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Health Issues Affecting Displaced Populations
The Evolution of Public Health Response in Emergency and Post-Emergency Phases of Complex Emergencies

Paul B. Spiegel

Introduction

The field of humanitarian response has made tremendous strides over the past decade. In the Cambodian refugee camps in the 1980s, the establishment of basic health information systems allowing for rapid response and directing health programs according to the data collected, proved a powerful tool in improving the health of the refugee populations.[1] Simple but powerful epidemiological computer programs were developed which have proved invaluable in the field.[2]

As a consequence of the terrible toll of the numerous massive population displacements in Africa and Asia throughout the past two decades, the importance of implementing rapid mass measles immunization campaigns for children, methods to detect, measure and treat malnutrition, and the recognition that four main communicable diseases (measles, diarrhea, lower respiratory tract infections, and malaria (in endemic areas) during the acute phase of crises often accounted for over 70% of all deaths in the camps), has saved an incalculable number of lives.[3-6]

The field of disaster response has slowly professionalized over the past decade. Western-trained health professionals, whose education generally emphasizes an individual patient-centered curative approach, now have the opportunity to choose from various training programs which focus on the essential elements of managing health situations in complex emergencies (CEs), with an emphasis on public health and preventive medicine. From the numerous experiences of responding to mass population movements during the past few decades, a codification of standards of care during the acute phase of CEs has been developed,[7] es-

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sential medication lists have been established,[8] and large kits containing medical supplies for rapid response have been created and pre-positioned.[9] However, responses are still based upon the early paradigms of humanitarian response and have not effectively evolved over the past 5-10 years, in terms of addressing different typologies and epidemiological disease profiles of CEs, as well as the different phases and their definitions.

Typologies

Before the fall of the Soviet Union in 1991, most international responses to CEs, or complex humanitarian emergencies (CHEs) as they have generally been called, occurred in S-E Asia and Africa. Typically, there were numerous causes, primarily a mixture of natural (draught, flood, famine) and political instability (coups, military conflicts), which resulted in massive population displacements. These people were generally poor, both in terms of health status as well as material possessions. They often walked for days and weeks, crossing a border into a remote region of another country whose people were equally poor and had little to offer. The combination of their exhaustion and malnutrition allowed communicable diseases, often in epidemics, to ravage the population.[5,10] With the disintegration of the Federal Republic of Yugoslavia in 1991/92, a different type of CE was observed, sometimes referred to as a complex political emergency (CPE).[11] These wars, often within one state, have culminated in campaigns of ethnic cleansing which have deliberately targeted civilians. Relatively healthy people were suddenly forced to flee their homes, by vehicle or by foot, to become displaced within their country or in nearby neighboring countries. The humanitarian aid system, often implemented by non-governmental organizations (NGOs), has been slow to recognize and adapt to this new typology. The skills and type of personnel needed for CPEs are often different, as are the medical supplies (including the pre-positioned supplies).

Epidemiological Disease Profiles

Disease profiles of countries often depend upon the stages of their development. Communicable diseases account for the majority of deaths in developing countries, and baseline mortality rates are higher.[12] Developed countries' crude and age-specific mortality rates are much lower than developing countries. Populations live longer and non-infectious chronic diseases, such as lung, cardiac, and certain cancers account for the majority of deaths.[12] The baseline epidemiological disease profile of these populations directly effect the disease profiles observed in the different crises. Furthermore, the different populations' baseline health status and material wealth, combined with the distance, time and mode of travel (foot vs vehicle) used to reach 'safety', as well as the remoteness of that location, all have a tremendous effect on the type and degree of morbidity and mortality observed. For example, in the recent CPEs in the Balkans, mortality rates have remained relatively low, and deaths directly related to war trauma have accounted for the majority of all mortality, while deaths due to malnutrition and communicable disease remained relatively low compared to the CHEs which have occurred in S-E Asia and Africa. [13-16]

Phases

CEs are generally divided into three phases- emergency, post-emergency, and repatriation/resettlement. Due to the high mortality in previous CHEs in S-E Asia and Africa, the definition of an emergency phase came to depend upon the level of mortality noted. If the mortality rate is >1 death/10,000 persons/day, which is approximately two times the normal baseline rate for developing countries, than the phase is considered to be an emergency.[6] This definition of an emergency phase does not necessarily apply to the CPEs which have oc-

curred in the Balkans, where overall mortality rates have often remained low,[13,16] despite massive population shifts in situations which were obviously acute humanitarian crises.[11] A different definition of an emergency phase for these CPEs needs to be established which takes into account the magnitude of displacement and consequent morbidity and change in circumstances (shelter, water, sanitation, source of income, etc.), rather than solely the level of mortality.

If one examines the life of a CE, many displaced populations remain in that status for years. Yet for the most part, guidelines and indicators have only been developed for the emergency phase of a CE.[7] In general, emergency phases of CHEs last 1-6 months, the time it takes to bring the mortality below the 1 death /10,000 persons/day threshold. After this period, mortality rates often stabilize and may even be lower than the host country.[17] Morbidity and quality of life issues then become the major concern in the post-emergency phase. Issues such as reproductive health,[18] psychosocial illness, and chronic diseases are belatedly coming to the attention of humanitarian agencies. Although these issues should be addressed during the emergency phase of a CHE, it is often difficult to successfully do so when the main goal is to minimize 'excess' mortality. This problem is not necessarily the case for CPEs, where mortality may not be elevated from its baseline, and the highest priorities may indeed be reproductive health, psychosocial illness, and chronic diseases. Standards for displaced populations in the post-emergency phase need to be created and implemented.

Current Refuge Issue- Health Issues Affecting Displaced Populations

I believe that this current issue of *Refuge* will help address some of the deficiencies in humanitarian aid listed above. The first three articles discuss established areas of CHEs – malaria, malnutrition, and water/sanitation. As these papers clearly show, resistance to antimalarial drugs and new techniques for the diagnosis of malaria, malnutrition in adolescence and adulthood, and water/sanitation issues in CPEs are rapidly evolving and NGOs must adapt to them if they are to be effective in the field. The next four articles discuss reproductive health, economic issues, and quality control and management issues in CEs. The former topic has received much attention in the past 5 years and is now becoming an integral part of humanitarian aid. The latter two topics are relatively new to the humanitarian field. All of the above issues must be considered and programs developed during the emergency phase. Whenever possible, these programs should also be implemented during that phase, and then become more comprehensive, while remaining adaptable, during the post-emergency phase. The last two articles discuss the new typology of the CPE. They highlight the similarities and differences between CHEs and CPEs, as well as provide recommendations to the NGOs responding to these crises. ■

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Feedback ?

Questions ?

Remarks ?

We welcome them all.

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Malaria Control in Complex Humanitarian Emergencies

John R. MacArthur, Holly A. Williams & Peter B. Bloland

Abstract

War, famine, civil conflict, and political persecution displacing large populations often leads to severe disruptions in health services, disease control programs, food distribution systems, and loss of shelter. When the dimensions of the crisis overwhelm the local and international communities' ability to respond quickly and effectively, significant morbidity and mortality result in what is termed a complex humanitarian emergency. The public health consequences have been most severe in underdeveloped nations where most deaths are caused by communicable diseases, which include malaria. This paper describes and analyses the factors that contribute to malaria morbidity and mortality and proposes effective measures to combat them.

Résumé

Les conflits armés, les famines, les guerres civiles, les persécutions politiques déplaçant de grandes portions de la population provoquent souvent de graves perturbations dans les services de santé, les programmes de contrôles sanitaires, les structures de distributions alimentaires, et entraînent fréquemment la perte du gîte ou de l'abris. Quand l'ampleur de la crise submerge les capacités locales et internationales à y répondre promptement et efficacement, le résultat de ce que l'on appelle une urgence humanitaire complexe est un accroissement significatif de la condition maladive et de la mortalité des populations en cause. Les conséquences en termes de santé publique sont particulièrement graves dans les nations sous-développées, où un plus grand nombre de pertes de vie sont dues à des maladies transmissibles, incluant notamment la malaria. Cet article décrit et analyse la série de facteurs contribuant à la condition maladive et à la mortalité liés à la malaria, et propose des mesures effectives pour combattre ces facteurs.

Dr. MacArthur is currently an Epidemic Intelligence Officer with the Malaria Branch of the Centers for Disease Control and Prevention. His interests include evaluation of antimalarial drug resistance, malaria drug policy, and malaria control in complex humanitarian emergencies.

Dr. Williams is a Medical Anthropologist with the Malaria Branch of the Centers for Disease Control and Prevention. Currently, her research interests include malaria control in complex emergencies, drug resistance, drug policy, and socio-behavioral issues related to malaria control.

Dr. Bloland is a medical epidemiologist with the Malaria Branch of the Centers for Disease Control and Prevention. His current research interest is in the role of artemisinin antimalarial drugs in preventing the development of drug resistance.

Introduction

In 1998, there were an estimated 30 million refugees or internally displaced persons in need of protection and assistance worldwide.[1] War, famine, civil conflicts, and political persecution continue to result in mass displacement of populations. These events often contribute to severe disruptions in health services, disease control programs, food distribution systems, and loss of shelter. Large populations are commonly displaced from underdeveloped areas into new sites with scarce resources. When the emergency reaches the dimensions where it overwhelms both the local and international communities' ability to respond quickly, significant morbidity and mortality occur due to severe public health problems. This situation is known as a complex humanitarian emergency.

Mortality rates are used to divide complex humanitarian emergencies into two phases: emergency and post-emergency.[2] The emergency phase typically lasts from 1 to 6 months and is characterized by outbreaks of communicable diseases and crude mortality rates above one death per 10,000 persons per day.[3] The second stage of the crisis is the post-emergency or maintenance phase. During this period, the health profile is similar to that of the host country. The displaced population, however, continues to be at risk for the same communicable diseases that are present in the surrounding areas.[4]

The intent of this paper is to review basic concepts of malaria and malaria control for non-malariologists and to discuss how these concepts can be applied in the context of complex humanitarian emergencies. Successful implementation of malaria control early in an emergency situation can minimize the impact of this potentially severe disease among the displaced population.

Malaria

Routes of Transmission

Malaria infection in humans is caused by one or more of four species of intracellular parasites. Plasmodium falciparum, P. vivax, P. ovale, and P. malariae all cause disease although each clinical course is different. P. vivax is the most common species that infects humans worldwide, while P. falciparum is the most serious form leading to severe or fatal malaria. These parasites are most commonly transmitted by the infective bite of a female Anopheles species mosquito but can also be transmitted through blood transfusions and transplacentally from mother to fetus.

Epidemiology

Malaria occurs in more than 90 countries and 36% of the world's population live in areas with risk of malaria transmission. An additional 29% reside in areas once malaria free but now experiencing resurgent transmission, and 7% live in areas where the disease has never been under meaningful control. Each year there are an estimated 300-500 million clinical cases of malaria resulting in approximately 1.5-2.7 million deaths.[5]

Malaria transmission occurs in Central and South America, the Caribbean island of Hispaniola (Haiti and Dominican Republic), the Middle East, Central Asia, the Indian subcontinent, southern China, Southeast Asia, Korea, and Oceania. Most of malaria deaths, however, occur in children under 5 years of age living in sub-Saharan Africa.

Chloroquine-resistant P. falciparum was first recognized in Thailand and South America in the late 1950s. Since then, it has spread and intensified to the point where only parts of Central America, Hispaniola, and the Middle East are free of chloroquine (CQ) resistance. Drug resistance is not limited to CQ alone. Resistance is emerging to sulfadoxine/pyrimethamine (SP) in parts of eastern sub-Saharan Africa, Southeast Asia, and the Amazon region of South America. The border regions of Thailand have reported mefloquine resistance as well (figure).[6] Chloroquine-resistant P. vivax has been reported in Southeast Asia and Oceania and, in some foci, can be very common.[7,8]

Clinical Features

Infections with malaria present with a variety of signs and symptoms. The severity of the disease depends on the infecting species and the immune status of the patient. Those persons who have experienced repeated exposure to the parasite develop partial immunity and thus can better tolerate malaria infections. The risk of severe illness and death is much lower in these persons. Common symptoms in nonimmune persons infected with malaria include fever, chills, sweats, myalgias, arthralgias, headache, diarrhea, and other nonspecific complaints. Signs may include splenomegaly and common laboratory abnormalities are anemia and thrombocytopenia. Patients with partial immunity have even more nonspecific symptoms, often presenting similarly to a mild viral infection.

Uncomplicated malaria can rapidly progress into severe disease and death. Severe cases are almost uniformly due to P. falciparum. These patients may present with neurological complications such as sleepiness, altered mental status, convulsions, and/or coma. Renal failure, pulmonary edema, hemoglobinuria, and shock can also develop. The case-fatality rate of initially non-severe falciparum malaria has been estimated at less than 5%. Once the illness progresses to severe malaria, the case fatality rate is 15%-20%.[9]

Diagnosis

Early diagnosis and prompt effective treatment are paramount for the prevention of mortality from malaria. In disease-endemic areas, or in situations with patients arriving from these areas, all cases of febrile illness must be suspected as malaria. Information about the patient load in the clinic, time required to perform the test, costs involved, level of training and supervision necessary, and available equipment and electricity is necessary before deciding which diagnostic tool is best to use.

Presumptive diagnosis is commonly used in many parts of the world, especially in sub-Saharan Africa where it is simple, inexpensive, and rapid. However, diagnosis based on signs and symptoms is not reliable due to the nonspecific nature of clinical malaria. This poor predictive value, even in areas of intense transmission, will lead to overdiagnosis and, thus, unnecessary use of antimalarial medications. This can have adverse effects on the patient and possibly lead to increased antimalarial drug resistance. Over-diagnosis of malaria also causes the health care worker to miss other possibly important causes of the fever.

The current leading diagnostic method is microscopic examination of Giemsa-stained, thick-and-thin peripheral blood smears. Advantages of microscopy include high sensitivity and specificity among properly trained and supervised technicians. Microscopy also offers the ability to identify the infecting species and quantify the level of parasitemia. Although this is the "gold standard," setting up microscopy in the emergency phase of a complex humanitarian emergency may be difficult. In relief settings in Africa, where malaria transmission can be intense, microscopy-based diagnosis may be difficult if the number of febrile patients overwhelms the ability of the laboratory to examine the slides rapidly. Programs using laboratory diagnosis must ensure appropriate quality control of the tests. Although this may be difficult in some settings, there are quality control reports from refugee camps showing high sensitivity and specificity.[10]

Rapid diagnostic tests offer state-of-the-art technology for malaria control efforts. These tests require no special equipment or electricity, can be performed after minimal training, do not need cold storage, and offer high sensitivity and specificity. They are principally used to detect P. falciparum, although new tests also detect non-falciparum species. The major disadvantage of these tests is a high per-test cost (currently US $1 - $2 per test). Another disadvantage, especially in areas where drug resistance is a major problem, is the persistence of positivity after treatment. The test can remain positive up to 14 or more days after treatment,[11] prohibiting their use for monitoring parasite response after treatment.

Anemia is a frequent complication of malaria and contributes significantly to the overall morbidity and mortality associated with malaria.[12] Therefore, evaluation of anemia should be a component of a control program. Factors such as poor food rations, helminth

infections, recent diarrheal illnesses, hereditary hemoglobinopathies, and low socioeconomic status also contribute to decreased hemoglobin levels. Accurate clinical diagnosis based on pallor depends on the experience of the practitioner, but is a method that often yields poor results.[13] Hematocrit centrifuges are extremely sensitive. However, they require electricity for optimal performance. Hemoglobinometers are also very sensitive, but are expensive to buy and operate. One option that is affordable, accurate, and easy to use consists of special filter paper and a color scale.[14]

Case Management

Rapid and effective case management is the cornerstone of malaria control efforts. Falciparum malaria can progress to fatal disease within 48 hours, and therefore an effective first line therapy is essential. Optimally, treatment varies depending on the infecting species, local drug-resistance patterns, and severity of disease. If diagnostic facilities capable of determining species are not available, all presumptive cases must be treated as P. falciparum since this is the most lethal form of malaria.

Drug resistance patterns should be understood before the establishment of antimalarial drug policies. Generally, if the area is known to have P. falciparum parasites sensitive to CQ (Central America, Hispaniola, Egypt, and limited regions of the Middle East) then it can be selected as the drug of choice.

In areas where multiple drug resistance exists, the preferred option for the treatment of uncomplicated P. falciparum is the combination of an artemisinin derivative (e.g., artesunate) for 3 days with another antimalarial drug such as mefloquine. Studies investigating the combination of artesunate and SP are currently under way. This combination may offer a highly efficacious option for areas where CQ resistance is high but SP remains effective. In some refugee settings in Southeast Asia, artemisinin combined with mefloquine appears to have slowed the development of drug resistance and decreased malaria transmission.[15]

Care of patients with severe P. falciparum should include the use of a fast-acting antimalarial drug, prevention and treatment of convulsions and other complications, and good nursing care. Many deaths result due to delay in treatment or inappropriate treatment. Quinine remains the treatment of choice in patients with severe malaria. Other ancillary treatments may include antipyretics, anticonvulsants, furosemide, and dextrose.[16]

In areas of significant malaria risk, all anemic patients should be treated with antimalarial drugs regardless of the cause of the anemia. Micronutrient supplementation with iron, folate, Vitamin A, Vitamin C, or zinc can further enhance hematologic recovery. Caution is advised in using folate supplementation in conjunction with SP as treatment failures may increase.[17] Blood transfusions used to treat severe anemia can be lifesaving. However, there are risks involved with transfusions if screening for blood-borne pathogens is not reliable. Transfusions in patients with a hemoglobin level < 5 g/dl with respiratory distress or all those with hemoglobin < 4 g/dl have been shown to improve survival.[12] Due to the high risk of acquiring HIV from infective donors, all blood must be screened before transfusion. This may be impractical in the emergency phase of the crisis and thus a referral program to the nearest hospital with transfusion capabilities should be instituted. If this is not practical, the relief organization must rapidly develop blood transfusion protocols that include HIV screening.

In areas of the world where women have low levels of immunity, malaria is a major cause of maternal mortality, abortion, stillbirths, premature birth, and low birth weight.[18] In populations with high levels of immunity, malaria contributes to maternal anemia and low birth weight babies. Because of this, special attention needs to be given to provide rapid and effective curative services to pregnant women to reduce excess malaria-related mortality.

Preventive Services

Rarely does the relief agency have control over the selection of the resettlement site of a displaced population. Geographic features of the selected area may contribute to the transmission of malaria. Even with the influx of relief operations, shelter in the emergency phase is often crude, thus exposing the population to anopheline mosquitoes and possible malaria infection.

In pregnant women, weekly prophylaxis with an effective drug (e.g., mefloquine in the second and third trimesters) can prevent complications.[19,20] Intermittent therapy, the routine presumptive treatment with an effective antimalarial drug given once during the second and third trimesters, is a cost-effective method to prevent complications in semi-immune women in areas of high transmission. In populations with high-HIV seropositivity, intermittent therapy needs to be given more often.[21-23]

Mass prophylaxis is not generally recommended for populations exposed to perennial malaria transmission. However, there may be some high risk groups, such as pregnant women, very young children, or malnourished persons who may benefit from prophylaxis.[19,20]

Efforts with vector control are often minimal in the early stages of the emergency. Information about local vector behaviour may be obtained from the host country malaria control staff. If this is not available and if staffing permits, early operational studies of the vector population, especially biting behavior, can be useful. Vector control takes a more prominent role in the postemergency phase when the camp becomes more stable with the appearance of houses and other structures.

Distribution of insecticide-treated bednets is one preventive measure that should be undertaken. Nets can be hung even in crude shelters and are effective in the prevention of malaria. Although untreated nets may reduce the risk of malaria transmission, those treated

with an insecticide offer much better protection. All insecticide-treated net programs should have a component of training on how to reimpregnate the nets as the insecticide is only effective for 4 to 6 months. Community participation is essential if the program is to be successful. If the community has no prior experience with bednets, information and education on their use must accompany the distribution. Unless the displaced population understands the purpose of the nets and "buys into" the program, the nets may be sold for alternative items that the community perceives to be of greater importance or value.

Indoor residual spraying of insecticides may be an appropriate large-scale vector control measure for some settings, especially during a complex humanitarian emergency, as it does not require behavior change. For spraying to be fully effective, insecticide must be applied to all interior surfaces of all houses at regular intervals and is only effective against vectors that bite and rest indoors after a blood meal.[24]

When there are only a few sites responsible for mosquito breeding (e.g., pond), chemical larvicides can be used. Biological larvicides, such as certain species of fish, may be employed to control the mosquito population and also provide the community with an extra protein source. When there are many potential breeding sites, the use of larvacides is generally not cost effective.

