Hiroyuki Yokote

Mr Hiroyuki Yokote is a medical researcher with the bio-manufacturing firm KAKETSUKEN since 1981. He has a Masters Degree in biomedicine. Currently he is engaged with ongoing research and development of new biomedical products.

Diwakar Jha

Capt. Diwakar is attached to the Air Force Station Guwahati, India as a Senior Medical Officer. His academic qualification is MBBS, MD (Preventive Medicine) and DNB (Preventive Medicine). He has over 27 years of working experience with the Indian Air Force Medical Services. He was the Associate Professor in the Armed Forces Medical College in Pune, India. He has many papers published in National and International levels. Once commended by the Chief Of Air Staff, Indian Air Force in 1999 for his significant contribution in the field of Nuclear Biological & Chemical Warfare Protection. Lastly, he presented a paper in 1995 whereby he was awarded the Second Best Paper Award.

OP1
LC16m8, AN ATTENUATED SMALLPOX VACCINE WILL BECOME AN EFFECTIVE COUNTERMEASURE AGAINST BIO-TERRORISM WITH SMALLPOX VIRUS THROUGHOUT THE WORLD

Hiroyuki Yokote, Yasuhiro Shinmura, Tomomi Kanehara, Azusa Satou, Chigusa Naga, Hajime Matsu, Kazuoki Chigita, Kunio Ohkuma, Seiji Miyamoto, Akinobu Funatsu, Masayuki Saijo, Shigeru Monkawa, Ichiro Kurane, So Hashizume

1. Human Vaccine Production Department, Chemo-Sero-Therapeutic Research Institute (KAKETSUKEN), Japan
2. National Institute of Infectious Diseases, Japan
3. University of Chiba, Japan

Objective: The attenuated freeze-dried smallpox vaccinia virus vaccine LC16m8 has been the sole licensed smallpox vaccine in Japan since 1975. LC16m8 was given to approximately 100,000 infants in the development stage and recently to over 3000 members of the armed-forces without any severe adverse events. In this study, in order to evaluate the usefulness of LC16m8 as a countermeasure against smallpox bioterrorism, we investigated both the short-term and long-term protective immunity induced by a single-dose vaccination of LC16m8 in a vaccinia Western Reserve (WR) intranasal challenge model. In addition, we evaluated the safety of LC16m8 in immunocompromised animals.

Methodology: We inoculated a clinical dose (approx. 2x10^5 PFU) of LC16m8 and that of Lister as a comparator in wild-type mice and CD4 and MHC class II-deficient mice by the multiple-puncture method with a standard bifurcated needle. At various time points after immunization, we challenged the mice intranasally with a lethal dose of WR. The assessment of neutralizing antibody titers was conducted with the use of the WR-specific plaque reduction neutralizing assay. Also, we evaluated the safety of LC16m8 in comparison to that of Dryvax in immunocompromised macaques.

Conclusion: We confirmed that the protective immunity conferred by a single-dose of LC16m8 was induced at early stage (2nd day) post-immunization and both the protective efficacy and neutralization antibody lasted over a long-term (over 1 year) in wild-type mice. In immunodeficient mice, LC16m8 vaccinated animals were well protected against the challenged virus. Moreover, the animals vaccinated with LC16m8 showed the same protective immunity as those vaccinated with Lister that had been used during the smallpox eradication campaign. In addition, there were no adverse effects caused by LC16m8 in immunocompromised macaques. Our data supports that the attenuated smallpox vaccine LC16m8 will become an effective countermeasure against bio-terrorism with smallpox virus throughout the world.

