

# THE ORGANIZATION OF A CASUALTY DEPARTMENT

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The casualty department is the shop front of any hospital, and for the sake of the good name and reputation of the hospital concerned, it is essential that treatment given there be expeditious, courteous and efficient. The casualty department is the only department seen by many patients, and the hospital is judged by the treatment they receive there. The importance of a casualty department will vary from one hospital to another. For example, a hospital situated in a highly industrialized area will require a casualty department able to deal with many hand injuries, whereas one which is situated in a more rural area may require a department which is smaller but orientated more towards dealing with serious traffic accidents.

All casualty departments have this in common — at any time a large number of people can unexpectedly be sent in for attention and this time can never be predicted; so that while flexibility is the main feature required in the department, there should also be extra facilities for great expansion if and when required.

Control of movement within the department is of far greater importance than large rooms, and much can be done with a little organizing. Where a large number of people usually attend, smooth and equitable handling would be assisted if each patient were given a numbered ticket on arrival, and the patients were called from the waiting rooms by their numbers. This ensures that the patient knows that he is getting a fair deal and that others are not 'jumping the queue'. It leads to a better understanding of the doctors' difficulties, to smoother running of the department and to less argument and fighting in the waiting rooms. Since on occasion knives have been drawn in our waiting rooms, the need for this smooth running is to us, at all events, very evident.

The basic needs of a casualty department are a waiting room and a reception room. If necessary, all the functions of the department can be performed using these 2 areas alone and, if their size is adequate, much valuable work can be done in them.

## FUNCTIONS

The functions of a casualty department must first be defined. They are:

1. To treat casual patients\* who may arrive during those times when formal out-patient sessions are not in operation, e.g., after hours and during week-ends.
2. To deal with accidents and injuries on a 24-hour day basis.
3. To attend to minor or major surgical infections according to the policy of the hospital concerned.
4. To prevent infectious cases from entering the wards by treating them as out-patients or in the casualty beds.
5. To teach medical students and casualty officers.
6. To act as a research instrument.

The first 4 functions are basic and essential to all casualty departments. The last 2 need well not be considered in the smaller non-teaching hospitals.

## PERSONNEL

### *Head of Department*

All hospitals which can afford to do so, are well advised to place a senior member of the staff in the position of head of the casualty department. This person's duties should be to organize the work and to integrate it with that of the rest of the hospital, to supervise the work of the casualty officers and to guide them in their duties.

By observing the run of work in the department over a period of some weeks, the head of the department will notice that there are certain times of the week which are busier than others. For example, Monday mornings (after the week-end) and Saturday mornings (when the out-patient department is not working fully) are busy times. Similarly, Friday nights and Saturday nights are the times when quite a few of our weekly wage-earners get into all sorts of scrapes after pay day and the department is heavily engaged in attending to drunken patients and those with cuts, stab-wounds and head

\* This is the etymology of the word 'casualty'. The accepted meaning of 'injured person' only came into common usage in the 1914 - 1918 war.

injuries. On Saturday nights and Sunday nights, motor-car accidents occur. If these busy periods are carefully noted, it is possible to arrange the rota so that more doctors are on duty at these times to take the load off the individual casualty officer.

The head of the department should be responsible for arranging the rota of duties and should be available for consultation in the diagnosis and treatment of difficult cases and particularly for advice in connection with their disposal. The policy within the department as it concerns the treatment of surgical infections of various kinds, and the prevention of the abuse of antibiotics and of blood and blood substitutes, should be this person's responsibility. He should also maintain contact with prospective casualty officers so that he may have someone available to take up duties should a vacancy arise. The position offers endless scope for clinical work and great satisfaction in guiding an eager group of hand-picked young doctors.

#### *Casualty Officers*

The casualty officers themselves must be carefully chosen; for unless the proper personnel have been selected, the department cannot work efficiently. The ideal casualty officer should be a doctor, qualified for about 5 years, who has had about 2 or 3 years in private practice, who likes and understands people and, in a teaching-hospital post, is presumably on his way to a higher qualification. He should be friendly, courteous, polite and energetic, and should have a good knowledge of diagnostic procedures. He should be calm and well able to deal with any emergency that might arise, whether this be medical, surgical or gynaecological.

