40th ICMM World Congress On Military Medicine

Abstract
Community based screening for pre-hypertension among military active duty personnel. Al-asmary sm, al-shehri aa, farahat fm, abdel-fattah mm, al-shahrani mm, al.omari fk, al.otaibi fs, al.malki dm. Source department of family and community medicine, al-Hada armed forces hospital, Taif, Kingdom of Saudi Arabia. Fmfayssal@yahoo.com abstract objective: to determine the prevalence of both pre-hypertension and hypertension and risk factors associated with the newly diagnosed Saudi military active duty personnel. Methods: a community-based cross-sectional screening of 1238 Saudi military active duty service personnel was conducted during the period from September to December 2007 at the military units of Taif region, western Saudi Arabia. Screening tools included self-administrated questionnaire, general physical examination, anthropometric measurements and assessment of blood pressure. Results: all participants were Saudi males. Their age ranged from +/-7.02. By applying the joint national committee on prevention, detection, evaluation, and treatment of high hypertension criteria, 214 (17.3%) were considered pre-hypertensive. Multivariate logistic regression analysis showed that obesity as measured by body mass index \( \text{odds ratio (or)} =2.71, \text{confidence interval (ci)}: 1.39-5.28 \), positive family history \( \text{or}=1.46, \text{ci}: 1.03-2.06 \), ever smoking \( \text{or}=1.45, \text{ci}: 1.05-2.02 \), and increased waist circumference \( \text{or}=1.04, \text{ci}: 1.02-1.06 \) were the significant predictors of hypertension among military active duty personnel. Conclusion: pre-hypertension is a common hidden problem and it predicts the development of frank hypertension. Findings of the current study support the recommendation of lifestyle modification for pre-hypertension patients. However, further prospective studies are required to determine the role of pharmacotherapy in pre-hypertension.
Not since Korea have the Canadian armed forces (CAF) been engaged in combat missions such as those experienced in Kandahar. This presentation will describe the CAF approach to psychological health during combat operations. Our approach starts well before deployment as mental health education and training occurs throughout one’s career and is re-emphasized during pre-deployment road to mental readiness training (r2mr). During deployment, CAF deployed a MH team to augment the primary care clinicians already in theatre. The team consisted of a psychiatrists, mental health nurses and social workers. Descriptions and statistics regarding the caseload and interventions will be provided. At mission end all that deploy are sent on a TLD (third location decompression) in Cyprus where the two active ingredients are “rest and relaxation” and further mental health training to aid in the transition from war zone to home. In addition, personnel are screened for psychological difficulties between 3-6 months after return and problems identified are addressed. In addition to the above a brief description of CAF successful programs to reduce stigma and increase help seeking will be discussed.
Abstract: during war and conflicts, deployed soldiers are not only exposed to the enemy but also to rigors of the environment including bites and stings of poisonous animals. A large number of scorpion stings were recorded during the gulf conflict. Scorpion stings are a serious threat to the soldiers. They are not only severely painful for long hours (< 12 hours) but may also lead to systemic complications in cases of severe envenoming. A proper management of these complications may help in reducing the morbidity and help in a faster recovery. Although specific anti venoms are available for few species of scorpions, the use of these antivenom remains controversial. Moreover anti venom use in the field has severe limitations including administration of antivenom within one hour of stings, the volume required and anaphylactic reactions on the other hand supportive care has been shown to be effective in severe scorpion envenomation involving systemic manifestations such as cardiopulmonary edema. Alpha-receptor stimulation plays an important role in the pathogenesis of pulmonary edema. Prazosin a postsynaptic alpha-1 blocker reduces preload and left ventricular impedance without causing tachycardia and is very useful in the management of scorpion stings. Moreover oral prazosin is quick acting, easily available, relatively cheap and does not risk anaphylaxis and can be easily administered. As a potent inhibitor of phosphodiesterase, prazosin also causes accumulation of cyclic gmp, one of the mediators for synthesis of nitric oxide (no) in the endothelium and myocardium. In addition, it also inhibits the formation of inositol triphosphate resulting in attenuation of myocardial responses to sympathetic stimulation. Hence prazosin is considered as a pharmacological and physiological antidote to scorpion venom action. The importance of prazosin in the management of soldiers with scorpion stings will be discussed.
Developments in Computer Assisted Rehabilitation Environments
Brigadier General (ret) Rob van der Meer
Prior Surgeon General

Computer assisted rehabilitation environment (caren) is a system that integrates a training platform (motion base), a virtual environment, a sensor system (motion capture) and d-flow software. It is useful for both diagnostic and therapeutic use. The human gait pattern can be impaired due to disease, trauma or natural decline. Gait analysis is a useful tool to identify impaired gait patterns. Traditional gait analysis is a very time consuming process and therefore only used in exceptional cases. With new systems, a quick and extensive analysis is possible and provides useful tools for therapeutic purposes. The range of systems will be described in this presentation, highlighting both their diagnostic use and the therapeutic possibilities. Because wounded warriors often have an impaired gait due to amputations of other extremity trauma, these systems are very useful for military rehabilitative efforts. Additionally, the virtual reality environment creates a very challenging situation for the patient, enhancing their rehabilitation experience. For that reason some armed forces have systems already in use. The most recent experiences will be discussed, including new developments both in the extension of the range of systems and the improvement and adaptation of the software. A new and promising development, the use of caren in a special application for patients with PTSD, will also be reviewed.
In worldwide military operations, vector-borne diseases such as malaria, dengue, leishmaniasis, lyme disease, etc... and associated discomfort caused by biting arthropods can be largely prevented with proper use of personal protective measures, particularly arthropod repellents. Personal protective measures and repellents are usually the first line of defense against biting and vector-borne disease arthropods and provide military commanders with a quick and inexpensive measure to protect the force in any military situation. This presentation will describe the United States Department of Defense arthropod repellent system and other important personal protective measures used to protect the military troops from disease vectors throughout the world.
Blast Injuries: Nature of Trauma and Management Strategies
Maj. Gen. Dr. Saud AlOmani
Director, Prince Sultan Military Medical City

In the recent years there has been tremendous emphasis about the hazards of chemical and biological weapons. On the contrary, extremely high numbers of deaths and disabilities caused by explosion used by terrorists in recent times have received relatively less attention of the health care community. Improvised explosive devices currently used in insurgency as well as by terrorist organizations are particularly challenging in that they are often loaded with metallic objects to inflict severe penetrating injuries to maximize death/disability and destruction of structures. Although there are no accurate statistics of blast injuries in the Arab-Gulf regions, a single hospital of KSA (Prince Sultan Military Medical City) received 16 blast injury cases during the last 12 months. On the other hand a large number of blast injury cases have been reported from Egypt, Syria, Lebanon, Bahrain and other Arab countries. Injuries sustained from a detonation are classified as primary, secondary, tertiary, and quaternary. Primary blast injury results from direct effects of the blast wave within the body and are unique to explosions. Organs with an air-fluid interface such as the tympanic membranes, lung alveoli, and gastrointestinal tract are at particular risk. Secondary blast injury is a result of penetrating injury from bomb casing fragments, anti-personnel fragments (nails, nuts, bolts, ball bearings) and environmental debris. Penetrating injury due to bones and teeth can also occur and there has been one report of hepatitis B virus transmission caused by bone fragments from a suicide bomber. Tertiary blast injury occurs when the blast wave propels the victim onto a hard surface or causes an object to fall onto the victim (including structural collapse). The quaternary blast injury classification is a catch-all category for all other explosion-related injuries, including burns, asphyxia, radiation, toxins, and psychological trauma. Overall bombings and blasts have the potential to cause multi-system life-threatening and devastating injuries to a large number of victims simultaneously and without warning. Because of the ever increasing incidence of bombing/explosion in recent times, physician should become thoroughly familiar with the characteristics of contemporary explosive devices, spectrum of injuries and management strategies. In this review, an attempt will be made to highlight some of these aspects.
Blast Related Traumatic Brain Injury
Dr. Hassan Jaber
Consultant Neurosurgeon

Blast Related Traumatic Brain Injury

Blast Related Traumatic Brain Injury; Traumatic Brain Injury - TBI is a very common injury in wars. Now it is becoming the most common injury of the body of about %50 due to the increasing use of improvised explosives devices IED (%67) or mines (%33). The IED are widely used lately in terrorist attacks. Blast related injuries account for %90 of all war injuries and caused by primary, secondary and tertiary effect. The primary trauma called Barotrauma causes stress and shear waves that affect body parts and organs variably. The brain is affected as well causing diffuse axonal injury and different histological and chemical degenerative changes. Although most of the injured return to active duties, their injuries from the primary effect were under diagnosed and they endured long lasting sequels. The diagnostic tools are inadequate because the brain is a complex organ of chemical histological and functional structure that makes defining the accurate pathophysiology difficult. These casualties are usually labeled as functional and emotional which is still a part if the injury, but being organic is underestimated. Serious organic injuries caused by secondary and tertiary effect of the blast constitute a good percentage of TBI. These injuries cause high fatality and serious disabilities. Attention is directed to better understanding of mechanism and extent of injury as well as the ways to protect the brain. I present here a couple of war victims with blast related TBI by an IED. They suffered severe TBI from secondary effect of the blast. Each required multiple cranial operations. They arrived to our hospital in an advanced critical clinical condition, then after surgical treatment they left in very good level in the scale of recovery. Review of the medical science of blast related injury is presented to comprehend the overall picture of these injuries.
Use of Fresh Whole Blood and French Lyophilised Plasma for Haemorrhagic Casualties Transfusion: the French Military Health Service Policy and the Civilian Outlook

Col. Dr. Clavier Benoît, MD
Deputy Director of the French Armed Forces Blood Transfusion Centre
DABAN Jean Louis & SAILIOL Anne & AUSSET Sylvain

Transfusion in overseas operations (a) concerns mainly the war wounded in hemorrhagic shock.

The military health service (SSA) has established specific procedures for transfusion in an exceptional situation, in accordance with national, European and NATO. The type of lesion evolving because of conflicts become unbalanced, the use of explosives and other routine use of ballistic effects. The lesions reached 80% in the members and are often bleeding because they are decaying. The doctrine of SSA to support the bleeding wounded combines gestures said combat and nursing evacuation to bring the injured as soon as possible to a medical-surgical facility where hemostasis salvage surgery and transfusion for resuscitation survival and strategic medical evacuation will be practiced. In this context, the lyophilized plasma produced by the Blood Transfusion Centre of Hosts (CTSA) and whole blood (ST) collected in the field regularly demonstrate their effectiveness.

Collection and transfusion of ST are specific techniques for transfusion in OPEX that take into account the risk-benefit ratio. To reduce the residual risk of infection, a voluntary screening is performed for the donation of ST before departure.

ST kits are available as a device “all in one” grouping all the necessary sampling and qualification of the donation. Finally, the traceability of all blood products transfused in OPEX is provided by the CTSA retrospectively from data collected in the field. The lyophilized plasma has received approval from the National Security Agency of Medicines and Health Products (MSNA) for use in civilian areas targeted on the management of hemorrhagic vital emergency.
The first blood product albumin was developed during World War. Since then, blood products began to play an irreplaceable role in military trauma care. Currently, the supporting system of blood and blood products in military field trauma has become increasingly sophisticated. Development of novel blood products also improved dramatically. A relatively complete supporting system of strategic storage blood components consists of frozen plasma, platelet and red blood cell. Universal virus inactivated freeze-dried plasma has also been purchased by the military. Albumin is used as antishock blood volume expansion for emergency treatment of military trauma. Different kinds of albumin including albumin of various concentrations, high purity albumin and albumin in soft packages are available. Specific immunoglobulin has become the regular strategic storage of some developed countries, used for the prevention and treatment of infection in military trauma, emerging infectious diseases and against the potential threat of bioagents and bioterrorism. Local hemostatic produced upon fibrinogen and thrombin as well as coagulator Factor performing integral hemostasis effect have become increasingly significant for treating hemorrhage in military trauma. Development of anticoagulants including human protein C and antithrombin has got great improvement. These medicines have the potential for preventing and treating sepsis caused by military trauma. Protease inhibitors including 2-macroglobulin are expected to work in the specific medicine. In conclusion, blood products will play a greater role in the future war and non war military operations.
Background/Case Studies: Since 1987 the Netherlands Military Blood Bank has worked closely with Dr. C.R. Valeri for the production of -80°C frozen blood products. With the procedures of his Naval Blood Research Laboratory, the Netherlands Military has been able to provide frozen red cells since 1993 and frozen plasma and platelets since 2001 for peacekeeping and peace enforcing missions abroad for the Netherlands. With the availability of these -80°C frozen blood products the "walking blood bank" and its potentially unsafe blood products are obsolete and this concept is thus safely abolished in 2001 by the Netherlands military. Since the introduction of 4°C storage of thawed red cells in 2004, the Netherlands military mainly use 80°C frozen blood products to cover operational needs. Here we describe the experiences with these products of NLD blood bank facilities in Afghanistan, from August 2006-April 2010.

Study Design/Methods: All -80°C frozen products are leukodepleted and of universal donor type, produced in the Netherlands, shipped at -80°C (dry ice) and stored in theatre at -80°C. Products are thawed on demand (red cells, plasma and platelets) or for 4°C storage after thaw (red cells 14 days and plasma 7 days). Occasionally, non frozen liquid red cells are sent as a supplement to cover (expected) higher usage. All products are in compliance with international regulations and guidelines.

Results/Findings: During the past 4.7 years, 1,002 patients (83% Afghan) were transfused with 6,164 -80°C frozen blood products (2,168 red cell units, 2,953 plasma units and 1,043 platelet units) and 876 units liquid red cells. On one location where all blood products were provided by the Netherlands Military Blood Bank, blood usage and survival were further analyzed. It showed that >95% of the transfused patients were trauma patients, of which 14% (48 out of 341) required more than 10 red cell units within 24 hours. In these massively transfused patients survival improved from 44% (N=16) to 84% (N=34) after the introduction of the new 1:1:1 transfusion policy in November 2007. No walking blood bank was required and no shortages or transfusion reactions were reported.

Conclusion: Fully tested, frozen blood products, readily available after thaw proved to be a safe, available, effective and efficient blood support for combat casualty care and together with the use of a 1:1:1 ratio increased survival in MT patients significantly.
Old Chinese and Egyptian physicians used some chemical methods for the treatment of wounds and injuries. Although the beneficial effect of passing surgical instruments through flame was well known to ancient civilizations, the heat as a preservative method in the medical industry was first introduced in 1809 in France. Joseph Lister's (1827–1912) believed that it was microbes carried in the air that caused diseases to be spread in wards. Sterile gowns and caps were used by Gustavo Neuber. Surgical masks were applied in 1897 by Mikulicz, while rubber gloves were advised by William Hallstead in 1890. For the last two and half years, Syria suffers from the worst kind of war. So far more than 125 thousands civilians have died and more than four hundred thousands were injured. A lot of severe different casualties resulted which was extremely above the capacity of the local hospitals especially since some hospitals were occupied by fighting sides and used for military purposes. Some houses were changed into field hospitals where there degree of sterilization. As an orthopedic surgeon, I found myself going back to practicing a primitive form of sterilization. We applied smoking and boiling the metal surgical instruments. Other non-metal instruments were used without sterilization. Some surgical procedures such as amputations were performed with bare hands as there were no surgical gloves available and saws were sterilized by flaming. The percentage of infection is very high due to the lack of antibiotics as well. The aim of this paper is to shed lights on the primitive methods of sterilization inside some hospitals in Syria where the war is still active.
The evacuation of the sick, wounded and injured personnel during the military operations in the mountainous areas is one of the most difficult and complicated operations. It involves a multitude of factors. One has to take into account the degree of maneuverability, environmental conditions, and their impact on the individuals involved in the evacuations and medical evacuation aircrafts. The evacuation teams in the southern region of Saudi Arabia have faced many such difficulties during south shield operations war against the Huthis. Some of the difficulties include: towering and steep mountains along the southern borders with high peaks of mountains, deep and rugged valleys, a decreased scope of communications between aircraft and ambulances, frequent and highly unpredictable changes in the weather within short period of time, low oxygen and its impact on the pilots and the evacuation teams and limited availability of landing zones. The air evacuation of the sick, wounded and injured personnel during the military operations from the mountainous areas was observed to be the easiest means of medical evacuation due to the difficult terrains which limits the movement of ambulances and delays the transfer and speeding up the process of rescuing injured personnel. However air evacuation had side effects on both pilots and medical staff due to vibrations caused by flying at very high heights as a result of the presence of rugged mountainous peaks. The second squadron of medical evacuation in the southern region had taken part by evacuating 165 wounded personnel from the battlefields to the field hospital as well as regional hospitals. Some of the injured personnel were also transferred from the highest peaks of mountain in jizan region during this operation. A detailed strategy and the ways to overcome the difficulties encountered during the evacuation operations from mountainous region will be presented.
High temperature in military training: The role of Military Doctor in preventing dangerous circumstances.

Capt. Giannoglou D, MD
Clinical Fellow at St George’s Hospital, London, UK.

