Mass casualties management in major disasters
Tuesday 22 May 10h30 – 16h00

Mass casualties management in major disasters

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“STAND AND PLAY, SCOOP AND RUN” QUEL PROCÉDÉ CHOISIR ?
M. Essoussi, A. Hlali, M. El Ghoul, M.H. Manaï
Service de Chirurgie Viscérale et Générale - HMPIT

MCMIMD2
STRINGENT MEDICAL RESCUE AND THE WOUNDED DISPOSAL FOR LARGE SCALE DISASTER
Experimental pathology laboratory, Institute of radiation medicine, Academy of military medical science, Beijing, China
27 Tai-ping Road, Hai-dian District, Beijing 100850, China

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UNITED STATES DEPARTMENT OF DEFENSE MILITARY HEALTH SYSTEM ROLE IN NATURAL DISASTER RESPONSE.
D.Tarrantino (USA)

MCMIMD4
AVANCÉES TECHNOLOGIQUES DANS LA PRISE EN CHARGE DES BRÛLÉS
C.Garsin (FRANCE)

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CDL OA OGINBIYI1 FWACS, FMCA, FICS - BRIG GEN HMA AGADAZ2 FWACS, FMCS, FICS - DR. I MUJAWA3 FWACP
Departments of Anaesthesia1, Surgery2, and General Outpatients3, 44 Nigerien Army Reference Hospital, Kaduna, Nigeria

MCMIMD6
AN OPTIMIZED DECISION-SUPPORTING SYSTEM FOR MILITARY EMERGENCY MOBILE MEDICAL RESOURCE PLANNING IN REGIONAL MAJOR DISASTERS
L.L. ZHANG Y. LIU Y. ZHANG G.S. YANG  C.M. HU
Institute of Military Health Management of CPLA, Second Military Medical University, Shanghai, China - #800 Xiangyin Road, Shanghai 200433, China

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ASISTENCIA SANITARIA A BAJAS EN MASA EN CATASTROFES
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A.R. Valgin, I.V. Khelikov, V.M. Rusakov, L.A. Yurchin
Main Military Medical Directorate of the RF MoD, Main Center of the State – Sanitary and Epidemiological Control of the RF MoD

MCMIMD9
WEAK AND STRONG POINTS IN PREHOSPITAL COMMAND AND CONTROL – ARE RESULTS POSSIBLE TO MEASURE?
Lt Col Lars Lundberg MD PhD1, Anders Rüter MD PhD2
1 Swedish Armed Forces Medical Centre, Gothenburg, Sweden
2 Centre for Teaching and Research in Disaster Medicine and Traumatology, Linköping, Sweden

MCMIMD10
ORGANISATION DES SECOURS FACE A UNE INTOXICATION CHIMIQUE COLLECTIVE
Médecin Colonel BEKKOUCHE N. (Algérie)

MCMIMD11
EXPERIENCE DU SERVICE DE SANTE ALGERIEN DANS LA REPONSE AUX TREMBLEMENTS DE TERRE : CAS DU SEISME DE BOUMERDES.
Med Lt Col A. DEKHILI, Med Gle S. KHALFA

MCMIMD12
THE 2005 KASHMIR EARTHQUAKE – THE DUTCH USAR EXPERIENCE
Commander Floris J. Idenburg, surgeon – Royal Netherlands Navy Reserve
Haaglanden Medical Centre – Dept. of Surgery & Traumatology
PO BOX 432, 2501 CK Den Haag - The Netherlands

MCMIMD13
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Col. Roberto BRAMATI, IT Army MC
Col. Enzo LIGUORI, IT Army MC

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DISASTER HEALTH MANAGEMENT AND ETHICAL BOUNDARIES
Col. Adnan ATAC, PhD, Dept. Medical History and Medical Ethics
Gülhane Military Medical Academy (GMMA), Ankara, Turkey