The number of patients that such a doctor can treat during the day varies with the individual but on an average about 30-40 new cases and 30-40 old cases, a total of about 60-80 patients, can be attended by one doctor in a session of 8 hours without excessive fatigue. There is always a certain amount of loss of efficiency towards the end of an 8-hour session and it should be the aim of the head of the department to see that sessions are so divided that this loss of efficiency and, in consequence, the loss of diagnostic skill, should bear as lightly as possible on the patients. We have found that splitting the 8-hour session into two is well worth while as it allows us to give our casualty officers plenty of off-duty time and free week-ends at regular intervals so that they can plan ahead and use their off-times to the best advantage. Having a contented group of keen casualty officers is the most important factor in successfully running the department.

The casualty officers should be called 'first', 'second', 'third', etc. according to the seniority of their appointment, as all will need to know their relative status in the department should an emergency arise. Larger hospitals should make arrangements for a minimum of 3 casualty officers as a working rule. This number allows for off-time, holidays and sick-leave, and at the same time enables a proper rota system to be established. If, as in many cases, it is possible to have only 1 or perhaps 2 casualty officers, some lack of efficiency must be accepted as the norm. With 6 casualty officers as a standard force, it has been possible in the Groote Schuur Hospital to

arrange an emergency plan to deal with mass casualties should the resources of the hospital suddenly be faced with a large number of casualties. This emergency scheme will be considered later.

Since the number of patients attending daily can seldom be predicted with any accuracy, it is clear that if all the casualty officers are on full floor duties, there can never be any flexibility in the arrangements. It is therefore advisable to have a daily list of operations which are booked by the casualty sister-in-charge and to have one casualty officer, on a rotating basis, deputed to do these together with any emergency operations which may be necessary. This casualty officer will be occupied with his list of operations throughout the day in the casualty theatre but will be available immediately to assist in the department should any emergency arise.

In the same way we have found it expedient to separate the fracture cases from all the rest and to depute another of the casualty officers to attend to the casualty fractures in the orthopaedic department. This, in our hospital, is not a full-time occupation but in his free time this officer assists in the orthopaedic department with registrar status and he too can be called on in an emergency. We are fortunate in having the orthopaedic out-patient department on a separate floor of the hospital and the casualty officer working there carries out his duties under the supervision of that department. This arrangement, while it gives him every opportunity of learning the management of fractures, enables them to be kept under the single direction of the fracture unit of the orthopaedic department—a most desirable arrangement.

In this way, while the number on floor duty is never more than 3, within a few minutes 5 doctors can be standing by in an emergency and, by arrangement with the orthopaedic department and the department of surgery, many more registrars can be called in to assist in dire need. This special facility has not, as yet, been used; the casualty department has managed to cope with any local disasters without calling in additional aid from other departments.

#### *Nursing Staff*

A sister-in-charge and 3 or 4 nurses are the minimum necessary for running a busy casualty department. This allows for off-time, sick-leave, annual leave and accidents. A minimum of 2 trained nurses should always be present on the floor and it is best not to employ junior trainees in the department. All nurses should be fully immunized against the usual infectious diseases, and particularly against poliomyelitis, because the risk of infection is greater in this department than anywhere else in the hospital.

#### DESIGNING AND PLANNING A CASUALTY DEPARTMENT

In planning a casualty department it should be remembered that flexibility should be the most important consideration in the design. It should be designed so that control of movement is easy and so that the variations in numbers which occur from time to time will be taken up. While during certain emergencies anything up to a 100 people may suddenly arrive at a casualty department, it can be reasonably considered that if 30 people are handled every hour, the department is a very busy one.

### Waiting Room

The first requirement is an adequate waiting room or waiting space. This waiting room should be the largest room in the department and should have benches for those patients who arrive on foot and require to wait. A certain area should be left clear of benches where patients who arrive by ambulance and are left lying on trolleys may be kept waiting until they can be seen by doctors in the various treatment rooms.