OP2
EPIDEMIOLOGY OF MENINGOCOCCAL CARRIER STATE AMONGST RECRUITS OF A MILITARY TRAINING CENTRE

Diwakar Jha

India Air Force, India

An epidemiological study was carried out to determine meningococcal carrier state amongst recruits of a military training centre. 360 recruits with divergent socioeconomic, ethnic backgrounds were studied. Epidemiological factors such as age, religion, education status, housing conditions, and family structure considered. The over all carrier state was 11.94%. Carrier rate was higher amongst recruits from poor back ground and joint families. No association was found between carrier state and smoking as well as those suffering from upper respiratory tract infection. Carrier state was also studied in relation to age, marital status and education background.
OP3
THE STUDY OF ANTIVIRUS CORRELATES WITH DENDRITIC CELL RESTORATION IN CHRONIC HEPATITIS B WITH AUTOLOGOUS CYTOKINE-INDUCED KILLER CELL

Shi Ming 1, Fu Junliang 1, Zhang Bing 1, Tang Zirong 1, Zhang Hui 1 & Wang Fusheng 1
1 Research Center for Biological Therapy, Beijing Institute of Infectious Diseases, Beijing, CHINA

Background myeloid and plasmacytoid dendritic cells (mDCs, pDCs), are functionally impaired in patients with chronic hepatitis B (CHB). Adoptive immunotherapy can suppress hepatitis B virus (HBV) replication in CHB patient, but whether it can restore the functionality of mDCs and pDCs remains unknown. Objective to study the effect of CIK-cell treatment on the frequency and functionality of mDCs and pDCs in chronic hepatitis B patients and to plain the mechanisms of viral suppression and promotion immunity. The study provides evidences for developing CIK-cell treatment further. Methods autologous cytokine-induced killer (CIK) cells obtained from 14 CHB patients were transfused back to patient, case by case, to observe the effect of CIK-cell treatment on the frequency and functionality of mDCs and pDCs in CHB patients during a 24-week follow-up investigation. Result Seven virological responders exhibited a sustained decrease in HBV load after CIK-cell transfusion; another seven non-virological responders showed only sustained high levels of HBV load during 24-week period following CIK-cell transfusion. The rate of hepatitis B e antigen (HBeAg) loss or seroconversion was also higher in virological responders than in non-virological responders. Importantly, we found that the frequency and cytokine-producing capacity of mDCs and pDCs significantly increased in virological responders, but not in non-virological responders. In addition, These patients exhibited a close correlation between restoration DC subset and a decrease in HBV DNA load, rather than a change of alanine aminotransferase (ALT) level. Conclusion CIK-cell treatment reduced HBV DNA load in some CHB patients; the efficiency at least partially correlates with the restoration of frequency and functionality of mDCs and pDCs.

OP4
AEROMEDICAL EVACUATION OF PATIENTS WITH HIGHLY INFECTIOUS DISEASES

Marco Lastilla 1, Roberto Biselli 1, Ottavio Sarlo 1 & Manfredo Di Stefano 2
1 Italian Air Force, Medical Corps, Rome, ITALY
2 Infectious Disease Department, University “Sapienza”, Rome, ITALY

Highly infectious diseases represent clinical syndromes ranging from single to multi organ infections and pose a constant threat to the public. In the absence of a definite treatment for most causative agents patients benefit from maximum supportive care as clinical conditions may deteriorate in the short term. Hence, following initial case identification and isolation, rapid transportation to a specialised treatment unit must be considered in order to minimise the risk of secondary infections but is limited by available infrastructure, accessible care en route and the patient’s clinical condition. Despite the development of consensus curricula for the clinical management of highly contagious patients their medical transportation lacks a common approach. The Italian Air Force (IAF) provides a rapid response team (Aeromedical Isolation Team, AIT) located on Pratica di Mare Air Force Base for both international and domestic AE in order to relocate HID cases and provide medical care under high level containment. The AIT consists out of two teams, each comprised of three physicians (one team leader and two specialists in infectious diseases and anaesthesiology) and six infectious diseases nurses. Patients are transported in an Aircraft Transit Isolator (ATI, picture 8), a self contained plastic isolation facility provided with negative pressure and HEPA filtration of exhausted air. Currently two ATI for AE and one STI for ground vehicle transportation are in use. The ATIs are connectable to the STIs used by INMI, thus reducing contamination risks during the passage of patients from ATIs to STIs (picture 9). Military components of the AIT are trained every 15 days at Pratica di Mare Air Force Base in close relationship with homologous units of civilian organization such as INMI. In addition, international training activity in collaboration with the US-Army AIT is conducted...
OP1
MILITARY MISSIONS FOR HEALTH MANAGEMENT IN DISASTERS
Mehmet Eryilmaz & Cesim Demir
1 Department of Emergency Medicine, Gulhane Military Medical Academy, Angkara, TURKEY

The most significant factor which will determine the success of health management to be provided during disasters is adequate and efficient organization. "Basic Disaster Awareness" should be kept high within the society and all health personnel and other personnel working in health facilities. Our aim in this study is to review health management in disasters in our country.

