The Next Great Adventure in Trauma Care Data Collection
MERCuRY
Medevac En Route Care Registry
COL Kirby Gross distinguished himself through exceptionally meritorious service to the US Army from March 2006 to February 2016. During this time, he served in a succession of positions of greater importance and responsibility, culminating at the Trauma Consultant to the Office of the Surgeon General and the Director of the JTS. Other positions of significant leadership include: Commander of the 772nd Forward Surgical Team – Operation Iraqi Freedom (OIF); Chief of Surgery of the 10th Combat Support Hospital; and medical support of Special Operations.

COL Gross influenced Army and DoD policy and program recommendations to the Chief of Staff, Army; the Vice Chief of Staff, Army; and the Combatant Commanders on a monthly basis. His advice reflected the depth and breadth of his considerable experience and affected future programs and policy that will carry the DoD through the end of sustained combat operations. COL Gross relentlessly focused on battlefield care and saving lives in both OIF and Operation Enduring Freedom (OEF) by utilizing his experience to expand prehospital/point of injury (POI) evacuation trauma care guidelines; through training of military providers; by conducting research to reduce morbidity and mortality of our warriors; and by deploying seven times for a cumulative 50 months.

As the Director of the JTS, which contains over 116,000 records in its DoDTR, COL Gross deployed to Iraq and Afghanistan two times as Theater Director; he helped train 15 theater teams, which grew from seven members in 2004 to 17 members in 2014; helped develop 44 CPGs; and conducted a comprehensive review of the CPGs, which decreased variation in deployed trauma care; and he contributed to the military trauma system manual for the American College of Surgeons. In this role, COL Gross was a driving force in preparing medical personnel to meet the challenges of battlefield operations, ensuring they had the skills necessary to provide optimum care to casualties. He also published in peer reviewed journals; presented at national trauma academic societies, increasing the knowledge of providers on the advances of trauma care. COL Gross was recognized as a clinical expert by receiving the “A” Proficiency Designator. He has directly touched the lives of hundreds of surgeons and indirectly the lives of thousands of patients.

He has done this through his tireless efforts to educate and train the military surgeons of the future, his leadership in national organizations, his scholarly publications and presentations, and through his skill as a surgeon. In each of these roles, COL Gross’ exceptionally outstanding service, tireless devotion to duty, strong love of this country, and intense desire to serve the Soldiers who protect this great nation and never a day he was not excited to serve this great nation and never a meal he did not like,” said Dominique “Dom” Greydanus, MBA, Program Manager/Administrative Officer.

In COL Gross’ words: “You know what we have here at the Joint Trauma System? We have agitators, those who are not willing to accept anything less than perfection. We know we’ve come a long way in improving lives on the battlefield, but guess what? There is still plenty more to improve and that’s what we are continuing to do today.”

Paraphrased by Dallas Burelison, MBA, Education Branch Chief.

This is my last opportunity as director to thank the JTS team for ongoing contributions to improving combat casualty care outcomes. As JTS Director, I had the opportunity to interface with other organizations and individuals on behalf of JTS. Interactions occur most frequently by e-mail correspondence and teleconference; however, the interactions often involve face to face encounters. The number of journeys requiring face to face encounters over the past year has been 20 – NATO (2), UK (2), non-NATO (2), civilian meetings (5), and military medical meetings (9).

The number of meetings reflects the amount of interest in the JTS. Another measure of interest in JTS products are requests for information. Susan West, Data Analysis Branch Chief, identified 17 types of organizations which request information. This is not the number of individual requests, but 17 different types of organizations with unique regulatory requirements.

JTS responds to present needs of the DoD, but also recognizes the need to contribute to the development of the next generations of combat casualty care providers and clinical investigators. This obligation is met by teaching junior clinicians at SAMMC as well as teaching faculty and formalized training courses such as Advanced Trauma Life Support, Advanced Trauma Operative Management and Advanced Surgical Skills Exposure in Trauma. The increase in the breadth of our activities at JTS reflects the increased awareness of JTS by those like-minded organizations and leaders who seek to improve combat casualty care outcomes. The increase in scope of activities is also due to the excellent reputation earned by the JTS as a result of your tremendous contributions.

Thanks again to all for your commitment to the mission.
Mary Ann look for them. And being a trauma surgeon, my philosophy is to hope for the best but prepare for the worst. Over the coming months we will plan for all eventualities.

So we must turn to yet another oriental proverb: “Must float like leaf in stream of life.” (Well, a Vietnamese general said it in the movie “The Ladykillers,” so it must be true.) The leaf may not control the direction or the destination but float it must, lest it be overcome by events. Wherever we end up and however things reorganize in this phase of the restructuring of the Military Health System, we still have a job to do and we will continue to do it with the unparalleled excellence that everyone has come to expect from the JTS. Over the last year alone, under COL Gross’ guidance, the JTS won the MEDCOM WolfPack Award, the AMSUS Force Health Protection Award, and the Major Jonathan Letterman Award.

So BRAVO ZULU to everyone! (Sorry, you’re going to have to get used to Navy jargon in the Director’s column.) Note that these are all unit awards, not awards to a single individual. JTS has been doing great things for years before I showed up, and one hallmark of any well-functioning enterprise with a clear mission is that a change in leadership does not turn everything upside down.

So we can all expect to stay busy. While there are relatively few new patient records to abstract (a good thing for those down range in harm’s way), there are plenty to re-abstract, we are discovering new sources of trauma data, and there are data holes to fill in the DoDTR. The prehospital and medevac/MERCuRy projects must grow. Requests for data and analysis will continue. We have other COCOMs to conquer, and CPGs to publish.

So we do live in interesting times, but I’m pretty sure we’re up to the task. I’ll have to get back to you about the mimes.

JTS Wins Prestigious Letterman Medical Excellence Award

JTS is proud to announce it is the receipt of the 8th Annual Major Johnathan Letterman Medical Excellence Award for excellence in battle field medicine and outcomes. COL Kirby Gross, former JTS Director, accepted the award on behalf of the JTS at the Letterman Awards dinner October 8th.

Letterman winners are recognized for their innovative efforts in civilian emergency or combat casualty care. They work toward improving outcomes for patients with catastrophic injuries and draw on today’s cutting edge medical technology to develop new ways to assist Armed Forces members or civilians who have suffered severe disfiguring wounds.

In this case, JTS has helped drive the innovation, implementation and adoption of devices and techniques that increase a trauma patient’s chance of survival.

“By selecting JTS to receive this award, senior military medical leaders acknowledge the impact of JTS,” said COL Gross. “Both MAJ Letterman and JTS brought improvement in battlefield medicine by influencing the system of care. The work of JTS is not complete; much opportunity for improvement in combat casualty care remains.”

The MAJ Jonathan Letterman Awards are sponsored by the National Museum of Civil War Medicine (NMCWM). Nominees are submitted to NMCWM and honorees are selected by two US Army Major Generals, one US Army Lieutenant General, one US Navy Captain and the NMCWM Executive Director.

