Humanitarian Practice Network
HPN
Managed by
Humanitarian Policy Group

Number 60
June 2007

Network Paper

Mobile Health Units in emergency operations

A methodological approach

Commissioned and published by the Humanitarian Practice Network at ODI

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In brief

• Mobile Health Units are often used to provide health care in unstable situations, such as armed conflicts, where fixed services cannot function for reasons of security. They are, however, a controversial way of providing health care, because of their cost, their irregular service provision and their logistical complexities.

• Drawing on the experience of the International Committee of the Red Cross (ICRC) and on the relevant literature, this Network Paper provides a decision-making framework for health care workers considering whether to use Mobile Health Units. The paper gives an overview of the place of MHUs in a health care system, and provides the theoretical background to the decision-making process around how and when to set them up. It also elaborates on the strengths and weaknesses of Mobile Health Units, and uses practical examples both from the literature as well as from the authors' own field experiences to illustrate its argument.

• The paper concludes that, although a logical approach in contexts where traditional permanent (fixed) health structures are unavailable, absent, overburdened or dysfunctional, other options should be considered before embarking on the wholesale substitution of health care services through Mobile Health Units or other structures.

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Printed and bound in the UK

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ISBN: 978 0 85003 849 1
Price per copy: £4.00 (excluding postage and packing).

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Introduction

Mobile Health Units (MHUs) are often used to provide health care in unstable situations, such as armed conflicts, where fixed services cannot function for reasons of security. They are, however, a controversial way of providing health care, because of their cost, their irregular service provision and their logistical complexities. Drawing on the experience of the International Committee of the Red Cross (ICRC) and on the relevant literature, this Network Paper provides a decision-making framework for health care workers considering whether to use MHUs. It argues that, although a logical approach in contexts where traditional permanent (fixed) health structures are unavailable, absent, overburdened or dysfunctional, other options should be considered before embarking on the wholesale substitution of health care services through mobile health units or other structures.

The Preamble to the Constitution of the World Health Organisation (WHO), adopted by the International Health Conference in New York in June 1946, states that 'Governments have a responsibility for the health of their peoples which can be fulfilled only by the provision of adequate health and social measures'. One should always endeavour to ensure that the government authorities fulfil their responsibilities towards populations affected by armed conflict. This is also required by the Geneva Conventions of 1949, which outline roles and responsibilities in conflict situations, and which have now been signed by all independent states. The ICRC, whose actions are based on the Conventions, therefore takes the view that, 'While circumstances may lead the ICRC to provide services for affected groups, it is not the organisation's role to relieve the authorities of their responsibilities'. The ICRC will continue to urge them to ensure delivery of those services and fully meet their obligations.

This paper is intended to guide public health professionals providing health services at primary level in the process of deciding whether to include Mobile Health Units in their programmes. It gives an overview of the place of MHUs in a health care system, and provides the theoretical background to the decision-making process around how and when to set them up. The paper elaborates on the strengths and weaknesses of Mobile Health Units, and uses practical examples both from the literature as well as from the authors' own field experiences to illustrate its argument.

What are Mobile Health Units?

Mobile Health Units are part of a strategy for the provision of occasional ambulatory health services. The choice of services offered varies, but typically includes a range of preventive measures (immunisation, health promotion, disease screening), as well as curative services (usually surgical or dental care). Services are by nature intermittent, which means that Mobile Health Units suffer from intrinsic constraints which must be taken into account before a decision is made about which services to provide.

The choice of services (vaccination, health promotion, preventive activities, transfer of patients, curative care) must be appropriate, and each activity must be carefully planned, in particular the mode of action, human and material resources, timeframe and logistics. These activities must respond to priority pathologies, determined on the basis of mortality and morbidity rates. Mobile Health Units can be used effectively to provide a package of selective primary health services. Preferably, there should be a fixed health facility to which patients can be referred.

The MHU strategy must remain exceptional, to be used only as a last resort with the aim of providing health services to population groups which have no access to a health care system. Mobile Health Units may be considered for a short transition period, pending the reopening of fixed health facilities or resumed access to such facilities.

Chapter 2
Health care systems and Mobile Health Units

A health system can be described as a pyramid.[1] Specialised health facilities are at the apex of the pyramid, while general health services, including primary health care (PHC), are at the base. Mobile Health Units are part of primary health care, but may also represent more specialised levels of health care, for instance clinics performing ophthalmic surgery.

The most basic health facilities (health posts in Figure 1, but in some countries these may be health centres or consultations given by a general practitioner) are responsible for all or part of primary health care services. The primary health care system as outlined in the Alma Ata declaration constitutes a range of activities and services.[2] These may be divided into several categories: food security, water and sanitation, health promotion, preventive activities, curative services, rehabilitation and social assistance (as shown in Figure 2, page 4).

In situations of armed conflict, the range of PHC services that can be provided is severely restricted. This means that, in any given situation, it is essential to select the priority services among the spectrum of PHC services. Such a strategy has been proposed as an interim approach to disease control in developing countries.[3] In conflict situations, where it is rarely the case that all services can be provided, selection will be necessary.

Emergency medical and health operations, as opposed to regular PHC services, require careful analysis and decision-making before selecting the response that is appropriate to the needs of conflict victims. The first steps involve analysis:

- of the political situation; and
- of the health situation.

Continued analysis of developments in the political situation and the health crisis is essential. To decide on appropriate action, one must assess the political situation on the one hand, and the health situation on the other. The various types of health crisis can be distinguished on the basis of the relationship between health needs and health services, as follows:

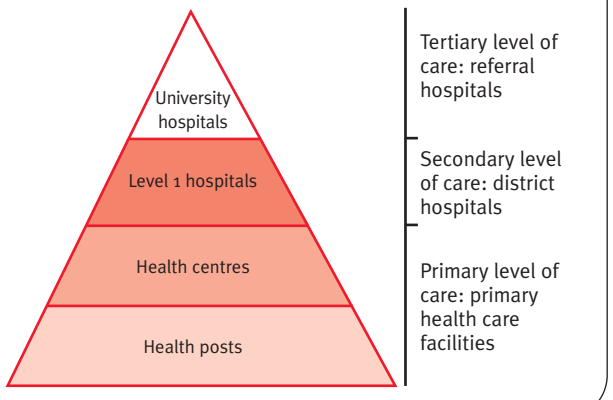
- emerging crisis and pre-crisis situations
- acute crisis
- chronic crisis
- post-crisis situations.