OP2
MODULARIZED DISPOSITION OF MOBILE MEDICAL RESOURCES IN MEDICAL RESCUE OF DISASTERS
Zhang Lulu, Liu Xu, Liu Yuan & Zhang Yi
1 Institute of Military Health Management of CPLA, Second Military Medical University, Shanghai, CHINA

Objective: To elucidate the modularization mechanism of mobile medical resources (MMR), establish a modularized disposition system of MMR for medical rescue of disasters, so as to provide an optimized plan for disposition of MMR during disasters.

Materials and Methods: We retrospectively investigated the selection and disposition (power, distribution, types and the functional modules) of MMR during the rescue efforts of four disasters in China, namely, the 1998 flood, Tangshan earthquake (1976), the Daxingaling forest fire (1987), and the Wenchuan earthquake (2008). A questionnaire survey was conducted on medical rescue of disasters and modularized MMR disposition in 115 military medical service officers. The database technique and multiple statistical analysis methods were used to establish the MMR database for disasters and to calculate the scale and structures of different factors and modules. The modularized MMR disposition system for disaster rescue was established by using integer programming and linear programming operational research, complex system modeling and DEA model.

Results: We found that some functional modules of MMR for medical rescue of disasters, such as psychological intervention, gynecologic and pediatric, and dermatology modules, were absent; and the equipment & drug module was not matchable with the demand of medical rescue of disasters. Totally 20 standard functional modules of MMR were obtained for medical rescue of disasters. The modularized MMR disposition systems different scales and properties, which contain the types, number of functional modules and the characteristics of the resources. The modularized MMR disposition can improve the efficiency and MMR disposition by 40% and save 30% of the resources.

Conclusion: The current disposition of MMR for medical rescue of disasters is both insufficient and wasteful. The application of modularization mechanism in disposition of MMR for medical rescue of disasters, establishment of standard functional modules of medical service, and optimization of modularized MMR disposition system allow for functional module storage at peacetime and modularized disposition after disaster, which can greatly improve the efficiency of MMR disposition for medical rescue of disasters and maximize the efficiency of medical service commanding.
Jegatheesan Singaravelu

Medical graduate from Kasturba Medical College, Manipal, India (1985). He joined the Malaysian Armed Medical Corps in 1987 and served as a Regimental Medical Officer to a number of regiments before being posted as a Medical Officer to the AFH Terendak, Malacca. In 1992, he was sent on an army scholarship to the University of Malaya to do the Masters in Anesthesiology. He has been serving as the Head of Anaesthesia and Intensive Care Services at the various AF Hospitals in the country since 1996. He has served as the Contingent Commander for the Malaysian Military Humanitarian Assistance Team during the Aceh Tsunami Disaster of 2004, the Deputy Commander in Pakistan during the earthquake in 2005 and the Commander again in the earthquake that hit Jog Jakarta, Indonesia in 2006.

Jose M. Fonseca

Lieutenant Colonel Jose M. Fonseca is the Director of International health specialists Team, Office of The Command Surgeon, Headquarters Of United States Southern Command, Miami, Florida. As the leader of a five-person team, he supervises and coordinates the operations of a hand-picked group of expert international health professionals who provide advice, liaison, assessments, and services in support of medical security cooperation activities within the regional area of focus of the US Southern Command and US Air Forces South.