High temperature is a well known enemy, especially during summertime. The need for constant training, regardless the weather, requires proper advisory and warnings for the soldiers, in order to avoid dangerous situations. The main conditions caused by high temperatures, such as exhaustion, dehydration and heat stroke are presented and solutions are being suggested, when the circumstances do not allow rapid transportation to the hospital. Injuries and illnesses caused by extreme heat is a common phenomenon in military training during summertime. It is emphasized that the role of military doctor is to mainly prevent these conditions from happening at first place. To achieve this, he must warn and advise the soldiers before any major military task, when the temperature is expected to be in the range of >30°C. At the same time, he is responsible for the proper equipment and supplies, that will ensure the personnel's defence against heat.
Water Management During Military Operation

Let. Col. Pharm. Ahmed Hisham Hawary
Intelligence and security Department of M.S.D

The working paper submitted by discussion of all matters relating to water management and its uses during military operations. Therefore, it will mention the types and sources of water and potential threats towards it. The importance of water and its use during military operations.

It also will highlight steps and mechanisms dealing with water management and estimating daily requirements including the required uses depends on the quality of the military mission. Requirements that should be available for drinking water in the field will be discussed and how to be analyzed to ensure their validity. Also, the steps and mechanisms of scientific planning would be taken to provide the amount of water and its uses before the task starts and the review of the most important factors affecting the water.
The psychic effects of combat on soldiers are described in literature since Antiquity. The great number of severe conflicts in Europe on the XIXth and XXth centuries has enabled military and civil psychiatrists to make more accurate the symptomatology and psychopathology of these effects.

The French military psychiatrists have witnessed two types very distinct pathologies on soldiers taking part in EO (external operations). On one hand, a stress related disease, situational, temporary and in most cases reversible with extraction of the subject from the reasons of the stress, which can be tackled by training. On another hand a psychic injury due to a traumatic scene, both surprising and frightening, that requires a special care, since the withdrawal of the subject from the trauma location is not sufficient to his recovery.

We therefore propose to have a look at firstly what is stress related and secondly to the psychic trauma effects (Psycho-Traumatic Syndroma, PTS) that affect between 5% and 10% of the French soldiers in EO.
Towards the end of the seventies and early eighties, alcohol use and abuse had been reported by researchers as being rampant among young adults. The military as an institution that is mostly populated by young adults has received little scientific attention in drug misuse studies in Nigeria. There is therefore a need to look into the pattern of alcohol use among soldiers in the Nigerian Air Force (NAF). Therefore, the aim of the study is to assess the prevalence of alcohol misuse among soldiers in the Nigerian Air Force, as well as to assess the relationship of alcohol use and harmful effects. The study will involve assessing the Nigerian Air Force personnel attending officer’s and other rank’s messes as well as attending the mummy market (a place which serves as a mini mart, and a joint where soldiers relax and are allowed to sell, buy and take alcohol). Two questionnaires will be randomly distributed to officers, air men and air women. Each of the personnel will be required to complete a general health questionnaire, as well as audit. Only NAF personnel in a sound physical and mental state would be considered. The result of the study will be tabulated and cross tabulated using a frequency distribution. A student t-test and chi - square test will be used to analyse the data. The outcome of the findings will be discussed in the light of previous studies, and appropriate inference will be made following the discussion.
Illness of the Optic Nerve in Both Eyes in a Patient Due to Chronic Exposure to Jet Fuel Type JP - 8 and JP - 4, Which is Based on Kerosene

Maha A. Badr
Senior Clinical Consultant Neuro-Ophthalmology.
Prince Sultan Military Medical City (PSMMC )

The aim: to study the poor condition of the optic nerve in both eyes in a patient exposed chronically to deal with the aircraft's fuel tank type JP - 8 and JP - 4 during the process of cleaning the fuel tank of the aircraft. Method: a status report on Saudi patients has a 35-year-old that lost sight in both eyes and suffered atrophy of the optic nerve in both eyes. He underwent examinations for the nerves of sight, eyes, nerves, magnetic resonance imaging and lab tests. The results: the patient lost his eyesight in both eyes, the medical history and clinical features have pointed that blindness may happen because of sight neuropathy was poisoned by jet fuel (JP - 8 and JP - 4). This is confirmed by the results of the magnetic resonance imaging (MRI). Conclusions: chronic exposure to jet fuel JP - 8 and JP - 4 may cause poisoning of the optic nerve. Therefore, the regular examinations of the state of the eyes using the Sanlen chart to measure visual acuity may not detect early nerves poisoning. Therefore, we recommend measuring the field of vision, visual safety planning and evaluation of the optic nerve by scans the bottom of the eye during the regular checkups for the eyes to detect early changes and prevent permanent loss of vision.
Viral respiratory infections are particularly common and of varying severity. In recent years, advanced techniques in molecular biology have helped identifying new viruses that cause respiratory infections. These newly identified viruses in humans are from the animal reservoir. They generally have a major pathogenicity with a high mortality rate.

SARS (severe acute respiratory syndrome) is the first transmissible and serious disease to emerge in the XXI century. The epidemic that started in China in late 2002, has spread globally involving more than 8,000 people and leaving over 800 dead. Among flu viruses, the H5N1 epidemic followed a few years later by the H1N1 pandemic has increased the concerns of a new deadly pandemic similar to the Spanish flu of 1918-1919, responsible, at that time, of 20 to 50 million deaths.

Through international mobilization driven by alerts from the WHO, these epidemics have been lessened. However, the recent emergence of the H7N9 flu in China followed by the MERS-Coronavirus in the Middle East and later in Europe during the year 2013 shows clearly the permanent threat of the respiratory viruses. These emerging viruses usually have a low ability to spread between people, which fortunately limit the spread of epidemics. Despite this, some of these viruses represent a significant threat.

The fight against these epidemics through the implementation of a coordinated response strategy at the national and international level is a major public health. The management of mass casualties during the event requires qualified people, the organization of health care facilities and a close coordination of all the emergency services involved.
A Study on Traumatic Spinal Cord Injury in an Inpatient Rehabilitation Unit in Central Saudi Arabia
Dr. Maher Aljadid
Consultant Physician and Head of Rehabilitation Section - Prince Sultan Medical Military City

Objectives: To determine the causes, age and gender differences, hospital length of stay (HLoS) and prevalence of traumatic spinal cord injury (TSCI) in a Saudi referral trauma center. And to identify the reasons behind staying longer at rehabilitation centers compared to other countries.

Methods: We retrospectively reviewed hospital records of all patients who completed the TSCI rehabilitation program in the Rehabilitation Medicine Division, Department of Neurosciences at Prince Sultan Military Medical City, Riyadh, Kingdom of Saudi Arabia from August 1982 to November 2010. The age and gender of the patient, type and mechanism of trauma, type and severity of neurologic deficits, frequency, and HLoS of patient's were collected for analysis.

Results: The mean age of the patients was 29.7 ± 0.73 years. Out of 466 TSCI patients, 398 were males (85.4%) and 68 were females (14.6%). The higher frequency of TSCI was found in the 16-30 age group, and a lower frequency was found in the 0-15 and >45 age groups. Out of the 466 TSCI patients 377 (80.1%) sustained their injuries as a result from motor vehicle accidents. Cervical cord was the most common site of injury accounting for 34% (n=137) of cases in male population, and in females, the higher frequency was the upper thoracic (n=31 [45.6%]) There were 250 TSCI patients that stayed in the hospital for 1-70 days, and only 12 patients stayed in the hospital for >280 days.

Conclusion: Compared to females, the frequency of TSCI was higher in males and 16-30 age group sustained more TSCI. Road traffic accident was the most common cause of injury and more than 50% of the TSCI patients stayed in the hospital for <70 days.
Simulations have been used widely in high risk environments like the Military Air Force to prepare their staff for real critical scenarios and to minimize human related errors. These Innovations have been advancing for the last 20 years. Therefore, the high fidelity simulation technologies in medicine and in Military Field Medicine claim to be effective and of high impact on knowledge, skills and attitudes among health care providers. The Army Mobile Field Hospital of UAE during deployment missions and exercises started implementing these technologies as part of their strategic vision of improving “training gaps”. Would these technologies contribute to the continuous improvement in military health care services in the field? And, is it a cost effective solution to boost the training quality among troops? Is there enough evidence based guidance to answer whether these technologies are a Myth or Truth?
Background: the HIV situation in UAE can be characterized as low-prevalence, a cumulative total of 726 HIV still-alive cases has been reported among UAE nationals: 546 males (75.2%) and 180 females (24.8%). In the period 2010-2011, a total of 93 new HIV cases were reported among UAE nationals: 36 in 2010 and 57 in 2011. The HIV/AIDS prevention program in the UAE military began in 2009, in 2010 a knowledge attitude and practices (KAP) survey has been formed to make a base-line data to be used for prevention education to all military personnel and their families, moreover to find out the risky behaviors among the youth the military personnel.

Methodology: KAP survey was developed to analyze the situation in the military and to provide the program with base-line data, in addition to the KAP survey, focus group discussions and interviews were implemented to identify the risky behaviors and HIV/AIDS risk perceptions.

Main findings and results: studies indicated that most age groups likely to be infected are young people under the age of thirty years and that the sexual practices outside of marriage may be responsible for the majority of cases. The main findings from the KAP survey results includes: most of the people interviewed know about the modes of transmission, the risk perception of the participants was low, the stigma regarding people living with HIV is very high and there were many misconceptions about the virus and the disease.

Discussion: intervention plan conducted to tackle the above findings; the plan included HIV/AIDS school curriculum for military institutions, peer education training program and confidentiality policy for the HIV positive people. In addition to the above, communication plan was developed to deal with risky behaviors and to formulate suitable IEC materials for HIV prevention.
Objectives: MOLE was a two-year project focused on m-learning, provided training/reach-back capability to 22 nations, leveraged the global cellular network infrastructure, mobile technologies and emerging mobile devices and facilitated sharing of educational and training content to be used for humanitarian/disaster medical preparedness and involvements. The process of development, the objectives, the testing and the end product and its implications in humanitarians’ assistance medical missions will be discussed. Design and structure of the project: the MOLE team developed over a 2 year period the mobile application using the work completed by three teams: medical contents team who focused in developing the medical contents used for humanitarian assistance missions based on previous expertise’s technology and transitions team working on transforming the medical contents into a mobile app testing and evaluation team worked on conducting an operational evaluation of mobile learning’s utility, usability and suitability of the app. Results: the final product of MOLE has six major content categories: Library; the library contains a multimedia collection of indexed materials in different media (text, e-book, video) covering topics relevant to the organization and delivery of healthcare services in a humanitarian or relief mission. Mission packs: mission packs is not yet active. Standards: the standards section contains materials to allow users to review international rules of engagement and understand legal and ethical responsibilities. Network: the network section is an area intended to facilitate finding, documenting and sharing information about resources on a mission tools: a collection of interactive job aids to support mission preparation and performance in the field standards: contains materials to allow users to review international rules of engagement and understand legal and ethical responsibilities the testing and evaluation results shows excellent learning’s utility, usability and suitability of the app. The app. is now available for both ios based and android based smart phones. Conclusions: MOLE smart phone app. is a product of collaborative work and efforts of 22 nations. It is an excellent tool for preparation, preparedness and engagement activities of medical involvement in humanitarian missions worldwide.
Background: The phenomenon of CO2 retention during exercise has been reported in divers, ex-divers and young sportsmen. It may be responsible for better performance of some divers and at the same time put them at greater risk of CO2 toxicity and diving accidents in certain circumstances. It is not known if this is an inherent trait or acquired over years of diving and its occurrence in divers of the Indian navy has not been studied.

Method: Twenty each of healthy submariners, diving arm volunteers, divers and surface Navy sailors were subjected to incremental exercise test and their end-tidal carbon dioxide tension measured before, during and after exercise. Arterial blood was sampled before and after exercise for presence of post-exercise acidosis and its nature.

Results: The divers had greater end tidal carbon dioxide tension during exercise compared to submariners and sailors midway through (Mean ±[SD] - 48.3[2.9] vs 45.5[2.8] and 43.9 [2.8]) and at peak exercise (49.5[3.5] vs 46.0[3.2] and 46.1[3.4]). The values of divers and dive volunteers were comparable. Repeat measures analysis of variance also revealed significantly greater end tidal carbon dioxide tension through exercise in these two groups.

Conclusion: Divers and dive volunteers retain significantly more CO2 during exercise compared to sailors and submariners. The phenomenon of CO2 retention in divers may be an inherent trait.
Jordanian Royal Medical Services, Milestones in Health Promotion
Major General Dr. Khalaf Al-Jader
Director General of Royal Medical Services

Describes the significant development milestones that have been crossed by the Jordanian Royal Medical Services to become one of the largest medical institutions in the renaissance of modern Jordan and the International Community. The Royal Medical Services as National and International Military Health institution vision is to be the forefront in providing complete excellence in medical services that cope with global medical advancement. Royal Medical Services is an educational umbrella for physicians, nurses and allied health professions for different health sectors in Jordan and worldwide. These successful milestone leaps have promoted Jordan as the number one health care services provider in the region and among the top 5 in the world as well as being the top medical tourism destination in the Middle East and North Africa as ranked by the World Bank.
Similarities, differences, and challenges in care of garrisoned and deployed service members, and care of civilians who “fall under our control” (i.e. wounded as collateral damage).
Warner Anderson MD FACP
International Health
Office of the Assistant Secretary of Defence for Health Affairs

Similarities, differences, and challenges in care of garrisoned and deployed service members, and care of civilians who “fall under our control” (i.e. wounded as collateral damage).
The modern Medical Services in Nepalese Army started in the year 1925 AD (1982 B.S.) with the establishment of 64 bedded Tri-Chandra Military Hospital (TCMH) Kathmandu, which was established in the honor of the Nepalese soldiers who lost their life in the first world war. Today under Directorate General of Medical Services of Nepalese Army there are 16 Field Ambulance Companies of UN-Level-1 standard at brigade level and 2 Field Hospitals of UN Level-2 at division level and Shree Birendra Hospital of 490 bedded capacities as central referral hospital. Besides these, the Nepalese Army has one Army Rehabilitation Center for the combat casualties which are providing physical, psychological and moral support to the physically challenged military personnel. With the brutal attack of Maoist insurgents at Dang Barrack of Nepal Army in 2001, Nepal Army was mobilized throughout Nepal to control and contain Maoist insurgency movement and to bring to peaceful negotiation in Nepal. During the 5 year Maoist insurgency period from 2001 to 2006 almost 3,000 combat casualties were brought to Birendra Army Hospital for emergency surgery and management. During the 5 year Maoist insurgency 760 combat casualties of Nepal Army lost their life at the battle field and on their transport to military hospital. Of the 3,000 combat casualties brought to military hospital only 50 combat casualties lost life in spite of major trauma. The Nepalese Army Medical Corps has also assisted in treating the injured personnel during various natural disaster i.e. earthquake, fire, landslide, epidemics, flood, accidents, etc. both national and international since its establishment. The Nepalese Army Medical Corps is providing medical relief operation for the civil population with the co-ordination of the NDRC. The Nepalese Army Medical Corps has its disaster relief standby team for medical epidemic, landslide, earthquake and flood. Beside all these medical services, Nepalese Army Medical Corps has been providing medical treatment to the regular, retired and their dependents. Nepal became a member of the United Nations in 1955. The participation of Nepalese Army in the UN peacekeeping operations spans a period of 53 years covering 37 UN Missions, in which over 97,182 personnel have participated. UN Peace Support Operations began with the deployment of five Military Observers in the Middle East (United Nations Observer Group in Lebanon) in 1958. The first Nepalese contingent, Purano Gorakh battalion was deployed in Egypt in 1974. To date, 59 personnel of the Nepalese Army have sacrificed their lives in the line of duty and 58 have been disabled. Currently, Nepalese Army has some 3,773 soldiers serving in 12 different missions around the World. At present The Nepalese Army Medical Corps is providing medical service establishing level 1 hospital to the troops of Nepalese contingent deployed in Sudan, Iraq, Syria, Lebanon, Congo, Haiti and Mali. The Nepalese Army Medical Core is providing medical services i.e. HIV awareness classes, pre medical checkup, vaccinations, etc. to the troops participating in UN missions during pre deployment, under deployment and post deployment.
International Health Regulations

Dennis Faix, MD. MPH

works in Alert and Response Operations, Division of Communicable Disease, Health Security, and Environment at the World Health Organization Regional Office for Europe.
Background: Neisseria meningitidis, etiological factor of invasive meningococcal disease, is a human commensal that colonizes the nasopharynx. Colonization is usually asymptomatic but is a prerequisite for disease. Asymptomatic carriers are the major source of infection. Immunoprophylaxis is one of the most effective methods induced herd protection by preventing nasopharyngeal meningococcal acquisition.

Material and methods. The survey of n. Meningitidis carriage was conducted between January and March 2013 in the military unit in Poland. The single-time throat culture samples were collected from 559 professional soldiers (302 unvaccinated vs. 257 vaccinated individuals with quadrivalent conjugate vaccine a,c,y,w-135). The bacterial identification was performed with classic microbiological methods (culture, incubation, identification). Non-culture method (pcr) was used for confirmation of detected strains of n. Meningitidis and determination of serogroups (a,b,c,y,w-135).

