TERNATIONALE DE
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SOCIEDAD INTERNACIONAL DE
MEDICINA DE CATÁSTROFE

INTERNATIONAL SOCIETY
OF DISASTER MEDICINE

الجمعية الدولية لطب الكوارث

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NEWSLETTER

MEDICAL RELIED PLAN AND MEDICAL SERVICES IN THE EVENT OF A DISASTER IN A FOOTBALL STADIUM CONTAINING SOME 100,000 SPECTATORS

(by Dr Franco Enrico FIORENTINI)

I. INTRODUCTION

Dr FIORENTINI is a member of both the ISDM and the Italian Society of Disaster Medicine. In preparation for the World Football Championships which took place in Italy in 1990, Dr FIORENTINI had drawn up guidelines as early as 1989 for the medical services required to cope with a possible disaster during this international event. It should be borne in mind that in fairly recent years football matches have led to large-scale disasters, such as the Heysel stadium disaster on 29th May 1985 in which some 40 people were killed, the disaster in Moscow on 20th October 1982 during a match between Harlem and Spartak when 340 people died, or that of the Sheffield stadium which left 95 people dead and 180 severely injured, to mention but a few. The organizers of events assembling large crowds should plan relief operations well in advance.

II. NORMAL SITUATION AT THE SAN SIRO STADIUM IN MILAN

This stadium can take over 80,000 spectators. Usually there are two first-aid stations run by a nurse, with the help of a few first-aid workers. Generally four ambulances are parked within the stadium itself. The most frequent interventions are minor surgery and the administration of analgesics and tranquilizers. Acute pathologies (heart attacks, serious injuries) that require urgent hospitalization are rare during football matches.

Normally, outside the stadium there are no medical services, ambulances, nor fixed first-aid stations. It should be pointed out that the San Carlo Hospital, with extensive surgical capacity, is close to the San Siro Stadium.

III. NORMAL MEDICAL SERVICES AND EQUIPMENT REQUIRED DURING A SPORTS EVENT

In our opinion, a stadium which can contain some 100,000 spectators should have adequate equipment and qualified first-aid workers in sufficient numbers. Past experience has shown that at least one ambulance is needed per 10,000 spectators. The medical equipment of these vehicles, as far as possible, should be standardized material. Particular attention should be paid to the drugs needed for emergency resuscitation. The presence of a resuscitating anaesthetist on board each vehicle is essential and he should be backed up by three competent first-aid workers. This team should always remain close to the vehicle. It is the task of other first-aid teams ("recovery teams") to transport any injured to the ambulances. These persons should also be trained and be in radio contact with the regular ambulance teams. These "recovery teams" should be stationed within the stadium so that they can cover each part of it as effectively as possible. It is obvious that this type of presence cannot be improvised, it must be planned and the staff must be trained. Radio links should be established not only between the first-aid teams and the stadium's first-aid stations but also between the ambulances and the receiving hospital. The stadium should not only be divided into sectors, but the links between the sectors and the evacuation routes should also be defined and clearly signposted. The medical teams should have a perfect knowledge of the stadium's lay-out. In each sector in the stadium there should be a qualified doctor. These teams dispersed throughout the stadium should have the appropriate material at their disposal.

IV. SPECIAL MEDICAL SERVICES IN THE EVENT OF ACCIDENTS OR MAJOR DISASTERS INSIDE OR OUTSIDE THE STADIUM

The terms "emergency", "accident" and "disaster" are too often confused. An emergency is defined as a situation in which only individuals are involved; an accident is a situation demanding the commitment of mobilizable forces in predictable proportions and consequently a demand for assistance can be satisfied without the commitment of extraordinary forces or means. A disaster situation however implies a state of affairs in which ordinary means are inadequate for the assistance demanded and recourse has to be had to all the forces available in a specific geographical area. Consequently, each stadium which can receive a large crowd during an event should have a real medical relief plan for disaster situations. These generally imply three inter-dependent structures each with its own specific relief phase :