The waiting room should have 2 separate entrances, one for walking, the other for ambulance cases, and both types of patient should pass the records counter to receive their cards before being allowed into the waiting room (Fig. 1). The ambulance cases will naturally be given

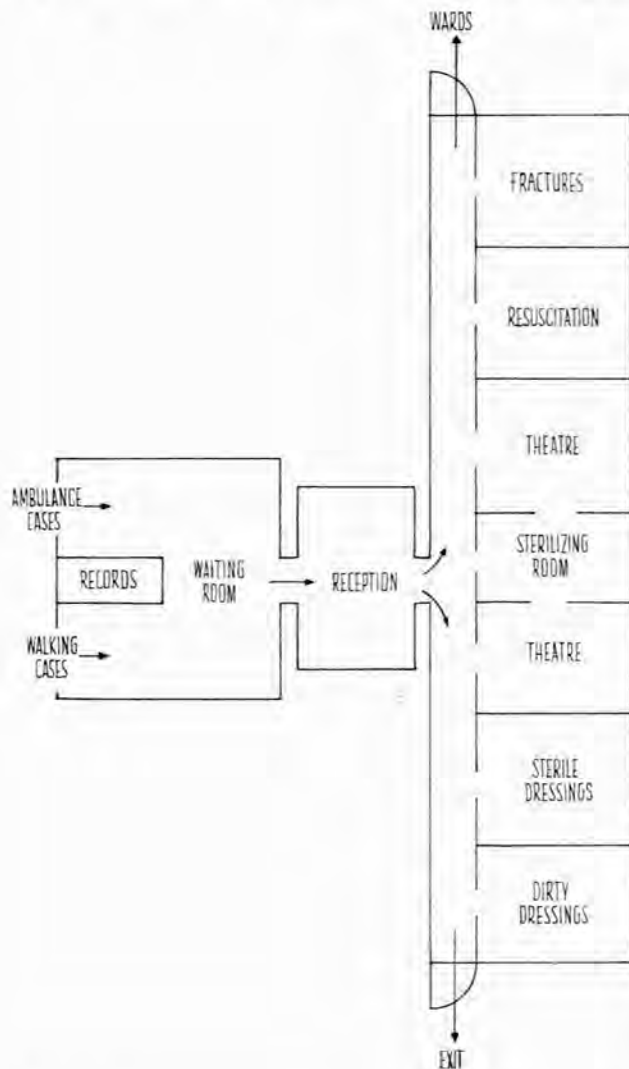


Fig. 1. Diagrammatic arrangement of an ideal casualty department.

priority. The waiting room should be cheerful, painted in light colours in an easily washable paint and the floor should be made of waterproof material that can be washed down. The walls need not be tiled, as this adds to the

coldness of the place. There is no objection to having paintings or frescoes on the walls but anything that can collect dust should be avoided.

Owing to poor design or to pressure of numbers, patients may try to wait in corridors; however, the smooth working of the department depends on corridors being free. If a hospital should find that for one reason or another its waiting facilities are inadequate, it should arrange to build a temporary waiting space rather than allow patients to use the corridors as waiting areas — this can only lead to confusion and collapse of smooth running arrangements.

### Reception Room

The reception room should be furnished with a minimum of furniture, but requires a telephone, a desk and an X-ray viewing box on the wall. Two or 3 disrobing cubicles should be provided and the usual diagnostic instruments should be available. A history is taken at the desk and the patient is examined on one of several couches in the room. Side-room facilities for urine analyses and simple blood tests should be accessible and, in those hospitals where a blood bank is not on constant duty, there should be facilities for grouping and cross-matching blood. Plasma, plasma substitutes and solutions of 5% dextrose in saline should be in store cupboards.

A tourniquet should be close at hand and a sterile tracheotomy set in a sterile drum is a *sine qua non*. In addition, a pair of Safar plastic tubes\* should be kept within easy reach.

Half-a-dozen Thomas' splints of various sizes and a similar number of padded Cramer's splints should be ready for use in a nearby cupboard.

### Dressing Rooms

Ideally, 2 dressing rooms should be available — a *clean dressing room* where stitches can be removed, clean wounds examined, and injections given, and a *septic or non-clean dressing room* where infected wounds that are being treated or have resulted from incising abscesses or infected areas can be examined and dressed. Although this is the ideal arrangement, it is not essential to have more than 1 dressing room; all the work of the casualty department can be done in this room quite efficiently, if proper precautions are taken.

