Maryland Medicine
The Maryland Medical Journal Volume 13, Issue 3

MEDICINE AND THE MILITARY

ALSO INSIDE:

MedChi CEO discusses the Loan Assistance Repayment Program for physicians

Trust to the Nth Power.

How much do you trust your business bank? The small ones, you may not trust their expertise. The mega ones, you might question their focus.

Northwest Savings Bank is a strong, well-capitalized bank Forbes calls "America's Most Trustworthy." We're local. Large enough to handle your diverse financial needs, small enough to genuinely partner with your business.

And, unlike some banks, Northwest is actively lending, helping to get Maryland working again, better than ever.

Forbes America's Most TRUSTWORTHY Companies 2012

In analyzing over 8,000 publicly-traded companies, Forbes named Northwest one of America's Most Trustworthy Companies.

BUSINESS BANKING
COMMERCIAL LENDING
EMPLOYEE BENEFITS
WEALTH MANAGEMENT
CASH MANAGEMENT SERVICES
MERCHANT SERVICES
REAL ESTATE LENDING
SBA LOANS

NORTHWEST SAVINGS BANK

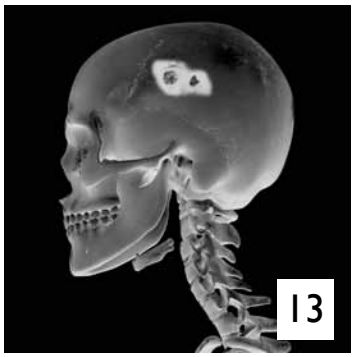
9612 REISTERSTOWN ROAD • OWINGS MILLS • (410) 356-4248

Northwest Direct: 1-877-672-5678 • www.northwestsavingsbank.com

Member FDIC

Volume 13 Number 3

INSIDE



Robert J. Ursane, MD, discusses PTSD and related stress trauma.

Departments

Features

Scan the code with your smart phone and download *Maryland Medicine* to your mobile device.

The cover photo is courtesy of Rocky Vista University College of Osteopathic Medicine and reflects one of the many drills conducted during RVUCOM's innovative three and a half-year military medicine track. RVUCOM has also earned the distinction of having perhaps the largest percentage of students on military scholarship of any civilian medical school.

Leadership by Example

PRESIDENT'S MESSAGE

Brian H. Avin, MD

As I begin my year as the 165th President of MedChi, The Maryland State Medical Society, I want to thank Dr. David Hexter and Dr. Harry Ajrawat for their leadership and dedication to the Medical Society. They have set a high standard for the next president to aspire to and I will do my best to reach it. I also want to thank Gene Ransom for his commitment and leadership as Executive Director of MedChi and for his boundless energy and productivity. I thank all of you for your contributions to our medical society and for your contributions to our communities where you provide your precious skills and talents.

Needless to say, times are changing and we are transitioning into an ever-challenging environment to practice our profession. It is no longer feasible to run a small business while at the same time keeping abreast of what is being required of us. Adoption of electronic medical records (EMR), in addition to striving to meet meaningful use standards, places an enormous stress on physicians and their staff. This is an expensive undertaking and adds an operational cost that will forever be with us. It also adds uncertainty when we are unable to provide services when the computer system slows or goes down, an unfortunate recurring event. And think the unthinkable — the EMR system we invested in does not meet our needs, the company is bought out and no longer supports the product, or the company fails. If this is not enough, we are looking at an anticipated 27 percent pay cut from Medicare while hemorrhaging funds to establish EMR and being asked to participate in pilot programs that will change the way we earn income. We have fallen off the cliff of uncertainty. We physicians are not prepared to meet these challenges and must depend on others to do so, another costly and uncertain venture. Well, I digress, for this is not what I am here to discuss, but it is difficult to ignore the every day realities that confront our practices. MedChi, can help us navigate during these turbulent times.

What I intend to discuss is the cost of medical care and how it has changed since 1960. I choose 1960 because Medicare and Medicaid went into effect in 1965. The reason for considering medical costs in the first place is that they will be the driving force that changes how we practice medicine in the future. We need to understand the nation's demography, revenue stream, and expenditures. The population was 186 million in 1960 and is now 323 million. In 1960, healthcare costs were $27 billion and in 2012, healthcare costs are expected to be $2.834 trillion —$8,937 per person in 2012 as compared to $145 in 1960. (A dollar today was worth $7.75 in 1960 and, thus, $145 in 1960 is the equivalent of $1,123.75 today.) Medicare cost the federal government $37.4 billion in 1980 and $524.6 billion in 2010, while Medicaid expenses were $26 billion in 1980 and $401.4 billion in 2010. In 2010, the federal government accrued an additional $200-$300 billion in healthcare costs when one includes Public Health, the Veterans Administration, the National Institutes of Health, the Centers for Disease Control and Prevention, the Indian Health Service, and certain county and state hospitals. This adds up to $1.226 trillion spent by the federal government on healthcare in 2010. Government revenue in 2010 was $2.163 trillion. Federal healthcare costs consumed approximately 50 percent of the revenue collected. In 1960, the federal budget was $3.814 trillion (a deficit of $1.6 trillion); thus, healthcare costs were 30 percent of the federal budget but over 50 percent of revenue collected. It is projected that Medicare costs in 2020 will reach $1 trillion and Medicaid costs will reach $957 billion. Total healthcare expenditures in 2020 are projected to be $4.487 trillion or $13,709 per person. The government's revenue will have to double by 2020 just to keep pace with projected medical expenditures. Our nation's debt now exceeds the gross domestic product and will continue to do so for years to come. As an aside, Medicare is now spending 25 percent more than it collects annually, and social security is spending 25 percent more than it collects annually. This will become more of a problem as the workforce contracts and the number of retirees increases.

The thrust of this discussion is to emphasize that affordable, accountable healthcare will be unattainable until Americans become accountable for their health. The mission of the Patient Protection and Affordable Care Act is to increase access to care, to improve coordination and quality of care, and to reduce costs. Improving access to care is a stated vision of MedChi and improving the coordination of care is a window of opportunity to decrease expenditures. Quality of care is more difficult to define and reducing costs is a complicated undertaking.

Non-communicable diseases comprise the bulk of illness in the United States, at least 60 percent of which is caused by unhealthy habits. As our population grows in numbers, with the population aging (70 million people turning 65 over the next 30 years—10,000 per day), and with healthy behavior lagging, the costs expended on self-induced illness will go untamed. Accountability pertains to the healthcare profession and to our citizenry as well. Healthcare costs will increase exponentially if Americans do not take responsibility for their health. No system can be devised that will compensate for unhealthy behavior: a single-payer system or any other system will collapse under the stresses caused by unhealthy behavior. Fifty years after the Surgeon General reported that cigarettes are dangerous to one's health, tobacco remains the leading cause of morbidity and mortality in the United States. It is incredible that the staunchest supporters of tobacco are

continued on page 11

Paying for Medical School

CEO'S MESSAGE

Gene Ransom, III, Esq.

Recently, I was speaking to a student from Johns Hopkins School of Medicine about her future and, in particular, how she was going to pay her student loans. She explained to me that she had it all worked out—she had enlisted in the military and, upon graduation and completion of basic training, she would be an officer and have her loans paid off.

Joining the military is one way to make medical school tuition affordable, but it won't work for everyone. MedChi, the Maryland State Medical Society, has been working on this critical issue for some time. While the cost of medical school continues to rise, the payment to physician graduates of those schools continues to decline. This limits the options for new physicians, who often face repaying loans larger than many mortgages.

One current option is the Loan Assistance Repayment Program. It is open to primary care physicians: that is, those who practice general internal medicine, family medicine, general pediatrics, obstetrics and gynecology, or general psychiatry. However, they must practice in an eligible practice site. An eligible practice site is one operated as a public clinic by any federal, state, or local governmental entity or a nonprofit medical care facility that 1) treats all persons, regardless of ability to pay, and 2) is located in a geographic region of Maryland that the Health Resources and Services Administration has designated as a Health Professional Shortage Area (HPSA) A primary care HPSA includes internal medicine, family medicine, pediatrics, and ob/gyn; a mental HPSA is for psychiatry.

The Loan Assistance Repayment Program has two flaws. It simply does not have enough funding, and it has a very limited scope given the fact that it only applies to certain specialties and sites. In 2009, MedChi put a lot of effort into passing legislation to improve the program. Senate Bill (SB) 627/House Bill (HB) 714 (Loan Assistance Repayment and Practice Assistance for Physicians) was enacted, providing for the creation of a state-specific loan assistance program for physicians who will practice in a state-defined shortage area. The legislation expanded coverage to include family medicine, internal medicine, obstetrics, pediatrics, geriatrics, emergency medicine, and psychiatry. This was a start in addressing the limitations with respect to the practice type and geographical areas covered as well as the monies dispensed.

The intent of the legislation was to fund the program by the addition of a 0.1 percent assessment on all hospital bills in Maryland. It is estimated that such an assessment will raise $10–$13 million per year (as opposed to the $500,000 received from the federal program in 2008). While SB 627/HB 714 has established the legal vehicle for the new program, it is yet to be funded. To date, the Department of Health and Mental Hygiene has not been able to persuade officials from the Federal Centers for Medicare and Medicaid Services that an assessment on hospital rates for these purposes is acceptable in light of the rules regarding Maryland's unique Medicare waiver with respect to its hospital rate-setting system. In essence, Maryland will have to demonstrate that assisting physicians will be beneficial in controlling hospital costs in Maryland. MedChi is hoping that the Department can finally get this issue resolved, because the Maryland Medicare waiver is under consideration for update this year.

While this is a step in the right direction, the improvement fails to fully address the complex problem. As more patients have insurance with Medicaid expansions and the new Exchanges, we will need more physicians. Despite that need, however, the heavily regulated imperfect market is artificially keeping physician payments low and creating a crisis in waiting. MedChi will continue to work on how to address this issue moving forward. We want your input. Please contact me with your suggestions on how we can improve shortage issues, make medical training more affordable, and help young physicians afford their loans.

Gene Ransom, III, Esq., Executive Director and CEO of MedChi, The Maryland State Medical Society, may be contacted at 1.800.492.1056 or gransom@medchi.org.

EDITORIAL STATEMENT

Editorial Offices
Montgomery County Medical Society
15855 Crabbs Branch Way
Rockville. MD 20855-0689
Phone 301.921.4300, ext. 202
Fax 301.921.4368
sraskin@montgomerymedicine.org

Advertising
800.492.1056

Classified and Display Advertising Rates
Susan Raskin
301.921.4300, ext. 202
sraskin@montgomerymedicine.org

All opinions and statements of supposed fact expressed by authors are their own, and not necessarily those of *Maryland Medicine* or MedChi. The Editorial Board reserves the right to edit all contributions, as well as to reject any material or advertisements submitted.

Daisy and the Duke

EDITOR'S CORNER

Bruce M. Smoller, MD

I began this story a year and a half ago. I'm not sure why I never finished it, but it seems appropriate to finish and share it now that the baseball teams in both DC and Charm City are going great guns and may well meet each other in the Battle of the Beltways come October. Oh, that would be delicious…only slightly less so than if the Nats beat the pinstripes off the (hated) Yankees. Now that is a fate to be divinely wished for! Anyway, I am tired of bellyaching about reimbursements, Obamacare, lawyers, and Medicare. Baseball and dogs are balms to soothe the stresses of life, both to be treasured and nurtured. As assets they pay back many times in pleasure the small investment made in their acquisition.

Anyway, I write this in the hope that baseball and dogs, the anodynes of childhood, will distract from the real world long enough to be felt as pleasure.

The Duke of Flatbush has died. Duke Snider, born Edwin on September 19, 1926, passed on February 27, 2011. He was the majestic nobleman who owned centerfield for arguably the most storied team ever to inhabit the chronicled, majestic game of baseball, the Boys of Summer, the Brooklyn Dodgers of the 1950s, and if he never got promoted from Duke to King in real life, he was the King of my imaginary flights of fancy, for he was kindred to me. Well, he wasn't really related…not in real life, but real life doesn't matter that much to boys. The Duke and I shared a birthday and that made him kindred in my book. He was the best ballplayer on the best team that ever lived and for a 12-year-old boy playing stickball on the streets of New York, sharing something personal with him, even if he never knew, was all that mattered.

I grew up in Queens. The rule was quite simple…if you lived in the Bronx (and who could call that living!), you had to root for the (hated) Yankees. If you lived in Brooklyn, rooting for anyone other than "dem bums" could get you seriously hurt. If you lived in certain parts of Manhattan, Willie Mays and the Giants were your hereditary demigods. But if you lived in Queens…you got to choose. Staten Island didn't count. No one seemed to live there. It could have been a part of Canada or Mexico for all we knew or cared.

Some weird kids did choose the Yankees and the Giants. They were never heard from again. I and about a million other kids in Queens adopted the Dodgers. We were rewarded, of course, with the highs and lows of a fanatical devotion to the most up and down, colorful, talented, star-crossed, astonishing team that ever inhabited a diamond.

It wasn't that the Dodgers were a bad team. By the way, I refer only to the *Brooklyn* Dodgers. When they moved to Los Angeles, they ceased being the Dodgers for me. Heck, they ceased *being*, period. They had talent galore...from Jackie Robinson on second to Roy Campanella at catcher, they were a first rate team. Well, maybe second rate at times. But their performance was always accompanied by the twin sparks of flair and drama that caught the attention of every boy and dad (and not a small number of some moms and sisters, too) from Flushing to Flatbush and back. All brought to life on radio by Red Barber and Vin Scully…so smoothly delivered that you could swear you smelled the hot dogs.

Duke Snider was at the center of a stellar list of baseball players. He hit more than 40 home runs in five consecutive seasons, a feat only accomplished by four other baseball players. His fielding was the stuff of legends. He and the other two New York center fielders of the time, Mickey Mantle for the Yankees and Willy Mays for the Giants, had a permanent boxed entry in the newspapers of the day, comparing their feats, and they were, arguably, the best outfielders in the game at that time, and maybe ever. It is bittersweet that the Duke hit the last home run in Ebbets Field before the Dodgers absconded to Los Angeles. Bye, Bye Miss American Pie…it was the end of baseball as we knew it.

