EMERGENCY HEALTH SERVICES

DEPARTMENT OF NATIONAL HEALTH AND WELFARE

MINISTÈRE DE LA SANTÉ NATIONALE
ET DU BIEN-ÊTRE SOCIAL

SERVICES DE SANTÉ D'URGENCE

INTRODUCTION TO DISASTER NURSING

by

F. Lorraine Davies
Nursing Consultant
Emergency Health Services

PRECIS 9.01

The term disaster is defined as "a sudden or great misfortune, calamity; ill luck". Disaster Nursing may be defined as nursing care adapted to conditions prevailing in disasters (peacetime or wartime) where the number of casualties place an undue strain on our facilities, supplies, equipment and personnel.

Disaster may strike at any time. A disaster causing mass casualties will require nurses to extend their practice; to cope with situations calling for improvised methods; to handle emotional stress (their own as well as others) and to provide the best possible nursing care under what may be less than desirable conditions.

In order to accomplish these tasks, nurses must first accept the responsibility to be prepared to render nursing care in the emergency situations which a disaster creates. If disaster strikes there is a need to know what to do, to provide the type of leadership required, to give the type of care that, as a nurse, she had been educated to give. Once the disaster strikes there is no time to indoctrinate nursing staff that is why nurses need to prepare themselves, know their community and its plan, the hospital plan and recognize their responsibilities as nurses and citizens.

In order to function both effectively and efficiently in disaster situations, their responsibilities should be considered in three phases - first, the pre-disaster phase, secondly, the disaster phase and thirdly, the post-disaster phase.

In the pre-disaster period it is necessary to become familiar with existing plans (hospital and community). If no plan exists, the development of such plans should be encouraged and supported. It is of primary importance that response to disaster should reflect the coordinated planning efforts of all concerned in order to ensure the most effective use of personnel and equipment and to prevent chaos. Many disasters cannot be prevented, e.g., hurricanes or tornadoes, however, disasters due to explosions, fires, transportation accidents can be prevented, or their frequency lessened, if efforts are made to point out hazards and help to alleviate them.

Planning needs to be both basic and practical. It should include measures to be followed in disaster as well as preventive measures where possible. Plans must be flexible and should consider such factors as loss of personnel, utilities, supplies and they must provide for means of communication between staff, as well as to the public and between institutions. Many of these points, while not directly the responsibility of the nurse, can affect her ability to function in disaster situations and are therefore important to her.

Experience with disasters has taught that the nurse has been faced with disaster situations. She must recognize that it is her responsibility to be prepared to provide good nursing care, to direct others in assisting with nursing care, to conserve her skills and use them to the best advantage. She must be able to set priorities, understand the principles of mass casualty care and be aware of her probable reaction to disaster.

In the disaster phase, the nurse must function in her professional capacity in an efficient, effective manner and must apply the principles of mass casualty care. The primary objective is to do the greatest amount of good for the greatest number of people. The techniques for reducing an overwhelming casualty load to manageable proportions are as follows:

(1) Casualty sorting into priorities.

(2) Establish echelons of care.

(3) Standardization of treatment.

(4) Provision of early resuscitation and life-saving measures.

(5) Early debridement and delayed primary suture.

It is very important that the nurse understand the principle of casualty sorting and the need to set priorities for care. Sorting of casualties is the most difficult and the most important task in caring for large numbers of injured and requires informed judgement, hard work and courage. Sorting must continue as long as a disparity exists between the patient load and the personnel and treatment capability available for management. It must take place immediately at the site and begin with the screening of minor injuries and dead.

Casualty sorting is divided into four classifications:

(1) Minimal - Those persons who require simple treatment and discharge.

(2) Delayed - Those persons who require simple initial care, further care may be deferred until later with little added risk.

(3) Immediate - Those persons who require life-saving treatment and have reasonable chance of survival, e.g., readily accessible hemorrhages, blocked airways, severely wounded extremities.

(4) Expectant - Those persons who are so critically injured that their chance of survival is minimal and to whom supportive care and spiritual help can be given.

In local disaster when help is forthcoming and the disparity between the casualty load and personnel and facilities can be expected to improve it is still important to adhere to these basic principles. Nurses must accept the fact that until the situation has improved the basic objective is to save as many lives as possible.

In the case of patients requiring surgical intervention, priorities have been established as to the order in which the patients are handled. Beginning with the life-threatening conditions, the priorities are as follows:

(1) First priority - asphyxia, respiratory obstruction, sucking chest wounds, tension pneumothorax, maxillofacial wounds where asphyxia exists or may develop, shock due to internal or external hemorrhage, massive muscle damage, evisceration.