He completed his Bachelor in Science in Physical Therapy Degree in 1987. Commissioned as a second lieutenant in the US Air Force and entered active duty in 1987 as the Chief of Physical Therapy Services. He is the first Puerto Rican to be board-certified in orthopaedic physical therapy by the American Board of Physical Therapy Specialties. Lt Col Jose has experience as a provider of continuing health education in physical therapy in the US and abroad and works with nongovernmental organizations dedicated to the development of health care professionals around the globe. He has received outstanding major awards and decorations and is involved in a number of Professional memberships and organizations.

OP4
MILITARY MEDICAL SUPPORT TO THE DOD HUMANITARIAN MINE ACTION PROGRAM—COLLABORATING TO STRENGTHEN OCCUPATIONAL HEALTH AND MEDICAL EMERGENCY RESPONSE CAPACITY IN NATIONAL HUMANITARIAN DEMINING PROGRAMS IN LATIN AMERICA

Jose M. Fonseca

United States Air Force, Biomedical Sciences Corps, UNITED STATES OF AMERICA

Medical personnel from the United States Armed Forces are proving to be key in the establishment and refinement of train-the-trainer programs in occupational health and emergency medical response in support of new and established humanitarian demining programs in partner nations in Latin America. This presentation will highlight the programmatic aims, the planning process, the training events, provisional outcomes, and observed challenges of recent medical missions in support of the HMA activities in Latin America.
Basuri Faki

Associate Professor Col Dr Basuri bin Faki (Rtd) was born in Singapore, 50 years ago. Just after graduating from University Malaya Kuala Lumpur with the Bachelor Dental Surgery, he joined the MAF with Labuan as his first posting in 1983. He obtained his post graduate Diploma in Dental Public Health from the University of Sydney Australia in 1992. He went to the MAF Staff College in 1995 after which he served on various Staff Officer’s posts in Dental Branch Health Services MAFHQ and as the Principal Dental Officer, Army Divisional HQ. He has served in Bosnia from Dec 1997 to Jul 1998 as the dental officer to the 5th Malaysian Contingent. He had given talks during local dental seminar on various military dentistry topics such as Forensic Dentistry which is his Dissertation Topic during his course in University of Sydney. He left the Service in May 2009 and since has joined MAHSA University College as the Associate Professor in Dental Public Health.

Saud Alsaif

Colonel Dr Saud Saleh Al Saif is a Consultant ENT Surgeon and Head of the ENT Unit and Director of Medical Administration, King Fahd Military Medical Complex Dhahran, Kingdom of Saudi Arabia (KSA). He obtained his Medical Degree from the University of Alexandria, Egypt in 1987 and proceeded with specialist training in ENT at various local and overseas medical institutions. Dr Al Saif has extensive experience in both clinical and administrative positions throughout his tenure with the KSA Armed Forces. He has presented and attended numerous international conferences and has published his scientific papers in various international journals. Colonel Al Saif has been appointed to head various committees and working groups in his hospital and organizations and organized several national and international conferences in KSA. Presently, he is the General Secretary of Saudi ORL Society and has been appointed as Chairman of the Organizing Committee for the 7th ARABFOSE of ORL-H&N Conference and 8th International Saudi ORL-H&N Conference in March 2011.

OP1
STUDY ON THE UTILISATION OF ARMED FORCES DENTAL CENTRE BY MALAYSIAN ARMY PERSONNEL

Basuri Faki & Nasrudin Jaafar

Aim: The objective of this study was to assess the pattern of utilisation of Armed Forces Dental Clinic by Malaysian Army personnel.

Method: Questionnaires were provided to selected Army units which fulfilled certain criteria. Out of 328 responses received for the survey, 279 respondents fulfilled the criteria for having served the Army more than 2 years.

Results: Demography. 24.7% of respondents were in the 21 – 25 years age group, 18.3% were 26 – 30 years, 16.6% were 31-35 years, 29.7% were in 36-40 years, 9.7% were in 41-45 years and 0.7% were more than 45 years. This study involved personnel from units in Penang (32.73%), Alor Star (23.38%), Sg Petani (23.38%), Taiping (16.19%) and Kelantan (4.32%). 206 respondents (73.8%) were from units that are within 1 kilometer (km) away from the nearest AFDC, 67 (24%) are 2 km away while only 6 (2%) are 7 km away.