An electric sterilizer which boils all day is uncomfortable; a steam sterilizer, with automatic cut-off and a fan extractor, will help to keep the dressing room clear of smells, bacteria, and steam. A steam sterilizer is also more efficient and much cheaper to run than an electric one.

### Resuscitation Room

The resuscitation room is a separate room where oxygen should be piped and where suction is instantly available for keeping the patients' air-ways clear. However, this is a luxury and could well be replaced by similar facilities being made available in the theatre, reception rooms or dressing rooms. Cross-wires, strained at 7 ft. 6 in. above

\* Safar plastic tubes are S-shaped tubes for mouth-to-mouth resuscitation. Under the trade name of 'resuscitubes' they are available in 2 sizes for adults and children and are made by Messrs. Johnson & Johnson (Pty.) Ltd., P.O. Box 727, East London.

the floor, should be put up in all these rooms and, from them, wire hooks of appropriate length for hanging bottles of blood and intravenous solutions should be kept suspended. In this simple way a room 15 ft. square can be used to accommodate 6 stretcher cases receiving intravenous fluids at the same time.

#### Theatres

The theatres of a casualty department differ in no way from those of the main hospital, except that the equipment need not be so elaborate. Thus, while it is unnecessary to equip a casualty theatre with full laparotomy instruments, there should be a full range of instruments for stopping haemorrhage, stitching wounds, opening abscesses and dealing with such minor plastic work as may be required in an emergency. Ideally, the casualty theatre-suite should consist of 2 theatres with a sterilizing room situated in between. These theatres should never be simultaneously in use so that one is always available for emergencies.

In addition to normal theatre equipment, the casualty theatre requires: (1) A tracheotomy drum in which a complete set of tracheotomy instruments with sterile towels are kept, (2) a cut-down drum which contains instruments for emergency intravenous cut-downs, and (3) a metal toolbox labelled 'I.P.P.R.' containing equipment for intermittent positive-pressure respiration — this metal box is sealed with a ring of gummed paper before use so that it can be seen at a glance whether it has been used; if so, its contents can be rechecked. It should contain the following equipment: (a) 1 ambu resuscitation bag, (b) 2 masks for this bag (one large, one small), (c) 3 metal air-ways (large, medium, small), (d) 5 portex intratracheal tubes (sizes 2, 4, 6, 8 and 10), (e) 1 laryngoscope handle with spare batteries and lamp, (f) 2 laryngoscope blades (small and large), and (g) gauze bandage for use as a throat pack.

#### X-rays

Since it is not usually practicable to have a complete radiological unit for the sole use of the casualty department, the closest liaison, on a 24-hour basis, must be maintained between the casualty department and the radiodiagnostic services of the hospital.

#### STERILIZATION

In all hospitals throughout the world, the hospital staphylococcus has been found after a time to have invaded the casualty department.<sup>2</sup> This problem is always with us and must be tackled energetically and continuously. Cupboards should be built-in or fixed to the walls and their tops made sloping so that dust cannot accumulate and so that odd objects cannot be placed on top of them for storing. The flat tops of instrument tables or dressing tables should be covered with glass or stainless steel sheeting. Walls must be painted at fairly frequent intervals and all projecting objects should be removed.

In spite of this, the hospital staphylococcus may become resident and must be attacked directly. At Groote Schuur Hospital we have found that spraying once a week with a solution of a quaternary ammonium compound which is lethal to the hospital staphylococcus, is most satisfactory.

Many commercial preparations are available; the one we use is 'quatarg',† a quaternary ammonium compound, combined with a detergent, which is sprayed by our hygiene department in the early hours of 1 morning a week. Since this routine has been followed, our bacteriologists have reported a marked drop in the frequency of hospital staphylococci.

To promote asepsis our nurses are encouraged to use a 'no-touch' technique, but this slows the work down and, unless they are constantly supervised, the technique is as often broken as not. However, the nurses on dressing duties wear masks and gloves. The gloved hands are frequently washed with 'phisohex' which is available in wall-dispensers in all dressing rooms and reception rooms.

Hospital blankets must be frequently laundered and sterilized and the blanket cupboards in which they are kept should not stand in or be allowed to open into dressing rooms; they should be made to open either into the general waiting room or into hospital corridors where there is a free draught of air from outside the hospital.

