; use of the Female Urinary Diversion Device (FUDD); and health and illness behaviors in women in a deployed setting. Army healthcare professionals encourage women to make their health a top priority and to take steps to improve their physical, mental, emotional and spiritual health and lower their risks of certain diseases. Exercising, eating right, regular checkups and preventive screenings, avoidance of risky behaviors, and paying attention to mental health are paramount in improving one's health.

Army Medicine encourages women to be resilient and find balance. Perata said, "Whether serving on the battlefield or running things on the home front, the strength of our Army as a whole, depends greatly on the health of these women."

Synapse program helps Service Members with TBI

By Dr. Kendra Wagers

LRMC

LANDSTUHL REGIONAL MEDICAL CENTER (LRMC), Germany – Traumatic Brain Injury (TBI). It's been called the signature injury of the wars in Afghanistan and Iraq, and after over 10 years at war, many of our servicemen have been repeatedly exposed to events that have the potential of causing a brain injury.

Over one million military personnel have deployed since 2001 in support of Operation Enduring Freedom (OEF) in Afghanistan or Operations Iraqi Freedom (OIF) and New Dawn (OND) in Iraq. Current deployment operations have involved Service Members in ground combat and hazardous security duty.

TBI is the most prevalent injury among warfighters during OND, OIF and OEF as a result of contact with enemy forces or weapon systems - mortars, improvised explosive devices, rocket-propelled grenades - and from head impacts from accidents, enemy action or other factors.

Deployment, therefore, could include being exposed to gun shots, blast exposures and other significant potential TBI generating events. Given the significant length of the war and repeated deployments of Service Members to dangerous duty assignments downrange, there is an increased risk of exposure to possible TBI events as well as increased risk of increased symptoms arising from repeat exposures. LRMC has developed an intensive rehabilitation program to help called Synapse that focuses on providing care to Service Members who experience TBI.

This interdisciplinary team approach was developed as a response to the dynamic nature of potential TBI events Service Members could experience. Service Members at war are particularly at risk of TBI resulting from combat blast injury, which is usually characterized as resulting from primary (e.g., exposure to over pressur-

ization wave from blast), secondary (e.g., impact from blast, debris), tertiary (e.g., impact after displacement), or quaternary (e.g., burns, inhalation of toxins, hypoxia, psychological effects) blast effects.

Such blasts effects can produce profound traumatic injuries in the brain, including damage to the parts of the brain that make vision possible, affect auditory processing, impact balance and coordination, impair cognitive functioning and/or impede occupational performance. The team of clinicians works to collaborate and individualize care for our Service Members, to educate them on the recovery from injury, and foster greater understanding of what they can do to protect themselves.

LRMC's Synapse program has a strong clinical team consisting of three TBI neurology providers, a clinical psychologist, a TBI optometrist, an audiologist, two physical therapists, two speech therapists, an occupational therapist, a rehabilitation psychologist and several nurse case managers.

The entire team evaluates Service Members experiencing TBI and determines if intensive services would support the Service Member in their return to full duty.

Providers often collaborate on care evaluating the patient in an integrated service delivery environment to maximize therapeutic gain. The intensive program at Landstuhl is individually developed to meet a service's unique symptom presentation and can be a few weeks or up to eight weeks long as appropriate.

A vital component to the discharge and follow-up plan is educating Service Members and their support system on engaging in their own recovery and considering all the factors in their lives that influence a positive course of rehabilitation.

The goal of the intensive Synapse program is to offer a comprehensive intensive TBI program that complements the TBI care throughout the European theatre. The mission is to not improve symptoms but foster understanding and recovery.

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Prosthetist recognized for innovative device

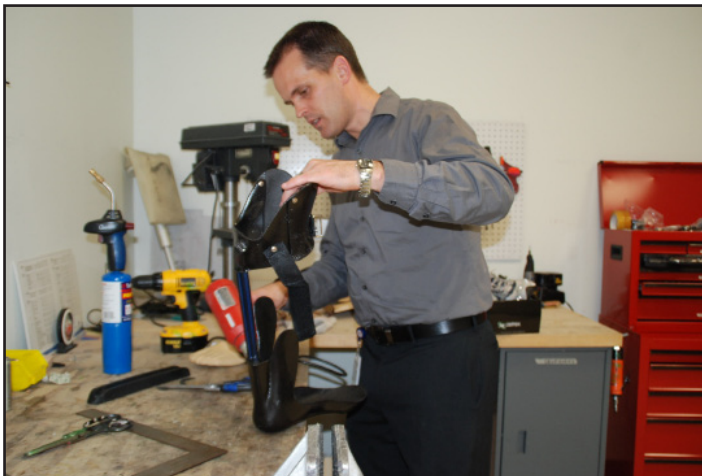
Story and photos by Maria Gallegos
BAMC Public Affairs

A prosthetist at the Center for the Intrepid will receive special recognition from the San Antonio Business Journal for his innovative device that helps Wound Warriors get back on their feet, literally.

Ryan Blanck was named this year's Health Care Innovator, a special Health Care Heroes publication that focuses on outstanding achievements of individuals and organizations in the healthcare field.

"A bit surprised when I heard the news. I did not realize that I had been nominated for any sort of award at all," said Blanck. "So I was taken back when I heard that I actually won an award for the work that I do each and every day."