(2) Second priority - visceral injuries, perforations GI tract, GU tract, thoracic wounds, biliary pancreatic wounds. Vascular damage - all injuries where tourniquet necessary. Closed cerebral injuries with consciousness.

(3) Third priority - spinal injuries requiring decompression. Soft-tissue wounds requiring debridement. Lesser fractures. Eye injuries. Maxillofacial injuries without asphyxia.

The successful management of mass casualties also demands that early surgical and medical care be standardized within reasonable limits until a stabilized post-disaster situation permits adequate time for individualized procedures and more leisurely clinical approach.

The provision of early resuscitation and life-saving measures is extremely important. It includes control of hemorrhage, fluid replacement and essential steps such as the correction of anoxia resulting from a penetrating chest wound or head wound; immobilization of fractures; the initiation of intra-gastric suction to relieve distention and vomiting in abdominal wounds.

Infection can be mitigated or even prevented by the adequate debridement of all wounds. This implies the removal of dead and contaminated skin, subcutaneous tissue, muscle and bone with a minimum of reparative surgery to structures deep to the skin. Exceptions to the last statement, however, are organs requiring immediate functional restoration, e.g., small bowel or severed popliteal artery. Wounds once debrided are left open for delayed primary suture.

In the post-disaster phase, the nurse will have a very real responsibility to the survivors and their families. In this phase people will require emotional support to accept their losses, and later they will need rehabilitation and help to become useful, productive members of society in spite of the emotional upset and physical losses they sustain.

Those nurses involved primarily in public health will have a role in protecting the health of the community both during and following the disaster. These nurses will be involved in helping citizens to understand public health procedures, in teaching proper methods of dealing with contaminated water, food, ensuring a safe environment and preventing the outbreak of communicable diseases.

In this age of advanced technology, we are forever increasing our potential for disaster. We read daily of disasters which occur around the world, of air crashes, floods, tornadoes, earthquakes, building collapses, hazardous substances which escape from tank cars or trucks. We read these accounts of disaster and think how terrible the event was, but because we are not directly involved, we forget them. The nurse should learn from these accounts and from the experiences of others and recognize her responsibility to plan; to coordinate her efforts; to direct her skills and energies in the proper direction during a disaster. She should recognize the need to evaluate her performance in exercises in order to ensure a correct response in the event of disaster and to continually up-date her nursing knowledge and skills.

All this may seem to be a great and heavy responsibility but, in fact, once the nurse recognizes the need to prepare and accepts the challenge it is a very easy load to carry. The outcome will be a feeling of competence and assurance obtained from the knowledge that she is prepared to function under catastrophic circumstances, and is ready to give competent, effective nursing care to those who look to her for assistance.

EMERGENCY HEALTH PLANNING
FOR
THE COMMUNITY

PRECIS 12.07
AUGUST 1975

GENERAL

It is our belief that every community requires a disaster plan, one part of which should be the plan of the hospital or medical faculty in that community.

The first concern is naturally for one's family and other intimates, and then for the larger community. This is true even of those who have a community responsibility and is one of the reasons why we advocate pre-planning and organization - it allows for the planning for one's family, and a clear definition of one's responsibility in disaster.

To ensure that the casualties resulting from a disaster receive medical care quickly and efficiently, the Hospital Emergency plan must be integrated and coordinated with the Community (Municipal) Disaster Plan. Regardless of the capability of the hospitals to cope with mass casualties, their efficiency is severely curtailed without the involvement of outside help - local community help.

COMMUNITY EMERGENCY HEALTH SERVICES

ROLES

Every community which develops a plan of action for natural disaster, is creating the basis by which that community would respond to the needs and responsibilities of a national emergency. The operational responsibilities of a Community Emergency Health Services in a National Emergency are as follows:

(a) Provision of advice to council and municipal agencies in health matters.
(b) Life saving surgery and hospitalization for seriously injured.
(c) Emergency medical treatment for injured not requiring hospitalization.

(d) Continuing medical care on an austere basis.
(e) The organization, control and administration of emergency health units assigned to the municipalities for the support of re-entry operations.
(f) The direction and employment of available and assigned health manpower.
(g) The administrative support of health facilities and units that may be located in the municipality, but which remain under the control of zone or regional emergency government headquarters.

