Emergency War Surgery

NATO HANDBOOK

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Foreword

This manual is presented to the Armed Forces as the United States issue of the NATO Emergency War Surgery Handbook. The handbook was developed by a committee of three surgical consultants representing the military medical services of France, the United Kingdom, and the United States, assisted by observers and the written recommendations from other NATO nations. The material used was obtained from authors and publications of many NATO countries.

Through the continued efforts of Brig. Gen. Sam F. Seeley, MC, USA, Chairman of the NATO Committee, this issue was prepared in order to meet the requirements of the medical services of the military departments of the United States.

Due to the close alliance and the interdependence of the NATO nations for medical care of their respective personnel in a major disaster, the need for uniform guidance in the matter of emergency war surgery became apparent.

In editing and consolidating this material, great credit is due to Col. Joseph R. Shaeffer, MC, USA; Capt. Robert B. Brown, MC, USN; and Col. David Gold, USAF (MC), who undertook the task with enthusiasm and who, despite the many natural difficulties encountered, have produced a most informative and yet compact edition. Thanks are also due to Miss Elizabeth M. McFetridge for her willingness to leave other compelling editorial duties in order to assist with this publication.

For the attainment of uniform guidance, therefore, I commend this manual for your study and use, the better to accomplish our joint medical responsibilities.

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Assistant Secretary of Defense
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General Considerations of Forward Surgery

Military surgery is a development within the art and science of surgery which is designed to carry out a specialized, essential, and highly significant mission under the adverse conditions of war. It is distinctive in that, contrary to the usual medical practice, the care of the individual must necessarily become secondary to the military effort whenever a given tactical situation so demands.

On the other hand, neither this realistic and practical necessity nor the additional necessity of haste in caring for a continuous flow of battle casualties requires that military surgery be carried out in an atmosphere of confusion and disorder or that standard principles of treatment be abandoned. On the contrary, as all past medicomilitary history shows, intelligent planning and training, in anticipation of the needs of the emergency, have made possible an enviable record in military medicine.

The basis of success in military medicine in the combat zone is an organized team, each member of which has been trained to accept the responsibilities of his assigned position and to be prepared to move to a new station, with different responsibilities, as new situations develop. No matter how expert a medical officer may be in one field or another, he must always conduct himself within the purposes and limitations of the mission of the particular medical echelon in which he finds himself at the moment.

Success in military medicine, furthermore, has been achieved in spite of the fact that over the ages, many—sometimes most—of the lessons of the past, all of them learned by hard experience, ordinarily lie fallow between conflicts. Almost invariably they have had to be rediscovered, relearned by additional hard expe-

rience, and expanded and adapted by succeeding medical generations as new emergencies have arisen.

The milestones of history, unfortunately, are very often represented by wars, and modern wars are no longer limited conflicts between nations. Instead, they are fought between groups of nations. The role of the medical profession therefore extends to the care of collaborating nationalities. It must be carried out in widespread geographic areas and in extremes of climate. These facts, highlighted by the continuing tensions of the times in which we live, explain the need for the expansion of the curricula of medical education to include the doctrines and principles of military medicine. Some medical students will make military medicine their careers. Those who do not may be called upon in emergency to serve in the medical department of some branch of the Armed Forces. They too must know the fundamentals of military medicine. Medicomilitary knowledge, in short, is no longer a function of professional medical officers alone.

ECHELONS OF MEDICAL CARE

The basic concept of medicomilitary care is that it is provided by echelons. To carry out the correct procedure at the appropriate time and in the appropriate facility is an inviolate rule of military medicine. In no other way can the most effective medical care be provided. This concept is at variance with the accustomed physician-patient relationship of civilian practice. It is one reason why considerable readjustment of both thinking and action is required on the part of all who enter military service from civilian life and practice.

Medicomilitary care is carried out in the following echelons (fig. 1):

1. In the first echelon, the trained medical aidman provides first aid and conveys or directs the casualty to the battalion aid station, in which he is examined by a medical officer. Because of the proximity of the aid station to the battle line, its mission is simply to provide essential emergency care and to prepare the casualty for evacuation to the rear.