Blanck developed and created a device called Intrepid Dynamic Exoskeletal Orthosis, also known as the IDEO, a streamlined, energy-storing brace that delivers nearly instantaneous results for patients with lower leg injuries.



(Top) Ryan Blanck, inventor of the Intrepid Dynamic Exoskeletal Orthosis (IDEO), completes his final stage of brace fabrication before it is tried-on by a limb salvage patient. (Bottom) Retired Sgt. John Rice, a U.S. Marine, tries on his new brace at the Center for the Intrepid.

CS4.0 Optimized
Care and
Transition of
Wounded, Ill, and
Injured Warriors

"I am highlighted [sic] with this award but I am not the only one deserving of the honor. There are many others involved who have helped make the IDEO and the success of the program we have today," said Blanck.

Prior to IDEO according to Blanck, "There wasn't a go-to option," he said. "There wasn't a combination device that would allow offloading, adequate range restriction and power generation."

So he created one.

The device is a lightweight, carbon-fiber brace that can be tucked under a pant leg and into a boot or sneaker. It comprises a cuff that wraps around the leg just under the knee connected to a footplate by carbon-fiber rods.

The custom-fit brace works by offloading the limb and allowing the patient to operate the lower limb in a way that avoids pain, he explained. When a patient's heel strikes, the device stores energy through the gait cycle, then delivers it back to propel the foot forward.

"That's the concept behind it all; energy storage and power," said Blanck.

"The way it works is very much like a runner's prosthetic," said Blanck. "As the warrior steps on it and moves forward, the energy of the foot piece is transferred to the back of the foot piece with a spring motion."

Since its inception in 2009, more than 200 wounded warriors have been fitted with the IDEO and are able to walk, run, parachute, and perform demanding physical activities required to stay on active duty in the military or transition back into civilian society.

"Without the drive and efforts of so many wounded warriors who utilize the IDEO and overcome the limitations of their injuries, there would be no reason for any acknowledgement of this program and the IDEO. They are the real heroes in all of this," said Blanck.

"Just seeing the joy in a wounded warrior's face at walking again pain-free, make every extra hour of work worthwhile," said Blanck. "I loved my job before this, but this is a whole new level."

The device was signed over to the Department of Army and is now under a provisional patent phase with an 80/20 percent agreement between the Army and Blanck.

"There is significant research related to outcomes and benefits of the IDEO and related rehabilitation. This research is key in continuing validation of what we are doing as well as future advances of this technology," said Blanck.

"I am continuing to look at ways to improve and advance this system so more patients can possibly experience increase functionality after a devastating injury," he said.

"We know that the military population has found benefits of the IDEO, so the potential to see patients outside of our facility to have them experience the same benefits of the IDEO and introduce 'Return to Run' program is maybe not all that far off in the near future," added Blanck.

A special publication featuring articles about Blanck and other winners will be available April 6 in the San Antonio Business Journal and an awards ceremony is scheduled for May 15 at the McNay Art Museum.

New award recognizes exceptional teamwork

By Nancy Quick

AMEDD Civilian Corps

The Army Medicine Wolf Pack Award made its debut in February at the forum of AMEDD senior leaders at Fort Sam Houston, TX. The Wolf Pack Award recognizes exceptional teamwork by an integrated group of military and civilian team members focused on excellence in support of Army Medicine. Lt. Gen. Patricia Horoho, The Surgeon General and Gregg Stevens, the Chief of the AMEDD Civilian Corps were on hand to present plaques to the winners.

Winning teams will be announced quarterly and receive a Wolf Pack Award certificate from the AMEDD Civilian Corps. Quarterly winners will automatically compete for Army Medicine "Wolf Pack of the Year."

The first quarterly co-winners were the Landstuhl Regional Medical Center (LRMC) for its work in management of Traumatic Brain Injury (TBI); and HQ, USAMEDCOM, Directorates of Program Analysis & Evaluation and Resource Management for creation of the Business Operations Bowl (Biz Ops Bowl) competition. Both winning nominations were very strong with little to differentiate their excellence.

The LRMC TBI team exhibited an exemplary TBI screening and rehabilitation program. This integrated team instituted seven model practices for enhanced patient care to promote, sustain and enhance Soldier health, return to duty and quality of life. These model processes cover all domains of patient care: education, screening, evaluation, treatment, training for medical providers and tracking of efficacy and optimal outcomes. These seven processes highlight the innovative, cooperative mindset that is the cornerstone of our team. Each member of the team is vitally engaged in enhancing the standardization, functionality and practicality of patient care that culminate in a responsive, dynamic and personalized service for out patient populations.

In an effort to improve MTF business operations performance command-wide, the Army Medical Command conducted the first Business Operations Bowl competition over the course of the 2011 MEDCOM Training Symposium. The Biz Ops Bowl Team used

current business operations metrics to rank each MTF's monthly pre-Bowl performance and to establish rounds of competition that tested the business operation knowledge of qualifying MTF Teams.

In the words of the Bavaria MEDDAC Team Leader, Lt. Col. John Melton, "The Business Operations Bowl provided a powerful example--it takes trust, knowledge, collaboration and a true sense of urgency for any team to successfully negotiate our complex environment. This is how our Army Medicine Team will lead change."