Warriors Extend Special Thank You to JTS

JTS was recently honored by those special warriors who dedicate their lives to our preserving our freedom and safeguarding our families at home and abroad. The plaque bore this moving message. JTS members “have exemplified themselves in the execution of our global mission to maintain the health and welfare of personnel in order to disrupt, dismantle and destroy terrorist threat, deny enemy sanctuary and exhaust every possible means to implement mission driven solutions to enable every officer and operator the ability to effectively execute their specialized skills at an optimum level for maximum success.”
**MERCuRY Expected to Deliver Unparalleled Single Source Data Aggregation Capabilities**

By Mary Jo Glunz-Bartz, JTS Information Manager

JTS is buzzing about MERCuRY, yet few have a solid grasp of the project. The translated acronym Military En Route Care Registry provides some insight, but fails to illustrate the big picture, and there is so much more to the story.

MERCuRY grew out of the need to collect more Medevac data and to fill existing gaps in the collection of trauma care data of patients in transit.

- There are inconsistencies in the collection methods and terminology between services and transport means.
- There is no means to consolidate data from all transit movement into a central database.
- There is no process to retrospectively evaluate and analyze en route care.

MERCuRY will also satisfy the informational requirements of the Golden Hour rapid evacuation initiative to measure the effectiveness of the program.

To resolve the matter, leaders from Air Force and Army units put their heads together and decided a single en route registry was in order. The proof concept, En Route Registry, was programmed for a prototype en route trauma care from the following sources.

- En Route (prototype)
- Golden Hour (declassified)
- Theater Medical Evacuation
- Two CCATT
- USAF Aerospace Medicine

These databases can be queried for clinical event review, performance improvement, and high-value innovation. MERCuRY will contain data from past transports, link directly with the DODTR to review long-term clinical outcomes, and be used as a model for possible prospective collection of data for medical and trauma patients.

As MERCuRY Program Manager Col Stacy Shackelford explains it: "This project is a long overdue effort to collect detailed data on en route care. MERCuRY will be the most detailed database ever created for evacuation at all levels and support research by collecting massive amounts of retrospective data. We are also simultaneously developing a prospective process in order to capture this data real-time going forward to be used as a powerful Quality Improvement tool."

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**Recovering Encryptions Keys to View Old Emails**

By Mary Jo Glunz-Bartz, JTS Information Manager

- Are you due to get a new CAC?
- Do you receive/send encrypted email?
- Are you converting from contractor to civilian or civilian to contractor?
- Are you moving from one service to another?

Then you need to know about Public and Private Keys and the effect on encrypted email.

Public Key Infrastructure (PKI) certificates and their respective keys are embedded in the integrated circuit chip on a Common Access Card (CAC). When obtaining a new CAC, a new email encryption certificate is generated and previously encrypted email is inaccessible. To read older emails, you must recover your previous encryption key(s).

There are two keys. The public key is used to encrypt email and a matching private key is used to decrypt email. Encrypted email can only be opened with the private encryption key that matches the public encryption key originally used to encrypt the email. DoD PKI established the key escrow and recovery process to recover email encryption keys associated with previous CACs. You can recover your encryption keys either manually through this page. When logging in, use your regular logon; do not use the email certificate.

I just renewed my CAC and was asked by the clerk if I wanted to recover my keys. At the time I said I didn't have anything I needed to access. I was proven wrong the next day. Fortunately, the clerk handed me a flyer with instructions. It was easy and I had the capability to go back to every CAC I've had since I came to JTS in 2007. Did I say it was easy?

The JTS played a prominent role in the White House’s Stop the Bleed Forum in Washington, D.C. October 6th. The initiative is a joint effort among several government agencies and the private sector to give citizens the tools they need to help in an emergency situation and knowledge to stop life threatening bleeding. The national campaign includes prehospital measures recommended by the JTS and Tactical Combat Casualty Care (TCCC) to control external hemorrhage to increase an injured person’s chance of survival.

According to the White House, The goal of this initiative is to build national resilience by empowering the general public to be aware of the simple steps that can be taken to stop or slow life threatening bleeding, and to promote the general public’s access to Bleeding Control Kits in public spaces, while they travel, and in the home. Working with the private sector and nonprofit organization, the Stop the Bleed Campaign will put knowledge gained by first responders and our military, into the hands of the public to help save lives. The town officials of Davie, Florida were invited to participate in the White House event. Davie was recognized as one of the leading municipalities that has already added severe bleeding kits to community resucers.

JTS accomplishments in trauma care are monumental to improved external hemorrhage control interventions, particularly tourniquets and hemostatic dressings, in the US Military. These military advances in external hemorrhage control were the basis for the White House Stop the Bleed Campaign. With these tools, bystanders will be able to do what medical officials say is the most critical task in the moments after an injury: keep the victim from bleeding to death. Similar to the use of CPR or automatic defibrillators, improving public awareness about how to stop severe bleeding and expanding personal and public access to Bleeding Control Kits can be the difference between life and death. The kits typically CAT or SOFT-T tourniquets and hemostatic dressings, protective gloves and elastic bandages.

Dr. Jonathan Woodson, a featured speaker, emphasized those first on the scene, even before professional first responders, can make all the difference during what he calls the “miracle minute.” He drove this point home in his speech by pointing out that in the 10 minutes it would take him to finish his speech an injured person would bleed to death from an injury from a large artery or vein if someone did not stop the bleeding.

JTS’ own prehospital trauma expert, Dr. Frank Butler, MD, has been involved in this effort since its inception in 1993 when he penned the original TCCC paper. The document is a product of a combined research effort performed by the Special Operations medical community and Uniformed Services University of the Heath Services, a JTS data sharing partner. The Stop the Bleed campaign was founded on these TCCC principles.

The TCCC measures were implemented in Denver, Colorado where six lives were saved in two years. “The improvements in battlefield trauma care pioneered by the Committee on Tactical Combat Casualty Care and the JTS have saved the lives of thousands of wounded warriors. It has been an incredible honor to be part of this great team,” said Butler.
COMING SOON TO DoDTR: ICD-10 COMPLIANCE NEW CODING SYSTEM PROMISES TO DELIVER DETAILED DATA & EASE PERFORMANCE IMPROVEMENT MEASURES

JTS is currently in the process of upgrading the DoDTR to incorporate the mandatory International Classification of Diseases Revision –10 (ICD-10) HIPAA transaction code sets for diagnosis in accordance with the 01 Oct 2015 deadline. ICD-9 coding will remain in the background to facilitate the maintenance of existing ICD-9 coded records. The upgraded DoDTR will also offer PCS coding.

ICD-10 provides much-needed updates to medical terminology and disease classification, as well as codes that allow for comparison of mortality and morbidity data.

ICD-10 offers an extensive set of diagnosis codes—about 68,000 to ICD-9’s 14,000. In this case, more is definitely better. More codes mean concise diagnoses. Medical providers can more accurately document clinical information. ICD-9’s limited number of codes produced indistinct, limited patient data. Specific data translates into more granular data analysis.