2. In the second echelon, care is rendered at an assembly point or clearing station. Here the casualty is examined, and his wounds and general status are evaluated, to determine his priority, as a single casualty among other casualties, for continued evacuation to the rear. Emergency care is continued, and, if necessary, additional emergency measures are instituted, but they do not go beyond the measures dictated by the immediate necessities.

3. In the third echelon of care, the casualty is treated in a medical installation staffed and equipped to provide initial wound surgery, the proper resuscitation for it, and the necessary postoperative and adjuvant treatment. Casualties whose wounds make them nontransportable receive surgical care in a field hospital close to the clearing station. Those whose injuries permit additional transportation without detriment receive it in an evacuation hospital somewhat farther to the rear.

4. In the fourth echelon of medical care, the casualty is treated in a general hospital staffed and equipped for definitive care. General hospitals are located in the communications zone, which is the support area to the combat zone or army area. The mission of these hospitals is the rehabilitation of casualties to duty status or, if rehabilitation cannot be accompished within the permitted holding period, their evacuation to the Zone of Interior for reconstructive surgery and other treatment.

The Logistic Problem

It is important to remember that there is a logistic problem in the care of all battle casualties. Military medical facilities must always be in a state of readiness to move according to the dictates of the tactical situation, though this necessity in no way lessens the responsibility of the medical service for providing for the medical care and disposition of casualties.

In spite of the exceedingly unfavorable circumstances of war, movement of casualties from echelon to echelon in the forward area (that is, the area between the line of battle and the evacuation hospital) is usually accomplished within a matter of hours. Distances vary with the local tactical situation but, generally speaking,

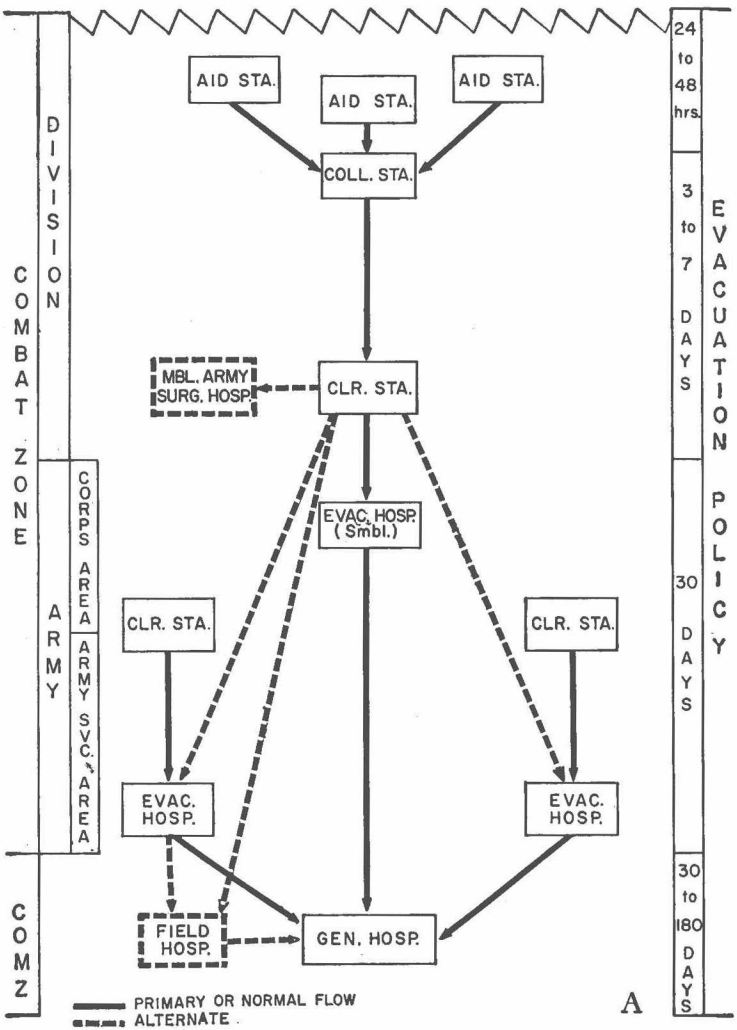

FIGURE 1.—Evacuation and hospitalization in combat zone. A. Organization in World War II.