Another vector control measure is breeding site reduction. Examples include controlling the runoff from water stations or filling holes. With the exception of Anopheles stephensi in southwest Asia, artificial containers such as pots or tubs are not suitable for anopheline breeding. A thorough knowledge of the behavior of the local anopheline mosquito is imperative for appropriate control.

Complex Humanitarian Emergencies

General

Despite years of effort to reduce the impact of malaria on mortality rates, it continues to be a major cause of death in the tropical and subtropical developing world. Most complex emergencies since the early 1960s have taken place in under developed countries where local resources have been insufficient to provide fast and effective relief services.[25] In many of these crises malaria was endemic in both the country of origin and the country of asylum.

While the malaria burden in these countries can be great, it is exacerbated where there is a mass migration of people. Displaced persons are at increased risk of acquiring malaria for several reasons. The geography of endemic areas and the population's acquired immunity to the disease are another important aspect affecting the vulnerability to acquiring malaria. If the displaced population moves from a malaria-free area to an endemic zone, it is at increased risk for malaria infections, epidemics, severe illness, and death. When a group flees a disease-endemic region and seeks refuge in a malaria-free area, it may introduce the parasites into the host community, thus posing risks for the local inhabitants.

When large populations are forced to move, they frequently travel long distances to arrive at an area felt to be secure. During the journey, they sleep outside and are exposed to mosquito bites. Upon arrival, they often settle in uninhabited areas and near water sources. Many will bring livestock with them that may attract more mosquitoes.[26,27] Initially, the group lives in open areas without adequate shelter, potable water, or sanitation. These camps are often overcrowded and have no formal health care facilities. Environmental damage caused by settling into new areas also contributes to the development of vector breeding sites.

Epidemic Malaria

Due to the aforementioned characteristics of displaced populations, the risk of epidemic malaria is very high. The initial response to an apparent epidemic of malaria is to confirm an increase in cases, determine the extent of the outbreak, and investigate the demographics of those infected. Once the presence of an epidemic has been established, additional support and logistical resources should be rapidly mobilized to assist in the management. The key components of epidemic control include the provision of effective curative therapy to the affected population, prevention of further transmission, containment of the outbreak, and improvement of readiness for future epidemics.[24]

Early warning surveillance systems should be designed to assist in the detection of epidemics. Monitoring the number of cases of fever and malaria on a daily or weekly basis can alert the relief team to an unusual increase in incidence. Other variables such as rainfall, temperature, and vector density may also provide useful information in predicting epidemics.

Management of an epidemic differs depending on the infecting species, size of the outbreak, and resources available to the intervention team. The team should rely on the full use of available refugee health workers to educate the public, conduct active case detection, organize testing, and dispense treatment. Ideally, only diagnostically confirmed cases of malaria are treated, but this may be unrealistic in settlements with large populations. Another option is to confirm the presence of an outbreak with available laboratory diagnostic tests and then presumptively treat all cases of fever as malaria.

The combination of an artemisinin drug for 3 days (e.g., artesunate) with a longer acting agent for 1 day (e.g., mefloquine) has been used in Southeast Asia for P. falciparum epidemics. Although combination therapy is a good theoretical choice for epidemics as it has reduced the gametocyte carriage rate among treated individuals,[28] it has not been used in epidemics in areas outside Asia.

Prompt detection, early intervention with an effective antimalarial drug, and active community participation will decrease the morbidity and mortality associated with malaria epidemics.

Malaria Control - Emergency Phase

Initial Assessment

A comprehensive approach to conducting a needs assessment of the crisis must occur. The displaced population is in dire need of water, food, shelter, sanitation, and security. Communicable diseases such as diarrhea, measles, and meningitis contribute to increases in morbidity and mortality.[25] Depending on the prevalence of malaria in the area of the resettlement, a large number of emergency phase deaths may result.[29-32] Therefore, it is imperative that relief experts begin planning for malaria control from the beginning of the emergency.

The initial malaria assessment should focus on three areas: epidemiology of the disease, environmental factors contributing to its transmission, and local entomologic data that may assist in vector control activities (see table on page 10). Some of these data can be collected before the relief team departs for the field.

A situation analysis must also include information on the logistics involved in caring for the health needs of the displaced population. Questions concerning access of transportation to the selected site, availability of local materials and human resources, and legalities of the importation of relief materials (e.g., medications, supplies) must be addressed. Finally, a continual review of the safety of the site should occur. Agencies need to have a written security policy with personnel following the guidelines.

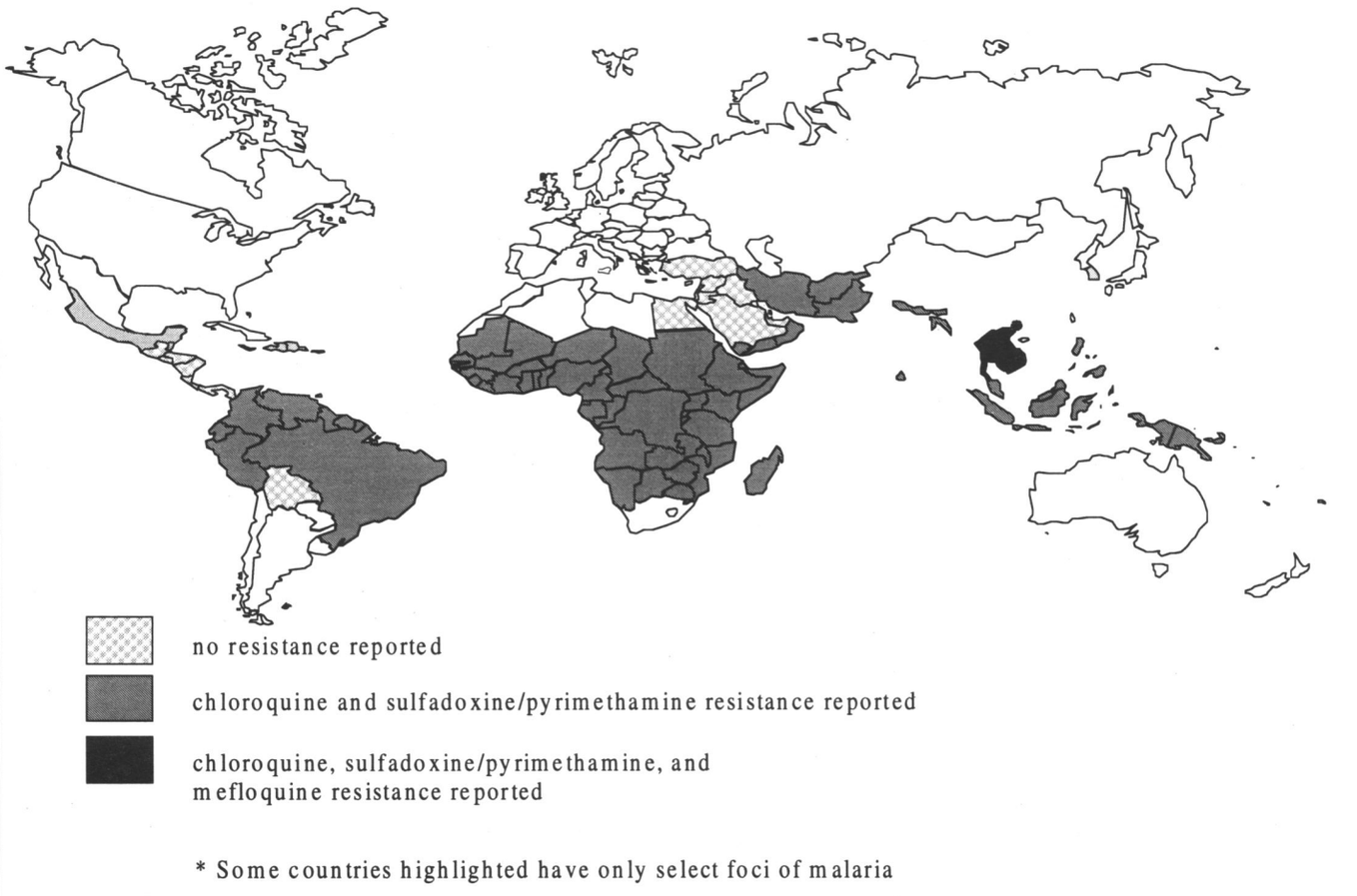
Health Information System

In the emergency phase of complex humanitarian emergencies, mortality rates can exceed 60 times the normal rates.[2] Establishment of a reliable, timely surveillance system for communicable diseases endemic to the preflight and resettlement area will capture these events. This system monitors cause and age-specific mortality rates and should have the sensitivity to detect epidemics, enabling rapid interventions.

The case definition of malaria depends upon the diagnostic capabilities available. Ideally, the definition would be based on a thick smear blood slide or positive results from a rapid diagnostic test. In the early phase of the emergency, however, diagnosis may rely solely upon patients having fever or a history of fever and no other obvious infection accounting for the febrile disease.

Data should be collected and analyzed on a daily basis during the

Figure. Worldwide Patterns of Antimalarial Drug Resistance



emergency phase. Graphing of crude incidence and mortality rates assists in monitoring for possible outbreaks. Data obtained from local malaria control officials can be used as baseline rates if available.

Community Participation

Outreach health programs using community health educators trained from the displaced population need to be organized early. These educators circulate among the newly arrived persons to assess the health status of the families, triage ill persons to established health centers, and provide education on prevention of the major communicable diseases prevalent. Visits to persons who arrived earlier to the camp may detect unreported illnesses and facilitate referrals to the health center.

Successful malaria control efforts include an understanding of the social behaviours of the host and displaced communities. This task may be extremely difficult to accomplish because of competing demands in meeting priority needs during the first month of operations. Attention should be placed on the various social organizations established in the camp. It is essential to understand and integrate community leaders into malaria control activities from the beginning as they may be valuable resources in supporting control activities. Also, early integration of traditional or community healers into malaria control efforts may prevent conflicts with relief agencies that promote western health care.

Information about malaria knowledge, beliefs, and practices of the community needs to be obtained. Participatory or rapid appraisal methods, such as using key informants and focus groups, allow the community to share, enhance, and analyze their knowledge of life and conditions, to create a plan, and to act.[33]

Malaria Control Post-Emergency Phase

Health Information System

The post-emergency phase of complex emergencies is characterized by a steep decline in crude mortality rates. The focus of the health information system continues to be the collection of reliable, timely data. Training of refugee health staff in the collection and analysis of simple data should occur. These courses need to include the recognition of epidemics, and the utilization of surveillance data for monitoring, evaluation and planning of the malaria control program. If not possible during the emergency phase, case definitions of malaria should now shift to laboratory-confirmed cases with reporting of the infecting species. Data continues to be collected, analyzed, and graphed on a daily or weekly basis, as the risk for epidemics still exists.

Community Participation

During the post-emergency phase, the displaced population settles in the new area and attempts to reconstruct the social networks that were present in their preflight communities. This is a time when people struggle with what has occurred and are in the process of redefining a sense of meaning to their lives.

Relief interventions now focus not only on curative care, but on preventive care as well. Expanded training of the community health educators selected from various groups within the displaced population continues. Relief workers need to cooperate with the refugee team to develop culturally appropriate health education messages.

Utilization of key community members in the planning of malaria control activities allows refugees to regain a sense of control. This enhances the acceptance level of the program within the displaced community. During programmatic planning for future work, relief organizations and these community representatives need to prioritize the malaria control agenda. Decisions about further training, vector control strategies, community health education events, and choices for appropriate drug policies are made in a collective manner. Community participation is aimed at inclusion and building capacity. Both the relief organizations and the displaced people must be moving into a development mode with projected plans for community-based malaria control strategies.

Other Activities

Establishment of community health workers in the prevention and treatment of malaria and other diseases occurs in the post-emergency phase. This can be done by using medical skills already present in the community or by building capacity by training new health workers. The integration of these workers can free relief agency staff from actual patient care responsibilities and allow them to take on a supervisory role. The ultimate goal is to have the refugee health team assume the management responsibilities of the hospital and clinics.

Assessment for drug resistance must occur every 1 to 2 years to ensure that the current therapy provided is efficacious. Other operational research projects, such as community-based qualitative studies, might help in both case management and developing appropriate health education messages.

Coordination

The response to complex humanitarian emergencies by the host government and international community can be effective. However, there are often several competing organizations with similar agendas vying for a piece of the relief operation. This can be extremely problematic unless adequate coordination exists. Often the task of coordination falls to the United Nations High Commissioner for Refugees if the displaced population crosses an international border. If the population is internally displaced, the United Nations Organization for Coordination of

Humanitarian Assistance is often the lead agency.

Actual implementation of the relief efforts is usually carried out by nongovernmental organizations such as Médecins sans Frontières (medical services), OXFAM (water and sanitation), or the International Rescue Committee (education and training). Host country ministries of health or national Red Cross/Crescent societies may also be involved with implementation of relief activities. Other agencies such as the International Committee of the Red Cross may play a role as well. Efforts by the international agencies to incorporate local staff into the relief work should be made. Each organization brings certain specialties to the relief effort, however, because of the possibility of competing interests and the complexity of the emergency, coordination among agencies is paramount.

Conclusion

Malaria continues to be a major communicable disease in the tropics and subtropics, killing 1.5-2.7 million people each year. It is characteristically a disease of the poor, young, and weak. War, civil strife, mass migration of nonimmune groups into high-risk areas, breakdown of health services and malaria control programs, environmental degradation, and problems with access to the population contribute to increased morbidity and mortality.

Malaria must be recognized by the international relief community as a major cause of morbidity and mortality in the displaced population and host communities. The challenge is to implement malaria-control activities that are evidence-based, cost effective, and feasible, given the difficult nature of complex humanitarian emergencies. International relief agencies are often staffed by medical staff from developed countries with little or no experience with malaria. Therefore, by improving relief workers' understanding of malaria control concepts through adequate training before placement in the field, countless deaths due to malaria can be avoided. ■

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Table. Initial Malaria Assessment in Complex Humanitarian Emergencies

Epidemiologic	*Environmental*	*Entomologic*
Disease endemicity[1]	Proximity to water	Anopheline species
Prevalent Plasmodium species	Proximity to agriculture	Biting behavior
First-line therapy	Proximity to forests	Resting behavior
Antimalarial drug resistance	Temperature	Vector breeding sites
Immunity levels[2]	Rainfall	Vectorial capacity[3]

[1] Endemicity refers to the amount or severity of malaria in an area. Quantifying endemicity can be done by calculating spleen rates or parasite positivity rates (Hypoendemic: spleen rate/slide positivity in children (2-9 years)<10%; Mesoendemic: spleen rate/slide positivity in children (2-9 years) 11% - 50%; Hyperendemic: spleen rate/slide positivity in children (2-9 years)>50% and >25% in adults; and Holoendemic: spleen rate/slide positivity in children (2-9 years) constantly >75% but low adult spleen rates.

[2] Often relates to disease endemicity in country of origin.

[3] Vectorial capacity is term used to express the malaria transmission risk. It can be expressed as $C=(ma^2p^n/-\log_e p)$ where ma is number of times a person is bitten per day, p^n is proportion of vector population surviving incubation period or parasite.

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Note

The views expressed within this paper are solely those of the authors and do not reflect those of the United States Public Health Service.

An Ongoing Omission: Adolescent and Adult Malnutrition in Famine Situations

Peter Salama & Steve Collins

Abstract

Prolonged famine causes malnutrition in all age groups. The under five age group is systematically targeted for nutritional interventions in the majority of complex emergencies where famine is a major component. Older children and adults however, are often not targeted systematically or are excluded completely. This is despite the past experience in Somalia, Angola and more recently southern Sudan, of sustained high adolescent and adult mortality rates associated with malnutrition. Using the recent example of southern Sudan, the authors analyze some of the reasons for this omission, which include factors such as inadequate scientific literature, the bias of conventional nutritional epidemiology, agency inexperience and media and funding pressures. Finally the authors call for a greater amount of attention and resources to be targeted towards these age groups by the humanitarian community. Programmes should be accompanied by operational research within the framework of a common research agenda.

Résumé

La famine prolongée engendre la malnutrition dans tous les groupes d'âge. Le groupe des moins de cinq ans est systématiquement ciblé pour intervention nutritionnelle dans la majorité des situations d'urgences complexe où la famine est un composant majeur. Les autres enfants et les adultes, pour leur part, sont souvent ciblés très sporadiquement, ou même complètement exclus. Cette situation se perpétue malgré les expériences passées en Somalie, en Angola, et, plus récemment, au Sud-Soudan, où un taux constant de mortalité adolescente et adulte ont été associés à la malnutrition. En se basant sur l'exemple récent du Sud-Soudan, les auteurs analysent certaines des raisons de ces omissions, ce qui inclut des facteurs tels: une documentation scientifique inadéquate, les préjugés de l'épidémiologie nutritionnelle tra-ditionnelle, l'inexpérience des agences et des médias, et les pressions issues des sources de financement. Les auteurs font un appel pour qu'une plus grande attention et de plus amples ressources soient consacrées, par la communauté humanitaire, à cibler les adolescents et les adultes dans les situations de famine. De plus, les programmes d'aide devraient s'accompagner d'investigations opérationnelles effectuées dans le cadre d'objectifs de recherche communs.

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Steve Collins is an independent consultant in nutrition and health who was involved in the design of the Concern programme for adolescents and adults in Ajiep.

Introduction

The year of the 1998 famine will go down as another disastrous period in the history of southern Sudan. Once again aid agencies rushed in to deliver services as Operation Lifeline Sudan (OLS) and non-OLS agencies alike, either initiated or expanded operations in response to the humanitarian crisis. The international donors poured millions into OLS, which expanded into one of the largest emergency operations in history. As the rains end and the cease-fire, that has allowed the response in Bahr el Ghazal to continue, draws to a close, it will be important to evaluate the quality of the humanitarian intervention in southern Sudan. In particular, the prioritisation of resources is a key area that should be closely examined. This article focuses on one aspect of humanitarian intervention; the choice of target groups for selective feeding interventions.

The Focus on Child Malnutrition

By August 1998, according to the United Nations Children Fund's (UNICEF) figures, there were 18 Non-Governmental Organisations (NGOs) operating 50 Supplemental Feeding Centres (SFCs) and 21 Therapeutic Feeding Centres (TFCs) in Bahr el Ghazal (see map) with anticipated numbers of beneficiaries of 40,753 and 6,430 respectively.[1] To our knowledge, not one of these centres provided services tailored towards older children and adults. Although some centres did include small numbers of adults, particularly if they were categorised as 'vulnerable' (disabled, elderly, pregnant and lactating women), the inclusion of adolescents and adults was generally on an ad hoc basis. This focus on child malnutrition did not always correspond with the mortality patterns in a given location. In a number of areas, typical of a late stage in a severe famine, adult and adolescent deaths out-numbered those of children under the age of five.[2] The inappropriately low amount of resources targeted towards acutely malnourished adults and adolescents indicates a failure to rationally prioritise relief interventions in order to address the vital needs of this population.