Results: 29 carriers were found in the group of unvaccinated professional soldiers (9.6% of examined individuals) whereas among vaccinated soldiers only 3 persons were carriers of n. Meningitidis (1.2%). The most frequently identified serogroups among 32 carriers serving in the same military facility were serogroup b (28.1%), followed by y (25.0%), and c (21.9%). Conclusions. The initiation of mass vaccination with quadrivalent conjugate vaccine a,c,y,w-135 in the military environment seems to be an effective tool in a suppression of carriage of neisseria meningitidis. Surprisingly, high prevalence of carried serogroup y observed in examined soldiers may indicate its increase in general polish population.
Abstract: every army has its operational requirements for individual, for small scales, and for group interventions. There is always the possibility of exposure to repeated combat and traumatic incidents. All over the world and in every army there is the special privacy and the sacred life of the military in which there is always the non-acceptance of “outsider intervention.” TRIM is a program adopted by the British armed forces which aim to pick up and diagnose mental consequences of all types of trauma which military personnel can encounter. It is based on training soldiers and officers in the army to understand the psychology of trauma and to be able to deal with mental consequences of it as well as to be able to provide the psychological first aid in the field. It enables them to decide if the situation requires professional psychiatric intervention. It is inexpensive, cost effective and very practical to be applied in any army. In our armed forces, with presence of our great religion and excellent social bonding and good financial status, implementing TRiM can be very efficient.
The lethal triad is used to describe the combination of coagulopathy, hypothermia and acidosis seen in exsanguinating trauma victims. Resuscitation of massively injured patients is physiologically complex, time dependent and significant resources management matters often associated with poor survival rate.

Damage Control Resuscitation (DCR) is defined as a systemic approach to major exsanguinating trauma combining the strategies of permissive hypotension, hemostatic resuscitation and damage control surgery. The aim of permissive hypotension is to achieve a systolic blood pressure of 90mmHg in order to maintain tissue perfusion without encouraging re-bleeding from clotted vessels. Hemostatic resuscitation describes the early use of blood components, to treat the acute traumatic coagulopathy and prevent the development of dilutional coagulopathy. The strategies include administration of fresh frozen plasma and platelets; use of recombinant factor VIIa and cryoprecipitate. Damage control surgery aims to stop hemorrhage, minimize contamination and allow optimization of physiological function.

The current recommendation in military conflict is FFP: PRBC in 1:1 ratio supplemented as necessary with recombinant factor VII. The resuscitation and surgery are undertaken simultaneously with close communication and cooperation between surgeon and anaesthetist.

The aim of this presentation is to provide an overview of managing trauma casualties most at risk of coagulopathy and death and to address all aspects of lethal triad immediately on receiving the injured patients.
Military hospitals are institutions built, developed and staffed to serve a very special and important sector of the community in the Kingdom of Saudi Arabia. The military sector in addition to its role in protecting the country's boundaries and territories constitutes a very productive part of the community and for those important functions the government of the KSA has rewarded them a unique health services system through establishing modern, highly equipped, well-staffed state-of-the-art institutions. The hospitals have also been managed by highly qualified high ranked officers well versed in modern hospital management.

The model institution used in this study is the nwafh. We focused on the nwafh educational and training activities during the period 1991 to 2002 when the institution was almost transformed into a center of high quality academia, state of the art training and education. This was a natural outcome to the collaboration between the nwafh and the royal colleges of surgeons and other academic institutions. It was a clear example of how things can be done and how technology can be made to yield to the needs and the determination of the people who are seeking excellence work for it and wants to see things done the way they should be.

The nwafh during that decade was a university in its own rights. The department of surgery introduced basic and advanced laparoscopic courses to be run twice a year and over 500 surgeons graduated from this institution. The dissemination of the technique did not stop at the national level only but it crossed boarders to go overseas to introduce laparoscopic surgery into neighboring countries. One of the first laparoscopic courses took place in the Sudan, when the University of Gezira invited the team to come over and conduct the course there, an approval from the leadership was sought and the late minister of defense gave the permission and not only that he gave orders to take all the needed equipment that would facilitate the course.

A number of postgraduate examinations were taking place there, namely the frcs examinations, the atls courses, basic and advanced surgical skills courses, visiting professors giving state-of-the-art lectures and much more. The same was done in other departments; pediatrics, obstetrics, gynecology, family medicine, tqm, internal medicine and all of this was orchestrated by the joint efforts of the medical administration and the royal colleges.

This study will review all these activities and quote them as examples to be repeated since nothing is impossible as long as there is the will and the motivation.
Aims: The authors report a retrospective descriptive study of 1407 dossiers of gallstones. The aim of the study is to assess the care and the profile of gallstones in general surgery department at the national hospital centre in Nouakchott Mauritania.

Patients and Methods: Over a period of five years 1407 dossiers were included. Databases were statistically analyzed by SPSS and the variables studied were: age, gender, ethnicity, previous history, clinical biology, US and Scanner, type of intervention, route first, and postoperative length of stay. It is de1214F s and 193H, the median age was 46 (14-90). The arab ethnic group is dominant (95%). Diabetics (3.2%) and hypertension (3.6%).

Results: Biliary lithiasis (BL) uncomplicated were observed in 499 patients (35%), cholecystitis in 645 (45%) and CBDS were 152 (10%). Clinically the pain of RUQ was the most frequent symptom. The biologically leukocytosis was found in 385 (27%), cholestasis and cytolysis in 153 (10.8%) cases and liver failure in 20 cases (1.4%). 1396 patients underwent ultrasonography (99.21%), the Scanner in 131 (9.3%) and seven Bil-MRI only were found. Cholecystectomy by the coelioscopy was performed in 225 patients, (16%). The conversion was found in five (0.39%) cases. The choledocostomie by Kehr drain was performed in 98 (6.9%) patients, the biliary-digestive 28 (1.99%) times and ideal choledochotomy suture with 2 patients. Immediates postoperative complications were found in 53 (3.76%) cases, they were primarily infectious complications 31 (2.5%) cases of hematoma or bleeding 10 cas and 2 bile leaks. Lesions of the CBD during cholecystectomy are five in number with partial or complete sections 3, 5, 2 ligatures after Coelo. Deaths are the number 16 or 1.4%. The residual stones after cholecystectomy were 18 (1.27%) cases. Cholangiography by Kehr drain was found in 92 cases with 3 cases of residual stones after cholangiopancreatography. The average length of hospital stay was 2.7j (1-8) for uncomplicated gallstones and 4.58j (1-23) for cholecystitis and 15.38 (1-29) for CBDS. Comorbidities are dominated by hernia - hernia 20 (1.5%), goiters 20 (1.5%), pancreatitis 18 (1.4%). There was an associated pregnancy reported in 8 cases.

The calculo-cancer represente 2.48% (35 patients). The pathology was found for 463 (32%) patients with only 221 (15.70%) of acute cholecystitis, 222 (15.77) chronic cholecystitis, gallbladder adenocarcinoma 8 well differentiated, 4 hyperplasies, 2 liver metastases, one case cavernous hemangioma and five defects coloration. The mortality rate is 1.4%, the morbidity rate is 3.76% marked by a high level of infections.

CONCLUSION: Cholelithiasis is common Mauritania, its early care is needed to avoid the occurrence of complications and reduce the percentage of deaths.
A cross sectional sample of 624 military personnel, mostly males, were assessed for the prevalence of major cardiovascular disease risk factors. Those study participants were attending the military recruitment clinic for their reengagement check up. Of the 624 personnel studied, (593 (90%) were males. The majority of the participants (61%) were aged between 26 to 45 years. The assessment protocol included anthropometric information and measurements, laboratory tests, relevant medical history and life style practices. The risk factors investigated were obesity, diabetes, smoking, hypertension and dyslipidemia. Our findings indicated that 38.6% of the subjects had a bmi of 30 or more. Fifty percent of those aged 26-45 years were obese while an additional 25% were overweight. Out of the 462 subjects investigated for diabetes, 222 (48%) had increased risk for the disease while 65 (14%) had diabetes. Interestingly, 25 of the 65 (38.5%) who were diabetic were not aware that they have the disease. Twelve of the 31 who had a hba1c of more than 9 reported themselves as non diabetic when their medical history was taken. Dyslipidemia was prevalent at a rate of 50%, smoking was at 28% and abdominal obesity was at more than 50%. The proportion of subjects who have more than one risk factor is high. Efforts to implement preventive interventional measure to reduce the risk were carried out and results did show the effectiveness of those measure. Several approaches are discussed.
Military Medical Services Dealing with Mass Gathering Situations even if preplanned is conceptually affected by the concept of an unexpected increase in demand on health care providers beyond what is planned for. This prove itself more true looking at what is going on internationally in the developed, developing and underdeveloped world whether politically, or the expanding of industrial urbanization, and or naturally. Our experience even goes beyond to the fact that some mass gathering events are so enormous and the health care demands might exceed beyond the capacity of any system to cope. Therefore we came to conclusion that we have to modify the way we think in dealing with such an expanding burden on emergency organizations military or others particularly those who serves in Safety and Security and Medical Services Whether Hospitals and or Pre-hospitals.

In our presentation we will prove beyond the reasonable doubt that every emergency medical services providing organizations and medical facilities have to adapt the surge capacity as a conceptual framework to be able to rapidly expand its capacity to accommodate such un expected increase in demand beyond what is planned and to be an integral part of what we should be ready to be able to shift to as a solution. We have to be ready with a dynamic process nourished by a continuous data from EMS, ED, Hospital and System & input, throughput and output. Such a process should make us ready with options list that best equipped to serve our patients focusing on transport capability and the S approach in planning for Space, Staff, Supplies, and System to avoid Chaos & Contamination. It should help us with priority and event action list that includes patients’ priority actions and preset dynamic and fast clinical work practice to optimize emergency care and disposition decisions.

In summary we need urge capacity as additional contingency option and concept that make us ready with list that best equipped to serve our patients and actions that are directed towards us being able to maintain effective and efficient Patient Care.
South Africa (SA) has a doctor-patient ratio of 0.7 doctors per 1,000 people. People have limited access to quality healthcare services largely due to weak healthcare services and a severe lack of trained human resources. The National Department of Health therefore explored various options of increasing the number of skilled healthcare providers to improve the provider-to-patient ratio and increase access to care. The Clinical Associate Programme (CAP) was thus born as an innovative “new” kind of mid-level healthcare professional (HCP) with the necessary knowledge, skills, competency, commitment and attitude to function effectively in the public sector. Clinical Associates (CAs) are university trained HCPs that work under supervision. The CAP is similar to the Physician Assistants (PAs) in the USA adopted since 1961. This phenomenon of mid-level HCPs spread fast globally and is the third fastest growing career in the world. Today, PAs serve in the U.S. Military as front line combat medics. Combat-ready medical officers/specialists of the South African Military Health Services are required to plan and support operations throughout the continuum of care from Force Preparation to mobilization and demobilization. The South African National Defense Force is expected increasingly to deploy internally and externally and has thus resulted in a shortage of available medical officers to deploy. In view of this, the SG in partnership with the Minister of Health has adopted the CAP as a force multiplier for utilization in the operational theatre. This paper presents findings of a systematic review of the literature. It provides an overview of the process adopted on the use of CAs in the operational theatre and explores the pros and cons of military utilization. Successes are highlighted and challenges/obstacles identified impeding rapid scale-up and utilization of CAs. Lessons learned on the utilization of CAs are clearly described so that other militaries are able to benchmark the use of mid-level HCPs in the operational theatre.
Management of gunshot wounds of the limbs: what can we learn about related cases during Tunisian revolution? Lotfi Nouisri, Professor, MD and Senior Colonel in the Department of Orthopedic Surgery Military Hospital of Tunis - 1,008 Tunis - Tunisia the incidence of bullet wounds in civilian trauma has increased in many parts of the world during 2011. For general surgeons with limited experience there is a bewilderment range of apparently contradictory advice on management. An attempt to clarify this for gunshot injuries of the limbs without major vascular injury must include current concepts of ballistic wounding, the pathology of soft tissues wounds, fractures and of bacteria contamination. Neither bullet velocity nor available energy can provide a guide of tissue damage in gunshot fractures; the surgeon should not “treat the weapon”. The state of soft tissue envelope and the fracture pattern are the key factors and are determined by energy transfer. The aim is the preservative of healthy soft tissue with minimal non-viable and contamination. Advice on clinical practice achieved during Tunisia events (January and February 2011) and treatment options cannot be prescriptive because of the wide range of injury patterns and settings but an understanding of the general principles can guide clinical management.
Background: Religious pilgrimage, or Hajj, is a basic tenet of the Islamic doctrine. Each year approximately 3 million pilgrims congregate for up to 2 weeks in a <3 square mile area around the city of Makkah. Hajjis can experience physical and emotional stress with limited healthcare access. Cardiovascular events were the main cause of death during Hajj for the last decade; therefore the Strategic Cardiac Hajj Interventional Program (SCHIP) was launched in 2009 to provide improved cardiac outcomes.

Aim: To assess the impact of SCHIP on cardiac mortality during Hajj.

Methods: A team of Cardiologists, specialists, nurses with access to 3 cardiac catheterization laboratories provided 24 hour-a-day support to 13 local hospitals throughout the Hajj period. Cardiac and all causes mortality adjusting for the potential other covariates were statistically analyzed using time series data before and after intervention.

Results: Cardiac death rates during 2006, 2007 and 2008 were 51.7%, 50.6% and 53.2%. After SCHIP introduction rates in 2009, 2010 and 2011 were 43.3%, 32.5 and 19.7%. The in-hospital mortality for ACS were 4.7%, 4.6% and 3.0%. The number of cardiac procedure performed in 2 week during Hajj 2009, 2010, and 2011 were 183, 288 and 550. The majority of the procedure in the last 3 years were coronary catheterization 90.1%, 80.9% and 86.7%. The rates of open heart surgery were 7%, 5.2% and 4.5%.

Conclusion: After introduction of SCHIP, cardiac and in-hospital mortality substantially reduced. Future introduction of mobile cardiac catheterization laboratories may further reduce cardiac mortality.
Pre-deployment selection and use of prophylactic and therapeutic medications require an understanding of the antimicrobial resistance profile of infectious pathogens for which troops are at risk. These profiles are important both from deploying troops and the civilian population in the area of deployment. Endemic disease threats such as malaria, moderate to severe enteric disease and sexually-transmitted infections illustrate this. In this presentation, an overview of deployment-related challenges regarding antimicrobial resistance will be presented. The potential role of surveillance will be discussed, including the results of a pre-meeting survey on current military health system practices. The World Health Organization has launched an initiative to assess the scope of antimicrobial resistance challenges across global health and pursue solutions. That effort will be introduced.
Since 1996, the Defense Medical Surveillance System (DMSS) has been used by the U.S. Department of Defense to conduct highly focused health surveillance and epidemiologic studies in the U.S. military population. Composed of data from healthcare records, personnel actions and assignment history (including deployments), DMSS is a unique source for information that can be used to guide military policies and force health protection. The Medical Surveillance Monthly Report (MSMR) is a periodic publication in which studies from DMSS and other data sources are published. MSMR articles address problems that are highly relevant to military deployment operations, including mental health conditions, infectious disease, injuries and chronic illnesses. DMSS and the MSMR represent a long-term investment in public health that takes advantage of digital information infrastructure and modern information system design.
Military Health System Strategies regarding preparedness and response for antimicrobial resistance

Dr. David Brett-Major
Medical Officer, Health Security and Environment, World Health Organization

Pre-deployment selection and use of prophylactic and therapeutic medications require an understanding of the antimicrobial resistance profile of infectious pathogens for which troops are at risk. These profiles are important both from deploying troops and the civilian population in the area of deployment. Endemic disease threats such as malaria, moderate to severe enteric disease and sexually-transmitted infections illustrate this. In this presentation, an overview of deployment-related challenges regarding antimicrobial resistance will be presented. The potential role of surveillance will be discussed, including the results of a pre-meeting survey on current military health system practices. The World Health Organization has launched an initiative to assess the scope of antimicrobial resistance challenges across global health and pursue solutions. That effort will be introduced.
The Russian Military Medical Academy is a unique institution in the medical education system of Russia. It is one of the largest, and actually the only highest education establishment of military medicine in Russia, the main research institution in management and coordination of military medicine studies, the leading hospital in the Ministry of Defense of the Russian Federation.

The Academy exercises three interrelated functions: educational, scientific and medical-diagnostic. For implementation of these functions the Academy has:

- 7 training departments: the Superior Commanding Medical Staff Department, the Army and Missile Corps Medical Department, the Air Force Medical Department, the Naval Medical Department, the Foreign Medical Officer Department, the Postgraduate Training Department, the Undergraduate and Graduate Medical Training Department for Civil Physicians;
- Medical College for training and refresher course of nurses and paramedical personnel;
- 60 chairs, including 17 surgical, 14 therapeutic, 3 prophylactic, 7 special military medical and 19 theoretical;
- Scientific research center, Pharmaceutical center, Technical-engineering center, clinical base, base of providing educational activities and other services.

Every year more than 3 thousand medical officers, cadets and students study at the Academy and additionally about 2 thousand medical officers take professional refresher courses at the Postgraduate Training Department.