I have had many dogs in my life, all equally wonderful. Any of you who know me know that they are the center of our family's lives and rule the domains of my house and my attention with equal measure. Now the delicious part…one of my current pups is a beautiful rescue. She is half husky and half Shiba Inu, a sleek, beautiful, and loving animal who claims the greater part of my daily attentions. When I picked her up, I also picked up her whelping papers, which don't often accompany a rescue, but in this case did. To my great pleasure and surprise, her birthday is precisely the same as that of the Duke and, of course, the same as mine. What a wonderful symmetry. Some cosmic force has seen fit to forever link the Duke, my hero and symbol of baseball and childhood; Daisy, my other hero and pretender to my affections; and…well, me! How much better can it get!

So here's to the Nats and the Orioles in their quest for greater glory. Only one of them can win but wouldn't it be a delightful way to spend the autumn? I can almost hear Vin Scully intone "Snider goes back for a high, well hit flyball to center…back, back to the wall." The fans, including one slightly aging doctor and his faithful dog, gasp in childish awe as he snags the ball out of its arc and saves the series….

Introduction

Tyler Cymet, DO

Should I care if the patient I am caring for has spent time in the military? Isn't the physiology the same as any other patient's? Why would a physician ask about a patient's military experience?

Why care if your patient has been in the military? The answer is becoming increasingly clear. A good physician should know about a person's military history to understand the patient. It is an independent risk factor for specific medical issues, and becomes part of a patient's culture that introduces family and health issues and gives a tremendous amount of information about the patient's beliefs, value systems, and attitude, and possibly about their learned and accumulated experiences. It is a prism to interpret a patient's answers to the questions that we ask. Military personnel go through a collective training of the mind and exhibit consistent behaviors.

The military is a cultural group different from many others. People who have spent time in the military have lived and worked in a closed system where even the language is different. The answers personnel give a physician can have a direct effect on all facets of their lives.

I often administer the Department of Defense 17-question post-traumatic stress disorder (PTSD) screening questionnaire[1] to patients in my care. Handing the questionnaire to a system-savvy veteran often starts a conversation with, "Doc, do you want me to answer this to get out of duty for a period of time, or is this just for me to do and keep for myself?" Military personnel live in a system where there is a "permanent record" that matters, and this can make individuals somewhat more hesitant to be completely open with a provider with whom they don't have a relationship.

Military personnel have typically held onto their own medical records and been responsible for obtaining and documenting their follow-up care. This is different from the open system that most of us function in. And contrary to the principles of disaster medicine in civilians, where triage takes the sickest patients first, the military culture often strives to return people to combat before attending to the sickest individuals.

And there are health issues that we screen for in military personnel that we don't worry about in others. We don't know why people who have served in the military have a greater incidence of ALS, but they do.[2]

You wouldn't think that osteoarthritis occurs more commonly in young active individuals, but it is something we see and hear about often among veterans and active duty military.[3]

We all think about PTSD,[4] traumatic brain injury,[5] and musculoskeletal issues as being related to service in the military; the different culture also needs to be taken into account.

And military health is going to be a bigger and bigger issue. With the winding-down of the "formal warfare" in the Middle East, there will be about two million U.S. military personnel who have cycled through areas of conflict. About a million of them will be coming back to the United States in the next 12 months.

Those in the military go through a collective training of the mind and exhibit consistent behaviors that can inform a provider on a patient's behavior. Even the language is different.[6]

Medical schools have noted this as well and responded with specific teaching activities to prepare students to care for members of the military and military veterans in the future. The Rocky Vista University School of Osteopathic Medicine requires all of its students to participate in training in both basic and advanced disaster life support. The Nova Southeastern University, through its Institute for Disaster Preparedness, trains medical students to deal with issues of bioterrorism and all hazards preparedness.

It is important to note that military personnel are trained for different environments than civilians. This training will lead to a different perspective on healthcare, and different responses. Being aware of the issues is a first step.

General Medical History Questions to Ask Military Personnel

- Tell me about your military experience.
- When and where did you serve?
- What did you do while in the service?
- How has military service affected you?

Follow-up Questions: "Yes" to any of the above, ask:

- "Can you tell me more about that?"
- Did you see combat, enemy fire, or casualties?
- Were you or a buddy wounded, injured, or hospitalized?
- Did you ever become ill while you were in the service?

Stress Reactions/Adjustment Problems

In your life, have you ever had an experience so frightening, horrible, or upsetting that, in the past month, you:

- Have had nightmares about it or thought about it when you did not want to?
- Tried hard not to think about it or went out of your way to avoid situations that reminded you of it?
- Were constantly on guard, watchful, or easily startled?
- Felt numb or detached from others, activities, or your surroundings?

Unique Health Risks from Serving in the Military by Era

Operation Iraqi Freedom/Operation Enduring Freedom/ Operation New Dawn:

- Animal bites/rabies
- Blast injuries—may cause penetrating, blunt trauma, and/or burn injuries
- Dermatologic issues
- Embedded fragments (shrapnel)
- Leishmaniasis
- Mental health issues
- Multi-drug resistant acinetobacter
- Reproductive health issues
- Traumatic amputation
- Traumatic brain or spinal cord injury
- Vision loss

Gulf War:
- Exposure to chemical or biological agents
- Exposure to depleted uranium
- Dermatologic issues
- Immunizations
- Infectious diseases (e.g., Leishmaniasis)
- Exposure to oil well fires
- Reproductive health issues

Vietnam:
- Exposure to Agent Orange
- Hepatitis C

Cold War:
- Exposure to nuclear weapons testing (atomic veterans)

Korea:
- Exposure to Agent Orange
- Cold injury
- Exposure to chemical warfare agent experiments
- Exposure to nuclear weapons (including testing or cleanup)

World War II:
- Cold injury
- Exposure to chemical warfare agent experiments
- Exposure to nuclear weapons (including testing or cleanup)

Tyler Cymet, DO, is Associate Vice President for Medical Education for the American Association of Colleges of Osteopathic Medicine He may be contacted at tcymet@gmail.com. For a complete list of references, contact Susan Raskin at 301.921.4300 or sraskin@montgomerymedicine.org.

References:

1. http://www.aacom.org/programs/joiningforces/Documents/joining.forces.ptsd.checklist.17.item.civilian.pdf.

2. Amyotrophic Lateral Sclerosis in Veterans: Review of the Scientific Literature Institute of Medicine Report. November 6, 2006. http://www.iom.edu/Reports/2006/Amyotrophic-Lateral-Sclerosis-in-Veterans-Review-of-the-Scientific-Literature.aspx.

3. Cameron, K.L., M.S. Hsiao, B.D. Owens, R. Burks, S.J. Svoboda. "Incidence of Physician-Diagnosed Osteoarthritis Among Active Duty United States Military Service Members." *Arthritis Rheum.* 2011 Oct;63(10):2974–82. doi: 10.1002/art.30498.

WRITE TO US

The Editorial Board of *Maryland Medicine* welcomes your letters, comments, and opinions. Readers may respond to the authors or the editors by e-mail at sraskin@montgomerymedicine.org or by mail to Editor, *Maryland Medicine,* c/o Montgomery County Medical Society, 15855 Crabbs Branch Way, Rockville, MD 20855.

President's Message ...

continued from page 5

those people who are being sickened and/or killed by the product. Tobacco is a public health emergency (more than 300,000 deaths a year in the United States) and the government chooses to tax the product rather than remove it from the environment. Why did the government not tax lead and asbestos rather than removing them from the environment, for they injured or killed a fraction of individuals as compared to tobacco?

Chronic illnesses are expensive, are lifelong conditions, and decrease the quality of life of the individual as well as the lives of family members and caregivers. Added to this is the staggering cost of lost productivity. It is estimated that a modest reduction in unhealthy behaviors can prevent or delay 40 million cases of chronic illness a year. Obesity is our latest epidemic and is accompanied by an increased incidence of diabetes, heart disease, high blood pressure, cancer and arthritis.

Five percent of the population is responsible for 50 percent of healthcare costs, while 50 percent of the population is responsible for 97 percent of healthcare costs. The remaining 50 percent of the population is responsible for 3 percent of healthcare costs. The chronic conditions we live with today will take several decades to work through the system and, thus, we will be burdened with these costs for decades to come. How to contain healthcare costs is clear: reduce self-induced illness that and chronic disease. We must take responsibility for our own health.

Demonstration projects under consideration today aim to lower healthcare costs by concentrating on coordinating and improving quality of care, and lowering payments for work performed. Physicians can be held accountable for our behavior, but we cannot be expected to be held accountable or placed at financial risk for the behavior of others. We need to set an example for our patients by living healthy lifestyles and getting our health numbers in order. The best example of leadership is leadership by example and we will have difficulty convincing our patients to live healthy lifestyles if we do not practice what we preach. Please join me this year in championing health promotions and health maintenance, for a healthier America will lower healthcare costs, will increase productivity, and will improve our quality of life.

LETTERS

When Practicing Medicine was "Real"

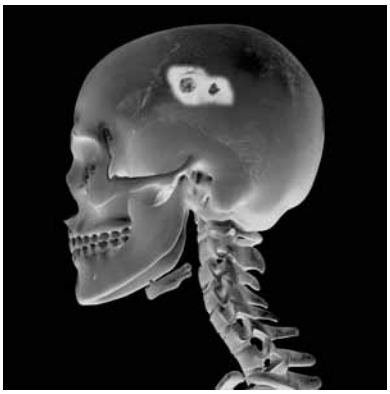
I read with total understanding and support Dr. Gershen's "Personal Perspectives" article in *Maryland Medicine* (Volume 13, Number 1). Entering medical school in 1954 at Tulane University School of Medicine, followed by a brief residency in internal medicine, I became a general practitioner.

Today's wonderful tools of the trade were preceded by hands, smells, percussion, auscultation . . . etc., etc., etc.! It was a wonderful life, a bit scary, risky, and always with rewards of successes when they came, as they usually did. I was fortunate to experience practicing in suburban areas and very rural, isolated areas, and to have a medical management career with insurance companies. All were enlightening but a far cry from today's sophisticated care and skilled and technically competent clinicians.

Thank you for the recall in what was "real medical practice."

David R Ewing, MD, MBA
Tucson, Arizona

Letters to the Editor are each the opinion of the author and may not reflect the opinion of the Maryland Medicine *Editorial Board or MedChi, The Maryland State Medical Society.*



Post-Traumatic Stress Disorder and Other Trauma Disorders

Robert J. Ursano, MD

In the wars since 1812, the numbers of both dead and wounded have risen and so have the psychological consequences of war. In 1812, there were 2,260 battle deaths. During the Civil War, there were 215,000 battle deaths and 280,000 non-battle deaths. During World War II, there were 291,000 battle deaths and 115,000 non-battle deaths. And the tally of those who perished during the Vietnam, Korean, and Gulf wars combined was more than 400,000.

Over the years, it has come to be understood that these battle deaths are only part of the consequence of war. Post-traumatic stress disorder (PTSD), whether called "battle fatigue" or "shell shock" in earlier wars or PTSD currently, has taken an enormous toll. For instance, between July 1940 and June 1946, the Army saw 2,214 suicides, and the current rate of suicide bears scrutiny and intervention. In 2003, there were 79 suicides among active duty personnel and 16 among non-active duty. In 2008, the last year for which there are accurate figures, there were 128 active duty and 43 non-active duty suicides. Suicide is among the leading causes of death and disease burden around the world, and that is no different in the service. While a wide range of mental disorders increases the odds of experiencing suicidal ideation, PTSD and major depressive disorder are primary among them. Fifty-nine to 75 percent of all suicide attempts are associated with prior DMS-IV disorders, and PTSD, with its attendant depression, is a standout among them.

However, after controlling for psychiatric co-morbidity, only disorders characterized by anxiety and poor impulse control predict which people will actually carry through with suicide attempts. Thus, depression predicts suicidal ideation but not suicide plans or attempts. Among those with suicidal ideation, disorders characterized by severe anxiety and agitation (for example, PTSD, poor impulse control, conduct disorders, and substance use disorder) predict which suicide ideators go on to make a plan or an attempt.

Among attempts to understand suicide and its relationship to PTSD in the Army, the Army STAARS (Study to Assess Risk and Resilience in Service Members) is an important tool. It is a collaborative study among the Army Uniformed Services University of the Health Sciences, University of California, University of Michigan, and Harvard Medical School. It has five study components: historical data, new soldier study, all-Army study, soldier help outcome study, and pre-/post- deployment study.

Data derived from STAARS show already (and this is a work in progress) that veterans who screen positive for PTSD are 4.5 times more likely to report suicidal ideation after accounting for age, depression, and substance abuse. With two or more comorbid disorders, as is often found in an army population, there is a 5.7 times more likely response of suicidal ideation relative to those with PTSD alone. Thus, substance abuse, prior depression, and anxiety states outside of PTSD increase the likelihood of suicidal ideation dramatically.

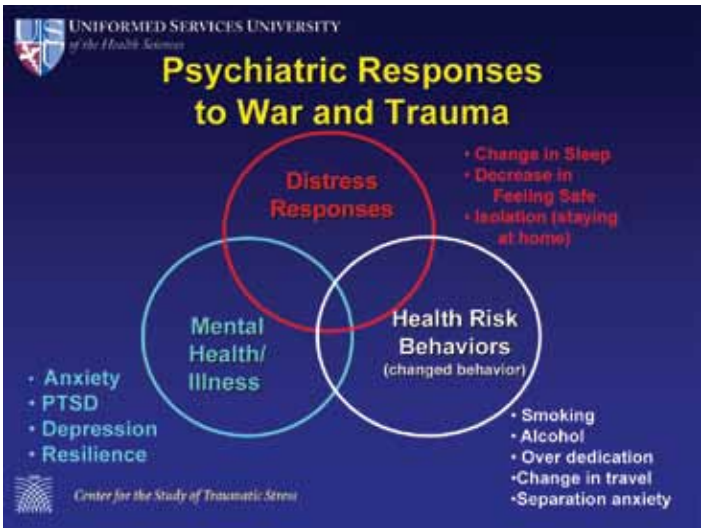
In the population of Iraq veterans who have seen active duty, there is also a positive correlation among those subjected to firefights and those not. There is a four times greater likelihood of PTSD among those surviving six to nine firefights, but, interestingly, after 10, this number goes down. This statistic is as yet unexplained.