Past Lessons Forgotten

Lessons, supposedly learnt in Somalia and Angola, about the importance of treating malnutrition in all sections of the population appeared to have been forgotten. The inattention to the plight

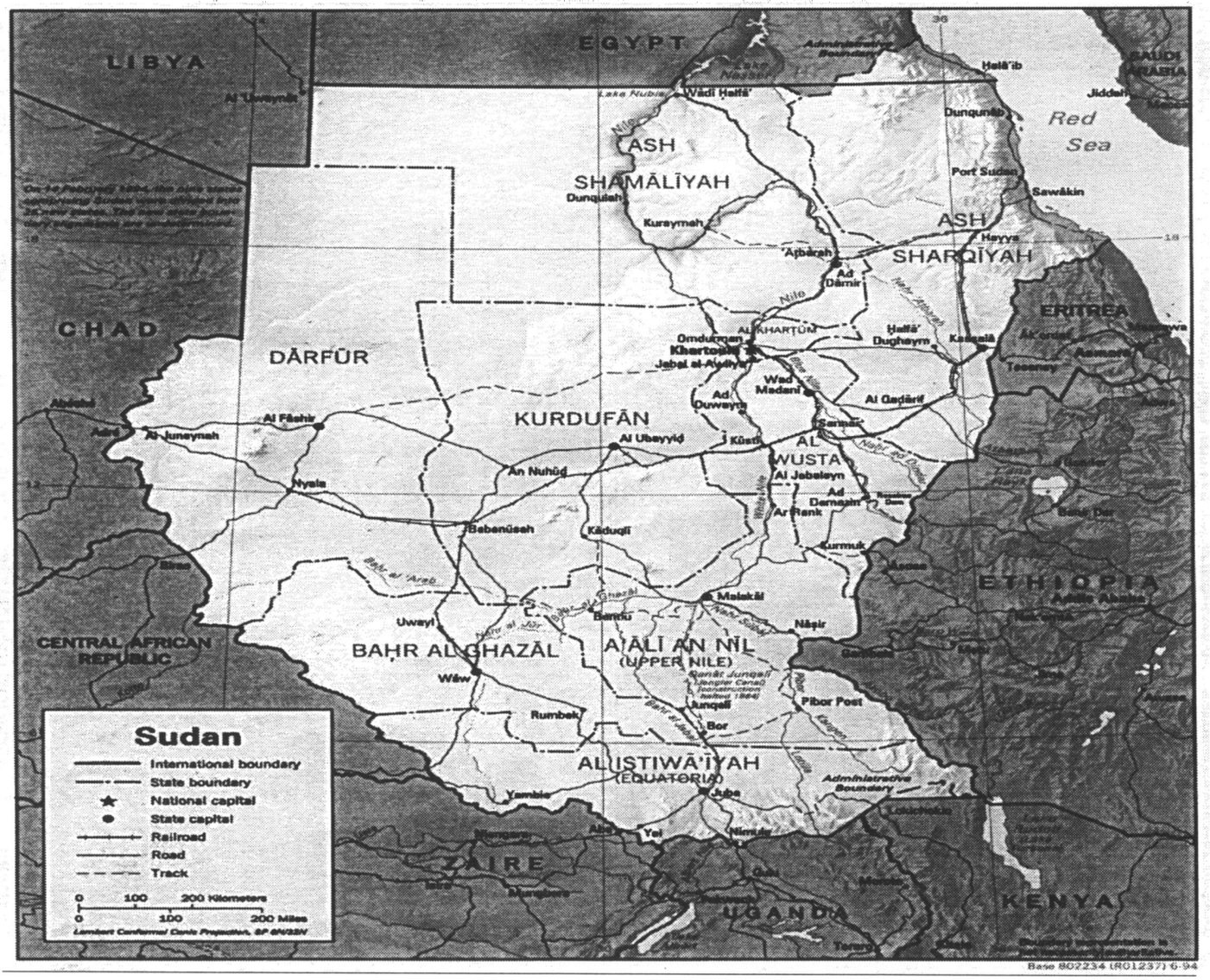
of malnourished adults and adolescents, characteristic of most humanitarian responses to famine and war since the Second World War, returned. During 1992 in Baidoa, Somalia, although adults and adolescents accounted for two thirds of recorded deaths, there were almost no specialised nutritional services for these age groups, who were instead, expected to recover on a basic ration of rice and beans.[3] The success of the single adult therapeutic centre in the town prompted a rethink as to the importance of adult and adolescent malnutrition in famine. By the following year some lessons had been learnt. In the town of Melange, Angola, where the mortality picture was again similar, with 75% of the bodies buried during the first few months of the aid operation aged more than 10 years,[4,5] adult therapeutic services figured strongly in the response. This increased attention towards adult feeding continued, and in more recent relief operations, for example in the Great Lakes region since 1994, or in Liberia during 1996/7, specialised adult feeding centres have played important roles in the humanitarian response.

Why Were Malnourished Adults and Adolescents Neglected?

In view of these recent experiences and successes with feeding programmes targeted towards adults, why was this target group neglected in southern Sudan? The reasons are complex. Many factors, such as the inadequacy of the literature on the problems of starving adults, the focus of nutritional epidemiology on the under five age group, inexperience, the short history of contemporary adult selective feeding programmes, media expectations and funding pressures, are all important. These are explored in the following paragraphs.

Diagnosis and Treatment of Malnourished Adolescents and Adults still in its 'Infancy'

There is little good scientific literature available on the diagnosis and treat-



ment of malnourished adolescents and adults, and the tools for assessing these age groups in the field remain primitive. As recently as 1996, Mason et al. were unable to find any studies on the relative risk of mortality from under-nutrition in adults.[6] There is still little uniformity in the international standards and accepted protocols for adult nutrition programmes. Body mass index (BMI), in vogue for the assessment of chronic malnutrition in adults is problematic. Large individual variations in body shape, particularly the relative lengths of the legs and back can alter individual BMIs by as much as 4 kg/m^2 irrespective of nutritional status. Whilst these differences can be corrected on a population level, by adjusting BMI values using the "Cormic Index" (sitting height/standing height), such adjustments are not practical on an individual basis for screening admissions to feeding centres. The height and weight measurements required can also be difficult to obtain in severely malnourished adults. Although admission indicators based upon a combination of MUAC and clinical criteria are being developed, measurement error can be significant and the problem of appropriate discharge criteria remains. For adolescents, especially post-pubertal adolescents (and particularly in the 'nilotic' people of southern Sudan) the level of knowledge is even more basic. Extended weight for height charts are poor predictors of mortality and extended BMI for height charts have as yet been used infrequently, remain invalidated and are likely to suffer from similar problems as BMI in adults. The use of MUAC for adolescents, although promising, has not yet been adequately explored and no cut-off values exist. Much research on screening and assessment tools is still needed.

The focus of nutritional epidemiology in famine situations on the under five age group, draws attention away from adults. As a result, the extent of adult malnutrition may not be so apparent to planners. This is particularly so in areas such as southern Sudan, where famine oedema is uncommon and severe malnutrition in older people, therefore, less easily recognised. The exclusive focus of nutritional surveys on the under five age group (in Sudan less than 115cm) also means that there is usually no baseline indicator against which adult nutritional programmes can be monitored and the impact of these programmes assessed. This makes it difficult to judge effectiveness or decide when to close programmes. We feel that older age groups should be included in nutrition surveys, especially in locations where famine has been present for a longer period of time.

Inexperience

Inexperience, at both individual and agency level, is another important reason behind the disregard for malnourished adults. In the absence of clear epidemiological data and agency guidelines, the experience of field workers and co-ordinating agencies is all the more important. Generally however, NGO and UN field co-ordinators, managers (as well as funders), are less familiar with implementing adult feeding programmes. Not only may the problem remain unrecognised, but also expectations and the specific difficulties involved in them may be poorly understood.

Complexity of Adult Feeding Programme Design

The design of adult feeding programmes is often more complicated than that of child programmes. The potential for adult centres to become quasi-hospices, to contribute significantly to population displacement, or to undermine survival strategies and contribute to adverse outcomes for children of the malnourished are factors that need to be taken into account at the design stage.[7] Frequently, other illness, particularly chronic infectious diseases such as tuberculosis (TB), and HIV will complicate a high proportion of cases. On admission it is extremely difficult to differentiate between malnutrition secondary to these illnesses and primary malnutrition, itself often complicated by other illnesses. These two forms of malnutrition, however, require different approaches to treatment. The absence of tools to quickly identify TB, the difficulties posed in the treatment of TB in unstable settings and the ethical problems involved in the spot diagnosis of HIV, therefore complicate programme design and implementation.

Even in cases where rehabilitation is relatively straightforward, primary malnutrition responds slower to treatment than in children, with a mean length of stay of around 30 days and a mean increase in weight of less than 10 g/kg/day.[8] Furthermore, in some countries socio-economic factors, such as the pressure on beneficiaries to leave centres to plant crops, or problems of compliance with a milk-based diet and inpatient care, result in higher default rates in adult centres than in those providing care for children. Addressing food preferences through supplementation of diet with local foods in the recovery phase may improve compliance. Appropriate care must be taken at all times to maintain adult dignity especially in the TFC setting.

These differences mean that adult nutrition programmes often require more involved planning and more intensive medical interventions than under five programmes. Even with this, programme results, as defined by successful exits, may be less positive than for childhood programmes. It will be necessary to evaluate adult nutrition programmes using different reference standards, since successful recovery rates of more than 75% or mortality rates of less than 10% are probably unrealistic.[9]

Media and Public Relations

Nutrition programmes for adolescents and adults may not meet media expectations. Amongst the media and the increasingly influential 'agency public relations officers', images of starving infants are deemed to be more powerful in eliciting western sympathies than images of starving adults. The journalist who visited a Concern adult TFC in Sudan and requested 'to see the starving babies' was not an isolated simpleton, but represented a mainstream

conception of what the media considers 'sexy'.

Certainties and Failure of Response

Amidst all this confusion, inadequate information and inexperience, there are some certainties. Firstly, in a severe famine, particularly towards the end of its evolution at a time when humanitarian interventions are up and running, severe malnutrition amongst the adolescent and adult population is frequently a major public health problem. Secondly, with the correct treatment, such as 24-hour therapeutic care with the careful titration of calories given to the weight and stage of recovery, rehabilitation is often successful. Even the most emaciated adults can survive and thrive. Thirdly, it is vitally important to save the lives of adults and older children as these age groups are the most economically productive and, in agrarian or agricultural communities, the major food producers.[10] The deaths of mothers and older children have dramatic ramifications for survival of other children and the structure of society. Furthermore, the elderly and elders in many communities, particularly where traditions and culture are transmitted orally, are critically important to community and cultural integrity and coherence. We feel that in southern Sudan, particularly in Bahr el Gazal, the omission of supplementary and therapeutic feeding specifically targeting adults and adolescents was a major failing of the humanitarian response. It is time that attention to these age groups in planning and programme design was built into famine relief responses in a systematic and structured manner. The need for targeted adult and adolescent feeding programmes should always be investigated as part of any famine relief response and when necessary specialised services should be established. In addition, the many areas of uncertainty outlined above will only be clarified if such programmes are accompanied by operational research to assess the effectiveness of the different indicators and treatment regimens used. For this to progress efficiently, good inter-agency co-ordination is required to ensure the utilisation of existing knowledge in this field, standardise protocols and develop a common research agenda. ■

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Water for the Displaced Population's Health: An Urban - Rural Dichotomy Revisited

Alpaslan Özerdem & Sultan Barakat

Abstract

This paper is a review and analysis of the health impacts of inadequate and unsafe water supplies on displaced populations. The investigation focuses on the overall health implications of the current praxis of water supply recovery and reconstruction, which is often biased towards urban areas, neglecting the water needs of those living in rural areas. Having explored a series of water quantity and quality issues, and their inter-relationship to public health, by comparing urban and rural settlements in the Tuzla Region of Bosnia-Herzegovina, this paper concludes that the overall strategy of responding to water needs of displaced populations requires equal attention and care to both urban and rural areas.

Résumé

Cet article propose un récapitulatif et une analyse de l'impact sanitaire d'une distribution inadéquate et insécuritaire de l'eau chez les populations déplacées. La recherche concentre son attention sur l'impact sanitaire global des pratiques actuelles de distribution des eaux, qui privilégie souvent les zones urbaines au détriment des zones rurales, dont les besoins en eau potable sont sciemment négligés. On explore un certain nombre de questions relatives à la quantité et à la qualité de l'eau, et leur relation avec la santé publique, en comparant des installations urbaines et rurales de populations déplacées de la région de Tuzla, Bosnie-Herzégovine. L'article conclut que la stratégie globale visant à répondre aux besoins en eau potable des populations déplacées doit être aussi attentive et minutieuse en zone rurale qu'en zone urbaine.

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Introduction

Water is not only significant for our very existence, but also for the continuation of physical, social and economic aspects of everyday life. Without adequate means of water, the development of society and satisfaction of human aspirations cannot be managed. Since there is no substitute for water, humanity's existence totally depends on it. In fact, it is water's indispensable multi-functional character for life - health, habitat, carrier and production functions – which is why water is often used as a weapon of war.

Vulnerability of water supplies, particularly those in urban areas due to their complexity is often manipulated by warring parties in armed conflicts: destruction inflicted on water supply components by bombing and artillery; cutting off or poisoning of water sources when they are in the hands of opposing side. Armed conflicts have also great indirect negative impacts on water supplies, as the interdependence on electricity and fuel for their operation makes them very vulnerable to war conditions. The other indirect effect of war on urban water systems is the lack of personnel, materials, equipment and chemicals for their operation and maintenance. Even if they are obtained through great efforts, the lack of personnel may still pose a great challenge for the improvement of supplies. Water board staff may be under conscription or they might be ethnically cleansed and displaced, injured or dead (Özerdem, 1998).

As a result of these direct and indirect impacts of armed conflicts on water supplies, war-affected communities go through the burden and hardship of lacking adequate supplies of safe water for their well-being and health. Besides the scope of these challenges with water quantity and quality in settlements affected by armed conflicts, the influx of refugees and internally displaced persons (IDPs) further exacerbates the situation. These influxes of displaced people, which increase the demand for water in a settlement sometimes by 10 to 20 fold, put tremendous strain on damaged and already inadequate existing supplies. Consequently, both host communities and those displaced from their homes and livelihoods often experience deadly health problems caused by water-related infectious diseases (Özerdem & Barakat, 1997).

The literature in public health studies and the health care for war-affected people usually state the classification of water-related infectious diseases according to their transmission routes as (Feachem, et al., 1977; Dangerfield, 1983; WEDC, 1991; Mears & Chowdhury, 1994; Kolsky, 1993; Thomson, 1995):

1. Water-borne route: The infection occurs by drinking water containing pathogens.
2. Water-washed route: The infection in this group caused by the lack of water for personal hygiene.
3. Water-based route: Some pathogens spend a certain part of their life cycle in an aquatic animal such as a water snail and infection occurs by coming in contact with parasitic worms.
4. Insect vector route: Water in this route acts as a breeding ground for insects which spread diseases.

Table 1 shows these four water-related transmission routes with examples of diseases and preventive strategies. What can be derived from the preceding table is that many infectious diseases such as diarrhea, dysentery and cholera can be prevented from causing the deaths of thousands of war-affected people by increasing and improving water quantity and quality. According to Kolsky (Kolsky, 1993), the

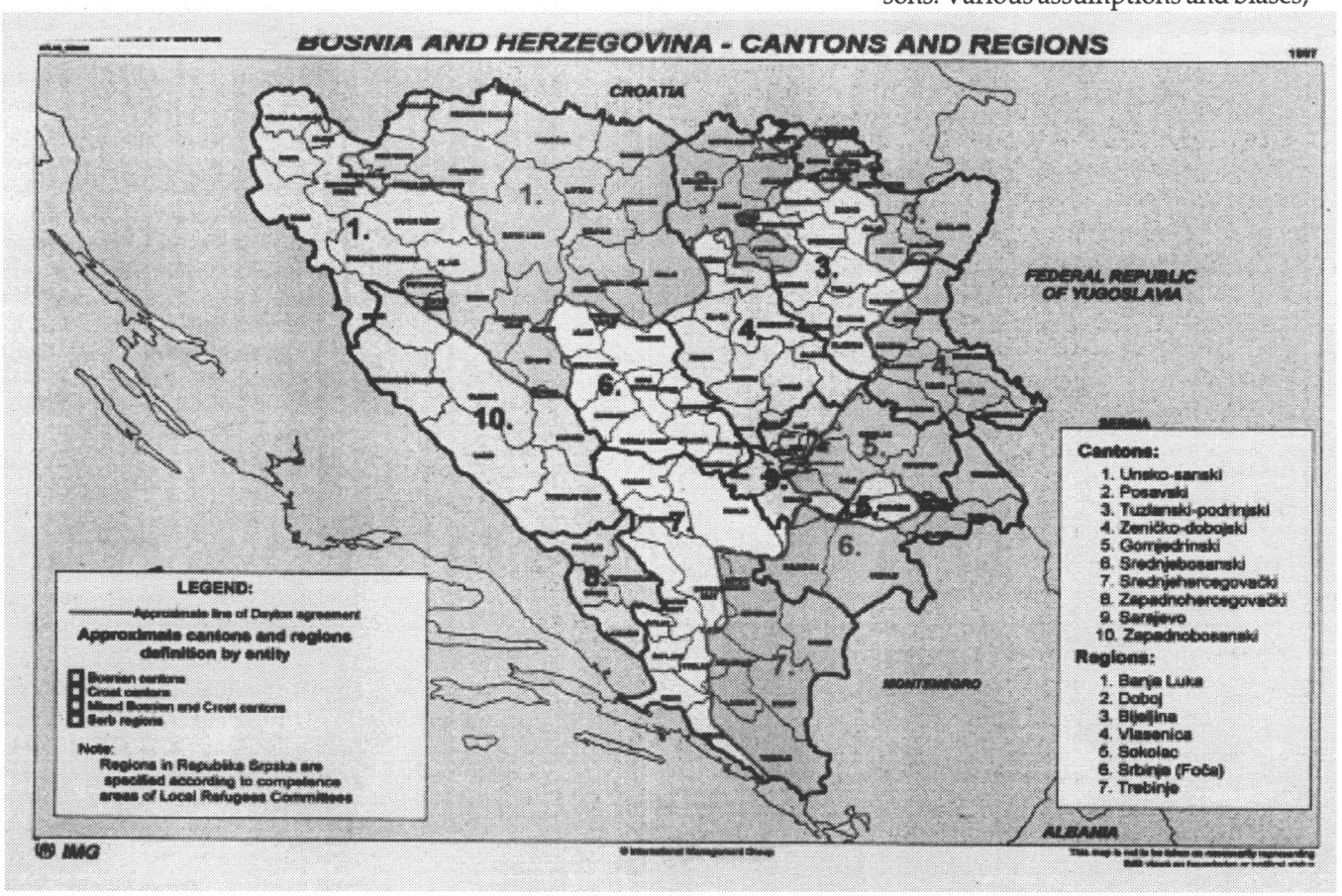
Table 1: Water-related infection routes with examples and control measures
(Source: WEDC, 1991:70 and Dangerfield, 1983:27-28)

Transmission route	Example	Preventive Strategy
Water-borne	Diarrheas, dysenteries, cholera, typhoid	Improve water quality Prevent use of uncontrolled sources Hygiene education
Water-washed	Infectious skin and eye diseases, louse-borne typhus	Increase water quantity, accessibility, reliability Personal hygiene education
Water-based	Schistosomiasis, guinea worm infection	Water quality & quantity Control snail population Excreta disposal control
Water-related insect vector	Sleeping sickness, malaria, yellow fewer	Improve surface water management and surplus water drainage Destroy breeding sites of insects

preceding categorisation of water-related infectious diseases was especially appreciated by engineers, as it outlines a preventive strategy for each transmission route. For example in Table 1, the improvement of water quality was given as an appropriate intervention for water-borne diseases and increasing the quantity for the water-washed. However, it is difficult to claim a single transmission route for diarrhoeal diseases as both water-borne and water-washed routes play a significant role in their infection. As a result of this, Bradley and Feachem proposed the following classification:

1. faecal-oral diseases (water-borne and water-washed)
2. strictly water-washed diseases (skin and eye infections)
3. water-based
4. water-related insect vector

The engineering approach underlined by Kolsky, which considers water provision only in terms of pumps, pipes, volume and chlorine, also highlights another problematic area with the current praxis of responding to water needs: the difficulty of physically meeting the water needs of displaced persons. Various assumptions and biases,



such as being able to eradicate all water-related diseases by only improving water quality, or focusing on urban areas at the expense of those living in settlements which are not covered by an umbrella of a water supply system complicate the situation. Therefore this paper will review a series of water quantity and quality issues, and their inter-relationship to public health through an urban-rural injustice discourse in the context of the Tuzla Region of Bosnia-Herzegovina in order to derive a set of lessons to be utilised in responding to water needs of people in other war-affected areas.

The Tuzla Region Context

The Tuzla Region of Bosnia-Herzegovina is located approximately 90 km north of Sarajevo, and includes the municipalities of Banovic, Brcko, Celic, Doboj East, Gracanica, Gradacac, Kalesija, Kladanj, Lukavac, Sapna, Srebrenik, Teocak, Tuzla and Zivinice. The Dayton Line separates the Tuzla Region from the Serbian regions number 2, 3 and 4 along its west, north and east sides, while in the south, it borders with the Muslim Canton number 4, as can be seen on the map on p.17. In each municipality of the region, there is a centre town which is the main settlement for administrative, economic and social activities and gives its name to the whole municipality such as Lukavac, Tuzla and Zivinice towns in their respective municipalities. Besides these centre towns in each municipality, there are also a number of smaller towns and villages, and it is in conjunction with this administrative structuring that the first layer of urban -rural dichotomy appears at the intra-municipality level. However it should be noted that there are also distinctive differences in economic development levels at the inter-municipality level. For example, Tuzla, Srebrenik and Gradačac municipalities have much better physical, economic and institutional resources than in Åelic, Kalesija and Teočak. In addition to this, as a result of the Cantonal System in the Federation of Bosnia and Herzegovina, Tuzla town also has the role of being regional capital city, as is the status for Zenica in Zenicko-dobonjski Canton (Number 6) and Mostar in Srednjehercegovacki Canton (Number 7), which means a further concentration of administrative and institutional structures in its boundaries.