Foreign Medical Officer Department provides higher professional education, postgraduate education and professional development. It gave education to more than 3,000 military medical professionals from a number of countries in Europe, Asia, Africa and Latin America. Currently it provides higher professional education for physicians, dentists and pharmacists.
Ambulance Safety and Quality Assurance in EM Transportation
Dr. Khalid Abu Haimed,
Consultant, Emergency Medicine, Pre-hospital Care and Disaster
King Fahad Specialist Hospital Dammam

Ambulance Safety and Quality Assurance in EM Transportation

Being in the military medic fleet the overwhelming tactical training might overlook the need to focus on the medic safety as a medical provider. Those who provide or supervise them and or medically direct their operation to ensure that the following is addressed in the field medic practice as part of his or her competencies:

• Familiarity and practice of Ambulance Safety and Preventive Measures

• The early recognition and confrontation of lack of implementing Safety & Prevention measures effect on them

• Supervisors ensure to have an Ambulance Safety Quality Assurance program that document, address and monitor an improvement program

• Medical Directors to ensure that providers of Field EM management and Transportation have a Safe Performance and Clinical Practice.
Activated on January 11th, 2013 in full agreement with the Malian government and according to the United Nations Charter, operation SERVAL is an operation under national command which aimed to allow Mali to get back its territorial integrity. This operation is characterized by its initial lightning speed, by the exceptional characteristics of the theater of operation (climate, strains, distance with the metropolis) and by the density of the operations.

The lessons learned already highlight the efficiency of the warning device, the quality of the training of the teams, the coherence of the capacity choices and the richness of the acquired operational experience. Beyond what constitutes an unquestionable military success, and even if no conflict looks like one another, there are lessons to be exploited and margins of progress are identified. The prominent place of the medical within Command and Control is reaffirmed and the capital gain of Patient Evacuation Coordination Cell (PECC) is undisputed. Regarding the organization of the medical support, operation SERVAL dedicated the first operational deployment of the medical transit unit (MTU) and emphasized the interest of the CASA C 235 (“Casa Nurse”) as vector of the tactical MEDEVACS. The individual and collective experiences regarding combat rescue allowed good care of the wounded people on the ground. The medical teams in support of the combat units developed ingenious methods of action to assure an itinerant medical support. Advanced surgical units demonstrated their tactical flexibility as Role 2 BASIC in particular thanks to their capacity of redeployment.

With regard to the nature of the operations and the climatic constraints, the water supply will have been a major logistic stake from which it will be necessary to learn. The distances on the Malian territory and the isolation of small detachments prefigure challenges regarding medical support of the future commitments. The biology means, particularly important in intertropical zone, have to be the object of additional studies to have deployable light laboratories.
Proposed Medical Preparedness for Royal Thai Army for cbrn Warfare & Terrorism

Col. Dr. Piyapan Cheeranont
surgeon, department of surgery, Phramongkutklao Hospital, Royal Thai Army Medical Department.

Thailand has some threat from cbrn terrorism. The preparedness we made for our personnel are trainings and exercises. We prepare 3 medical battalions with ppe and decontamination shelters to response in case of cbrn terrorism and hazardous material accident. For the mission abroad such as peace operation, we proposed some preparedness for the troops that may be sent to a risk area which consists of training, adequate ppe, pyridostigmine as pre-treatment medicine and antidote auto-injectors.

In considering which type of antidote to be used, we reviewed articles, collected and compared information about 3 types of oximes, pralidoxime, obidoxime and hi-6. With available experimental evidence, we found no clinically important differences between pralidoxime, obidoxime and hi-6 in the treatment of nerve agent poisoning except in the treatment of cyclosarin (GF) and soman poisoning, when hi-6 might be preferred. Considering about toxicity and price of each oxime, we proposed to procure atropine and pralidoxime chloride auto-injectors for Thai troops that prepare for missions abroad. These auto-injectors can be used in cbrn terrorism also.
Coalition forces units in Afghanistan faces sporadic attacks while conducting convoys and delivering supplies throughout the AOR. The preferred methods of engagement are IED's, RPG's, small arms fire and a combination of effects in a coordinated deliberate ambush. To secure theses convoy's platoons will conduct route clearance. On the 4th September 2009, during a mission of route clearance, a French convoy faced the worst ambush touching more than 10% of the strength. The convoy was organized in two parts of ten armored vehicles separated with a distance of one kilometer. The French MD was in the first half of the disposal and the paramedic in the second one; the IED attack touched one of armored vehicle of the first part of the convoy, exploding directly under the fuel tanker killing immediately the driver and burning deeply three other members of crew, six other members have been touched but less deeply. In less than fifty minutes after the beginning of the attack, the nine victims had been evacuated by HLO, after being stabilized by the MD helped by the other soldiers acting as the learned during their rescue training before their deployment. Illustrated by a short movie, the author suggests an After Action Review, analyzing the tactical and medical action during this attack. Based on this singular experience, lessons learned will be identified and explained.
Modern Cardiac Surgery Objective is to minimize the trauma to the patient and make it less invasive.

From 2006 to 2013, we performed 280 minimally invasive mitral valve surgery, 45 minimally invasive coronary artery bypass, 120 minimally invasive aortic valve replacement and 30 minimally invasive atrial septal defect.

The result of this was patient satisfaction, less pain and better cosmesis.
Current "Care Under Fire" Tactical Combat Casualty Care guidelines call for stopping life-threatening external hemorrhage but only the tourniquet exists as a possible treatment. Given the limitations of tourniquets, there is a gap in the existing hemorrhage control protocol. The iTClamp™50, a new hemorrhage control device that can control bleeding in all compressible areas in less than 5 seconds, functions by sealing the skin to create a static, temporary hematoma under pressure. This allows for stable clot formation until surgical repair. Previous, swine and cadaver studies have demonstrated the clinical effectiveness of the iTClamp 50 across multiple compressible zones. This study evaluates how the iTClamp 50 fills an unmet medical need during "Care Under Fire" including a usability study, bench-top testing and safety assessment. A usability study was completed using 21 participants with no previous experience with the iTClamp 50. All participants were able to safely and effectively close a simulated bleeding wound. The average application time was 13.7 seconds for the first application, this dropped to 6.9 seconds for the second application. Notably, during the second application users were wearing wet gloves. Bench-top studies demonstrated that the iTClamp 50 can be effectively applied over uniform clothing. To determine if the device causes skin damage, the iTClamp 50 was used to control bleeding from lethal femoral artery injuries created in swine. Six hours following application, the devices were removed and skin samples proximal to the wound excised. Histological examination revealed that the device did not cause skin damage or necrosis. Taken together, the iTClamp 50 is uniquely designed to fill an unmet medical need during "Care Under Fire" as it is easy to use, allows for self or buddy aid and can be applied through uniform clothing safely and effectively with no tissue damage.
Dental identification in Tunisia: Before and After the Revolution

Major Dr. Bouhafa Sarah
forensic dentist, general direction of the military health

he author will review the various procedures of identifications made in the Department of Forensic Medicine of Charles Nicolle Hospital. It is usually about identifications of charred corpses and drowned individuals.

The first step is when the forensic dentist proceeds as an investigator. His role is to collect a sum of clues and information identified at the level of the toothing of the corpse to form a dental post-mortem.

The second step is the comparative identification when there is a lack of ante-mortem data to be evaluative. Some cases of dental identifications before and after the revolution are beneficial during the second step.
Oral and maxillofacial surgeons play an important role in the treatment of patients in wartime because many wounded individuals suffer from injuries in the facial area. Maxillofacial surgeons represent a vital part of the trauma team. Since the beginning of the Syrian uprising in 2011, war victims have been facing daily attacks from different weapons, mainly firearms resulting in serious life-threatening injuries. The aim of this presentation is to evaluate the patterns of these complex maxillofacial gunshot injuries sustained in modern warfare by sampling a number of patients from the Syrian causalities; those who have been treated by our team in the Syrian refugee camps in Turkey (September 2012) and also to discuss the management of these unique injuries as they represent a new challenging entity in the trauma field encountered by maxillofacial surgeons today.
Evaluation of Dental Emergency Outcomes of the Oral Health Fitness Classification of the South African Military Health Service (SAMHS) in Gauteng-South Africa

Lt.Col.Dr.Thomas Khomotjo Madiba
Community dental Specialist, SO1 Oral Health Surveillance

Background: dental emergencies are a threat to the military mission and a major concern for military planners. They take soldiers away from their assigned places of duty and reduce combat effectiveness.

Objective: to determine the rate of dental emergencies in the South African military health services.

Methods: a cross-sectional retrospective record analyses of members of the South African National Defense Force (SANDF) that received an oral health fitness (ohf) classification of 1 and 2 in area military health unit Gauteng (amhugt) in 2009 was carried out. The amhugt members were followed up for a year to determine if they developed dental emergencies. Data analysis included chi-square tests and logistic regression analysis. The level of significance was set at $p<0.05$.

Results: dental emergency rate for amhugt was 307/1000 per year. Most of the dental emergencies were dental restorations (58.5%) and extractions (13%). Patients were more likely to experience a dental emergency if they were white, female, of ohf 2 classification and older than fifty years of age. Conversely they were least likely to experience a dental emergency if they were black, male, of ohf 1 classification and in the age group 31-40.

Conclusions: the dental emergency rate for the SANDF is high compared to military health units from other countries and it was influenced by race, age and gender.
The Role of Human Amniotic Membrane in Acute and Chronic Wounds and its Outcome

Brig.Gen. DR. Mohamed Baghdadi
Consultant Plastic and reconstructive Surgery ArmedForcesHospital- Jeddah

Aim: The role of human amniotic membrane in the management of acute and chronic wounds and its outcome.

Methods: Under supervision of the hospital ethical committee we are extracting fresh Human Amniotic Membrane (HAM) during an elective C section in a HIV 1,2, HTLV, HBV, HCV negative patients after obtaining written consent from donors. After cleaning and removing blood clots, HAM is preserved in normal saline in a sterile container with addition of 160 mg of gentamicin. Patients under study are screened for seronegativity. Cultures are taken from wounds and the HAM before application. Written consent is obtained from recipients and membrane is applied as an OPD under sterile conditions. Dressing is changed twice a week. Digital photographs are obtained at all stages. Progression in wound healing is measured.

Results: We have completed 67 cases to date. Diabetic Feet: 22, Crush Injuries: 17, Burn: 15 and Pressure Ulcer: 13. More than 90 percent of our patients healed completely with minimal scarring.

Conclusions: Healing was faster and without any adverse affects. HAM donates epithelium, HLA negative has growth factors, antibacterial properties and has minimal stroma. It is readily available, easy to harvest, easy to preserve and easy to apply. It is very cost effective as compared to the advanced dressings at present. It also reduces patient visits to the hospital.
Damage Control in Combat Wounds
Col. Corrado Maria Durante, MD
Medical Advisor ITA Army General Staff

Damage Control in Combat Wounds: Colonel Corrado Maria Durante, M.D. Medical Advisor, Italian Army General Staff - Forces Employment Division. Senior Consultant, Wound Care Unit - Army Military Hospital. Rome, Italy. In current operational theaters a surgical team has to face a kind of tissue damage characterized by a thermodynamic etiopathogenesis combined with diagnosis and treatment requirements untraditional and completely new, compared to the past. This is due to both the effect of unconventional explosive weapons and the occurrence of new tactics and fight scenarios. The main characteristic of these injuries are basically: 1.) Extensive destruction of soft tissues, 2.) Pathogen colonization, 3.) High level of exudates and 4.) Increased tendency to local infection. This scenario defines a sort of challenge between the aggressor, with poor resources but without scruples, and the field hospital surgeon, a professional provided with technological equipment who has to face complex and severe tissue damages which, in a short time, could develop in severe infections, cause handicaps and major amputations and, in some cases, put the life itself at risk. The so called “military” patients, represented by those casualties suffering from tissue injuries that hardly occur in the civilian setting, are characterized by the presence of multiple complex wounds, severe local infection and global evacuation through several military surgical facilities. The scientific and technical result of the several field experience of the Italian Army Health Service has allowed the development of a process of rationalization and standardization of therapeutic acts aimed at containing the tissue damage, infectious complications and related morbidity. This method, called Damage Control in Combat Wounds, is actually, able to face these emerging wounds and the key to follow, with more reassuring functional and anatomical result, the long therapeutic process of the wounded in acti
MILITARY ANESTHESIOLOGY AND INTENSIVE CARE
IN MEDICAL EVACUATION
Col. Alexey Schegolev, PhD.
Chief of Department of Anesthesiology and
Reanimatology of Military Medical Academy
Main anesthesiologist of Ministry of Defense of Russian Federation
Colonel of medical service

Military Anesthesiology and Intensive Care in Medical Evacuation
Dental Implant System have been developed and used for rehabilitation of partially or fully edentulous subjects. We need to know about the predictable and effective therapy for our patients and help them maintain their natural dentition. This lecture will provide us with the opportunity to look both at the past as well as in the future as we will be presented with highlights on the key success factors for implant treatment in both the surgical and restorative phase.

As implant dentistry has earned its place as one of the standard option available to dental practitioners today, patients expect more of oral health and esthetics and it is in the best interest of every practitioner to have a broad range of skills associated with implant dentistry at their disposal. Knowledge, treatment plan, experience and teamwork efforts are the essence of dental implant success.
The need of non-steroidal Anti-inflammatories (NSAIDs) to treat battle in both acute and chronic pain is obvious. NSAIDs affect the gastrointestinal track (GIT) which is mainly responsible for the ingestion, digestion and absorption of nutrients and waste elimination through peristaltic movement of the colon. Gastrointestinal motility is basically associated with the pacemaker activity through Interstitial cells of Cajal (ICC) responsible for the opening of the voltage-dependent Ca2+ chloride channel which leads to phasic contractile in the gastrointestinal track. However, the purpose of the current study we performed in University of Hertfordshire on the role of carbachol, Eact, Niflumic acid and T16Ainh-A01 were determine their effect on mid-proximal colon of rat. Carbachol a cholinergic agonist increases the rate of circular and longitudinal muscle contraction. Subsequently, increase in carbachol concentration 30nM, 100nM and 300nM increases the influx of Ca2+ leading to increase in rate of mid proximal colon motility. Conversely, Eact effectively activates the Calcium activated chloride channels (CaCC) resulting in circular and longitudinal muscle contractions. Similarly increase in Eact concentration showed increased mid-proximal colon motility with a considerable (P<0.05) increase in intraluminal pressure. However, high concentration of hexamethonium (300µM) inhibited the contractile effect of Eact mediating the relaxation of circular muscle motility. Subsequently, nifedipine blocks the active influx of Ca2+ from CaCC and reducing the contraction of smooth muscles motility in the mid-proximal colon. Nifedipine is concentration dose-dependent. Increase in nifedipine concentration (30nM, 100nM and 300nM) relaxes colon muscle contraction. Similarly niflumic acid a non-steroidal anti-inflammatory drug reduces the rate of peristaltic mid-proximal colon motility through the blockage of cholinergic nerves. Increased dose concentration (30nM) wholly inhibited the level of longitudinal and circular muscle contraction. Equally, the inhibiting effect of T16Ainh-A01 on CaCC significant reduced the contraction motility of mid-proximal rat colon. T16Ainh-A01 caused a relaxation effect on the circular muscle contraction. The following conclusions can be drawn from the present study; That NSAIDs may have adverse effect on the solders physical activity. Farther studies on patients to confirm our findings are needed.
Technology has tremendously revolutionized the medical field with the creation of robotic devices and complex imaging systems. The novel developments have made operations: 1) much less invasive, 2) relatively pain free, 3) minimal bleeding, and 4) faster recovery. Telesurgery performed by multi-armed robots remotely controlled by real surgeons located hundreds or thousands of kilometers away has become a reality. Besides war zones, remote disaster areas and underwater surgery, doctors are now developing the telesurgical units for NASA space missions. Robotic surgeons promise to save lives in war zones and disaster-stricken areas. On the battlefield, latency to medical procedures often determines who lives and who dies. A recent study of combat casualties found that in nearly two-thirds of fatal battlefield injuries, related death comes within 30 minutes. There is precious little time to perform even simple life-saving procedures, such as controlling bleeding. Surgical robots offer a tantalizing alternative for onsite surgical procedures. They would allow military doctors stationed at a safe distance from the front line to perform operations without once putting their hands on patients. Medical vehicles equipped with such remote-controlled robots could get surgical care to soldiers in a lot less time than it would take to evacuate them to the nearest base or hospital. The fact is that the whole setup is compact, rugged and easy to transport in the war zone. International Federation of Robotics estimated the number of robots used in surgery and therapy including electromechanical arms to position instruments, robotic bone drills and computer-controlled radiotherapy equipment at 2,800 units worldwide. Surgeons have confirmed that robotic procedure may save the lives and limbs of soldiers in war zone with minimal blood loss and fewer complications.
The advent of modern psychiatry in its many specialties allowed an advanced knowledge of the disorders that affects soldiers whose investigations are continuing their ascent prevalence. The psychopathological analysis of burnout for example incorporating a socio-cultural perspective shows that among the etiological factors, the secondary psychological maladjustment to emotional suffering is a result of an internal conflict between ethical values and real constraints paradoxical field expectations and beliefs of the soldier. The Military Ethics conjoint to socio-cultural approach explains the genesis of this psychopathology. Indeed, framing the goals of the commitment of military forces in a conflict intends to emphasize the universal principle of a just war and that violence is a means of suppressing the other without passing violence under international conventions allowing to build a humanist common platform that excludes in the fighter, the possible internal self-mutiny of moral or spiritual nature and early clinically asymptomaticat first. The second part which reports the code of moral ethics as obedience to the supervisor is an operation of unconscious transfer of model of exemplary and can be a tool to cushion the adverse effects on the mental health of the fighter due to the difficulties of reconciliation of military and family life. The other side in relation to the genesis of disorders in the fighter results from the behavior adopted in a military conflict and the landscape of suffering lived either close to his injured or deceased colleagues or among civilian casualties. This involves the intervention of overall moral ethics rejuvenating values and that does not especially constitute a fictitious barrier that even a techno-psychological training alone wouldn't allow to resolve.
Leadership development strategy fully integrated with and supportive of organizational strategy
Consistency in leadership development across multiple leadership functions and operational units
Maximized leadership accountability through
Formalized framework regarding leadership expectations
Clearly defined behavioral and technical performance standards
Progressive success measures
Interconnected and mutually supportive leadership development and performance evaluation systems
High-Performing leaders to meet ongoing system needs
Value of Medicolegal Autopsy of Military Casualties in Peace and War
Lt.Col.Dr. Ahmed AlYahya
Chairman of Forensic Sciences Department
King Fahd Security College

The words autopsy, necropsy and post-mortem examination are synonymous, although post-mortem examination can have a broader meaning encompassing any examination made after death, including a simple external examination. Autopsies can be performed for two reasons: clinical interest and medicolegal purposes. The clinical autopsy is performed in a hospital mortuary after consent for the examination has been sought from and granted by the relatives of the deceased. The doctors treating the patient should know why their patient has died and be able to complete a death certificate even in the absence of an autopsy. These examinations have been used in the past for the teaching of medical students, etc. and for medical research. The medicolegal autopsy is performed on behalf of the state. The aims of these examinations are much broader than those of the clinical autopsy and include: identification of the dead body, to estimate the time of death, to identify and document the nature and number of injuries, to interpret the significance and effect of the injuries, to identify the presence of any natural disease, to interpret the significance and effect of the natural disease present, to identify the presence of poisons and to interpret the effect of any medical or surgical treatment. Forensic autopsies are mandated by law whenever suspicious circumstances surrounding a death; thus, rates for this type of autopsy have not declined until now. The current study will focus on the scope of medicolegal autopsy in military casualty’s in peaceful conditions while serving on active duty or training and also its value during war time. Extent and legal limitations of this major procedure will be discussed and compared to other forensic investigations in civilian circumstances. Social and religious considerations will be discussed as well.
Purpose: to explore Greek military medical doctors’ and nurses’ level of job satisfaction relatively to their deployment at ISAF.