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MASS AMMONIA ACCIDENT - AN EXAMPLE OF PREPAREDNESS OF THE NATION
Vucinic S1, Jevtic M2, Todorovic V1, Jovanovic D1, Segrt Z1, Tomic I3, Potrebic O1
1 National Poison Control Centre, Military Medical Academy in Belgrade
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MCMIMD16
THE 2005 KASHMIR EARTHQUAKE – THE DUTCH USAR EXPERIENCE
Commander Floris J. Idenburg, surgeon – Royal Netherlands Navy Reserve
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MCMIMD17
TREATMENT STRATEGIES FOR MASS BURN CASUALTIES
Authors: J. K. Chai, Z.Y.Sheng, D.F. Hao, C. A. Shen
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MCMIMD18
EXPERIENCIA DEL HOSPITAL MODULAR DE CAMPAÑA DEL EJÉRCITO DE CHILE EN APOYO A LA COMUNIDAD
GDB. Alejandro Mandujano Bronfmann
Comandante de Salud y Jefe de Sanidad del Ejército de Chile

MCMIMD19
MASS AMMONIA ACCIDENT - AN EXAMPLE OF PREPAREDNESS OF THE NATIONAL POISON CONTROL CENTRE, MILITARY MEDICAL ACADEMY IN BELGRADE
Vucinic S1, Jevtic M2, Todorovic V1, Jovanovic D1, Segrt Z1, Tomic I3, Potrebic O1
National Poison Control Centre1, Headquarters2, Clinic for pulmonalory disease3, Military Medical Academy, Belgrade, Serbia
MCMIMD1

“STAND AND PLAY, SCOOP AND RUN”
QUOI PROCÈDE CHOISIR ?
M. Essoussi, A. Hiali, M. El Ghoul, M.H. Manaï
Service de Chirurgie Viscérale et Générale - HMPIT

Ce sont deux procédés de prise en charge des blessés graves en afflux massif. Le conditionnement initial puis le transport par voie routière est le procédé le plus approprié dans notre pays. Le but de cette communication est de montrer que de part nos moyens, nos conditions géographiques et des contraintes parfois insurmontables du transport héliporté, le transport routier devient plus rapide et plus bénéfique pour les blessés porteurs de lésions graves et multiples dans notre pays.

MCMIMD2

STRINGENT MEDICAL RESCUE AND THE WOUNDED DISPOSAL FOR LARGE SCALE DISASTER
Experimental pathology laboratory, Institute of radiation medicine, Academy of military medical science, Beijing, China
Address: 27 Tai-jing Road, Hai-dian District, Beijing 100850, China

Objective: “Life exceed everything”. To raise remedy level and reduce casualty, this article systematically introduce the stringent medical rescue strategy and wounded disposal for large scale natural disaster and man-power disaster such as terrible attack. Materials and Methods: Through systemic investigation, we analyzed the large scale wounded characteristics and stringent medical rescue experience for natural disaster such as tsunami, earthquake, conflagration and so on happened frequently in the world and terrible attacks in many countries including America, England, Russia, Spain and India. Then proposed the related strategy and wounded disposal principle.

Results and discussion: 1. Wounded characteristics: (1) Numerous wounded soldiers happened unexpectedly (emergent). (2) Many kinds of injury happened simultaneously, mainly compound injury, and injury condition was dangerous and serious (critical). (3) The happening time was difficult to know, the collapsed buildings increased, and the scene condition was complicated (complex). (4) Wounded soldiers added at night, and deeply buried soldiers occurred frequently, so the difficulty for search, dig and rescue increased (difficult). 2. Stringent medical rescue strategy: (1) Establish national and city’s high-performance medical rescue command institution or organization system. (2) Establish rescue system and base for different kinds of disaster. (3) Consume various k medical rescue stringent scheme, emergency support and rescue during nighttime. (4) Take full advantage of army’s special functions characterized by high concentration, quick response, frequent training and well equipment. (5)Enhance entire people’s antiterrorism consciousness; strengthen antiterrorism training; Enhance self-help and buddy aid skill, and think highly of psycho-precaution against disaster. (6) Set up firm humanitarianism idea that rescue life is the most important task in all disaster accidents.