The Tuzla Region preserved its multi-cultural and multi-ethnic characteristics for centuries under the rules of different empires from the Ottomans to the Austria-Hungary Empire. Although it was mainly a Muslim region - 65% of the population in 1991- the Croats and the Serbs formed a considerable proportion of the population in municipalities such as Brčko and Tuzla. There is no doubt that the war changed the demographic composition in the municipalities, both in terms of population and ethnicity, through its severe impacts such as ethnic cleansing and mass population movements. According to the United Nations High Commissioner for Refugees (UNHCR 1997), there are 200,000 Muslim IDPs living in the Tuzla Region. However, apart from estimating some approximate numbers and percentages, it is not an easy task to estimate the current ethnic breakdown for each municipality.

Table 2 shows that the municipalities of Gradačac and Lopare experienced a considerable level of displacement in terms of receiving refugees and IDPs, as well as having people displaced from their boundaries, due to their geographic positions between the Federation of Bosnia - Herzegovina, and Republica Sirpska. On the other hand, the main displacement experienced by Lukavac and Tuzla had been in terms of receiving mainly Muslim IDPs from other parts of Bosnia-Herzegovina. For example, IDPs form 25 % of the current population in the Tuzla Municipality. More importantly, it can be seen that, as a consequence of Muslim IDPs, the proportion of ethnic groups has changed considerably. Even assuming that the population of Croats and Serbs remained the same during this period, the ratio of the Muslims in the Tuzla Municipality increased from 48% to 65% (Özerdem, 1998).

Table 2: The pre-war and post-war population and ethnicity in four sample municipalities
(Source: UNHCR, 1997a)

		Gradačac			Lopare			Lukavac			Tuzla		
		B	C	S	B	C	S	B	C	S	B	C	S
Pre-war Pop.	Total	56,581			32,537			57,070			131,618		
1991	%	60	15	20	37	4	57	66	3	21	47	15	15
Current Population & Major Ethnicity	Fed	38,600			19,500			51,200			159,718		
	Major ethnicity	+	+		+			+			+		
	RS	6,900			20,200								
	Major ethnicity			+			+	+			+		
Refugees From	Fed	min 250			---			min 660			min 2,300		
	Major ethnicity												
	RS	min 4,000			900								
	Major ethnicity	+					+						
Displaced Persons In	Fed	4,400			1,400			7,500			41,200		
	Major ethnicity	+			+			+			+		
	RS	2,000			4,800								
	Major ethnicity			+			+	+			+		

B: Mainly Bosniacs, C: Mainly Croats, S: Mainly Bosnian Serbs
min: minimum
Fed: Federation of Bosnia-Herzegovina, RS: Republica Sirpska

The Provision of Drinking-Water in the Tuzla Region

A survey carried out by Jusupovic and Bešlagic (1998) from the Tuzlanski-podrinjski Cantonal Ministry of Health and the Cantonal Public Health Institute respectively, presented the current situation of water supply and drinking-

Table 3: State of Water Supply in Tuzla Region 1998
(source: Jusupovic and Bešlagic, 1998:116)

Municipality	% of inhabitants with connections to city water networks	Water consumption (litres/ inhabitant/ day)	% of deteriorated water supply network
Banovici	10	50 - 230	25
Brcko	-	-	-
Belic	-	-	-
Doboj East	-	30	16
Gracanica	32	150	57
Gradacac	22	150	80
Kalesija	25	20	-
Kladanj	-	-	-
Lukavac	28	250	20
Sapna	-		-
Srebrenik	14	140	-
Teocak	-	-	-
Tuzla	67	200	-
Živinice	44	150	-

-: no data

water quality control in the Tuzla Region.[1] The following data obtained from this survey are presented in table 3. This table shows the percentage of municipalities with service connections to city waterworks, their water consumption, and the percentage of deteriorated city water supply networks.

This table shows that the level of service connection to existing urban water supplies is very low in the Tuzla Region. The Tuzla municipality has the highest proportion of its population, connected with the water supply network, while it is as low as 10% in the municipality of Banovici. However, the percentages provided show the ratio for the number of inhabitants with connections to city water networks by municipality. However, it is known from the field work that the percentages for the population living in town centres are much higher than those in rural areas. For example in Gradacac, Gracanica, Tuzla and Zivinice town centres, almost all populations are served with water by town water supply networks. The variation of water consumption from one municipality to another is large: over 150 litres per capita per day (L/p/d) in major municipalities, to between 20-50 L/p/d in the smaller municipalities, which from field experience is similar to those municipalities without any data.

Table 3 also shows that the technical state of water supply and its distribution networks are rather alarming. The level of deterioration in Gradacac, for example, is as high as 80 per cent. Therefore it is not surprising to see that almost all water distribution networks in the region experience a leakage level at least 40 to 50 per cent.

Apart from Tuzla and Zivinice, which use sedimentation, filtration and disinfection facilities, the main type of water treatment for other municipalities in only chlorination (disinfection). Furthermore, the treatment facilities only supply water to the town centres in

Table 4: Four major diseases registered at the Cantonal Public Health Institute in four municipalities of the Tuzla Region
(Source: The Cantonal Public Health Institute, 1995)

	Year	Tuzla # Cases	Srebrenik # Cases	Lukavac # Cases	Zivinice # Cases
Bacilli Dysentery	1991	3	-	4	-
	1992	15	-	1	6
	1993	58	1	-	2
	1994	11	-	1	3
Acute Enterocolitis	1991	32	7	9	9
	1992	125	21	10	62
	1993	215	29	16	42
	1994	138	8	6	18
Hepatitis A & B	1991	31	4	16	17
	1992	22	10	2	3
	1993	21	21	4	7
	1994	59	31	23	60
Salmonellosis	1991	43	6	16	15
	1992	29	1	2	4
	1993	1	-	-	-
	1994	5	-	1	-

Table 5: Results of bacteriological survey of water supplied to rural areas, according to type of facilities, in the Municipality of Tuzla (Source: Mehinović, 1998:96)

Type of Water Facility	No. of Samples	No. of Positive Results	Percentage of Positive Results (%)
City waterworks - survey 1	9	1	11
- survey 2	4	2	50
Local waterworks - survey 1	38	25	66
Tapped source - survey 2	45	31	69
Public fountain	14	5	36
Well (above 5 households)	153	129	85
Artesian well	1	1	100
Cisterns	2	2	100
TOTAL:	266	196	74

each municipality. Therefore the real state of treatment facilities for those who do not live in rural areas is much worse, as they are supplied with water directly from local sources, such as garden wells.

Health Consequences of Inadequate Water Supplies in the Tuzla Region

The war in Bosnia and Herzegovina had serious impacts on the health of the population due to the deterioration of environmental and living conditions, malnutrition and destruction of health facilities. Communicable diseases, especially among refugees and IDPs, have shown a large increase throughout the country. For example, the result of a medical survey upon the arrival of 4,200 displaced people from Srebrenica, in the Tuzla Region, showed that 72 % of children had malnutrition, 42 % of them suffered from anaemia, 40 % had an upper respiratory tract infection, 31 % had a skin disease, 17 % suffered from diarrhoea, and 17 % had bronchitis (Ministry of Health, 1996).[2]

The Cantonal Public Health Institute in Tuzla (1995) prepared a report on the health situation in several municipalities in the region. The data provided in this report covers the period from 1991 to 1994, where 1991 and early 1992 figures represent the pre-war situation while mid-late 1923, 1993 and 1994 figures are for war time.[3] This data is presented in Table 4, which shows cases registered at the Cantonal Public Health Institute. The figures provided are artificially low for the following reasons: the difficulties of compiling information during the war; the Institute received its figures only from the Tuzla General Hospital, while those cases treated in the clinics may not have been sent to them. Therefore it can be assumed that the real state of these four major diseases were in fact much worse in the four municipalities during the period of war. Due to unreliable population estimates, incidence rates of diseases could not be calculated.

The decrease in the number of the given diseases in the Tuzla region for the year 1994 in Table 4 can be explained by the improved response to basic needs by the international community which was effective from early 1994 onwards.

The paper will now present the result of a survey on the bacteriological safety of water in the rural areas of the municipality of Tuzla which are not covered by the Tuzla Town Water Supply. The survey was carried out using the Oxfam's E-coli counting method by the Tuzla Health Centre in 1997. It was particularly important to show the scale of the health problem for approximately 30 per cent of the rural population who are not connected to a town water supply in the Tuzla municipality. Mehinovic (1998: 95) stated:[4]

> "The control of quality of water from water supply facilities which are outside of the city waterworks system is performed mostly by no one, except in epidemiologically indicated situations".

From the data in Table 5, 74 % of all facilities tested were positive for bacteriological contamination. Thus the rural water supply in the municipality of Tuzla posed a high level of danger to public health for possible epidemics of infectious diseases.

Using UNICEF's threshold, which identify water with more than 10 E-coli colonies per 100 ml as polluted, the degree of contamination of water in these positive test results is in excess of acceptable levels. Of the positive test results, 52% had between 1-50 colonies per 100 ml of water, 17% had 51-200 colonies, and 31% had too many colonies to count. Considering the high percentage of E-coli of faecal origin in the water, it is not surprising to see that there was a high incidence of intestinal infectious diseases registered in the municipality of Tuzla during the period when this survey was carried out.

The presence of the above mentioned faecal-oral diseases (water borne and water washed) in the territory of the Tuzla municipality show that water in settlements which are not covered by the town water supply is exposed to a high risk of faecal contamination. Consequently, water in these settlements is not safe for drinking purposes because of bacteriological contamination.

Discussion

The health impacts of inadequate water supplies on the population of the Tuzla Region of Bosnia - Herzegovina have been evaluated in this paper. It highlights a series of challenges in terms of responding to water quantity and quality needs, but also to the existence of an overall bias in the current praxis of water supply improvements for populations in urban areas at the ex-

pense of those living in rural settlements.

Our data clearly show large variations in the number of inhabitants in different municipalities connected to water networks, highlighting the issue of unequal access to adequate and safe water supplies. Those towns in municipalities with more commercial and institutional importance are better served with water supplies than those which are smaller and poorer. It is in fact, ironic that most of those smaller municipalities are now worse off after the war, as they were either divided by the Dayton Line, creating the phenomenon of 'displaced' municipalities, or they were badly affected by the influx of IDPs. The issue of unequal access to adequate and safe water supplies also has a second dimension, as those in town centres of each municipality are more likely to have access to safer water supplies than those living in rural settlements. In other words, the inhabitants who obtain their water from private sources such as private garden and artesian wells or from local waterworks, which are often lacking a treatment facility or consistent testing of water quality, are the most likely to be affected by water-related infectious diseases. Though inequalities between urban and rural areas in accessing adequate and safe water supplies (both inter and intra municipality) has long been a challenge in the context of responding to 'basic needs' in developing countries, this paper shows that the scope of these problems are further exacerbated by the impact of armed conflict.

Furthermore, the framework of planning and implementation of water supplies in war-affected areas is often designated by a series of biases. The field research experience in the Tuzla Region shows that spatial, institutional and political biases have been very decisive in favouring urban groups in water supply construction and reconstruction projects carried out by international NGOs and local authorities during and after the war. It appears that the pre-war era custom of neglecting the needs of rural settlements is often passed over to the post-conflict period, during which those communities living in rural areas become even more marginalised, both politically and economically. As it is said in a Turkish proverb:

> "those who are far from the sight will also be far from heart."[5]

the needs of rural settlements become further neglected as towns become the centres for many international relief and development agencies. This concentration of organisations further biases the building of infrastructure and projects towards the towns, consolidating their already well-rooted presence in the political and institutional arena. Therefore, it is crucial that those practitioners involved in the recovery of water supplies in war-affected areas adopt an egalitarian strategy towards rural areas in their approach for water quantity and quality improvements. After all, caring for human life without discrimination, whether it is South or North, far or close, or in urban or rural areas, is one of the basic principles of humanitarianism.

Conclusion

It is evident from the preceding review of displacement and public health issues in the context of the Tuzla region case study that the existence of pre-war bias in the provision of an adequate amount of safe water for populations in urban areas at the expense of those living in rural settlements is often passed over to the post-conflict period. It is often the case that rehabilitation and reconstruction programmes implemented by international humanitarian organisations to improve water supplies in war-affected areas also concentrate on urban areas. As a consequence of this biased approach, the populations in rural areas are the most likely to be affected by water-related infectious diseases. ■

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Notes

1. Fatima Jusupovic (M.D., Msc) and Zijad Bešlagic (Prof., PhD) are working for the Tuzlanski-podrinjski Canton Ministry of Health and the Public Health Institute in Tuzla, respectively.
2. This document was prepared by the Federation of Bosnia and Herzegovina Ministry of Health with assistance of WHO.
3. The war affected the Tuzla Region starting from April/ May 1992.
4. Dr. Nermina Mehinovic works for the Tuzla Health Centre and she led the team who carried out the survey on the bacteriological safety of waters in rural parts of the Municipality of Tuzla.
5. The Turkish proverb mentioned is "Gozden Uzak Olan Gonulden de Uzak Olur". □

Reproductive Health Issues Affecting Displaced Populations

Samantha Guy

Abstract

The provision of reproductive health services for displaced populations has gained momentum since the 1994 International Conference on Population and Development (ICPD). The ICPD Programme of Action sets reproductive health within a rights framework and highlights the needs of refugees and internally displaced populations. This paper looks at the background to reproductive health for refugees, offers some lessons learned from Marie Stopes International's refugee programming experience and highlights possible future interventions.

Résumé

La prise en compte des questions d'obstétrique pour les personnes déplacées a gagné un surcroît d'attention depuis la Conférence Internationale sur la population et le Développement de 1994. Le programme d'action ayant découlé de cette conférence place l'obstétrique dans le cadre adéquat et met en relief les besoins des réfugiés et des personnes déplacées à l'intérieur des frontières nationales. Cet article propose un rappel historique de la question de l'obstétrique pour les réfugiés, suggère quelques leçons à tirer de l'expérience d'organisation des réfugiés de Marie Stopes International, et signale les interventions futures possibles.

The Context – Agency Initiatives

International recognition of the pressing demand for reproductive health services in refugee settings is well documented.[1] Although international conventions and agreements have been ratified, reproductive health services for refugees are still being neglected or delayed.

The principles of reproductive health arise under specific international human rights instruments,[2] applicable to all persons, including refugees, without discrimination.

> "The human rights of women include their rights to have control over and decide freely and responsibly on matters related to their sexuality, including sexual and reproductive health, free of coercion, discrimination and violence."
>
> Fourth World Conference on Women, Platform for Action, Beijing, 1995

It was in Cairo, at the 1994 International Conference on Population and Development, (ICPD) that the reproductive health needs of refugees were officially recognised for the first time at a UN conference:

> "In planning and implementing refugee assistance activities, special attention should be given to the specific needs of refugee women and refugee children. Refugees should be provided with access to adequate accommodation, education, health services, including family planning."
>
> Programme of Action, International Conference on Population and Development, Cairo, September 1994, Para 10.25

> "Reproductive health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity in all matters relating to the reproductive system and to its functions and processes. Reproductive health therefore implies that people are able to have a satisfying and safe sex life and that they have the capability to reproduce and the freedom to decide if, when and how often to do so."
>
> Programme of Action, International Conference on Population and Development, Cairo, September 1994, Para 7.2

A central achievement of ICPD was its promotion of a comprehensive approach to meeting people's reproductive health needs. The rights of women are central to the Programme of Action, which calls for the full and equal participation of women in civil, cultural, economic, political and social life. Until 1994, population programmes emphasised family planning services. The Cairo Programme of Action presents an alternative agenda, based on a human-rights framework, which recommends that reproductive health (RH) should be made available to all. It calls for comprehensive RH services, designed with the involvement of women, to serve women's needs and advance women's rights.

As a result of the ICPD, the Inter-Agency Symposium on Reproductive Health in Refugee Situations was convened in 1995. Fifty agencies committed themselves to improving reproductive health provision for refugees and produced the Inter-Agency Field Manual on Reproductive Health in Refugee Situations. In addition, the Inter-Agency Working Group on Reproductive Health in Refugee Situations (IAWG) was formed, comprising 32 members including NGOs, donor agencies and researchers. The final version of the field manual has just been produced and is available from the United Nations High Commissioner for Refugees (UNHCR).[3]

Samantha Guy runs Marie Stopes International's Reproductive Health for Refugees Initiative. Marie Stopes International is at the forefront of international initiatives to institutionalise reproductive health in refugee settings.

Recognising the pressing need to introduce reproductive health care as early as possible, the concept of the Minimal Initial Service Package (MISP) was developed by the IAWG. The MISP is specifically designed to facilitate the timely and appropriate delivery of reproductive health services in the initial acute phase of an emergency situation and to plan for services as the situation develops. The MISP concept includes: human resources; guidelines and training for the implementation of selected interventions; material resources, including essential drugs, and basic equipment.

To provide the material resources of the MISP, UNFPA has developed The Reproductive Health Kit. The kit is divided into 12 subkits for use at different levels of health facility.[4]

Reproductive Health for Refugees Consortium

During the ICPD, CARE, International Rescue Committee (IRC), John Snow International Research & Training (JSI), Marie Stopes International (MSI) and the Women's Commission for Refugee Women and Children (WCRWC) united to form the Reproductive Health for Refugees (RHR) Consortium. Its membership has recently been extended to include: American Refugee Committee (ARC) and Colombia University Centre for Population and Family Health. The aim of the RHR Consortium is to institutionalise reproductive health for refugee women, men and adolescents worldwide in accordance with the Cairo Programme of Action. The Consortium has developed training modules and needs assessment tools, established an advocacy group of refugee women from around the world and implements a small grants programme. Currently in development is a set of monitoring and evaluation tools for RH in refugee settings.[5]

The Provision of Reproductive Health Care in Emergency Settings

Refugee and emergency settings compound many of the problems faced by women. It is imperative to ensure that a lack of comprehensive health services does not add to the suffering of refugee women.

Reproductive health entails much more than the skeleton maternal and child health services provided in many refugee settings. An effective programme of reproductive health care is sensitive to the different needs of men and women, of different ethnic and cultural groups, and of different age groups. It must be accessible and available to single women, widows, older women, adolescents and men.

In Sri Lanka, MSI promotes community participation in the project to help ensure services are appropriate to all sectors of the community and as a result has seen a marked increase in the care seeking behaviour of the internally displaced communities it serves.

Reproductive health for refugees covers the following technical areas:

- safe motherhood (including antenatal, delivery and post-partum care)
- prevention and management of the consequences of sexual and gender violence
- family planning
- prevention and treatment of sexually transmitted diseases and HIV/AIDS
- emergency obstetric care, including the treatment of abortion-related complications

While food, water, shelter and primary health care are provided as a matter of course in emergency settings, reproductive health care provision is far from universal. Lessons from refugee settings worldwide clearly reveal that ignoring the reproductive health needs of refugees can threaten the lives of many people (WHO, 1997, UNHCR, 1999, RHR Consortium, 1998), yet this crucial component of emergency aid is often overlooked by agencies. Reproductive health has been referred to by some as an optional second phase intervention rather than a first phase imperative. However, as the majority of crises prove, certain reproductive health services are required from the moment displacement occurs such as prevention and management of the consequences of sexual violence, reduction of HIV transmission, prevention of excess neonatal and maternal morbidity and mortality, planning for comprehensive service delivery. Other services can be established as the situation develops such as comprehensive family planning, prevention and treatment of STDs, ante - and post-natal care, counselling, management of consequences of unsafe abortion.

Most refugees are from countries where health indicators are already poor. Flight from war, civil or ethnic conflict or natural disaster exacerbates existing health problems. During flight, women, in particular, are vulnerable to sexual violence and abuse. Even once women reach relative safety, conditions still prevail that further contribute to their ill health: malnutrition and epidemics, an absence of law and order, increased responsibility for households in the absence of male family members, and breakdown of pre-existing family structures. Despite a lack of hard data, there is ample evidence (Palmer 1998, UNHCR 1999, UNFPA 1999, RHR Consortium 1998) to support the need for reproductive health services in refugee settings. Women are most affected by reproductive health problems and for refugee women this burden is further compounded by the precariousness of their situation.