Is post-traumatic stress disorder any different in the Army than it is in civilian life?

PTSD is a response to an unanticipated catastrophe. If one has time to rehearse the catastrophe and a response to it, the likelihood of PTSD goes down. Rehearsal is, of course, impossible in civilian accidents or dam breaks, and in the active duty and on station military. PTSD is the inability to "digest" early stress symptoms and return to a stasis point. There is an altered "set point" and some sort of "glue" that makes the symptoms "stay" or cluster.

Many years ago, George Engel, a leading luminary in psychiatry, posited the concept of *conservation withdrawal.* That is, in the face of a sudden catastrophe, the body and mind essentially shut down in order to heal. Thus, PTSD can be seen as a healing response, although its symptoms are distressing in and of themselves and may lead to other psychiatric problems such as suicide.

Many patients in civilian life who have this disorder have prior or comorbid psychiatric problems. A common estimate is that 60 percent of patients who have PTSD have premorbid or comorbid psychiatric disease. However, at a certain point, the graph reaches an asymptotic condition. At that point, the premorbid psychological



state just does not matter. If the trauma is large enough—for instance, an airplane accident or battle trauma—*anyone,* with or without pre- or comorbid psychiatric conditions, will experience PTSD.

PTSD's symptoms are characterized by intrusive nightmares and intrusive thoughts and dissociative flashbacks that are best illustrated by the Vietnam veteran who hunkers down behind a bench in McDonald's thinking he is back in Danang in a firefight. These people actually experience the trauma, or re-experience it. Anxiety states indicate fearfulness, sweating, typically slack–jawed and wide-eyed appearance, symptom generalization (that is, the re-experiencing of symptoms the closer in setting and scene one gets to the original drama), confusion, memory problems, hypersomnia or, paradoxically, sleep disturbance, and hypervigilance (increased startle combined with "always being vigilant").

Research Positron Emission Tomography (PET) scans have shown distinct patterns during a PTSD episode, and recovery produces PET scans that resemble normal. There are some studies that show that the serotonin transporter gene is important in predicting the possibility of PTSD and studies are apace to determine the genetic and neurochemical markers in the disorder.

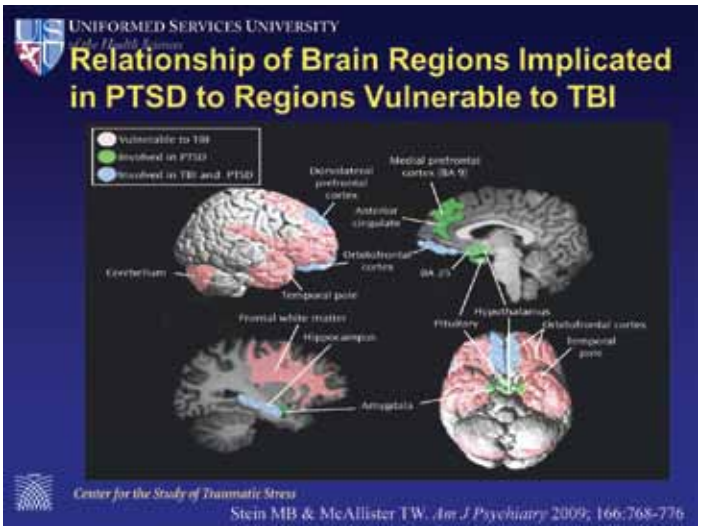
Recently, there has come to be seen a connection between post-concussive symptoms, such as those received in an improvised explosive device explosion, and PTSD on both symptom and neurochemical levels. Post-concussive syndrome presents with the following symptoms: headache, dizziness, balance problems, nausea, vomiting, fatigue, visual disturbance, sensitivity to light and noise, tinnitus, anxiety, depression, irritability, mood lability, slowed processing, decreased attention, poor concentration, memory problems, verbal dysfluency, word finding problems, and abstract reasoning problems. There are crossovers in the cortical areas of the brain that are vulnerable to traumatic brain injury and involved in PTSD. So, for instance, the orbital frontal cortex, dorsolateral prefrontal cortex, and hippocampus may be involved with both traumatic brain injury (TBI) and PTSD, while the areas involved in PTSD alone seem to involve the medial prefrontal cortex, amygdale, and hypothalamus with its pituitary stalk.

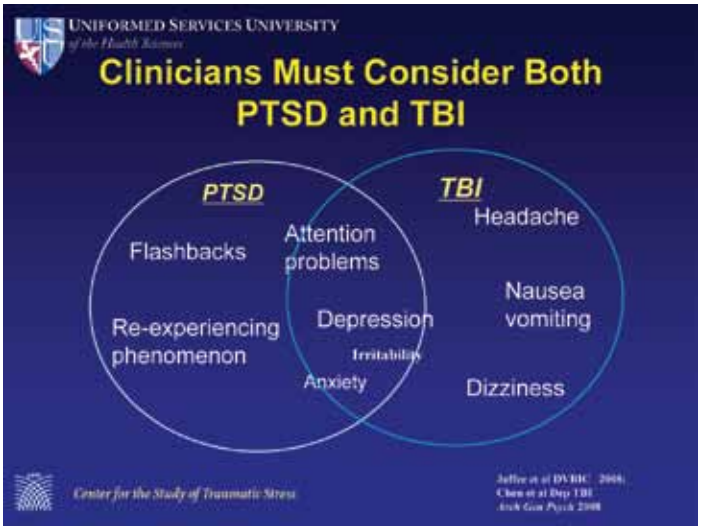
The areas of commonality in symptoms between PTSD and TBI include attention problems, depression, irritability, and anxiety. Further study is needed, but this is an intriguing area, especially in military medicine.

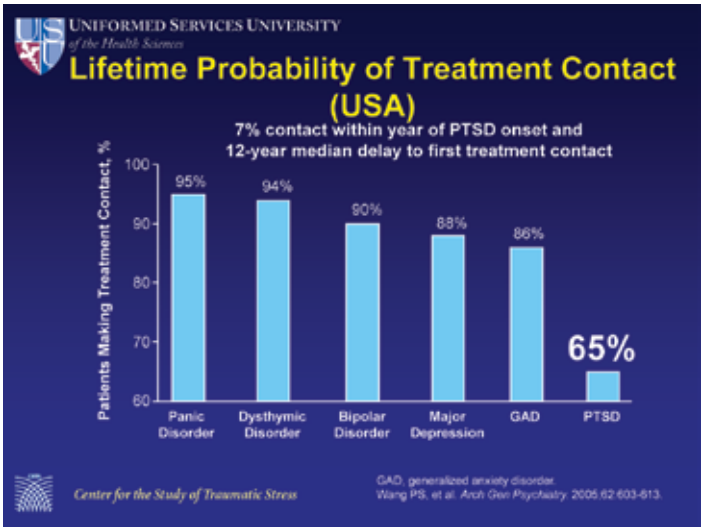
In terms of treatment, there are barriers to care that are somewhat peculiar to the military but exist in some form in civilian care also. Military personnel do not refer themselves to mental health treatment facilities because of the following: "I would be seen as weak," " My unit leadership might treat me differently," "Members of my unit might have less confidence in me," or "My leaders would blame me for the problem, and it would harm my career."

In the service, there is a lower probability of treatment contact with PTSD than with other diagnoses. Thus, panic disorder, dysthymic disorder, bipolar disorder, major depression, and general anxiety disorder all have over an 85 percent chance of contact with mental health professionals, whereas PTSD only has a 65 percent chance.

Much study still needs to be done, but the inter-relationship among post-traumatic stress disorder, suicide, and traumatic brain injury has begun to be recognized. Studies by our group and others will, it is hoped, yield valuable interventions in the future.







Robert J. Ursano, MD, is Professor and Chair, Department of Psychiatry, Uniformed Services University of the Health Sciences, and Director, Center for Traumatic Stress. This article was written by Bruce M. Smoller, MD, using, with permission from the author, a PowerPoint presentation.

Trauma-Related Amputations: Treating the Whole Patient

Francisco Ward, MD

Amputations have occurred throughout history but the causes of amputation have changed, from chiefly the result of traumatic injuries (mauling, hunting, crush, war) to primarily dysvascular (peripheral arterial disease (PAD) and diabetes) issues followed by oncologic etiologies. The medical justification for surgical amputation has also changed over the years with the advent of improved medical and surgical knowledge as well as technological improvements in prosthetics.

The reasons to perform amputations depend on whether the surgery is for the upper or lower extremities. Trauma (males predominate, but incidence increases with those over 85 years old) and congenital deformities are the most likely causes of upper extremity amputation. Dysvascular (ethnic and gender differences exist; African American males have the highest incidence) and oncologic causes lead to the most low extremity amputations.[2]

The rates of trauma-related amputation and cancer-related amputations have both declined during the past several decades, except for an increase during times of war. The Armed Forces Health Surveillance Center reported that in 2011, a record number of soldiers, 240, had at least one limb amputated.

Overall, dysvascular disease is the most common reason for an amputation. Persons with diabetes experience an earlier onset of atherosclerosis and more rapid progression of disease.[1] To understand the prevalence of dysvascular amputation, one must consider the risk factors for peripheral vascular disease and diabetes. Healthcare disparity plays an important part in the clustering of amputations within geographic and ethnic groups. According to medical literature, 60 percent of all lower extremity amputations are preventable.[3]

The most frequent level of amputation is the below-the-knee amputation (transtibial) followed in frequency by above-the-knee amputation (transfemoral). The list that follows shows the distribution of various levels of amputation.

Through Shoulder (Shoulder Disarticulation) / Forequarter 1.5 percent
Above Elbow (Transhumeral) 4 percent
Through Elbow (Elbow Disarticulation) 0.5 percent
Below Elbow (Transradial) 8 percent
Hand 2 percent
Through Hip (Hip Disarticulation) and hemipelvectomy 2 percent
Above Knee (Transfemoral) 31 percent
Through Knee (Knee Disarticulation) 1 percent
Below Knee (Transtibial) 47 percent
Through Ankle (Symes or Ankle Disarticulation) 3 percent

In the United States, more than 23 million people 20 years of age and older have diabetes (www.diabetes.org; www.cdc.gov) and the incidence is increasing by 5 percent per year. Diabetic peripheral neuropathy (DPN) is the most common chronic complication of diabetes and is the leading cause of diabetes-related hospital admissions and non-traumatic amputations.[4] For people suffering with diabetes or peripheral vascular diseases, the initial amputation occurs because a foot ulcer becomes infected, does not heal, and leads to osteomyelitis, gangrene, or sepsis.

Practitioner use of a simple, three-minute screening tool such as the Michigan Neuropathy Screening Instrument (MNSI), a validated clinical screening instrument for the assessment of DPN designed to balance the contribution of motor and sensory findings, will lead to earlier identification of a major precursor to dysvascular foot lesion,[5] giving the practitioner an entry way into the important discussions to follow about PAD, DPN, proper foot care, smoking cessation, and amputation prevention.

Practitioners must teach their patients to:

Inspect their feet everyday for wounds or blisters by looking at them (including the bottom of the feet using a handled mirror if necessary) and touching them.

Wash their feet every day with soap and water, dry the skin thoroughly, especially between the toes, and use lotion at night to moisturize the skin.

Trim their toe nails (or teach family members) by cutting straight across from side to side; cutting the nail on a curve increases the chance of cutting the skin.

Dysvascular amputation has a high morbidity and mortality rate. Clinicians are still under-treating amputees' peripheral vascular disease despite a two- to five-year life expectancy following amputation for chronic vascular disease for 60 percent of patients.[6] The use of statins and anti-platelets should be considered along with lifestyle changes regarding diet and low exertion exercise. After an initial amputation, the median survival time for diabetic patients was 440 (95 percent CI 303–577) days, and for non-diabetic patients 563 (95 percent CI 368–758) days. During the first year after the initial amputation, 60 diabetic patients (45 percent) and 78 non-diabetic patients (50 percent) died.[8]

The decision to amputate is an emotional process often associated with depression and a dread of disfigurement and disability. Enlisting an amputee who has regained functional mobility and activity of daily living independence is often very helpful for patients (and their families) with an impending or first-time amputation. Limb amputation should be seen as a means to return the person to a more functional level. Many times an amputated limb is much more functional than a mangled or chronically diseased non-functional body part, especially when this body part is putting the patient in significant medical risk. Prosthetic advances are allowing patients to return to levels of pre-amputation function. In addition, the level of amputation has a direct effect on energy cost during mobility. The selection of the surgical level of amputation is a critical decision that will affect many future choices; therefore, one should enlist the services of a physiatrist if available or a physiotherapist with experience in amputee management. In general, with each joint lost and replaced by an artificial limb, there will be greater cost, greater loss of function, a greater degree of impairment, and increased energy cost in using the prosthesis. The patient's cardiopulmonary and neuromuscular baseline will need to be taken into consideration because these medical comorbid conditions may be what stands between a patient regaining mobility with the use of a prosthetic or being wheelchair-dependent in the case of lower extremity above-knee amputations or bilateral lower extremity amputations. In the hospital setting, skin bleeding is the simplest and most common way to determine an amputation level.

Traumatic amputation is the leading cause of upper extremity amputation. Each year, tens of thousands of people lose a limb to some type of traumatic event. Common causes of traumatic amputation include car and/or motorcycle accidents, occupational injuries, and accidents involving consumer products such as farm equipment and lawnmowers.[7]

"As a nation, we must remain committed to ensuring that those living with limb loss have the support they need to reach their greatest potential," wrote President Obama when he designated April 2012 as Limb Loss Awareness Month. "We must also provide those at risk with information that can help prevent this condition. Greater public knowledge of the causes and warning signs is essential to decreasing the rates of preventable limb loss," the letter continued, "and by working with the limb loss community, we can help reduce new cases."

Statistics

- 60 percent of limb loss is preventable.
- 54 percent of limb loss is due to diabetes/vascular disease.
- 45 percent of limb loss is due to trauma.
- Up to 55 percent of diabetics with one extremity amputated will require amputation of the second limb in two to three years.
- Among amputees, smoking cigarettes has been associated with a re-amputation risk 25 times that of nonsmokers.
- In 2009, hospital costs of limb amputation totaled more than $8.3 billion.
- African Americans are four times more likely to lose a limb than non-Hispanic white persons.
- The introduction of comprehensive foot care, including regular visits with a podiatrist, has been associated with reducing diabetes-related amputations by up to 80 percent.
- Nearly half of the individuals who have an amputation due to vascular disease will die within five years. This is higher than the five-year mortality rates for breast cancer, colon cancer, and prostate cancer.

