

One of the largest accidents was at the plant “Dalchim-pharm” in Khabarovsk where more than 1,000 workers were affected.

**Results:** When analyzing the results of the operations of the All-Russian Disaster Medicine Service in this accident, we made certain the system set up in Russia at chemical accidents was highly efficient. The system is presented at territorial, regional, and federal levels. Each city has a centre for Disaster Medicine where there are specialists in chemical accidents that are ready to organize cooperative efforts between different services, if a chemical event would arise. In chemical emergencies, the headquarters are set up and supervised by a representative from the Department of Public Health. This representative supervises all of the medical units that participate in the chemical emergency response; in particular, the Emergency Medical Care Teams, toxicological teams of specialized centres for acute poison control, medical teams from other departments such as the Ministry of Defense, the Interior Ministry, the Ministry of Transport, etc. Such cooperation provides prompt delivery of a first doctor experienced in the provision of such care at the site of event.

Therefore, in the chemical accident in Khabarovsk, the first medical teams arrived three minutes after the onset of the accident, and evacuation of the injured to specialized clinics was completed within two hours. Because of the above activities, secondary care was delivered within the first three hours, and later, 95% of the patients were discharged from the clinic in an adequate state of health.

The second distinctive feature of the system is the delivery of experienced and secondary medical care directly to patients at the site of emergency. This feature allowed avoidance of complications of the injured in a given situation.

The third distinctive feature is the exact identification of the toxic substance. Local medical institutions, toxicological centres, and the All-Russian Centre for Disaster Medicine diagnose the substance on a gas-liquid chromatograph and a nuclear-magnetic mass spectrometer. Hexachlormelamine poisoning was determined as the cause in the Khabarovsk incident. Rapid identification of the cause makes it possible to provide a timely and adequate specialized therapy for patients.

**Conclusion:** The system for response to chemical emergencies set up in Russia is highly efficient and is recommended for introduction into other countries.

**Keywords:** accidents; chemical; care, secondary; cooperation; detection; evacuation; hazardous materials; hexachlormelamine; physicians; poisoning; preparedness; system; teams

#### G-28

##### Japanese New Disaster Relief Ship, “OSUMI”

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Japan is an island country surrounded by the sea. Almost

all of the big cities are located on a coast. Kobe is the typical example.

The recent big earthquake in Hanshin District of Kobe taught us that rescue activities using the land route were extremely difficult, while those using the sea route were very effective. Due to the fact that Japan had no medical rescue system via the sea route, such medical activities were limited. For this reason, the necessity of multi-purpose ships and rescue ships for disaster relief are being discussed. Currently, the Japanese Maritime Self-Defense Force has a new landing ship, the “OSUMI”. The OSUMI has high-level medical facilities. We will discuss the practical uses of this ship for disaster relief.

**Keywords:** disaster; disaster relief ship; Japan; relief; sea approach; ship;

#### G-29

##### Police Medical Support in Hong Kong

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Serious incidents during the period 1950–1967 led to a fundamental reorganisation of the Police response to Civil Disorder in Hong Kong, including the formation of a Police Tactical Unit with specialist training in this area. It is not widely known that as a direct result of these troubles, baton rounds were invented in Hong Kong, and that much of the experience gained acted as a catalyst for thought in other nations.

While the streets of the Territory have remained relatively peaceful since that era, rioting in the Vietnamese refugee camps and sporadic upsurges in armed robbery by gangs have led to an awareness that training needs to be maintained. Within the Police Force, a number of units have identified the need to acquire medical response capabilities to a high standard.

In this presentation, we discuss the potential needs of Police Forces for tactical medical support, and the problems and risks that stem from these needs, drawing on the Hong Kong experience.

**Keywords:** baton rounds; civil disorder; Hong Kong; law enforcement; refugee; tactical medical units

#### G-30

##### Shock for Everybody

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An uncountable amount of literature has been written about the problem of shock, and the more information — the more confusion between the readers. In this paper, the author will explain the basic principles of the circulation and shock using funny pictures.

This system of pictures has been prepared using

Microsoft Power Point,<sup>®</sup> and can be presented at different levels of knowledge and difficulty depending on the characteristics of the audience. This method was practised successfully on students of medical faculty in Prague and the same way for paramedics of the Emergency Medical Services (EMS) of the Town of Jeseník. It serves the students as the first step of introduction to the problems of shock, and helps them to keep in mind the common principles of diagnosis and therapy.

