ACTION STATIONS FOR DOCTORS IN CIVIL DEFENCE

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The medical problem is foremost in Civil Defence and the role of medical men, and their disposition before and after an atomic attack, are of the utmost importance. It is therefore essential that the Branches and Divisions of the Medical Association of South Africa in the probable target areas, which include the ports and the Reef, should make a survey to estimate the number of available medical men. It is also necessary to know the number of dentists, nurses, pharmacists, technicians, dieticians, and hygiene personnel, who would be available to act as auxiliaries. The nursing service and the pharmacists are, of course, essential.

Statistics of the results of the attacks of the 'nominal bomb' on the two Japanese cities of Hiroshima and Nagasaki show that such a bomb dropped on a town of half-a-million inhabitants is likely to cause 120,000 casualties.

Unless treatment is given in the first 24 hours the death rate of these casualties is very high. Under conditions, in which such a great number of casualties have to be dealt with, the minimum amount of treatment must be given to the maximum number of patients. This calls for definite planning by the Association in conjunction with the Civil Defence authority and the other public bodies concerned.

In the numerical survey of available medical men it is essential to ascertain the number of specialists, under their specialities. Special wards will have to be allocated for special injuries such as chest wounds, brain and nerve injuries, and fractures, and equipment and instruments for these cases, too, must be made available. Efficiency is best obtained in hospitals where similar cases are warded together.

For instance, casualties arriving at a 'cushion hospital' are brought into the receiving and sorting department. From this department they may be transferred to the resuscitation ward for urgent treatment, or to wards for burns, or to traumatic wards, or direct to the operating theatre, or to a medical ward for radiation sickness or to an orthopaedic ward, or to a non-casualty ward Medical teams are organized, each team dealing with one ward only, e.g. for resuscitation, burns, traumatic conditions, fractures, or radiation sickness. In addition medical teams will be needed for operations, anaesthetics, and blood transfusion, and for the pathology and radiology sections.

As there will be a continuous stream of casualties arriving, teams will have to be organized to work in shifts, so that continous treatment can be given. Standardization of treatment will have to be introduced in order to conserve drugs and dressings.

The medical planning has many complexities, especially when speed in evacuation of casualties is essential, and the posting to action stations should be done as soon as possible. In this the Association is asked to play its part in the general scheme of Civil Defence. Cognisance must be taken of extraordinary conditions that will prevail. All hospitals will be overcrowded. Recreation rooms, dining rooms, halls, store rooms, will be taken over for patients. The wards, too, will be overcrowded. All available space in the centre will have to be utilized and space between beds reduced so as to allow just sufficient room for nurses to attend patients. Additional operating theatres will have to be improvised, with minimum equipment and perhaps with a personnel consisting of an anaesthetist, a theatre sister and a nursing auxiliary. Priority operation cases will be numerous and economy of effort called for. All this adds to the number of medical personnel that will be required.

In order to conserve medical man-power the general public will need to be trained in first aid. This training will save lives, prevent complications, and relieve shock and pain. There is bound to be delay in moving patients owing to debris, to difficulties of transport, and perhaps also to radio-activity from 'fall-out', and trained lay personnel will therefore be essential to give the necessary care. The teaching of first aid will have to be undertaken by the medical profession. It can be limited to basic instruction in haemorrhage, shock, wounds (with special reference to abdominal and chest wounds), cranial injuries, unconsciousness, fractures radiation sickness, artificial respiration, and hand and stretcher transport.

In the chain of evacuation through supporting echelons the medical man's role is of great importance. It should be planned that all doctors are to be withdrawn from the target area at the time when an attack is imminent; when this should be carried out cannot be discussed within the scope of this article. The target area is subdivided into small regions, each controlled by a warden, whose attached staff of fire fighters, rescue parties, welfare section and first-aid personnel all have a knowledge of first aid and can treat casualties.

A SCHEME FOR MEDICAL ORGANIZATION IN A BOMBED AREA

1st and 2nd echelons. The 1st echelon is composed of stretcher bearers, all with a knowledge of first aid, who carry the casualties to the periphery circle, taking the place where the bomb drops as the centre of the circle. At every one-sixth of a mile on the periphery circle, are first-aid parties, each consisting of a doctor in charge, a trained nurse and 8 other ranks (doctors and nurses if available). They form the 2nd echelon. The condition of the patients is checked, further first aid is given if necessary, and the patients are sorted.