AHIMA and the eHealth Initiative (eHI) have released results from their third annual survey of healthcare providers to assess ICD-10 transition’s anticipated impact. More respondents than last year said they believe ICD-10 will make it easier to perform activities such as analyzing and reporting measures on performance, quality, and safety or collecting and exchanging health information.

“The new coding system will allow unparalleled specificity in Diagnoses and Procedure coding, and will continue to allow the JTS to remain at the forefront of trauma injury classification, patient care tracking, and evaluation of outcomes,” said Phil Sartin, Data Acquisition Branch Chief.

CPG COLLECTION UPDATED TO DELIVER GAME-CHANGING TRAUMA CARE INSTRUCTIONS, TECHNIQUES

In the words of COL Kirby Gross, the JTS is most visible for two things: the Combat Casualty Care Curriculum Conference and the Clinical Practice Guidelines (CPGs). Trauma care professionals look to JTS for latest information on trauma care instruction, techniques, pharmaceutical guidance, and supporting innovations. The JTS CPGs deliver the complete package. Maintaining the CPGs is essential to producing the game-changing guidelines.

The JTS Education team is taking advantage of this time of transition to update the entire collection of the CPGs, which now totals 44. JTS Director CAPT Zsolt Stockinger and Education Branch Chief Dallas Burelison are leading the effort. This feat would not be possible without the support and commitment of senior tri-service members and coalition partners. Over 240 Subject Matter Experts contributed to this formidable task.

“Now that the operational tempo has declined with the transition of Operation Enduring Freedom into Operation Freedom’s Sentinel, it is the logical time to update the CPGs to reflect our accumulated global war on terrorism experience, and to revise them to no longer be specific to the US Central Command area of operations. This is particularly important as JTS works with other Combatant Commands (COCOMs) like Pacific Command to develop their own trauma systems,” said CAPT Stockinger.

A refined approach to the sharing and distribution of CPGs will give COCOMs the ability to more easily disseminate innovations. The JTS CPGs deliver the most pertinent CPGs this spring. CAPT Stockinger explains just how important publication is to the successful adoption and application of the CPGs.

"Publishing the CPGs as articles in the Military Medicine is important for two reasons. First, dozens if not hundreds of individuals assist in the writing of the CPGs, most outside of the JTS, none of whom has ever received public credit for the contribution. These contributors will finally receive the recognition they deserve, and I have no doubt that formal authorship opportunities will generate help with future CPG updates," said CAPT Stockinger.

“Second, the CPGs will now be available in searchable peer-reviewed medical literature, the source to which most medical professionals turn for guidance or justification. Citing review literature carries much more weight in the medical community than does citing a website or a military instruction, particularly on the civilian side. And just like Tactical Combat Casualty Care, the publication of CPGs can be used to disseminate applicable medical knowledge from the military to the civilian sector.”

According to the New York Times, mankind has only been at peace for 8% of recorded human history. At this rate, the CPGs will continue to be a needed and valued resource.
The failure rate for surgical airways performed during battlefield trauma care has been reported to be 33%. 1

LTC (P) Bob Mabry recently published the results of a research project in which US Army combat medics were found to perform surgical airways on human cadavers with 100% success using the CricKey surgical airway device, compared with a 70% first-pass success rate using the standard technique. They were also able to perform a surgical airway significantly faster with the CricKey compared to a control group that performed surgical airways without using this device (34 seconds vs 65 seconds). 2

A proposed change to the TCCC Guidelines to add the use of the CricKey as the preferred technique for surgical airways was recently reviewed by the TCCC Working Group and approved by the required two-third or more of the voting members of the Committee of the TCCC (CoTCCC).

The position paper for this change to the TCCC Guidelines has been approved for publication by USAISR. It will be published shortly in the Journal of Special Operations Medicine.

The training slides to support this change have been developed by Dr. Stephen Giebner, the CoTCCC Developmental Editor and forwarded to the TCCC Distribution Group. The CricKey change slides will be incorporated into the 2015 version of the TCCC for Medical Personnel curriculum. Both that curriculum and the TCCC for All Combatants curriculum are being updated and will be available in the near future.

Thanks to LTC Bob Mabry and his team for developing this update.

References

The CoTCCC has evaluated the Abdominal Aortic and Junctional Tourniquet (AAJT) for potential use in TCCC.

No human or animal data were found that document the safety and efficacy of the AAJT when it is applied to the abdomen in the presence of an unrepaird vascular injury proximal to the site of aortic occlusion. Entrance wounds for high velocity projectiles or blast fragment do not reliably predicit the internal course of the bullet(s) or the fragment(s).

Further, recent research performed at the US Army Institute of Surgical Research evaluating the effect of aortic occlusion by the CRoC and the AAJT have noted adverse effects with a 2-hour application time. In the AAJT study, Dr. Kheirabadi studied a two-hour application of the AAJT in six spontaneously breathing pigs. His conclusions were that “The ischemia-induced hemodynamic and metabolic changes from the two-hour AAJT application were more severe than those measured with other JTQs (previously studied) and were life-threatening in spontaneously breathing subjects. Cardiopulmonary support appears necessary at the time of release of AAJT to prevent hyperkalemia-induced respiratory or cardiac arrest.” (Dr. Bijan Kheirabadi – abstract submitted for MHSRS)

In light of the above and after discussion with the JTS leadership, further evaluation of the AAJT for use in TCCC will be suspended. This decision is subject to change as new data become available or if the recommendations for use of this device are modified by its manufacturer.

Note: Dr. Frank K. Butler, Jr, CoTCCC Chairman provides the TCCC updates.
The Pacesetter program recognizes and honors JTS staff members who set the pace for the organization’s standard of excellence. Pacesetters lead by example, demonstrate a positive attitude when faced with challenges, and are known for their collaborative spirit. Each quarter, JTS leadership selects professionals whose behaviors and work ethics support or further the mission, goals, values and initiatives of JTS.

In July of 2014, Phil once again transitioned within the organization to the position of acting DAB Branch Chief and eventually Branch Chief as he transitioned to civil service in Jun 2015.

“He has assisted in developing the DoDTR practices and has been the driving force and continuity behind the education and training for the last couple of years, particularly the transition between the store and forward and web implementation,” said JTS Deputy Director Mary Ann Spott.

During his tenure, Phil has taught trauma abstraction and Report Writer to generations of deployed JTS personnel.

“This Report Writer expertise is second to none, often creating specialty custom reports on short notice to assist our deployed colleagues,” said Renee Greer, MOTR Branch Chief. “His attention to detail and testing plans have saved hundreds of man-hours of rework. Phil is so good at data management that sometimes new personnel forget Phil is a trauma nurse to the core.”

This fall, Phil organized a team of subject matter experts for developing and providing DoDTR ICD-10 implementation training to JTS staff and DoDTR users. The implementation of ICD-10 within the DoDTR will continue to advance the system’s capability to detail our population’s distinct injury patterns, the provided care, and performance improvement evaluation of outcomes.

After all these years, Phil remains fascinated with the rapid impact JTS has on trauma care.