3. Disposal principles for wounded soldiers on disaster scene: (1) Implement field first aid quickly—include injury examination, categorization(Accurate assurance of injury class, localization, cause, state and condition) and rescue on the spot (hemostasis, bone fracture fixation, wound bandage, antishock, keeping respiratory tract unobstructed and so on), especially pay attention to the principle that macrotrauma is prior to microtrauma. (1) Search and rescue buried soldiers—it is important for reducing casualty to make use of detect techniques such as personnel, police dog, microwave, supersonic wave, heat imagery and so on to search, dig and save the severely injured soldiers only have weak life sign. In Tangshan earthquake, more than 5600 persons were dugged outside that day, and the survival percentage was 81%; more than 1600 persons were dugged outside on the second day, and the survival percentage was 33.7%; the third day was 36.7%, the fourth day was 19%, and the fifth day was merely 7.4%. (2) Carry and transport quickly—establish transportation and medical evacuation system mainly composed of special transport strength. Land, sea and sky conjugated to ensure succession guardianship and non-interrupted therapy, and avoid death and damage again during transportation [1,2]. Conclusion(s): Stringent medical rescue strategy and the wounded disposal for large scale disaster is a system engineering. Based on the establishment of adequate stringent rescue strength and consummate organization hierarchy, every department should coordinate, be in close cooperation, efficient direction, clear division of labor, unimpeded information and rich experience. Be good at implementing whole range disposal including remedy, search, transport and evacuation for the wounded at night.

References:

MCMIMD3

UNITED STATES DEPARTMENT OF DEFENSE MILITARY HEALTH SYSTEM ROLE IN NATURAL DISASTER RESPONSE.
D.Tarantino (USA)

Summary not available at time of print

MCMIMD4

AVANCÉES TECHNOLOGIQUES DANS LA PRISE EN CHARGE DES BRÛLÉS
C.Garsin (FRANCE)

Summary not available at time of print
Disaster making; Geographic information system; decision-supporting system; Key words: Emergency mobile medical resources; Optimized decision-mobile medical resource planning, and upgrade the organization and disaster rescue. Incorporation of the decision-supporting system for Conclusions: There is co-existence of deficiency and over-decision-making, raises accuracy by 50% and reduces resource various emergency mobile medical resource planning protocols in The GIS-DSS developed in the present study is able to directly derive persons/10,000 population, and the emergency mobile medical manpower should not be smaller than 4 emergency mobile medical resource planning was developed. Objective: To provide theoretical references and decision-supporting tools for military emergency mobile medical resource planning in response to regional major disasters. Materials and Methods: A survey was made with respect to the quantum, allocation and category of military emergency mobile medical resources including manpower, medicinal supplies and functional modules (institutions) in a military command region in the year 2006. A retrospective analysis was also made of data obtained from seven disasters in China between 2001 and 2005 with respect to the number and classification of casualties and emergency mobile medical resource planning. Using the database and geographic techniques, a database and geographic information system (GIS) of the emergency mobile medical resources of the said military command region were established, based on which a requirement forecast system for the medical resources in a major disaster model was constructed by using the autoregressive integrated moving average and back-propagation (ARIMA-BP) network; an optimized decision-supporting model of emergency mobile medical resources by using complex system science and multi-goal programming, and finally a regional GIS-based decision-supporting system (GIS-DSS) for military emergency mobile medical resource planning was developed. Results and Discussion: With respect to forecasting the requirement for emergency mobile medical resources in rescue maneuver of disasters of different scales and natures, the capacity of reserve emergency mobile medical manpower should not be smaller than 4 persons/10,000 population, and the emergency mobile medical manpower modules should not be fewer than 2/100,000 population. The GIS-DSS developed in the present study is able to directly derive various emergency mobile medical resource planning protocols in different situations, which can be demonstrated on maps in the form of figures and tables, and therefore it shortens two-thirds of time for decision-making, raises accuracy by 50% and reduces resource consumption by 40%. Conclusions: There is co-existence of deficiency and over-consumption in emergency mobile medical resource planning in major disaster rescue. Incorporation of the decision-supporting system for emergency mobile medical resource planning into the general medical service commanding system can raise sciencyfity of emergency mobile medical resource planning, and upgrade the organization and command art of medical and health services. Key words: Emergency mobile medical resources; Optimized decision-making; Geographic information system; decision-supporting system; Disaster