1. A coordinator centre responsible for all logistics and the coordination of medical relief (in particular the alarm stage);

2. A mobile medical relief unit which represents the disaster plan intervention stage. This unit should be equipped with sufficient staff and material to be able to cope with 100 victims. The presence of a resuscitator-doctor capable of effecting triage is necessary. It is obvious that a unit of this kind needs to have transport, in particular backup ambulances at its disposal;

3. A hospital plan to deal with the massive arrival of injured persons (reception stage). Nowadays, each hospital should have its own internal emergency plan to cope with a disaster situation so that it is not necessary to have a specific plan for a sports event.

One of the important persons in this set-up is of course the DIRECTOR OF MEDICAL RELIEF. He should be a doctor specializing in emergency resuscitation and disaster medicine. He should have both practical experience and theoretical

knowledge. Among the important functions that he has to fulfil particular mention should be made of : assessment of the extent of the disaster, analysis of its consequences and any potential developments, deciding on the engagement of extraordinary services to face up to the needs and future developments, assuming overall command of the relief operation on the disaster site, responsibility for the coordination of relief with the medical services in the rear, deciding how many hospital structures should be placed on alert, then brought into operation in line with the disaster plan.

Well before the disaster this coordinator should be appointed so that he can make all the special arrangements needed to cope with a possible disaster situation. Among the important tasks at this level we should mention in particular the definition of local and loco-regional medical relief plans, liaison with the political and medical authorities, the training of the staff appointed to the definitive relief plan (both for the mobile medical relief unit staff and for other first-aid workers), organizing exercises and courses.

Making a relief plan operational always represents a sequence of actions which can be foreseen; the medical relief chain then is not a matter for improvisation. Of course, account must be taken not only of the general aspects of the relief organization but also of more specific aspects inherent in particular situations (type of event, type of spectator, type of structures, kind of stadium and evacuation means, etc.). The tendency should be increasingly to concentrate efforts on the stadium itself so as to avoid too rapid a congestion of the hospitals. Thought must obviously be given to the heterogeneousness of the various organizations intervening in a situation of this kind. It is indispensable, then, to lay down a veritable doctrine and to publish recommendations in order to ensure good coordination and a standardization of material and relief-work.

In a crowded football stadium it is obvious that the problem of transporting victims can be difficult and the medicalisation of first aid should be planned (triage of the victims, life-saving gestures, etc.) so that it can be given in situ.

V. IMPLEMENTATION OF THE MEDICAL RELIEF CHAIN

A. ALARM

The alarm should be given by the coordination centre whose responsibility it is to alert the political authorities / the medical authorities (ambulances, helicopter ambulances) backup and police structures / the hospitals involved by the mobile medical relief unit.

B. RECOVERY OF THE WOUNDED

This stage includes medical assistance for victims and their transport to previously defined locations in the rear. The activities of the medical relief teams within the various sectors of the stadium should be carried out in close coordination with the central post. An advanced medical station corresponding to an authentic intermediary structure between the disaster site and the hospitals is absolutely necessary. In principle, this is where the triage will be carried out and decisions taken on the evacuation of victims to the hospitals in the rear and to their final destination depending on the pathology. It is absolutely necessary for this advanced medical station to be well signposted and clearly known to the police forces, who have in fact a significant role to play in protecting this structure, facilitating the work of the relief personnel and keeping open access routes for transport. The police forces should also be perfectly familiar with

the disaster relief plan so that they can facilitate the circulation of ambulances, the landing of relief helicopters. So the police should also plan a whole series of measures to be applied as soon as the disaster situation is recognized as such to keep the evacuation routes open for the injured and channel the crowd of spectators along other routes. The advanced medical station represents the centre where all victims, including disaster fatalities, are assembled. It must also serve as the centre for the distribution of material to replenish the teams' material when needed.

