WHO-PAHO Guidelines for the Use of Foreign Field Hospitals in the Aftermath of Sudden-Impact Disasters

Foreign Field Hospitals

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Contents

Introduction 5

Early Emergency Medical Care 7

Follow-up Trauma and Medical Care 10

Donation of FFH (Without Personnel) to Serve as a Temporary Hospital 16

Introduction

Both natural and complex disasters may produce a massive number of casualties that outstrip the ability of the local health care system to provide the required care. Damage to the health care infrastructure will further compromise the delivery of health services.

As a consequence, affected and collaborating countries are anxious to find ways to provide immediate medical care to victims. An obvious solution would seem to be the dispatch of mobile field hospitals to the stricken area.

In complex disasters (civil conflicts and wars), field hospitals—civilian or military—have been used with notable success. However, the experience in the aftermath of natural disasters in developing countries has proven to be less satisfactory in terms of effectiveness and cost.

These perceived shortcomings prompted the World Health Organization (WHO) and the Pan American Health Organization (PAHO) to convene a meeting of experts to review guidelines regarding the dispatch or donation of foreign field hospitals (FFH) to areas in which a disaster has compromised the delivery of health services, particularly in developing countries.

Systematic and independent evaluation of FFH used in disasters will be required to further refine the following recommendations.

Definition

For the purpose of these guidelines, a field hospital is defined as a mobile, self-contained, self-sufficient health care facility capable of rapid deployment and expansion or contraction to meet immediate emergency requirements for a specified period of time.

The field hospital may be temporarily dispatched with personnel or donated without personnel.

It is understood that: field hospitals are deployed only: (a) following an appropriate declaration of emergency and a request from the health authorities of the affected country; (b) when they are integrated into the local health services system; and (c) when the respective roles and responsibilities for their installation and operational sustainment have been clearly defined.

Uses for Foreign Field Hospitals

Field hospitals may be used to substitute or complement medical systems in the aftermath of sudden-impact events that produce disasters for three distinct purposes:

1. Provide early emergency medical care (including Advanced Trauma Life Support—ATLS). This period lasts only up to 48 hours following the onset of an event.

2. Provide follow-up care for trauma cases, emergencies, routine health care and routine emergencies (from day 3 to day 15).

3. Act as a temporary facility to substitute damaged installations pending final repair or reconstruction (usually from the second month to two years or more).

The FFH should meet some essential requirements to ensure that it benefits the affected population. Ideally, it should also meet some additional (optional) criteria.

The World Health Organization (WHO) and the Pan American Health Organization (PAHO) suggest the following "essential requirements" and "additional (or optional) criteria" for each intended purpose.

Early Emergency Medical Care
(First 48 Hours)

Essential requirements:

- **Be operational on site within 24 hours after the impact of disaster**

The interval must begin from the time of occurrence of the mass casualties and not, as usually advertised by donors, from the time the request is acted upon by the assisting country or organization. This is an essential medical requirement for life-saving response and is not an administrative condition that can be waived.

- **Be entirely self-sufficient**

In the early phase, FFH should be able to operate with a minimum of support/utilities from the affected community. At the least, they should have sufficient power generating capacity and medical supplies and equipment to operate independently for the first 48 hours. The staff should require minimal or no support (food, accommodation, etc.) from the host community.

- **Offer comparable or higher standards of medical care than were available in the affected country prior to the precipitating event**

The medical personnel should be qualified and have prior experience in managing mass casualties (including the concept of triage) and in treating victims with acute, multiple injuries.

Optional criteria:

- **Be familiar with the health situation and culture of the affected country**

Sharing the same language and culture or being familiar with the health systems and level of technology of the affected country are highly desirable even in the immediate aftermath of a natural disaster (first two days).

In practice, those medical facilities that are available within the first 24 hours most likely will come from the closest neighbors who share the same language and culture.

Issues that must be clarified before accepting/requesting a field hospital for early emergency trauma/medical care (first 48 hours).