Methodology: a cross-sectional study was conducted. Data were collected through an anonymous and self completed questionnaire. Content and face validity of the questionnaire have been assured. The sample consisted from all the 115 officer medical doctors and nurses, participated in ISAF during the years 2006-2010. The rr was 29.6%. P-values <0.01 were considered as statistically significant otherwise stated.

Results: the mean age of the respondents was 35.48±5.64. 76.5% of the respondents were graduates from the military medical academy. For the 82.4% of the respondents, participation in ISAF was their 3rd mission abroad. All but one individual were English spoken, while almost 60% were trilingual. 74% of the participants were ordered to be deployed. The economic status for the 76.5% of the participants was considered good to quite good. Although the living conditions during their stay in Afghanistan as well as the availability of medical equipment were considered moderate to good for 76.3% of the participants respectively, the majority of them (64.7%) were not willing to participate again in a similar mission. 90% of the officers who would encourage their colleagues to participate would participate themselves again. Health officers who were not willing to recommend to their colleagues participation in a similar mission were mainly concerned about the high risk in the Afghanistan area. However, the majority of health officers had good relationships with the other Greek officers and extremely good with foreign officers respectively.

Despite the feelings of depression, anxiety, homesick, fear and aggression when in Afghanistan, the vast majority of the participants concluded that their participation at ISAF has helped them to ameliorate themselves as personalities and to value small pleasures of the daily routine.

Conclusion: comprehensive, detailed and timely information about any upcoming mission, improves the participants’ level of adjustment as far as the environment and the mission requirements. Provision of psychological preparation and support are strongly recommended.
Wide variations in the prevalence of sexual violence in armed conflict exist. The most important reason for such variation may be the different cultural norms & taboos held by combatants. Other factors, such as the gender balance of armed forces, the level of discipline and the degree of tolerance by commanders for sexual violence committed by their subordinates, the relationship between civilians and invading forces are relevant. The record of prosecutions for sexual violence by the International Criminal Court and other Courts such as the ICTY is improving and signals the disapproval of society for such crimes against humanity, genocide and war crimes. Ethical training of armed forces in Canada and Australia is an important prerequisite for deploying peacekeeping forces.
The War Impact on Mental Disorders

Dr. Seham AlYousef
Faculty lecturer in nursing college- king Saud University- community and psychiatric mental health

The war impact on mental disorders in the Arab region does not have any accessible information regarding lifetime prevalence as well as the treatment for mental disorders. Particularly in the Arab region, there has been no proper national response regarding disorders associating and after the war. The current paper explores the evidences that are gained through literature that has been published in regard to the impact of during and post-war have on the population's mental disorders. Various studies have been conducted on disasters and war is a human made disaster that until recently has an impact on mental disorders which are the major factors of psychiatric disorders include ranking, gender and marital status discrimination. This study focuses on investigating and examining mental illness and disorders as a result of armed conflicts the occurred within the ministry of military services and community health centre situated in ministry of health, Riyadh city. Individuals such as military personnel, their families, general population and refugees may have developed early symptoms of mental illness. Random participants have been selected to be interviewed in regards to their war experiences and psychological reaction. There are 100 participants provided by the military ministry where the amount of male and female is 60 and 40 respectively. Each assessment would require a time period of 2 months to complete. The methods are utilized at ministry of military services and community health center related to ministry of health, al Riyadh city, Kingdom of Saudi Arabia (KSA). The following recommendations were suggested in order to treat it effectively. There is a need to identify the symptoms at an early stage before creating an effective strategy tailored to the state's organizations and additionally to increasing awareness as well as developing specialized treatment tailored for individual cases.
Objective: Although the draft used the psychological assessment, there were still mental patients enlisted. This study developed a wireless, group psychological measurement system, compiled the cognitive ability and personality test scales, established a series of test methods and standards to detect how seriously people answered the questions, and also set up some methods for identifying false results of personality tests.

Methodology: By the wireless group psychological measurement system, we used some cognitive ability tests and personality tests to detect the important persons, who would take a diagnostic test and an interview later. After that, some of them would be taken to the psychiatric specialist hospital for diagnosis to determine to leave or to stay.

Sampling: A user found out 76 psychiatric patients from more than 40,000 recruits; Our research group tested more than 30,000 new recruits for 3rd consecutive years. 180 new recruits were returned because of mental illness or serious psychological disorders, but one person missed.

Conclusion: The results can be used for large quantities of psychological tests, and solved the problem of false psychological test results. Under high stress conditions when military training, those results can rule the mental patients out of recruits basically.
Objectives: this community based retrospective cohort study aims for nutritional, psychological, behavioral, family adjustment and psychiatric assessment of Saudi children exposed to the 2009-2010 war against “elhotheein” methods: 186 internally displaced children age (5 - 16) years from Jazan “exposed” to the war and 157 “unexposed” children (5 - 17) years from King Khaled military city, Hafr Elbatin, were assessed 6 months after the war for clinical and laboratory evidence of malnutrition, anxiety, depression, aggression, adaptive (prosocial and planful) behavior using child behavior inventory, rutter scale a2 and McMaster family adjustment device. The psychological outcomes of both groups were compared and correlated with different socioeconomic variables. Results: the “exposed” children had no laboratory evidence of malnutrition. They had insignificantly higher percentile body mass index (p=0.13), significantly lower socioeconomic status, more anxiety (p=0.044), better adaptation (p=0.0000005), less aggression (p=0.025), less antisocial behavior (p=0.014) and lower family adjustment (p=0.017) involving 6/7 subscales (problem solving, communication, roles, affective responsiveness, behavioral control, and general functioning) compared to “unexposed” children. The “exposed” children with the lower income had more anxiety (p=0.02) and better adaptation (p=0.01). Females had more anxiety (p=0.0057) and males had more antisocial behavior (p=0.02). Older children had less deviant behavior (p=0.0046), better adaptation (p=0.0074) and better planful behavior (p=0.00013). Children of elder mothers had better planful behavior (p=0.039). Children from bigger families were less aggressive (p=0.049) and had less antisocial behavior (p=0.04). The “exposed” children receive free accommodation and meals but no prior psychological or psychiatric assessment. Conclusion: in the “exposed” children, the nutritional support prevented malnutrition. Their anxiety points to underlying psychological problems. Their higher adaption and lower antisocial behavior reflect effective adaptive mechanisms, possibly social. The socioeconomic status affects the psychological outcome. War children need education, psychological screening and studies for their adaptive mechanisms.
Combat Stress Reaction, Post Traumatic Stress Disorder and the Role of the Military Doctor

Capt. Giannoglou D, MD
Clinical Fellow at St George's Hospital, London, UK.
Giannoglou Dimitrios, Persefonis Georgios, Papadimitriou Konstantinos

Combat Stress Reaction, Post Traumatic Stress Disorder and the Role of the Military Doctor

Combat stress reaction (CSR) is the physiological and psychological reactions manifested by a number of symptoms during or just after combat. It is not a psychiatric diagnosis, but a normal condition that may occur in any combatant under abnormal circumstances. A person's psychological defenses are overwhelmed and the person is temporarily unable to fight or function. There are many factors, either environmental or situational, that can lead to CSR. These include intense combat, elongated battle or war duration, large numbers of killed and wounded soldiers, atrocities, weather changes and extreme temperatures, surprise attacks and use of chemical, nuclear or biological weapons. There are various reactions to the CSR, either physiological or psychological. The first include neurological, cardiovascular and gastrointestinal responses, while the latter consist of fear, panic attacks, lack of concentration, emotional instability, insomnia, depression, apathy and exhaustion. If properly recognized, CSR can be treated within one to three days and the majority (80-90%) of the soldiers can return to their duties with a good result. Combat stress reaction is not to be mistaken for Post Traumatic Stress Disorder (PTSD), which is an anxiety disorder that can develop after exposure to a terrifying event in which physical harm occurred or was threatened. As opposed to the CSR, PTSD is a long term psychiatric disorder and needs long treatment. Victims often find themselves to have intrusive flashbacks to the events that caused the trauma. Although the symptoms (both physical and psychological) are similar to CSR, this time they are much more intense and long-lasting. As Peacekeeping Force missions is the main stressful condition of most modern armies, it is the military doctor's duty to follow the actions required to avoid CSR and PTSD and then to be able to recognize PTSD from CSR and treat the victims accordingly to each situation. To do so, he must follow the principles
Post-traumatic stress disorder among Nigerian military personnel-findings from a post-deployment survey. Background: this study evaluates prevalence of ptsd among Nigeria military personnel returning from psos for comparison with international literature. Method cross sectional research design was employed in the study. A total of 3,040 personnel deployed to Darfur, Sudan for United Nations psos in 2010 were evaluated. Data was collected from the de-induction medical screening for these military personnel. A 20 item standardized self-reporting ptsd instrument with internal reliability of 0.86 cronbach alpha was used. It had four subscales: hyper vigilance, emotional disturbance, avoidance and resilience. Findings among 3,040 troops evaluated, 3,005 were males (98.8%) while 35 were female (1.2%). The mean age of the participants was (x=32.6, sd=6.9). Four hundred and five (13.2%) personnel were positive for ptsd. Using t-test of independence, various age ranges were compared for prevalence of ptsd. Troops between 33-60years of age had more cases of ptsd than younger soldiers between 18-32years (t (3038) =5.1, p<.05. Conclusion from this post-induction survey: the prevalence rate of ptsd following deployment in Darfur, Sudan is 13.2%. This rate is high and requires adequate attention because of the present inadequate mental health services in the Nigeria generally and the military in particular. Current security and socio-economic challenges increase the likelihood of exposure to further mental stressors. Older soldiers seem to cope less well to the mental stress of pso deployment. In view of the effect of ptsd on functioning in the workplace and at home, more effective screening tools targeted towards the high risk sub-group should be developed. In addition, after foreign deployment, re-integration of personnel should involve a holistic social support to accommodate family, relatives and significant others.
Self induced burns in soldiers’ background: self-inflicted injuries in military personnel are a well known entity and most literature focuses on the hand injuries and few or seldom on burn injuries. According to this review, self-inflicted burns in soldiers are studied.

Methods: this is a retrospective study of burn in soldiers from January 2012 to October 2013 with the diagnosis of feet burns. We collected all data regarding date and time of the burn, etiology, distribution, percentage depth of the burn and duration of sick leave. Discussion: all patients in this study presented with burns on the dorsal of the feet. Mostly, the causative agents were alkali to drain tubes. All patients were male adult military personnel during exercise rotation and duties. Conclusion: self-inflicted burns are common among soldiers along with other injuries. Emergency physician and burn surgery doctors should suspect the self-induced cause and refer the patient for psychiatric counseling so these cases can be prevented in the future and treat any associated psychiatric problems.
Role of Pakistani Armed Forces in Disasters
Maj. Gen. Dr. Salahuddin Qasim, MD
Assistant Of Surgeon General - DGMS
Human Error in Military Flying: Physiological & Psychological Dimensions
Major. Dr. Waqar Ul Hassan Zaidi
Senior Flight Surgeon, King Abdul Aziz Air Base, Dhahran. KSA

Military flying in the present era consists of the dynamic interaction of man, machine and environment. The technology in aviation has changed tremendously in the past 50 years. Machines have become modern, reliable and robust in the form of highly agile aircrafts having fly by wire technologies. Environment is the aerial environment outside and the immediate cockpit inside the aircraft with its inherent problems of gravity, temperature and barometric pressure issues. The intrinsic reliability of humans has not improved over the same period. Consequently, man has come up as a weaker link in this whole interactive chain. This gives birth to human error in flying which has been estimated to be a contributor in 70-80% of aviation accidents. Military pilot has to face and counter multiple demands challenging his physiological and psychological milieu. Agile military flying imposes huge changes in blood pressure during combat maneuvers involving g forces, causing peripheral and central vision loss and unconsciousness. Pilots are subjected to significant changes in barometric pressure with their resultant effects on body cavities. Erroneous perception of position and/or attitude with reference to earth or other aircraft that causes pilots to be spatially disoriented, extremes of noise, vibration, high workload, task demand, stress and fatigue can all make the situation ripe for human errors. These range from errors of perception, judgment, decision and actions leading to non fatal and fatal accidents in military flying causing loss of precious lives and assets. A new concept of the ability to psychologically compartmentalize oneself during flying differentiates healthy and a failing aviator and has gained popularity in international military arenas. There are known factors which can change a healthy aviator to a failing aviator. The central job of the military aviation medicine community is to be preemptive, to keep the aviator healthy physiologically and psychologically.
This study aims to show the extent of the existence of Post Traumatic Stress Disorder, idiopathic, in fighter pilots. The study is applied on a stratified sample which includes 205 fighter pilots in four operational air bases in Kingdom of Saudi Arabia. The scale consists of 19 phrases that are extracted from the psychiatric symptoms in both ICD-10 and DSM-IV. The results show the different opinions of the sample’s participants toward Post Traumatic Stress Disorder. The degree of some phrases are higher than 50% such as ‘I ignore talking about anything that reminds me about my painful experiences’, ‘I suffer when I remember my painful experiences’, ‘I suffer from severe tantrums’ and ‘I feel annoyance when I wake up in the morning’. In contrast, there are other phrases that have a lower degree than 50% such as ‘I do not remember important part of my painful experiences’, and ‘I see flashbacks of painful experiences’. This shows that the symptoms of Post Traumatic Stress Disorder are not complete to make sure that the fighter pilots are really suffering from this disorder. However, the results emphasise that the fighter pilots suffer from painful memories and experiences which remain in more than 50% of the fighter pilots’ memories. According to some psychological theories, the continuity of bad memories and painful experiences can cause depression, annoyance, and anxiety. This study recommends to have psychological therapists who work in the military and also to have psychological programmes for prevention and therapy, for fighters in general and for pilots in specific; because of the probable pressures of their work. The combat and painful experiences can affect the psychological condition and the armed forced preparation.
Post-traumatic stress disorder among soldiers. Cases of post-traumatic stress disorder (PTSD) were first seen during the first world war when soldiers developed shell shock as a result of the harrowing conditions in the trenches. It was recognized in 1980 by the American Psychiatric Association as a mental health condition. PTSD is an anxiety disorder characterized by insomnia, nightmares, flashbacks, lack of concentration, irritability, isolation and guilt. Severe cases may end in suicide. Seeing cases of PTSD during the military activities at our southern borders in 2009 prompted me to visit the Queen Elizabeth hospital in Birmingham, United Kingdom where British military personnel are treated. PTSD on the rise among British servicemen and women after decade of war. According to figures released by defense analytical services and advice (the UK ministry of defense department that monitors mental health) that last year, 2,550 soldiers, sailors, airmen and marines were treated for mental health issues taking the total diagnosed since 2007 to 11,000 - a significant proportion of the 177,000 serving personnel. Of those diagnosed last year, 176 were treated for psychoactive substance abuse including alcohol abuse; there were 1,662 cases of neurotic disorders, including 273 reports of PTSD; 547 cases of mood disorders, including depression and 167 cases of other mental and behavioral disorders. Since the invasion of Iraq in 2003, there have been 123 suspected or confirmed suicides of serving personnel. It is expected that a rise of up to 12 per cent in the number of cases of PTSD each year until at least 2018. Any treatment depends on the severity of symptoms and how soon they occur after the traumatic event. The victim is always morally right, neither responsible nor accountable and forever entitled to sympathy. Every military unit now has trained personnel who try to identify and help those showing signs of trauma.
Burnout in the Military: a Medical, Psychological and Socio-cultural Look
Dr. Hachelafi Hamied MD
Faculty of Medicine. Oran University