C. MEDICAL EVACUATION

When the clinical state of victims has been stabilized at the advanced medical station, after triage and definition of priorities and destinations, there remains the problem of evacuation. Here, plans must be prepared long before the disaster. Where necessary it must be possible to requisition any special means of transport.

VI. CONCLUSION

The organizers of sports events no longer have the right nowadays to agree to assemble tens of thousands of people in a particular place (a football stadium for example) without making sure beforehand that a genuine disaster relief plan exists. It goes without saying that in most sports events this plan does not need to be activated. More often that not medical problems are rare and the number of victims during a large-scale sports event is low (an indisposition, a coronary, etc.). A tragedy always occurs unexpectedly and an epidemiological survey of the major disasters which have occurred during sports events since the beginning of the century teaches us that it is very difficult to predict the type of event which could degenerate into a genuine disaster. So, we have always to be ready and we cannot but unreservedly recommend the creation of disaster relief plans for each sports event attracting more than 20,000 spectators.

A PLEA FOR RECOGNITION OF THE RENAL COMPONENT OF DISASTERS

(by Dr Kim SOLEZ, Chairman, ISN Commission on Acute Renal Failure Disaster Relief Task Force)

As Chairman of the International Society of Nephrology's Commission on Acute Renal Failure I welcome the opportunity to contribute to the ISDM's Newsletter. Crush syndrome-induced acute renal failure is a very important cause of morbidity and mortality in many disasters and is one of the few life-threatening complications of earthquakes which can be effectively dealt with by international teams arriving some days after the event. The kidney disease component of disasters has not been specifically recognized in the "Amiens rose window" described in your February 1991 Newsletter. Our organization hopes that this Newsletter insertion will help to enhance the dialogue between disaster physicians and renal physicians so as to ensure a less chaotic handling of this problem than occurred in the Armenian earthquake in 1988. We welcome the opportunity to work with members of your organization and other relief agencies such as Médecins sans Frontières and Médecins du Monde. We have put together an extensive worldwide organization to deal with the problem of renal failure in disaster but this will only work effectively if it is properly interdigitated with the activities of other organizations.

As was pointed out by Dr NOJI in your April Newsletter, the occurrence of crush syndrome is dependent upon the type of building construction. Areas such as rural Latin America in which much of the population in earthquake-stricken areas may live in single-storey adobe houses would experience little crush syndrome. The potential for rhabdomyolysis associated acute renal failure is very great, however, in more developed urban areas where much of the population may live in multi-storey concrete structures. The dissemination of information necessary for rescue teams to prevent the occurrence of acute renal failure and the very early institution of appropriate treatment of those individuals who do develop this life-threatening complication is the principal goal of our Task Force. We hope to establish effective communication with the International Society of Disaster Medicine and to interest as many of its members as possible in our activities. We would welcome correspondence and involvement from any interested persons.

The official description of our Disaster Relief Task Force is provided below :

INTERNATIONAL SOCIETY OF NEPHROLOGY

The International Society of Nephrology (ISN) is an organization of more than 6,000 physicians and scientists around the world interested in the kidney and kidney disease. It is the largest organization devoted to the study and therapy of renal disease.

THE ISN COMMISSION ON ACUTE RENAL FAILURE

The ISN has established a commission on acute renal failure in order to represent the highest possible level of scientific investigation in acute renal failure and to bring together nephrologists and physicians, and scientists of other relevant disciplines. The composition of the ten member commission is shown below :

Kim SOLEZ (Chairman), Edmonton, Alberta, Canada

Robert S. BALABAN, Bethesda, Maryland, U.S.A.

Ernesto CARAFOLI, Zurich, Switzerland

Luzius DETTLI, Basel, Switzerland

Haskel ELIAHOU, Tel-Hashomer, Israel

Frank EPSTEIN, Boston, MA, U.S.A.

Nishio HONDA, Tokyo, Japan

David HUMES, Ann Arbor, MI, U.S.A.