Lt. Gen. Patricia Horoho, The Surgeon General and Gregg Stevens, AMEDD Civilian Corps Chief, present the first quarterly Army Medicine "Wolf Pack Award" to Brig. Gen. Nadja West, Commanding General, U.S. Army Europe Regional Medical Command and ERMC Command Sgt. Maj. Robert C. Luciano, receiving the award on behalf of the co-winning LRMC TBI Team. (Courtesy photo)

A special note: The photo of the Directorates of Program Analysis & Evaluation and Resource Management was featured in the April 2012 Mercury, p. 13.

Off-duty doctor comes to aid of German woman

By Chuck Roberts

LRMC Public Affairs

LANDSTUHL REGIONAL MEDICAL CENTER, Germany – Donald Bittner has been a doctor since 1981, but the Navy captain had never practiced medicine like he did March 26 while driving to a local restaurant with his wife.

They were passing through the village of Bann when they noticed several people crowded around a man performing CPR to an elderly woman beside the road. When he approached the scene and announced he was a physician, the daughter told him the woman was her mother and had collapsed only a few minutes prior.

Bittner quickly assessed the wom-

an who was not breathing, had no pulse and had turned blue. After succeeding in opening an airway blocked by her dentures, Bittner performed mouth-to-mouth resuscitation and assumed control of CPR procedures with the help of the initial responder who assisted when he became fatigued from the continued effort.

Bittner continued CPR until a second ambulance arrived and the defibrillator was successfully applied to initiate a heartbeat



Navy Capt. Donald Bittner

and resume breathing on her own.

The patient was taken to nearby St. Johannes Krankenhaus where the Bittners visited about an hour later and met the emergency room doctor who said the patient was in stable condition but had transferred to Westpfalz Klinikum in Kaiserslautern for further care.

Although Bittner said he has performed CPR a few times during his career, to include reviving a patient in the operating room who had gone into cardiac arrest, it was the first time while off duty.

"In a hospital you have that sterile setting. When you're outside the hospital it's a whole different thing. It's not sterile anymore. You become actually involved with the Family, so the whole emotional experience is completely different."

In a league of his own

By Christine Creenan-Jones
USUHS

In a league of his own, Maj. Jarold “Tom” Johnston, a Graduate School of Nursing student in the PhD program, is the Army’s only male midwife and lactation consultant. In these roles, he’s been the go-to guy for thousands of new mothers and fathers with questions about pregnancy, labor and baby care for the past six years.

Still, Johnston doesn’t consider himself unique or a pioneer. He’s just doing a job he loves and helping military Families in the process.

“I didn’t originally seek out this career, but the Army Nurse Corps places great value on gender neutrality and thought I was a good candidate for midwifery school since I had a lot of nursing experience in maternity,” he said. “Midwifery wasn’t my first choice, and I even considered turning the assignment down. But, I’m glad I didn’t, because I love my work.”

After completing a civilian midwifery program in Rhode Island, Johnston began providing full-spectrum primary care to women at military hospitals in North Carolina and New York. Like all midwives, his professional scope is broad, but Johnston focuses mostly on obstetrics – a field he is passionate about.

“Midwives are part of something really special,” he said. “We play an important role in helping couples grow into Families, from before a woman becomes pregnant to well beyond the birth of her child.”

As a midwife, Johnston attends uncomplicated births and teaches new parents many useful skills, including proper breastfeeding techniques. Johnston admits several of his patients are surprised to learn he’s a board-certified lactation consultant, but it doesn’t take long for most women to look past his gender.

“It’s a perception thing more than anything else. There are plenty of male gynecologists, after all, and their work is just as sensitive and personal as mine,” he said. “People accept them, no questions asked, because in the end, most people just want a competent, professional caregiver – woman or man.”

Like his female counterparts, Johnston provides expert advice – non-pharmacologic techniques for easing painful labor and effective breastfeeding techniques to



Maj. Jarold Johnston (Courtesy photo)

avoid complications – but, he still has a special appeal. Johnston’s gender – though not an issue for him or his patients – is still a hot topic among professionals in the field.

The father of eight has been invited to speak at several national conferences about his unique experiences in nursing. Johnston has taken these opportunities to focus on meaningful topics, like the vital role fathers play in creating happy, healthy Families.

“My work is interesting to a lot of people, and I enjoy sharing my experiences with other professionals,” Johnston said.

“But, I always talk about midwifery fields in general, not who’s in them. I’m just not that interested in gender roles.”

Whether intentional or not, Johnston has moved nursing boundaries for the Army by integrating a field as old as time. Now, he’s hoping to move ground in a new discipline. At USU, Johnston is combining his love for midwifery and human lactation with cell biology – likely topics for the research he’ll conduct as part of his doctoral education in the Graduate School of Nursing.

“If you understand how cells work, you understand how life works,” he said.

For Johnston, this means understanding his own midwifery career better, which has been full of life.

IP 9.0 Tell the Army Medicine Story

Training supports combat hospital

By CW 3 Allan LaViers
AMEDD Center and School DCDD

The Army Medical Department Test Board, working with the Army Medical Research and Materiel Command and the AMEDD Center and School Directorate of Combat and Doctrine Development, will evaluate the use of new air beam tents to replace the current TEMPER shelter system in use with the Combat Support Hospital (CSH). The equipment, known as Force Provider Expeditionary Systems, was developed to provide housing for troops and replaced the old general purpose tents.