Francisco War, DO, practices as a Rehabilitation Specialist in Baltimore, MD. He may be contacted at drfward@comcast.net. For a complete list of references, contact Susan Raskin at 301.921.4300 or sraskin@montgomerymedicine.org.

References:

1. Guggenheim, W., G. Koch, A.P. Adams, C.S. Hoar, F.C. Wheelock, B. Hills. "Femoral and Popliteal Occlusive Vascular Disease. A Report on 143 Diabetic Patients." *Diabetes* 1969;18:428–33.

2. Dillingham, Timothy R., et al. "Limb Amputation and Limb Deficiency: Epidemiology and Recent Trends."

3. Amputee Coalition Web site at www.amputee-coalition.org.

Military Medicine and Civilian Medicine: A Comparison

Murray R. Berkowitz, DO, MA, MS, MPH

Military medicine is contrasted with civilian medicine. While there are similarities, the most obvious difference is the area of "operational medicine" in the military. The unique challenges of military medicine are presented. The most common medical issues encountered in military medicine are briefly discussed.

Background

The terrorist attacks on the World Trade Center "Twin Towers" in New York City and the Pentagon near Washington, D.C., on September 11, 2001, have brought the population of the United States to full awareness that "it can happen here." Since that time, the United States has been on heightened security and we have seen many of our young men and women in uniform at airports, bus depots, etc. We are currently much more aware of the presence of our service members than at any time since World War II. Nightly, we hear on the news of the service members killed in action. We can easily imagine that for every death, more are wounded. One might think, "I know what 'military medicine' is. I watched *M*A*S*H*. Military medicine is the care and treatment of service members wounded in combat operations"; however, that view is an oversimplification and provides only a part of the total picture. Others may think that military medicine is the care and treatment of soldiers, sailors, airmen, and marines by physicians (and other health professionals) wearing a uniform; this, too, is an incomplete oversimplification. Still others may think that "military medicine" is just "regular" or "civilian" medicine when treating service members—again, another incomplete oversimplification.

There are obvious similarities between "military medicine" and "civilian medicine." Both provide acute and chronic care to their patients. Both utilize hospitals and medical centers. Both engage in teaching future healthcare providers in academic medical centers and residency and fellowship programs. Both provide care for active working-age patients and, where space is available, for their families and for those retired from the workforce (and their family members as allowed by law). Both perform research to advance the state of the art and state of the practice of medicine and public health.

So How Is "Military Medicine" Different?

Why do we have medical professionals in uniform? Simply put, to deploy with troops. As uniformed personnel, they then have the "protections" afforded to uniformed soldiers (by the Geneva Convention). Why are physicians commissioned as officers? In recognition of their advanced education and training and to direct, supervise, manage, and command medical activities in the military.

Unique Challenges of Service Member "Patients"

There are unique challenges in providing healthcare to military service members as "patients." Service members have the potential to go from the most "fit" to most disabled in an instant! This is obviously true in combat operations, and it is also true in so-called "training" (also known as "instrumentality of war"). The most common medical issue in service members is musculoskeletal injury. Low back pain, sprains, and strains (most often ankle and knee) lead the list; fractures follow a close second.[1,2] The prevalence of psychiatric conditions is higher in military personnel than in their civilian counterparts.[3,4] These are followed by "exposure" (due to the extremes of weather, heat, and cold)[5] and infection.[3,6] "Operational medicine" places great emphasis on preventive medicine. It is the responsibility of the Battalion, Brigade, or Division "Surgeon," the Flight Surgeon, or the Ship's Surgeon (these are titles of the commander's chief medical officer and not their medical specialty) to brief the commander on the anticipated diseases and/or occupational hazards involved in the upcoming operation and to prepare the troops with any necessary immunizations or other preventive care.

There are also occupational exposures to toxic substances. These include not just the possibility of exposure to biological, chemical, or radiological/nuclear agents during the conduct of combat operations, but also toxic chemicals or vapors from heavy military equipment; aviation, ship, or vehicle fuels; etc. There is also the possibility of radiological/nuclear exposures in the propulsion systems on naval vessels, both submarine and surface ships. Occupational exposures also include the effects of noise.

The triage of military casualties is different than triage of patients coming into a civilian emergency room. Specifically, the requirements of military missions necessitate the rapid return of the less wounded or injured to the battlefront. Thus, the least wounded or injured are cared for first! This allows for the greatest number of battle troops actively engaged in combat. Civilian triage has long been caring first for the most severely injured in efforts to save their lives. An unfortunate reality of combat is that some severely wounded may die due to the military triage; however, today's combat casualties have the highest survival rate of "direct battle injuries" in the history of warfare. The "return to duty" rate is 97 percent.[7] These military triaging methods are currently implemented as standard practice in today's civilian mass casualty incidents.[8]

Summary

In medical treatment facilities, military medicine and civilian medicine appear very similar. Unique to military medicine, however, is the area of "operational medicine." Military service members operate in hostile environments and are exposed to various occupational hazards, including combat operations. The civilian community has benefitted from advances in military medicine, especially in the arena of preventive medicine. Triage of battlefield injuries has improved civilian emergency medicine. The use of "physician extenders" has been adopted by civilian medicine. Civilian medicine has adopted military methods for mass casualty incidents. The historic advances of battlefield medicine with forward care facilities—the Mobile Army Surgical Hospitals (MASH) of the Korean Conflict—and the aeromedical evacuation and "dustoff" missions of Vietnam are commonplace in civilian medicine.

Most Common Medical Issues in Military Service Members

1. Musculoskeletal injuries including low back pain, and sprains and strains to the ankle and knee
2. Psychiatric conditions
3. Exposure to heat or cold
4. Infection

Murray Berkowitz, DO, MA, MS, MPH, is a tenured Associate Professor. He is Board Certified in Neuromusculoskeletal Medicine and Osteopathic Manipulative Medicine and in General Preventive Medicine and Public Health, and holds additional certification in Occupational Medicine. Dr. Berkowitz is a graduate of the American Osteopathic Association Health Policy Fellowship. He is a decorated former Lieutenant Colonel, U.S. Air Force, who served in both the Army and Air Force, and is a disabled veteran. The content in this article does not necessarily reflect the views of the Department of Defense. Dr. Berkowitz may be contacted at murraybe@pcom.edu. For a complete list of references, contact Susan Raskin at sraskin@montgomerymedicine.org.

References:

1. Jones, B.H., M. Canham-Chervak, S. Canada, T.A. Mitchener, S. Moore. "Medical Surveillance of Injuries in the U.S. Military: Descriptive Epidemiology and Recommendations for Improvement." *American Journal of Preventive Medicine* January 2010 38(1) Supplement:S42–60.

2. Waterman, B.R., A.J. Schoenfeld, C.A. Holland, G.P. Goodman, P.J. Belmont, Jr. "Burden of Musculoskeletal Disease and Nonbattle Nontraumatic Injury in Both War and Disaster Zones." *J Surg Orthop Adv* 2011 Spring;20(1):23–9.

3. Belmont, P.J., Jr., J.P. Goodman, B. Waterman, K. DeZee, R. Burks, B.D. Owens. "Disease and Nonbattle Injuries Sustained by a U.S. Army Brigade Combat Team During Operation Iraqi Freedom." *Military Medicine* 2010 Jul; 175(7):469–76.

Domestic Violence in Military Families: Non-Fatal Strangulation

Andrey Bergin, MA, & Rosalyn Berkowitz, RN, BSN

Strangulation is taught as part of routine military training. High rates of strangulation are seen in domestic violence. Coupled with high rates of domestic violence seen in military families, this could be a deadly combination. The following article discusses the issues medical providers face when treating victims of non-fatal strangulation.

Domestic violence is recognized as one of the most serious health threats to women in the United States, affecting more than 5 million victims. In addition to the resulting injuries, domestic violence increases a woman's long-term risk for many other health problems, including chronic pain, physical disability, drug and alcohol abuse, depression, post-traumatic stress disorder, HIV/AIDS, and depression.[1] The Centers for Disease Control and Prevention (CDC) reported 2,340 deaths in 2007— 70 percent women and 30 percent men.[2]

According to Campbell (1998), abused women are six to eight times more likely to use health services than are non-abused women.[3] Many domestic violence victims do not disclose information about abuse unless asked directly. Asking patients direct questions about their relationships is the only way to determine their risk. Studies show that domestic violence support services can save lives and reduce severe re-assaults by 60 percent.[4] ***Recognizing that the healthcare setting is a first response to domestic violence, Northwest Hospital developed the Domestic Violence (DOVE) Program to provide immediate crisis intervention and follow-up services to victims.***

One form of domestic violence of which the healthcare community is increasingly aware is strangulation. According to a study published in the 2008 *Journal of Emergency Medicine*, "Women who were the victims of completed or attempted homicide were far more likely to have a history of strangulation…."[5] Strangulation is directly related to high risk for homicide. However, identifying non-fatal strangulation poses unique challenges. It has been the observation of the DOVE Program that some victims did not identify as being strangled when triaged or when talking to the nurse or physician. For example, a patient may report that her throat hurts, but neglect to say that she was strangled. Sometimes the information emerges as the patient discloses more detailed information to the domestic violence advocate. Patients may refer to non-fatal strangulation as "choked" or use other phrases, like "jacked up." Additionally, the assaulted patient may have other injuries causing severe pain, such as a fractured orbit after being punched or kicked in the face. The patient may overlook the strangulation because the pain is less and she survived the event.

Sequelae of non-fatal strangulation can be serious, and their occurrence can be immediate or delayed. "Up to 36 hours after the strangulation attempt, the patient can develop edema of the supraglotic and oropharyngeal soft tissue, leading to obstruction."[6] Pneumonia and pulmonary edema "could occur from attempting to breath against a closed glottis."[7] Miscarriage,[8] stroke,[9] brain damage, and death[10] hours, days, or weeks later have additionally been documented.

A study published in the *Journal of Neurosurgery* in 2000 identified three cases of carotid artery dissection in young females with a history of manual strangulation. This illustrates the "susceptibility of the manually compressed internal carotid artery to traumatic injury" and "identifies bilateral symmetrical internal carotid artery dissection as a consistent finding and the real danger of delayed stroke as a consequence of strangulation."[11]

Articles in the 2001 *Journal of Emergency Medicine*, as well as experience by the DOVE Program, show that only 50 percent of non-fatal strangulation victims have any visible injuries. Coupled with the patient not reporting or minimizing the strangulation, victims receive cursory history and physical exams.[12] Noticing this phenomenon at Northwest Hospital, the DOVE Program created a strangulation protocol in conjunction with training to improve the medical response and intervention.

The protocol includes pertinent questions to ask the patient such as: How were you strangled? Were you shaken or thrown to the floor or against a wall? Did you lose consciousness or

continued on page 29

A Motor Vehicle Collision Involving a Veteran:

A Teaching Case from the Joining Forces Teaching Curriculum for Medical Students

Murray Berkowitz, DO, MA, MS, MPH,
Dès Anges Cruser, PhD, MPA,
Alan Podawiltz, DO,
Charles E. Henley, DO, MPH,
Andrew Yuan, DO,
Anita M. Navarro, MEd, and
Tyler Cymet, DO.

The following case is from the AACOM Joining Forces Curriculum Development Group

Note: This case scenario can be acted as a live simulation. The answers to the questions will vary based upon the questions asked and the tests and studies ordered. It is meant to stimulate and expand the thinking when caring for a member of the military or a military veteran.

Emergency Room Presentation

A 28-year-old male is brought to the emergency room (ER) after being involved in a motor vehicle collision; he is strapped supine on a back board with his neck in a cervical collar. The patient was the driver and only occupant of a Ford 150 pick-up truck. Four other people were injured in the accident. Police are at the hospital investigating the accident.

Medical Knowledge: Data show that approximately 45 percent of those involved in motor vehicle accidents who call for help will be seen in the emergency department.[1]

You are the ER physician. What action(s) will you take in managing this patient?

The patient's cervical spine should be stabilized when he is moved. The ABCs—airway, breathing, and circulation—can be assessed from the initial interaction. Initial physical assessment should determine any areas of pain or potential lacerations, abrasions, contusions, or fractures. Assessment should include evaluation of the ankle, knee, pelvis, abdomen, wrists, shoulders, and potential areas that could have borne blunt trauma. The abdomen should be auscultated and palpated. It is expected that the student will indicate performing a focused history and physical examination.

It is expected that the student will ask the appropriate questions to glean the following information:

The patient states that he has no recollection of the accident but has general pain as well as pain in his neck and upper back. The pain is dull with intermittent sharp neck pain. The pain is 5–6 on a scale of 10 with spikes to 7–8. He denies hitting his head during the accident. The air bags did not deploy. He was secured in the driver's seat by the seatbelt-shoulder harness. He denies any alcohol consumption or drug use during the previous 24 hours. The patient denies any history of abuse of any illegal substances or prescription drugs. He is a construction contractor and was on his way home from work when the accident occurred.

What is the next step in managing this patient?

It is expected that the student will now indicate performing a focused physical examination. The physical exam reveals the following:

Tenderness at the spinous processes at C3–5, the costochondral junctions of ribs 3–5 on the left and of ribs 7–8 on the right. There is ecchymosis over the lower right margin of the anterior rib cage. The patient's head is normocephalic and atraumatic. There is no evidence of rhinorrhea and no hemotympanum. There is no epistaxis.

It is expected that the student will obtain cervical imaging (plain x-rays) before removing the cervical collar and order a urinalysis, and possibly a complete blood count and prothrombin time/international normalized ratio (PT/INR). The student should be specific in the labs and the rationale for each test ordered, as well as which radiographic views are needed and why.

