

**Results:** The number of patients who underwent medical care was enormous as shown by a figure of 2,611 patients in 9 days. Infectious diseases were detected in 85% of all patients, among them, patients with malaria, respiratory infectious diseases, and diarrhea-characterized diseases predominated. To the contrary, there was no outbreak of the cholera and dysentery.

Through epidemiological investigation, self-recognition of healthiness decreased among the flood victims after the disaster. The incidence of malaria increased between four to five-fold over non-disaster periods and the quality of drinking water deteriorated after the disaster.

**Conclusions:** The incidence of the diarrhea-characterized diseases likely to become an epidemic, such as cholera and dysentery, was not high, although the incidence of infectious diseases, particularly malaria, and diarrhea-characterized diseases was increased and the risk of infectious diseases was also increased. The medical care activities, epidemiological investigation and laboratory testing executed in the frame of the international emergency aid program were found to be a useful means to track a post-disaster trend of the outbreak of infectious diseases.

**Key words:** cholera; disaster; diarrhea; dysentery; epidemic; epidemiology; floods; infectious diseases; Japan Disaster Relief (JDR) Medical Team; malaria; medical care; risk

**E-mail:** kondou@nirs.go.jp

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### Hypermagnesemia Common in CPAOA Patients in Japan

**Kazutoshi Kuboyama, MD**

Nishinomiya, Hyogo JAPAN

**Introduction:** Only in ionized form, can magnesium be physiologically active in the human body. But current discussions of hypomagnesemia in critically ill or severely injured patients and clinical trials of magnesium administration for these patients mainly depend upon the data with serum total magnesium concentration. As for ionized magnesium ( $Mg^{2+}$ ), to our knowledge, reliable data in such patients are limited. We hypothesized that the  $Mg^{2+}$  concentration of critically ill or severely injured patients in our facility might be distributed widely.

**Methods:** We retrospectively studied serum  $Mg^{2+}$  concentration and clinical features of patients who presented in the emergency room (ER) of our critical care medical center during six months. In 215 consecutive critically ill or severely injured adult patients with age >15 years (males, 124; females, 92), we measured serum  $Mg^{2+}$  concentration as a part of our routine biochemical assessment concomitant with arterial blood gas analysis immediately after arrival. The  $Mg^{2+}$  measurement was determined using NOVA Stat Profile Ultra (NOVA Biomedical, Waltham, MA, USA) with reference interval of 0.45–0.60 mmol/L. Clinical features of the patients also were examined.

**Results:** The mean age of the patients was  $55.1 \pm 21.2$  (mean  $\pm$ SD) years, and the mean value of  $Mg^{2+}$  was  $0.531 \pm 0.115$  mmol/L (range: 0.23 to 1.40 mmol/L). 148 patients (68.8%) showed  $Mg^{2+}$  values within reference range,

whereas 30 (14.0%) were with hypo-magnesemic, and 37 (17.%) were hyper-magnesemic. In 47 patients (21.9%) with cardiopulmonary arrest on arrival (CPAPA),  $Mg^{2+}$  ( $0.575 \pm 0.140$  mmol/L) was significantly higher than for the non-CPAOA patients ( $0.519 \pm 0.103$  mmol/L) (Student's t-test:  $p < 0.05$ ). Patients with hypermagnesemia had 17 of the CPAOA (45.9%), which was significantly more frequent than for normomagnesemic (16.2%) and hypomagnesemia (20%) patients (chi-square test:  $p < 0.05$ ). Regression analysis showed no significant correlation between  $Mg^{2+}$  and  $Ca^{2+}$ ,  $Na^+$ , or  $K^+$  concentrations.

**Conclusion:** In critically ill or severely injured patients, especially in CPAOA patients, who presented in our ER, hypermagnesemia was common. Blind administration of magnesium to such patients is not advisable.

**Key words:** cardiopulmonary arrest; critically ill; emergency room; magnesium administration; magnesium levels

**E-mail:** qq-kubo@hyo-med.ac.jp

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### Major Aviation Disasters: EMS Strategies and Tactics

**Dr. Gunnar J. Kuepper**

Los Angeles, California USA

Many airplane accidents are initially survivable. People die in the subsequent fire, smoke, and heat conditions. If a major cargo or passenger jet crashes, either on airport premises or miles away into a municipality, the final decision of life or death for the plane's occupants and people on the ground is made by fast, skilled responses. Considering that fire, rescue, and EMS responders will have only minutes to start successful lifesaving operations, it is crucial that even local emergency departments are prepared.

Using recent aviation disasters, the presentation demonstrates Comprehensive Emergency Management, Fire/Rescue/EMS Response Strategies and Tactics, Recovery and Investigative Operations, Airport-Community Disaster Planning, "Working Together TM," Common Challenges and Specific Hazards. The Family Assistance Act and the rules of different parties (i.e., hospitals, air carrier, Red Cross, NTSB, Law enforcement, aviation authority, coroner) are explained.