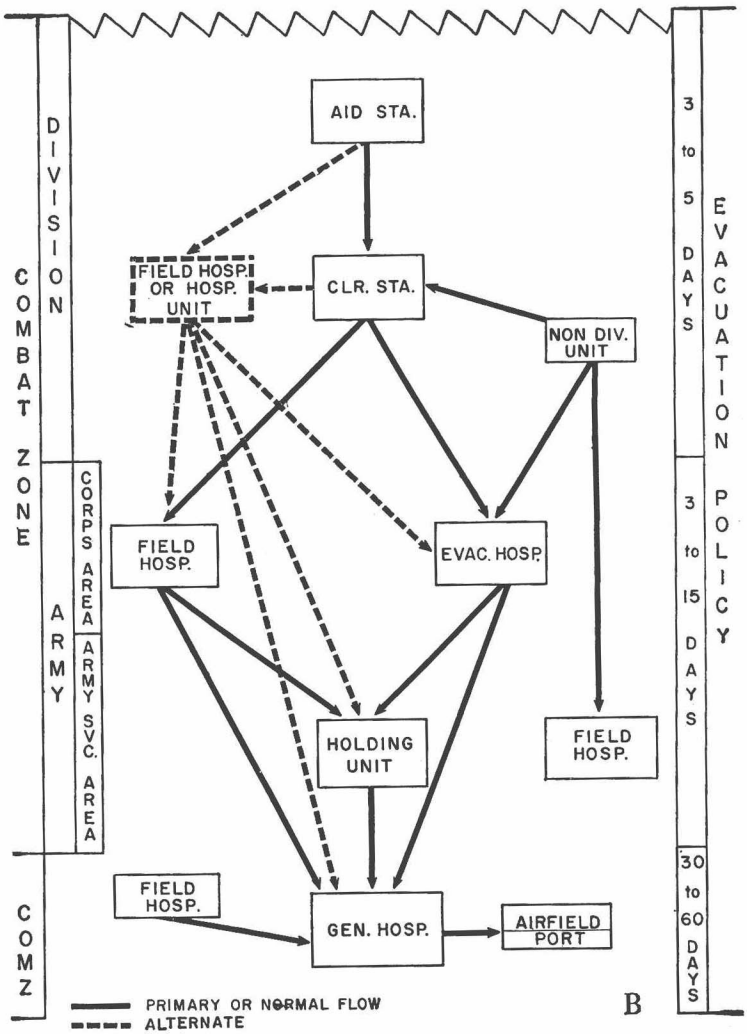

FIGURE 1—Continued. B. Present organization.

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casualties travel a distance of many miles between the battlefront and the field hospital and an additional distance if they receive initial wound surgery in an evacuation hospital.

As a rule, battle casualties receive initial care, including initial wound surgery, within the forward area, but modern air evacuation, which significantly reduces the time-space factor, may alter the older concept by transporting casualties directly into the communications zone for their initial treatment. Furthermore, modern concepts of increased mobility for all fighting units, as well as the vulnerability of even remote areas to aerial or missile attacks, require that all medical units, wherever they are located and whatever their original mission, must be prepared to receive and treat casualties as circumstances require. In modern warfare, the battlefront is likely to be highly fluid. Here, again, medical officers must be prepared to adjust themselves realistically to urgent needs as they arise.

THERMONUCLEAR WARFARE

The application of thermonuclear energy to instruments of war, together with the proved capabilities of this new force for mass destruction, has brought about far-reaching changes in all military planning and training to cope with the flood of problems introduced by these new developments.

The casualty-producing energies released by thermonuclear detonations, whether of cannon, rockets, guided missiles, or bombs, are blast, heat, and ionizing radiation. These effects which occur immediately and simultaneously are augmented by damage from falling structures, secondary fires, and delayed fallout of particles contaminated by radioactive materials. Multiple injuries will therefore be prevalent among the casualties, and medical care will be complicated by the fact that each of these injuries must be evaluated as to its significance in terms of priority for treatment and survival.

The chief problem of thermonuclear warfare arises from the sudden precipitation of enormous numbers of casualties on surviving medical capabilities. The term "mass casualties" is now