#### THE USE AND ABUSE OF BLOOD AND PLASMA

Blood is usually required in the casualty department in a hurry. Patients arrive exsanguinated from medical, gynaecological or surgical causes, or after accidents and injuries of various kinds. Two bottles of blood, given at this stage, are much more valuable than many more given an hour later when it may be very difficult to restore the patient from a state of irreversible shock.<sup>3</sup> The blood must be carefully typed and this takes time.

We have come to use the following routine as being the safest for the patient. An intravenous drip is set up and, after drawing off a sample of blood for cross-matching and grouping, 2 bottles of plasma, each containing 250 c.c. are given immediately and as quickly as possible, if necessary under pressure. This restores the patient and gives everyone a few minutes in hand; a bottle of O Rh-negative blood is now substituted and by the time this has run in, correctly cross-matched blood should be available in almost unlimited quantities. In this way, it is possible to avoid reactions and at the same time to restore any patient's blood pressure to a reasonable level in the department with little risk of transfusion reactions. We have made it a rule that no patient, injured or exsanguinated or in shock, should leave the department unless his blood pressure is 100 mm.Hg systolic *and rising*.

Particular care is necessary in dealing with the elderly, with infants, and with those whose hearts are not in good condition. In these cases the margin between plethoric failure and anaemia is small and blood must be given very cautiously. It may be necessary in such cases to give at this time rather less blood than is thought adequate, and perhaps later on to give packed cells. One bottle given to an elderly injured person may upset the delicate hydraemic balance and put the patient into congestive cardiac failure.

† Distributed by Messrs. Westdene Products (Pty.) Ltd., P.O. Box 7710, Johannesburg.

A great deal has been written to indicate that indiscriminate intravenous therapy is dangerous. A careful assessment should be made using the appearance, the blood pressure and general condition of each individual as a guide. If in doubt, the blood pressure is taken at 5-minute intervals before starting intravenous fluids and proceeding only if the pressure does not rise.

Dextran and dextrans are very useful in places where blood and blood substitutes such as plasma are not readily available. We have not used these blood substitutes or fillers because our blood transfusion service informs us that cross-matching after these have been given is a lengthy and more difficult process. However, dextran has a small but limited place in acute injuries in the special circumstances indicated, and in burns its use has much to recommend it.

#### MULTIPLE INJURIES

Patients with multiple injuries fall into a peculiar and separate category. Apart from patients with head injuries, the highest mortality occurs in this group and the successful management and disposal of these difficult and dangerous cases puts an accident service and casualty department to its most severe test. Since no single surgeon can possibly be expert in all branches of traumatology, we have arranged that these patients are placed directly under the *personal* supervision of a senior surgeon who is expected to call on the services of the orthopaedic, neurosurgical, maxillo-facial, or other departments as the need arises. Special arrangements are also required for the in-patient treatment of such cases. As far as the casualty department's duties are concerned, resuscitation is carried out energetically with blood and other measures to overcome the shock, and the patient is moved from the department only when all arrangements are already made for attending to his most urgent injuries, the less serious ones being treated as the need arises, *secundum artem*, and by the experts concerned.

#### MASS CASUALTIES

Every hospital should have a plan in readiness for dealing with mass casualties. It is not enough to be able to handle these occurrences by routine measures; success in these matters is judged not only by the expedition and smoothness of the procedure and by the lack of upset of the hospital's general running, but primarily by the high percentage of lives saved and morbidity avoided.<sup>4</sup>

'The ingredients for production of a disaster are always with us; a crowded school bus and an unguarded railway crossing, a tornado and a city, a full plane and its critical moment of take-off and landing. These and many other circumstances can provide the potential for creating casualties in more than normal number'.<sup>5</sup>

Because of its prime position in the Western Province, the Groote Schuur Hospital must expect to be called upon to bear the bulk of the burden of any sudden onrush of casualties, and because of its resources both in personnel and equipment, it is right that this should be so.

The control officer at the Central Ambulance Station receives the first call for assistance. He sends out his ambulances and receives on-the-spot reports by radio-telephone from the first ambulance on the scene. He is then

able to assess the approximate extent of the casualty list and to notify the casualty officer on duty at Groote Schuur Hospital. This notification arrives about 15 minutes before the first ambulance can possibly reach the hospital.