“With the combined resources of our system including acquisition, analysis, performance improvement, and automation, we have been able rapidly produce feedback to customers within our continuum to standardize and improve trauma care. It has been a privilege to work with so many dedicated personnel who strive to maintain this capability on a daily basis,” said Phil.
Lasers are critical components of a variety of military activities, including range finding, target designation, live-fire simulation, and escalation of force (EOF) security warnings. Unfortunately, the increasing use of laser-based technology also increases the potential for ocular injuries. Reports indicate that many of these incidents were the result of lasers being used as signaling devices towards fellow soldiers or as props for jokes (e.g., “lightsaber” battles). As the majority of laser eye injuries are due to the improper operation of laser devices or misuse, it is important that military personnel and civilians have a clear understanding of the proper use, control and hazards of lasers.

Contrary to popular misconception, the majority of laser exposures, or illuminations, do not result in ocular injury. Nevertheless, the momentary distraction following a laser illumination still can have devastating effects, particularly on the performance of critical military tasks (e.g., aiming a weapon or operating vehicles and aircrafts). In recognition of such consequences, it is a federal offense to aim a laser at an aircraft in the U.S., subject to a fine and imprisonment.

Serious ocular injury is uncommon. Damage from a visible laser requires a combination of sufficient power and time exposure to cause true damage. The permanence and severity of laser-induced ocular damage primarily depends upon characteristics of the laser. Power is reliant on both the power of the laser as well as the distance from the target. For military visible lasers like the green beam designator (GBD-III) or “dazzler,” the nominal ocular hazard distance (NOHD, or the danger zone) is generally on the order of 50m. Military lasers are often classified by wavelength (visible or invisible) and power. Lasers with wavelengths in the “visible” spectrum are often used in EOF activities and immediately convey the message “I see you and have you in my sights.” A common example is the “dazzler” often used at security checkpoints and on patrols. Only wavelengths of light in the visible and near infrared spectrums are capable of damaging the retina, thus producing more severe ocular injuries.

The risk of ocular injury typically increases with the power of the laser, though the same amount of damage could be produced using less power if the laser energy is emitted in shorter, more concentrated pulses, the dwell time is increased or the diameter of the laser beam (i.e., spot size) is decreased. The distance of a laser from its target is also important, as the laser is better able to be concentrated on one spot on the retina at closer distances. The beam has to hit the eye and stay there for quite a bit of time (a few seconds, with more time required for further distances). It’s very rare that a sweeping laser exposure will cause injury.

Invisible lasers (e.g., range finders) are generally more powerful and emit a very short concentrated burst of laser. Each pulse is typically powerful enough to cause some damage and doesn’t have to dwell on the retina as long. Accidental exposure can cause near-immediate injury. Vision drops abruptly and stays down (it might even get progressively worse, quickly). Most invisible laser injuries are self-induced accidents.

The non-military dazzler version approved by the FDA for use by law enforcement officers has a power of 200 milliwatts (0.200 watts), compared to the military grade green laser output of 532 nanometers (5.32 watts).

Atmospheric conditions (e.g., rain or fog), certain protective devices (e.g., flight masks), and eye-related characteristics (e.g., blink reflex and pupil size) also affect the potential for laser-related ocular damage, primarily by redirecting the laser beam or controlling the amount of energy absorbed by the eye. Additionally, the use of certain optical devices such as binoculars or sighting instruments may increase the risk of ocular injury by magnifying the power of the laser beam.

Visual symptoms following a laser exposure are often limited to the eye’s normal response to bright light, most notably temporary dazzle or flashblindness that typically resolves within minutes. Individuals with true laser injuries often report seeing a flash followed by a sudden and severe decrease in visual acuity.

The benefits of laser technology comes with disadvantages if precautions are not taken. As the Dazzler debuts in civilian police forces and becomes commonplace at security checks, educating the public about the risk of eye injury is critical.

By Robert Mazzoli & Devon Oskvig, Vision Center of Excellence
CAUTION: USE CELL PHONE AT YOUR OWN RISK

New Evidence Renews Old Fears of Radiation Poisoning, Cancer

By Cynthia R. Kurkowski, JTS News Editor

SAR certification has come under scrutiny for its shortcomings. Official, consistent standardized SAR testing procedures for FCC compliance do not exist. The agency relies on industry organizations (e.g., ANSI, IEEE) and private ventures for SAR testing procedures. Regulations governing the SAR testing are 50 years old. They were derived from levels determined in the 1960s during early research of radiation hazards. The FCC admits it struggles to match testing requirements with constantly changing cellular technologies. Cell phones are tested against artificial materials, not humans, animals or biological materials. Add to that popular wearables and Bluetooth technologies which people wear around the clock do not even require SAR testing.

“If industry does not want to advise people about the fact that phones are not tested next to the body, then they should get the FCC to change its requirements for radiation testing,” said Environmental Health Trust’s Senior Medical Advisor, Dr. Robert Morris, MD, Ph.D. “They cannot do this because, if phones were tested next to the body, they would be found to emit too much radiation to pass current standards.”

The FCC requires wireless phones to have SAR levels no greater than 1.6 watts per kilogram. When all transmitters are working, the SAR value increases. Simultaneous use is the norm rather than the exception given today’s cell phone operator who talks, texts and surfs the Internet. Phone manufacturers are not required by law to disclose this simultaneous SAR. The FCC’s downplay of the simultaneous SAR illustrates how outdated the SAR standard is.

Finding your phone’s SAR is a feat of patience and persistence. The rate is not conveniently displayed. In fact, it is not displayed on your phone, listed in product literature, or published in most manuals. To find out your SAR, you must know the phone’s FCC identification (FCC ID) in order to look up the phone’s SAR on the FCC website. You can find the FCC ID number on the phone case of the phone, usually hidden under the battery. Once you have the number, you go to Equipment Authorization section of the FCC website and perform a “FCC ID Search.” A list of documents appears. You have to dig

(Continued on page 11)
Think twice before stashing that cell phone in your bra. Dr. Lisa Bailey, a Bay Area breast surgeon, reports “some very unusual breast cancers” in women who carried their cell phones in their bras. In some cases, the cancerous areas were suspiciously shaped like cell phones. Breast cancer is also impacting more women in their early twenties – a rare occurrence in the past.