In framing a response, the following decision steps are involved:

- demographic decisions: what is our *target population*?
- institutional decisions: what *modes of action* should be chosen?
- strategic decisions: *what strategy* are we going to use (ranging from emergency medical and health activities to PHC)?
- operational decisions: what *services* are we going to provide?
- decisions relating to timing: *how long* are we going to provide these services for?

Figure 1

The health care pyramid



To these a further category will be added:

- decisions as to *priorities*: what activities shall we start with?

It is important to regularly raise the question of what mode of action should be adopted for each activity; this is explained in the section below.

Modes of action

In order to remind governments of their responsibilities under the WHO constitution and the Geneva Conventions, several different modes of action can be adopted. The ICRC usually uses one of the following, but other modes (e.g. advocacy) are possible.

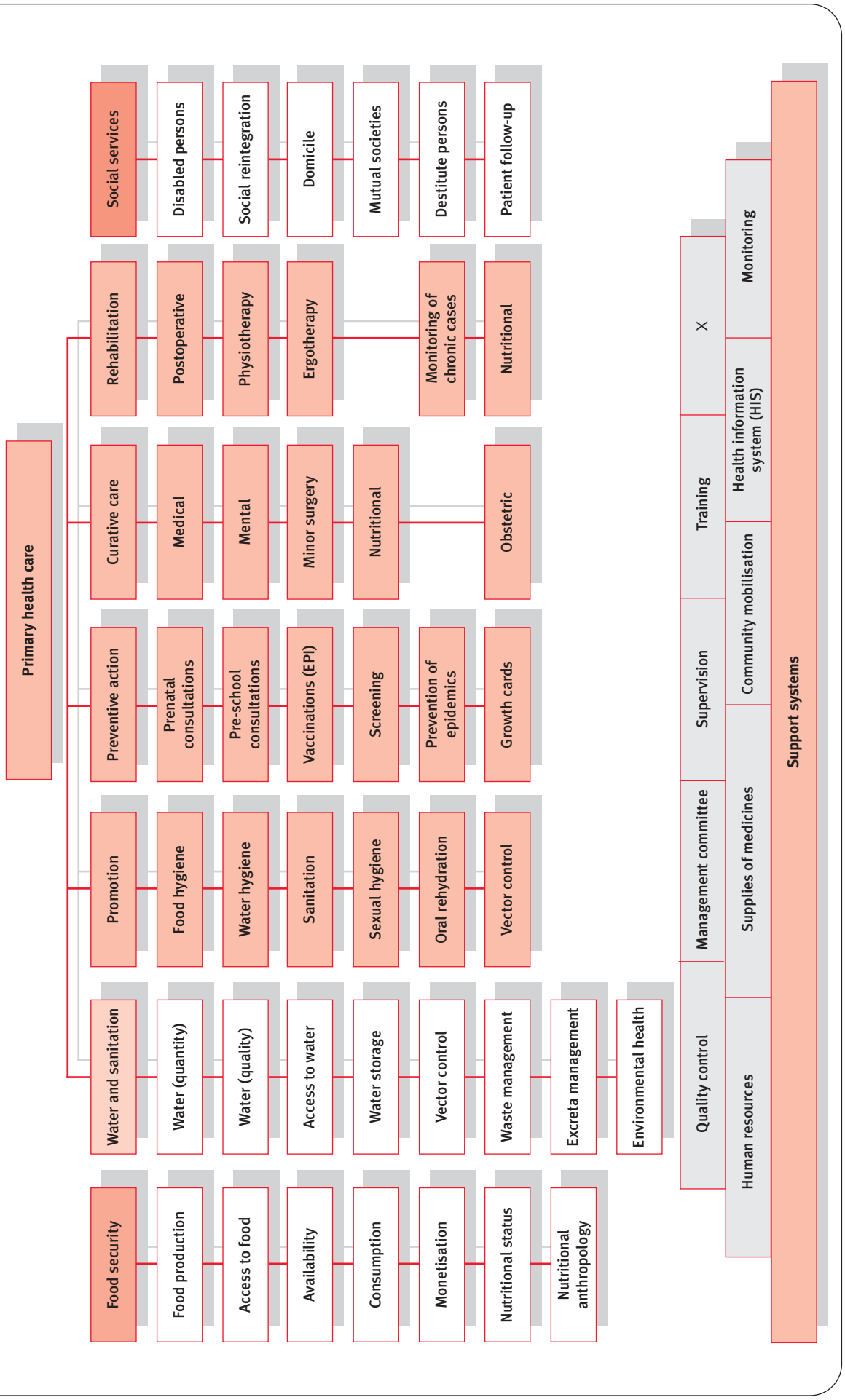
Persuasion: bilateral and confidential dialogue

The purpose of persuasion is to convince the health authorities that they must fulfil the obligations incumbent on them, namely to preserve the life and health of the population.

Mobilisation: seeking the support of others

Mobilisation means seeking support from third parties who can exert some influence over the authorities we are trying to convince. This request for support is enshrined in Article 1 common to the four 1949 Geneva Conventions (the obligation to 'ensure respect'); in situations of armed conflict, the Geneva Conventions are applicable.

Figure 2
The constituents of primary health care



Support: cooperation with ineffectual authorities

Support activities are aimed at the authorities themselves, and are intended to help them to fulfil their responsibilities. Such support may be in many forms: material support and help with training, for example, or assistance in the areas of management and coordination. It presupposes a relationship of trust with the authorities, the cooperation of those authorities and prior agreement on the objectives to be achieved and the appropriate timeframe.

Substitution: the direct provision of assistance in place of ineffectual authorities

It is often the case in situations of armed conflict or internal violence that the authorities lack the means or the will to meet humanitarian needs in their countries. It sometimes happens that there are no, or no longer, any authorities at all. In such cases, needs have to be met in a direct manner, by providing direct assistance to the victims. These activities amount to substitution if the organisation acts as a replacement for the authorities in charge.