**Keywords:** alarm reaction; circulation; emergency medical services; insult; medical students; oxygen consumption; oxygen delivery; paramedics; shock; steady state; teaching;  $VO_2/DO_2$  ratio

### G-31

#### Management Technologies in the System of Emergency Prevention

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The urgency for the discussion of problems concerning the development of management technologies in the systems for medical humanitarian assistance is determined by the necessity of dispersing experience and scientific projects that are part of the structural/functional organization of the All-Russian Centre for Disaster Medicine (ARCDM) and in analogous services of other countries.

**Objective:** To demonstrate ways, using the experience of ARCDM, to develop management technologies to improve Disaster Medicine services. The main purpose of Disaster Medicine services is to carry out preventive measures and decrease the health aftermath of natural calamities, accidents, and disasters. The grounding of the main management technologies used legislatively on some levels of the All-Russian Service for Disaster Medicine (ARSDM), and their characteristics are the:

- 1) Level of activity of international coordinating mechanisms for promotion and mutual interaction;
- 2) Level of mutual assistance and interaction of Disaster Medicine Services in the CIS countries;
- 3) State of complex activity regulation in emergencies and mitigation;
- 4) Level of management technologies in the sphere of resolutions of the Federal Inter-institutional Commission — a lead organization for coordination and interaction between different institutions and ministries;
- 5) Hierarchy of management technologies inside the Health Ministry that reflect vertical management mechanisms; and
- 6) Vertical management and horizontal interaction from federal to territorial to regional to local levels.

The following normative regulating documents are the main papers that determined the improvement of management solutions and coordination that are aimed to increase the efficiency of the activities of ARSDM: 1) The Constitution of Russia; 2) Federal law "On protection of population and territories against natural and technological emergencies"; 3) Resolution 05.11.95, No. 1113 of the

government of Russia, "On emergency response and prevention system in Russia"; 4) Resolution 03.05.94, No. 420 of the government of Russia, "On protection of life and health of population in the Russian Federation at set-out and relief operations in emergencies, caused by accidents, natural calamities and disasters"; 5) Resolution 28.02.96, No. 195 of the government of Russia, "Problems of ARSDM"; 6) Resolution 08.07.97 on Disaster Medicine Service of the Health Ministry of Russia; 7) Federal laws, orders, resolutions of the President of Russia, other ordinances of the Government, orders of the Health Ministry, Resolutions of the Federal Inter-institutional Commission, and other normative/legislative acts.

At each of the presented management levels in the system for the prevention of accidents, natural calamities, and disasters, it is proposed that they focus on the principles of legal regulation, scientific grounding, competence and experience, sufficient financing, identifying the sources of emergencies, forecasting emergencies, and the development of criteria to estimate emergency scales and the health aftermath.

**Keywords:** assistance, mutual; coordination; Disaster Medicine; efficiency; emergencies, natural and technical; forecasting; interaction; management; prevention; technologies, management

#### General Session-II

#### Hospitals in Disaster-I

Monday, 10 May, 4:20–15:35 hours

Chair: V. Anantharaman, Takeshi Shima

### G-5

#### Who's In-Charge for the Treatment of Disasters and Victims of Emergencies?

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**Introduction:** The fact is that, the actual treatment of the victims of the disasters and majors accidents starts after they are transferred from the Emergency Room or the triage area to the Intensive Care Units or to the patient care wards. Many of these patients suffer multiple injuries, and some of them must be operated and treated by different teams of different specialties. So, it is not uncommon to find confusion about who's in charge?

The answer to this question not only is important from political and legal points of views, but also, for medical care reasons, since the medical condition of the patients may change within minutes and not hours, and the role of continuous monitoring is essential for further management. Based on personal experience of direct involvement in four disasters and several mass casualties incidents, I found that this confusion is serious.

Several factors should determine who is in charge? These factors include: 1) the type of injuries; 2) the causes of the life-threatening; 3) the expected changes the conditions of the patients; and 4) the availability of well-trained intensive care unit (ICU) staff. For example, in cases of craniotomies, the neurosurgeon should direct the team.