Pocketing the cell phone in your jeans can cause reproductive complications and prostate cancer. Studies in Australia and India have found men who use cell phones most frequently (and keep them in their pants pocket) had lower sperm counts than those who used cell phones less often.

with a high pathogenic potential and that the oxidative stress induced by RFR exposure should be recognized as one of the primary mechanisms of the biological activity of this kind of radiation. It is well established that oxidative stress is associated with carcinogenesis. For instance, the oxidative stress elicited by Membrane-Type 1 Matrix Metalloproteinase is implicated in both the pathogenesis and progression of prostate cancer.7

Similarly, experimental evidences of cancer expansion in rodents caused by long-term low-intensity RFR exposure were published.3 Activation of Ornithine decarboxylase (ODC) was detected in RFR-exposed cells. ODC is involved in processes of cell growth and differentiation, and its activity is increased in tumor cells.4 Although overexpression of ODC is not sufficient for tumorigenic transformation, an increased activity of this enzyme was shown to promote the development of tumors from pre-tumor cells.5

Other studies found ODC is also overexpressed in breast cancer tissues and cell lines compared with non-tumor tissues and normal breast epithelial cells. There was a positive correlation between the level of ODC mRNA and the staging of tumors. 6

“The International Agency for Research on Cancer (IARC, part of the World Health Organization) has concluded that the radiation they [cell phones] emit is a possible cause through the documents to find the SAR compliance and certification information. I found the SAR listed in the conclusion of the SAR testing reports. The FCC did not list my ZTE’s documentation. I had to Google the phone model number and FCC ID to find documents listing the SAR value. The ZTE SAR did fall well under the acceptable 1.6 watts/kilogram for both next to head and near the body. Further investigation, however, revealed the higher end cell phones like the iPhone barely squeak past over the acceptable RF rate by .01 in simultaneous mode, which brings us back to why those radiation warnings are so important.

Recent studies show low intensity RFR contributes to cell mutation, aka cancer growth. Among 100 currently available peer-reviewed studies dealing with oxidative effects of low-intensity RFR, 93 confirmed that RFR induces oxidative effects in biological systems. Analysis demonstrates low-intensity RFR is an expressive oxidative agent for living cells of cancer. Those cases might take decades to develop. So, if there is a risk, we won’t know for sure until tens of thousands of people have died,” said Morris.

“In the meantime, it seems prudent to reduce exposures, especially when doing so can involve something as simple as using headphones. Improving consumers’ access to warnings about potential risks, warnings that are already in the phones, is a no brainer. Why is industry fighting this?”

To understand how radio frequency electronic magnetic fields impact your health, check out PowerWatch. http://www.powerwatch.org.uk/RF/phones.asp

References
“Flu shots are here!” messages signal flu season is officially here. The season extends through May 21, 2016.

While flu seasons can vary in severity, people 65 years and older usually bear the greatest burden of severe flu disease. It is estimated that this group represents 80-90% of seasonal flu-related deaths, and 50-70% of the hospitalizations. In Texas there were 16 influenza-associated pediatric deaths last influenza season. The past season was moderately severe. CDC estimated last year’s flu vaccine reduced an individual’s risk of visiting a doctor due to flu by only 23%. Keep in mind, 2014-15 flu vaccine was not a good match for the season’s dominant virus.

“Even in a good year, the flu vaccine isn’t as good as most of our vaccines. Its efficacy is around the 60, 65 percent range, which is, you might say, passable, but not what we would like,” said CDC Director Thomas Frieden.

There are several flu vaccine options for the 2015-2016 flu seasons.
- Intramuscular (IM) vaccines will be available in both trivalent and quadrivalent formulations. (High dose vaccines, which are IM vaccines, will all be trivalent this season.)
- For people who are 18 through 64 years old, a jet injector can be used for delivery of one particular trivalent flu vaccine (AFLURIA® by bioCSL Inc.).
- Nasal spray vaccines will all be quadrivalent this season.
- Intradermal vaccine will all be quadrivalent.

The safety of Live Attenuated Influenza Vaccine (LAIV) in persons with other underlying medical conditions that might predispose them to complications after wild-type influenza virus infection (e.g., chronic pulmonary, cardiovascular [except isolated hypertension], renal, hepatic, neurologic, hematologic, or metabolic disorders [including diabetes mellitus]) has not been established.

Nasal vaccine sprays containing LAIV should not be used by:
1. Persons aged <2 years or >49 years.
2. Children aged 2 through 17 years who are receiving aspirin or aspirin-containing products.
3. Persons who have experienced severe allergic reactions to the vaccine or any of its components, or to a previous dose of any influenza vaccine.
4. Pregnant women.
5. Immunocompromised persons.
6. Persons with a history of egg allergy.
7. Children aged 2-4 years who have asthma or a wheezing episode noted in the medical record within the past 12 months, or for whom parents report that a health care provider stated that they had wheezing or asthma within the last 12 months.
8. Persons of any age with asthma are at increased risk for wheezing after administration of LAIV.
9. Persons who have taken influenza antiviral medications within the previous 48 hours.

For 2015–16, U.S.-licensed trivalent influenza vaccines will contain hemagglutinin (HA) derived from an A/California/7/2009 (H1N1)-like virus, an A/Switzerland/9715293/2013 (H3N2)-like virus, and a B/Phuket/3073/2013-like (Yamagata lineage) virus. Quadrivalent influenza vaccines will contain these vaccine viruses, and a B/Brisbane/60/2008-like (Victoria lineage) virus, which is the same Victoria lineage virus used in 2013–14 and 2014–15.

What you should know about this flu season’s vaccine.

Track the flu season week by week.
http://www.washingtonpost.com/graphics/health/flu-tracker/
JTS partners with several industry leading organizations to foster advances in medical care. Perhaps one of its most productive partnerships is with the Trauma Infectious Disease Outcomes Study (TIDOS) based at Uniformed Services University (USU). TIDOS is an observational cohort study which evaluates infection-associated clinical outcomes in hospitalized medical evacuees following traumatic injury.

TIDOS’s primary objectives are to describe trauma-related infectious disease epidemiology, evaluate short- and long-term outcomes (with a five year follow-up), and identify risk factors generating evidence to improve prevention and management. TIDOS findings are enabling medical professionals to develop effective treatments of infectious diseases (IDs). Critical to the TIDOS analyses is Department of Defense Trauma Registry (DoDTR) data.

TIDOS grew out of the need to improve the understanding of clinical outcomes related to infectious complications of combat trauma. During periods in 2010-2012, the invasive fungal wound infections (IFIs) incidence rates were as high as 10-12% for intensive care unit admissions at Landstuhl Regional Medical Center (LRMC) in Germany (where patients received care after medical evacuation from combat zone prior to transfer back to the United States). The rates coincided with high blast casualty rates. In addition, the increasing rates of infections secondary to multidrug-resistant organisms were of particular concern. TIDOS investigators led the investigation into the unexpected outbreak of IFIs using data obtained from the DoDTR/TIDOS infectious disease (ID) module.

A Memorandum of Understanding between JTS, U.S. Army Institute of Surgical Research, and the Uniformed Services University of the Health Sciences [on behalf of the USU Infectious Disease Clinical Research Program (IDCRP)] led to the development of the supplemental ID module of the DoDTR in 2009. The TIDOS project completed cohort enrollment earlier this year following cessation of combat operations. Infection-related data were collected on over 6,000 LRMC trauma patient admissions of which approximately 2,690 transferred to a participating TIDOS clinical site in the United States. In addition, over 1,350 patients have been enrolled in the TIDOS cohort for long-term follow-up through the DoD and Veteran Affairs healthcare systems.