Medical Knowledge: Military veterans who have post-traumatic stress disorder (PTSD) and are involved in a motor vehicle collision are less likely to have an elevated heart rate.[2]

When the ER physician orders lab and imaging studies, he overhears a conversation between the EMTs who transported the patients (including yours) and the police. The EMTs found the patient to be "somewhat dazed" but he did not appear to be "high." Two of the other three patients were in the front seat of a

sedan immediately in front of the patient's truck. The EMTs noted that the patients in the car were stopped at a red traffic light at an intersection. The car was pushed from behind by the truck into the intersection where both the sedan and the truck struck a vehicle coming from their right, "T-boning" that third vehicle. The driver and sole occupant of the third vehicle arrived in the ER in unstable, critical condition. The police note that, according to witnesses at the scene, an 18-wheeler in the right lane was slowing for the red traffic light. They stated that as the "big-rig" was slowing, it backfired, and that immediately after the backfire, the pick-up (in the left lane) started to accelerate, crashed into the sedan stopped at the red light, which was pushed into another car that was coming from the right with the "right of way" because it had the green light. All three vehicles came to a stop in the intersection due to the crash scene and all three vehicles were damaged.

The patient is transported to the radiology department accompanied by a police officer. While waiting for the patient to return from radiology, his wife arrives, having been brought to the ER by the police who found her at home waiting for her husband.

It is expected that the student will now indicate interviewing the wife while waiting for the x-ray and lab results.

The wife notes that her husband returned to his civilian job two months ago following his year-long deployment to Afghanistan with his Army National Guard unit.

It is expected that the student will now ask further questions of the wife with particular attention to the patient's sleep patterns, behavioral changes, marital and family relationships, and drug and alcohol use/abuse.

She notes that her husband has trouble falling asleep and wakes up, often multiple times, in the middle of the night due to nightmares. He is easily, "startled by the littlest thing—everything seems to set him on edge." Since arriving home from Afghanistan, he has become "distant" from her and their two children (a four-year-old son born during his earlier deployment to Iraq, and an 18-month-old daughter). They were "high school sweethearts" and have been married six years. She is "really concerned that they will not make it." She does not believe he is using illegal or prescription drugs or alcohol, but, "he doesn't seem interested in the things he used to be." She notes that he sometimes loses focus at work and she is worried about him "getting fired or, worse, getting injured or killed."

When the patient returns from the radiology department, it is expected that the student will ask him about his military service and experiences.

He joined the National Guard right out of high school to be able to get free tuition at the state university in return for his service. He felt good that he might be called upon in the event of a hurricane, flood, or tornado and to help his community. He "learned construction in his combat engineering MOS" (Military Occupational Specialty) classes. He quit college after a year because he "was not doing all that well and it seemed boring." He likes construction because he feels that he "is building something" and "contributing." When asked about his deployments, he reluctantly says, "Yeah, I deployed." (But says nothing more.) When asked where he was deployed, the patient says, "You know, the sandbox." When asked if that means Iraq, he says, "Yeah." But he notes that he just returned from Afghanistan. When reminded that he earlier said that he was deployed to Iraq, the patient responds, "Yeah that was three years before." The patient is asked if he has seen combat and he says simply, "Yeah." The patient is asked if he was evaluated by the military before he was released from active duty. He filled out the forms, completed a bunch of questionnaires, but, "they just kept throwing more paperwork at me; they didn't care. I just wanted to get out and go home, so I said everything was okay."

What is the differential diagnosis for this patient?

It is expected that the student will include at least the following in the differential diagnosis: anxiety, major depression, PTSD, mild traumatic brain injury (TBI), post-concussive syndrome, cervical sprain and strain, acceleration-deceleration injury, muscle spasm, cervical spine somatic dysfunction, thoracic spine somatic dysfunction, costal/rib somatic dysfunction, lumbar spine somatic dysfunction, hip/pelvis somatic dysfunction, sacral somatic dysfunction.

Lab and radiology studies are now available.

Lab Studies:

Insert columns of the results of lab studies ordered appropriately for the reasons given by the students. These results should be in columns with the result(s) and the normal range(s) provided so that the student is required to interpret the results. The student should then look at how these results support or refute any of the conditions on the differential diagnosis.

The radiologist's report reveals no evidence of a fracture or dislocation. There is a loss of lordosis in the cervical spine at C3–6 and loss of kyphosis in the thoracic spine at T3–7. There appears to be bruising of the anterior ribs 7 and 8 on the right; clinical correlation is recommended.

What is the next step in managing this patient?

It is expected that the student will now indicate ordering either psychiatric or neurology consults based upon the differential diagnosis, or some kind of assistance from a mental health professional. The student

should demonstrate that he/she knows that this patient has more than can be effectively treated in the ER, yet should not be released without further evaluation. Referral to a neuromusculoskeletal medicine/osteopathic manipulative medicine (NMM/OMM) specialist on an outpatient basis is appropriate given the number of "regions" of somatic dysfunction.

Psychiatric Consult

You are the attending psychiatrist on the Psychiatric Consultation-Liaison Service and have been asked to examine and evaluate a 28-year-old male combat veteran in the ER following a motor vehicle accident. You review the patient's chart, including the lab reports (which are negative for drugs or alcohol).

You are the consultation-liaison psychiatrist. What action(s) will you take in managing this patient?

It is expected that the student will indicate performing a psychiatric history and physical examination. It is expected that the student will pay particular attention to the social/occupational history and evaluate the patient's affect, mood, thought processes, thought content, cognition, insight, and judgment. The psychiatrist needs to explore homicidal ideation (none) and suicidal ideation ("I wish I wasn't here.… My wife and kids would be better off without me.") Information to be elicited during the psychiatric history based on appropriate questions as follows:

Note: Three scenarios are offered. The psychiatrist is (1) someone who has never served in the military, (2) someone who has served in the military but was never deployed into a combat zone, and (3) someone who served in the military and who served in a combat zone.

Scenario #1:

Psychiatrist: Hello, I'm Dr. _____. I see from your chart that you're a veteran and saw combat.

Patient: Yeah. Were you in?

Psychiatrist: Sorry. I was never in the military.

The psychiatrist will only be able to get the staccato, short answers that are basically the same as the ER physician obtained. The psychiatrist must consider the "poverty of speech" (short, yes/no answers), illusions (misinterpretations of reality—in particular, the backfire of the truck as gunfire or an explosion), and insight and judgment (the patient understanding what really happened and his role in it).

Scenario #2:

Psychiatrist: Hello, I'm Dr. _____. I see from your chart that you're a veteran and saw combat.

Patient: Yeah. Were you in?

Psychiatrist: Served in the Army, but never made it past Lanshtuhl. Saw a bunch of wounded coming through there, though.

The psychiatrist will be able to obtain more fully developed responses. The patient will tell where he served and more about the types of daily missions he went on with his unit. He will still be reluctant to discuss the visual nightmares and flashbacks he suffers based on seeing members of his unit killed or wounded.

Scenario #3:

Psychiatrist: Hello, I'm Dr. _____. I see from your chart that you're a veteran and saw combat.

Patient: Yeah. Were you in?

Psychiatrist: Was in the 82nd. First deployment came across the Saudi border as part of Task Force Hunter back in 2003. Second time was with the 73rd Cav in Tikrit in '06.

The psychiatrist will now be able to obtain full answers with appropriate interaction between patient and physician.More complete responses will be provided by the patient, including descriptions of the patient's nightmares and flashbacks of seeing members of his unit killed and wounded as well as the explosions and attacks he survived.

Note: The participants can explore ways to establish rapport with the patient to obtain more information when the patient appears not to connect with non-military, non-veteran healthcare providers.

What is the differential diagnosis for this patient?

It is expected that the student will include at least the following in the differential diagnosis: anxiety, major depression, PTSD, abnormal grief response (prolonged "survivor's guilt").

What is the next step in managing this patient?

The student should explore the patient's suicidal ideation and determine that the patient does not have a plan (none). The student needs to develop a treatment plan to deal with the depression or depression component of the patient's PTSD. The student needs to fully understand that PTSD is an anxiety disorder and treat accordingly. The student needs to determine whether the patient will be treated first as an inpatient or go to "partial-hospital" or go immediately to outpatient treatment.

Neurology Consult

You are the attending neurologist on the Neurology Service and have been asked to examine and evaluate a 28-year-old male combat veteran in the ER following a motor vehicle accident. You review the patient's chart, including the radiology and lab reports (which are negative for drugs or alcohol).

You are the consulting neurologist. What action(s) will you take in managing this patient?

It is expected that the student will indicate performing a focused neurological history and physical examination. It is expected that upon completing the focused neurological examination, the student will order a head MRI. The student should be specific as to the rationale for ordering the head MRI.

The head MRI reveals bruising of the cerebral cortex in several regions, including the frontal and temporal lobes.

The student needs to interpret that these findings are consistent with mild TBI. As the neurologist and becoming familiar with the latest literature, the student should be led to the literature citing performing newer testing of diffusion tensor imaging to better detect disuse axonal injury, and also consider perfusion-weighted MRI and/or functional MRI to detect hemodynamic response in the brain. The student should also be led to the literature to consider PET for quantifying the ischemic burden after TBI. The student should also be led to the literature to understand that the use of biomarkers such as neuron specific enolase (NSE) and glial fibrillary acid protein (GFAP) are still not of proven clinical efficacy.[3]

What is the differential diagnosis for this patient?

It is expected that the student will include at least the following in the differential diagnosis: mild TBI, post-concussive syndrome.

What is the next step in managing this patient?

It is expected that the student will know that there is no cure for TBI and that both mild and blast-induced TBI are progressive, chronic disorders. It is also expected that the student will be able to perform the needed patient education regarding signs and symptoms and when to come in for further treatment.

Murray Berkowitz, DO, MA, MS, MPH, is Associate Professor of Neuromusculoskeletal Medicine and OMM; Director, Family Medicine/Osteopathic Manipulative Medicine Clerkship; Director, Preventive and Community Based Medicine, Philadelphia College of Osteopathic Medicine.

Dès Anges Cruser, PhD, MPA, is Associate Professor, Medical Education & Social and Behavioral Science Director, Mental Sciences Initiatives Program, Texas College of Osteopathic Medicine.

Alan Podawiltz, DO, is Interim Vice President for Health Affairs, University of North Texas Health Science Center at Fort Worth, Texas College of Osteopathic Medicine.

Charles E. Henley, DO, MPH, is Associate Dean for Clinical Affairs, Marian University College of Osteopathic Medicine.

Andrew Yuan, DO, works at the Southport Medical Center, Fairfield, Connecticut.

Anita M. Navarro, MEd is Research Analyst, Careers in Medicine, Association of American Medical College.

Tyler Cymet, DO, is Associate Vice President for Medical Education, American Association of Colleges of Osteopathic Medicine.

References:

1. Nordhoff, L.S. *Motor Vehicle Collision Injuries: Biomechanics, Diagnosis, and Management*. 2nd edition. Jones and Barlett Publishers, 2005.

2. Blanchard, E.B., E.J. Hickling, T. Galovski, C. Veazey. "Emergency Room Vital Signs and PTSD in a Treatment Seeking Sample of Motor Vehicle Accident Survivors." *J. Traum. Stress* 15:199–204. doi: 10.1023/A:1015299126858.

3. Francati, V., E. Vermetten, J.D. Bremner. "Functional Neuroimaging Studies In Posttraumatic Stress Disorder: Review of Current Methods and Findings." *Depress. Anxiety* 24:202–18. doi: 10.1002/da.20208.

Emergency Open Heart Surgery Under World War II Combat Conditions

The Remarkable Experience of Douglas H. Stone, MD: A Young Baltimore Surgeon

Douglas H. Stone, MD

The following article was originally printed in the Maryland Medical Journal, *which was the former journal of MedChi, the Maryland State Medical Society, before the name was changed to* Maryland Medicine *in 2000. This article was originally published in Volume 48, No. 2, March/April 1999. The Editorial Board of* Maryland Medicine *felt it a fitting piece to reprint in this issue of* Maryland Medicine.

This is my account of the battlefield heart operation performed on Private Terrance "Terry" Kelly Fitzgerald in 1944 during the Normandy Campaign, World War II. A reunion in 1995 revealed a keen interest by the patient and his wife, Vivian, in learning more of what had actually happened to him in Normandy on that pivotal day of his life. Also, for many years members of my family have urged me to record one of my most interesting war experiences.

After Pearl Harbor, academic centers and the medical profession organized to serve our country's armed forces. I joined the Johns Hopkins General Hospital #18. This unit was activated at Fort Jackson, South Carolina, April 20, 1942. I was commissioned as a captain, having completed my general surgical residency the year before at The Union Memorial Hospital in Baltimore.

The Hopkins Hospital Unit was dispatched to the South Pacific and stationed in New Zealand for six weeks. After indoctrination, we went to Fiji. I served there with the Hopkins Unit for another nine months, during which time we cared for 50 wounded marines from Guadalcanal. In Fiji, I ruptured a ligament in my left shoulder helping to build huts for personnel and was ordered back to Walter Reed Hospital, where it was repaired.

The Auxiliary Surgical Groups

While convalescing, I met with Surgeon General Fred Rankin who discussed new assignments that were available. He told me about the newly established Auxiliary Surgical Group Units, which had proven successful in the North African Campaign. These were made up of 40 teams; each composed of three physicians—a chief surgeon, his assistant, and an anesthetist—and a nurse and two GI technicians. He gave me a choice, and I was assigned to the 4th Auxiliary Surgical Group as chief of a team. Each chief was allowed to choose his own assistants from the cadre of other medical officers based on mutual consent.

These special teams could function in field hospitals, in evacuation hospitals, and even with the most forward battlefield clearing stations. When the strategic situation demanded, the team might even have to act independently to provide initial care to the severely wounded. The teams were utilized on a random basis, and being unattached, were sent wherever they were needed most urgently. Nurses, all young women in those days, were usually detached to serve with the evacuation units when their teams were in combat areas. Nevertheless, some were killed in bombing raids. Several of our officers and enlisted men were also killed in action; two of them close friends of mine.

Field hospitals were divided into three platoons, each with a surgical team and about 20 army technicians, tents, operating tables, and all the additional mobile equipment needed to perform forward battlefield surgery. They were the first definitive units in the field and usually backed up the clearing stations, which were designed to administer first aid and triage on the edge of the battlefield. This enabled serious casualties to reach us promptly in the field hospital. Our primary mission was to pro-

vide life-saving surgery to non-transportable chest and abdominal patients who could not survive without immediate attention. The less seriously wounded were transported back to the next in line which was the evacuation hospital. These planned arrangements were frequently disrupted. Sometimes the surgical teams were the very first to treat severely wounded soldiers right on the edge of the active battlefields.