AN OPTIMIZED DECISION-SUPPORTING SYSTEM FOR MILITARY EMERGENCY MOBILE MEDICAL RESOURCE PLANNING IN REGIONAL MAJOR DISASTERS
L.L. ZHANG Y. LIU Y. ZHANG G.S. YANG C.M. HU Institute of Military Health Management of CPLA, Second Military Medical University, Shanghai, China

Objective: To provide theoretical references and decision-supporting tools for military emergency mobile medical resource planning in response to regional major disasters. Materials and Methods: A survey was made with respect to the quantum, allocation and category of military emergency mobile medical resources including manpower, medicinal supplies and functional modules (institutions) in a military command region in the year 2006. A retrospective analysis was also made of data obtained from seven disasters in China between 2001 and 2005 with respect to the number and classification of casualties and emergency mobile medical resource planning. Using the database and geographic techniques, a database and geographic information system (GIS) of the emergency mobile medical resources of the said military command region were established, based on which a requirement forecast system for the medical resources in a major disaster model was constructed by using the autoregressive integrated moving average and back-propagation (ARIMA-BP) network; an optimized decision-supporting model of emergency mobile medical resources by using complex system science and multi-goal programming, and finally a regional GIS-based decision-supporting system (GIS-DSS) for military emergency mobile medical resource planning was developed. Results and Discussion: With respect to forecasting the requirement for emergency mobile medical resources in rescue maneuver of disasters of different scales and natures, the capacity of reserve emergency mobile medical manpower should not be smaller than 4 persons/10,000 population, and the emergency mobile medical manpower modules should not be fewer than 2/100,000 population. The GIS-DSS developed in the present study is able to directly derive various emergency mobile medical resource planning protocols in different situations, which can be demonstrated on maps in the form of figures and tables, and therefore it shortens two-thirds of time for decision-making, raises accuracy by 50% and reduces resource consumption by 40%. Conclusions: There is co-existence of deficiency and over-consumption in emergency mobile medical resource planning in major disaster rescue. Incorporation of the decision-supporting system for emergency mobile medical resource planning into the general medical service commanding system can raise sciencyfity of emergency mobile medical resource planning, and upgrade the organization and command art of medical and health services. Key words: Emergency mobile medical resources; Optimized decision-making; Geographic information system; decision-supporting system; Disaster
MCMIMD9
WEAK AND STRONG POINTS IN PREHOSPITAL COMMAND AND CONTROL – ARE RESULTS POSSIBLE TO MEASURE?
Lt Col Lars Lundberg MD PhD1, Anders Rüter MD PhD2
1 Swedish Armed Forces Medical Centre, Gothenburg, Sweden
2 Centre for Teaching and Research in Disaster Medicine and Traumatology, Linköping, Sweden

Background: Performance indicators have recently been introduced as a tool for scientific evaluation of the prehospital command and control in the civilian management of mass casualties. The use of measurable performance indicators could lead to a more specific evaluation also in a military setting. This would provide a possibility to specify more accurately likely areas for improvement.

Methods: A set of previously developed performance indicators for prehospital command and control has been applied to different military scenarios, covering the initial decision-making in the on scene medical management.

Results: From a total of eleven proposed performance indicators, the standards set for civilian use should be able to meet in most cases. The performance indicator where the goal is most likely not to be achieved is to have the first patient evacuated within 15 minutes.

Conclusions: Measurable performance indicators for prehospital command and control could to some extent be applicable also in a military environment. Future developments may lead to that the concept of measuring results using performance indicators could become a quality control tool also in a military setting.