TIDOS IFI experts contributed to the JTS Clinical Practice Guideline (CPG) for preventing and treating IFIs. TIDOS analyses have since confirmed the independent IFI risk factors cited in the JTS CPG, including blast injuries sustained while on foot patrol, traumatic above knee amputations, and large-volume (>20 units) blood transfusions within the first 24 hours after injury. In addition, a local CPG was implemented at LRMC, which greatly reduced diagnosis time and treatment initiation as confirmed through process improvement analysis by the TIDOS team. Furthermore, a TIDOS analysis demonstrated the significant negative impact of IFIs on the timing of wound closure and healing. Aggressive surgical debridements remain the primary therapy accompanied by empiric systemic antifungal therapy when there is strong suspicion of an IFI. Other recommendations include:

- Early tissue sampling for wound histopathology and fungal cultures.
- Early consultation with infectious disease specialists.
- Coordination with surgical pathology and clinical microbiology.

IFI work by TIDOS investigators (supported by DoDTR data) has included risk factor analysis, syndromic classification, wound microbiology, and orthopedic outcomes. In one investigation, TIDOS analyzed potential predictors for the development of IFI among wounded warriors and confirmed an independent association with blast injuries (odds ratio [OR]: 5.7; 95% confidence interval [CI]: 1.1-29.6), dismounted at the time of injury (OR: 8.5; CI: 1.2-59.8), sustaining traumatic above knee amputation (OR: 5.9; CI: 1.3-24.2), and having sustained blast injury (OR: 2.2; CI: 1.0-4.5).
confirmed the pathogenic nature of mucormycosis. Another recent study on IFI wound microbiology evidenced by a longer duration from injury to wound closure compared to wounds with non-Mucorales mold infections (median of 17 days versus 13 days). The analysis showed the polycrivial nature of fungal-infected wounds with 30% of the IFI wounds having multidrug-resistant organisms isolated at the time of infection work-up. TIDOS and JTS support performance improvement initiatives such as examining adherence to antimicrobial prophylaxis, the use of antibiotics to prevent infections at the surgical site, in response to traumatic injuries. When adherence within 48 hours of injury to the CPG published in 2008 was evaluated, the overall compliance rate was 75%. A recent analysis assessed compliance with the 2011 CPG over a five-year period and found significant improvements in adherence, particularly with open fractures (34% to 77%) and maxillofacial injuries (50% to 76%), primarily due to significant reduction in the use of expanded gram-negative coverage. The latest study evaluates patient clinical outcomes related to antimicrobial prophylaxis. TIDOS will continue to leverage data analyses across DoDTR supplemental modules, such as the Military Orthopaedic Trauma Registry, and collaborate with ISR scientists to examine wound microbiology and the role of biofilms in chronic infections.

References
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Prior to that, Major General Norman T. Kirk, the first orthopaedic surgeon to be named US Surgeon General, had advocated the use of clinical practice guidelines. Kirk was responsible for numerous improvements in military trauma care, including guidelines for amputation and an enhanced system of stateside rehabilitation. He was one of the first US surgeons to focus on the continuity of care to treat trauma at the point of injury to stateside hospital efforts.

In the Circular Letter which directed the official publishing and use of CPGs for combat-related injuries during US wartimes, DeBakey wrote: “The purpose of this letter is to provide broad policies and certain guiding principles on the care of the wounded in theater of operations. The experiences that have already accumulated has provided the foundation of the U.S. military medical community since WWII when a then world-famous surgeon with The US Surgeon General’s Office took it upon himself to tackle the challenge of standardizing care and treatment of battle casualties. The US trailed in its adoption of standard guidelines for theater trauma injuries. The use of guidelines was not new. According to our own CAPT Zsolt Stockinger, the English Civil War in 1642. There was, however, a lack of consistent, official guidelines for US combat medics. Lt. Col. Michael DeBakey, MC, Surgical Consultant, penned Circular Letter No. 178 (dated 23 October 1943) which transformed medical response and treatment across the continuum of care and established the tradition of clinical practice guidelines. Circular Letter No. 178 set the parameters still followed today by first responders, transporters, nurses and surgeons. In fact, the letter served as the first CPG.

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Prior to that, Major General Norman T. Kirk, the first orthopaedic surgeon to be named US Surgeon General, had advocate...
Training and experience, particularly at the Role 2 (R2) level, have been identified as critical elements to increasing the survivability rate of our wounded warriors. Yet there is a lack of evidence about the impact of Role 2 medical resources in the combat theater.

Given the definition of the R2 element varies by service, unit, country and operational requirements, consistent data collection is tricky. A R2 element is a medical capability which augments or enhances other assets (e.g., ASMC) by conduct of lifesaving surgical interventions and damage control resuscitation.

The few published reports documenting the activities and performance of R2 elements during Operation Enduring Freedom or Operation Iraqi Freedom indicate insufficient information concerning patients and the clinical interventions associated with R2 facilities to allow for proper training of future teams. Optimal preparation for these healthcare providers is to expose them prior to deployment to as many trauma situations as possible with which they may be involved. To do so requires knowing the specifics of the trauma situations. No systematic and comprehensive evaluation of R2 utilization had been conducted until recently when a team led by LTC Elizabeth A. Mann-Salinas, PhD, RN, FCCM, began examining the DoDTR’s R2 registry. Without analysis of this information, military planners and medical leaders are unable to best allocate resources in future operations.

Mann-Salinas hopes to understand the impact of R2 utilization during the Afghanistan conflict and beyond, with emphasis on patient outcomes and provider competency. The study will help define the critical skills and knowledge necessary to significantly improve readiness by matching the right medical intervention with the appropriate life-saving skill.

The team is retrospectively reviewing de-identified data of more than 15,000 patients extracted from the R2 Registry. They are focusing on patients who receive treatment at a military medical treatment facility and who meet all the following inclusion criteria: 1) adult trauma patients (defined as age 18 years or older at time of injury); 2) deployed in Operation Enduring Freedom; 3) trauma-eligible patients based on the R2 Registry Record Inclusion Criteria defined as battle injury (BI) and non-battle injury (NBI); and 4) wounded in year 2008 or later.

Mann-Salinas’ initial review of R2 data uncovered the following limitations.

- R2 Registry does not provide data prior to 2008.
- Navy/Marine R2 data sets are included.
- Data was entered by clinical staff untrained in JTS data entry.
- Other missing data includes:
  - Injury severity scores
  - Primary injury mechanism
  - Most significant injury

The initial review of R2 Registry will drive future analyses and integration of additional data sources such as Center for Army Lessons Learned resources and the Joint Lessons Learned Information System. Long term, the team will perform a systematic review of all medical combat training and preparation; determine optimal curriculum for each skill type; develop a validated knowledge assessment instrument; and create an evidence-based competency assessment program.

(Continued on page 17)
The research will help the Defense Health Agency to better formulate policies, procedures, and guidelines for the employment of Role 2 medical assets in present and future conflicts. It will allow policymakers to consider doctrine, organization, training, leadership, material, and safety principles in the most efficient and effective use of those assets and will assist operational and medical commanders in preparing those assets for employment.