According to Danny Ellis at the AMEDD Test Board, “We are evaluating the functionality of the Force Provider shelters to support the medical mission.”

To reduce the probability of power failures during crucial aspects of the test, the Army Medical Materiel Development Agency contracted with the Army’s Communications and Electronics Command (CECOM) to provide power generation and distribution training to the 14th CSH.

CECOM, working with subject matter experts from the Directorate of Combat and Doctrine Development, developed a comprehensive two week power distribution course designed around the CSH. The intent of the CSH power course is to provide hands-on instruction for up to 12 personnel on proper set up for a power distribution grid. This course provides the layman with the training necessary to become a subject matter expert in power distribution.

During a recent training event where members of the 14th CSH were trained, the CECOM trainers identified a few aspects of the CSHs distribution method that was potentially hazardous, in particular the grounding wire for the 100kW tactical quiet generator.

CECOM originally developed the course for the infantry brigade combat team command post (IBCT CP) after feedback from the theater indicating substandard power grids that were prone to failure, or worse, injury to the combatant. At a recent conference CECOM realized that with the electrical load required of a fully deployed CSH, and the potential of harm to the patients being seen, that their IBCT CP course could be modified to assist the AMEDD in their efforts of providing world class healthcare by ensuring stability and reliability of the hospital power grid.

Medical lab specialist invents bone marrow extraction device

The complex and dynamically changing nature of battlefield injuries requires continual progress in the development of novel wound treatment technologies. In a significant advance toward expanding medical countermeasure development, SPC Erik Eaton, a 68K (Medical Laboratory Specialist) of the U. S. Army Medical Research Institute of Chemical Defense (USAMRICD), has recently submitted an

Invention Disclosure for a device that holds great promise in facilitating efforts to investigate the efficacy of a therapy based on a type of tissue repair cell found in adult bone marrow. The particular cell type being evaluated is referred to as the mesenchymal stem cell, or —MSC.

These cells have shown the capability to mature to form new bone, skin, muscle, blood vessels, and several other cell types. Interestingly, the cells also show dramatic effects on reducing inflammation specifically at the site of tissue injury. Together, these properties make MSC therapy a promising new approach to address injuries which are challenging to treat, but commonly sustained by the warfighter.

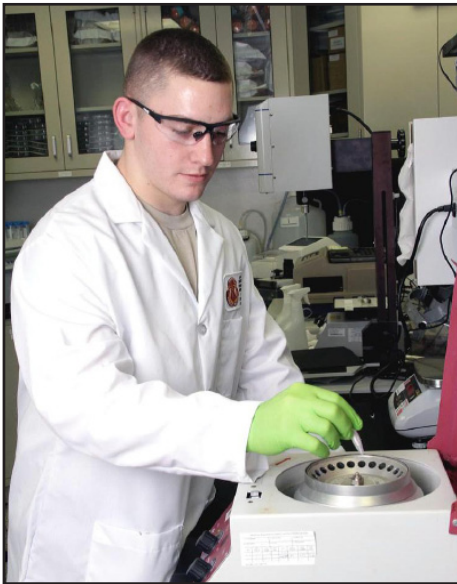
However, before this technology can be implemented for battlefield use, the safety and efficacy of MSC administration as a therapeutic must be thoroughly evaluated. Mouse models of tissue injury are frequently used to investigate these important parameters for new drugs. However, the use of mice to study the potential benefits of biological products isolated from bone marrow has been historically difficult due to the small amount of marrow that can be obtained from each individual donor.

Previously, mouse bone marrow has been isolated for laboratory studies by flushing the marrow from the longest bones of

the donor with saline solution. Using this approach, the amount of bone marrow obtained has been low and highly variable. The new device developed at USAMRICD represents a construct that holds the bone in place while the sample is spun at a high rate of speed. In addition to use in the study of cellular therapies, the device also could be utilized to isolate the starting material for investigations of proteins and any other biological constituent that occurs naturally in the bone marrow for evaluation of potential medical efficacy.

The use of mice in studies designed to determine if a new candidate drug will be effective in promoting wound healing holds certain important advantages. A variety of mouse strains are available to researchers that can be used to —hone in on the specific mechanisms by which the drug provides benefit, information which is critical in obtaining approval by the Food and Drug Administration for the medical use of therapeutics. The breakthrough represented by the development of a marrow extraction device for use with mouse donors holds great potential for facilitating research that will result in the delivery of cutting-edge medical interventions to address the unique demands specific to the treatment of battlefield injuries.

(Courtesy USAMRICD)



SPC Eric Eaton, a 68K (Medical Laboratory Specialist) of USAMRICD, works with his bone marrow extraction invention device. (Courtesy photo)

Rare Disease Threatens Life in Afghanistan

By Capt. Addie Snay
TF MED-A Public Affairs

BAGRAM AIR FIELD, Afghanistan — Slurred speech and difficulty breathing were just some of the symptoms a civilian contractor was experiencing when he sought medical care at Mazar-E-Sharif.

These symptoms along with blood work showing a low red blood cell count, or anemia, proved for a difficult diagnosis. The medical team at Mazar-E-Sharif had narrowed it down to a stroke or possible thrombotic thrombocytopenic purpura (TTP) and made the decision to have the patient medically evacuated to the Bagram Air Field's Craig Joint Theater Hospital (CJTH) for further emergency care.