Burnout is the final phase of a psychic decompensation which indicates a mismatch either immediate or lived under a sequelae that happened during the career of the military. Medical studies have shed the light on the psychopathological aspects of this syndrome that affects the different professional categories with high mental workload; but few studies only explain the genesis of this state, especially in the military. The study of the profile of vulnerable individuals predisposed to develop a burnout counts certain personality traits like strong dedication, idealization of the profession, a high degree of altruism, etc. The ambivalence between educational values and beliefs constituting the nature of socio-cultural heritage of the individual on the one hand, moral deception between expectations projected through a hope of development in the chosen profession and the reality of the controversy land on the other hand, are the bed of an internal conflict situation that worsens over time and is externalized unexpectedly depending on the adaptation of the individual capacities. However, despite the efforts of military health institutions for identifying individuals at risk through morality surveys during selection interviews that did not prevent the increase of suicide and psychiatric disorders among the ranks of the military contingents whose universal mental health indicators testify. Apprehension of the clinical component currently works towards a comprehensive global view of all of human identity in its different facades both medical and psychological, but also social and cultural. In this context, the contribution of the establishment of a socio-cultural analysis for a better understanding of the burnout syndrome is essential to provide better prevention in the scheme of this occupational hazard.
Military Health Care Personnel Satisfaction With Simulation Learning Environment in Relation to Self-Confidence & Performance

Abdulaziz Aljehani
Prevalence of Depression and Associated Factors Among Military Personnel in the Air Base in Taif Region
Moneer Mohammed Al Amri

Background: depression is a common disorder affecting about 121 million people worldwide. The military personnel can be at risk of their job including daily training, temporary camping away from home, missions, frequent changing of home from place to place and exposure to dangerous equipment or materials. Objectives: to determine the prevalence of depression among military personnel in the Taif region and the factors that is predisposing to depression. Material and methods: cross sectional study among King Fahad air base military personnel, Taif region, in Saudi Arabia, 2009. A sample of 357 participants was selected randomly. The tool of the study was self administered questionnaire of beck depression inventory scale. Result: it showed prevalence of depression among studied population is 17.1% and the associated significant factors are sibling, work type, smoking, sick person at home and problematic relation with co-worker, supervisor, subordinates, fathers and relatives in univariate analysis but it is difference in multivariate logistic regression analysis where the significant factors are those having female sibling only and the relations with supervisors and relatives. Conclusion and recommendations: this study revealed that prevalence of depression among military personnel is relatively high as compared to reported rates in other non-Saudi military personnel. Many factors predispose to the occurrence of depression among the studied participants which include difficulties in relation between military personnel and their supervisors or their relatives in addition to community stress on married personnel who have only female siblings or no siblings at all. This study raises the importance of social factors and their implication on occurrence of depression among military personnel. Both supervisors and military personnel are in need for training programs to improve their skills for better communication and adaptation in cases of stress whether
Noise Hazards on Hearing in Military Services

Maj.Gen. Gamal Elserafy, MD
Director General of Health Services Military Medical Services
Egyptian Armed Forces

Noise has a dangerous effect on hearing. The armed forces personnel are exposed to different types and intensities of noise during training and maneuvers. These affect their hearing and causes hearing loss. The primary aim of this study are to estimate and analysis noise in different divisions of the armed forces as well as evaluate the affect of their hearing before and after exposure to noise immediately and after twenty one days. In addition, a program for prevention of noise hazards hearing was formulated. This study was carried on 850 subjects chosen represent all weapons and all ranks of military personnel, all of them have normal freely mobile tympanic membrane, also one hundred of civilians were chosen as control. Audiometric evaluation was performed (pure tone and speech) for both group. Also, noise analysis was done for each corps (intensity, duration, type, peak frequency noise).

The main results & conclusion obtained in this study were:

1- The duration of exposure of military personnel to noise in relation to its intensity exceeds the permissible limits of OSHA damage risk criteria. The most affected frequencies of hearing due to noise exposure were the higher tones (4 & 8 KHz). Low frequency noise has more damaging effects on hearing. The effects of military noise on hearing varied from one corps to another, this depends on:
   a. Intensity of noise.
   b. Type of noise.
   c. Duration of noise exposure.
   d. Frequency of noise.
   e. Distance of personnel from noise sources.
   f. If personnel wore ear protection or not.

2- Airforces and armoured personnel were less affected by noise because they wore headphones for communication which act as ear protectors.

3- Military engineers were the most affected subjects because they were exposed to high intensity noise of explosions.

The probability of occurrence of temporary and permanent threshold shifts in pure tone and speech discriminations among military personnel due to noise exposure was highly significant.
Objective: This observational study was conducted in Armed Forces Institute of Pathology (AFIP), Dhaka, Bangladesh among samples of urine, blood, pus, sputum and throat swab to identify common microorganisms and to assess their sensitivity to three selected antibiotics.

Methods: All of the samples of urine (173), blood (31), pus (63), sputum (28) and throat swab (14) tested for culture and sensitivity in that center over a period from January 2012 to February 2013 were included in this study. Selected antibiotics were ciprofloxacin, cephradine and cefixime.

Results: Commonest organisms found in different samples were Escherichia coli in urine (57.8%), Salmonella typhi in blood (54.8%), Staphylococcus aureus in pus (42.9%), klebsiella in sputum (67.9%) and Streptococcus pyogens in throat swab (78.6%). In urine samples, microorganisms were found resistant to cephradin in 95% cases but sensitive to cefixime in 30.4% cases. Microorganisms in blood samples were sensitive to cefixime in 83.3% and Ciprofloxacin in 80.6% cases. Ciprofloxacin, cephradine and cefixime; all three antibiotics encountered resistance in 63.5%, 82.5% and 75.8% samples of pus respectively. Among sputum samples organisms were sensitive to ciprofloxacin in 71.4% and cefixime in 64.3% cases whereas resistant to cephradin in 92.9% cases. In organisms of throat swab Cephradin had sensitivity in 71.4% cases but cefixime encountered resistance in 57.1% cases.

Conclusion: The study reveals an alarming picture of antimicrobial resistance in Bangladesh Armed Forces.
Objective: To study the effect of noise exposure on the hearing sensitivity of the screened study subjects, analysis of the questionnaire for noise exposure and to compare between hearing impairment in different noise exposure categories.

Materials and methods:
As a first part of the screening study, 1,879 subjects were evaluated. A noise exposure survey was completed by the study group. Screening air conduction pure tone audiogram was done for each participant. Patients who did not pass the screening were referred to the ENT and audiology unit for further evaluation: complete history, otological examination, pure tone audiometry, tympanometry and DPOAEs.

Results: the average duration of duty for the study group was 10.26 ± 8.06 years. 33.9% of the study group were cigarette smokers. 188 subjects out of 1,879 (10%) did not pass the screening air conduction pure tone audiogram and they were referred to audiology clinic. The mean emission amplitude across the DPOAEs measured frequencies in NIHL patients at high frequencies were significantly lower than that of the low frequencies. Also it was noticed that as the hearing loss increases at high frequencies region with the NIHL the DPOAEs amplitude decreases.

Discussion and conclusion:
10% of the high risk noise exposed subjects had high frequencies hearing loss. This hearing loss could be minimized with the proper use of the hearing protective devices on exposure to intense noise level. DPOAEs in NIHL evoked at low frequencies differ from those evoked at high frequencies. Reduction in the emission amplitude of DPOAEs at high frequencies region was significant in comparison with that of the low frequencies. These differences can be attributed to the hearing loss and the pathophysiologic mechanism at the level of OHCs encountered in those patients.
Even in our high-tech armed forces, manual lifting and carrying of loads are still core demands of soldiering. In this context, transporting a casualty on a stretcher is a prime example for a challenging occupational task that primarily depends on handgrip strength. However, handgrip strength and thus performance may vary considerably due to influence of gender and training. Aim of the study was the preliminary assessment of the influence of gender on performance and recovery and to estimate maximal trainability of women by comparing strength data with results from more than 2,000 healthy adults with data from highly trained female athletes.

Methods:
Stretcher carriage tests (with a stretcher mock-up) were performed with both hands until exhaustion on a treadmill (velocity 4.5 km/h, mean load at handles 245 N (25 kg)). Isometric handgrip strength was measured over 15 s pre-test and at fixed post test intervals to capture recovery kinetics. Maximal (Fmax) and mean handgrip force (Fmean) were derived from the 15 s force tracings.

Results/Discussion:
1) Effects of gender
Male performance (184 s) was almost double over females (98 s). Maximal handgrip strength was decreased by 25 % (men) and 14 % (women) immediately post exhaustion. Complete recovery of handgrip strength required up to 72 h. Slow force recovery was probably caused by eccentric strains due to vertical oscillations and subsequent muscle damage.
2) Influence of gender and margins for trainability
Fmax (men: 541 N; women: 329 N) and Fmean (men: 461 N; women: 278 N) differed significantly between genders. Gender related distribution showed only a marginal overlap: 90 % of the women did not attain the maximal handgrip strength of the 5th percentile (398 N) of male volunteers. Female athletes (n=60) were able to attain mean Fmax corresponding to the 15th percentile of the male control group indicating an unbridgeable gap despite longtime and intensive training.
Spain Military Medical Support abroad

Col. José Antonio VIQUEIRA CAAMAÑO, M.D.

ASSISTANT OF THE SECRETARY-GENERAL
The Saudi MSD Missions in Mass Gathering Medicine
Maj. Gen.(ret) Dr. Ketab Alotaibi, MD.
Advisor to the Minister of Defence for Health Affairs
Mansour Alwakeel

The MSD consistently has the honor to take part in any humanitarian missions in and outside the country. Most of these missions are by definition mass gathering events. The major of these missions include the following:
1- Iraqi refugees after the gulf-war.
2- The refugees after the south-border war between the Saudi army and alhosty terrorist groups.
3- The repeated annual mass gathering event of pilgrims to Macca area (Hajj).

Within this paper I will present the medical services provided by the MSD staff to those in need of our services. The major human gathering in our experience is the pilgrims coming to Macca from all around the world with numbers ranging from 3.5-4 million people annually where they gather in one area for a certain amount of time.
Objective:
Compared with other types of natural disasters, earthquakes are much more harmful and unpredictable and cause a significant loss of life and assets. In the past six years, three major earthquakes above 7.0 on the Richer scale struck West China, which killed more than 80,000 victims and injured nearly 400,000 people. After disasters, the Chinese Army, as the mainstay of earthquake relief force, immediately proceeded with effective rescue efforts. Management of the rescue efforts and characteristics of casualties were studied on the basis of the practical investigation of the three major earthquakes.

Methodology and Sampling:
This is a retrospective study. Data were gathered from the field research of Wenchuan earthquake in 2008, Yushu earthquake in 2010 and Lushan earthquake in 2013, as well as from health service reports and information from each major earthquake. To survey the management of medical relief, 20 interviews with more than 300 rescuers were held and more than 200 documents were reviewed. Information on the types of injuries are collected from more than 60 hospitals which received the injuries from the quake area.

Conclusions:
Growth curve of earthquake casualties has obvious turning point, which presents «two stage». The occurrence time of turning point is not only related to the size of the earthquake, but to the time of first-aid and the organization efficiency. The evacuation principle of «Two level, Air transportation, Evacuation for all injuries» improved the rescue efficiency. The grouping of the relief force should keep the principle of «early, sufficient, nearby and experienced». The deployment of relief force should be flexible and modularized based on «three phases». Medical relief forces should be grouped rapidly and sufficiently in «Emergency phase». And then the forces deployed fully in «Effective phase». Finally, medical relief work should be carried out in «maintenance phase». Headquarters of earthquake relief organization should be allocated on first-line of earthquake area to improve efficiency of the decision-making and resource utilization.
Objective To discuss when China Medical Rescue Team received the emergency rescue mission after an earthquake, how to organize and implement the whole progress to dispatch and rescue.

Method To review and analysis the rescue mission of “9.7” Yiliang earthquake of Yunnan province and “4.20” Lushan earthquake of Sichuan. Result The earthquake injured rescue mission has been accomplished in Yiliang county, and we take specialist surgical on evacuation injured in Zhaotong and develop a technique assistance relationship with the local hospital.

Conclusion To build a professional medical rescue team which is always prepared is an effective method to deal with the military operation other than war.
Objective: disaster is an unpredictable event causing significant physical damage and loss of life. Preparedness for disasters is a dynamic process. In addition to having a well documented disaster plan, it is important to have regular drills to test the hospital's plan. The purpose of our hospital disaster drill was to train hospital staff to respond to the disasters and to validate the effectiveness of the hospital's disaster plan. Method: we planned a drill for internal disaster to exercise the Kasımpaşa military hospital's disaster response plan in 2008. As Istanbul is located on seismic zone, our scenario was an earthquake collapsing the hospital. Our drill consisted of 10 basic components of disaster response such as incident command system, hospital evacuation, set up treatment area, triage, victim care, resource adequacy, communications, reporting, security and hospital personnel needs. At the end of the drill all participants were asked questions to evaluate the drill. Results 25 doctors, 10 hospital administrative staff, 10 paramedics, 30 nurses, 20 health care workers took a role as a players and an actor in the drill. 50 soldiers took a role as a victim. 75% of participants, regardless of the job type, evaluated the drill as successful. The most important comment was to stockpile medical and non medical resources outside the hospital. Conclusion: hospital drills are an effective way to see the deficiencies of the hospital disaster response plan, to motivate the hospital disaster preparedness, to improve hospital staff knowledge and perception of disaster preparedness, to practice disaster-related patient care in emergency settings. We evaluated that disaster drills should be designed and implemented at least once a year with different scenarios and different staff. References 1. Sauer lm, McCarthy ml. Major influences on hospital emergency management and disaster preparedness. Disaster med public health prep. 2009;3(2 supply):s68-s73.
On April 24, 2013, Rana Plaza, an 8 storied giant structure accommodating 5 garments factories, a bank, a number of commercial shops and offices collapsed at Savar, Dhaka, Bangladesh, while more than 4 thousand people were working inside. A massive rescue operation was carried out lasting 21 days by the Government of Bangladesh involving all of her associated organs with a key role by the armed forces.

Methods: This observational study was conducted on pre-hospital, hospitalized and post hospital management of the victims of the disaster. Every injured individual was tracked for a period more than 3 months.

Results: This disaster finally left 1,132 dead and 2,438 injured. Approximately 400 individuals were fortunate enough to leave the wreckage either uninjured or after getting minor first aid on the spot. Considering triage, the injured people, after initial first aid and resuscitation by military field medical units and similar civil facilities, were transported to level-2 hospitals Combined Military Hospital (CMH) Savar (407 patients) and Enam Medical College Hospital (1,700 patients) and a number of private clinics (226 patients). 28 patients suffered crush injuries, amputation of limbs, head injuries, spinal injuries, chest injuries, fracture of long bones and pelvis were evacuated to CMH Dhaka, a level-4 hospital and 105 were taken to National Institute of Traumatology Orthopedic and Rehabilitation (NITOR). Out of 2,438 patients 951 (39%) received prolonged hospitalized treatment. Of them 225 (23.66%) had blunt trauma, 149 (15.67%) soft tissue injuries, 137 (14.41%) fractures, 46 (4.84%) crush injuries, 40 (4.20%) head injuries, 33 (3.47%) limb loss and 321 (33.75%) sustained other injuries without life risk. Three patients expired during treatment due to complications like acute renal failure and ARDS. A total of 36 cases were found disabled due to sequelae of head injury, spinal injury, and fracture of long bones and injury of peripheral nerves. Acute stress reaction was the most common presentation (44.92%) in the patients. A total of 77 patients were placed under rehabilitation program and occupational therapy at Centre for Rehabilitation of the Paralyzed (CRP) a specialized institute located at Savar, Dhaka.

Conclusion: Management of mass casualty in this building collapse provides us a valuable experience, to be utilized in dealing with similar disaster that might take place in densely populated cities in an earthquake prone country like Bangladesh.
The Defense Department policy and challenges in response to disasters and humanitarian assistance
Warner Anderson MD FACP
International Health
Office of the Assistant Secretary of Defence for Health Affairs
Objective To investigate the epidemiologic features of disease profile in navy personnel during escort mission of Gulf Arden, and provide solid evidence for prevention and management of long voyage related disease.

Methods The onboard clinic medical records of navy personnel during 3 escort missions of Gulf Arden were reviewed. The disease recorded were classified and categorized to explore the features of epidemiologic profile and time course. Results During three missions, respiratory infection, low back pain, acute enterogastritis and oral ulcer are the top 4 diseases of disease composition. The most common categories of disease are respiratory diseases, gastrointestinal diseases and orthopedics diseases. They showed different time course of morbidity, the morbidity curve with time of respiratory diseases showed a decline manner, the gastrointestinal diseases showed a fluctuation manner and non-traumatic orthopedics disease showed a stable platform manner.