In general, the first ambulances carry the worst cases. Each can take 2 cases and the station controls 34 ambulances. The largest number of stretcher cases that could possibly arrive at one time can therefore hardly exceed 60.

It is clearly to be understood that the functions of the casualty department in this, as in lesser emergencies, are relatively simple, but require to be integrated into the general work of the hospital particularly with regard to the disposal of cases. In all these sudden increases in the normal number of casualties, the problem can be considered under the following headings: (1) receiving, (2) sorting, (3) disposal, and (4) information services.

#### *The Fundamental Duties of the Casualty Department*

As far as the casualty department is concerned, its fundamental duties in these emergency conditions are 3 in number: (a) To clear the air-way and maintain respiration, (b) to stop and/or to control haemorrhage, and (c) to combat shock.

On receipt of a telephone call from the control officer of the ambulance station indicating that a disaster has occurred and that mass casualties can be expected, the casualty officer on duty carries out the following steps in the given order:

1. Telephones the head of the department.
2. Telephones other casualty officers on duty, and calls in those who are not on duty to the casualty department.
3. Empties the casualty department of casual patients.
4. Collects trolleys from other departments in the hospital and places them in the casualty department.
5. Makes available labels and kit-bags.
6. Notifies the blood transfusion officer to be prepared to match blood or alternatively, in the absence of a blood transfusion officer, makes available whatever supplies of blood he has.
7. Sets up a desk information service.

#### *Receiving the Patients*

By the time the first ambulance has arrived at the hospital, the organization should be ready to receive the patients and an office where information can be given about those admitted should be set up. This latter is very important because otherwise it is inevitable that the hospital and casualty space will be flooded by anxious members of the public requiring to know more about their relatives.

The first casualty officer now proceeds to the waiting room and awaits the patients. The third, fourth and fifth casualty officers wait in the reception rooms and theatres. The second casualty officer meets the ambulances at the door and, going into the ambulances, checks whether the patients' air-ways are clear. He then sends them to the waiting-room where they are met by the first casualty officer who sorts them under the following heads:

1. *Respiratory obstruction.* Patients with respiratory obstruction are taken directly from the ambulances to the casualty theatre.
2. *Minor injuries, burns and fractures.* Patients suffer-

ing from these injuries are put in the waiting rooms to await treatment at leisure, and for these purposes it must be considered that all fractures are injuries whose definitive treatment may be delayed.

In general, a fracture must be treated as a case of urgency rather than emergency, but, in some cases of closed fractures of the femur, up to 2 pints of blood may extravasate into the haematoma and the surrounding tissues, and urgent replacement of this will be required before the shock can be overcome. Moreover, the pain associated with the unreduced fracture demands immediate relief even if proper splinting is applied. But the delay of a few hours (at the most) is permissible, if shock, haemorrhage, and pain can be controlled and if better facilities for treatment are made available within these few hours.

'Fractures kill through mismanagement; they should be splinted before the patient is ever moved. Otherwise, shock may develop and what could have been treated successfully, and leisurely, turns into another death'.<sup>6</sup>

It pays to place the fracture cases, even the compound fractures, on one side, and to deal with them later. This is possible at Groote Schuur Hospital because fortunately the orthopaedic department and the casualty department are physically separated so that the fracture cases can be handled at leisure and in the correct sequence.

3. *Shock*. Patients suffering from shock are placed on trolleys and are immediately wheeled into the resuscitation and reception rooms. It should be possible, using the simple arrangements described above, to handle 12 or 18 cases in 3 rooms on their trolleys with great ease.

4. *Haemorrhage*. Patients suffering from external haemorrhage are taken directly to the casualty theatre and the haemorrhage controlled. Later, treatment for shock may have to be instituted. This treatment is started in the theatre and continued in the resuscitation rooms. Patients with internal haemorrhage are sent to the wards or directly to the main hospital theatres after the shock has been treated.

5. *Non-ambulatory patients*. These patients, including those with fractures, are placed on wheelchairs or on trolleys and are seen by the senior casualty officer present who divides them into: (a) those requiring immediate attention, (b) those who can be sent up to the wards, and (c) those who, after treatment, can be discharged.