Questions both parties (recipient and donor) should ask:

Questions	Comments
When can the FFH actually and effectively start assessing and treating victims?	If not within 24 hours of the impact, consider accepting this facility using the criteria for secondary care and routine emergencies (3–15 days). Beware of vague answers or misleading statements that indicate that the hospital can be "activated" or mobilized within, for example, 6 hours. What you need to know is when it can be operational on site.
Is the hospital fully self-sufficient (including power and water)? For how long?	Only self-sufficient hospitals should be accepted.
Type of equipment and services available? Number of beds? Stabilization and transfer of patients only? Full operating room capacity? General anesthesia? Blood bank and laboratory?	The reply will tell you what you can reasonably expect in terms of performance and services.
Type of medical staff available? Number, qualifications and seniority? Prior experience in mass casualty management?	Medical staff inexperienced in disasters, too junior or from a specialty unrelated to trauma/medical emergencies are not as useful as emergency physicians and trauma surgeons from a busy trauma department.
How long can the FFH stay?	Longer is not necessarily better. FFH staff unfamiliar with local culture and health services quickly outlive their usefulness (and welcome). Needs change after a few days, as should the profile of the assisting medical staff.
What is the most appropriate location for installation of this FFH?	This depends on medical needs (identified by recipient country), logistical imperatives (roads, infrastructure) and access by victims. Generally, FFH are better placed in the proximity of a local health facility (even if it is out of service).

Follow-up Trauma and Medical Care

Day 3 to Day 15

Following the first 48 hours when provision of acute care does save lives, the health services are progressively overwhelmed by the need for secondary or maintenance care for the trauma victims as well as the demand resulting from the rapid emergence of normal emergencies or routine medical care. The health facilities may not be fully operational and staff will urgently need some rest and time to care for possible personal losses.

When the local health installations remain functional, this need of external assistance is better met by medical brigades or teams from within the country or from culturally compatible neighbors rather than by expensive or bulky FFH.

The primary role of the FFH is to temporarily fill the gaps in emergency medical assistance resulting either from the large number of casualties or the inability of the local health services to respond to normal emergencies. The duration of the FFH operations should usually not exceed 15 days but can be extended at the specific request of the affected country.

Essential requirements:

- **Be fully operational within 3–5 days**

Early arrival at the site is no longer a matter of life or death as almost all victims will have received acute care from the local health workers and the few FH or medical teams from outside the disaster-affected area who were able to arrive in time to provide effective medical care.

A few hours may not make a significant difference after the first 24 hours, so hasty decision-making by the recipient government is counterproductive. Nevertheless, in order to assist with the provision of health care that meets immediate needs of the affected community, such field hospitals must be operational within three to five days following the impact.

- **Minimal need for support from the local communities**

The FFH must be self-sufficient (staff, medicines, equipment and supplies, orthopedic surgery and minor interventions, anesthesia, external consultation and accommodation of the FFH staff). Water and power may be restored at least for critical facilities in the community affected. The FFH may reasonably expect to receive some support from the local authorities. However, due to the expected unreliability of these services, the FFH should be able to provide its own source of energy and water when necessary.

- **Basic knowledge of the health situation and language, and respect for the culture**

The FFH personnel is expected to initiate or continue to provide services after the initial acute care phase (first 48 hours) and must be able to communicate with the patients, the local authorities and colleagues in the health services. The staff should have some familiarity with endemic local pathology. Some of the staff should speak the local language or interpreters must be provided.

Medical personnel utterly unfamiliar with the environment have proven to be not only of limited utility but often have turned out to be a burden and a source of contention for the host community.

- **Availability of selected specialties**

The FFH must include health professionals in areas other than orthopedics, such as general surgery, anesthesiology, internal medicine, gynecology and obstetrics, and pediatrics with the paramedical and support staff to meet the type and variety of services they will be called on to provide. The equipment and facilities should allow assessment and treatment of all patients regardless of age or gender.

- **Sustainability (appropriate technology)**

The bulk of the assistance from the FFH may consist of external consultations and routine (non-disaster related) hospital care. FFH do not stay for extended periods of time and the local health workers are expected to assume full function within a few weeks after the precipitating event.

The quality and sophistication of the care provided by the FFH must be sustainable by the local health services once the FFH has departed. Short-lived availability of higher technological care (diagnosis, medicines, etc.) often raises unrealistic expectations from the population and leaves the local health services in a weakened position.

- **Evaluation of the cost-effectiveness and cost-benefit associated witht he use of the FFH**

Setting up a field hospital is an expensive undertaking. A detailed agreement between the recipient and donor must be made specifying who will be responsible for costs associated with shipment, site preparation, maintenance, operational costs, staffing, etc. Donors sometimes expect the host country to cover local expenses involved in operating a field hospital(e.g., utilities, fuel, and other support), but local health services are not usually able to meet these costs.