**Key words:** aircraft; aviation; crashes; fire; heat; lifesaving; responses; smoke; strategies; tactics

**E-mail:** gjk@emergency-management.net

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### Meeting the Challenge of Catastrophic Domestic Terrorism: A Systems Approach to Local Jurisdiction Preparedness, and Development of Stand-alone Capabilities

**Steven Kubr**

Managing Director of Strategic Emergency Group, Ltd.

**Introduction:** History clearly illustrates that catastrophic terrorism can occur in any community at any time. Incidents such as the sarin releases in Matsumoto and

Tokyo, Japan; bombings at the World Trade Center in New York City, the federal building in Oklahoma City, and the American Embassy in Kenya; and the recent interdiction of terrorists attempting to enter the United States, provide enough evidence to suggest that strong local terrorism preparedness and response programs are needed.

Planning for terrorism must go beyond training courses and drills. Terrorism readiness requires an in-depth, multi-level, comprehensive approach geared to the nuances and intricacies of terrorism involving chemical warfare agents and industrial materials, and biological pathogens and toxins.

*Objective:* To provide attendees a detailed overview of effective metropolitan terrorism preparedness in order to effect similar programs in their home communities.

Briefing topics include: (1) planning assumptions and developing a baseline from where to begin the process, (2) threat analysis, targets, and vulnerability; (3) capability assessment—emergency medical service, fire and hazardous materials, law enforcement, public health, health and medical; and (4) program initiatives including training, equipment, enhancements, and exercises. Responses to terrorism start at the local level. Federal response assets will not arrive for hours, perhaps even days after an incident. Local jurisdictions must develop a stand-alone capability to react to a terrorist incident while awaiting the arrival of the authorities.

**Key words:** assessments; capabilities; initiatives; planning; responses; terrorism; threat analysis

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### **NBC Programme of the Swedish National Board of Health and Welfare**

*Per Kulling, MD*

Director, Department of Emergency and Disaster Planning, Swedish National Board of Health and Welfare, Stockholm, SWEDEN

*Introduction:* The Swedish National Board of Health and Welfare is a national authority under the government tasked with the supervision of medical and social care with respect to quality, safety, the rights of the individual, mediation of expertise, and participation in development and training. Within the programme of national defence, actions to manage threats from N, B and C agents have high priority. In this concept N, B and C agents include both warfare agents and agents occurring in peacetime (e.g., accidents with nuclear material, pandemics, and chemical accidents). During the last decade, the Swedish National Board of Health and Welfare has developed a programme meeting the demands of threats from N, B and C agents.

**Medical expert groups (MEG):** The first medical group established was the medical expert group for N agents (N-MEG) in 1986 after the Chernobyl incident when medical information in many cases was quite confusing. This group of medical experts is at the disposal of the Swedish National Board of Health and Welfare and the Swedish Government. Corresponding medical expert groups for C

agents (C-MEG) were established in 1998 and for B agents (B-MEG) in 2000.

*Guidelines:* The Board has published guidelines in order to standardise planning and preparedness for emergency situations in the country. These guidelines are "Chemical Accidents and Disasters" and "Nuclear Accidents and Disasters Due to Release of Radioactive Materials". Guidelines on "Pandemics and Bioterrorism" are under preparation.

**Centres of Research and Expertise:** In order to guarantee knowledge, research, education, and training within the N, B, and C fields, special centres of research and expertise are being contracted and supported financially.

**Highly contagious patients:** In order to be able to take care of and transport highly contagious patients, financial support is given to Linköping University Hospital for equipment and for education and training of personnel in treating and transporting (especially equipped ambulance and aircraft) highly contagious patients.

**Decontamination and personal protective equipment:** In order to manage situations of chemical incidents, a programme for decontamination and personal protective clothing has been developed. This programme includes equipment for decontamination of exposed persons at accident site and at hospital as well as personal protective equipment (including respiration protection) for ambulance and medical personnel. Research on decontamination procedures is also included in this programme and focuses on when, how, and why decontamination of persons exposed to chemicals must be performed.

**Key words:** accidents; biologics; chemicals; decontamination; disasters; education; knowledge; nuclear materials; programmes; research; responses; threats; training  
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### **Health Information Team in a Congolese Refugee Camp of Tanzania**

*Dr. Osamu Kunii*

Tokyo, JAPAN

*Background:* The persisting conflicts in the Great Lakes regions of Africa continue to cause refugees to flee into the United Republic of Tanzania. As of February 2000, the UNHCR has provided protection and assistance to some 415,000 refugees from Burundi, 285,000; DRC, 118,000; Rwanda, 7,600; and Somalia, 4,200. The Health Information Team (HIT), whose members were selected from refugee communities, has played a pivotal role in the provision of health services for refugees in Tanzania since February 1997.

*Objectives:* This study aimed at illustrating the role of the Health Information Team, and the gap between expected and achieved work in a Congolese refugee camp of Tanzania.

*Methods:* We conducted face-to-face, structured interviews with 50 members of the HIT and with 500 refugees. Focus group interviews also are given to both HIT members and refugees.

*Results:* We are scheduled to complete the survey by the