#### *Blood*

If a blood transfusion officer is on duty, he should have been alerted at the first instance. If not, blood should be made available as soon as possible.

#### *Labels and Kitbags*

Labels should be prepared and kept in the department to be tied onto the wrists of patients to identify them correctly. All drugs given, as well as a working diagnosis, should be entered on this label. *No drugs or blood should be given unless this is noted on the label.*

The kitbags are numbered pillowcases with drawstrings, which should be kept handy. They are invaluable for storing the patient's belongings.

#### *Morphine*

Morphine can be given to all patients who complain

of pain but its use should not be indiscriminate, particularly in the case of patients in shock. It is best administered intravenously,  $\frac{1}{4}$  gr. morphine being drawn up into a syringe and about half of this dose given immediately. As soon as the patient feels that the pain has been relieved, no more should be given and the amount and time should be noted on the label.

#### *Operating Theatres*

We feel that operating theatres play a very small part in the early management of mass casualties. The first casualties requiring theatre attention may not be ready for operation until at least 4 hours after the accident has occurred, so that it is unnecessary to disorganize the arrangements of any of the theatres by calling on them to begin preparations as soon as an incident is reported.

#### *Disposal*

If many patients need to be admitted after an incident, it is advisable to clear one ward of all occupying patients and to use this empty ward for taking all the patients from the particular accident. In this way they can all be kept under one authority and management is thereby greatly facilitated.

#### *General Handling*

Once the above organization for dealing with mass casualties gets going we have found that it can carry on indefinitely, handling many patients very expeditiously. The numbers that can ultimately be handled depends on the number of beds that can be made available in the hospital and is outside the control of the casualty department.

It will be observed that in this organization for treating mass casualties the head of the department is not allotted any definite duties. He is required to supervise the whole procedure and to see that the arrangements run smoothly. If he is surgically trained, he will be called on to help sort the cases. In this way the whole procedure can be accelerated.

'Who qualifies best to sort casualties? A surgeon with experience. The more prominent the surgeon the more important it is that he use his time to guide and direct work with the benefit of all his background training. In this way he can see 50 or 100 patients in the time required to operate on one of them. In a major disaster... the goal must be to save the maximum number of lives'.<sup>6</sup>

Running all through the concept of handling casualties is the knowledge that it is not so much operating on the patients that is of primary importance as making the decision *when* to operate and in what order to deal with the individual lesions in cases of multiple injuries. It is in these decisions that the major responsibility lies and the head of the department will usually be required to undertake this responsibility.

#### ATOMIC WARFARE

This matter has been considered at length in most medical journals<sup>7</sup> and a report on South African conditions has been published recently.<sup>8</sup> It appears that 'great reliance will have to be placed on the services of sub-professional personnel' and that a new concept in medicine has arisen, *viz. triage*, whereby available medical officers will in the first instance be employed in casualty selection rather than for casualty

treatment. Since the number of casualties is likely to be overwhelming and the facilities for treating the casualties may themselves be involved in the incident, a considerable disorganization is to be expected. The principle of *triage* involves deciding whether a patient is going to survive or not and giving medical attention only to those who are likely to live. This heavy responsibility will have to fall on the surviving medical officers, and the casualty department will, to a certain extent, have to use the same criteria when giving treatment.

#### CONCLUSION

Some hospitals have made it a rule that no one, either on the medical or surgical side, should be considered as a candidate for appointment to the consultant staff unless he has had some experience of casualty work; this point may well be considered by the authorities concerned. A rule of this nature will ensure a good supply of casualty officers on the one hand and on the other it will, in due course, provide most smaller hospitals with a staff well-trained in basic traumatology.

It is only by training the personnel and by organizing our existing casualty departments that we can hope to provide the country with a better accident service—a service sorely needed, the lack of which is well recognized.<sup>9</sup>

#### SUMMARY

1. The organization of the casualty department at Groote Schuur Hospital is described.
2. It should be possible to arrange for a casualty department in smaller hospitals to be organized on similar principles using our experience as a guide.
3. The basic principles of the general treatment of injuries have been enunciated.
4. A system for handling mass casualties is described.

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