The Normandy Invasion

Our team waded onto Utah Beach two hours after midnight D-Day, June 6, 1944. We were without orders and had no supplies. Nearby on the beach was a Clearing Station. We used their basic supplies and from then on around the clock, we operated on severe chest and abdominal wounds. During this period, our "sterile technique" was truly a fruitless gesture. The sterility of the instruments and the gloves ended with the first patient. Thereafter, we soaked everything in bichloride of mercury solution and used it over and over, until fresh supplies began to reach us.

Living conditions were crude for everyone. For our team, sleep was a ten minute cat-nap on a blanket on the ground, wet or dry, near the saw horses, while the next patient was being prepared. Food was K-rations whenever the opportunity presented. Water laced with chlorine came from a canteen. Every two or three days there was a chance for a shave and a bath out of a helmet.

Our primary mission was to provide life-saving surgery to non-transportable chest and abdominal patients who could not survive without immediate attention. The less seriously wounded were transported back to the next in line which was the evacuation hospital. These planned arrangements were frequently disrupted. Sometimes the surgical teams were the very first to treat severely wounded soldiers right on the edge of the active battlefields.

This unrelenting battlefield experience gave us a fine honing in emergency techniques and in teamwork which prepared us well for the challenges to follow. Though there were a few replacements, the team work remained superb.

The St. Lô Offensive

On July 3, 1944, my surgical team was sent forward, a little before daylight, to provide medical support to the ferocious attack on St. Lô, which was part of the desperate Allied "Breakout" attempt in Normandy. It was raining.

We moved out in a weapons carrier, my team of five—three officers and two medical technicians. Also, we had adriver and a helper, plus two x-ray technicians with portable battery-operated machines and lights. We were equipped with a Heidebrink anaesthesia machine, my Army issue bag of excellent surgical instruments, and a dozen bottles of type "O" universal donor blood. In addition, we had containers of sterile dressings, antiseptic solutions, rubber gloves, adhesive tape, needles, sutures, etc., and finally, we had two saw horses (my "operating table").

Every day we received a generous number of units of whole blood. (Later in the war, most were drawn in the United States within the previous 24 hours, were flown overseas in bombers, then in light planes, and finally delivered via Jeep to our surgical teams in action.) Blood transfusion in itself saved many lives of the severely wounded.

The battle was raging. We pulled up as close to the action as we dared, behind a little rise. Just beyond, and on the other side of the rise, we saw a big excavation in the ground, perhaps 10 by 12 by 6 feet. The rise was probably the dirt thrown up from the hole. The opposite side of the pit was sloped and marked by fresh tank tracks. No doubt it was an abandoned German tank pit or gun emplacement. The rise pad been thrown up by the enemy toward the English Channel for protection from our expected invasion forces. But now that the Germans had been driven out, we used the pit, and so the rise gave our weapons carrier some shelter.

We jumped into the excavation, unloaded our saw horses and other equipment and prepared to go to work immediately. It was raining steadily and we were all out in the open, soaking wet and muddy. Now that the rise was behind us, we were not well protected from German fire, except for being down in their tank pit. For a while the rain fell on us and in the open wounds as we were operating. Later, our resourceful men rigged a makeshift cover for us, taking canvas from the top of the weapons carrier.

At this point there was a shell burst nearby and very shortly two corpsmen slid a litter with a badly wounded soldier on it over the muddy edge of our hole. He was not breathing and had no detectable pulse. The medical corpsmen litter bearers looked at me, shook their heads dolefully, and scrambled back over the rim of the hole to return to their rescue of the battlefield wounded. These brave battlefield corpsmen saved many lives, sometimes losing their own in their attempts.

We immediately decided to give this man his chance, slim as it seemed. The litter was put across the saw horses and while I soaked my hands in bichloride solution and pulled on sterile gloves, our technicians cut away his shirt with their combat knives. This exposed a "sucking" wound of the upper right chest. The wound had been stuffed with a piece of GI raincoat to prevent the sucking action. Terry says he remembers the corpsman doing this, right on the spot where he was wounded, "to keep me from suffocating," he was told before he lost consciousness. Terry also remembers that it was raining. He even recalls passing the German pit that just minutes later would be the site of his operation.

The patient was unable to breathe on his own. Our anesthetist immediately applied a mask to the patient and pumped in oxygen under manual pressure to the rubber bag attached to the machine. This artificial respiration also helped to inflate the remaining functional lung, the other having collapsed. Simultaneously one of the technicians swabbed the chest wall with antiseptic solution, and then he soaked his hands and became our instrument man. I quickly threw four sterile towels around the wound site and made an incision directly through the skin wound. It was necessary to rapidly remove sections of four ribs to give myself room in which to operate. The chest cavity was full of blood. I actually had to bale it out by the handful. Our technicians got the suction working, which enabled me to see the damaged area. They were unable to insert needles into the collapsed peripheral veins to give the crucial blood and electrolyte

fluids. I told the technicians to remove the blood pressure cuff from the patient's arm and to wrap it around the blood donor bag. This improvisation was in anticipation of the need to steadily force the blood to flow faster through the tube into the heart.

By this time I had the heart exposed and moved gently to the patient's right. The critical wound was an elongated vertical gash into the right ventricle, now barely oozing blood. I plugged the gash with my right index finger along the wound and while holding the flaccid heart in the same hand gently and rhythmically massaged it. With my left hand I took the large donor needle from the technician having to ignore "sterile" technique, and inserted it into the right atrial chamber of the heart. Three liters or more of blood were given as rapidly as possible. The effect was magical. Veins grew visible in the arms, and more blood was started in them. The above actions were crucial, making it possible to proceed with the definitive operation.

With my finger still plugging the deep gash, I took a large curved Bloodgood suture needle in the left hand, passed it deep through the full thickness of the heart muscle on one side of the gash, under and around my finger and into and out through the full thickness of the heart muscle on the other side. This was done quickly four times in a row. Then, as I slid my finger out, all four sutures were pulled up gently by Bill Moore, my assistant. I quickly tied square knots in each suture one by one, snugly, but not tightly. Over this incision I sutured a flap of pericardium to cover and support the closure. The sac itself was not fully closed for fear a possible accumulation of blood into the empty sac might compress the heart and inhibit its action or cause localized infection.

After closure of the heart wound had been completed, I resumed cardiac massage to the flaccid heart muscle and could feel it perceptibly firming up and fibrillating. Soon a little rhythm or beat was detectable. As I continued this action, the patient began to change color from paper white to pale pink. His veins were filling up, so now they could be used to give additional blood more rapidly. We all gave a heartfelt sigh of relief. We knew we had won the all-important first round and had made a good start.

By now all bleeding had stopped. The patient had received and retained an estimated five liters of whole blood, was showing an even better color, and had a detectable pulse.

Finally, we checked around the chest cavity for "bleeders," using the suction apparatus to empty all fluid and to get a "dry" chest. A couple of hemastatic sutures were quickly placed in a shallow laceration of the right lung. We then inserted our drains through stab wounds into the chest cavity, instilled 40,000 units of penicillin into the chest, sprinkled sulfanilamide powder into the chest and tissues, and carefully closed the incision in layers.

Terry did not develop an infection, despite the primitive circumstances of his wounding and operation. We were constantly amazed at how few infections there were in these hardy, healthy young soldiers. It was only towards the end of the Beachhead action that penicillin became available to us in the field and seemed to be so effective and precious.

Our battery-operated field x-ray machine films revealed to us that there was a jagged piece of shrapnel about one inch long by a half inch wide which appeared to be embedded in the liver below the diaphragm, slightly to the left of center. Experience had taught us that to attempt to remove this would have required major additional surgery which was out of the question in this situation. It had also taught us that unless such metal fragments were the cause of major bleeding, which was not the case here, they seldom caused trouble. To this day, the shrapnel is still visible by x-ray and has caused no further harm.

The patient informs me that he is sure this was a fragment from a mortar shell fired from a German tank hiding behind a little village church nearby. He and his patrol had been ordered to knock out that tank. It was probably the tank that had previously occupied our pit.

We surmised that Terry had thrown himself forward; the shrapnel had entered his chest just under the right clavicle, cut the slice through the muscular wall into the chamber of his heart, and passed through the diaphragm and into the liver, slightly to the left of center.

When Terry was brought to us by the medical corpsmen, our technicians could not find his dog tags. They could not fill out his "EMT" [emergency medical tag]. It was deduced from the location of his wound that the shrapnel had cut the chain supporting his identification and that his dog tags were lost on the battlefield. We did not know who he was or what outfit he belonged to. We couldn't identify him from the content of his pockets. It was onIy when he regained consciousness, days after the operation, that he established his identity. Terry said if he hadn't survived, he might now be occupying the Tomb of the Unknown Soldier.

It was providential for Terry, not only that the wound in his heart did not involve the major cardiac vessels or nerve trunks, but also that he was our first patient that day at that particular battlefield. One of the most painful things that casualty surgeons had to do was to decide after careful, thoughtful triage which of those desperately wounded to operate on first.

Terry had been sent back immediately to the platoon hospital in the weapons carrier with an attending technician. As other patients were operated on they too were sent back, though at times some waited on the wet ground wrapped in blankets.

The returning weapons carrier brought us fresh supplies of wrapped sterilized instruments, sutures, dressings, blood, IV fluids, antibiotics, as well as K-rations, water and more blankets.

The casualties kept coming in all day and the next night and we were very busy. We even worked to save some desperately wounded German captives, after first caring for all our American soldiers

As the battle moved away from us and the patients dwindled, we moved back to the hospital platoon. We operated on the last of our patients in the luxuries of tent cover, replenished supplies at hand, and with much more effective sterility. The hospital platoon stayed there for three more days to care for our postoperative patients. Terry was doing extremely well. Being the exuberant youth that he was he actually got himself off his cot and onto his feet for a few seconds before being quickly ordered back to his cot. This happened just before the hospital was ordered forward and our postoperative patients were turned over to a holding company for further care. In one of his recent letters, Terry wrote that after that episode, unremembered by him, he was not ambulatory until he returned to the United States. He had been told by a nurse shortly after his operation: "Captain Stone operated on me immediately. He cut four of my ribs away, reached inside my chest and pulled my heart to the right. He removed the blood from my chest and held his finger in the hole in my heart to stop the flow of blood. My veins collapsed, and Captain Stone injected blood directly into my heart and veins. They said I had been declared dead once during the operation but Captain Stone would not give up." Terry was sent back along the chain of military hospitals in Normandy to England and finally to the United States.

continued on page 33

PERSONAL PERSPECTIVES

Below, some of our MedChi members share their experiences of serving in the military.

Walter Reed Medical Center Training Was Superb

I am a retired orthopedic surgeon. The Dean of my medical school was chief consultant to the Army for internships and residencies. In an interview, he suggested that I apply to Walter Reed Army Hospital for my internship. At that time (1954), Walter Reed was considered one of the top teaching hospitals in the country. I was very happy to be accepted. The Korean War had just ended and we were responsible for caring for the troops injured during that conflict. The experience was invaluable. Besides treatment of war injuries, Walter Reed served as a community hospital for Army personnel and dependents. We even had an ER, pediatric and ob-gyn services, and other departments. I rode the ambulance, as was usual in those days, picking up injured soldiers at Suburban and Washington Adventist Hospitals. The internship went very well. I remained at Walter Reed for additional general surgery and orthopedic training. Following completion of my residency, I was transferred to Fort Benning, Georgia, as assistant chief of orthopedic surgery. The professional experience gained there and the life-long friends we made were wonderful. After four years in Georgia, I left the Army and returned to Montgomery County to practice. I will always be grateful to the Army for my training and the broad experience afforded to me.

George Schonholtz, MD
Montgomery County, Maryland

Genitourinary War Injuries: Changing Injury Patterns, Increasing Congressional Awareness

I am a urologist in private practice and an Army Reservist of 12 years. I had the privilege of deploying with the 399th Combat Hospital to Mosul, Iraq, in the winter of 2006. The Iraq and Afghanistan theaters have witnessed new and increasingly complex patterns of genitourinary injury. The combination of improvised explosive device becoming the weapon of choice and the increasing time spent on foot patrol have led to an increase in devastating blast injuries from below. Genitourinary injuries, though less common than extremity injuries and not publicly visible, are no less debilitating both functionally and psychologically.

Genitourinary war injuries are just now beginning to get the attention they deserve at the congressional level. As a member of the American Urological Association's (AUA) Legislative Affairs Committee, I am leading an AUA task force to steward HR 1612 through the 113th Congress next year. Promulgated by the AUA, the bill establishes a National Commission on Urotrauma. The Commission is a combined effort of the Departments of Defense, Health and Human Services, and Veterans Affairs. It will study and report to Congress on the current state of battlefield urotrauma and develop a framework for improving the care and rehabilitation of this unique group of wounded warriors. From identifying resources, to coordinating public/private partnerships in the reconstruction and rehabilitation of genitourinary injury, to providing comprehensive fertility therapy, there is much to be done for these finest of Americans who have sacrificed so much for our great nation.

Mark T. Edney, MD
Salisbury, Maryland

Now That's Tough

I had numerous experiences during my time in the service, such as an Arctic deployment, a rendezvous with a nuclear submarine, and engagements with Russian "trawlers," but one small incident has remained with me all these years.

In 1970, while I was working in the base emergency rooms, a soldier was brought in by two of his comrades. An airborne unit was doing practice jumps from planes (not platforms) and this unlucky paratrooper had injured his leg during landing. Keep in mind that equipment was not as sophisticated as it is today and hard landings were common.

On examination, he was in severe pain with a markedly swollen knee. X-rays showed no fracture (CT scans and MRIs were not yet being utilized). I recommended staying in the hospital for treatment. He held up his hand and said, "No thanks, Doc. Just give me a pain shot and a splint. I've got more jumps to do." I remember thinking he must be deranged. I asked him how he expected to land safely in his situation and he responded, "I'll just land on my good leg." He said he would deal with the injured leg later. I did what he requested but have often wondered how everything turned out for him. To me this was an example of why I would not want to be fighting against our military then or now.