Optional criteria:

- **Cultural similarity**

Familiarity with and a respect of the local culture and language are essential requirements. Ideally, the staff should share the same language and culture. Dissimilarity of culture and language has resulted in misunderstandings between the external helpers and the local staff.[1]

- **Broad range of medical disciplines**

The FFH should include a broad range of clinicians and public health professionals. Epidemiologists, hygiene/sanitation experts and mental health experts have proven to be valuable assets.

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1 In most instances, the time of the medical staff of a FFH is dedicated increasingly to providing external (ambulatory) consultations to outpatients. The total number of consultations will far exceed the normal rate for reasons not necessarily associated with the disaster but rather with poverty or poor coverage of the health services. Increase in demand for services can be attributed to:

- Prestige of foreign doctors;
- Availability of new diagnosis, treatment or medicines;
- Unformulated wish for second opinions on minor ailments; and/or
- Economic incentives (absence of a token fee for consultations or medicines).

The short duration of this otherwise valuable assistance leaves the local staff in a debilitated and uncomfortable position. Statistics on numbers of consultations during this period also tend to exaggerate the impact of the disaster and the relevance of the FFH.

Issues to clarify before accepting/requesting a field hospital for follow-up care (day 3 to day 15).

Questions the recipient government should ask:

Questions	Comments
When can the FFH actually and effectively start assessing and treating victims?	If not within five days of the impact, postpone the decision until you have completed a detailed assessment of the needs and residual health capacity. Beware of vague answers or misleading statements. What you need to know is when it can be operational on site.
Is the hospital self-sufficient? For how long? What may be required from the host community: prepared site with drainage, water, power (specs?), interpreters, food, and accommodation for staff? When?	Normally, only self-sufficient hospitals should be accepted. However, after 48 hours, you should know where basic utilities (power, water, etc.) are available and can be provided. The reply will assist you in deciding where to locate this FFH: near a partly functional hospital or one that is totally destroyed or out of service.
What are the financial implications for the host community or health services?	Who will pay for the utilities, fuel and other support? Exemption of VAT and other taxes? This is a sensitive issue but must be answered as completely as possible. Many FFH from less wealthy countries expect the host country to cover all local expenses. Local health services are usually unable to do so.
Type of equipment and services available? Number and type of beds? Trauma care only? Surgical capacity for most emergencies (including geriatric, obstetric and pediatric)? Diagnostic facilities (lab, X-ray)?	The reply will tell you what you can reasonably expect in terms of performance and services. Keep in mind that in large part the demand will be for routine emergencies and chronic care of a general population.

Issues to clarify before accepting/requesting a field hospital for follow-up care (day 3 to day 15).

Questions the recipient government should ask:

Questions	Comments
Will your stock of medicines be sufficient for the anticipated duration of the mission and the local health situation? Is your logistical unit able to provide you with the required supplies?	Beware that some groups may use medicines that are expired or not registered in the country (refer to WHO guidelines on donations).
Are you familiar with and willing to follow the Ministry of Health or WHO treatment guidelines observed in the country?	Share any relevant standard treatment schedules or guidelines the Ministry of Health may have issued. The treatment offered by FFH should be similar to that normally provided in the host country (e.g., oral rehydration therapy, standard TB drugs, etc.).
Medical staff: Number, qualification and seniority? Language and culture? Insurance and liability coverage?	The staff should include professionals able to provide general care for the most common problems in the country: diarrhea; acute respiratory infection; endemic diseases; geriatric, obstetric or pediatric emergencies, etc.
Will the medical staff be available and equipped for visits to outreach areas?	The use of FFH personnel and resources to visit neighboring communities that do not have access to health facilities is a definite asset.
Will the FFH include public health experts? Epidemiologist? Water and sanitation engineer? Mental health specialist?	This is not a prerequisite but these experts are sometimes more useful than a generalist.
How long can you stay?	Longer is not necessarily better. FFH unfamiliar with local culture and health services quickly outlive their usefulness (and welcome).
Who is paying for what?	Details of costs are to be identified and an agreement worked out between donor and recipient specifying who will be responsible for paying for what (e.g., site preparation, transport, operational costs, waste disposal, maintenance and repairs).

Issues to clarify before accepting/requesting a field hospital for follow-up care (day 3 to day 15).