Although CJTH's primary mission typically includes the care of combat injured patients, the professionalism and expertise available across the entire continuum of care in theater through to CONUS MTFs provides for the capable care and prompt evacuation of a wide variety of medical emergencies relating to loss of life, limb, or eyesight.

TTP is a rare disorder of the blood-coagulation system, causing extensive microscopic clots to form in the small blood vessels

throughout the body. These small blood clots, called thromboses, can damage many organs including the kidneys, heart, and brain.

Upon arrival to Craig Joint Theater Hospital, Carl Moore underwent a CT scan of the head, which with additional blood work, proved his symptoms to be consistent with TTP. He received the needed blood products and was transferred that same evening by Critical Care Air Transport Team to Landstuhl Regional Medical Center.

"The decision for this emergent transfer out of theater was the need for the patient to be treated by an expert in this condition, or a haematologist," said Air Force Maj. Joseph DuBose. "Through our very capable telemedicine capabilities we were able to contact a haematologist at LMRC who was instrumental in helping us establish the best course of action for this patient."

The patient would receive the emergent evaluation for possible plasma exchange that he needed at LMRC. In the era before effective treatment with plasma exchange, the fatality rate of TTP was about 90 percent. With plasma exchange at six months, the survival rate is around 80 percent.

"In this instance the system did exactly what it was designed to do, provide the right care at the right time and deliver the patient to the appropriate expertise expeditiously," said DuBose.

Working out the bugs

Story by Jeffrey Soares
USAMRMC Public Affairs

Arthropods -- they bug us most of the time. Mosquitoes, spiders, ticks, mites, centipedes -- the list goes on and on. Many people have a hard time tolerating these little creatures; some are even deathly afraid of them.

For the men and women conducting research funded by the U.S. Army Medical Research and Materiel Command's Military Infectious Disease Research Program (MIDRP), however, studying this particular group might be considered a labor of love. For many years, the research teams at the Walter Reed Army Institute of Research, U.S. Army Medical Research Institute of Infectious Diseases, Naval Medical Research Center, and OCONUS labs throughout the world, in coordination with MIDRP have been working on safeguarding Soldiers against potentially serious diseases carried by seemingly harmless bugs and flies. The result of this joint effort is the Arthropod Vector Rapid Diagnostic Device, or AV-RDD.

"The AV-RDD products developed by the USAMRMC are unique in that they can identify if an arthropod is infected with a pathogen that may cause severe disease in humans," said Monica O'Guinn, a senior biomedical scientist on the MIDRP team.

The AV-RDD is a hand-held device used to determine whether arthropods, such as sand flies and mosquitoes, are infected with pathogenic organisms capable of infecting deployed military personnel. This device can be used anywhere at any time. It is as simple to use as an over-the-counter pregnancy test, and provides results in less than a half hour.

"These products are not for use with human samples, so they do not diagnose disease in Soldiers that have acquired a disease spread by these various arthropods," continued O'Guinn. "Instead, they are used to identify areas in which arthropod-borne diseases

are present, so that commanders can determine which steps to take to either control the arthropods with pesticides or trapping, or mandate the use of personal protective measures."

These personal protective measures typically involve the use of bed nets or bug repellents, the enforcement of proper uniform wear (i.e., long sleeves, long pants, hats, etc.), and potential prophylactic measures (e.g., pills) in the case of a malaria outbreak.

Currently, five AV-RDDs have been completed and assigned a "National Stock Number," which means that these can be purchased by preventative medicine detachments/units, healthcare personnel, and medical laboratories for use in a deployed setting.

These five products include detection kits for Malaria, West Nile virus, and Rift Valley Fever virus, as well as a combination of viruses such as (1) West Nile, St. Louis encephalitis, and Western Equine encephalitis, and (2) West Nile, St. Louis encephalitis, and Eastern Equine encephalitis.

An AV-RDD has been established for Dengue (Feb. 2012), and one for Leishmania is in the process of obtaining an NSN assignment.

To establish their effectiveness as a countermeasure against infectious disease, the AV-RDD kits have been tested in both Army and Navy laboratories, and evaluated at USAMRMC and NMRC field sites in Thailand, Peru, Indonesia, and Kenya. These products have also been endorsed for use by the Armed Forces Pest Management Board.

"A goal of the USAMRMC is to produce products that have an impact on increasing force health protection, and now we can use these AV-RDD kits in the field as a tool to conduct surveillance against medically relevant pathogens transmitted by mosquitoes, ticks, and other carriers," said O'Guinn.

The tireless efforts of the research teams supported by MIDRP will certainly help to protect our Soldiers -- who spend their days protecting us.

"A goal of the USAMRMC is to produce products that have an impact on increasing force health protection, and now we can use these AV-RDD kits in the field as a tool to conduct surveillance against medically relevant pathogens transmitted by mosquitoes, ticks, and other carriers."

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Research,
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This particular Arthropod Vector Rapid Diagnostic Device is used to detect Malaria. (Courtesy photo)

WRAIR researcher receives award

Congratulations to Dr. Maryanne Vahey, the Science Director of the Walter Reed Army Institute of Research who recently was awarded the Decoration for Exceptional Civilian Service, the highest honorary civilian award for a Department of the Army civilian and equivalent to a military Distinguished Service Medal, for her service in support of Army medical research.