Denunciation: resorting to public condemnation

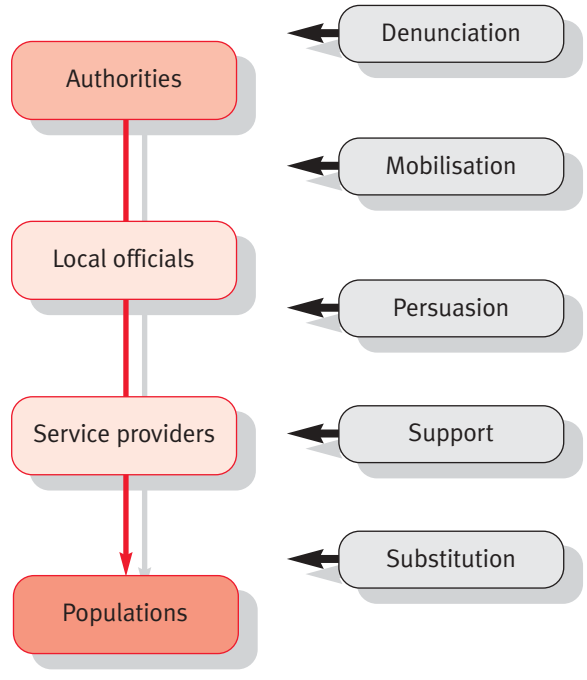
Denunciation means issuing a public statement to the effect that observed actions amount to a violation of international humanitarian law or of fundamental rights. The public allegation of violations constitutes the final stage of the process. Resort to denunciation should be exceptional.

These modes of action are not mutually exclusive, as a combination is essential for the implementation of the strategy selected: support may enhance the effect of persuasion, and the aim of mobilisation may be to obtain support.

Figure 3 shows the different modes of action and the corresponding interlocutors.

Figure 3

The ICRC's modes of action

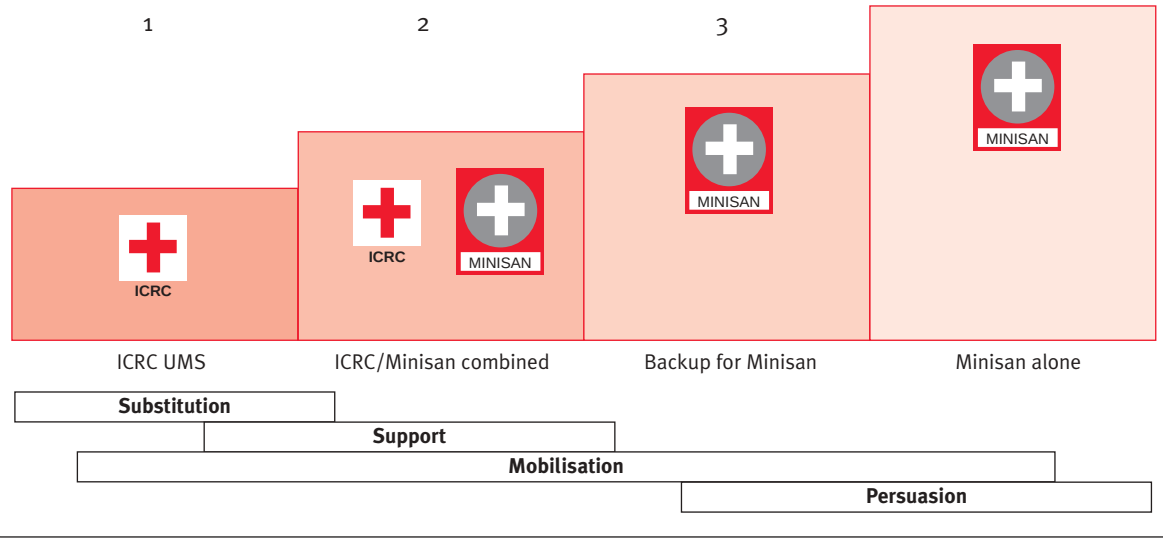


The link between modes of action and MHU strategy

The support provided to health care services by the ICRC in Colombia in 2005 offers a good illustration of the various possible stages in cooperation between a ministry of health (in this case Minisan) and the ICRC. In this situation, the different modes of action are complementary.

Figure 4

ICRC support to health services in Colombia, 2005



The ideal situation is obviously one in which the ministry of health takes complete responsibility for the country's population. In the late 1990s and early 2000s, however, the ICRC was the only humanitarian organisation in Colombia whose presence was accepted by the armed groups, and it therefore had to act as a substitute for the ministry of health (No. 1 in the figure). After months of persuasion, this mode of action became unnecessary, and the ICRC moved towards support and back-up for Minisan. In some regions, the ICRC seconds its staff (usually at least one local doctor) to the ministry of health, and guarantees security – as in No. 2 in the figure. The third and last stage is support from the ICRC for a service which is entirely the responsibility of the ministry of health; the ICRC is there only for security reasons, following negotiations with the various armed groups (No. 3 in the figure). Every activity and mode of operation of an MHU must be carefully planned in order to avoid substitution and to encourage independent action on the part of the ministry of health in rebel-held zones.

Key messages from a review of the literature

A review of the literature for Mobile Health Units revealed the following:[4]

- MHUs can be an effective strategy, but they rarely have lasting effects. They are often used as a last resort to reach population groups cut off from health services. The main objective of Mobile Health Units is to improve the access of these population groups to the health system.
- MHUs can be used for vertical programmes reaching out to underserved areas. These programmes can be preventive, such as screening for cancer in urban areas, and are often used as such in developed countries (examples include cancer screening for African-Americans in Pittsburgh in the United States and breast screening for women in London's East End), or can be curative (such as internal medicine clinics for service veterans in Colorado).
- In developing countries, MHUs are often used to bring vertical programmes to remote areas: dental care in South Africa, cleft palate surgery in Uganda, elective surgery in the Central Amazon Valley, Brazil, schistosomiasis control in Botswana, malaria clinics in Thailand, cervical cancer screening in South Africa, leprosy clinics and echinococcosis screening in Kenya.
- Mobile clinics are a way of bringing health care services to nomadic people who would otherwise be deprived of them, such as the Maasai in Kenya or nomadic reindeer herders in Alaska, or rural farming communities in Zimbabwe.
- Many articles stress the importance of having a fixed health facility to support the MHU. Mobile clinics are seen as complementing fixed clinics, and they may remove the need for hospitalisation. This fixed facility has a dual role: the selection of patients for the MHU and follow-up after the departure of the MHU. Often, mobile clinics are set up by charities in parallel to the public system.
- Most descriptive articles claim that mobile clinics are cost-effective ways of providing care, but the few articles that specifically looked at this question concluded that it was more cost-effective to provide care through primary health care facilities rather than through vertical programmes. However, increased costs bring increased health benefits. Many articles stress the high cost of mobile health provision.
- MHUs are seen as very useful for screening campaigns (breast cancer, uterine cancer, tuberculosis, schistosomiasis) and, more broadly, for health promotion and preventive activities.
- The most efficient MHUs are those treating conditions that can be dealt with in a single visit (cataracts, dental problems).
- When used for screening purposes, MHUs must focus on serious pathologies which are slow to develop, such as leishmaniasis, onchocercosis, leprosy and trypanosomiasis and breast or cervical cancer.
- Articles on Mobile Health Units which are part of a PHC programme emphasise the importance of community involvement, for instance in organising the site of consultations and the schedule of visits.
- To encourage attendance at MHUs, the first services offered should be those of greatest interest to the population (e.g. vaccination as part of a family planning programme, the distribution of condoms in clinics dealing with sexually transmitted diseases or HIV/AIDS). The practice of tagging on services onto a vertical programme is well established, and is described in WHO's Sustainable Outreach programmes.