PEACETIME PLANNING PROCEDURE

The steps to be taken in order to fulfil the Community Emergency Health Responsibilities are:

(a) Appoint the Municipal Director/Coordinator EHS.
(b) Appoint a Municipal Emergency Health Advisory Council.
(c) Establish a planning organization.
(d) Assess the Potential health workload.
(e) Assess the health resources availability.
(f) Determine the potential for emergency operations.
(g) Prepare the Community Emergency Health Plan.
    1. With information now available, the EHS Director can now assign specific tasks to various hospitals, emergency units and public health units, etc.
    2. The plan must include:
       Mission and site involvement.
       Information to other agencies (Fire, Police, etc.) who are required for support of EHS.
    3. Hospitals review individual plans to fit into the community health plan, which in turn must fit into the overall Community Emergency Plan.

EMERGENCY MEASURES AND THE HOSPITAL EMERGENCY PLAN

With a Community/Area, during the planning stage, the responsibility for coordinating resources and services outside the health field, rests with the Emergency Measures Coordinator. Complete community involvement is best obtained in those communities where Emergency Measures is well organized.

The efficient movement of casualties from the disaster area to a medical care facility depends almost entirely on outside services. If these services have prepared emergency plans, which have been co-ordinated by Emergency Measures, the operation will be efficiently performed. Therefore, it is important that the Emergency Measures Coordinator be consulted by the Hospital Emergency Committee, when the Hospital Emergency Plan is being considered. In the absence of an EMO plan for the community the hospital must accept the responsibility of planning for the necessary support services required by the hospital.

Since the Hospital Emergency Plan must be prepared not only for casualty reception, but also for patient evacuation in the event of internal disaster, it is advisable that representatives of both the Fire and Police Departments attend planning meetings.

THE COMMUNITY AND THE HOSPITAL

In a community which has only one Active Treatment Hospital, the coordination of the Hospital Emergency Plan with the Municipal or Community Plan will present few problems if the Emergency Measures Co-ordinator utilizes the community resources and coordinates the training of sufficient personnel (stretcher bearers, First Aiders, etc.) to meet the demands imposed by an anticipated disaster. The Co-ordinator will know what resources must be utilized, by attending Emergency Committee meetings and knowing the Hospital Emergency Plan, as well as the physical layout of the Hospital and grounds.

Single Hospital communities must also look beyond the borders of their community in planning for a disaster. In areas where there are several "one hospital" communities within reasonable proximity, inter-hospital liaison should be instituted and maintained. This will enable the hospitals to co-ordinate their plans to provide mutual aid and support. The Emergency Measures Coordinator should be brought into the disaster planning, to obtain and coordinate the resources from the various communities required in support of the Hospital Emergency Plan.

COMMUNITIES WITH TWO OR MORE HOSPITALS

Such communities emphasize, to a greater degree, the importance of the coordination of the Hospital Emergency Plans with the Community Plan, particularly in such areas as traffic control, equitable distribution of casualties and transportation or ambulance services. Community assistance would also be required to enable physicians to reach their designated hospital as expeditiously as possible.

A major metropolitan area, which has a multiplicity of hospitals within its corporate limits, would be in a better position to provide adequate support in the event of a disaster. The co-ordinated hospital plans should be incorporated into the Community Disaster Plan. Each hospital or group of hospitals may be given the responsibility for a designated sector of the metropolitan area, which could be extended beyond the metropolitan boundaries to embrace rural hospitals.

INTEGRATION OF HOSPITAL EMERGENCY PLANS

The impact of disaster may, on occasion, be absorbed by one hospital, however, where applicable, the planning must proceed on the assumption that disaster operations will be a cooperative effort based on the resources of a group of hospitals. In some municipalities

there is a convenient cluster of facilities involving large, specialized hospitals, general hospitals and other facilities which work cooperatively together. The concept of area-wide disaster planning is furthered by the integration of hospital emergency plans. The purpose of integrating hospital emergency plans is to ensure quality of casualty care in major emergencies. It should also be used to ensure that hospitals will not be inundated and that they will not be inappropriately used. The components which enter into a coordination of hospital emergency plans and which can assist in the achievement of the purpose of coordinating hospital plans are:

(a) Communications
(b) Casualty Transport
(c) Response at the Scene
(d) The Hospitals
(e) Command and coordination of the Health Services.

COMMUNICATIONS

Telephone communications are the basis for most ordinary traffic between a hospital and a community. They will continue to be used as far as possible in a disaster, but, should be supplemented by a communications system which is independent of public utilities which can reach essential areas which would otherwise be inaccessible. A two-way radio communications system should be considered if facilities are available.