Duration of service in the Army. 27.6% had served less than 6 years, 14.3% served 6 to 10 years, 16.5% served between 11 to 15 years, 37.6% had served between 16 to 20 years, and 3.9% served more than 21 years.

Findings: Majority of personnel last visited the dental clinic more than 6 months irrespective of rank, age, duration in service and distance of unit to the nearest dental clinic; majority of personnel visited the AFDC, followed by government dental clinics and private dental clinic; treatment sought by majority was mainly preventive and curative treatment; the perception of no treatment needed by personnel and non availability of dental officer were the main reason for personnel to avoid the AFDC; and free of charge and near to dental clinic were the main reason for seeking treatment at AFDC.

Conclusion: Dental service utilisation among Army personnel was found to be low irrespective of their ranks, the distance from AFDC and number years they are in service. Programmes such as oral health awareness campaigns to all military units should be organised periodically by the local AFDC to increase utilisation.

OP2
AN UNUSUAL CASE OF FIREARM INJURY TO THE FACE WITH BULLET COVER LODGED IN THE NOSE

Saud Alsaif & Khalil Al Shaikh

We report an unusual case of an accidental firearm injury, in 35 year old male firearm trainer, by a bullet cover fired in a retrograde manner, which was lodged in right nasal cavity just reaching sphenoid sinuses without any neurological impairment. The extent of tissue damage and posterior extent of tract was assessed by plain radiography and CT scans. The bullet cover was removed under endoscopic guidance and wound sutured with a small defect left for healing with secondary intention keeping in mind second step reconstruction for permanent defect. On follow up wound had healed with good esthetic results. The case showed that gunshot injuries can be treated primarily and undermining of the edges of wound and regular well lubricated dressings are key to good healing.
ABSTRACT

CONCURRENT SESSION 7C: DENTAL HEALTH AND MAXILLOFACIAL SURGERY

Wan Azmil Wan Mohamed Annuar

Col Dr Wan Azmil Bin Wan Mohamed Annuar was born in Kuantan, Pahang in 1971. He obtained Bachelor in Dental Surgery degree from University of Malaya in 1995. After finishing his Bachelor degree, he joined the Dental Services Malaysian Armed Forces in May 1995. His first place to serve was the Sungai Petani Malaysian Armed Forces Dental Centre from 1995 to 2000. In 2000, he began pursuing his postgraduate degree, Master in Clinical Dentistry (Restorative Dentistry) specializing in Conservative Dentistry from University of Malaya. After finishing his postgraduate degree he serve in Royal Malaysian Navy Hospital in Lumut from 2004 to 2007 as a Dental Restorative Specialist. He has been appointed as Honorary Consultant for MClinDent in Restorative Dentistry (Conservative Dentistry) program from Faculty of Dentistry in University of Malaya and also as a part time lecturer in Faculty of Dentistry, National University Malaysia. Currently he is a Principle Dental Officer and Dental Restorative Specialist base in 1st Division Infantry, Kuching, Sarawak.

During his service, he had opportunity to attend a few international meetings & courses in Japan, Hawaii, United States, Turkey, Canada, Singapore and various local meetings. Over the years, he had published and presented papers on dental materials both locally and internationally.

OP3

ENDODONTIC TREATMENT OF A MAXILLARY CENTRAL INCISOR WITH ARRESTED ROOT DEVELOPMENT: A CASE REPORT

Wan Azmil Wan Mohamed Annuar 1, Rosshuahami Abdul Rahman 2 & Juanna Bahadun 3 1 Dental Division, 1st Infantry Division, Bukavu Camp, Tun Ahmad Zaidi Adnucce Road, 93150 Kuching Sarawak MALAYSIA.
2 Health Services Division (Dental Branch), MALAYSIA
3 Ministry of Health Malaysia (MOH), MALAYSIA

Arrested root development of permanent teeth can occur due to local factors such as infection and trauma or general factors such as radiation and odontodysplasia. This case report presents a 11 tooth with arrested root development requiring endodontic treatment. Following obturation with MTA, a minor surgical procedure was performed to remove periapical pathologic tissue. The tooth had remained asymptomatic at the 6-month review and the case will be followed-up for at least 2 years to ensure complete healing.