It has been shown that women in refugee settings experience (Palmer 1998, RHR Consortium, 1998, Busza and Lush, 1999):

1. Higher maternal mortality and morbidity as a result of:
   - poor nutrition
   - repeated, frequent pregnancies
   - lack of clean, safe delivery care
2. Increased (often unsafe) sexual activity, which results in an increase in HIV/AIDS and sexually transmitted diseases due to:
   - use of sexual favours in exchange for food, money or protection

• rape as a tool of coercion or humiliation
• breakdown of family and social structures, and accompanying behavioural change
• boredom

3. Increased fertility rates due to:
• improvements in child survival rates
• pressure on women to rebuild the population
• lack of birth spacing/family planning information and supplies

In Sierra Leone, experience indicated that fertility was high in the camp environment. Boredom was identified as leading to the appearance of unsafe sexual activity in the camp. An informal assessment was carried out to discover the reasons why women wanted to have many children and the results were given as:
• willingness to replace those lost during the war
• children represented the only stability for women in new relationships
• increased food rations

It is important that RH interventions are not only timely but also appropriate. In an emergency, it may be easy to overlook particular refugee needs in the urgency of providing services. Refugee participation is vital in ensuring that services are tailored to users' needs.

Lessons Learned and Recommendations From MSI's Refugee Projects

There are a number of issues which differentiate refugee settings from conventional settings and must be taken into account in service delivery and programme implementation.

Agencies operating within a refugee setting need to retain a greater degree of flexibility in order to remain responsive to the often rapidly changing needs of a refugee community. Services required at the onset of an emergency will develop and expand as the situation stabilises. In addition, reproductive health agencies must be prepared to provide primary health care services as well as to encourage primary health providers to integrate reproductive health into their service mix.

The highly political nature of complex emergencies can make the provision of reproductive health care a particularly sensitive issue. Therefore, it is imperative to ensure the full participation of the refugee community, particularly women and adolescents, in all stages of the planning, design and implementation of services.

It is also important to ensure that services reach the host/local population as well as the displaced population, not just to reduce the possibility of tension between the communities but also to make clear that there is no ethnic dimension to the provision of services.

Refugees are not always in camp environments, thus services also need to be accessible and available to those living within the host community.

Health committees comprised of key community representatives should ensure the ongoing acceptability and appropriateness of services liaising between the project and target communities.

Community volunteers should be identified and trained to become health providers. This strategy ensures valuable skills are not lost during displacement, new skills can be developed in preparation for the return process, and services remain appropriate to the target population.

Extra care should be paid to ensure that quality of care is not compromised during the provision of comprehensive sexual and reproductive health services. Specialist technical support for specific service components should be considered to ensure continuing high quality services as well as to monitor quality of care issues.

Appropriate information education and communication messages and materials in consultation with community leaders and health committees should be developed. Materials may be available from the country of origin or locally produced material could be adapted to suit the particular situation.

Recommendations for Future Action

MSI and the RHR Consortium are at the forefront of organisations undertaking a range of activities to guarantee the provision of reproductive health services in refugee settings. The following set of recommendations is drawn from global programming experiences and highlights some of the areas in which action must be taken to ensure reproductive health care provision for refugees.

1. A Broad Perspective

Solutions for short-term problems should be matched with long-term needs and should have a positive long-term developmental impact for the whole community.

2. Advocacy and Fundraising

A concerted advocacy programme to promote increased attention and action for RHR aimed at policy makers, government officials, UN agencies, donors, aid workers, the media and the general public.

Implementing agencies need to challenge long standing organisational priorities to build institutional capacity and commitment to RHR.

3. A Participatory Approach

RHR programmes must be based on participation, capacity building and strengthening representative organisations.

Sensitisation and assistance to local communities should be established in order to alleviate tensions between local and refugee populations.

Greater understanding of the cultural and traditional values of refugee communities will ensure culturally appropriate services and resources are available.

Co-ordination between agencies is imperative in order to avoid duplication and to ensure that the full range of reproductive health services are available.

NGOs must ensure that camp layout really considers women's and children's issues. The consequences of poor camp layout on women's health can lead to high medical and human resource costs.

Greater representation of women in decision-making positions in implementing agencies and refugee organisations, including translators, will help ensure services are appropriate

and accessible to refugee women and their families.

Programmes must take the long-term perspective in which women are perceived as crucial in the rehabilitation and reconstruction process.

Involvement and education of refugee men about their responsibilities is critical to women's health status; particular attention should be paid to the needs of adolescents.

4. Training and Capacity-Building Needs

Greater training and awareness among field staff on practical protection measures for preventing and responding to sexual violence is needed.

Public health awareness campaigns should be implemented among refugee and displaced populations, incorporating training in good reproductive health practices.

Increased resources, both financial and human, to implement comprehensive RH programmes are needed.

Greater access to female protection, medical staff and female interpreters would ensure that refugee women are more able to report incidents of sexual violence.

5. Research and Development

Further research and study into the health, behaviour and characteristics of refugees and internally displaced persons is needed to further develop the design and implementation of reproductive health care services.

Development of tools to assist managers and field staff in implementation of comprehensive RH programmes are needed.

Conclusion

The challenge facing all organisations is to ensure that advances made at the policy level are translated into increased action and commitment at the field level. ■

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3. Centre for Documentation for Refugees fax: 41 22 739 73 67 email: cdr@unhcr.ch.
4. For a copy, contact UNFPA local offices or Emergency Relief Office fax: +41 22 979 9049 email: unfpaero@undp.org
5. For further information on the RHR Consortium contact: Samantha Guy, MSI, tel: 44 171 574 7346, fax: 44 171 574 7418, email: sam.guy@stopes.org.uk or Rachel Jones, WCRWC, tel: 1 212 551 3112, fax: 1 212 551 3180, email: rachel@intrescom.org.□

The Upcoming Issues of Refuge:

- Religious Refugees
- Challenges in Refugee Service Delivery
- Refugee Return
- A special issue on East Timor

Background Information on the Centre for Refugee Studies

The Centre for Refugee Studies (CRS) is an organized research unit of York University. Founded in 1988, the Centre for Refugee Studies is successor to the Refugee Documentation Project created in 1981 for the conservation and analysis of research documents and data collected by Operation Lifeline during the Indochinese Boat People crisis. In 1991, CRS was designated as a Centre of Excellence by the Canadian International Development Agency (CIDA).

The Centre for Refugee Studies fosters interdisciplinary and collaborative research in all of its undertakings. Our efforts are focused in areas related to a comprehensive research programme expanding from theoretical to institutional research on the aforementioned areas of study. In carrying out this research, CRS networks with Canadian and international development agencies and academic institutes. CRS invites scholars from abroad to share in the research. Canadian and international students are supported to undertake field studies and conduct related research. Joint research activities with institutions in the developing world are underway. CRS plays a significant role in an advisory capacity with Canadian government and other agencies.

Good Practice in Public Health: Thinking About the Economics of Complex Emergencies

Danielle Deboutte

Abstract

Emergency public health action is often faced with severe constraints. Limited resources are available to respond to sometimes-immense initial requirements and competing needs. Ethical decisions in public health can only be made when the decision-maker understands the arguments for and against, and decides in the light of this knowledge. Emergency budgets are not unlimited, have alternative possible uses, and can easily be wasted. Yet many aid workers find it impossible or unethical to consider the cost of emergency aid.

This paper proposes to consider the use of economic methods in three ways:

1- to assist with rational decision-making.

2- to offer a tool for continuously monitoring interventions.

3- to enable programme evaluation in terms of cost-effectiveness.

Résumé

L'action sanitaire d'urgence rencontre souvent des contraintes très sévères. Les ressources disponibles sont limitées pour faire face a des besoins initiaux souvent immenses et concurrents. Les décisions de nature éthique en matière de santé publique ne peuvent être prises que quand les décideurs comprennent à fond la totalité des arguments pour et contre, et arrêtent une position éclairée par cette connaissance. Les budgets d'urgence ne sont pas illimités. Ils ont des possibilités d'utilisation différentes, et peuvent conséquemment être facilement gaspillés. Et pourtant de nombreux intervenants considèrent éthiquement questionnable une position consistant a scruter attentivement le coût de l'aide d'urgence. Cet article propose de considérer la mise a profit de méthodes économiques selon trois avenues:

1- l'appui apporté à des prises de décision rationnelles;

2- l'apport d'un outil servant à assurer un suivi constant et fiable des interventions;

3- la possibilité de formuler une évaluation des programmes en termes de rendement.

Danielle Deboutte has a Masters degree in public health from London School of Hygiene and Tropical Medicine, and is currently employed by the World Health Organization as a short term professional in the Department of Emergency and Humanitarian Action.

Is Economics Relevant in Emergencies?

Humanitarian action in complex emergency situations is fraught with uncertainty. At the onset, it is necessary to provide immediate relief for survival, while access may be limited by environmental and security constraints. Plans will rely on rapid assessments and standard approaches. Under these circumstances, resources are easily wasted. Yet many aid workers consider it impossible and in any case unethical to consider the cost of emergency aid.

Programme monitoring and evaluation are complicated by unpredictable events, making it hard to tease out programme effects from incidental occurrences. Evaluation of the early objective to preserve lives rarely considers a comparison of operational cost. Long-term evaluation needs explicit objectives and a set of measurable indicators. An estimate of the cost to achieve a certain output would be relevant for both planning and evaluation.

The public health sector has long recognised, at least in principle, the need to make optimal use of limited resources. Public health professionals are responsible for decisions on how to address a range of population needs related to health care. Decisions on the provision of services are increasingly guided by the availability of effective interventions. The extent of the budget allocated will depend on the size and seriousness of a problem, and on the cost of the intervention. In the management of humanitarian emergency situations, the limitation of resources may be even more pronounced, sometimes in the context of immense initial requirements. Relief programme decisions should aim to maximise health gain within available resources, and economic analysis has a role in this goal.

Health economics applies theories, tools and concepts of economics to the health sector. It looks at allocation of resources within the economy to the health care system, and the distribution of these resources to different activities and individuals.[1] Introducing health economics in the public health management of emergencies could be of use in three ways:

1. to assist with rational decision making.
2. to offer a tool for continuously monitoring the effectiveness of interventions.
3. to enable programme evaluation in terms of cost-effectiveness.

Making Rational Decisions

Following an emergency, decisions are typically made by donors about the magnitude of funding and often about the type of programme to be implemented in a particular place (earmarked funds). These decisions are guided by requests from humanitarian agencies, of which some are implementing partners, and by the governments of affected countries. In the context of development, governments of implementing countries are considered to be the best judges of their nation's needs. In emergency situations, complicated by civil

uprising, this assumption may only hold for part of the population. An impartial needs assessment becomes mandatory.

Control of an acute emergency is achieved by provision of effective care, including basic needs such as water, sanitation and food if needed, to as many survivors as possible in an equitable way. Decisions on who provides relief aid and how it should be delivered are usually made from a purely pragmatic point of view. In the advent of an emergency, numerous relief agencies compete for limited funding.

Operational humanitarian agencies should be unbiased advocates of the health and human rights of the population they serve. The taxpayer assumes that funding for humanitarian agencies is related to the needs of the beneficiary population. With no clear criteria to evaluate efficiency and cost-effectiveness of emergency interventions, funding of agencies and thus their own survival largely depend on field visibility (i.e. attraction of media) and the image this creates vis-à-vis potential donors. In this context, economic analysis can provide rational methods for decision making, which should result in better outcomes.

Offer a Tool to Monitor Interventions

If programmes are effective, the general health and nutrition situation of the population should ameliorate and stabilise, at least in comparison to what would happen without the intervention. When essential needs are not or insufficiently addressed, there may be a reduction in the overall effect of the humanitarian intervention and a lag in service delivery. Measuring inputs and outcomes in one sector may indirectly point to shortcomings in another. Overlooking the link between nutrition and communicable diseases can lead to high death rates in malnourished individuals with an infection. At the time of an epidemic, adequate feeding and disease management, including correct sanitary measures will have better results than each intervention on its own.[2]

The course of humanitarian emergencies cannot be predicted. The evolution of the security situation and ease of access to an area can influence the nutritional and health status of the population. Existing programmes often need to be modified, and new interventions may be required. To provide an efficient response, the data obtained by immunisation and nutrition surveys should be complemented with routine data from health system surveillance. The epidemiological findings could be compared to expenditure on food, medicine and other programmes. This comparison would be a step towards recognising the level of interaction between the various harmful factors in a complex emergency, and finding ways to compose and maintain a balanced package of services. Expenditure on medicine for curative purposes may be of little benefit to a hungry population of internally displaced persons if access to health services is limited. Under those circumstances, it might be more useful in the short run to distribute food and seeds for planting. The net effect of using part of the medicine budget for preventive services will be better health.[3]

Enable Programme Evaluation in Terms of Cost-Effectiveness

The evaluation of emergency assistance to Rwanda (5 volumes)[4] includes 10 pages that deal with the financial cost of the operation. It is noted that it was not possible to break down the overall known allocations of USD 1.29 billion. At the same time, donors want value for money, but are unwilling to separately finance programme evaluations. With support from international agencies such as the World Health Organization, prospective data collection could be tested in a limited number of settings. The aim would be to match data on the cost of programmes and programme elements with outcomes in terms of vital population statistics (morbidity, mortality and malnutrition).

Relief workers sometimes argue that it would be unethical to apply economic analysis in emergencies. This argument is based on the same reasoning used to discredit health economics in general, i.e. that human life has no price. In reply it can be pointed out that it may not be universally possible to say what should be the value of a life, but within a given budget we should strive to preserve as many lives, and reduce as much morbidity, as possible. In any case, finite values are placed on emergency action in the way every budget is set. It is important to remember that:

- funds used for humanitarian relief operations have alternative possible uses.
- every humanitarian operation is determined by the size of its budget.
- the collective budget available for a humanitarian operation does not per se reflect the needs of the population.
- within a given relief setting, there will be competing options for the use of funds.
- an accurate estimate of population needs with ranking order of importance, would be useful - without ranking of needs, budget allocation depends on supplier preference.
- if the cost to satisfy the different population needs can be calculated, it should be possible to draw up a budget to cover these needs - without this exercise, budgets are based on guesses at best and emotions at worst.

In public health care, the issue is not the ethics of behaviour, but the ethics of decision making. A decision is made in an ethical way when the decision-maker understands the arguments for or against a decision, and decides in the light of this knowledge. In almost all cases, arguments for and against the issue must be weighed. The concept of "do no harm" conflicts with the notion to "do more good", since some people will be harmed by decisions that achieve a general improvement in health. Duty to the individual may conflict with duty to the people, and helping more people may conflict with helping those individuals most in need. Health economics will help to make the optimal choice to help the greatest number of people in the most efficient way possible on the basis of available data.

Ways in Which Health Economics Can Be Used

It is neither possible nor desirable to set a fixed level of expenditure for a particular type of intervention. However, by deconstructing an operation into all of its elements (e.g. cost of goods, personnel, and transport) it is possible to arrive at an approximate cost for a defined project. It should also be possible to predict the number of beneficiaries, provided the target population and the extent of the emergency are known. This kind of baseline assessment can be used as a tool for budgeting, and for evaluating the outcome of an intervention, if epidemiological data on the beneficiary population are recorded. In fact, some agencies have started to move towards this approach.

A comparison of strategies to manage cholera outbreaks illustrates how health economics can be used in making policy decisions in emergencies. Cost-effectiveness analysis indicated that stock piling of treatment kits in the area was more cost-effective than vaccination.[5] Another study by MSF in Nigeria[6] showed that meningitis vaccination at the height of an epidemic was extremely costly per case averted, compared to correct case management. Neither of these examples should be used to discredit vaccination as a way to avoid disease. Instead they indicate the importance of correctly timing interventions to obtain maximum benefit at a given cost.

Analysis of surveillance data can give an indication of the relative importance over time of different interventions in one particular setting, and of the scope for expanding one programme and reducing another. Health economics provides tools to calculate the marginal cost, or the incremental unit cost (a measure of the resources associated with a small incremental change in output)[7] of variations in programme output. At field level, direct accounting methods can be used. Statistical modelling techniques at headquarters level, could facilitate donor decisions on budget size for different programmes in the same emergency zone.

Good Public Health Practice in Emergencies

Good practice in public health should be appropriate, acceptable, cost-effective and equitable.

Appropriateness

In terms of public health, appropriate action produces health gain for the population concerned. The most appropriate action is the one that maximises health gain with the resources available. Initial assessment and subsequent monitoring of an emergency contain three components:

1. the health and nutritional status of the population.
2. the local resource capacity.
3. the additional requirements to deal with the problem.

Acceptability

An approach is acceptable if it ensures a good outcome, which is wanted by the beneficiaries. If a public health intervention is not acceptable to the population, it will fail. For example, chlorinating buckets of water taken from a contaminated source, is a technically adequate method to disinfect it. In some situations, this has been found to create problems, because people became convinced that they would be poisoned.[8] It may be worthwhile to define emergency scenarios (e.g. small camps, large camps, and displaced people not in camps, besieged static populations) and try to determine the most effective and acceptable way to deal with each scenario. This categorisation could offer a method to refine standard approaches. In economic terms, utility would be emphasised more than efficacy (utility is what individuals want to maximise, the economic equivalent of happiness or satisfaction;[9] efficacy, in terms of health interventions, is the measured value under controlled test conditions).

Cost-Effectiveness

Programme cost calculated as an average cost per beneficiary can mask an extremely high marginal cost (the marginal cost at any level of output is the additional cost required to move one unit higher on the output scale).[10] Programme decisions should take the marginal cost into account but keep in mind equity of access. While vaccination against measles is a cost-effective intervention at the individual level, for public health purposes one should also define the marginal cost at different levels of coverage under different conditions and determine the incremental cost-effectiveness ratio (ICER). Health gains would be maximised at a coverage level where the incremental cost of vaccination would no longer be proportional to the incremental gain in herd immunity. Decision-making and programme monitoring could benefit from research to determine the marginal cost of different activities.

Equity

The definition of equity is a matter of ongoing debate. In practice, the notion of equal access to health care for equal need can be used as a starting point. Where refugees or internally displaced persons are dispersed among a static population and use the same services, accepting the additional cost of providing free care to the entire population may be the most efficient way to provide equity of access to health services in an acute emergency. An increase in total cost is justified if it improves the effective provision of humanitarian aid.

Conflicts can occur between cost-effectiveness and equity of distribution. Before using this argument against the health economics approach, it should be clear that the awareness of conflicting needs is a result of information analysis. An informed decision will take the equity of service provision into account, and promote cost-effective ways to reach this goal.

In an emergency-affected population, some individuals and groups are more vulnerable, (e.g. one-parent households, unaccompanied minors, and aged persons with no family). Setting up protective mechanisms requires sensitive methods to identify them, and a non-discriminative approach to protection. If the former cannot be done in a cost-effective way, programme design could include a safety net. For example,

it is common practice to offer supplementary food rations to all pregnant women, as there are no easy, reliable methods to detect those most at risk of malnutrition.

Characteristics of Health Care Systems in Emergencies

The management of emergency situations has been reshaped by conceptual changes. In recent years, many complex emergencies (e.g. Angola, Liberia, Somalia) have fluctuated between phases, with episodes of relative peace and stability, interrupted by recurring violence or socio-economic trouble. The response to emergencies should recognise these fluctuations by taking a development-based approach at the earliest possible stage. Yet the notion of development in emergencies implies that the epidemiological situation is sufficiently under control to go beyond the short-term focus of containing avoidable deaths.

The expressions "early phase" or "acute phase" are sometimes used to describe the initial situation of excess mortality and morbidity beyond a defined threshold. The usual structures of primary health care do not yet or no longer exist, or are unable to cope with the type and amount of problems at hand. This phase will end when the epidemiological profile of the affected population has reversed to pre-crisis standards. Both needs and management methods will then resemble what is known to be acceptable for the affected population at that time and place.

In "Refugee Health - an approach to emergency situations",[11] Médecins Sans Frontières have established ten top priorities.[12] The initial provision of humanitarian assistance, including health care in acute emergencies could be improved by developing refinements to the standard approach, through the inclusion of certain situation indicators, as mentioned previously. After the first rapid assessment, adjustments should be made to address specific problems, taking local resources into account.

Even in countries at war, the emergency situation does not equally affect everybody. Pre-existing disparities in wealth and access to care will often remain in place. If the national health care system reflects these inequities, it will not be easy, and perhaps impossible to switch from high-tech priorities to a focus on primary health care. The situation can be worsened if inappropriate technology is imported to deal with the immediate problems.