CASUALTY TRANSPORT

No substitute can be found for the supportive care provided by well trained ambulance attendants to the patient in transit. First Aid procedures, to save life or function, are pre-requisite to the transport of the seriously ill or injured and must be rendered in disaster as well as at other times.

Triage at the site must ensure that those casualties requiring immediate treatment are identified and moved to the hospital and given priority in transport.

RESPONSE AT THE SCENE

In large scale disasters it may be necessary to set-up a medical operation at the scene of the disaster. The setting up of a medical team to be sent to the site will, of course, be dependant on the facilities and medical resources available. If such teams are contemplated, pre-planning is essential in order that a co-ordinated team may be sent to the site with the equipment necessary to function. It is also essential that access of such temas to the disaster site be ensured by providing for transport in a clearly marked, recognized vehicle.

The first action of the team should be the establishment of an impromptu medical post which can be in touch with hospitals immediately by two-way communications. Casualties should be received at the medical post, sorted, given sustaining care in accordance with their medical priority and dispatched to the appropriate facility according to priority. The four main functions of such on-site medical teams would be:

(a) Triage and life saving treatment.
(b) Initiation of casualty documentation and records.
(c) Reception, evaluation and dissemination of information to hospitals.
(d) Equitable distribution of the injured in accordance with the plan for the area.

HOSPITALS

One function of the integration of hospital emergency plans will be to conform or modify the role of the participating hospitals and make such information available to other interested groups. Each hospital must be prepared to perform its own function to its full, extended capability. By integrating hospital emergency plans they then become a part of a district plan rather than a local emergency plan. All hospitals automatically contribute services in the amount necessary to provide casualty care of a complete range and high quality, whether or not the disaster occurs in their immediate vicinity.

COMMAND AND COORDINATION OF HEALTH SERVICES

Command and coordination of the local health services is a local health responsibility. Initiative in creating an organizational structure which will best serve the locality in an emergency is therefore placed in local hands. For this purpose a district coordinator of health and casualty care services is worthy of consideration. Authority would then be centralized in the coordinator and during the planning phases he would provide liaison between the treatment services, public health services, between the hospitals, and between hospitals and other facilities in the area. The authority of the district health coordinator to direct casualty care services would rest upon the mutual consent of the hospitals and other services concerned.

TRAFFIC CONTROL

Traffic control will form part of the police plan. In small communities help will be required to assist the police with crowd control both at the site of the disaster and at the hospital entrances. Traffic control may be required at various points between the scene of the disaster and the hospital. Within the hospital grounds, traffic must be controlled and directed in accordance with the hospital plan.