For more than three decades, Vahey's research protocols, collaborative studies and rigorous scientific discipline have helped shape the Army's reputation as a leader in scientific discovery. Her endless contributions to scientific endeavor and frequent contributions to peer-reviewed literature are well known to her colleagues, contemporaries, the National and international research community and her Army Family.

TATRC: Translating research into new medical products

Only a small percentage of medical research projects result in a new product on the market. If Ron Marchessault has his way, the U.S. military will see more and more promising technologies put into use to improve the care of our Service Members.

Marchessault is the director of technology transfer and commercialization for the U.S. Army Medical Research and Materiel Command's Telemedicine and Advanced Technology Research Center. TATRC's goal is to translate research into new products to advance the care of the nation's warfighters.

TATRC is deeply aware that it must encourage that next breakthrough that will enhance military health -- while making the most effective use of the federal funds that it stewards.

For this reason, the center charged Marchessault with developing a comprehensive commercialization program for the more than 1,800 research projects it manages at universities, government labs and high-tech start-up companies. It's a charge he takes seriously since a funded research project is only half the journey to providing solutions for Soldiers while bringing the lessons learned from war to the benefit of the wider society.

"Developing commercially viable technology requires more than a quick marketing survey," says Marchessault. "To determine what we should fund, we must find out whether a new technology solves an important problem, and who would purchase it."

Marchessault has been managing technology research projects for TATRC since 1998. In 2009, he was asked to create a formal program to leverage federal investment with private sector capital to commercialize federal medical research and development technologies. Since then, he has developed an innovative technology transfer program. His holistic approach is helping TATRC assess and guide the commercial potential of new discoveries and technologies, connect researchers with investors, and evaluate the economic impact of the precious research dollars the center manages for the military.

ASSESSING

Marchessault has sought out several strategic partners and resources to provide the business expertise that must marry with science to create a marketable product. The first two years have seen many successes. *Market Overview Analysis*

Fifteen TATRC small business partners demonstrating technologies with

strong commercial potential were selected in 2011 for market overview analyses by FirstLink, a DoD technology transfer partner. One company, Tursiop Technologies, has developed nanotechnology for magnetic resonance imaging that dramatically decreases the size of the magnet needed, thus reducing the cost. It has now obtained the third-party funding needed to seek U.S. Food and Drug Administration approval. *"Discovery to Market" Project*

Student teams from the Johns Hopkins University Carey Business School Global MBA program presented commercialization plans for eight TATRC projects in December 2011, marking the first such DoD/university technology transfer partnership. TATRC projects included in the program ranged from an e-learning system for surgical skills to a wearable robotic arm to a mobile diabetes self-care system. The students gained vital experience in applying business theory to assist high-tech start-up companies, while the researchers gained intellectual property research and in-depth marketing analyses that easily could have cost them hundreds of thousands of dollars. *Online Commercialization Assessment Tools*

After exploring several online commercialization assessment programs, Marchessault has introduced TATRC partners to EquityNet, a proven, metric-based program for determining commercialization viability. Ten companies are now participating in the program, which includes a business plan analysis, expert business support and opportunity assessment research.

As a result of TATRC-sponsored networking through the National Association of Seed and Venture Funds, Blacktoe Medical III obtained the funding needed to pursue U.S. Food and Drug Administration approval for its SonicEye® finger-mounted ultrasound technology. (Courtesy of Blacktoe Medical III)

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CONNECTING

For those technologies "ready for prime time," networking is another key part of TATRC's Technology Transfer Program. Marchessault has teamed with the National Association of Seed

and Venture Funds to connect promising research with private investment. *Marketing Campaign to Private Sector Developers*

Last year the NASVF developed a marketing campaign to aid in TATRC's commercialization goals. Through careful messaging and positioning in the health-care business ecosystem, TATRC-funded companies with commercially viable technologies are being promoted to investors. *Networking through NASVF*

Select small business partners seeking private sector capital have had the opportunity to pitch their companies to angel investors and the venture capital community through two NASVF meetings co-sponsored by TATRC. In Baltimore in 2010, three companies presented, and Blacktoe Medical III obtained the funding needed to pursue FDA approval for its SonicEye® finger-mounted ultrasound technology.

EDUCATING

Marchessault believes the best way to help translate research into a commercial product is to consider the market potential from the outset. Several programs are underway to educate and encourage investigators as well as reviewers to incorporate business analyses throughout their project timetables. *Medical Technology Transfer Symposium*

TATRC organized a two-day symposium with the University of Nebraska Medical Center in May 2011. The Midwest Medical Technology Exchange enabled TATRC researchers in the Midwest to network with regional investors and discuss critical elements of technology commercialization. In this purely educational exchange, inventors were the audience as investors presented perspectives and information pertaining to commercialization.

ECONOMIC IMPACT

With "accountability" as his watchword, Marchessault is also integrating a final pillar into TATRC's Technology Transfer Program. He has shown that of approximately 1,800 projects funded through TATRC since 2000, 2.3% have resulted in a commercial product, generating \$209M in sales from a total federal investment of \$74M.

Marchessault notes, "For TATRC, it's not enough to have good science alone. Projects must meet a clinical need and often have commercial viability."