Questions the donor should ask:

Questions	Comments
Where (city, village, or community) should we install the FFH? Available utilities: water, power, etc? Nearest health facility or hospital? Is the site prepared to install the FFH?	Details on the site requirements (area, drainage, etc.) and the need for utilities should be provided to facilitate decision-making by the authorities. Field hospitals are expected to be self-sufficient.
What will be provided as a counterpart contribution (no cost to the donor) by the host country? Site preparation, utilities, security, additional staff, transportation, accommodation?	Ideally, the FFH should be donated with a budget to cover all local expenses, from utilities to hiring local staff. If this is not the case, specify in advance what you expect as a counterpart contribution from the host country.
Whom should we report to in the capital and locally?	The FFH must report to the regional/local health authority. Clarify the channel: The director of the hospital? Someone else?
Will the Ministry of Health assign a permanent liaison officer to the FFH?	A liaison officer assigned from the host Ministry of Health to the FFH will facilitate smooth coordination.
Size of the population? Number and severity of injuries? Any particular health problem in this community?	This information is important but often is unavailable at the time of deployment.
Status of the (nearest) local hospital or health center? What type of services is it able to offer? If damaged and out of service, what will be the role of the local health staff? Should they be absorbed and utilized?	It is essential to determine whether the FFH will supplement or replace the local facility. Local health workers must be integrated into the FFH if the local facility is destroyed.
What information and reports will the host country require? Should the local reporting format be used or adapted?	Reporting on activities and diseases in a format required by the host health services is an obligation of the FFH, including military ones.

Donation of FFH (Without Personnel) to Serve as a Temporary Hospital

(from Second Month to Several Years)

The use of donated, transportable hospitals may appear to uninformed decision-makers as the ideal no-cost, ready-to-use alternative pending the repair or reconstruction of a major health facility. However, it is not the miracle solution anticipated by health authorities of the host country.

The deployment of FFHs presents particular challenges and should be considered cautiously. In the aftermath of recent disasters, hasty political decisions and unrealistic expectations have caused problems ranging from inadequate facilities for patients and staff, unexpected costs to the host and political misunderstandings between both parties.

National authorities should approach the issue of a donation of a FFH in terms of providing a *durable, temporary* hospital (rehabilitation phase) until a permanent solution (reconstruction phase) is available. A mobile FFH is one of the many alternatives for the provision of routine health care and must be considered on the basis of cost-effectiveness and cost-benefit.

Essential requirements:

• Lack of other more cost-effective alternatives

Donating field hospitals involves serious expenditures for both the donor and recipient (transportation, maintenance, utilities). Field hospitals are not cost-effective from either the recipient's or donor's point of view.

Given the expected duration of the need for temporary facilities (years and not months as generally expected by local health administrators) and the technical shortcomings of this solution, other and more suitable temporary facilities should be proposed using the funds assigned to this highly visible measure. It is recommended that the donor consider building a more durable temporary facility using, by order of priority: pre-fabricated modules, metal containers, wood and plywood, and adaptation of an existing building.

Should funds be earmarked exclusively for the donation of a FFH, some additional conditions should be met.

• Appropriate standards for both the patients and the staff

Considering the duration of the use of the temporary facilities and the admission of long-term patients, the FFH should provide a level of comfort for patients, health workers and support personnel in terms of space, temperature control and resistance to water and other environmental elements appropriate to the local climatic conditions.

Similarly, the donated medical equipment should meet the standards to which the health services are accustomed. These standards will vary from country to country and from urban to rural areas.

• Design for use until final reconstruction

A temporary accommodation should be able to withstand abuse and poor maintenance, and remain water-tight and functional

for the anticipated duration of reconstruction of the damaged hospital (generally two years or more). Tents and inflatable modules deteriorate due to lack of maintenance and careless handling by the staff and public. Under the best care, tents must be replaced every six months. Steel containers have a much longer useful life making them a more durable choice. Prefabricated modules also offer attractive solutions and allow more flexibility in selecting or using medical equipment.

The initial time frame for a field hospital given as a donation should be for a period of one year with the possibility of extension only by agreement between the donor and recipient. (This time limit should serve to stimulate national officials to complete repairs/rebuilding of the damaged/destroyed facility.)

- **Installation and maintenance support provided at no cost to the affected country**

Deployment and maintenance of a field hospital is a complex task requiring significant support from the donor institution. A formal agreement between the donor and recipient for a mutually agreed period of time[2] must be formulated, including:

- Operational and financial responsibility of the donor for on-site installation of the facility as well as its "sustainment" (this military term includes daily maintenance, preservation and preventive replacement);
- Provision of spare parts especially for equipment not available locally;
- Training of the medical/technical staff and the maintenance personnel in the use and care of the equipment;
- Clear definition of responsibilities of each party including the conditions for transfer of responsibilities;
- Mechanism for joint evaluation of the hospital use, its cost-effectiveness and cost-benefit.