Chapter 3
Setting up Mobile Health Units

In deciding whether to set up Mobile Health Units, the last question to be asked should be: 'What services (a service being a set of activities) are we actually going to provide in our emergency medical and health operations?'. Thus, there may be a curative service, a vaccination service, a preventive service or a maternal and child health care service. These services must constitute a response to the main pathologies encountered. For Mobile Health Units, we also ask the following question: 'What activities shall we begin with?'. This is of particular importance for mobile units because of their intrinsic constraints. The choice of priority activities must be made on the basis of priority health problems. However, the order of priority will depend largely on:

- the possibilities for implementation: local and expatriate human resources, logistical resources and, in the case of MHUs, the time to be spent on the spot, for example; and
- how the population perceives the situation.

Examples of the prioritisation process for a given situation include:

1. In the case of vaccinations, when there is an epidemic outbreak, social mobilisation will take place spontaneously as soon as information about the time and place of the vaccination campaign begins to circulate. When there is no epidemic, however, mobilisation may take much more time and require more resources.
2. IEC (information, education, communication) sessions are rarely a priority in an emergency situation, but are essential at all other times.

In the case of MHUs, the prioritisation of activities is essential in view of the intermittent nature of the services provided. Careful thought must be given to any new activity.

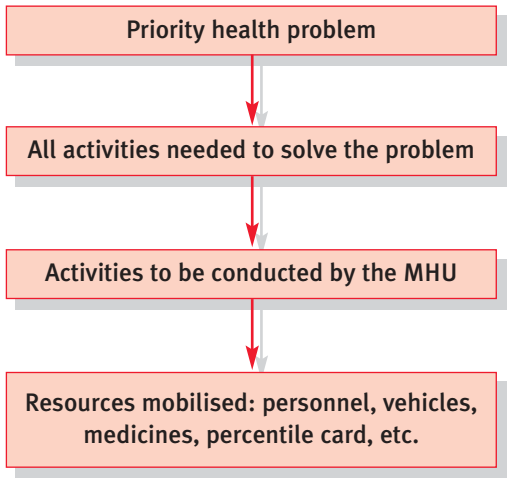
The shaded area in Figure 6 (overleaf) illustrates the top priorities in a given situation. The main health problems are known (shown in the top line). The activities that need to be carried out are also known (shown in the boxes with dotted lines), but the choice of activities will depend on the needs assessment.

Once priority actions have been decided, the next question that has to be asked is who is going to do what. This entails considering again the different modes of action. Some examples include:

1. If there are no health personnel on the spot: mode of action = *substitution*.
2. If there are health personnel on the spot, we have to train them so that they can conduct health education sessions in our absence: mode of action = *support*.

Figure 5

Steps in planning Mobile Health Units



3. If there is a local organisation a few kilometres away: mode of action = *mobilisation*.
4. If a Health Promoter from the ministry of health can be assigned to the health post from a centre or a hospital: mode of action = *persuasion*.

Each activity must be regularly reviewed in the light of the corresponding mode of action, bearing in mind that preference must be given to the mode of action that involves the least substitution possible.

Preventive action and health promotion for optimum results

MHUs are not an appropriate strategy for treating patients during the acute stage of their illness. The literature demonstrates the value of the MHU strategy for vaccination or screening for serious/fatal conditions which are slow to develop. The various services provided by a Mobile Health Unit may be compared to a capsule. The outer casing is attractive and brightly coloured, and conceals the active principle (in this case vaccination, and the whole range of health promotion and preventive activities).

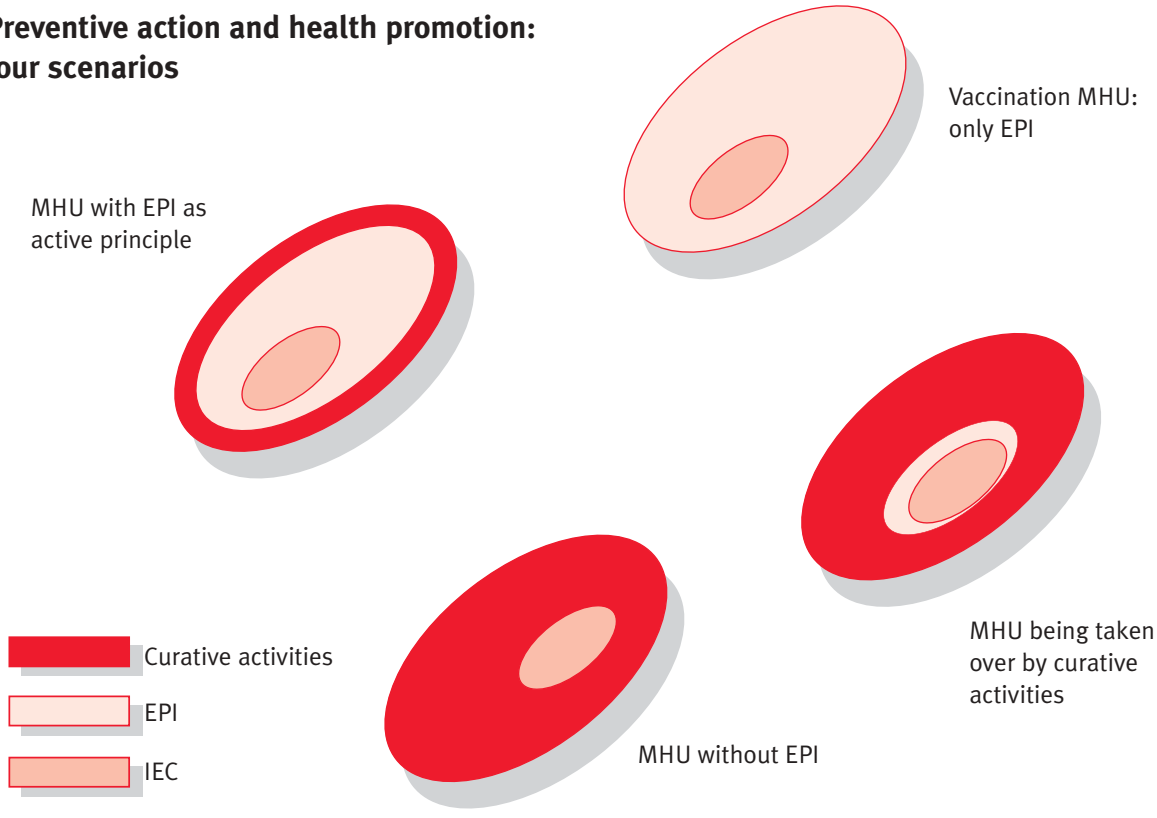
The following four situations are frequently encountered in the field.