Barry Reed

Dr Barry Reed BDS, MDS, FRACDS is a Dental Surgeon by training. He graduated with a Bachelor of Dental Surgery from the University of Sydney, Australia in 1983. He obtained a postgraduate Masters Degree in Dental Surgery at the Dept of Oral Medicine & Oral Surgery, Sydney University in 1988 and Fellowship of the Royal Australasian College of Dental Surgeons in 1990. Dr Reed currently holds several appointments including as the Visiting Oral and Maxillofacial Surgeon John Hunter Hospital since January 1994; Consultant in Oncology at the Newcastle Mater Hospital since 1991; Clinical Lecturer, School of Medicine, University of Newcastle since 1992 (part-time); Accredited Visiting Specialist at Lake Macquarie Private Hospital, Hunter Valley Private Hospital, Maillard Private Hospital, Lingard Hospital and Warners Bay Hospital. He is also the Oral and Maxillofacial Surgeon, 1st Health Support Battalion, Australian Army Reserve. Dr Reed has also extensively published his scientific research papers in both local and international Dental journal publications. He has also produced 2 audio-visual teaching aids titled “Infection Control in Dental Practice” and “Australian Army Aboriginal Community Assistance Program Oral Hygiene and Tooth Brushing Instruction Video for Aboriginal Community Schools”. The former AV aid has received national and international distribution to private practitioners, universities and dental societies and was endorsed by the Australian Dental Association. Dr Reed is also actively involved in Community and Assistance Work especially with the Aboriginal community. For this, he was awarded the Colonel Kenny Award as the Best Reserve Dental Officer in the Australian Army in 2008.

OP4

SEVERE MAXILLOFACIAL TRAUMA FROM IEDS: MANAGEMENT LESSONS LEARNT FROM THE US ARMY.

Barry Reed 1 & Robert G Hale 2
1 Australian Army, AUSTRALIA
2 Department of Oral and Maxillofacial Surgery, Brooke Army Medical Center, San Antonio, Texas, UNITED STATES OF AMERICA

The current wound management protocol developed by the US Army in Iraq for facial trauma from IEDs was in response to poor results from using conventional civilian trauma management techniques. This was due to the unique wounding characteristics of IEDS. Several surgical devices were also introduced, which together with this protocol greatly improved outcomes in relation to both facial appearance and jaw function (especially in regard to chewing, mouth opening, swallowing and speech). This presentation describes how these severe facial injuries from IEDs can present as a complex initial wound management problem for the Australian Army; and how updating doctrine and health policies to make use of the extensive US Army experience in wound management, together with the introduction of several clinical devices would enable world class health care outcomes for future casualties in our deployments. The method with the greatest chance of success in addressing and solving in a formal and systematic manner the increasing military wound care problems described above was via an official government visit by an Australian Army Reserve oral and maxillofacial surgeon to the Brooke Army Medical Center Department of Oral and Maxillofacial Surgery in 2008 to gain experience in current US Army wound management techniques. The results of this approach have included: 1. development of training modules in primary management protocols for facial trauma from IEDs for the Australian Army. 2. publication with US Army co-authors of a detailed review article on the primary management of maxillofacial injuries from IEDs in order to summarise contemporary methods of management for training of all military health care personnel involved in facial injury care. In conclusion, establishing a continuing collaborative partnership with the US Army in wound management will promote significantly improved outcomes in relation to facial appearance and jaw function for future wounded Australian soldiers.
Conclusion: There is a need to improve the quality of DUWLS in the dental centers of MAF for better patient care.