The team's findings will also make their way into the future implementations of the Role 2 Registry which will attempt to fill the informational gaps identified by the Role 2 project.

**THE ROLE 2 PROJECT TEAM**

- LTC Elizabeth A. Mann-Salinas, PhD, RN, FCCM
- Tuan D. Le, MD, PhD
- Col. Jeffrey A. Bailey, MD
- Mary Ann Spott, MPA, MSIS, MBA
- CAPT Zsolt T. Stockinger, MD
- COL Michael D. Wirt, MD
- Surg. Capt. Rory Rickard, PhD, FRCS
- COL Kirby R. Cross, MD
- Col Stacy A. Shackelford, MC

(Continued from page 2)

Common symptoms and clinical findings of laser-related ocular injuries include:

- Protracted reduced visual acuity
- Lingering flash blindness or glare
- Photophobia
- Red visual haze
- Eye pain or tenderness
- Scotomas: A blind spot or blind area in the field of vision
- Ocular surface burns
- Chorioretinal (retinal) burns
- Retinal hemorrhage
- Extensive retinal scarring with neovascularization
- Vitreous hemorrhage
- Macular pucker and cysts

Laser exposure should be examined by an ocular specialist within 24 hours of exposure. Visual acuity and Amsler grid testing should be performed to assess for changes in vision; fundus photography, fluorescein angiography, and optical coherence tomography are recommended to assess retinal damage. The treatment of laser-induced eye injuries is generally limited to medical management, with surgical intervention when indicated.

Anti-inflammatory medicines like steroids (i.e. prednisone) and non-steroids (i.e. naproxen, indomethacin) have been shown to help mitigate the damage or prevent the spread of damage if not prevent permanent damage. If damage occurs, there are some medications that we might administer as intraocular injections to help mitigate the extent of the injury.

Intentional laser injuries can be avoided with the use of proper safety equipment, an operational understanding of the laser being used, safety training and responsible comportment by military personnel. Laser devices should only be used for the sole purpose in which they were intended and always within the specified Nominal Ocular Hazard Distance. Laser protective eyewear can be effective, however, laser protection requires special lenses which are specific to the wavelength of the laser threat.

There are two lessons to be taken from this article:

1) Permanent laser-induced eye injury is not common, and
2) Laser injury can be prevented. Take precautions. Never look directly into a laser. It’s that simple.

**References**

Intern’s Research Findings Will Help Military Medical Facilities Prepare for Future Workloads

Project: Best Fit for Surgical Workload at Various Echelons of Prehospital Care

By Cynthia R. Kurkowski, JTS News Editor

Claire Caldwell returned to JTS this past summer to continue the research she began in 2014 during her initial summer internship. Her project, Best Fit for Surgical Workload at Various Echelons of Prehospital Care, stemmed from the inadequate numerical evidence to support surgical workload preparation in deployed situations. Standard medical units/force structure and training recommendations are typically used, but susceptible to mismatch of resources. The discrepancy results in the under or over supply of personnel and equipment. It can even cause insufficient medical skill sets can cost lives or hinder recovery. Claire’s work is the first ever analysis of surgical workload at all echelons of care across the entire spectrum of the Global War on Terrorism.

This time around Claire focused on analyzing, interpreting and sharing the data she previously compiled and categorized. Using medical data collected during the Operation Enduring Freedom and Operation Iraqi Freedom conflicts, Claire sought to predict workloads — procedure types and frequency — En Route Care Providers through the continuum to Role 3 military medical locations may expect to experience in the future. By matching data to known operational tempo, population at risk and casualty estimates enables service leaders to successfully allocate resources and train personnel for future military operations. It turns out Role 2 and Role 3 display very similar workload trends and procedural ratios. This finding may enable Role 2 and 3 training to be combined.

Claire presented her findings at the 2015 Military Health System Research Symposium in Fort Lauderdale, Florida in August, and plans to submit the research for publication in a scientific journal. She also expects to present at AMSUS in December.

“The biggest challenge of this project was accepting that the data wasn’t perfect, complete, or always accurate. I fixed what data I could and dumped data that was beyond repair and kept moving. Inaccurate initial data from the DoDTR means subsequent data analyses will be inaccurate as well, and that was something I struggled to accept,” said Claire. “Our findings are not 100% representative of what actually happened, however, they are the best representation we have based on the available data.”

Claire’s time at JTS taught her to be open to new experiences and look at research and medicine from different perspectives. She said she hadn’t even considered presenting the project to the MHSRS until CAPT Stockinger submitted the abstract and it was approved.

CAPT Zsolt Stockinger mentored the A&M cadet during her return internship.

“Although I was nervous of presenting my finding, I am glad I had the experience of doing so, and was able to see the other advances in military medicine,” Claire said.

Claire walked away from JTS with a high respect for data analysis. Claire is studying for her Bachelor’s in Allied Health at Texas A&M University-College Station. Next summer will find her at nursing school.

References


How DoDTR Data is Changing the Medical Care Landscape

Validating the Military Injury Severity Score (mISS). A retrospective review of DoDTR data will determine whether mISS is a better predictor of combat mortality than the Injury Severity Score (ISS) and the New Injury Severity Score (NISS). Findings will be presented at the EAST 2016, and a manuscript is under preparation for the Journal of Trauma and Acute Care Surgery. Team: COL Kirby Gross, MD and Tuan Le, PhD.

Refining the Trauma and Injury Severity Score (TRISS). This study aims to use the DoDTR data to calculate comprehensive trauma and injury severity score (cTRISS) co-efficients with comprehensive methods going beyond the original TRISS method. Introduced in 1981, TRISS determines the probability of a patient’s survival based on revised trauma score, injury severity score and patient’s age. Team: COL Kirby Gross, MD and Tuan Le, PhD.

Combat Casualty Care/Case Fatality Rate. This is an analysis of trends in severity of combat casualty and mortality rates in Afghanistan from 2001 to 2014. Findings were: (1) the case fatality rate declined substantially, primarily due to less killed in action, despite increases in the severity of combat injuries; (2) The implementation of damage control resuscitation, tourniquet application, and “Golden Hour” rapid evacuation policy likely contributed to these reductions in mortality. An abstract from this study has been accepted for the November AMSUS poster presentation. A manuscript is under preparation. Team: COL Kirby Gross, MD; Tuan D. Le, PhD; Jean A. Orman, ScD, MPH; CAPT Zsolt Stockinger, MD; and Col. Jeffrey Bailey, MD.