- A thin curative 'shell', which deals with the main acute and chronic pathologies, surrounding a major component of health promotion and preventive activities, including vaccination. This is the ideal situation.

Figure 6
Health problems and priority actions

Figure 7

Preventive action and health promotion: four scenarios



- A vertical MHU conducting EPI activities.
- Health care workers often give preference either to the curative component or to health promotion and preventive activities.
- An exclusively curative MHU, whose activities have little impact on the health of the population.

A large number of MHUs tend to drift towards the curative option, and few, if any, tend to favour health promotion and preventive activities.

Triage

One feature common to any intermittent service is an influx of patients with high expectations. As MHU activities are time-limited, one must select patients who are in the most serious condition, and for whom something can be done. This is known as triage.

A failure to carry out triage creates confusion and jeopardises the security and effectiveness of the health team. Without proper triage there can be no efficient MHU. This stage, which at first sight appears to be a minor matter, is the most complex part of the work of an MHU.

The basic principles of triage (both medical and surgical) are:

1. With the limited means at our disposal (time, services, human resources) we cannot do everything for everybody.
2. The aim therefore is to achieve the best possible results for the greatest number of people.

These two points appear obvious, but they are real stumbling blocks in the field. Health staff often find it difficult to set aside the least serious cases, the quality of care must be the highest possible, taking account of local conditions, the number of patients and the time available, and armed groups may exert significant pressure for treatment.

Strict triage criteria must be decided before the team travels to the site where consultations will be given. These criteria must be explained to the community concerned. They will depend on:

- local mortality and morbidity rates (high-priority pathologies);
- the activities considered to be priorities; and
- the resources mobilised (personnel, drugs, surgery or not).

Patients will then be divided into four categories:

1. Serious cases: these patients need emergency attention but have a good chance of survival.
2. Patients with secondary priority: these patients need to

be examined, but the need is not urgent; they are put on a waiting list. They are then given a consultation in order to direct them to the person who is best able to look after them. Most patients belong to this category.

3. Patients who do not require a consultation: these form a fairly large group; they can receive effective help such as treatment for parasitic infestations or distribution of a three-month supply of ferrous sulphate for women of child-bearing age.
4. Patients with little chance of survival: these individuals are given appropriative comfort care.

Triage must be well organised in logistical terms. Patients do not wait patiently in line, as in a bank, but try to force their way in. Thus, the strongest patients and those with the least serious conditions will gain access to services, while the weakest will be left behind:

- In Rwanda in 1993–94, patients had to pass along aisles separated by tape; this was the only means of channelling such large numbers.
- In Colombia, an important factor in triage is the distance travelled by the patients to reach the consultation. The criterion of 'first come, first served' is not applied; instead, the criterion of distance covered to reach the consultation is used, thereby giving people time to return to their homes safely.

Frequency, schedules and communication

Key questions:

- Do we have time to conduct our activities? Or should we abandon them?
- If we go ahead, will we achieve any results?
- Are we setting out to treat acute or chronic diseases?
- Will the beneficiaries be free to attend? Must they work in the fields, for example, or is it a market day?

The main intrinsic constraint affecting MHUs is the temporary nature of the care they dispense: the mobile teams move on, but the patient remains. Although evaluation of the health zone enables us to document the causes of mortality and morbidity, and therefore to determine the activities to be conducted, the feasibility of those activities depends on security and logistical factors. The distances to be travelled, the time required, the seasons, rises in water levels, agreements and problems of access often mean that health units work in a very limited time frame.

Box 1

What is the probability of a patient suffering from pneumonia being examined by an MHU?

The probability exercise described here demonstrates the inadvisability of setting up curative MHUs. The probability of the patient having access to an MHU in time is equal to the ratio between the number of days that the MHU is present and the number of days in the year, as follows:

$$\text{Probability of a consultation:} \quad \frac{\textit{number of days that the MHU is in the village}}{\textit{number of days in the year}}$$

Therefore, when we carry out vaccinations in a community on an annual basis, during four two-day sessions, the probability of the patient with acute pneumonia having access to treatment at the MHU is 2%. With a *weekly presence* in the same village, the probability is only 14%.

In the case of a health centre, which is open every day, the probability is 100%.

Presence	1 x / week	2 x / quarter	Every day
Probability of seeing the patient during the acute phase of his illness	14/100	2/100	100/100

It should be emphasised that these figures relate to an ideal situation.

If the patient cannot reach the place where consultations are given, for reasons of distance, physical condition or insecurity, for instance, the likelihood of treatment is lower still.

MHUs and protection activities in conflict areas

MHUs are often proposed in areas of conflict, where fixed units are unable to bring health care to the population. Organisations may need to consider a protection aspect to their activities, and Mobile Health Units can be a way to achieve this.

The ICRC often works in conflict areas, and has a clear mandate, by virtue of the Statutes of the Movement (Article 5.2, paras c and d), to provide protection to populations in these areas. If the actions taken are to make an impact on protection, as well as being of direct benefit to the health of the population, it is vital to gain the trust of warring parties by demonstrating professionalism and neutrality. Once a relationship of trust has been established, a dialogue can be initiated, and this can create an opportunity to raise matters such as alleged breaches of international humanitarian law.