(Courtesy TATRC Public Affairs)



AMEDD Center & School dedicates new exhibit

Story and photo by Phil Reidinger
AMEDD Center and School Public Affairs

On March 23, staff and faculty members of the Army Medical Department Center and School assembled in the foyer of Aabel Hall to dedicate the new building entrance exhibit to Soldiers, Noncommissioned Officers and Officers who have dedicated their lives in service to the Army Medical Department.

In addition to featuring the command's mission to envision a design, and train a premier medical force for decisive action, the new exhibit tells the history of the Army Medical Department Center and School and the Medical Field Service School (MFSS) which dates its origin to 1920 at Carlisle Barracks, Pa.

During the ceremony the Warrior Medic Memorial was added to the foyer. The memorial honors – to date - 200 AMEDD Officers, NCOs and enlisted Soldiers who have died supporting Operation Iraqi Freedom, Operation Enduring Freedom and Operation New Dawn serving the Army Medical Department in a variety of occupational specialties.

After World War II the Army relocated the Medical Field Service School from Carlisle Barracks to Fort Sam Houston in 1946. The school headquarters was located in the former 9th Infantry Regiment headquarters buildings currently the home of Installation Management Command headquarters. Students attended class in a variety of buildings located on the post.

The school leadership sought a consolidated training and headquarters facility on post and in 1970 Congress appropriated \$9.8 million for the construction of the first building complex designed specifically for the MFSS. The late Representative Henry B. Gonzales, 20th Congressional District, the person most responsible for securing funds for the construction and principal speaker for the ground breaking on July 18, 1970, struck the MFSS key note mission then and now when he said “the money spent to build and equip the new school should be considered an investment in life for all mankind because the techniques for the preservation of human life developed at the school have universal application.”

Construction on the facility began immediately after the ground breaking. The Browning Construction Company, a San Antonio-based company, completed con-

struction in the winter of 1972. The 400,000 gross square foot complex was composed of reinforced concrete with precast native quartzite exterior panels. The smaller of the two buildings was designed specifically as an administrative building, although the first floor and basement contained student-related activities as the officer student battalion personnel services, the school library and reading room, a post office and a book store. The second and third floors contained the Commandant's office and other staff administrative facilities. The larger building, the school house was designed to house 48 classrooms with a seating capacity of 3,000.

On December 10, 1972, the administration building B-2840 and the primary academic building B-2841 of the Medical Field Service School were named in honor of Col. Bernard Aabel, Medical Service Corps, and Maj. Gen. John M. Willis, Medical Corps. During the building dedication Secretary of the Army, Robert F. Froehlke, announced the Medical Field Service School name had been officially changed to the Academy of Health Sciences.

Aabel served through five campaigns in the European Theatre during WWII and was wounded in action. During the Korean War, he was Deputy Commanding Officer

of the Medical Replacement Training Center, Camp Pickett. His service included duty with the Surgeon General's Office, with the Military Attaché to Finland and as Chief, Medical Service Corps. Aabel served as chief of the Corps from 1955 to 1959.

The Medal of Honor display was dedicated in the foyer of Aabel Hall on July 12, 1985. Designed, constructed, and donated by the noncommissioned officers at the Academy of Health Sciences, the display was dedicated to the United States Army Medical Department Soldiers awarded our nation's highest military award – the Medal of Honor. At the time of unveiling there were 48 Army Medical Department recipients. The display was formerly dedicated by Maj. Gen. William P. Winkler Jr., AHS commandant, with assistance from then Brig. Gen. Patrick Brady, MSC, Medal of Honor recipient for combat actions in Vietnam.

Today, the Army Medical Department Center and School boasts 424 course listings supporting 57,000 students annually. Both the Center and School are the foundation on which the Army Medical Department is built, sustained and transformed. *(Adrian Neidinger, AMEDDC&S historian contributed to this story).*



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Tripler uses cutting-edge procedures to manage pain

By **Stephanie Bryant**
TAMC Public Affairs

HONOLULU — The use of spinal cord stimulators to treat chronic pain has evolved recently at Tripler Army Medical Center.

In 2011, the Food and Drug Administration approved the use of percutaneous spinal cord stimulators using a paddle lead. The approval of this procedure made a nice addition to TAMC's Integrative Pain Management Clinic. The clinic, priding itself on trying to reduce the use of opiates to treat pain, had already been performing spinal cord stimulator implants using cylindrical leads.

The spinal cord stimulators use leads, which are wires that go from the stimulator device to the spinal cord, to deliver signals that will interrupt the feeling of pain.

Tripler's Dr. Phillip Lim, pain management physician, IPMC, who performed the first paddle lead implant in February, said a lot of patients say it feels like a massage when the neurostimulator is activated.

"A few patients have even moaned from relief when I turn on the pack," Lim said with a laugh. "The technology has gotten so good over the years (with spinal cord stimulators)."

Maj. Brian McLean, chief, Pain Medicine and Interventional Pain Services, said this treatment is for patients with severe neuropathic pain, who have exhausted all other avenues of relief and treatment.

"We start with a three-seven day trial using a temporary lead and using an epidural," McLean explained. "We do not want to (implant) a permanent lead unless the trial offers them at least 75 percent pain relief."