Background: Dental unit waterlines (DUWLS) are the tubes that connect the high-speed hand piece, three ways syringe and ultrasonic scaler to the water supply. The source of water is either from public water supply or independent separate water reservoir. Extensive tests and research done in America showed that traditional dental clinic: using public water supply has an average of 375,000 colony forming units of bacteria per milliliter (CFU/mL) of water sample. Those with independent water reservoir averaged 1,200,000 CFU/mL. Bacteria, fungi and protozoan has been shown to colonize and replicate in DUWLS resulting in forming of biofilms. American Dental Association (ADA) recommended water delivered to patients during non-surgical dental procedures contains no more than 200 CFU/mL of bacteria.

Aims: To evaluate the water quality of DUWLS and the prevalence of pathogenic bacteria in particular Pseudomonas aeruginosa and Legionella in DUWLS of the dental centers in Malaysian Armed Forces (MAF) and Universiti Kebangsaan Malaysia (UKM).

Op6

A CROSS SECTIONAL STUDY OF WATER QUALITY FROM DENTAL UNIT WATER LINES IN THE DENTAL CENTERS OF MALAYSIAN ARMED FORCES AND MALAYSIAN NATIONAL UNIVERSITY

Mei Siang Ma 1, Zalini Yunus 1, 2 & Zukri Ahmad 2
1 Armed Forces Dental Center, Kem KEMENTAH, Jalan Padang Tembak, 50634 Kuala Lumpur, MALAYSIA
2 Science and Technology Research Institute for Defence (STRIDE), Ministry of Defence, MALAYSIA

Background: Dental unit waterlines (DUWLS) are the tubes that connect the high-speed hand piece, three ways syringe and ultrasonic scaler to the water supply. The source of water is either from public water supply or independent separate water reservoir. Extensive tests and research done in America showed that traditional dental clinic: using public water supply has an average of 375,000 colony forming units of bacteria per milliliter (CFU/mL) of water sample. Those with independent water reservoir averaged 1,200,000 CFU/mL. Bacteria, fungi and protozoan has been shown to colonize and replicate in DUWLS resulting in forming of biofilms. American Dental Association (ADA) recommended water delivered to patients during non-surgical dental procedures contains no more than 200 CFU/mL of bacteria.

Aims: To evaluate the water quality of DUWLS and the prevalence of pathogenic bacteria in particular Pseudomonas aeruginosa and Legionella in DUWLS of the dental centers in Malaysian Armed Forces (MAF) and Universiti Kebangsaan Malaysia (UKM).

Op5

DENTAL STATUS AND COMBAT READINESS ASSESSMENT OF MALAYSIAN ARMED FORCES INFANTRY SOLDIERS.

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1 Faculty of Dentistry, University of Malaya, Kuala Lumpur, MALAYSIA
2 Science and Technology Research Institute for Defence (STRIDE), Ministry of Defence, MALAYSIA

Objectives: To compare caries status during enlistment and after 5 years of service and to assess dental combat readiness using DENTAP 2008 system.

Method: This was a combination of cross-sectional / retrospective study using questionnaire and by clinical examination involving 173 soldiers from five battalions.

Results: Caries prevalence had increased by 3.8% within 5 years (2002=79.9%, 2008=83.7%). However mean DT had decreased (2002=1.7, 2008=1.3), MT increased (2002=0.5, 2008=1.1) and FT increased (2002=1.3, 2008=1.6). Active caries (DT) was slightly higher at recruitment (50%) than 2008 (54.9%) indicating that treatment had been done. DMFS increased 63.6% since recruitment with the biggest changes in the MS component (increased 129.2%). Using DENTAP 2008, only 40.5% of subjects were classified dentally fit.

Conclusion: The current status of infantry soldiers was better than at recruitment in terms of decreased DT but the mean filled (FT) and missing teeth (MT) had also increased. However, dental combat readiness according to DENTAP 2008 was low with more than one-half of subjects needing dental treatment prior to deployment.