Often, the ministry of health representatives who accompany the MHUs are the first beneficiaries of the ICRC's protection activities. Population groups who are vaccinated are protected from a whole range of diseases. In addition, documenting alleged abuses is possible, and it

is also often possible to make contact with armed groups involved in the conflict. In this context, medical teams are sometimes asked to carry out health activities in remote areas where the population is exposed to violations of humanitarian law, and a conflict of interest may arise:

- It is the responsibility of health personnel to comply with public health standards so as to ensure that health activities have significant benefits for the beneficiaries. An appropriate presence in the field will be needed, even though protection activities rarely take place within the same timeframe as the medical activities which have to be completed. Vaccination cycles and educational programmes, for example, cannot be interrupted.
- Health care workers must be well-informed of both the health and the 'protection' objectives of their work.
- Certain health activities, such as gathering information for an epidemiological study of violations of humanitarian law, may be important for protection purposes as they provide access to an area that might otherwise be closed to them.

The MHU strategy still remains the last option for providing appropriate health care, although to non-medical staff it may often seem to be the first option. Health staff may come under pressure to open *something*, just to be present, regardless of its appropriateness.

Factors to be considered in deciding whether to set up an MHU

Before deciding to establish an MHU, we have to ask ourselves eight questions.[5]

1. What is happening?

The raw data that flow in during a disaster are often imprecise and contradictory, and are rarely an adequate basis for deciding whether action should be taken and, if so, in what form.

> *The first requirement, then, is to make an initial assessment of the situation. However, Mobile Health Units are not an assessment strategy, because assessments generate too many expectations on the part of the population. It is important to have thorough knowledge of the various actors involved, as they will make it possible to apply modes of action other than substitution.*

2. What is important?

The initial assessment will bring into focus a set of problems, some of them more important than others. The task here is to identify the problems of highest priority.

> *In dealing with the various partners, actors and authorities, three questions must constantly be asked: what is known, what can be done and what will be done? Mortality and morbidity rates must be ascertained or calculated, and an effort made to identify the causes.*

3. What can be done?

Pinpointing the most urgent problems does not mean that they can be solved. At this point, the constraints of the situation help establish priorities for action.

> *A thorough study must be made of strengths and weaknesses, opportunities and threats (a SWOT analysis).*
> *Choice of target population: displaced persons, children under five, etc.*
> *The major constraint leading to the use of mobile health units is a population group's lack of access to the health system (poor security, destruction of health facilities, etc.).*
>
> *Study of HR and logistical constraints.*

4. What will be done?

To decide what should be done, planners must take note of existing norms and the constraints of the situation. This will allow them to define the limits of what can realistically be attempted – in other words, to set objectives.

> *The decision to take action requires taking the political and health situation (pre-crisis, acute crisis, chronic crisis or transition) into account.*
> *Mortality and morbidity rates have been ascertained by the assessment, and are our first priority.*

5. How will it be done?

To achieve a particular objective, planners can choose between several types of activity. Initially, they must define all the activities that can be undertaken to accomplish a specific objective, and then decide what actions will actually be carried out and in what order – in short, determine a strategy.

> *At the decision-making level it is essential to determine the modes of action (mobilisation, support, substitution, etc.) to be applied.*
> *The strategy is a choice of activities and a combination of modes of action which make it possible to operate on different levels. One can achieve objectives by taking advantage of strong points and of the opportunities offered by the environment, and by minimising weak points.*
>
> *MHUs are beset by a large number of intrinsic constraints, and these must be considered at this stage. Here questions 4 and 5 must be combined so as to:*
> - *determine the diseases to be dealt with;*
> - *ensure that the priority activities correspond to those pathologies; and*
> - *ensure that the question as to the modes of action to be applied is asked again for each activity.*
>
> *We must answer the following questions:*
> - *Is any strategy possible other than a mobile clinic?*
> - *For how long are we going to use that strategy?*
> - *What activities are we going to carry out simul-*

taneously, in order to limit the duration of the strategy? Is there an endpoint to the action, an exit strategy?

- *Are we using the right mode of action? Are we leaning too far towards substitution? (In respect of the operation in general, and of each activity?)*

It is at this level that thought must be given to the integrated approach, until the specific activities to be conducted are determined.

6. What resources are needed to do what will be done?

Implementing the chosen activities will require the use of resources (human, material, financial), so resources must be planned for.

The resources mobilised will depend on the activities planned (see question 5). They may be a limiting factor (human resources for medical and protection work, number of persons per vehicle, medicines).

7. Implementation

The activities are carried out.

This is the stage for taking action, for implementing the decisions made, and for carrying out activities, whether in the form of mobilisation, support or substitution.

8. What was done?

The evaluation of what has been done should cover not only the quantities of resources used, but the entire planning process (quality of the services provided, impact on the victims' health, and so on). This is known as evaluation and surveillance.

Experiences with MHUs

Experience has shown that the following factors are important when using an MHU strategy.

MHUs should be used as a last resort, to allow population groups which are cut off from health services easier access to the health system

In view of the intermittent nature of the services provided by an MHU, other – i.e. fixed – strategies for providing health services are preferable.

MHUs require highly trained staff

The implications of triage mean that appropriate training needs to be provided, especially to the gate-keepers of the services. The limited range of – usually rather specialised – services available adds to these training needs.

MHUs are a favoured strategy for vertical programmes

A programme is described as vertical when the health personnel involved are brought in from another facility (usually one on a higher level in the health hierarchy) to dispense specific treatment. For example, a health centre may receive specialists in leishmaniasis or malaria, or a hospital may receive an ophthalmic surgeon. These vertical programmes exist alongside the existing network of health centres and hospitals. In Sierra Leone in 2001, for example, MHUs provided curative services limited to the main pathologies. Vaccination and awareness-raising activities were conducted successfully for six months.

MHUs must focus on serious pathologies which are slow to develop, and on preventive and health promotion activities

In light of the intermittent nature of the services they provide, MHUs are useful as a way of dealing with pathologies which are serious but slow to develop, and for preventive and health promotion activities (such as prenatal consultations and vaccinations).