Conclusions Respiratory diseases, gastrointestinal diseases and orthopedics diseases are most common diseases encountered in long voyage. Each of them showed unique
Ankle sprain is a common injury in athletic populations that results in significant time lost to injury. HYPOTHESIS: The incidence rates (IRs) of ankle ligament sprains are influenced by height, weight, body mass index (BMI), physical conditioning, level of competition, type of sport, and athlete exposure to sport. METHODS: A longitudinal cohort study was performed to determine the effect of risk factors for ankle sprain at a Military School between 2010 and 2012. RESULTS: A total 234 cadets sustained new ankle sprains during 5111 person-years at risk, resulting in an overall IR of 45.8 per 1000 person-years. Cadets with ankle sprains had higher mean height, weight, and BMI than uninjured cadets (P <.001). Cadets with ankle sprains had higher average scores in push-ups, sit-ups, and run time than uninjured cadets (P <001). Ankle sprain occurred most commonly during athletics (51.4%). Ankle sprain IR did not significantly differ between different athletic competition after controlling for athlete-exposure (IRR, 1.10; 96% CI, 0.87-1.42). Soccer and basketball had the highest ankle sprain IR. CONCLUSION: Higher mean height and weight, increased BMI, greater physical conditioning, and athlete exposure to selected sports were all risk factors for ankle sprain.
Aero medical evacuation (AE) has become a necessity in the present day military missions. It is used when other means of transport are either not present or impractical. It has contributed tremendously in saving lives and improving the well being of military personnel getting injured in the field and requiring immediate transfers to competent medical facility. The spectrum ranges from a single patient to multiple patient transfers. The patients are categorized on the basis of priority and dependency. The aero medical evacuation encompasses forward, search and rescue, tactical and strategic types and aircraft usage ranges from a helicopter to C130 Hercules depending on specific mission requirements. Certain general and clinical considerations become vital when a decision of AE has to be taken by the flight surgeon. There are trained and organized teams carrying on aero medical evacuation for a whole spectrum of medical problems and providing sophisticated and competent medical treatment in air. It has become accepted within the military forces of most western countries that the preferred method of patient transport is by air. Effective aero medical evacuation has changed the outlook in which military operations are conducted in present day battle theatres. Competency based training of military health professionals and provision of full logistic support can be the key factor for successful aero medical evacuation.
Essential medicines, as defined by the World Health Organization (WHO), are those drugs that satisfy the health care needs of the majority of the targeted population. Therefore, this list of drugs must be easily available and cost-effective. We established a program for supplying and managing medication use in missions using the WHO list. It has about 320 items. It consists of minimum medicine needs for a basic health for priority conditions. Priority conditions are selected on the basis of current and estimated future public health relevance and potential for safe and cost-effective treatment. Experience with different missions has shown that there were several advantages of using the WHO list of essential medicines. These advantages include the relatively low cost, easy access from the local markets, facilitate supply and storage management, optimizing the rational use and minimize waste and errors. The use of essential medicines list enabled optimized the resources use and maintained effective use of pharmaceutical resources. This was especially true in conditions or areas with limited resources. It was noticed that prevention of diseases in areas that have high prevalence must be included in these programs. This required studying current and estimating future public health relevance of major conditions. The program has significantly improved communication, availability and rational use of essential drugs in these missions. It also facilitated managing endemic diseases and assisted providing educational programs health professions participating in these missions.
Microalbuminurea in Burns
Maj. Gen. Dr. Awad Al Zailay
Consultant of Plastic Surgery
Director of Al Hada Armed Forces Hospital
Primary Shortening Followed by Bone Lengthening in Situ for the Treatment of Gunshot Bone Defect: An Experimental Study

We have designed a technique of primary shortening followed by lengthening in situ with an external fixator for the treatment of gunshot bone defect. The study has investigated the biological basis of the technique of primary shortening followed by callus distraction in situ. Method: The canines with gunshot bone defect were treated by two methods for comparison: primary shortening followed by callus distraction or only fracture fixation with external fixator. The bone lengthening was terminated on the 8th week with adequate length gain in the group of bone lengthening. The local blood flow and pathomorphological change were observed in each group. Results: There was not a significant difference between the groups in the time of soft tissues healing. Bone healing was achieved in the animals of two groups and adequate length gained in the animals of the group of bone lengthening. The measurement showed that the length of callus distraction of was 2.82±0.94cm and the relative length of bone distraction was 19.3% (15.8-21.4%), compared with normal limb. It was observed that callus formed mainly as a result of endochondral osteogenesis in bone lengthening. The osteogenesis effect of fracture fragment may be one of biological basis of bone healing in bone lengthening in gunshot bone defect. The local blood supply in the group of callus distraction (in the speed of 1mm / day) did not show any difference comparing with another group in which there was no callus distraction. Conclusion: It suggested that the proper speed of bone distraction did not have bad effect in tissues healing or local blood supply and the technique of primary bone lengthening in situ may be effective and safe for the treatment of gunshot bone defect.
Recent Advances in Combat Pre-hospital Care

Dr. Ibrahim Abouelkher Moustafa, MD
Director Accident & Emergency Department, King Fahad Military Medical Complex, Dhahran

Recent Advances in Combat Pre-hospital Care

Combat casualty care has gone through profound changes over time, some like Black Bourne from U.S. army institute of surgical research describe it as “military medical revolution” while others like Murray in Cambridge University press like to call “earthquakes”. The aim of this presentation is to address the recent advances in the art and practice of pre-hospital combat casualty care such as the use of tourniquets, hemostatic dressing, hypothermia prevention new tools, airway protection, thoracic trauma management and the use of blood and blood products infusions during early pre-hospital phase. In addition, we will try to highlight the recent advances in rapid tactical evacuation of military casualties during war time and the current efforts to use freeze-dried plasma and junctional tourniquet in pre-hospital resuscitation.
In Senegal, the integration of women in army started since 1984. It was gradual and limited to the health service of the army. Since 2008, the gates were opened and the massive and rapid influx of female soldiers arrived in this male environment. The military health services have been a key player in the integration process of these women in Senegalese armed forces.

**Objectives:**

Aims were to describe the clinical and behavioral manifestations and outcomes encountered in both sexes and to assess the role of the health service of the armed.

**Methods:**

Authors realized a retrospective study from January 2008 to December 2012. It is made from the collection of data from medical records of female soldiers followed in the Department of Psychiatry at Hôpital Principal de Dakar and reports interventions advocacy, support groups and workshops on gender in the military.

**Outcomes:**

The majority of these female soldiers had a good adaptation in the armed forces. Some women presented various psychiatric disorders: somatic conversions, acute dissociation and a crisis of collective hysteria. In some battalions, the men felt overwhelmed and rushed in their habits. Several questions showed that unease: how to manage diversity? How to deal with them? Do they have the same skills as the men in same conditions? When can they get married? With who? The question of the limits of the concept of equality between men and women and asked introduced the gender. It is beyond the scope of operational readiness and has several dimensions: physiological, psychological, cultural and political.

**Conclusion:**

The actions of medical services in Senegalese army must be linked with the managerial components, fiscal and legal framework in a global sense for having of feminization process management.
Field Medical Care from Injury to Definitive Care: Lessons Learned From the Southern Border War 2010

Col. Abdullah Mohammed AlGhamdi
Director of Armed Forces Hospitals, S.R
Abdulelah Hummadi

The Houthi insurgency in Yemen is a civil war in Northern Yemen. It began in June 2004. On November 4, 2009, insurgents shot dead a Saudi security officer and entered Saudi territory and attacked patrols. Saudi forces were mobilized to the southern border and an offensive military action was started to remove the Houthis from the Saudi territories. Our paper examines the military prehospital care policies and procedures in view of the Southern Border conflict. Lessons learned will be highlighted and used to propose a comprehensive way to the benefit of the Army and ultimately the future battlefield casualties.
The words autopsy, necropsy and post-mortem examination are synonymous, although post-mortem examination can have a broader meaning encompassing any examination made after death, including a simple external examination. Autopsies can be performed for two reasons: clinical interest and medicolegal purposes. The clinical autopsy is performed in a hospital mortuary after consent for the examination has been sought from and granted by the relatives of the deceased. The doctors treating the patient should know why their patient has died and be able to complete a death certificate even in the absence of an autopsy. These examinations have been used in the past for the teaching of medical students, etc. and for medical research. The medicolegal autopsy is performed on behalf of the state. The aims of these examinations are much broader than those of the clinical autopsy and include: identification of the dead body, to estimate the time of death, to identify and document the nature and number of injuries, to interpret the significance and effect of the injuries, to identify the presence of any natural disease, to interpret the significance and effect of the natural disease present, to identify the presence of poisons and to interpret the effect of any medical or surgical treatment. Forensic autopsies are mandated by law whenever suspicious circumstances surrounding a death; thus, rates for this type of autopsy have not declined until now. The current study will focus on the scope of medicolegal autopsy in military casualty’s in peaceful conditions while serving on active duty or training and also its value during war time. Extent and legal limitations of this major procedure will be discussed and compared to other forensic investigations in civilian circumstances. Social and religious considerations will be discussed as well.
Tear Gases: Fatal or Just Hazardous Agents! A Medicolegal Concern
Abdullah Al-Qarni

Tear gas is considered a chemical weapon, usually non-lethal, that stimulates the corneal nerves in the eyes to cause tears, pain, and even blindness. Common agents include pepper spray (OC gas), 2-chlorobenzaldehyde (CS gas), dibenzoxazepine (CR gas), CN gas (phenacyl chloride), Nonivamide, Bromoacetone, Xylyl bromide, Syn-propanethial-S-oxide and Mace. Lachrymatory agents are commonly used for riot control. Various international treaties prohibit their use as chemical warfare agents. During World War I, more toxic lachrymatory agents were used. Since 50 years, CS has become the main riot control agent used by police and military forces throughout the world. It is known that CS can cause a number of adverse effects in those exposed to it. The earliest symptom is a burning sensation in the eyes, nose and throat. At a later stage, lacrimation, rhinorrhea, conjunctivitis, sore throat and salivation. These symptoms are followed by chest pain and dry cough. Understanding its properties and its complications is critical in order to provide proper medical management of its post-exposure effects. As the need for CS and other law enforcement devices increases, it is important from medicolegal point of view to ensure proper management protocol. This study reviews various studies in the literature that dealt with the physical characters of CS, the dispersion methods, the short and long-term effects of exposure and guidelines for post-exposure management protocol. Moreover, the current study will focus on medicolegal aspects of unwarranted or excessive use of these agents during riot control which may endanger the lives of crowds as well as the soldiers, in addition to their probable fatal consequences.
The treatment of war wounds is an ancient art and historically war surgeons contribute greatly to the modern surgery. Improvements in weapons technology forced surgeons to rethink their interventions in their effort to tip the odds of survival in favor of their patient. Throughout most of the history of warfare, more soldiers died from disease than combat wounds and misconceptions regarding the best timing and mode of treatment for injuries often resulted in more harm than good. The outstanding military surgeon of the Napoleonic Wars, Baron Dominique-Jean Larrey, generally is regarded as the originator of modern military trauma care and what would become known as triage. In this historical review, the role of war surgery to the development and refinement of modern surgery along the past 250 years will be highlighted and presented. Since the 19th century, mortality from war wounds steadily decreased as surgeons on all sides of conflicts developed systems. Revision of the most important trends in western and non-western military trauma management over centuries will be reviewed and its impact on the current surgical practice will be discussed including; the major areas of emphasis which are medical evacuation and organization, wounds and wound management, surgical technique and technology, with a particular focus on amputation, infection and antibiotics and blood transfusion. Also, lessons of history will be discussed and how they are reflected in contemporary surgical practice.
This is a prospective, cohort long-term outcome study. Long-term follow-up with the use of low-dose opioids in intrathecal (IT) drug delivery system (DDS) for the treatment of intractable, severe chronic nonmalignant pain.

**Intervention:** The intervention was the implantation of DDS.

**Method and patients:** A total of 61 consecutive patients (60% females, 40% males) with a mean age of 59.2 years and a mean duration of symptoms prior to implant of 6.2 years were referred for implant of DDS for severe intractable noncancer pain. After adequate patient evaluation, each underwent a trial with IT opioids. Three patients failed the trial and 58 patients were implanted. Follow-up was 36 months with intervals at 6, 12, 18, 24, and 36 months. The Brief Pain Inventory was used for follow-up assessment criteria at baseline prior to implant as well as throughout the duration of the study.

**Outcome Measures:** Outcome measures included self-reported pain scores (worst and average), functional improvement and IT dose and oral opioid consumption.

**Results:** We observed a statistically significant reduction in both worst and average pain from baseline (8.91 and 7.47 at baseline) throughout the duration of the study (4.02 and 3.41, respectively, at 36 months) (P = 0.012 and P < 0.001, respectively). We also documented a statistically significant improvement in physical and behavioral function. All subjects showed a significant reduction in the oral opioid consumption. The dose of IT opioids remained low and virtually unchanged for 36 months of follow-up: 1.4 morphine equivalent/day at 6 months and 1.48 at 36 months. Oral opioid averaged 128.9 mg of morphine equivalent/patient/day at baseline to 3.8 at 3 month and remained at the same level throughout the study.

**Conclusion:** Low-dose IT opioid can provide sustained significant improvement in pain and function for long-term follow-up in chronic noncancer pain.
Abstract objectives: not all practice guidelines were consistent with available evidences. Pain is the most common reason for emergency department (ED) USA and oligoanalgesia in this setting is known to be common. Our aim was to explore the necessity of following the new clinical evidences in drug treatment of emergency cases (EC) in clinical practice. Methods: this retrospective pilot single center study assessed the current state of EC pain management practice. A cross-sectional interview survey of 20 physicians and analysis of patient data during a one month period in the emergency rooms in Althawra teaching hospital, University of Sana’s, Yemen, to understand the drug used in pain management in different situations in EC in regards to the clinically evidenced trials. Results: a total of 70% (n=14) of the participants reported that they believed that there was a need for better pain management and/or sedation in their ED. Examples of drugs to be considered in special correlation and contradiction were diclofenac in ureteric colic pain. Guidelines on pain management and sedation in the ED are not available. Traumatic painful patients represented the most common cause of pain in ED (50%), followed by abdominal pains (20%) and cardiac pains (15%). Conclusions: despite the frequency of pain in the ED, few studies have examined this phenomenon. This study documents high pain intensity and suboptimal pain management practices. Inconsistency between the tested physicians may be improved by better access and implementation of evidence based therapy and guidelines.
Non-battle-related injuries and the occurrence of chronic pain are major causes of medical evacuation in wartime. Because pain medicine specialists may not be deployed to a war zone, the treatment of pain from non-battle-related injuries has very limited success. Many studies have demonstrated that the return-to-unit rate for soldiers evacuated to a tertiary care facility for pain management is very low. By 2006-2007, the military were beginning to see a link between increasing rates of soldier and veteran suicides and pain issues. They noticed that symptoms in troops with chronic pain were the same symptoms associated with posttraumatic stress disorder and traumatic brain injury. Epidemiological studies suggest that high return-to-duty rates after treated non-battle-related pain are possible when early and aggressive pain management strategies are employed in forward-deployed areas. The first interventional pain treatment center to be established in a war zone has been successful in treating soldiers with non-battle-related acute and chronic pain so they can return to active duty according to a report published in anesthesiology.
Our Experience About Stress Fracture
Senior Col. Nouisri Lotfi Professor, MD

If the first description of a fatigue fracture was made at the level of the forefoot in the military, one must concede that the markets forced, and today, the race walk, hold the palm in terms of frequency of occurrence of the order of 1-30% of the young recruits (1st month ++). During ten years (2000-2009), we collected 27 locations in 23 patients (17 men and 6 women) of average age 28 years including 2 bilateral locations in the upper tibia metaphysis (1st location with 15 cases) occurring mostly among young recruits but also of young active members including 2 medical officers. MRI in time allows early diagnosis even if bone scintigraphy is specific but non-sensitive; therefore CT-scan is useful for some locations (sacrum - talus). Functional orthopedic treatment is in good standing, surgical indications will be exposed. In any event, the resumption of the sport does as a general rule only after a minimum of 3 months, after obtaining a radiographic satisfactory bone consolidation. Finally, we will insist on the fact that sport resumption must be gradual, over several weeks, after correction of possible contributory factors in particular food and hormonal imbalances for women. Prevention will be oriented on the adaptation of training programs and training of coaches and young recruits training cycles.
Chronic wounds can be the result of numerous injuries sustained in a war theater. When combined with associated medical conditions such as diabetes, heart disease or paraplegia these chronic wounds can result in the development of decubitus ulcers that are very difficult to heal. The resources that are utilized to heal these types of wounds are enormous and can be prevented ahead of time. The aim of the study was to look at the incidence of pressure sores in 12 states in U.S. veterans of foreign wars residing in Long Term Care facilities and to perform a retrospective analysis using a mobile wound care software platform (Woundwizard, New York, New York) from 2009-2012. Incidence, outcomes and staging were analyzed by the use of an ipad and droid cloud based platform and wound product utilization was analyzed and evaluated. A grant total of 13,827 pressure sores were thoroughly evaluated in order to develop pressure sore prevention protocols in this highly vulnerable patient population.
Abstract: To design the soldier concept in future horizon, not only is it a requisite to provide some information about the battle scenario but also it requires a plan to train soldiers properly to complement the battle scenario who are ready for the battle area. One of the most important ways is that the protocol estimates the required physical ability based on the evaluations of operations and activities, anthropometry and mental preparation. The objective of ergonomics is to create an optimal environment consistent with the dimensions and capacities of the human body. Achieving this goal is possible by changing the system to provide the environment suitable for human characteristics and capacities. Therefore, understanding the physical and mental capacities of humans are important issues in ergonomics. To do this, different thing are used like: having sizes and physical dimensions of the armed forces for use in the design, manufacture and providing work spaces, equipment and facilities, equipment, and everything which man is in relation to physical terms. Having this data and using it effectively will increase operational efficiency and logistic systems. This will result in improvements for the entire country’s armed forces.