In humanitarian emergencies, health care is often provided free of charge. Complex emergencies often occur in low-income countries, or in countries at war, settings where health insurance is either unknown or no longer operational. Long-term financing of health care will have to be (re-)considered as soon as the acute emergency is over. The management of the early phase of an emergency should be distinguished, but not completely separated, from the following phases (stabilisation, transition, return to development). Health economics can provide ways to assess national capacity to allocate resources to the health sector in the transition phase. Long-term substitution of national resources through external aid can be damaging, as can early withdrawal of external relief from an emergency affected population.

The choice of methods to provide relief in the early phase should facilitate the transition process towards renewed development. Where health care facilities and personnel remain functional, they should be strengthened and supported. Creation of new facilities should be in line with the existing structures, anticipating future needs. Introducing services that are more advanced than what is commonly expected will raise problems of sustainability, especially if they respond to a real need and are likely to create a demand (an example could be the acceptance of patients for elective surgery in an emergency unit).

Conclusion

There is often uncertainty over the preferred way to organise cost-effective, appropriate, acceptable emergency humanitarian action. In the early phase, a rapid needs assessment may only provide approximate data on the numbers of people affected, and the type and extent of assistance required. Once a situation has stabilised, the long-term evolution of a complex crisis environment cannot be foreseen. Interventions that work in one setting might not be applicable or ineffective in another.

Reducing the margin of uncertainty can improve the provision of health care. In developed countries, health economics is commonly used in the planning and management of health care. The same is true for health sector planning in stable developmental settings. Tools that are of proven value in these settings should be tested and developed for use in emergencies. Steps to achieve this goal consist of systematically identifying, quantifying and valuing inputs, together with epidemiological surveillance based on an initial needs assessment. These can be complemented with other methods of data collection according to necessity and feasibility. Case studies in different settings, examining all phases of an emergency, will be useful to build up a body of knowledge for planning, decision making and evaluation.

The management of an emergency situation should aim at technical efficiency, acceptability and cost-effectiveness. A toolkit for the application of health economics principles in emergencies could contain basic methods to calculate the cost of interventions under field conditions, as well as budget planning tools for affected governments and advanced modelling techniques for decision making at the donor level.

Until now, few agencies have calculated and compared the cost-effectiveness of single interventions, such as mass vaccination. The results show that information on cost and effectiveness can be collected and analysed to guide decision making, even in emergencies. If these efforts are carried out in a more systematic way, a body of evidence can be assembled for use in the early planning stage. Budget planning and cost evaluation of humanitarian programmes should gradually become part of emergency management, along with the development of indicators of programme effectiveness. ■

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Continuous Quality Improvement Applied to Outpatient Health Care Delivery in Displaced Persons Camps

Paul B. Spiegel, Ellen Lynch & Narendra M. Patel

Abstract

Continuous Quality Improvement (CQI) has been shown to be a highly effective approach for the evaluation and management of hospitals in developed countries, but it has barely begun to be utilised in less developed countries. This article defines the principles and the main tools of CQI and then applies them to the post-emergency phase of a displaed persons camp situation, specifically towards improving the utilisation and the quality of care in an outpatient department.

Résumé

L'Accroissement Continu de la Qualité s'est révélé une approche très efficace pour l'évaluation et la gestion des hôpitaux dans les pays développés, mais n'a à toutes fins pratiques jamais été mise à profit dans les pays moins développés. Cet article définit les principes et les principaux instruments, Accroissement Continu de la Qualité, et les applique à la phase post-urgente dans la situation des camps pour personnes déplacées. L'attention porte plus spécifiquement sur les possibilités d'amélioration de l'utilisation des services et de la qualité des soins en clinique externe.

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Introduction

Continuous Quality Improvement (CQI) is an effective method of management and evaluation and its usage is becoming more predominant within the field of health care. In the 1940's, Dr. W. Edwards Deming introduced the concept that improving quality by objective methods would result in competitive advantage(Deming 1986). Today one can observe its usage within hospitals, clinics, health maintenance organizations and laboratories, yet CQI has yet to be applied to the delivery of health care in a displaced persons (DP) camp setting (DP refers to refugees and internally displaced persons). This article applies the principles and tools of CQI in order to assess the utilisation and quality of care of outpatient departments (OPD) in a composite DP camp (this camp represents a combination of various camps in which the authors have managed and visited over a number of years throughout Africa and Asia). Over the past two decades, through numerous United Nations' (UN) and non-governmental organizations' (NGOs) experiences in DP camp settings, many commonalities have been observed, and from these, certain guidelines and recommendations have been established (Sandler and Jones 1987, Perrin 1996, Desenclos 1993, CDC 1992, Steering Committee 1998, Médecins 1997) . For instance, many DP camps around the world are set up in a similar manner and have similar health care priorities. The UN has established an essential drug list (IDA 1990) in order to appropriately and effectively respond to the illnesses that commonly manifest in DP camps due to overcrowded situations, poor nutritional status, and inadequate public services (i.e. measles, diarrhoea, respiratory tract infections, and malaria in endemic areas). These similarities allow the framework outlined in this article to be applicable in most DP settings, with specific adaptations according to the local culture, the situation on the ground, and the data generated by employing CQI tools.

In this article, the tools of CQI are applied to the process of managing an OPD in a DP camp. The first stage consists of a comprehensive evaluation of the OPD in an inclusive manner as possible, comprising all levels of its health care workers, critical customers (i.e. everyone involved in the process from all stages of caregivers to the patients and the indigenous community), as well as the representatives of the host government. The next stage involves the gathering and evaluation of data from various aspects of the existing processes in the OPD. The information collected will allow the CQI team to fashion a specific, concrete plan to improve and/or re-engineer processes in order to achieve the desired improvements and objectives. Periodic and continuous evaluation will be necessary to ensure continuous improvement of processes and outcomes as well as to account for changes in the local situation. This analysis concentrates upon the post-emergency phase of a DP camp, where the situation is more stable than in the emergency phase, and hence more suitable for the application of CQI.

Background

Continuous Quality Improvement

Quality of care should be defined according to the health care giver's level of

skill and the patient's and community's level of expectation. Until recently, CQI, as applied in the health care setting, was primarily used in hospitals in developed countries according to standards set by accrediting agencies. In the 1980's, the process was extended to include primary health care in Western countries (Bender 1993). Soon afterwards, WHO began applying the process of quality assurance by developing international protocols for treatment of certain diseases (i.e. respiratory tract infections and diarrhea), and then expanded the concept to systematic analysis of health care systems in developing countries. CQI is an evolutionary process and may be defined as a structured and systematic approach for creating organisation-wide participation in planning and implementing continuous improvements in quality (Whetsell 1991). The four tenets of quality assurance, as stated by the Quality Assurance Project, which began in 1990 in order to develop and implement sustainable approaches for improving the quality of health care in less developed countries, are the following (Brown 1992):

1. CQI is oriented toward meeting the needs and expectations of the patient and community.
2. CQI focuses on systems and processes.
3. CQI uses data to analyse service delivery processes.
4. CQI encourages a team approach to problem solving and quality improvement.

Effective and simple tools are used for process analysis. The main analytic tools include flowcharts, cause and effect (fishbone) diagrams, brainstorming, decision matrices and story boarding. The major statistical tools include histograms, pareto charts, run charts, check sheets, scatter diagrams, and control charts (Brassard 1994).

Improving the quality of health care need not increase the cost of the existing system, and often becomes a cost-saving measure. In fact, CQI may often be the only alternative for over burdened health care systems, not only in developing countries, but all over the world. One of the CQI objectives is to maximise efficiency and effectiveness from existing systems and resources (Bender 1993).

Displaced Persons Camps

There are usually four power structures in DP camps: the United Nations High Commission for Refugees (UNHCR), the DPs themselves (usually represented by a DP committee), the NGO's, and the host government (IFRC 1996). Depending upon the decision being made, all or some of these groups should be contacted and the issues discussed before programs are implemented or changed. Currently, this inclusion principle is rarely followed. The time for implementing CQI in a DP camp is during the post-emergency phase, when the situation is more stable and the fundamental health care infrastructure has already been organized.

Functioning of an OPD in a DP Camp

Health care workers (HCWs) who treat patients in the OPD have variable levels of training which are often rudimentary. In nearly all cases, the NGOs provide on-the-job training to these workers. They are taught case-definitions and case treatment protocols, developed by the NGOs, the UN agencies or the host government for specific diseases, and are expected to follow them (Desenclos 1993). All HCWs should have a disease register which generally records the name, age, sex, location of person in camp, symptoms/signs, diagnosis and treatment prescribed for each patient seen. A patient usually has a patient card on which the HCW records the symptoms/signs, diagnosis and treatment. He is normally required to retain this card in order to be seen at the OPD in the future. When a patient arrives at the OPD, he is triaged, and then waits to see a HCW. When an emergency case is identified, the patient is immediately seen by a HCW. Depending upon the number of patients, the wait in the OPD can be minutes to many hours, and sometimes the non-urgent cases may not receive care that day at all. On average, a HCW in an average OPD in a DP camp would care for anywhere between 50 to 200 patients per day. In a DP camp of 30,000 people in the post-emergency phase, there are usually between 5-10 HCWs working in an OPD. In general, diagnoses are made primarily upon history and a cursory physical exam, and then a treatment protocol is followed.

Methods

A team of three persons, comprised of an expert in CQI, a physician with extensive experience in different phases of many refugee and IDP camps, and a registered nurse with years of experience in international development and emergencies, analysed the processes of numerous different OPDs in DP camps throughout Asia and Africa.

A composite OPD in a DP camp, combining the most common processes of the OPDs, was developed using CQI tools. CQI principles and tools were then applied to the existing processes of this OPD (specifically, flowcharts, brainstorming, nominal group technique, and a cause and effect (fishbone) diagram). In order to find common problems and create potential solutions. The authors attempted to be as inclusive as possible and consider the points of view from the health care workers, critical customers (patients), NGOs, UN and the host country (local persons as well as the government). After analysis of the OPD, concensus occurred on certain key processes which were then examined and proposals suggested as to how to improve the efficiency and quality of the care delivered in the OPD.

Results

Determination of the Objectives of the Analysis

The Nominal Group Technique was employed in order to create the objectives of the analysis. This technique attempts to provide everyone in the team an equal voice in the problem selection following specific steps which will not be outlined here. The following objectives were agreed upon:

1. To explain and apply CQI principles and tools to an OPD in a DP camp.
2. To increase the efficiency of the OPDby :

a. decreasing overusage of repeat health care seekers by implementation of new processes to control access.

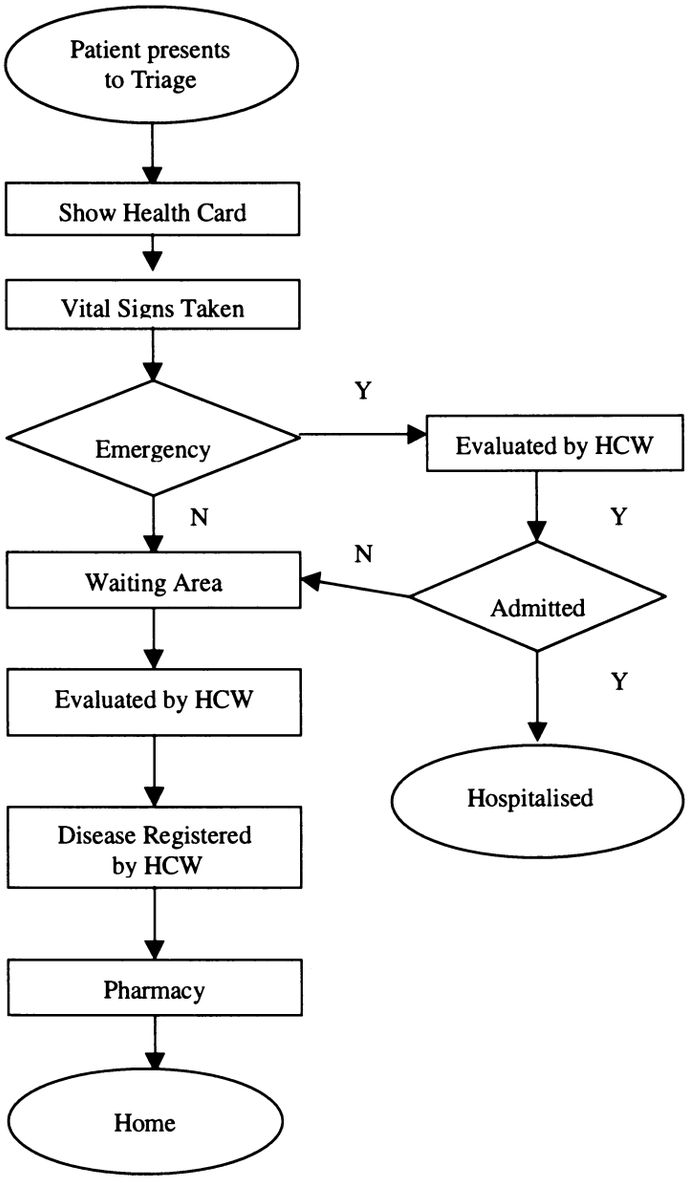
b. modifying the DP's expectations of the type of health care offered.

c. modifying the treatments and referral patterns of the health care workers working in the OPD.

3. To improve the population's reported satisfaction of the health care services provided, given the limited resources of the UN and NGOs.

4. To prevent long-term dependency of the population on the health care provided by the OPD, in order not to deter the ultimate goal of repatriation of the DPs.

Chart 1: Flowchart of Original OPD Processes in DP Camp



Recording the Existing Processes of the OPD

The existing processes of the OPD are analysed and portrayed in the flowchart below (Chart 1) in order to have a clearer understanding of the existing OPD processes and to allow for its dissection and analysis. The usage of a flowchart allows for the identification of an actual or ideal path that a product or service follows in order to identify any deviations.

Determination of the Causes of Over-Utilisation of the OPD

The cause and effect (fishbone) diagram (Chart 2) allows detailed analysis of the causes of over-utilisation of the OPD. This breakdown and subsequent clear portrayal of the relationships between the causes and effects allows for proper analysis and planning in order to correct an existing process or re-engineer a new process. A fishbone diagram represents the relationship between some effect and all the possible causes influencing it. It illustrates the various causes affecting a process by sorting out and relating them.

Data Collection and Analysis

After an unstructured brainstorming session, a concrete plan was developed and agreed upon by all members of the team regarding the type of data needed, collection methods for the data and analytic techniques in order to identify opportunities to improve the efficiency and quality of the OPD processes in the DP camps. A flowchart is shown for easy visualization of these methods (Chart 3). Brainstorming allows inclusion of all dimensions of a problem or solution without boundaries. It is used to help a group create as many ideas as possible in a short time period.

Chart 2: Cause and Effect Diagram:

Determination of the Causes of Over-Utilisation of the OPD

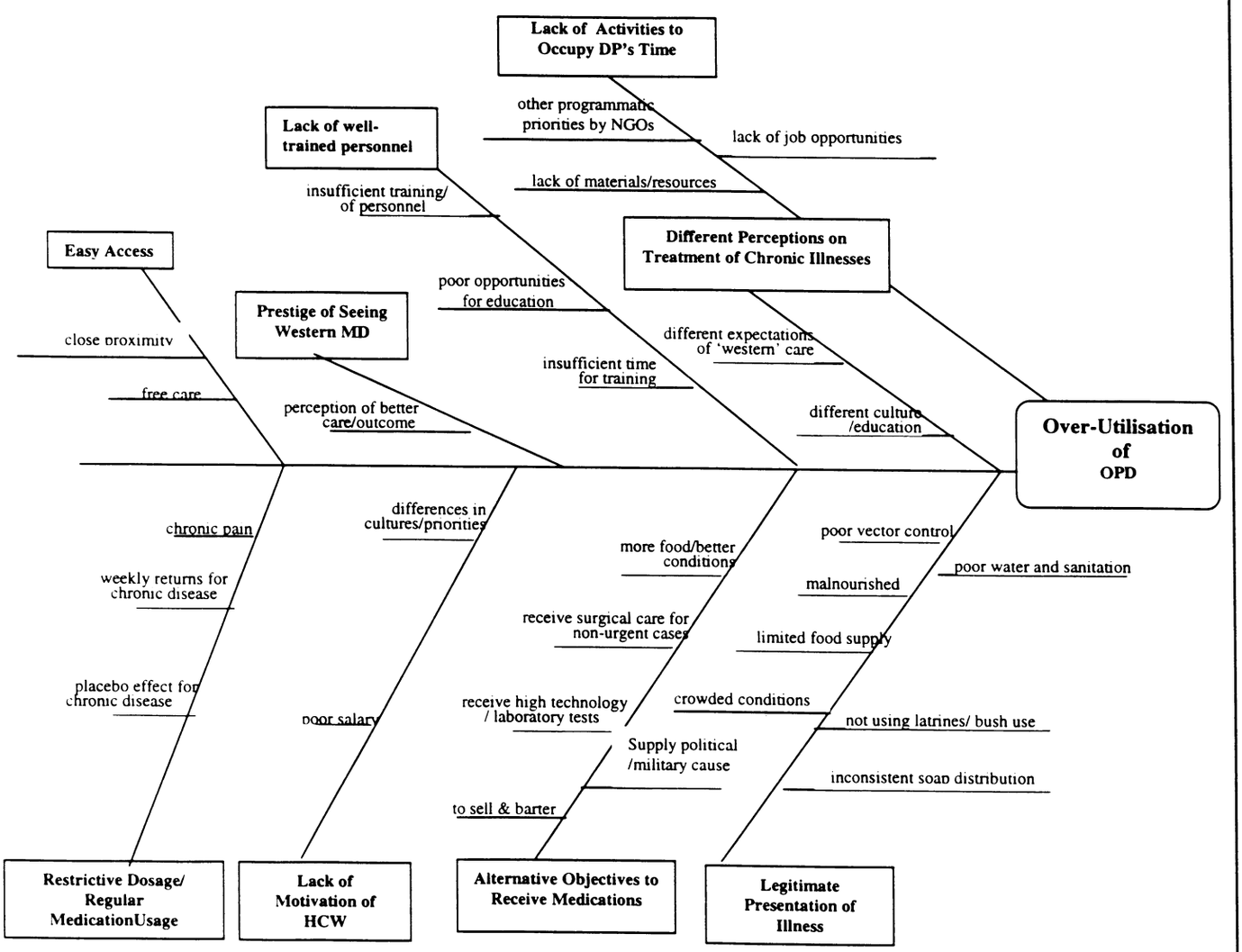
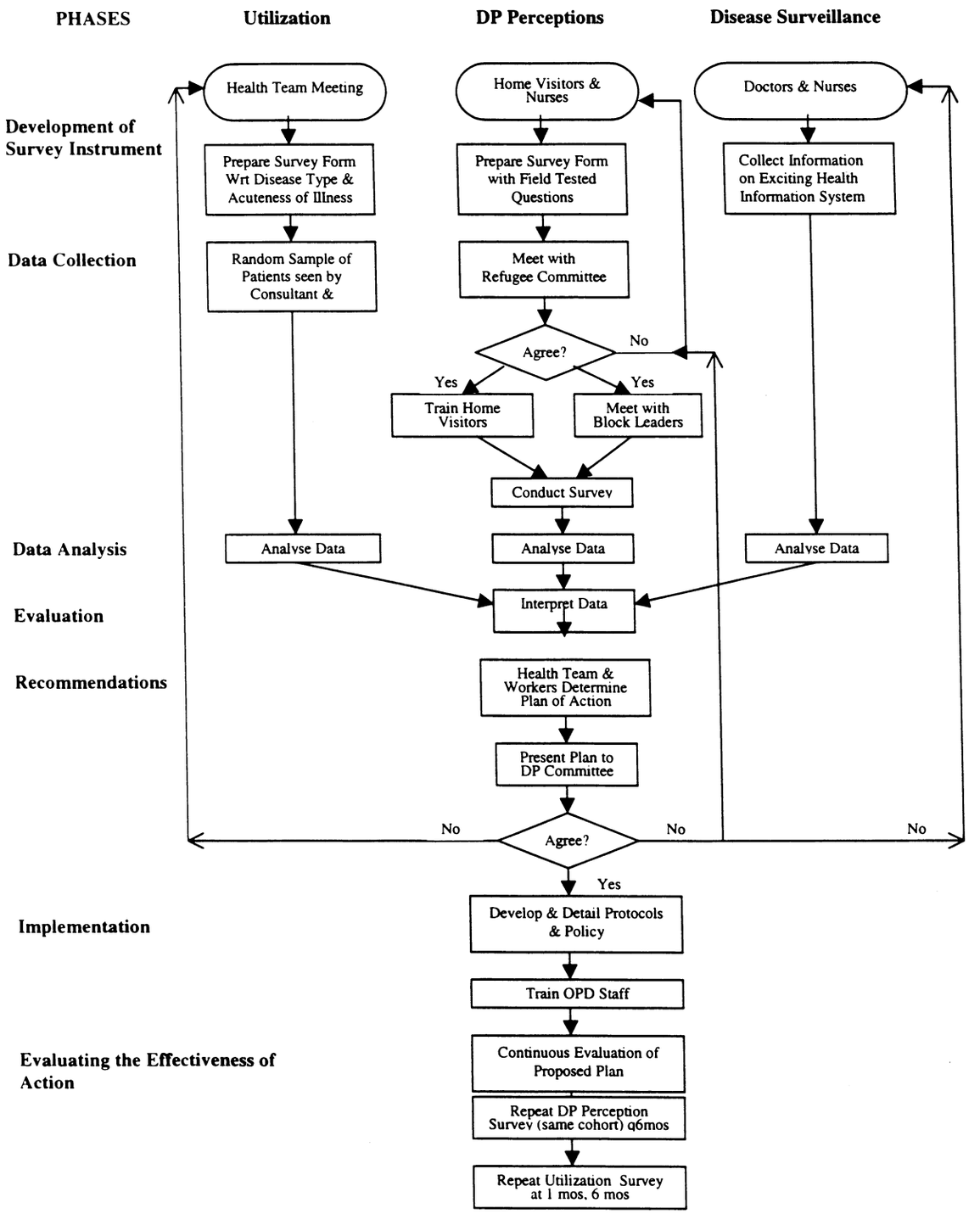


Chart 3 : Flow Chart of Improved OPD Processes in DP Camp



Establishment of a General Framework to Improve Efficiency and Quality of OPDs in DP Camps

After analyzing all of the above information, the team established a framework for meeting its stated objectives (Table 1). The group was not able to collect data as laid out in Chart 3, however, it created the framework based upon their numerous years of experience in DP health care.