Box 2

MHU services for nomads in Mali

Following the signing of peace accords with Tuareg rebels in Mali in 1994, the ICRC assisted the local health authorities in Timbuktu and Bourem/Gao with a programme to vaccinate nomad populations. The difficulties involved in implementing MHU services were linked to the nomads' way of life. Ideally, contact with the nomads should be made up to four times in five months, but neither the nomads nor the ICRC knew in advance where the target population would be. The main determinants of the nomads' movements were the rains, security or the proximity of other large herds which could jeopardise the viability of the place where they were currently located. To gather information about the whereabouts of nomad groups and to get an appreciation of security conditions, ICRC staff travelled around the target areas by camel.

Despite the fact that nomads were prepared to travel several kilometres to receive vaccinations, after a year of EPI-MHU programmes only 30% of the estimated population had been covered with three doses of vaccine. The final results are difficult to analyse because the total population is unknown. However, no outbreaks of measles were declared or cases of tetanus referred in the following years.

This one-year MHU gave the ICRC an opportunity to develop personal contacts with most of the former rebel leaders, and led to negotiations between them and the health authorities to decide where health centres should be built. The nomads did not ask for further mobile services, preferring to select sites for permanent services. Between 1997 and 2000, the ICRC helped local communities and authorities in Timbuktu and Bourem/Gao to build 14 health centres and rehabilitate six existing centres.

Box 3

A Mobile Health Unit in a buffer zone: Rwanda in 1993–94

On 4 July 1993, the RPF and the Rwandan government signed a peace agreement, leading to the disengagement of troops and the establishment of a huge buffer zone, with the RPF in the north and government troops in the south. During the transition period, this buffer zone would be left without an administration. In order to ensure that health services were available in remote areas, the ICRC, in cooperation with the Rwandan Red Cross, developed an MHU service between October 1993 and the beginning of the genocide in April 1994. During this period, two 12-strong health teams, with two fully equipped ambulances, delivered services in eight former health centres and locations in the disengagement zone.

Providing ambulatory services was a way of showing people in the demilitarised zone that they had not been forgotten. It also provided the ICRC with an opportunity to better understand and document breaches of international law. The number of consultations was high – an average of 600 patients per visit had to be screened – and triage was crucial for targeting services. Screening lines protected and sealed by iron poles were installed before care providers started consultations. One line was for scabies and skin infections, another for diarrhoeal disease. Under-fives and pregnant women were picked up in the lines.

Apart from skin diseases, maternal health and the under-five clinic, the bulk of consultations were linked to ill-defined symptoms among elders in the demilitarised zone. Placebos such as vitamins were distributed to people seeking empathy, psychological support and active listening. Most patients were referred to as 'war-sick', not 'war-wounded', meaning that there were very few cases in need of war surgery. The worst cases were referred to the central hospital in Kigali and then to Rutongo Hospital, a 100-bed health structure supported by the Belgian Red Cross. There was regular coordination between the Belgian Red Cross doctor and the mobile health clinics to ensure the regular discharge of patients and their transport back to their homes in the buffer zone.

MHUs are not appropriate to a public health approach

It is not possible to carry out a wide range of curative, preventive and health promotion activities on an intermittent basis. The simultaneous provision of all these services in a health facility is known as the horizontal or integrated approach.

- In Colombia, MHUs provided support for the PHC services in health promotion and preventive activities (vaccination, cancer screening). The authorities acknowledged that the MHUs represented a stopgap solution in regions where health posts had been abandoned because of the conflict, and where the MHUs were the only health service available.
- In the Vanni region of Sri Lanka, MHUs initially provided curative services, but gradually moved towards an educational function for community health workers. In Trincomalee, a ministry of health nurse joined the MHU team, giving prenatal consultations and administering vaccinations.

Box 4

Colombia: the importance of a defined referral system

In Colombia, arrangements have been made for primary and secondary level hospitals to receive patients sent to them by the ICRC, which pays the transport costs (there is no ambulance service).

Every Mobile Health Unit service is discussed with the municipality concerned, as are the criteria of triage and referral. To facilitate access to front-line hospitals in government-controlled areas for citizens living in rebel-held zones, the ICRC pays for the initial medical consultation, treatment and testing or the first night of admission if needed, giving time for the municipal hospital to start the administrative process for new referrals.

MHUs can be a strategy for emergency medical and health operations

Once the conditions to be treated have been selected and the priorities set for the corresponding activities, and taking into account intrinsic and extrinsic, environmental, constraints, MHUs may, for a limited period, constitute a strategy for providing treatment and other services. The quality of the services provided by an MHU depends largely on proper triage and a precise definition of priorities and the activities to be conducted.

MHUs must always be able to send patients to a referral facility and to carry out medical evacuations

MHUs are sent, as a last resort, into a zone whose population is cut off from health services. The population's

expectations far exceed the services that the MHU can offer. The inability to transfer the most seriously ill patients to a more specialised facility would discredit the strategy and jeopardise the MHU's presence. In practice, few patients agree to be evacuated, since it means leaving too heavy a burden on family members left behind. Furthermore, patients worry about whether and how they will be able to return to their homes.

MHUs are not tools for assessing a health zone

Any assessment generates considerable expectations among potential beneficiaries. To avoid disappointing people, it is important not to confuse assessment with strategies for action. MHUs are a way of responding to a health problem, not an evaluation tool. An MHU is not set up to assess the needs of a population group. On the other hand, it is sensible to take advantage of the presence of an MHU to assess more precisely the needs for protection and assistance in the health zone concerned.

MHUs are expensive to run

Only very specialised services such as dentistry and ocular surgery have proved cost-effective (an ICRC Field Surgical Team costs $6 million a year).

MHUs are often logistically difficult

MHUs by definition set out to reach population groups that are isolated because of poor security or difficulties of access. The logistical aspect of their activities becomes a major constraint which must be taken into account.

Conclusion

Mobile Health Units have their uses, but they must be considered carefully. In emergency situations and areas affected by conflict, mobile units may be the only way to provide a selection of priority services to the population. Setting up mobile health services is never easy, and several factors need to be taken into account: the possible modes of action, their role in the health care system, whether they respond to the priority needs as assessed, whether resources are available to implement these services, and whether this is an appropriate strategy. The services provided must be chosen carefully, in order to respond to health priorities. MHUs have a number of drawbacks (cost, logistics, scheduling problems), and these must be considered. Nonetheless, there are examples, from the published literature as well as from our personal experience, of Mobile Health Units providing essential services and having an impact, often going beyond the health aspects of the intervention. The framework provided in this article should assist decision-makers in choosing the right services for the populations they help.