3rd echelons. Those who require immediate aid and are unable to stand long transport are sent to the 3rd echelon, a mobile forward medical-aid unit. These units are also placed on the periphery circle at about 1 - 1½ miles apart and ½ - 1 mile behind the 2nd echelons. They can be stabilized in any suitable building and must be equipped to deal with urgent unspecialized major surgery and to administer urgently-needed blood transfusion, as well to handle cases of radiation sickness. They must have holding beds with nursing personnel, where patients can be retained for as short a time as possible before further transfer. At least two operating teams will form the minimum staff of a 3rd-echelon unit. This unit is a most important link in the chain of evacuation. Delay and transport time in getting casualties from the 1st and 2nd echelon parties on the periphery circle to the nearest cushion hospital might be too long for the serious, almost moribund, cases. The intervening treatment given at the medical forward units will save many lives.

Rest centres. Amongst the casualties arriving at the 1st echelon there will be minor casualties. These are directed to rest centres, which are merely stations that deal with uninjured homeless people and with minor injuries and hysterical and depressed psychological conditions. Visiting medical officers, including a psychiatrist, are necessary here. These centres are transit camps and the patients are dispersed by any form of transport far afield to neighbouring towns after being clad and fed.

The *4th echelons* are the cushion hospitals—improvised hospitals with equipment drawn from the general hospitals in the target area, which have to be evacuated, only leaving 10% of the beds and equipment to deal with emergencies. The arrangements of special wards and medical teams at the cushion hospitals have already been mentioned. The sorting department of cushion hospitals may, without admitting, direct some cases to general hospitals anywhere up to 100 miles away. Admitted cases, too, are moved at the earliest possible moment to these general hospitals, or tangent hospitals anywhere at all, thus making room for the continuous arrival of new cases and relieving congestion.

These *general hospitals* and *tangent hospitals* will have to have additional staff drawn from practising doctors in the vicinity. Guest houses or 'homes' in rural areas will have to be turned into convalescent homes, and local practitioners, with the aid of retired nurses and members of the voluntary aid societies, will be in attendance.

Mobile relief column. In the scheme of Civil Defence, neighbouring towns of a target area are likely to be asked to organize mobile relief columns, comprised of fire-fighting personnel with appliances, pioneer sections for rescue work, stretcher bearers, welfare personnel and first-aid sections. Medical men accompany the first-aid sections. Vehicles for the clearing of debris and for ambulance work also form part of these columns. After an attack the mobile relief columns converge on the target area, and act along with the Civil Defence organization where most needed.

Area Director. Each target area has a Director of Civil Defence who not only organizes the preparation beforehand but is actually in command of the 'battle' when it arises. This battle to save life and property and to restore essential services may have to be fought for days, hindered by fires, debris, and radio-activity. The Director has an operative and advisory staff of roads, electricity, water and sewerage engineers, a firemaster, a communications engineer, a welfare officer, a police officer and at least 3 medical officers with Civil Defence training. These medical officers will deal with the medical questions of hygiene, ambulance service, hospitalization, supplies of drugs, equipment and dressings, and the prevention of epidemics and food poisoning. In some countries a doctor with Civil Defence training is appointed as Area Director, for the main and most urgent problem is the evacuation and treatment of casualties, and his special knowledge of local and surrounding hospitals and medical personnel is of the greatest value.

Mobilization. Every doctor in the target area will have to be mobilized and appointed to an action station where his service and specialized knowledge in some branch of medicine will be put to the best advantage. As indicated above, the posts to be filled are the following:

In the first-aid parties and the 2nd echelons;
In the mobile forward medical-aid units;
In the cushion, general, tangent, and rural hospitals;
On the staff of the headquarters of Civil Defence during preparedness, and in action after an attack.

Training courses. At the British Defence College, Sunningdale, Berkshire, where I attended lectures in 1951, 1954 and 1957, special courses are held from time to time on every aspect of Civil Defence. At the 'Medical Caravan' course in 1957, which was attended by the medical chiefs of the Army, Navy, Air Force and Voluntary Aid Societies, medical problems only were discussed and studied. No facilities of this kind have been made available in South Africa.