Jack Francis, MD
Gaithersburg, Maryland

A Reassignment that Changed My Career Choice

My service experience in World War II changed the whole course of my life for the better. In 1944, I was in my first year of school at Johns Hopkins University majoring in chemical engineering. I volunteered for the Air Force and was accepted into air cadet training. Shortly after completing basic training,

my cadet class was temporarily assigned to an Air Force Base before continuing flight training. Someone, seeing Johns Hopkins University listed on my resume, assigned me to the base hospital, where I worked as a lab technician and had the chance to see the excitement and fascination of medicine!

After being discharged, I returned to Johns Hopkins University as a premed student and completed medical school, internship, residency, and advanced public health training. Sixty years of working in international health brought me far, far greater satisfaction and happiness than engineering ever could have.

Timothy Baker, MD, MPH
Baltimore, Maryland

Treating Soldiers During the Korean War

As a lieutenant in the Medical Corps, U.S. Navy, during the Korean War, our biggest challenge was dealing with soldiers with medical issues due to the sub-freezing weather. Temperatures reached minus 60 degrees Fahrenheit at night. When standing in line, marines would monitor each other for signs of frostbite and try to help each other. It is difficult to describe in 200 words how horrific the conditions were for soldiers and all medical personnel attempting to assist them. Fighting the cold was as difficult as fighting the 125,000 surrounding Chinese soldiers. Evacuating the wounded was a challenge due to airstrips covered in ice. Many of those wounded lost toes, other limbs or their lives due to the difficulty of evacuating them.

Sixty-one years later, I still remember those who lost limbs, due to the ravages of sub-freezing temperature exposure. We all feel lucky to be alive.

Stanley I. Wolf, MD
Bethesda, Maryland

Readers can find a published article by Dr. Wolf called, "*The Chosin Reservoir: Medical Care in Subfreezing Weather*" *in the June 2012 issue of* Leatherneck Magazine, The Magazine of the Marines *(http://www.mca-marines.org/leatherneck/issue/leatherneck-june-2012-issue).*

Domestic Violence ...

continued from page 19

feel dizzy or faint during or after being strangled? Did you urinate, defecate, or vomit? Are you experiencing neck/throat pain, dysphonia, dysphagia, or difficulty breathing? The protocol also includes directions for completing a pertinent exam, such as examine the neck (including the back of the neck), face, eyelids, mouth, shoulders, chest, chin, and behind the ears. Look for subconjunctival hemorrhage, bruising, ligature marks, finger and handprint marks, or petechiae about the face, eyes, mucous membranes, and scalp, or marks from the patient's struggle to release the perpetrator's hold on him/her. (A lack of petechiae does not indicate that strangulation did not occur.) In addition to other indicated tests, a soft tissue CT scan of the neck with intravenous contrast should be done to evaluate the structures of the neck as well as the vasculature of the neck. Admission for 24 hour observation is recommended based on the symptoms/findings.

Non-fatal strangulation should always be taken seriously. It is important for emergency department medical providers to ask the right questions in order to elicit the information needed to complete a thorough evaluation. It is unclear how many victims of strangulation have subsequently had strokes or other severe occurrences. It is clear, however, that this topic needs additional research.

Audrey Bergin, MA, has been Manager, Domestic Violence Program (DOVE) since 2004 and Rosalyn Berkowitz is Clinical Leader, Emergency Department at Northwest Hospital in Randallstown, MD. They may be contacted at 410.496.7555 or abergin@lifebridgehealthy.org. For a complete list of references, please contact Susan Raskin at 301.921.4300 or sraskin@montgomerymedicine.org.

References:

1. Population Information Program. (1999), Building Bridges Between Domestic Violence Advocates and Health Care Providers. *Building Comprehensive Solutions to Domestic Violence*, #6. National Resource Center on Domestic Violence and the Family Violence Prevention Fund.

2. Centers for Disease Control. (2012) *Understanding Intimate Partner Violence*. Atlanta, GA.

3. Campbell, R. (1998) "Making the Health Care System an Empowerment Zone for Battered Women." In J.C. Campbell (Ed.), *Empowering Survivors of Abuse: Healthcare for Battered Women and Their Children* (pp. 241–58). Thousand Oaks, CA: Sage.

Dr. William Beanes, Treating Enemy Combatants, and the "Star Spangled Banner"

HISTORICAL PERSPECTIVES

Sandra Rowland, MS, MA

There are many stories of the involvement of Maryland physicians in the early history of the nation, including the Revolutionary period and the War of 1812. Perhaps the most prominent of these is the story of Dr. William Beanes and his connection to Francis Scott Key and the composing of the "Star Spangled Banner" during the War of 1812. Since this is the bicentennial anniversary of this conflict, it is worth repeating the story even though many MedChi physicians are already familiar with it. This story also touches on the theme of treating enemy combatants, which continues to be an important ethical issue for physicians. If it were not for Dr. Beanes, Francis Scott Key would not have been on a ship in the Harbor of Baltimore to witness "the rocket's red glare…."

Dr. Beanes was born in Prince Georges County, Maryland, and studied medicine under one of the medical men in his neighborhood. He was both a physician and a statesman and was one of the founders of MedChi, the Maryland State Medical Society (at that time known as the Medical and Chirurgical Faculty of Maryland). He treated revolutionary soldiers from the Battle of Brandywine, the Battle of Long Island, and Valley Forge.[1] He married Sarah Hawkins Hanson and had a large parcel of land and a home in Upper Marlboro. By August 1814, Dr. Beanes was one of the few residents who stayed after the British invasion. General Ross, Commander of the British Army, used Dr. Beanes' home as his headquarters, apparently with permission, where Dr. Beanes treated wounded British soldiers and offered supplies to the British who bought horses and other goods from him.[2] From Upper Marlboro, the British continued their march into Washington, where they burned the White House. On the way back through Upper Marlboro in late August, some of the British soldiers, who may have been deserters, were caught plundering and stealing. Dr. Beanes and some other landowners in the area had them thrown into the county jail. When the British commander, General Ross, heard about the imprisoned British soldiers, he became incensed and had Dr. Beanes arrested for interfering with British troops. At the time, Dr. Beanes was 65 years old. U.S. Brigadier General William Winder protested the arrest and demanded his release in a note to British authorities. Winder wrote:

I am informed that a party from your army took Dr. Beanes, a respectable, aged man out of his bed, treated him with great rudeness and indignantly took him to your camp and that he is now on shipboard.… I hope on inquiry, justice and humanity will induce you to permit the doctor to return to his family as speedily as possible.[3]

The British refused to release Dr. Beanes and friends of the doctor sought the help of a well-known lawyer in Georgetown, Frances Scott Key. With the permission of President James Madison, Key and John Skinner, the U.S. Prisoner Exchange Agent for the region, set out in a flag of truce vessel, the *H.M.S. Minden*, to find the ship where Dr. Beanes was being held in the Chesapeake Bay. Before heading out, Skinner had collected letters from British soldiers who had been treated by Dr. Beanes attesting to his character and the excellent medical treatment they had received. When they arrived at the vessel holding Dr. Beanes, Skinner presented the letters to General Ross, who relented and decided to release Dr. Beanes. Many historians believe that the letters brought by Skinner were what convinced Ross to agree to Beanes' release. So the three Americans—Dr. Beanes, Francis Scott Key, and John Skinner—were allowed to go back to the *H.M.S. Minden*. However, since the British felt that the three knew too much about the British forces and plans of attack, the ship was tied up to another British ship and was detained for the duration of the Battle of Baltimore. The men spent the night witnessing the battle with a view of Fort McHenry where the Stars and Stripes was flying. On the morning of September 14, the British broke off the attack and were retreating when the three Americans witnessed that "the flag was still there." Inspired by his experience in the Battle of Baltimore, Francis Scott Key immediately penned a poem, which eventually became our national anthem. Were it not for Dr. Beanes, Francis Scott Key would not have been witness to this historic battle and we may never have had the "Star Spangled Banner." Dr. Beanes himself lived the rest of his life in Upper Marlboro and died at the age of 79 in 1828.

Sandra Rowland, MS, MA, is Executive Director of the Center for a Healthy Maryland. She may be reached at 1.800.492.1056, ext. 3336 or srowland@medchi.org.

References:

1. Magruder, Jr., Caleb Clarke. *Dr. William Beanes, The Incidental Cause of the Authorship of the Star Spangled Banner*. Records of the Columbia Historical Society. Washington, D.C.: Columbia Historical Society (1919); pg. 212.

2. Heidler & Heidler. *The Encyclopedia of the War of 1812.* Westport Connecticut: Greenwood Press 2002, pg. 20.

3. Victor, Weybright. *Spangled Banner.* New York: Farrer & Rinehart, Inc. 1935, pg. 112.

Black and White

WORD ROUNDS

Barton J. Gershen M.D., Editor Emeritus

From Auguste Dupin to Sam Spade, Ellery Queen, and Hercule Poirot, the phrase "shot at point blank range**"** has been a favorite of the master detective. It indicates someone shot at very close range, usually sufficient to leave gunpowder residue on the victim's clothes. The expression **point blank** derives from French *pointe*: "small hole or dot" plus French *blanc*: "white"—that is, the small white dot in the center of a target. Thus, one who hits the *pointe blanc* has hit the "bull's eye" of the target. Through years of linguistic evolution, point blank has come to mean "close range."

The word **blanch**, meaning "to turn pale or white," also derives from the French word *blanc*—as does the feminine name **Blanche** (describing a fair maiden). **Carte blanche** is a French expression meaning a "white or blank card" (one upon which nothing has been written), and metaphorically gives the recipient complete freedom to do as she wishes. The English version—a **blank check**— has the same meaning—the term "blank" deriving from French *blanc* as well. An empty space (as in a sentence) is also **blank**, and **blank cartridges** have gunpowder but no bullets. A **blank expression** alludes to an emotionless or "empty" facial appearance. **Blanket** also derives from the French *blanc*, the diminutive form of which is *blanchet*: "a little white woolen cloth," and originally referred to a small towel or washcloth. Gradually this sense changed to mean a large cloth used as a bedcover. (If the Australian actress Cate were doused with water, would they call her a "**wet Blanchett**?")

When someone blanches, they turn **pale**, deriving from Latin *pallidus*: "wan or white-faced," as the heroine of a Thomas Hardy or George Eliot novel often appears. **Pallor** obviously stems from the same Latin root; however, the derivation of the verb **appall** may not be so clear. It too, derives from Latin *pallidus* through French *apalir*: "to grow pale." Thus, to be appalled is to become pale with emotion. In grade B westerns the Indian chief often characterizes his white oppressors with the prosaic and derogatory words "**pale face**."

Another word for white stems from the Latin *albus* and may be found in such words as **albino**, **albumen**, and **albedo**. The first word in this series describes a human or animal with insufficient melanin, the second identifies the white of an egg, and the third refers to the amount of light reflected off the surface of planets and moons—defined as the ratio of reflected luminosity from the surface to the incident light upon it. One of the common vestments worn by Roman Catholic and Anglican priests is a long white tunic known as an **alb**, once again a product of the Latin *albus*. A somewhat more obscure derivative is the word **album,** alluding to the blank pages of a book onto which are glued photographs and other memorabilia. A change in the letter b to p resulted in the word **alp**, the famous white, snow capped mountains of Switzerland.

In medieval elegiac poetry **Albion** was often used to indicate the island of Great Britain. That word undoubtedly referred to the chalky white cliffs on its southern coast—the **White Cliffs of Dover**. An early term for Scotland was **Albany**, also stemming from Latin *albus*. The **Duke of Albany** was a peerage title often bestowed on the younger sons of Scottish royalty. In the early 1600s, the Dutch built a village along the upper Hudson River and named it Beverwyck. In 1664 the British captured that village and its nearby fort and renamed it **Albany** in honor of the English Duke of York, who also held the title of Duke of Albany, and who later became King James II of England. Both the state of New York and its capital Albany were named in his honor.

The dense white membrane covering the testis is called the *tunica albugenia*, derived from Latin *albus*, and the early Romans named much of the land bordering the Caspian Sea **Albania** because of its white snow-covered mountains. That land is now the country of **Dagestan**, located in the northern Caucasus Mountains. The suffix *–stan* is from ancient Persian and means "land or country." *Dag* is Turkic and means "mountains"—thus **Dagestan** means "land of mountains." **Turkmenistan** means "land of Turkic people," **Tajikistan** means "land of the Tajik peoples," **Afghanistan** means "land of the Afghanis," etc. The name **Pakistan**, however, has had a somewhat different origin. In 1947, Great Britain subdivided India and created a new and largely Muslim nation. This country was carved out of India's northern regions and its name was a composite acronym of: **P**unjab, **A**fghania, **K**ashmir, **S**ind, and Baluchi**stan**—creating "**Pakstan**." (The "i" was added later to make pronunciation easier.) *Pakistan* also means "land of the pure" in the Urdu language, giving the country's name additional significance.

Johann Friedrich Blumenbach (1752-1840), a German anthropologist and physician, was the first person to attempt a racial classification of humans. He divided people into Americans (red race), Malayans (brown race), Ethiopians (black race), and Mongols (yellow race). Blumenbach predicated his original work upon meticulous measurements of 60 skulls. One of those skulls was a complete and pristine skull found in the Caucasus Mountains. Blumenbach's measurements convinced him that this was a perfect specimen from someone of the white race—therefore he called that racial division **Caucasian** from its initial place of discovery. We owe to Dr. Blumenbach and his archaic classifications that familiar and wearisome designation "…a Caucasian male"…" heard frequently on television programs, over police radios, and in Grand Rounds presentations. Unfortunately, the Nazis also utilized his system to validate their extermination of "inferior" races.

Although there are several terms that have been used to denote "white," there are fewer words that specify "black." **Ebony** derives from Greek *ebenos*, mean-

continued on page 33

CLASSIFIEDS

EMPLOYMENT

INTERNAL MEDICINE: Call Sharing. Solo physician in Olney, MD, looking to share call with other physician(s) in nearby area. Flexible. Call 301.768.2169.

INTERNIST: Part-time. Join an extremely successful internal medicine group practice in Bethesda, Maryland. Seeking a part-time BC/BE Internist to job share with an established female physician as part of our group of 8 Internal Medicine physicians. Position is 5 sessions per week and is out-patient only. This practice is busy, growing, and offers the potential for partnership. Please email curriculum vitae to alt@ppa.md.