Box 5

MHUs in Myanmar and Darfur

Myanmar

In Myanmar, 'vertical' MHUs giving vaccinations were deployed in zones where there were protection problems. In 2003, following a vaccination prevalence survey, the ICRC decided to begin vaccination services in eastern Laikha in southern Shan State. Insecurity was the major reason for the non-availability of services in this area. Large-scale human right abuses were alleged to have taken place.

In 2004 and 2005, mobile clinics provided immunisation services (a full Expanded Programme of Immunisation (EPI) with six antigens) to children under five, and tetanus prophylaxis to women of childbearing age, as well as vitamin A supplements and deworming, as a basic package to all villages in the area. Vaccination coverage rates reached over 90% for BCG (the vaccine against tuberculosis) and measles, and 60% for Diphtheria-Pertussis-Tetanus 3rd dose (DPT3) and Oral Polio Vaccine 3rd dose (OPV3). As a direct result of the regular presence of outsiders in this closed area, human rights abuses also declined.

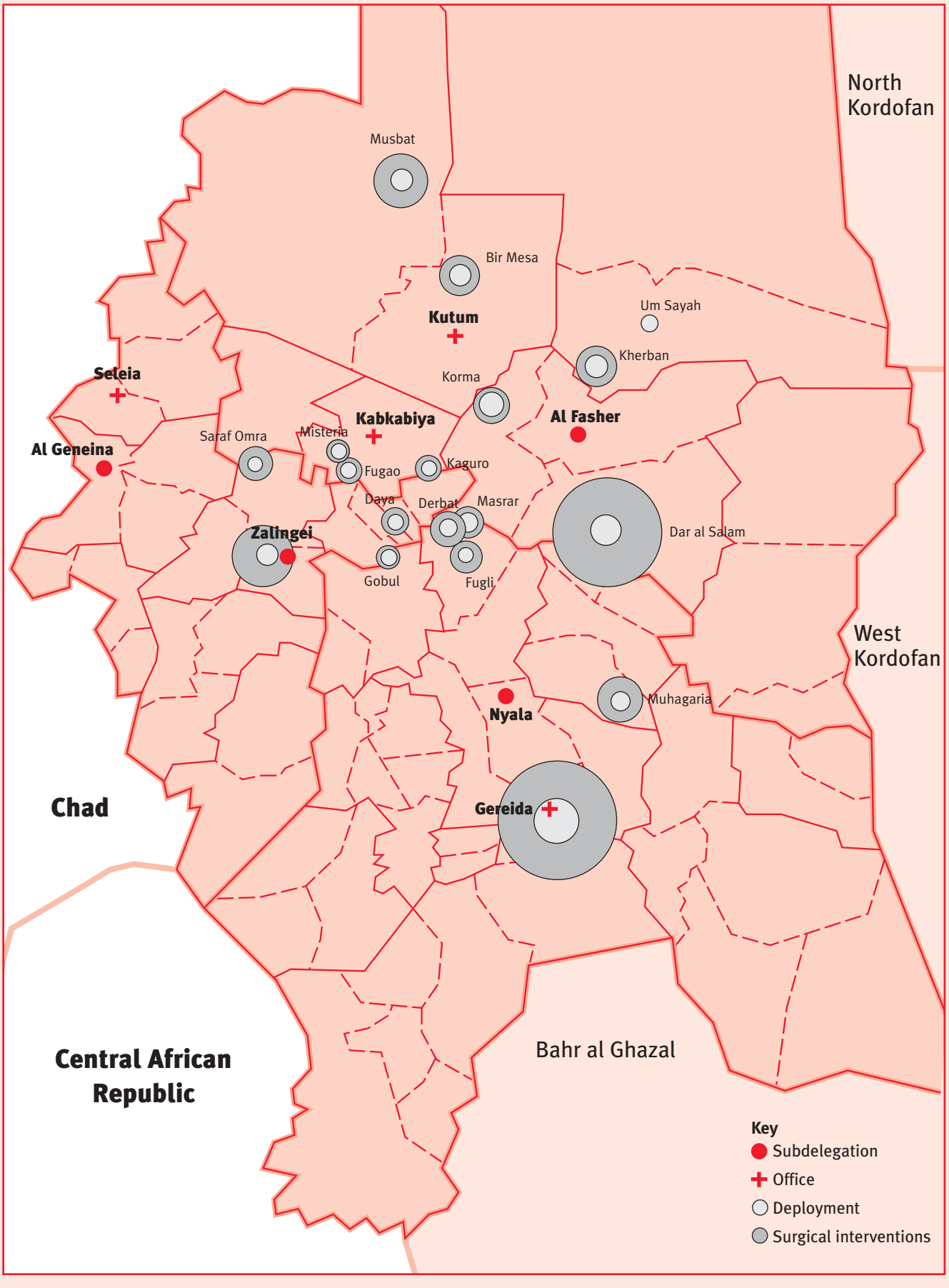
Darfur

The ICRC established a fast-response, mobile Field Surgical Team in Darfur in April 2005. The four-person team comprises a surgeon, an anaesthetist, a theatre nurse and a ward nurse. It travels all over Darfur, and its services are available to all combatants and communities beyond the reach of appropriate surgical care.

The purpose of the MHU is to operate on weapon-wounded people wherever an adequate surgical structure or trained surgeons are not available. The FST serves civilians and combatants alike, and its services are impartial, available to all based on needs alone. The FST intervenes in opposition and government areas where fighting has occurred. It can also assist the surgical team of a hospital if there is a large influx of wounded. It responds only in emergency situations. Between April 2005 and June 2006, the FST was deployed 66 times, performing a total of 766 operations. The FST was rarely called on to support a hospital, since existing surgeons had been trained in war surgery techniques by the ICRC war surgery seminars in Khartoum, and in three locations in Darfur.

Location	Deployment	Surgical interventions
Bir Mesa	4	26
Dar al Salam	9	203
Daya	1	10
Derbat	2	24
Fugao	1	9
Fugli	1	6
Gereida	19	262
Musbat	3	51
Saraf Omra	1	13
Um Sayah	1	0
Zalingei	3	59
Gobul	1	4
Kaguro	1	4
Kherban	5	28
Kurma	6	22
Masrar	4	12
Misteria	2	3
Muhagaria	2	30

Field surgical team activity map 04/05–07/06



Notes

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