until back in service) reached three hours in 82% of the total call volume in the pilgrimage area during 1996.

These results were the primary reason for the study group to recommend a more efficient and effective approach to the needs for the emergency medical coverage of this area, which was called "Treat and Release".

This pilot plan was implemented for two consecutive pilgrimage seasons (1997, 1998), and showed that by using the management plan, 73.8% of the ambulance trips have been eliminated. The results highlight the efficacy and efficiency of emergency medical services when provided at the crowd site compared to the results attained with the former, more traditional plan.

**Keywords**: emergency medical services (EMS); Hajj; needs; mass gatherings; mass gatherings; pilgrimage; planning; preparedness; transport; treat and release

## G-78
## The Disco Fire in Göteborg October, 1998

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Just before midnight on 29 October, 1998, a fire broke out in a discotheque located on the second floor of an old warehouse in Götenburg, Sweden. Despite a rapid response from the Fire and Rescue Service, 61 teenagers died entrapped in the burning building.

The medical treatment on scene were limited due to physical abuse of ambulance crews by bystanders and friends of the injured. The "load and go" principle was used bringing nearly 200 injured people to the hospitals within the area in a short time span.

Thirteen patients had to be transported to Burns Units within and outside Sweden. However, the major strain on the Health Care System was caused by an enormous demand for psychosocial support.

**Keywords**: burn units; burns; discotheque; fire; load-and-go; psychosocial support

## G-79
## Medical Liaison Officers — A Useful Tool to Counteract Potential Hazards

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Mass gatherings are potential risks for major accidents and disasters. During the last years, a number of public events have been held in Gothenburg, resulting in massive crowding of the inner city area. As a response to such situations, a formal collaboration between the Gothenburg Police Department and Gothenburg Health and Medical Services has evolved

In situations in which potential risks of casualties are foreseen, health personnel will be stationed as liaison officers in the Police Command Centre. In this position, they immediately will become aware of any escalating threats, and thus, can respond early. This routine has proven useful both in situations that can be foreseen (e.g., sports events, demonstrations), as well as suddenly appearing incidents (e.g., bomb threats).

**Keywords**: disasters; hazards; liaison officers; mass gatherings; police; risks

## G-80
## Admission of Mass Casualties in Gothenburg after the Great Discotheque Fire, 29 October , 1998

*T. Wikström, MD, B. Engarås, MD; P. Örtenwall, MD*
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At 23:42 hours (h) on 29 October, 1998, the worst fire disaster in modern Swedish history occurred in a discotheque in Gothenburg. Sixty young girls and boys died at the scene. Three more died later in hospital due to burn injuries and lung injuries. The majority of the victims were second generation immigrants.

A total of 162 patients were brought to the hospitals in the Gothenburg area. The patients were triaged rapidly in the emergency rooms, and then transferred to the intensive care units (ICUs) or regular patient-care wards. Thirteen patients were transferred by air to other hospitals with Burn Units within and outside Sweden.

What came as surprise was the enormous workload placed on the teams giving psychosocial care, both within the hospitals as well as in the community as a whole.

**Keywords**: burns; burn units; discotheque; fire; inhalation injury; lung injury; multi-casualty incident; psychosocial care

## G-81
## Mass Flame Disasters: Rules of Stage Treatment

*L.I. Gerasimova; A.N. Putintsev*
Central Institute of Traumatology and Orthopaedics, Burn Center of Sklifosovsky Institute for Emergency Care, Moscow, Russia

This presentation is based on the experience in medical aftermath from technogenic disasters in Russia.

The strategy for the provision of Disaster Medicine includes three stages of medical aid to burn victims:

1) A doctor is sent to the disaster zone depending on the evaluation of the severity and prognosis;
2) Render emergency aid in the case of acute disorders of the victim's vital functions; and
3) Casualty transportation.

The stage of qualified medical aid occurs in local hospitals that are located near to the disaster zones. It varies depending on the number of burn victims, the results of medical triage, and the availability of medical resources. The general rules of medical aid are: 1) adequate pain relief; 2) respiratory or cardiovascular insufficiency; 3) provision of intensive antishock infusions and

drug therapy; 4) antiseptic dressings covering the burn wounds; and 5) prophylaxis of catalepsy. Depending upon the prognosis of the burned victims, evacuation should be directed to specialized medical centers.

The stage of specialized aid occurs in medical centers according to the stage of the burn illness and the wound severity. Treatment tactics are directed to prevent acute respiratory insufficiency and infection complications. Active surgical measures for speedy restoration of a skin covering using effective physical methods for burn treatment include and, etc.