MCMIMD10
ORGANISATION DES SECOURS FACE A UNE INTOXICATION CHIMIQUE COLLECTIVE
Médecin Colonel BEKKOUCHE N. (Algérie)

Des accidents chimiques collectifs graves ont frappé des populations dans différents pays dans le monde.
- Usine UNION CARBIDE BHOPAL- INDE le 03 décembre 1984 (2000 morts immédiat, 6500 morts officiels, 70.000 personnes impliquées).
- Dispersion de SARIN dans 05 wagons de métro de TOKYO par des membres de la « Secte AUM SHENRI KYO « « le 20 mars 1995 12 morts immédiat, 6500 morts officiels, 70.000 personnes impliquées).»

Ces différentes catastrophes interpellent les responsables locaux non préparé à ce type d’événement, à mettre en place un dispositif organisation des secours, voir une véritable stratégie générale face à une intoxication chimique collective (intoxication par gaz, vapeur, aerosol) car les intoxication par ingestion relevé d’une autre stratégie. Et pour diminuer l’incidence de ces accidents, il faut mettre en place une politique de prévention, de préparation et de réponse adaptée à chaque type d’accident.

MCMIMD11
EXPERIENCE DU SERVICE DE SANTE ALGERIEN DANS LA REPONSE AUX TREMBLEMENTS DE TERRE :
CAS DU SEISME DE BOUMERDES.
Med Lt Col A. DEKHILI, Med Gle S. KHALFA

Le séisme est une catastrophe naturelle qu’on ne peut prévoir, ni dans le temps, ni dans le lieu. Néanmoins,ne peut-on pas tirer des enseignements des expériences vécues,à travers le monde, en matière de prévention parasismiques, de préparation et de plans d’organisation des secours et de prise en charge médicale des blessés ?

De nos jours, des actions ont été mises en place pour minimiser les conséquences dramatiques d’un séisme d’ampleur majeure. A Boumerdes, le mercredi 21 mai 2003 au soir, la secousse de magnitude 6.8 sur l’échelle de Richter a plongé la population dans le désarroi,Les autorités, surprises par l’événement ont engagé l’armée algérienne pour la gestion de cette catastrophe naturelle de grande ampleur. Les Services de santé militaire ont joué un rôle remarquable, en engageant tous les moyens humains et matériels et organisationnels disponibles pour la prise en charge des sinistres, depuis les décombres jusqu’aux hôpitaux et depuis l’alerte jusqu’à la phase de réhabilitation. Passée la phase immédiate classique de panique de la catastrophe, et après une reconnaissance aérienne de nuit, les opérations de secours étaient axées sur : la prise en charge médicale et l’évacuation des blessés, la mise en place de camps de sinistrés, la gestion des cadavres, la prise en charge psychologique des sinistres en particulier les enfants sans parents, l’approvisionnement en eau et vives, la mise en place des mesures préventives hygiéno-épidémiques, l’intégration des moyens civils et militaires, nationaux et internationaux, ainsi que la gestion des médias ; et tout cela dans un contexte de haute sécurité du fait que la zone était sujette à des actes terroristes profitables. Les Services de Santé Militaire Algériens ont acquis ainsi, une expérience louable en matière de gestion des désastres naturels dans un contexte particulier, ils en feront part à l’occasion du XXVIIe Congrès Mondial de Médecine Militaire à Tunis.

Mots clés : Séisme de Boumerdes, Gestion d’une catastrophe majeure, participation des Services de Santé Militaire Algérien.

MCMIMD12
THE 2005 KASHMIR EARTHQUAKE – THE DUTCH USER EXPERIENCE
Commander Floris J. Idenburg, surgeon – Royal Netherlands Navy Reserve
Haaglanden Medical Centre – Dept. of Surgery & Traumatology
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The author is a general surgeon and member of the Dutch Urban Search & Rescue Team (www.usar.nl). He is experienced in civilian and military traumatology, including peace keeping missions in Bosnia-Herzegovina, Liberia and Afghanistan. The author will describe and illuminate the unexpected events during the Dutch USAR deployment. It is a personal story of lessons learned from a major disaster.