Physician Compliance Rate. The aim of this PI study was to retrospectively analyze provider compliance once year post-implementation of JTS CPGs. The analysis hypothesized that CPGs disseminated by JTS and the CENTCOM Joint Theater Trauma Systems (JTPS) team led to a decrease in the variability of management of combat trauma patients. Ten CPGs were selected: battle/non-battle injury documentation, resuscitation, burn record, burn care, cervical spine evaluation, cervical and thoracolumbar spine injury, compartment syndrome and fasciotomy, emergent resuscitative thoracotomy, fresh whole blood, infection control, post splenectomy vaccinations, and wartime vascular trauma. The analysis focused on a trauma casualty record, burn care, cervical spine evaluation, cervical and thoracolumbar spine injury, compartment syndrome and fasciotomy, emergent resuscitative thoracotomy, fresh whole blood, infection control, post splenectomy vaccinations, and wartime vascular injury. For these 10 CPGs, 25 of the included PI measures were selected and identified by specialty area and type of procedure. The PI inclusion criteria classifications are high or low in complexity, observability, and trialability. The first findings will be presented at the December AMSUS. Team: CAP Zsolt Stockinger, MD and Dallas Burelison, MFA.

The Impact of the Evolution of Military Hardware and Preventive Measures on the Incidence of Burn Injury in Combat 2001-2014. A retrospective review of de-identified DoDTR data and perineal burn data from USAISR Burn Center was performed. “MRAP impact on injury pattern: Trends in combat-related burn incidence and severity” was presented at the AMEDD at War: Lessons Learned in September. Analysis results suggest that burn incidence has declined dramatically over time after 2007. The lower incidence rates of burns after 2007 and lower likelihood of severe burns after 2007 suggest that MRAPs had a positive impact on burn prevention in OIF/OEF. Future studies will provide a detailed analysis of the impact MRAPs had on burn prevention and survival. Team: LTC Wylan Peterson, MD; Tuan D. Le, PhD; COL Kirby Gross, MD; CAPT Zsolt Stockinger, MD; LTC Kevin Chung, MD, FCCM; COL Booker King, MD; COL Michael Wirt, MD; and COL Lorne Blackbourne, MD.

Combat Related Perineal Burns. One related study to the above proposal is “Association of time to bacteremia with mortality in burn patients” Team: MAJ John Graybill; Tuan Le, PhD; LTC Kevin Chung, MD; and Jeffrey Howard, MD.

MRAP Impact in injury pattern: Trends in combat-related burn incidence and severity. A performance improvement analysis presented at the AMEDD at War: Lessons Learned in September. A manuscript is under preparation. Team: LTC Wylan Peterson, MD and Tuan D. Lee, PhD.

Golden Hour. An analysis of data from DoDTR, AFMES and Casualty Flight database suggests rapid evacuation of critically injured casualties resulted in a reduction of KIA mortality, and that this reduction led to overall reductions in mortality in the time period following Secretary of Defense Gates mandate that casualties in Afghanistan be transported to a medical treatment facility within one [golden] hour. The findings were published in JAMA Surgery. http://archsurg.jamanetwork.com/article.aspx?articleid=244884.

Team: Russ S. Kotwal, MD; Jeffrey T. Howard, PhD; Jean A. Orman, ScD, MPH; Bruce W. Tarpey, BS; Jeffrey A. Bailey, MD; Robert L. Mabry, MD; and COL Kirby R. Gross, MD.

Long-term Outcomes Following Trauma. The analysis focused on a trauma casualty cohort from DoDTR, combined with data from other DoD sources (e.g., AFMES, DHA) with long-term follow-up on patients diagnosed with chronic diseases (hypertension, diabetes, cardiovascular disease and chronic kidney disease). The study found that exposure to trauma is linked to significantly increased risk of all four of these chronic diseases as far out as 8-10 years following the initial injury. Furthermore, the risk follows a dose-response relationship with injury severity, such that higher ISS equates to higher risk of each of these diseases. The results, Retrospective Analysis of Long Term Outcomes after Combat Injury: A Hidden Cost of War, were published on the Circulation website in September. Team: Jeffrey Howard, MD; Jean A. Orman, ScD, MPH; and LTC Kevin Chung, MD.

Evaluation of Role 2 Medical Resources in the Afghanistan Combat Theater: Past, Present, and Future. A retrospective review of DoDTR Role 2 data was conducted on the type of patients treated, procedure conducted, and associated patient outcomes. The purpose of this project was to conduct a preliminary review of the R2R to understand trauma patient epidemiology and related interventions at these facilities to inform optimal provider readiness for deployment. UK and Israel recently joined the project to conduct comparative studies. LTC Mann-Salinas presented her initial findings at the MHSRS this past August and plans to share them at the EAST 2016. The related study, The Impact of Tourniquet Use on Mortality and Shock for Patients Arriving at US Role 2 Surgical Facilities in Afghanistan,” is ready to submit to a peer-review journal. For more information, read the Role 2 article. Team: LTC Elizabeth A. Mann-Salinas, PhD, RN, FCCM; Tuan D. Le, PhD; Col. Jeffrey A. Bailey, MD; Mary Ann Spott, MPA, MSIS, MBA; CAPT Zsolt T. Stockinger, MD; COL Michael D. Wirt, MD; COL Kirby R. Gross, MD; and Col Stacy A. Shackelford, MC.

Editorial Note: Team members listed are ISR or JTS staff members.
The mission of the Joint Trauma System (JTS) is to improve trauma care delivery and patient outcomes across the continuum of care utilizing continuous performance improvement (PI) and evidence-based medicine driven by the concurrent collection and analysis of data maintained in the Department of Defense Trauma Registry (DoDTR). The JTS is a division of the U.S. Army Institute of Surgical Research (USAISR) which is part of the U.S. Army Medical Research and Materiel Command and is collocated with Brooke Army Medical Center. The USAISR is dedicated to both laboratory and clinical trauma research. Its mission is optimizing combat casualty care by providing requirements-driven combat casualty care medical solutions and products for injured soldiers, from self-aid through definitive care across the full spectrum of military operations; provide state-of-the-art trauma, burn, and critical care to DoD beneficiaries around the world and civilians in our trauma region; and provide a Burn Flight Team.

COMING SOON to the Combat Casualty Care Curriculum Conference

The JTS offers clinicians, nurses, and medics the opportunity to acquire Continuing Education credits on a weekly basis. The telemedicine conference was developed to increase the knowledge-base of clinicians, nurses, medics, and other non-healthcare providers while deployed. The dual technical platforms of land line telephones and Defense Collaboration Services are used to connect far-forward providers throughout the continuum of care.

If you would like to join the conference, please contact the JTS Education Branch Chief Dallas Burelison at dallas.r.burelison.ctr@mail.mil

JTS Combat Casualty Care Curriculum Line up

22-Oct-15: Clinical Investigations in Theater (PI vs. Research)
29-Oct-15: Translating Military to Civilian Advancements
5-Nov-15: Invasive Fungal Infection
12-Nov-15: Trauma Training Platforms
19-Nov-15: Prolonged Field Care
3-Dec-15: AFMES
10-Dec-15: Trauma Anesthesia CPG
17 Dec 15: Post Traumatic Stress Disorder; Hyper metabolic state in severe TBI patients
7 Jan 16: Dismounted Complex Battle Injuries (DCBI) CPG
14 Jan 16: Military / Civilian Trauma Systems
21 Jan 16: JTAPI
28 Jan 16: Genito-Urinary Injuries