Zalini Yunus

Dr. Zalini Yunus received the B.Sc. degree in Microbiology (1986) from the National University of Malaysia (UKM), Malaysia, the M.Sc. degree in Immunology & Allergy (1997) from the University of Nottingham, UK, and the PhD in Chemical Engineering (2004) from the University of Manchester Institute of Science & Technology (UMIST). UK. Between 1986 and 1998, she was a teaching assistant in UKM, and a research officer in the Institute of Medical Research, Malaysia. She joined the Malaysian Ministry of Defence (MOD) as a Microbiologist in 1998. At present, she is the Head of MOD’s Human Factors Branch, Protection & Biophysical Technology Division, Science & Technology Research Institute for Defence (STRIDE). She also serves as Chief Editor for the Science & Technology Defence Technical Bulletin, and BUDI, an internal bulletin of STRIDE. She has been active, both nationally and internationally, in strengthening the Biological Weapons Convention, and in biosafety & biosecurity measures. She has received numerous invitations to give lectures in these related issues. Her interests and research work are mainly related to biological and chemical warfare agent detection systems that based on dielectrophoretic field flow fractionation, microbiological, molecular biological and immunological techniques. In these areas, she has presented and published a number of papers in conferences and journals.
EXPERIENCE OF MEDICAL SUPPORT OF THE JOINT FORCE IN THE NORTHERN CAUCASUS ARMED CONFLICT

Alexander Belevitin
Surgeon General of the Russian Federation Armed Forces, RUSSIA

The analysis and results of medical support of the Joint Forces (JF) at carrying out counter terrorist operation in the North Caucasus testify that the medical service has successfully accomplished its mission. Approximately 40 thousand wounded and sick have been managed at various stages of the medical evacuation. Ninety percent (90.0%) have been hospitalized in medical institutions both in the combat area, and behind its limits. Eighty-nine-point-five percent (89.5%) of the wounded and ninety-five percent (95.0%) of the sick have recovered. Mortality rate was 1.5% among the wounded and 0.3% among the sick. 9% of the wounded and about 5% of the sick have been relieved from the Armed Forces of the Russian Federation. More than 100 thousand of those wounded and sick have been evacuated, mostly by air in 80% of cases.

Such achievements have been possible due to the following circumstances:

1. Construction and formation of medical support system of the JF based on the peace time infrastructure of medical service of the Russian Federation Armed Forces.
2. Preliminary preparation of personnel and territorial infrastructure of the medical service of the Northern Caucasus Military District to work in hospital-based stationary mode.
3. Formation near the border of the combat area of multi-profile, specialized hospitals based on garrison military hospitals, multi-profile specialized groups from Military Medical Academy and medical institutions of the Center.
4. Timely maneuver of assets of medical service, and medical aid, determined by constantly varying operative logistic environment, especially at the initial stage of operation.
5. Wide use of air transport for evacuation of wounded and sick and as a result leads to reduction of quantity of evacuation stages.
6. Reduction of terms of delivery of wounded and sick on stages of medical evacuation, and accordingly reduction of maximum permissible terms of rendering of all kinds of medical aid.

In conclusion:

1. The medical service of the Russian Federation Armed Forces is capable of providing support to the troops in the armed conflict by using the combat-ready assets of the peace time at the level of modern requirements.
2. The role of reservist which represents the functional assistance to the medical service of the Center. This group of reservist was formed through involvement of the central medical institutions, Military Medical Academy and district military hospitals, with the mission of reception, triage, rendering of specialized medical aid, treatment and rehabilitation of the heaviest casualties among the patients with long terms prospect of recovery.
3. Conduct of maneuverable operations have sharply revealed the problem of increased mobility and autonomy of medical units. Organizational structure and technical means of medical service, needs to be improved.
4. The large number of lightly wounded and sick dictates the necessity of creation of hospital for lightly wounded. To organize it in the JF it is necessary to strengthen it by specialized group on treatment of lightly wounded from Military Medical Academy or other medical institutions of central subordination.
5. The absence of joint control of medical assets by various ministries and departments along with the joint system of medical support of the JF leads to irrational of medical services.
6. The task of identifying dead servicemen should have been handled jointly by pathologists and forensic experts and not by the medical service personnel.
7. Sanitary and epidemiological surveillance during counterterrorism operation showed that there is a need for better protection for the armed forces operating in an unusual geographical location.