On 8 October 2005 a devastating earthquake (7.6 on the Richter scale) hit the northern parts of Pakistan and India, killing more than 80,000 people and wounding some 100,000. More than 3 million people were left homeless. In some urban areas the majority of buildings sustained damage or collapsed. The unreinforced solid concrete block masonry buildings could not withstand the tremendous forces, which were responsible for the majority of injuries and deaths.

Because of an official request by the Pakistan government, the Dutch USAR-team was immediately dispatched to the destroyed city of Bagh near the epicenter of the earthquake, in the mountainous area of the Pakistan-administered section of Kashmir. The official task of the USAR-team is to search for survivors of disasters. The team consists of dog-handlers, fire brigade workers and technical and logistical specialists. Normally, the medical task of USAR.NL is limited to providing first-aid to the survivors until they reach the local medical system. The medical personnel of the team include five experienced EMT’s and one traumatologist.

The unusual circumstances in which the disaster happened in Kashmir, the chances for survival were small. Despite working round the clock, the Dutch USAR team did not find one single survivor. Instead of searching for survivors, they took part in caring for thousands of wounded people that had managed to escape their remote villages. In those first days after the quake, the chaos was complete: bad weather, mountainous terrain, landslides, blocked roads, aftershocks. Medical assets were destroyed. Erratic or absent electricity and limited food and water supplies hampered relief efforts. Nonetheless, the ingenuity and motivation of the collaborating rescue teams - including members of the Pakistan Army Medical Corps - substantially improved the situation of the earthquake victims.

MCMIMD13
MILITARY HUMANITARIAN ASSISTANCE AND MEDICAL SUPPORT IN BAM EARTHQUAKE
Montazei F2, M R Jahani1, H Shizarzad2
1 associate professor, Department of medicine, Baghiyat-Allah University
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Introduction: Bam in south-east Iran was shattered on 26 December 2005 by an earthquake that lasted just 10 seconds and measured 6.5 on the Richter scale. More than 35,000 people killed, 23,620 injured (8028 of them seriously) and almost 20,000 homes destroyed. This report provides a brief review of the extent of the damage, the health problems encountered and the management strategies introduced to minimize morbidity and mortality in the aftermath of the earthquake by Iranian military force in immediate phase.

To cover the needs of the affected people, Bam was divided by 14
zones, each one allotted to a certain province. Military assistance was categorized into Search and rescue, Triage and stabilization, Evacuation, Medical care and Outpatient management, Recovery, Transient Settling and Reconstruction.

DISCUSSION: Due to Iran's geographical and geological situation, further earthquakes are inevitable. The experience gained as a result of the disaster at Bam provided Iranian health officials with a valuable learning opportunity, and identified areas where improvements can be made to respond to such a disaster quickly and efficiently.

MCMIMD14
ITALIAN ARMY MOBILE MEDICAL UNIT: A REAL SUPPORT IN MASS CASUALTIES
Col. Roberto BRAMA TI, IT Army

Medical assistance is one of the functions of the military logistic branch dedicated to satisfy all personnel psy-physical necessities. With the purpose to clarify how functionally medical support is assured we shortly recall different levels of organization. Health support is divided in Role in relation to level of medical care disbursed that exponentially increase from level 1 up to level 4. Every Role will be endowed with material and personnel calibrated to the assignment. We can start a view of Italian Army medical equipments with a short story of the field medical equipments development. From 2nd world war several years of studies and experiments had a considerable evolution in the field medical structures. At the beginning we have cotton tents for every use but surgical theatre was developed from a tent to a surgical cart. This hospital was deployed in Lebanon in 1981 and in North Iraq in 1991. Operational use in those two countries and medical assistance task for local civilian population pointed out some limits, so after a study, also comparative with other nations equipments we decided to connect the tents to each other in order to have aid units for patients treatment in therapeutic block systems. Army Headquarter decided to replace the cotton tents structure with a "closed circuit" structure build with inflatable tents more hygienic, less heavy and with a fast assembling. Surgical capability increase with the realization of a surgery room and an intensive care room inside a varying geometry shelters, that once closed can be transported inside a CH47 helicopter or C130 aircraft. The success of such structures led to the creation of analysis lab and pharmacy shelters and currently a CT scan shelter for field use. Now we can deploy a modular system for medical support concerning the tasks with the possibility to increase surgical capability with a two surgical bed operating room (MODULMED system and IRVING system) and a five intensive beds shelters (IRVING system) Long lasting operations recommended to build a real hospital with a confortable life standard and so we are able to replaced tents with containers.