Results: 1.) Human engineering factors. 2.) Ergonomic necessities in designing. 3.) Ergonomics, design and procurement of future soldier.
Background:
Hepatocellular Carcinoma is a leading cause for morbidity and mortality in patient with chronic liver disease. It usually occurs on top of cirrhosis which is commonly caused by viral hepatitis. Several therapeutic modalities been tried in patients with HCC and these therapies depend largely on the patient’s condition and the health expertise. Few reports in Saudi Arabia have described the disease presentation and treatment outcome.

Objectives:
To study the pattern of presentation and Treatment modalities of Hepatocellular carcinoma in PSMMC over the last 10 years

Methods and Material:
A retrospective chart review of 176 patients diagnosed with hepatocellular carcinoma based on histology findings or typical radiological features from January 2003 till December 2012 was done. Data collected were demographic, biochemical, radiological and histological data. Treatment modalities were recorded together with treatment outcome whenever available. Data were analyzed descriptively and comparison done between groups to identify predictors of poor outcome

Results:
A total of 176 patients were included. The median follow up was 14.5 months. Males constituted 77% of this cohort while female were 23% with a M:F ratio of 3.3:1. The mean age was 66 years ± 10.7 years and range was 30-99 years. 90% of these patients were Saudi. Only 38 patients out of 135 with available BMI had a BMI> 30 and the mean BMI was 27.1±5.5. HCV was the most common cause for underlying liver disease (45%) and HBV was the second commonest (27%). Sixty Patients (34%) were asymptomatic at the time of diagnosis. Of those who had symptoms, abdominal pain and abdominal distension were the most common symptoms (41 & 28 % respectively). Co morbid diseases were found in 62% of the patients, the most common of which is DM (58%) and hypertension (44%). Cirrhosis was present in 87% of cases while 13% had no radiological evidence of cirrhosis. One third of the patients had evidence of decomposition of cirrhosis on presentation and the tumor was advanced (beyond Milan Criteria) in 82(47%) of the patients. Old age and higher BMI were not associated with more advanced disease while DM and HCV infection were more frequent in patients with less advanced disease (p value: 0.028 and 0.002)

In this cohort, 6 patients had surgical resection, 54 patients were treated with Nexavar, 75 patient had RFA and 54 patients had TACE (conventional or DC beads). A total of 41 (24%) patient died during the follow up period however 57 patients lost their follow up and therefore their survival status could not be assessed. The Mean survival in various groups was as following: Nexavar group (13.5M), RFA (24.3M) and TACE (22.4M).

Conclusions:
Hepatocellular carcinoma is a complex disease with variable presentation. It is more prevalent in HCV infected patients with cirrhosis. The disease is advanced (beyond liver transplantation criteria) in almost 50% of the patients. The treatment outcome could not be accurately assessed due to lack of follow up information. This should warrant a more comprehensive surveillance program for early detection and better follow up system.
Military personnel are usually exposed to many carcinogens. Some of these carcinogens are general for all populations and some are specific in certain work place. Saudi Arabia army is composed of those working on the ground, sea and in air force. The known carcinogens are those present in preservatives, tobacco, UV, depleted uranium, some fuel exhaust and many others. We reviewed all cancer cases in Prince Sultan military medical city during one year and compared it with the general Saudi cancer registry.
OBJECTIVES: Oral & pharyngeal cancers show wide discrepancies in their geographical distribution given their association to some risk factors with local nature. No data on the magnitude of the problem in Saudi Arabia have been published. We aim to describe the incidence and characterize the various types of oral & pharyngeal cancers in SA.

METHODS: This record-based descriptive cross-sectional study was carried out in the National Saudi Cancer registry. Data including patient age, sex, nationality and residence. Calculation of age specific incidence rates, age standardized rates according to standard world population (ASR-W), and the cumulative incidence rate up to age 74 (Cum-74) was done according to the International Agency for Research in Cancer (IARC) methodology. For the purpose of comparability with the data in “Cancer Incidence in Five Continents, Vol. IX”, calculations were done for the period from 1998-2002.

RESULTS: During the period from 1998-2002, 1996 cases of oral cancer were registered, representing 5.28% of all sites cases. For all types of oral cancer, the ASR-W was higher compared to the crude rates, indicating a lower risk for these cancers in SA. The highest ASR-W was for nasopharynx (C11); the ASR-W for Saudi males (2.40) was higher than non-Saudi males (1.67), and both were higher compared to female rates, 0.79 and 1.39, respectively. Cancer tongue (C01-02) and mouth (C03-06) came second. For the tongue, the rates were higher among non-Saudis, and among females. For the mouth, the highest rate was among non-Saudi males, followed by Saudi females. The rates were generally lower compared to other Gulf countries.

CONCLUSION: The rates of different studied cancers are generally low compared to international figures except for nasopharyngeal cancer in men and women and hypopharyngeal cancer in women. This could be attributed to less risky dietary habits and may be due to under reporting.
Newborn Screening Program is a public health program implemented to detect and prevent selected congenital and metabolic disorders. If not detected and treated early in life, these disorders cause severe mental retardation, illness, or death. The detection of pre-symptomatic babies improves the clinical outcome and reduces morbidity and mortality. In April 2011, Ministry of Defense approved and supported the implementation of the newborn screening program in all of its hospitals. As a start, the General Administration of Medical Services for Armed Forces launched the program at the Prince Sultan Military Medical City in November 2011, followed by other military hospitals. More than 17,000 babies from six hospitals were screened for 16 inherited metabolic and endocrine disorders. From those 17,000 babies, sixteen (16) babies were found to be affected with incidence of 1:1000. Eventually, all infants born in the military hospitals should be screened. Details of the study and results will be elaborated.
Introduction: Immunization programs have eliminated or significantly reduced the incidence of serious infectious diseases; however, military immunization requires more attention in the scope of its unique and diverse mission and due to variant educational and socio-cultural determinants. One of the main goals of the military immunization program at Saudi national guard is to immunize all new recruits during their initial training period.

Objectives: This study aims to identify challenges faced during initial military immunization and to explore experiences, lessons learned and applied interventions.

Methods: Immunization of new recruits begins within the first 2 weeks of initial training. Soldiers are immunized against meningococcal meningitis (1 dose conjugate vaccine), dt (1 dose diphtheria and tetanus toxoids), mmr (2 doses of live attenuated vaccine), hepatitis b (3 doses of purified surface antigen) and varicella (2 doses of live attenuated vaccine for susceptible persons). The program for new recruits was initiated more than 10 years ago. The whole process of planning, communication with military training center, vaccine administration and health education was thoroughly reviewed based on documented reports and field observations.

Results: Age of new recruits ranges from 18-25 years old and they have secondary education. Main challenges are reduced perceived risk of disease, concerns over vaccine adverse reactions, lack of data regarding previous immunization history, screening for pre-existing immunity, completion of the vaccine series following the initial training and the need to establish comprehensive communication process to enhance immunization delivery.

Conclusion: Establishment of military immunization policies is a cornerstone to ensure and promote quality of the immunization program implementation. Culturally appropriate health education program should coincide with immunization campaigns focusing on risks of vaccine-preventable infections as well as effectiveness and safety of the provided vaccines.
Prevalence of Cardiovascular Risk Factors Among Saudi Military Personnel

Dr. Salim Ahmed Al Dahi, MD
Consultant family and community medicine-head of preventive medicine, prince salman military hospital

To measure the risk factors for cardiovascular disease (CVD) among military personnel in the Kingdom of Saudi Arabia. Methods: A nationwide survey included 10,500 active military personnel selected by multistage stratified random sampling representing various ranks in the army forces of 5 regions. The study utilized the World Health Organization stepwise approach to chronic disease risk factor surveillance (STEPS) in the design of data collection tool. Data include demographic and health behavior information, physical assessment and anthropometric, random blood glucose, serum cholesterol, and triglycerides measurements. Results: The response rate was 97.4% and the results showed that 9.1% of the sample population had that disease and that the risk varied by region, armed forces, crowding index waist-hip ratio, total cholesterol and triglycerides. Multivariate analysis identified crowding index, physical inactivity and military rank as independent predictors. Conclusion: The prevalence of risk factors is high among military personnel in the Kingdom of Saudi Arabia. The military health services must implement intervention programs to reduce these risks, with follow-up of the participants with identified CVD risk.
Using the Suite for Automated Global Electronic bioSurveillance (SAGES) to Enhance Disease Surveillance, Emergency Preparedness and Force Health Protection

Lt Cdr Christopher L. Perdue, MD, MPH
Preventive Medicine Officer

S. Department of Defense (DoD) global stability operations have provided many forms of humanitarian assistance to improve international global health, including the introduction of evolving and emerging technologies. The DoD overseas laboratories and the Global Emerging Infections Surveillance and Response System (GEIS) have been central in that effort in many locations. One of the newest tools is the Suite for Automated Global Electronic bioSurveillance (SAGES), a low-cost, highly configurable electronic system designed to replace traditional paper-based disease surveillance methods. SAGES has been developed and piloted with a number of partner countries. It takes advantage of ubiquitous communications technology and open-source software to quickly and reliably transmit data from field sites to a central database. Data can be used in real-time for outbreak surveillance, resource management and other health decision-making. With options for web-based access, foreign languages and statistical trend analysis, SAGES has become an important tool for enhancing global health security. The goal has been to create a software application that could be easily installed and configured to conduct many different forms of health surveillance and analysis. It is free and an open source and has already been deployed in a number of military and civilian settings.
Abstract: In combat, according to climatic conditions, geographical conditions and variety of military missions' in other words different equipment is used. These devices are designed to facilitate the implementation of the following may be assigned. In other word recent combat tactics by the forces that are trained to be significantly more efficient and more sophisticated equipment. In other words, the proportion of defense equipment and operation requirements needs to be fighting on the battlefield. This equipment must be designed in such a way that will facilitate achieving this goal. Due to the recent development of the science of ergonomics work for the purpose of human adaptation, and the system is at work, is of great importance. The main contents of the chapters in this paper are as follows: 2 - references required. 3 - Terms and Definitions (percentile - Individual equipment - height to the shoulder, in a sitting position - knee height, sitting - wide chest, standing - chest deep - deep belly, in a sitting position - over the back, standing - shoulder length, standing - the width between underarm China - China two underarm - round neck - round shoulders - chest - waist - around the shoulders of the armpit - armpit of the shoulder - torso). 4 - to carry ammunition vests. 5 - Symbols. 6 - Requirements (product dimensions conformity with user anthropometric characteristics - size - small, medium size - small size - weight - safety features - very easy to use and types of products). 7 - Psychology. 8 - The form and shape. 9 - Sampling. 11 - Introduction.
After changing the political regime in Bagdad in 2002 the Saudi Government ordered the Medical Services Directorate (MSD) to arrange for medical and humanitarian aid to Iraq. Convoys were composed from Red Crescent society for humanitarian aid and military field hospitals. The military field hospital composed of all major specialties with 50 beds expanding to 200 beds with two operating rooms. The medical staff was primarily from MSD and National Guard hospitals; King Faisal Specialist Hospital (KFSH) and Ministry of Health. In this presentation we will highlight the mission type, the number of patients seen and treated, the number of operations, the difficulties, outcome and the duration of the mission.
In recent years, the Chinese PLA mobile medical forces have taken an important role in providing medical support for disaster relief. In the year 2008, more than 200 military mobile medical forces took part in the Wenchuan earthquake disaster relief. In 2010, there were 25 mobile medical forces that come from armed forces or armed police participated in the Yushu earthquake relief. In order to further strengthen the capability of mobile medical troops, the followed measurements should be taken: First, The different scale and multifunction of emergency mobile medical forces should be established, for example 10-30 people mobile medical teams, 70-120 people field hospitals. Second, medical equipment with the characteristic of informationization, modularization and mobilization should be researched, developed and equipped. Third, different emergency support plans for mobile medical forces should be made beforehand according to expected tasks—for example the plan for earthquake disaster relief or the plan for flood disaster relief. Forth, the training on the emergency mobile medical forces should be done well to improve their capability. Lastly, the self-support capability of mobile medical forces, for example, transportation, communication and support for their daily life, should also be improved at the same time.
The mobile field hospital unit of the UAE army medical services corps played an important role over many years. It was established in 1984 as the first mobile army surgical hospital. The main duty is to provide medical care through its clinic and mobile medical support in all tasks of the UAE armed forces.

Mission in Albania:
Due to the civil war inside Kosovo, the NATO bombardments in Yugoslavia, many Kosovo Albanian fled from their hometown into Macedonia and Albania to survive the murderer attacks of the Yugoslav military and Yugoslav special security forces.
Over 436,000 refugees entered Albania. In April 1999, the ruler of the UAE, his Highness Sheikh Zayed bin Sultan al Nayan ordered the immediately support of the Kosovo refugees. UAE armed forces troops medical personal of the first surgical field hospital and teams of the UAE red crescent society was deployed to Kukes, Albania to set up a refugee camp. This refugee camp was enabled to shelter between 10,000 to 15,000 refugees. In short time the mobile field hospital with 200 beds was setup and more than 500 Kosovo Albanian received daily medical care, including surgical treatment.

Mission Kosovo (KFOR)
With the beginning of the international unauthorized occupation in Kosovo on 13th of June 1999 the NATO mission KFOR deployed their troops into northern Kosovo. About 1,200 UAE soldiers enforced the northern brigade under french command. The UAE contingent was the largest of all non NATO members and the only troop contributing country out the Arabic peninsula. With the closing of the Kukes refugee camp in Albania the mobile field hospital was deployed to Vucitrin, a small township between the capital Pristina and Mitrovica in the north of Kosovo. The UAE medical KFOR soldiers established their hospital with 100 beds and medical staff of 9 specialists at the outskirt of the town. From the beginning of this deployment the UAE mobile field hospital provided dedicated humanitarian and medical support. To the Kosovo Albanian population and Kosovo Serb population. The workload was between 200 and 300 consultations every day. Besides the UAE contributed humanitarian help to the overall population in the region. In December 2001 the UAE armed forces signed on order of the ruler of the UAE, his Highness Sheikh Zayed bin Sultan al Nayan, a contract to establish the Sheikh Zayed Hospital in Vucitrin to offer healthcare to the Kosovars. The UAE troops finished their participation in the KFOR peacekeeping mission at the end of 2001.

Summary:
The mobile field hospital, medical services corps, UAE armed forces, worked continuously almost 3 years in 2 different humanitarian and military missions.
The UAE medical services showed that it’s capable to integrate into international humanitarian peacekeeping operations. Willingness, knowledge and strengths of the medical services are the backbone to fulfill these challenging tasks.
The UAE mission in Albania and Kosovo received high appreciation and gratitude’s from the international world community, the United Nations and International Committee of Red Cross / Red Crescent.
The Tunisian army has worked in collaboration with various stakeholders in order to provide assistance and health support to the thousands of migrants and refugees fleeing the fighting that took place in Libya.

Refugee camps were established in the border region of Ras Jédir which lies in the middle of the Sahara in the south-east of Tunisia. With the creation of a second influx axis in Dhehiba, (Southwest Tunisia), new humanitarian needs and health performance have been generated. As part of this humanitarian effort, some missions were assigned to the Health Service of the Tunisian Army (SSA). They consisted mainly in dealing with a possible influx of wounded coming from Libya, on the Tunisian border; providing health coverage to refugees in various camps and coordinating humanitarian assistance. During the mission, SSA has faced some difficulties most of which were related to the specificity of the Saharan environment, cultural and religious diversity of refugee, status in the camp, long waiting time of repatriation... The authors highlight the contingency plan developed to ensure the success of the mission by providing medical support in addition to the coordination of services offered with various actions on the site. They include the supervision of camp hygiene, epidemiological monitoring of communicable diseases, the promotion of mental health and maternal and child health, etc...
In France since February 2011, the political crisis in Libya has caused a mass exodus of the population to neighboring countries, especially to Egypt, to the east; and Tunisia, to the west. To cope with this situation, the Tunisian authorities have assured the support of refugees and camp was set up by the Ministry of National Defense in the area of Choucha, (nine kilometers from the border crossing of Ras Jdir southeast of Tunisia). This camp was tasked to provide the fifty thousand displaced people a place to live in safety and dignity, pending a final solution. Supporting such a large number of people in a desert area, far from any town of importance represents a considerable challenge for the armed forces. The experience gained in these circumstances is both of technical and organizational aspects. In any event, the establishment and management of such a structure is part of a multidisciplinary approach, combining negotiation skills, engineering skills, operational knowledge of humanitarian services and, regarding the medical field, an ability to handle a large pathological diversity. Hygiene in all its components, is then of major importance. It is important to develop a comprehensive approach which promotes ensuring water supply of the refugee population, food security... taking into account waste disposal, disposal of sewage and excrement materials, to establish an adapted vector control and to prevent health risks associated with stray animals. The presence among the forerunners military elements, of a veterinary team has been a major asset. It assured interface with various non-governmental organizations involved and agencies in the United Nations. This mission was rich for the Tunisian military veterinary service.