PRIMARY CARE PHYSICIAN: Seeking IM/FP physician, FT or PT, for a well-established and growing practice with offices in Silver Spring and Rockville. Competitive salary and benefits, no call, friendly atmosphere. E-mail office@mhcmd.com or call 301.452.4062.

LEASE/SUBLEASE/SALE

BETHESDA: Attractive office space for rent in physician's practice w/private office, exam rooms, and shared waiting room ready for use. Walking distance to Metro, parking garage, or on street and county garage across street. Please call Avelene at 301.656.0220.

FOREST HILL: Office space available in a quiet professional building. Includes utilities, phone, copy, fax machine, receptionist area, waiting room, and parking. Two examination rooms and all other necessary accommodations for an MD (sink, closets, file areas, etc.). Part-time availability (1-3 days a week). Please contact Dr. Schmitt at 443.617.0682 or Dr. Legum at 410.852.0582.

FREDERICK: Office space to share. Approx. 2000 sq.ft. Bright & modern office on Guildford Dr. available to share (with some PT equipment). Waiting room and front desk. Perfect for internal medicine/family practice looking to expand to Frederick area. Hours and rent negotiable. Inquiries to goldfay2011@gmail.com.

GAITHERSBURG: Successful pediatric clinic, fully staffed, seeking physician to take over practice. Large office. and well established in the area. To inquire call Robert Gottschalk at 202.530.3300.

GERMANTOWN: Medical office space for lease in Germantown. 4000 sq.ft., Lots of Free Parking, Easy Terms. One Block to New Holy Cross near Montgomery College, Germantown. Call 301.502.1833 or 301.515.6971 after 6 pm.

GERMANTOWN: Ambulatory Surgery Center in Germantown approved by Medicare, AAAASF for Lease, Partnership, or Sale. Multi-speciality, GI, PM, Urology, Surgery. One Block to New Holy Cross near Montgomery College, Germantown. Call 301.502.1833 or 301.515.6971 After 6 pm.

GLEN BURNIE: For sale or lease. 1,100 sq.ft. surgical/medical office next to BWMC. 3 exam rooms, large waiting room, ample parking. Call 410.923.5665.

PASADENA: Dental office, to share rent. Perfect for dermatologist. Available 4-5 days/week. Call 410.889.1200.

ROCKVILLE: 1,200 sq. ft. office next to Shady Grove Hospital. Available afternoons and weekends. 301.424.1904.

SILVER SPRING: Doctors Medical Park. Private business office and consult room with shared exam rooms. Ample free parking. Minimum 3 half days per week. Call 301.681.7800.

SILVER SPRING, DOCTORS MEDICAL PARK: Georgia Ave. and Medical Park Drive. Close to Holy Cross Hosp., ½ mile north of #495. 3 building medical campus totaling 95,000 sq. ft. with over 100 medical practitioners and Clinical Radiology's HQ. 2 suites 1400-2750 sq.ft. avail. immediately. Call Steve Berlin at Berlin Real Estate, 301.983.2344 or steve@berlinre.com.

SILVER SPRING/WHEATON: Lower your overhead expenses by subleasing or sharing medical office space. Luxurious penthouse suite with 3200 square feet, 7 treatment rooms, surgery center, equipment and staff available. All medical specialties welcome. Call: 301.949.3668.

TOWSON: 2,087 square feet of second floor medical space available for lease at 660 Kenilworth Drive (directly across from Towson BMW). Suite is fitted for medical professional and landlord will build out to suit tenant's needs. Lease rate includes full utility and janitorial service. Attractive two story professional building with convenient and ample free parking. Caring on-site ownership and management. Excellent access to I-695, I-83, Timonium and downtown Baltimore. To discuss or see, call David Miller at 410.321.9558.

WHITE MARSH: Office to share. 5 exam rooms incl. procedure rm. Nicely furnished. Call 443.690.4062.

WHITE MARSH: Make me an Offer! Sublet my nice 2150 sq ft doctor's office on Belair Road in White Marsh. 5-6 exam rooms, lots of parking and easy access. Call 443.690.4062.

OTHER

CLINICAL TRIALS: We are recruiting motivated, detail-oriented physicians as sub-investigators for diabetes-related clinical trials. If interested, please contact 301.770.7373.

FOR SALE

MEDICAL EQUIPMENT: Two examination tables, EKG machine, computerized Burdick holter moniter with computer, printer, portable spirometer and autoclave. All in good condition. Asking price for all $7000. Price negotiable. Contact maduraprabhakar@hotmail.com.

MEDICAL EQUIPMENT: Diomed Laser (vein closure), Ritter Automatic Exam Table, Xray viewbox with 3 viewing windows. Inquiries call 301.325.3212.

Black and White ...

continued from page 31

ing "black," and originally referred to the hard, black wood of many species of Persimmon trees native to Africa and Asia. The term **ebonics**—formed from ebony and phonics—was invented by African American social psychologist Robert Williams to denote the vernacular English of many African-Americans. [1,2,3]

Stygian springs from the mythological Greek river Styx, which was said to divide Earth from Hades (the underworld). The macabre ferryman Charon transported souls of the newly dead across that river into Hades. This place was dark as night and guarded by the three-headed canine monster Cerberus. Thus the adjectival word stygian has come to signify blackness.

Melanin and **melanistic** derive from the Greek word *melas,* the genitive form of which is *melanos* meaning "dark or black." When one is sad, depressed, and looking on the dark side of things, he is said to be **melancholic**, from *melas*: "black" and *chole*: "bile" (as in cholangitis, cholecystectomy, etc.) Black bile was one of the four body "humors" or liquids that ancient physicians believed would trigger different personality types. In this case, black bile produces sorrow, despondency, and melancholy.

Polynesia consists of over 1,000 islands located within Oceania, including the islands of Hawaii, Samoa, Easter Island, New Zealand, etc. (From Greek *polys*: "many" and *nesos*: "islands.") Northwest of Polynesia is another group of 1,000 islands, including the Marianas and Wake Island. These are much smaller in size and are known as **Micronesia** (from Greek *mikro*: "small" plus *nesos*: "islands." South of Micronesia lie several islands, including Fiji, New Guinea, and Vanuatu, which comprise **Melanesia**—named for its dark-skinned residents.

The Latin word for black is *niger*, which evolved in Spanish to become *negro*. **Niger seeds** are black seeds richly endowed with oils, and a favorite food of finches—especially the goldfinch. The countries of **Niger** and **Nigeria** in Africa, however, were not named for the skin color of their citizens. They were named for the **Niger River**, which courses through both countries. That river's name, in turn, derives from the Tuareg language as *egereou n-igereouen*, meaning "big river." The British and French colonial powers shortened the name egereou **n-iger**eouen to Niger.

That fact is written down in black and white. It's called a dictionary.

Barton J. Gershen, MD, Editor of Maryland Medicine*, retired from medical practice in December 2003. He specialized in cardiology and internal medicine in Rockville, Maryland. If you are interested in purchasing a copy of* Word Rounds: A History of Words (Both Medical and non-Medical) and Their Relationship to One Another *by Dr. Gershen, please contact Flower Valley Press, P.O. Box 83925, Gaithersburg, Md. 20883, or www.amazon.com.*

References:

1. Williams, Robert. "Ebonics as a Bridge to Standard English." *St. Louis Post-Dispatch* January 28, 1997): pp. 14

2. Baugh, John. *Beyond Ebonics: Linguistic Pride and Racial Prejudice.* New York: Oxford University Press (2000). ISBN 0-19-512046-9.

3. http://en.wikipedia.org/wiki/Ebonics.

WWII Heart Surgery ...

continued from page 27

In June 1995, while my wife, Essie, and I were on an automobile trip through the West, we made a search for Terry, and found him in his comfortable home in Fonda, Iowa. He was doing well at age 71.

We met his wife, Vivian, a daughter and a grandson, and enjoyed an interesting and pleasant visit. Terry showed me his old battle scar, which I photographed, and we relived the momentous occasion which had brought us together. He related his many hospital experiences from the time of the operation until he finally reached home in Fonda, February 1, 1945.

Terry told me that in 1994 during one of his many checkups, a cardiologist remarked that the operation could not have taken place, because open heart surgery had not been published in the surgical journals until 1959.

While writing this paper, I again called Fonda and talked with Terry and Vivian. Terry is now 74 years old and doing well.

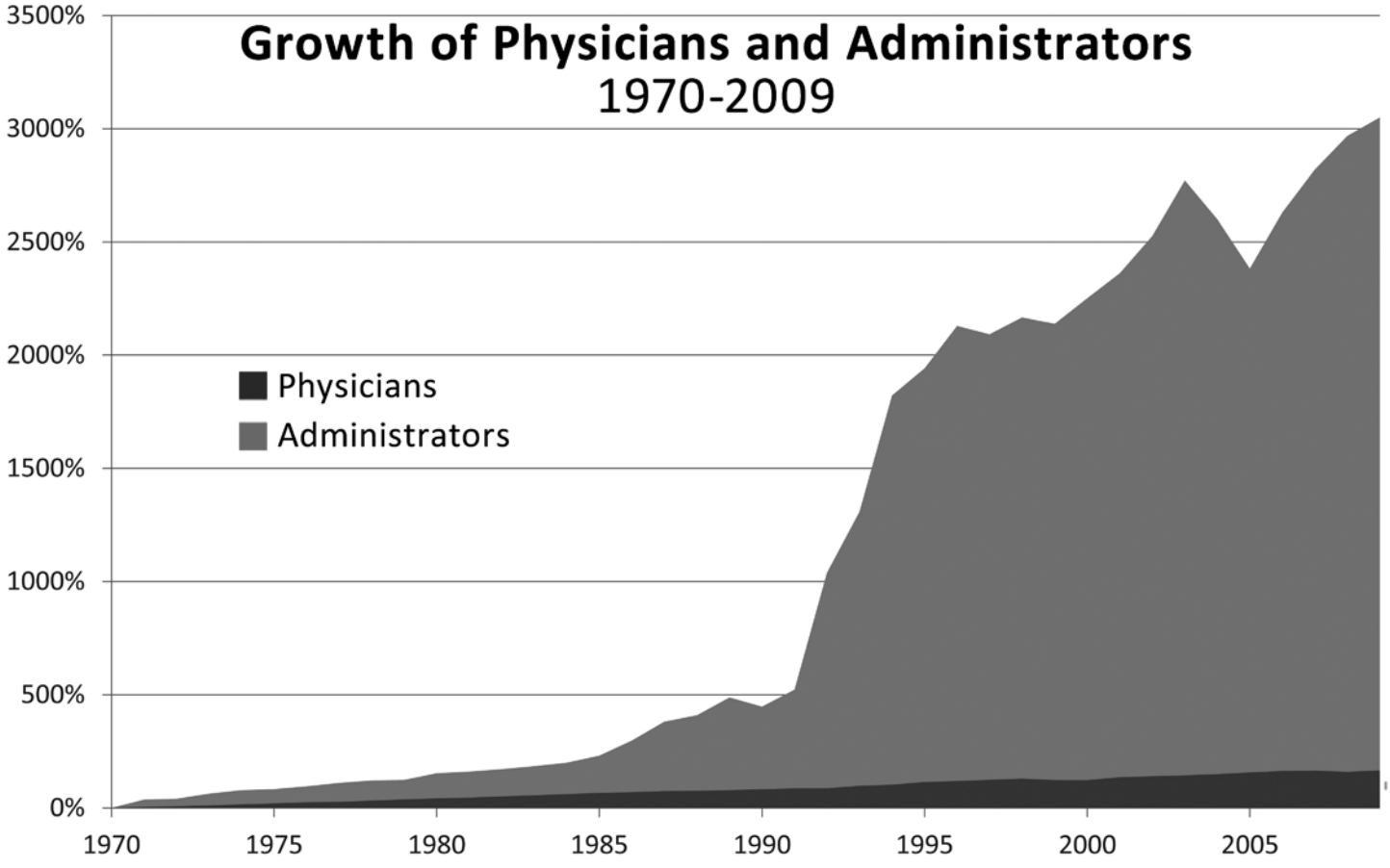
We had a lively conversation and will continue to keep in touch. God was with Terry 55 years ago, and I pray that He always will be.

Douglas H. Stone, MD, practiced surgery in Baltimore until 1968. He relocated to Asheville, NC, as chief of the general surgical section of the Veteran's Administration Medical Center in Asheville. Dr. Stone passed away on April 28, 2002, at the age of 91. For a complete list of references, contact Susan Raskin at 301.921.4300 or sraskin@montgomerymedicine.org.

References:

1. Williams, D.B. "Stab Wound of the Heart and Pericardium Recovery - Patient Alive Three Years Afterwards." *Med Rev* 1897; 51:437-439.

2. Matas, R. "The Surgery of the Chest and Some of the Problems Related to the Treatment of its Penetrating Traumatisms and their Immediate Complications." *Trans LA State Med Soc* 1898; 125-20 I.



Source: Bureau of Labor Statistics; NCHS; and Himmelstein/Woolhandler analysis of CPS

Administrative costs in U.S. healthcare have risen dramatically since 1970, as this graph by Dr. David U. Himmelstein and Dr. Steffie Woolhandler of the City University of New York School of Public Health illustrates. Himmelstein and Woolhandler discuss this issue at length in "Costs of Health Care Administration in the United States and Canada" in the *New England Journal of Medicine* (2003;349:768-75), where they show such costs now account for 31 percent of U.S. health spending. Graph courtesy of Physicians for a National Health Program (pnhp.org).

Professional protection with a home field advantage.

The only medical professional liability insurer created by Maryland Physicians for Maryland Physicians.

There's a reason why more Maryland Doctors place their trust in the team at MEDICAL MUTUAL than in any other insurance company: no other insurer can match our winning record. When it comes to defending good medicine on our home turf, we're aggressive, we know the Maryland courtrooms, and we know the Maryland legislature. As a Doctor owned and directed company, we understand your needs and concerns better than anybody else. It all adds up to the strongest defensive strategy for your practice and professional reputation.

MEDICAL MUTUAL

Liability Insurance Society of Maryland

225 International Circle | Hunt Valley, Maryland 21030
410-785-0050 | 800-492-0193

MedChi
The Maryland State Medical Society
1211 Cathedral St. ▲ Baltimore, MD 21201

Address Service Requested

Presorted Standard
U.S. Postage
PAID
Pemit No. 48
Merrifield, VA