We hope in a continuous exchange of experience, to give our help to the rebuilding of peace in the world for freedom and cultural evolution of the peoples.

MCMIMD15
TRAGIC BURN DISASTER IN POLYGON AREA
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1 Gulhane Military Medical Academy, Haydarpasa Training Hospital, Dept. of Plastic Surgery, Istanbul, TURKEY.

Objective: Our aim in this study was to provide insight into organizational requirements of a major burns incident in polygons and the results may be of importance for future planning of burn disaster management in these area.

Material and method: A tragic in-door fire disaster took place on June 1st 2006 at a polygon. 10 people attending shooting training and the 4 staff of the polygon were inside the building when explosion burn started. 7 of the wounded patients were treated in our burn unit.

Results: On the analysis of the causes of explosions during our study, the following measures, we believe, could bring down the incidence of this burn injury significantly. Safety regulations must be established. Regular inspection of electrical circuits is of great importance to prevent the electrical accident. Improvement to the equipment and isolation material against to melting gunpowder. Acceptable evacuation measures and local fire extinguishing precautions should be strictly provided against the explosion and burn risks. We consider that these places should be located in a separate building out of the residential area. In case of a fire disaster inhalation burn injury risk is high in these places.

Conclusion: Polygon area is generally assumed safe against to gunpowder explosion. However, it should be kept in mind that gunpowder explosion in this area is possible and strict measure should be taken against the disasters. In case facing with these victims, increased attention should be paid to the respiratory support during the early post-burn period.

MCMIMD16
DISASTER HEALTH MANAGEMENT AND ETHICAL BOUNDARIES
Col. Adnan ATAÇ, PhD, Dept. Medical History and Medical Ethics
Gülhane Military Medical Academy (GMMA), Ankara, Turkey

Over the course of the twentieth century, more than 159 million people have died as a result of war or natural disaster. The death toll from the two world wars exceeded 80 million, and nearly an equal number were exterminated during the century in genocidal campaigns. In the great wars, about as many soldiers died as civilians; the victims of natural disaster were all civilians. These terrible human losses have led some to label our time a “century of megadeaths”.

Humanitarian relief workers -both civilian and military- encounter most of ethical boundaries in the course of health management. How can health professionals work alongside military forces while maintaining the practice as well as the perception of medical neutrality among civilians and combatants? What should be the level of tolerance? What can be done when the witnessing and reporting of human rights abuses are incompatible with the mission of those who need to maintain a presence in the field to continue serving the innocent? What should be the ‘health voice’ when punitive economic sanctions affect not the perpetrators but the civilian populace? Health workers must be prepared to deal with ethical boundaries in the humanitarian disasters. This study attempts to present general principles of medical ethics for the health workers in order to function effectively in disaster health management.

MCMIMD17
TREATMENT STRATEGIES FOR MASS BURN CASUALTIES
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Objective: Mass burn casualties are always a great challenge to a medical team because of a large number of seriously injured patients were sent in within a short time. Usually a high mortality is impending. Experiences gained from successful treatment of the victims may further improve first aid at the scene, the care during transportation from a remote site, and successful treatment in the burn unit receiving the patients, who had already endured a harsh environment at the site of the accident, inadequate initial care and long transportation. The experiences gained may be useful in guiding the care of mass casualties in an armed conflict.