**Keywords**: acroionotherapy; burn centers; burns; complications; disasters; evaluation; magneto-laser therapy; mass casualties with burns; pain, relief of; shock; stages; surgery; transportation; treatment

*Plenary Session II*

## Health Disaster Management Guidelines for Evaluation and Research in the Utstein Style

**Wednesday, 13 May, 15:00–16:00 hours**

### PL2: Health Disaster Management Guidelines for Evaluation and Research in the Utstein Style

*Knut Ole Sundnes, MD;[1] Marvin L. Birnbaum, MD, PhD;[2] and the International Steering Committee of the Task Force on Quality Control of Disaster Management[3]*

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2. Departments of Medicine and Physiology, University of Wisconsin
3. The Task Force on Quality Control of Disaster Management of the World Association for disaster and Emergency Medicine (WADEM) is comprised of the following members: Jacov Adler, United Nations Department of Peacekeeping Operations and Israel; Marvin L. Birnbaum, MD, PhD, USA; Professor Johan Calltorp, PhD, Sweden; Professor S. William A. Gunn, MD, Switzerland; Dr. O. J. Khatib, MD, Organization of African Unity; Professor Michele Massellis, MD, Italy; Ernesto A. Pretto, MD, MPH, USA; Robert Souria, United Nations Department of Humanitarian Affairs; Knut Ole Sundnes, MD, Norway, Chairman; Takashi Ukai, Japan

*Collaborating Organizations:*

Mediterranean Club for Burns and Fire Disasters; Nordic Society of Disaster Medicine; Nordic International Rescue Foundation; Organization of African Unity; Prehospital and Disaster Medicine; Swedish National Board for Health and Welfare; United Nations Department of Humanitarian Affairs; World Association for Disaster and Emergency Medicine

**Introduction**: It only is 10 years since Disaster Medicine research moved from anecdotal and after-incident reports into some scientific structure. However, progress in Disaster Medicine has been slowed substantially due to: 1) inconsistency in reporting; 2) the techniques mandated by the circumstances of disaster require the use of techniques currently not well-understood in medicine; and 3) there remains some confusion in the use of terms. There did not exist any standardized mechanisms for the assessment of the efficacy and efficiency of responses to disasters. Most reports have been anecdotal or organizationally specific, and access to many such reports has not been universal. Hence, much of the information currently collected is not distributed widely and hence, the lessons that could be learned are not available for modification of future responses.

The over-riding objective for the development of the Template was to provide sufficient structure to research and evaluations of medical responses to disasters to be able to enhance the efficiency and efficacy of future responses. This objective has several components; 1) the provision of information that will be useful in the continuous quality improvement of the efficiency and efficacy of disaster responses; 2) the promulgation and further development of research/evaluation techniques that are useful in disaster circumstances; and 3) the furthering and clarification of the terminology used in Disaster Medicine.

**Methods**: The need for the development of the Template was discussed first in Pittsburgh in 1994, and the work has been ongoing since. Partial funding was obtained from the Norwegian Ministry. An international Steering Committee consisting of persons knowledgeable in Disaster Medicine was appointed, and this group developed the first draft of the Template.(*Prehospital and Disaster Medicine* 1996;11(2):82–90) This version, then, was the principal topic of discussion at an International Congress conducted at the Nordic School of Public Health in Gothenburg, Sweden. The discussions at the Congress led to the current version of the Template. The Utstein model for the study of cardiac arrests was used as a basis for Template development.

**Results**: Terms currently in use were examined carefully and some definitions modified so that they fit more accurately into the language used specifically by the Template. This allowed uniformity and removed some of the confusion that could have existed as one attempts to understand the Template.

The current version of the Template consists of two principal sections: I) the components that should be addressed in the study of medical responses to disasters; and II) the Evaluation/Research Template. The first of these two components lists and discusses considerations and areas for study of responses to disasters, and recognizes that it is not possible to describe the medical effects of a disaster without understanding the Pre-event Health Status of the affected population in the area(s) being studied. Further, it separates the Event responsible for the catastrophe from the Insult resulting from the Event. The magnitude of the insult is a function of the magnitude of the event and the absorbing capacity of the affected society to the event. Given the knowledge of the Pre-event health status in the area of exploration, it then is possible to judge the severity of the event. This is done using initial and subsequent assessments of the damage created and the Assessments of Needs for assistance. The Response, then, must address all or some element(s) of the Needs as identified in the Assessments. The real question is how and to what extent the response(s)