2 The agreement should cover the replacement of all tents and similar material every six months. Costs for such sustainment over one year will exceed those required for building temporary facilities that could last for several years.

Optional criteria:

Attention to numerous health considerations (water and sanitation) and technical factors (e.g., voltage, type of air conditioning, need for fuel) is important. The services of experienced logisticians familiar with this type of equipment should be sought before a final decision is made.

Issues that must be clarified before accepting the donation of a foreign field hospital to serve as a temporary hospital (2 months to 2+ years).

Questions the recipient country should ask:

Questions	Comments
How many patients can the proposed FFH accommodate?	If it does not meet your needs, seek another solution since exceeding this capacity will shorten considerably the life expectancy of the facility.
Can the capacity be expanded in a modular way?	Seek advice from professionals. Beware of promotional statements motivated by the public relation value of the donation of a FFH.
How long is this hospital designed to last, keeping in mind the climate and other conditions?	Do NOT underestimate the time required for completing extensive repairs of the affected hospital (over two years!).
Is it made of steel container modules, tents or inflatable modules?	If FFH consists of tents or inflatable modules, turn down the offer and seek another solution.
What is the date of manufacture?	Most military field hospitals are not available for donation unless 20–30 years old.

Issues that must be clarified before accepting the donation of a foreign field hospital to serve as a temporary hospital (2 months to 2+ years).

Questions that the recipient country should ask:

Questions	Comments
Is the donor willing to assume operational and financial responsibility for complete installation (including site preparation, drainage, etc.) as well as daily and periodic maintenance (including replacement as needed) for the intended duration?	Maintenance of FFH is demanding, costly and time-consuming. Hospital engineers are not equipped and are too busy for this task. If the donor is not willing to assume full responsibility (assigning funds and staff), seek another alternative in order to avoid disappointment and misunderstandings from all parties.
Are those funds potentially available for the building of more durable temporary facilities?	Considerable funds are required, often from both the donor and the recipient, to make a FFH serve satisfactorily as a temporary civilian facility. If the answer to the question is "yes", suggest that the donors build a temporary wood/plywood or metal container facility.
If the funds are earmarked exclusively for the donation of this FFH, technical experts should discuss:	
Site requirements	Drainage of the site is critical. Access to utilities and sewage cannot be improvised.
Power and utility needs (and cost)	Military equipment may have special requirements for fuel (aviation) or power.
Specifications of the medico-surgical equipment	In most instances, the hospital staff will find it more convenient to salvage equipment from the damaged hospital rather than use outdated material designed for military use.
Air-conditioning: Compatibility with isolation of patients with infectious diseases	A closed circuit system is most common and increases the risk of circulating pathogens.
Is the donor willing to support the cost of the travel of experts from the recipient country to discuss technical specifications with medical logisticians who are familiar with specific equipment?	Many additional questions will need to be answered by experts before deciding whether the donation will benefit the patients rather than becoming a source of embarrassment.

WHO-PAHO Guidelines for the Use of Foreign Field Hospitals in the Aftermath of Sudden-Impact Disasters

Natural and complex disasters can cause a dramatic increase in the demand for emergency medical care. Local health services can be overwhelmed, and damage to clinics and hospitals can render them useless.

Many countries maintain mobile field hospitals for defense or humanitarian purposes. Dispatching these facilities to disaster-affected countries would seem to be the ideal response to emergency medical needs. Unfortunately, experience has shown that in the case of natural disasters field hospitals often have not met the expectations of recipients and donor institutions.

In July 2003, the World Health Organization and Pan American Health Organization sponsored a workshop in El Salvador to discuss the pros and cons of using foreign field hospitals in the aftermath of natural disasters. These guidelines are the result of that workshop.

The workshop participants identified different phases when foreign field hospitals and specialized medical personnel are most useful. They can provide advanced trauma care and life support if at the disaster site within 48 hours of the impact of an event; they would provide follow-up care for trauma victims and resumption of routine medical care in the two weeks following the event; during rehabilitation and reconstruction phases (from two months to two or more years), a field hospital might serve as a temporary replacement for damaged health facilities. These guidelines propose conditions that field hospitals and their staff should meet for each of these phases. The guidelines also outline issues that authorities in donor countries and disaster-affected countries should discuss before mobilizing a field hospital.

This publication can be viewed online at
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