Short and Long Term Indicators

Indicators with time limits must be agreed upon. Listed below are the types of short and long term indicators which would be appropriate in this case.

Short Term Indicators :

1. Decrease patient volume from a to b patients/health care worker/day over 3 months.

2. Decrease medication usage by x% per day due to the subsequent decreased patient volume, and the change in the manner of distribution of medications by the pharmacy over 3 months.

Long Term Indicators:

1. Decrease patient volume from y to z patients/health care worker/day after 1 year.

2. Decrease medication usage by another x% per day, after 1 year, due to changes in health care workers' prescribing practices and after analysis of disease surveillance and utilisation processes.

Discussion

Principles and tools of CQI have been applied to the general setting of a DP camp. The ultimate goal of the application of CQI is to improve the management and quality of care of an OPD, and thus ultimately decrease morbidity and mortality. This article should act as an introduction of CQI to administrators and HCWs working in DP camp settings. Furthermore, the CQI tools sited here may act as templates to aid workers in the field.

The framework listed above (Table 1) is an outline which needs to be filled in according to the situation in the field. The CQI team re-engineered certain processes of the composite camp in order to improve its efficiency and quality, which are listed below. In order to decrease overusage of repeat health care seekers by controlling access to the OPD, it was proposed that emergency cases would be seen 24 hours, 7 days per week while non-emergent case would be divided into new cases and chronic or follow up cases. New cases would be seen in the mornings with no limitation as to the number of cases seen by the HCWs. Chronic or follow up cases would be seen in the afternoons and would be limited to 20 patients/HCW. Furthermore, if a customer does not have his issued health card, then he will not be seen until he returns to the OPD with it, unless it is an emergency. If the card is lost, then a new one will be issued but care will be delayed by one day for non urgent cases. To decrease patients being seen in the OPD for repeat psychosomatic illnesses, training of HCWs to provide small group counseling to specific groups, in order to treat these illnesses as well as to decrease clinic usage, should be implemented.

All critical customers should evaluate and prioritise medically beneficial and cost effective measures and compare them to the DP's expectations. For example, although some of the population may prefer injectable medications, the benefits of oral drugs may out weight their preference. For less severe cases, oral medications usually result in the same outcome with no secondary infections at the injection site or transmission of diseases from a contaminated needle, less discomfort to the patient, less medical waste to dispose of, and they are cheaper and do not require as much manpower.

Clinical diagnosis of malaria is neither sensitive nor specific (Meek et al. 1999) and thus whenever possible, a malaria smear should be taken before treatment. Random prescription of antimalarial drugs is expensive, promotes drug resistance, and has numerous side effects. Despite customer preference for antimalarial medications when fever and chills are present, the use of antipyretics should be weighed against antimalarial drugs for the non-vulner-

Table 1:

General Framework to Improve Efficiency and Quality of OPDs in DP Camps

A. More efficient use of the Out Patient Department

1. Decrease overusage of repeat health care seekers:
   - i. Implement a new process to control access to OPD.
   - ii. Enforce rule that health card must be presented before delivery of care.

2. Change DP's and local person's expectations of the health care available:
   - i. Decrease access to non-emergent care by local persons.
   - ii. Take a sample survey to assess DP's expectations of care to be provided and then then respond accordingly.
   - iii. Evaluate and prioritise medically beneficial and cost effective measures compared to DP's to expectations.
   - iv. Meet with DP leaders to create a plan and then disseminate it to residents and locals.

3. Improve quality of care:
   - i. Improve health information systems.
   - ii. Improve training of health care workers.
   - iii. Improve overall morale of staff in OPD.

B. Satisfy the health care needs of DPs given limited resources
   1. Build support systems.

C. Prevent long term dependency in order to achieve repatriation
   1. Regulate the care provided in OPD.

able groups in a population at first presentation, when no lab is available to confirm the diagnosis. Patients must return to clinic in 24 hours for a followup and a system for finding patients who do not return must be in place before this system is initiated. Furthermore, certain expensive or desirable medications from the OPD, for instance quinine, are commonly sold in the local markets. One way to decrease this wastage of medication and improve compliance of treatment is to employ directly observed therapy for certain medications. The patient must return daily to the clinic or a home care visitor must observe the patient take the medicine at home. Once these decisions are made together with the community, DP leaders must create and then disseminate the plan to residents in the camp in order to seek its acceptance.

Quality of health care can be improved by improving the health information systems (Hakewill and Moren 1991). This process involves re-analysing the existing surveillance systems using a standard criteria for evaluation (CDC 1988, CDC 1992). Furthermore, case definitions and treatment protocols should be followed by HCWs. This requires patience and persistence on behalf of the clinical manager. Lastly, definition for new (incident) versus repeat cases should be developed and implemented.

In order to improve the quality of care HCWs provide as well as improve the HCW's morale, the following processes were proposed: weekly lectures and preceptor sessions (to transfer skills and knowledge), weekly review of patient and medication registers, the provision of educational material (books, guidelines) and appropriate medical equipment, consistent feedback to the health team regarding their performance and programmatic changes initiated due to the data collection effort and reports provided. In addition routine meetings, assessments, positive reinforcement and team building should be implemented.

There is a fine line between attempting to offer health care to DPs in a comprehensive sense while being careful neither to offer too sophisticated care and thus create a disincentive towards repatriation, nor to create inequities compared to the services available to the local population (Allen and Morsink 1994, Allen 1996). In order to satisfy the health care needs as well as the expectations of the DPs, given the limited resources and proposed changes in OPD processes, support systems will need to be recognised and reinforced at all levels. Health information systems and customer exit surveys should be used to collect information regarding customer's usage and satisfaction of the clinic. This data should be analysed and acted upon accordingly.

Lastly, in order to prevent long term dependency by the DPs on the health care system, care provided in OPD should be regulated. Treatment should be restrict to the UN essential drug list. Guidelines for referrals to local or mission hospitals should be defined and strictly enforced. These restrictions should help reduce the reluctance of DPs to return to their place of origin when conditions are appropriate to do so, as occurred in Liberia (Schownegerdt 1998) and Cambodia.

Although this article is vertically focused on the functioning of OPDs in DP camps, it must be emphasised that at least part of the team assessing the OPD should also be used to assess other areas of health care provision in the camp (i.e. hospital, Mother-Child Health centre, feeding centers, and home visiting programs) to allow for a more comprehensive application of CQI towards the total health care provided to the DP population.

This article is limited in scope for several reasons. Firstly, the team conducted the analysis without the breadth of input from other key players in DP health care. Thus people involved in all stages of the actual OPD process, from health care workers to consumers to leaders of the camp to representatives of the host country, were not able to be involved in the analysis. Secondly, data from a specific camp were not utilised, which would have allowed for more specific recommendations. In lieu of these limitations, a composite camp composed of the most common processes and problems faced by OPDs in DP camps was developed.

Conclusion

Over the last two decades, many changes have occurred in DP health care, some due to the increase in experience and expertise developed in the field, and others due to changing political and economic climates. Continuous Quality Improvement can address most, if not all of these changes. By involving health care workers at all levels together with the patients and the community, in defining, analysing and realistically implementing cost-effective CQI measures, improved confidence, communication, and a clearer understanding of the community's needs as well as the restrictions and limitations of the UN and NGO agencies will develop. Furthermore, HCW's morale should improve, increasing job satisfaction and improving the atmosphere within a difficult work environment. As with health care throughout the world, the quality and cost of medical care is no longer determined by health care providers and a few important stakeholders (i.e. NGOs or the UN) but increasingly by the consumers and funding agencies (i.e. DPs themselves and the donor agencies). NGOs and aid workers can no longer simply provide medical care with little or no accountability (Toole and Waldman 1993). Donor agencies and the DPs themselves are demanding that NGOs be held accountable for their performance and provide quantifiable measures and indicators of effectiveness. NGOs, the UN and HCWs cannot approach this new paradigm with outdated management structures (Bender 1995). The dramatically rising costs of aid for the international community due to the successively increasing number of ethnic conflicts over the past decade must be controlled. CQI may prove to be an effective method to lower health care costs in DP camps while improving the quality

of care as well as patient, community and health care worker satisfaction.

This article showed how CQI tools may be applied in DP camps, as well as provided potential solutions towards improving the efficiency and quality of health care in an OPD. The next step will be to implement this framework at the field level using all the appropriate levels of health care workers and critical customers. This stage will allow data to be collected and analysed using CQI tools and methods, allowing for specific solutions to be developed for each particular camp. Either a case-control study or a retrospective cohort study would be feasible and provide invaluable information on the actual process of implementation as well as possible benefits of applying CQI to a DP camp setting. ■

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Rapid Assessment of Centers for Displaced Unaccompanied Children in Rwanda during the 1994 Crisis

Joseph J. Valadez & James Sherry

Abstract

This paper assesses all of the Centers for Unaccompanied Children (CUCs) in four prefectures of Rwanda during November 1994 using quantitative and qualitative methods. The purpose of the survey was to assess the quality of services delivered as well as the need for standards to be developed for planning and managing CUCs. This paper reveals that CUCs exhibit a large variability amongst themselves as well as numerous deficiencies in the quality of services delivered, and suggests the need for clear performance standards, and regular monitoring and supervision.

Résumé

Cet article procède à une évaluation de tous les Centres pour Enfants Non-Accompagnés dans quatre préfectures du Rwanda au cours du mois de novembre 1994, grâce à des observations directes et à un questionnaire. Le but de l'enquête est d'évaluer la qualité des services fournis, autant que de se donner une idée des besoins en matière de formulations des normes à développer pour la mise sur pied et la gestion de ces CUC. Cet article révèle que les CUC sont très peu semblables, et manifestent de larges disparités autant que de multiples déficiences dans la qualité des services qu'ils diffusent. On conclut en affirmant qu'il y se manifeste un net besoin de normes de performance autant que d'un suivi et d'une supervision constante de ces services.

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Introduction

The UN Convention on the Rights of the Child (Nations 1991) projected about 12.5 million refugee children worldwide by the end of the 20th century. Because past efforts of local and international professionals have not always met the needs of these clients, we must assume that problems will continue and possibly escalate in the future (Fred and Burlingham 1944; Ressler 1992). For several years, aid workers in disaster areas have noted that a large influx of funding can create tensions and chaos due to competition among organizations for resources and insufficient coordination. During the Rwanda Crisis in 1994, some aid organizations engaged in activities without having sufficient skills or equipment (Editorial 1995; Group 1995). In such conditions, humanitarian responses cannot only be inefficient but harmful. Accountability of humanitarian agencies is needed which can be advanced by the implementation of monitoring systems for quality assurance.

Establishing coordination amongst the different non-governmental organizations (NGOs) requires identification of basic organizational problems of both unaccompanied children and aid organizations. The data were originally collected at UNICEF/Rwanda during July-November 1994 in order to carry out technical assistance during the crisis period. UNICEF staff made a conscious decision to avoid the typical crisis response of ceasing to collect to data or to search for additional information during an emergency situation. Instead a plan was implemented to collect information some of which is reported here (Guetzkow and Valadez 1981).

This paper assesses the status of 15 Centers for Unaccompanied Children (CUCs) in four Prefectures of Rwanda approximately 3 months after humanitarian aid commenced in August 1994. The purpose is to describe the capability of CUCs functioning as support institutions for children and to identify their problems. While emergencies require rapid humanitarian responses, speed should not compromise service delivery quality. The data presented here provides a rare view of CUCs functioning during an emergency and raise questions about: (1) the importance of establishing standards that identify the minimal level of qualified medical and public health professionals needed to manage CUCs, and (2) the need for NGO headquarters and international organizations to facilitate quality control of CUCs.

Methods

Data were collected by an international NGO which UNICEF recruited to sample 100% of the CUCs operating in the catchment areas of the four Prefectures in which it was working. The Prefectures are located in the Southern and Central parts of Rwanda bordering (on Tanzania and Burundi);on the Tanzanian and Burundi borders; they include: Butare, Gitarama, Kibungo, and Kigali (map). UNICEF developed a survey instrument to obtain information from CUC records and by direct observation. As only 15 CUCs of more than 100 nation-wide are included in this

study, the sample cannot be considered representative of all CUCs working in Rwanda at that time. However, the variation of management problems in these CUCs may not be substantially different from other Prefectures throughout Rwanda.

Results

Location and Population

The 15 CUCs were distributed across prefectures as follows: Butare: n=7, Gitarama: n=2, Kibungo: n=4, Kigali: n=2. The age distribution of CUC children (Figure 1) indicated that 48% of children were in the 6 to 10 year group and 30% in the >10 year age group. A smaller proportion was in the <2 year and 2 to 5 year age groups (6% and 16%, respectively). Data suggest that CUCs have tended to support a school age population. It is possible that younger children may have died prior to reaching a CUC.

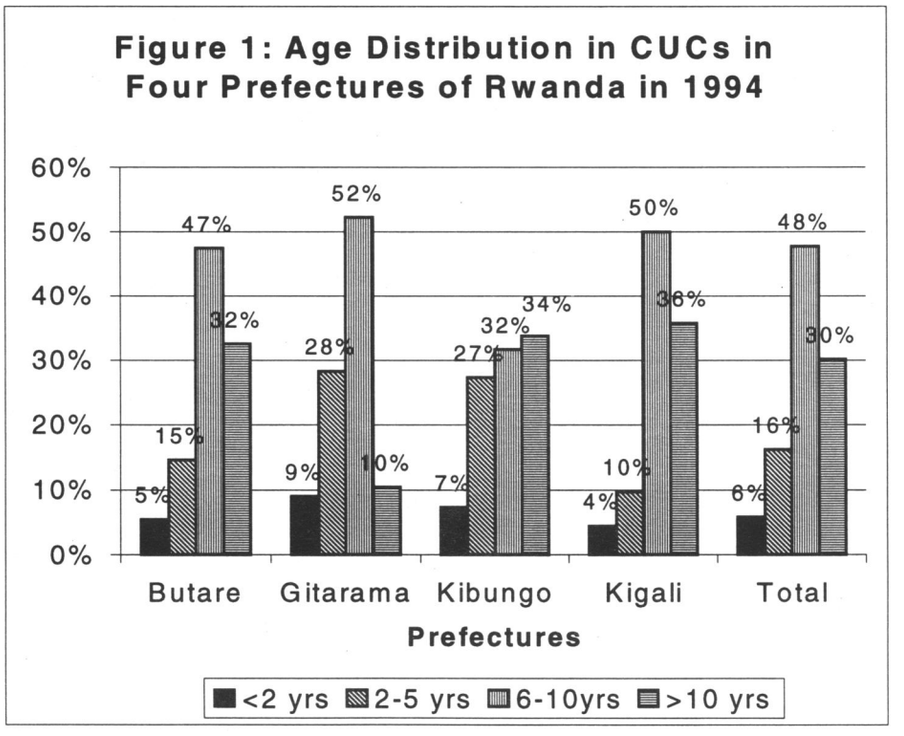
With respect to the management of the unaccompanied children, 87% (13/15) were registered with NGOs responsible for tracking them (e.g., International Committee of the Red Cross). Ninety-three percent (14/15) of the children were recorded in a register by the CUC itself.

The health worker population per 100 children is described in Figure 2. The mean ratio for all CUCs was 4 health workers for every 100 children. The data are also stratified in Figure 2 by professionals and non-professionals. As one would expect, there are more non-professionals than professionals per 100 children.

Water, Sanitation and Infrastructure

Seventy-three percent (11/15) CUCs reported an adequate supply of clean water although they obtained water from different sources; 6 had water delivered, 9 collected it themselves. The average distance to the water supply was 2.3 km. On average about 53% of the children had access to soap.

With respect to infrastructure, 53% (8/15) CUCs reported access to an electric power source. 100% had a designated cooking place, but only 73% (11/15) had access to firewood. As other fuel was scarce in Rwanda, this finding suggests scarcity of fuel for 27% of CUCs.



Children's Immediate Environment

The Rwandan environment is humid. Protection from the elements is particularly important. Seventy-three percent of children had plastic sheeting under mattresses or sleeping mats, 87% had blankets, and 27% had enough clothing to cover their bodies both above and below the waist.

Seventy-three percent of the children had dishes for eating meals. On average, children consumed 3.2 meals per day. There is no information to determine whether infants had more feeding sessions. It appears sufficient food was available; 14 CUCs had an average 27 days of food in reserve (max= 90, min=14), while the remaining CUC had 150 days of food reserves. However, only 53% had high caloric foods used for malnourished children. Although we have no data on the prevalence of malnutrition, severe malnutrition was reported throughout Rwanda. No data on the prevalence of malnutrition are available concerning the prefectures reported in this paper. However, high levels of acute malnutrition were reported in the Rwandan refugee camps in eastern Zaire (now Democratic Republic of the Congo) and ranged from 18% to 23% (Group 1995; Toole and Waldman 1997). If malnutrition was prevalent in the Rwandan CUCs then they may not have been properly prepared to re-nourish children.

Medical Preparedness of CUCs

Eighty percent (12/15) of CUCs reported a sufficient drug supply. However, only 73% (11/15) had oral rehydration salt packets (ORS) available on site. This basic deficiency is an indication of inadequate health system management in CUCs. Only 33% of children were vaccinated against measles, although measles vaccines had been available and distributed through an expanded program for immunization campaign beginning in August 1994.

Discussion

Seventy-eight percent of children were >5 years of age. This age distribution indicates that few young children found their way to CUCs in Rwanda. A small proportion of young children were also found in nearby CUCs in Tanzania. During December 1995 in Musuhura/Ngara Camp in Tanzania, 16% of the child population was <6 years of age (Land 1995). In Karagwe/Ngara and in Lukole/Ngara Camps in Tanzania 8% and 3% of child populations were <6 years (Land 1995). Therefore, it was not uncommon that young children were under-represented in the age distribution of children in displaced and refugee camps.

The operational implication is that CUCs should provide schooling, recreation and sports as part of their institutional infrastructure. We do not have data on whether the CUC sampled in this study had these activities. However, during our other work we frequently visited CUCs to assess how well they were organized. On more than one occasion, we found that the children were not organized into groups by age, and that recreational activities were not offered. Therefore age-specific guidelines for education and recreational activities need to be created and implemented for CUCs, even if they have only been in operation for short periods of time.