Materials and Methods: Thirty-five burn victims in a single batch, being transferred nonstop by air and highway from a distant province, were admitted 48 hours post-injury on June 28, 2006. All patients were male with a mean age of 24.4 ± 6.3 years. The burn extent ranged from 6% to 75% TBSA (15.7% ± 13.9%). Among them, thirty-two patients were admitted 48 hours post-injury on June 28, 2006. All patients were male with a mean age of 24.4 ± 6.3 years. The burn extent ranged from 6% to 75% TBSA (15.7% ± 13.9%). Among them, thirty-two patients were

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from sepsis and MODS. Dysfunction of the heart, lung, liver, kidney, and coagulation were found in all the patients. Forty-eight operations were performed in the 24 patients during one month together with comprehensive treatment, and the function of various organs was ameliorated after appropriate treatment. All thirty-five patients survived.

Conclusion: The experience of success can be summed up as follows: There was a well organized team consisting of several cooperative groups with specified duties. As a whole, the treatment protocol should be individualized, basing on the extent of the injury and the care he had received at the spot. The treatment protocol in our hospital consisted mainly of prompt effective relief of all life-threatening complications, followed by early closure of burn wounds, appropriate use of anti-infection therapy, emphasis on nutritional support, correction of metabolic disorders, alleviation of immunosuppression, correction of coagulopathy, and effective support and protection of organ function. All these efforts were contributory in successful treatment of these patients. Skilful plastic and cosmetic surgery is mandatory to take care the deformities of the face and joints to guarantee the restoration of the function and external appearance of the patients.

References:

MCMIMD18
EXPERIENCIA DEL HOSPITAL MODULAR DE CAMPAÑA DEL EJÉRCITO DE CHILE EN APOYO A LA COMUNIDAD
GDB. Alejandro Mandujano Bronfmann
Comandante de Salud y Jefe de Sanidad del Ejército de Chile

Introducción: Se presenta la experiencia del Hospital Modular de Campaña del Ejército de Chile (HMCE) en operativos de apoyo a la comunidad realizando 1194 intervenciones quirúrgicas de Cirugía Mayor Ambulatoria. Esto permite una real ayuda a la comunidad y mantener permanentemente entrenado a su personal para responder a eventualidades de emergencia de la comunidad nacional o a una solicitud de colaboración internacional.

MCMIMD19
MASS AMMONIA ACCIDENT - AN EXAMPLE OF PREPAREDNESS OF THE NATIONAL POISON CONTROL CENTRE, MILITARY MEDICAL ACADEMY IN BELGRADE
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The risk of mass exposure to toxic substances is increasing steadily due to the expansion of industry and deliberate development and use of chemical warfare agents. Despite the frequent occurrence of Haz-Mat incidence, organization and management of mass casualties still pose some specific problems. Most hospitals with emergency care are not fully prepared to handle contaminated or poisoned patients, which may have such number, severity and diversity of injuries that can overwhelm the ability of local medical resources to deliver comprehensive and definite medical care.

Objective: to review the role of the National Poison Control Centre (NPCC), Military Medical Academy (MMA), Belgrade in organization and management of mass ammonia poisoning.

Results: The accident happened on May 27th 1998 at 14:00 hrs near Belgrade, when a road tanker with 2.5 tones of ammonia exploded. A cloud of ammonia gas spread over the vast area causing mass poisoning of local residents. The duty physician in NPCC was informed at 14:40hrs. A plan prepared for Haz-Mat accidents regarding chain of command, with triage physicians, a nurse in charge and emergency staff was put into motion immediately. Additional hospital beds and supplies of drugs and other material were provided. The total of 143 patients was treated in MMA, 54 were hospitalized. Severe poisoning was registered in 19 patients; 9 developed pulmonary edema, 6 severe burns of eyes and skin, 2 required mechanical ventilation. Multispecialized team work (toxicologist, pulmologist, plastic surgeon, ophthalmologist) was necessary. One patient deceased on the 6th day, and 4 patients developed permanent sequels.

Conclusion: High quality of treatment, multispecialized teams and military organization of the National Poison Control Centre, MMA are responsible for successful treatment of this mass chemical accident. It also indicates preparedness of MMA for major disaster, terrorist attack and whenever there is a need for mass casualties’ management.