IP 10.0 Leverage Research, Development and Acquisition

For Maggie Peeler, who recently received a permanent cylindrical lead implant, the spinal cord stimulator promises her relief from lower back and leg pain after an injury 10 years ago.

Peeler said after her five-day lead trial when they removed the temporary lead, she realized how much pain she had learned to live with and was anxious to receive the permanent lead.

"The procedure is done on a large number of patients for a wide variety of neuropathic pain reasons," McLean added. "It is a very powerful tool to help with chronic pain and unlike medications and injections, it's not temporary relief, it is continuous, long-lasting relief."

More than 90 percent of the leads placed at Tripler are percutaneous. The paddle leads use less energy meaning patients recharge the battery less frequently. The cylindrical leads send energy everywhere, all around it, while the paddle leads sends energy to just the spinal cord.

"(In addition to the lead advancements), the new batteries are sensor batteries and will sense the patient's movement and adjust stimulation based on the position of their body," McLean said.

McLean said the important thing for beneficiaries to know is that the IPMC can provide pain relief without pain medications.

"Our goal is to not just improve their level of pain, but their function," McLean explained.

The spinal cord stimulator has also aided in retention and readiness. "Soldiers have even deployed with the spinal cord stimulator in," McLean said. "It saves the Army from discharging a Soldier with severe chronic pain."

MTFs awarded for environmental excellence, sustainability

By **Tammy Ford**
MEDCOM Sustainability Coordinator

Practice Greenhealth (PGH), the nations' leading organization for healthcare institutions that have made a commitment to sustainable practices and environmental excellence has recognized six MEDCOM military treatment facilities for their commitment to sustainable practices and environmental improvement. Madigan and Carl R. Darnall Army Medical Centers and Blanchfield, Evans, Moncrief and Winn Army Community Hospitals were presented with PGH Environmental Excellence Awards during the CleanMed 2012 conference on May 2.

Madigan is the first MTF to be inducted into the Practice Greenhealth Environmental Leadership Circle. This award recognizes healthcare facilities that exemplify environmental excellence and set the highest standards for environmental practices and sustainability in healthcare. Established in 2005, Madigan's multi-disciplinary sustainability team has earned multiple PGH awards over the years, culminating in the distinguished ELC award. Mike Kyser, Green Team Co-Chairman and Sustainability Coordinator, notes Madigan's major success as a \$70K

cost savings through the diversion of 590 tons of waste from the local landfill using strategies such as recycling laboratory solvents, cardboard, mixed paper, scrap metal and medical blue wrap.

Evans earned the Making Medicine Mercury-Free award and the Partner for Change award saluting their continuous improvement and expansion of their mercury elimination, waste reduction, and pollution prevention programs.

Maj. David Zajac, Chief Logistics Division and Sustainability Team Chairman said, "Winning these awards validates our progressive sustainable practices at Evans and gives evidence to the important causal link between effective healthcare delivery and sustainable practices."

Evans' eco-friendly housekeeping products and services resulted in an annual savings of \$384,000 and in just six months, Evans expanded their recycling program to achieve a 31% recycling rate for the facility.

Ongoing sustainability improvements earned Moncrief the Partner for Change award in 2012. The Moncrief "Green Team" was established in January 2010 and is co-chaired by Maj. David Glad, Chief Logistics, and Gilbert Crowell, Chief, Environmental

Services. Moncrief has achieved a Reduce, Reuse, Recycle (RRR) rate of 45% of the total waste stream for the facility.

According to Crowell, "Our recycling programs are the foundation of our sustainability program; it starts with staff education; leads to a change in mindset for everyone involved in the process, and results in a culture of excellence with a commitment."

Darnall received the 2012 Partner for Change award, just months after establishing their Green Team in December 2011.

Dorothy Smith, Chief Environmental Services and Green Team Leader said, "Recycling and turning off the lights are so easy, we should want to do this; it's no more than what we would do at home."

Darnall currently recycles over 35% of their total waste stream through a partnership with the Fort Hood recycling program. Another notable achievement; Darnall's single-use device collection and reprocessing program resulted in savings of \$291,500 from diverted waste and repurchasing costs in 2011.

Both Blanchfield and Winn received Partner for Recognition awards.

AROUND ARMY MEDICINE

1. Secretary of the Army John McHugh visits with members of the Army's Warrior Games basketball team in Colorado Springs, Colo., May 1. Wounded, ill and injured service members and veterans from the Army, Marine Corps, Air Force, Navy, Coast Guard compete in track and field, shooting, swimming, cycling, archery, wheelchair basketball and sitting volleyball during the 2012 Warrior Games. (Photo by Staff Sgt. Bernardo Fuller)



2. Sgt. 1st Class Frederick Scott, physical therapy technician, demonstrates to 23rd Quartermaster Brigade Soldiers the proper way to do the lunge exercise at an injury prevention session at Fort Lee, Va. (Photo by T. Anthony Bell)

3. Maj. Lorie Fike, chief of the CRDAMC Occupational Therapy Clinic, helps Staff Sgt. Douglas Sharper with the clinic's functional rehabilitation system as part of his treatment after surgery for his broken wrist. (Photo by Patricia Deal)

4. Cheering fans at the starting line encourage the racers at the beginning of the 2012 Warrior Games' Recumbent Men 20K, May 1. (Photo by Sgt. 1st Class Raymond Piper)