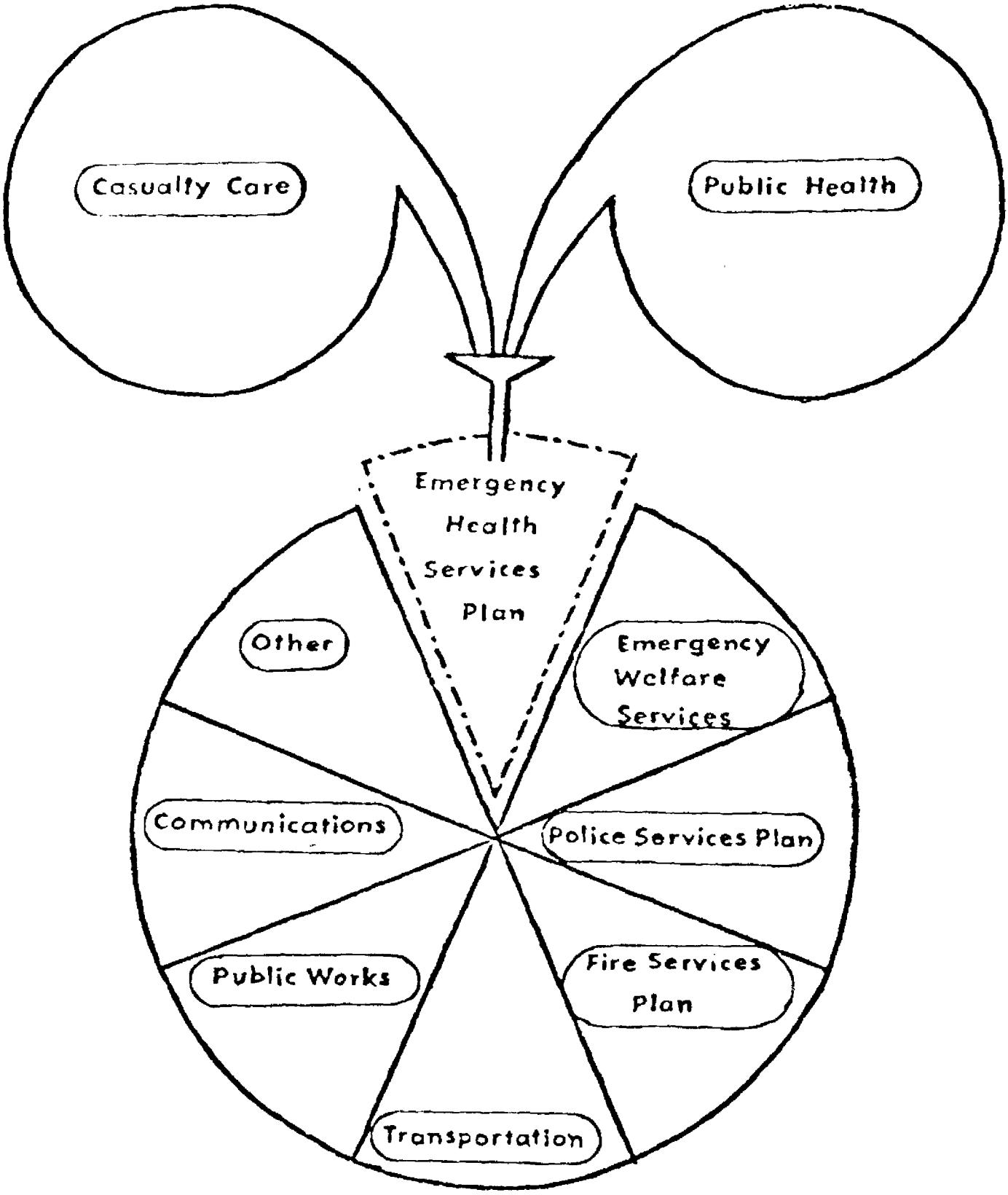
INFORMATION CENTRE

The Hospital Emergency Plan must include provision for the dissemination of information on casualties received at the hospital. Information could be sent via messengers to an Information Centre within the immediate hospital area, and specified in the Hospital and/or Community Plan, where people seeking information about casualties, would be directed. Hospital Social Services, where available, may be requested to man or organize this centre, consideration should also be given to the inclusion of clergy at the Centre.

In areas where there is more than one hospital, and where the hospitals have coordinated their plans, a central information centre may be the most efficient and effective means of providing information. It would also alleviate the problem of wandering from hospital to hospital seeking information.

SUMMARY

Coordinating the Hospital Emergency Plan with the Community Disaster Plan is of paramount importance if the victims of a disaster are to receive the best possible medical care. Medical, para-medical and lay personnel must assist and cooperate to ensure that all available resources are utilized; that enough volunteers are trained; and that plans are written, exercised and coordinated.



FINAL OVERALL COMMUNITY EMERGENCY PLAN

(COORDINATED by E.P.O.)

COMMUNITY PREPAREDNESS CHECKLIST
(for preliminary use)

		Yes	No
1.	Does the community maintain a current emergency health services operations plan covering emergency medical services, emergency public health services, & emergency ambulance services?		
2.	Does the community have an emergency operations centre with assured communications to hospitals, police, ambulance service, & other major organizations directly involved in the provision of support of emergency medical services?		
3.	Is an emergency mission assigned to each major health & medical organization in the community?		
4.	Are there sufficient numbers & types of health manpower who have emergency assignments & training to effectively perform emergency health service?		
5.	Are current inventories maintained of health facilities, health manpower, health & medical supplies & equipment, & directories of key hospital, ambulance services, & other medical & supporting organizations personnel?		
6.	Does the community disaster plan provide for supporting services to hospitals (e.g. traffic control, mass feeding, communications, utilities)?		
7.	Does each hospital in the community have a formal disaster plan to cover an influx of patients through the emergency unit?		
8.	Are disaster plans of all hospitals in the community coordinated?		
9.	Are there agreements with the hospitals of adjacent communities for the provision of emergency assistance?		
10.	Is there a coordinated ambulance & rescue service (among the services & with the hospitals)?		
11.	Is First Aid & Home Nursing training offered on a regular basis in the community?		
12.	Is training in emergency care procedures available to all professional & technical health manpower?		
13.	Are key staff members assigned & trained to man pre-positioned Advanced Treatment Centres & Casualty Collecting Units?		
14.	Are key staff members assigned & trained to man pre-positioned 200-bed Emergency Hospitals?		