Norbert H. LAMEIRE, Gent, Belgium

Lazaro MANDEL, Durham, NC, U.S.A.

DISASTER RELIEF TASK FORCE

The ISN Commission on Acute Renal Failure has established a Disaster Relief Task Force to provide a coordinated international response to the problem of kidney failure following major disasters such as earthquakes. Individuals trapped under falling masonry and collapsed multi-storey buildings very frequently develop the sudden onset of kidney failure. In major earthquakes, this problem of crush injury induced acute renal failure may lead to thousands of deaths. The aim of the Disaster Relief Task Force is both to prevent this complication by encouraging the intravenous administration of fluid to patients at risk, and to deal with the necessary dialysis (artificial kidney) needs of disaster victims with renal failure. This is a problem that can be adequately addressed by teams arriving two or more days after the initial event and is therefore quite amenable to treatment by prepared international disaster response teams.

DISASTER RELIEF TASK FORCE LEADERSHIP

The six world-wide task force leaders have responsibility for overall organization of the Disaster Relief Task Force (in cooperation with members of the Comission on Acute Renal Failure) and for providing a coordinated international response. The Task Force leaders maintain contact with other international relief organizations, help create and stimulate national teams, and obtain information on national teams at regular intervals. The Task Force Leaders are :

David BIHARI, London, England

Allan COLLINS, Minneapolis, Minnesota, U.S.A.

V.D. FEDOROV, Moscow, U.S.S.R.

Eric NOJI, Atlanta, Georgia, U.S.A.

J.P. WAUTERS, Lausanne, Switzerland

Yasuhiro YAMAMOTO, Tokyo, Japan.

NATIONAL KEY PERSONS

Key persons have been identified in each country represented in the Disaster Relief Task Force to interact and assist with the Task Force Leaders to organize national disaster relief teams and fundraising within their own country, and to establish the necessary links with their Minister of Health and Minister of State for External Affairs so that their country's government can facilitate the issuing of visas, landing rights, authorizations, and official invitations to assist in the event of an actual disaster. Appropriate consideration will be given to the different needs of earthquake-prone and non-earthquake-prone countries in these activities.

COMMENT FROM THE GENERAL SECRETARY

The ISN Commission on Acute Renal Failure is a most interesting contribution in the Disaster Field. Thus the General Secretary fosters this Organization and wishes that you don't hesitate to contact Dr Kim SOLEZ, it's President.

Address : Dr Kim SOLEZ
Chairman, ISN Commission on Acute Renal Failure
Department of Pathology, University of Alberta
Edmonton Alberta, Canada, T6G 2R7

CONGRESS ANNOUNCEMENTS

THE FOURTH INTERNATIONAL COURSE ON HEALTH AND DISASTERS PREPAREDNESS. July 1992, in Brussels. Sponsored by the World Health Organization. Public Health risks, information systems, management of preparedness and planning, and assessment of needs within the specific context of Health Preparedness and Relief.

Address : Course Co-ordinator, Fourth International Course, School of Public Health, University of Louvain, 30, Clos Chapelle-aux-Champs, 1200 Brussels, Belgium.

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ISDM LIFE

The ISDM has the great pleasure of admitting five new members. We extend a warm welcome to :

- Dr Philip A. UMEBESE, surgeon, Benin, NIGERIA
- Mr. Reto RIGHETTI, Directeur, SWITZERLAND
- MINISTRY OF PUBLIC HEALTH, MAURITIUS
- Dr Guillermo QUIROZ ELISSALT, CHILI
- Dr Zbigniew KOLACINSKI, POLAND

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INVITATION

You work in the field of disaster medicine in all its aspects : teaching / emergency services / first aid / civil defence / ambulance services / public services.

WHY NOT BECOME A MEMBER

NAME :

Position :

Address :

I request : to be enrolled as a member / information.
Please, return to the ISDM's Secretariat.