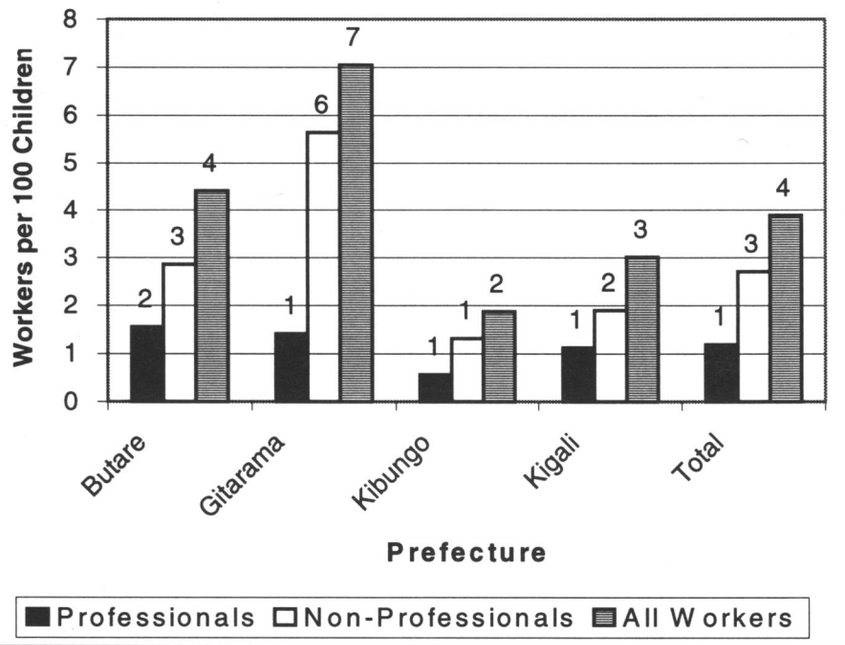
The number of CUC workers varied across the four Prefectures ranging from two to seven workers per 100 children. The average number of workers was 4 per 100 children. Gitarama had nearly double the ratio of health workers to children compared to the overall mean, whereas Kibungo had half as many. These data were difficult to assess since no standards existed for interpreting whether sufficient numbers of workers were available in the CUCs in each Prefecture. Nevertheless, the existing variations suggest that CUC workers were not evenly distributed over the Prefectures. This pattern implies substantially different management plans of the organizations managing the children in the CUCs. Had there been standards for assignment of the NGOs to catchment areas, CUC workers may have been more evenly distributed over the four Prefectures. More operational research is needed to determine optimal levels of professional and non-professional personnel to care for the children within the CUCs.

Most indicators in this study suggest that the CUCs were well equipped to meet the basic needs of the children. However, our data suggests that a significant proportion of children in some of the CUCs lacked clean water, plastic sheeting to go under mattresses, sufficient clothing, dishes, and soap. As the average distance to collect water was 2.3 km, we question whether adequate amounts of water was available for drinking, cooking and washing. The lack of soap raises questions about whether hygiene was inadequate. The lack of plastic sheeting under mattresses, blankets and clothing suggests that large proportions of children in CUCs were exposed to the elements. In future studies we recommend closer assessment of these questions.

Although food reserves were adequate, some CUCs did not have supplementary foods for malnourished children. As malnourishment was widespread in Rwanda at that time, this result may signal that some camps were not prepared for the health conditions they were encountering. Although 80% reported an adequate drug supply, 27% did not have ORS, and 66% of the children were not adequately vaccinated against measles, despite their availability through UNICEF since August 1994. Therefore, many CUCs exhibited deficiencies that may have left children exposed to health risks. These deficiencies could have been ameliorated with regularly monitoring by public health organizations using basic quality assurance procedures.

Most deficiencies amongst the CUCs reported here were preventable with proper medical or public health assistance. Medical supplies and technical assistance were available in Rwanda during the time of this assessment. The existence of the CUC management problems, however, was not detected prior to this evaluation. This deficiency was

Figure 2: Number of Health Workers per 100 Children



probably not detected because major health NGOs and the humanitarian relief organizations assumed that NGOs managing CUCs were providing sufficient medical or public health expertise. With a host of other health priorities in Rwanda during August-November 1994, the operating assumption was that NGOs fielded sufficiently diverse technical assistance to address the needs of unaccompanied children. The data suggest the contrary for at least some CUCs.

Conclusion

Organizations managing CUCs may not have sent staff to Rwanda with sufficient experience or qualifications to both detect and resolve health problems emerging during the Rwandan Crisis. This deficiency could be replicated in other crisis areas and therefore should be addressed by NGOs. Regular monitoring of the quality of services by agencies managing CUCs should be carried out by an experienced health or humanitarian relief organization. There is a need for the creation and implementation of standards with which to plan, manage, and monitor CUCs in future relief operations. Lastly, there is an urgent need for basic epidemiological surveillance within CUCs to determine the health risks to children in order to aid future crisis planning. ■

Acknowledgement

Our gratitude is expressed to the German NGO Psalm 47, whose representatives collected this information during November 1994. We also thank our colleague, Alisa Land, for her optimism and tremendous energy.

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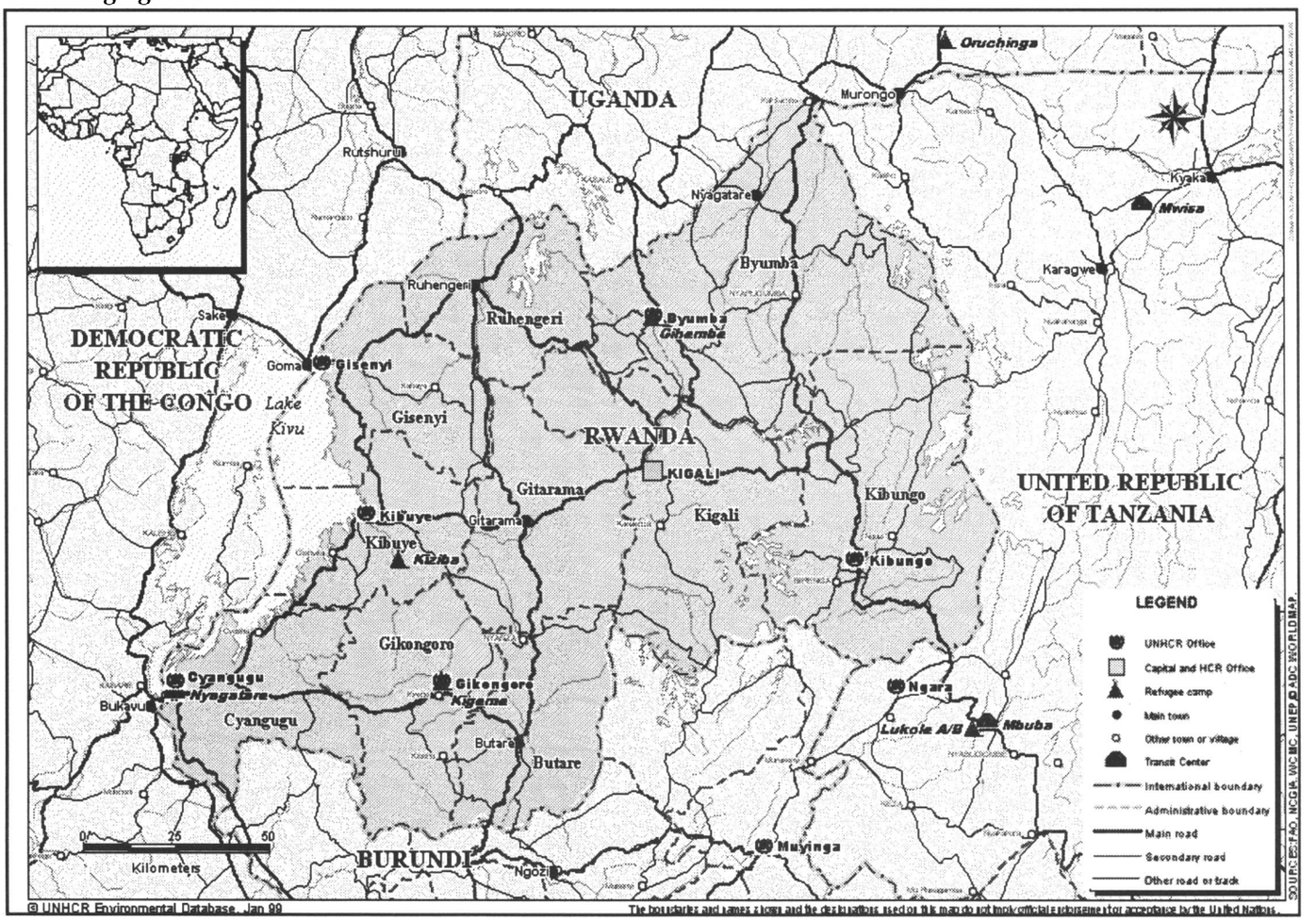

Kosovar Refugee Assessments in Montenegro and Albania

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Abstract

Following NATO bombings on the 24th of March 1999, Serbian armed forces provoked a massive population exodus of ethnic Albanians living in Kosovo, an autonomous province of Federal Republic of Yugoslavia. In June 1999, UNHCR reported that 600,000 Kosovars had found refuge in neighbouring countries. In order to assess the situation of Kosovar refugees, two surveys were carried out in Rozaje, Republic of Montenegro, and in Kukes, Albania, in April 1999. The main goal was to assess human rights violations. This paper describes the results of these surveys.

Résumé

Suite aux bombardements de l'OTAN du 24 mars 1999, les forces armées serbes ont déclenché un exode massif des populations de souche albanaise du Kosovo, une province autonome de la République Fédérale de Yougoslavie. En juin 1999, le Haut Commissariat de l'ONU pour les Réfugiés rapportait que 600,000 kosovars avaient trouvé refuge dans les nations avoisinantes. Dans le but d'évaluer la situation des réfugiés kosovars, deux enquêtes ont été menées à Rozaje, République du Monténégro, et à Kikes, Albanie, en avril 1999. Le but principal des enquêtes était de prendre la mesure des violations aux droits humains. Cet article décrit le résultat de ces enquêtes.

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Introduction

Following NATO bombings on the 24th of March 1999, Serbian armed forces provoked a massive population exodus of ethnic Albanians living in Kosovo, an autonomous province of Federal Republic of Yugoslavia. In June 1999, UNHCR reported that 600,000 Kosovars had found refuge in neighbouring countries[1].

In order to assess the situation of Kosovar refugees, two surveys were carried out in Rozaje, Republic of Montenegro, and in Kukes, Albania, in April 1999. The main goal was to assess human rights violations. Specific objectives were :

(i) to obtain demographic data and information on basic needs of refugees and corresponding coverage by humanitarian organisations.

(ii) to describe the history of the exodus.

(iii) to assess the impact of the forced migration on mortality amongst Kosovar Albanians.

Methods

Study Sites

Rozaje and Kukes were the main refugee entry sites to the respective countries. At the time of the survey, Rozaje had an estimated population of 25,000 refugees, 6,500 of whom where lodged in collective centres. At Kukes, the estimated total was 86,000 refugees among which 36,000 were in camps and in collective centres, 10,000 were in tractor camps and 40,000 living with host families.

Sample Size

Due to highly insecure working conditions, there was no choice but to rely upon a small sample size. A minimum sample of 200 families, providing a presumed total of 1600 persons (8 persons/family) was therefore retained for each survey in Rozaje and in Kukes. The surveys covered the events that occurred from March 24 to April 15, and March 24 to April 25, 1999, in the two respective locations.

Sampling Methods

In Rozaje, 3 out of 10 collective centres, representing 3,000 refugees, were selected by convenience. In each of the 3 centres, one out of two families was randomly selected by systematic sampling.

In Kukes, the survey was limited to the refugees hosted by Albanian families. A modified cluster sampling technique was utilised. A sample of 100 buildings and houses was randomly selected from a map depicting all existing physical structures in the town. Each selected structure was visited. Whenever an apartment building was found, a random sample of two apartments was selected, and Kosovar families living there were interviewed.

A household was defined as all close relatives living together under the same roof in Kosovo when the aerial bombardment began on March 24, 1999. A standard questionnaire containing information on date of arrival, household composition and hosting conditions was addressed to the head of the Kosovar family. For each household, the details of the exodus, the number of missing members, the number and cause of deaths, and vital needs (blankets, mattresses, and food) were recorded. General food distribution was assessed in Rozaje by asking to the fami-

lies the amount of bread received in the last 24 hours.

Results in percentage were expressed with 95% Confidence Interval [95%CI], calculated with the exact interval estimation method and based on two stage cluster sampling.

Data was entered and analysed using Epi-info 6.04b software.[2]

Results

A total of 406 families were interviewed on the 15th (Rosaje) and on the 25th (Kukes) of April 1999. Males aged 15 to 54 were under-represented in both places (table 1). The average duration of exodus to reach Rozaje and Kukes were 7.6 and 2.7 days (range: 1-23 and 1-30 days), respectively. The majority of the refugees (88% - 357/406) came from rural areas, from more than 80 different villages, located in Rugova and Prizren regions. Ninety-three percent (187/201) of the families in Rozaje arrived by walking. In Kukes, among 70 families from which information could be obtained, 62 (89%) had come by vehicle, mainly tractors.

Amongst both populations, 79% (321/406, [95%CI : 73-84]) of the families reported direct physical threat by armed men or by attacks as the main reason for leaving Kosovo. Others left to avoid attack or due to fear of repression. In Rozaje, 46% (92/201, [95%CI: 36-56]) of the families reported no longer having any identity cards. Refugee cards were not provided to the families on their arrival in Rozaje or in Kukes.

Thirty-one percent (126/406, [95%CI: 25-38]) of families reported " at least one family member left behind ". For the two samples, this amounted to a total of 310 persons, representing 9% [95%CI: 8-11] of the total number of persons [310 / (3,047 + 310)]. Among the 141 " left behind " in Kukes, 42 (30%, [95%CI: 20-42]) had been separated by force or detained, 45 (32%, [95%CI : 22-44]) were Kosovo Liberation Army fighters, 29 (20%, [95%CI : 12-32]) stayed voluntarily, and 25 (18%, [95%CI : 10-29]) reported other reasons (i.e. lost along the way, away from the family at time of exodus, etc).

A total of 13 deaths occurred during the recall period among the 3,047 persons in both sites. Six in Rozaje, from March 24 to April 15 1999, and 7 in Kukes, between March 24 to April 25, 1999. Among the 13 deaths, 7 (54%, [95%CI : 17-87]) were due to violence, caused by bullets, bombs or grenades. Other deaths mainly concerned young children and elders who died from " exhaustion " during the exodus.

Concerning basic needs, 8.5% (17/201, [95%CI : 4-16]) of the families in Rozaje had no blankets and 43% (87/201, 95%CI : 34-54]) had no mattresses. Families had received an average of 200 grams of bread per person per day (compared to the 300 grams/person/day which had been planned to be distributed). Twenty percent (41/201, [95%CI: 13-30]) of the families had not received any bread. In Kukes, only 22% (46/205, [95%CI : 15-32]) of the families had received a blanket, and no mattresses had been distributed. Twenty percent (41/205, [95%CI : 13-29]) of the families had not yet received any food parcel. Only 52% (107/205, [95%CI : 42-62]) had received soap. Sixty-two percent (126/205, [95%CI : 51-71]) of the families selected in Kukes paid an average rent of 250 Deustch Marks per month (about 180 USD). Others were accommodated for free or by relatives in Albania.

Discussion

The surveys conducted in Rozaje and Kukes targeted two different refugee settings in two different host countries. Despite these differences, the refugees' demographic characteristics and history of deportation were similar in both surveys. Based on such evidence, we think that our results could be representative of the populations who sought refuge in Albania and Montenegro.

The history reported by the families surveyed, mainly from villages, confirm the reports of forced deportation orchestrated by the Serbian military forces during this time period. Physical and

Table 1 : Demographics of Survey Population (refugees) in Rosaje, Montenegro and in Kukes, Albania, 15th - 25th of April 1999.

Category	Rozaje	Kukes	Totall
# persons	1537	1510	3047
# households	201	205	406
# persons/household	7.6	7.4	7.5
Male : Female ratio (M :F)	1.00 : 1.01	1.00 : 1.24	1.00 : 1.11
M :F ratio : 15-54 yrs	1.00:1.14	1.00:1.67	1.00:1.35
% males: 15-54 yrs	46.8%	37.6%	42.5%

psychological threats were the main reason reported by families for leaving Kosovo. This forced migration resulted in an unacceptable number of violent deaths among civilians, as well as the creation of many " missing persons "- primarily men of fighting age.

The large number of absent family members (i.e. "those left behind") is concerning. Among these absences, 60% were young male adults, which meant that many families had heads of households who were women and/or elderly. This finding was consistent with the under-representation of males between 15 to 54 years old in the study population which was found in both surveys.

At the time of the survey, the refugees' basic needs had not been adequately covered by relief aid. Many households were lacking such basic items as food, mattresses, blankets, and soap.

In part, this shortcoming may be due to the absence of an organised refugee registration system, which would make it difficult to ensure that each family received complete food rations and basic non-food items.

Conclusion

These two community surveys in Montenegro and Albania confirm systematic violations of human rights of the Kosovar Albanians by the Serbian military and paramilitary groups, which are consistent with other reports obtained by individual interviews[3,4,5]. These studies suggest that assistance to the refugees in Montenegro and in Albania have not met international standards.[6] This failure is especially egregious due to the massive mobilisation of the international community. The protection of the refugees and coverage of their basic needs, including individual registration, remain a high priority during the early stages of such emergencies. ■

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The Practice of Immigration Health in Complex Emergency Situations – A Case Study of Kosovo from March to July 1999

Brian D. Gushulak, D. W. MacPherson, H. Prochazka & M. M. Cooper

Abstract

The need to rapidly transport refugees, displaced as a result of evolving complex humanitarian emergencies creates challenges for those refugee-receiving nations that require formal immigration medical screening of these populations. Balancing the need to expediently resettle the refugees with these legislative and regulatory medical requirements can be logistically and operationally difficult. During the 1999 Kosovo crisis, the Humanitarian Evacuation Programme from the Former Yugoslav Republic of Macedonia rapidly moved large numbers of Kosovar Albanian refugees to nations with existing formal immigration medical screening requirements. This paper describes the successful management and delivery of immigration health services during this complicated international event.

Résumé

La nécessité de transporter rapidement les réfugiés déplacés à cause d'urgences humanitaires complexes à évolution rapide représente un défi pour les nations receveuses de réfugiés requérant un tamisage médical routinier de sa population immigrante. Des points de vue logistique et opérationnel, il peut s'avérer fort difficile pour ces états de concilier la nécessité de relocaliser rapidement les réfugiés avec les exigences de leurs lois et règlements en matière médicale et sanitaire. Lors de la crise du Kosovo de 1999, le Programme d'Évacuation Humanitaire de l'ancienne république yougoslave de Macédoine déplaça rapidement un grand nombre de réfugiés albanais kosovars vers des nations requérant formellement un tamisage médical de sa population immigrante. Cet article décrit la gestion et la distribution réussies de services de santé à l'immigration au cours de cet événement international complexe.

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Dr. M. Cooper has worked for the Canadian Immigration Medical Service in the Philippines, Singapore and Canada. During the Kosovo Crisis she was stationed in Skopje, and assisted in the pre-departure medical management of individuals destined to Canada from FYROM and Albania.

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Dr. W. MacPherson, Dept. of Pathology and Molecular Medicine at McMaster University, has consulted to governments and agencies on matters related to mobile populations, including program development, health data management.

Introduction

Complex humanitarian emergencies (CHEs) are characterized by environmental disasters or severe social-political disruptions, which affect the ability of a population to provide the basic necessities of life: food, water, shelter, and physical security. Very often, CHEs are associated with dramatic and unstable conditions, which make prediction of the magnitude and direction of needs for the affected population very difficult. In addition, mass movement of populations may also be a characteristic of CHEs. The dynamic conditions associated with CHEs pose formidable challenges for national and international acute response teams and relief agencies who are responsible for delivering services to affected populations.

During the initial phases of CHEs, many of the immediate interventions are focused on the provision of essential services to vulnerable populations. These services involve the provision and support of shelter, nutrition, sanitation and disease control. Health protection provisions and medical care are essential components in the management of complex emergencies.

When the displaced or affected populations are managed locally or within the region of the disruption, health service delivery remains centered on the provision of humanitarian care to those in need, and the prevention of communicable disease outbreaks. However, if the emergency evolves to the point where it becomes necessary to transport the affected population across international borders, additional medical issues involving international, frontier and quarantine health must be considered.

These international and quarantine health activities deal with the medical and regulatory interventions related to immigration and refugee resettlement that are required or recommended by some of the nations that receive or harbor migrant populations. The delivery of these mandatory immigration health practices in CHEs can be extremely challenging. Much of that challenge results from the fact that the practice of immigration health is based on regulated, regimented systems of organized border control requirements while CHEs take place in rapidly evolving, dynamic environments, often marked by poorly controlled environmental, civil or social situations. When these events are associated with the international movement of the affected

populations, the international implications of existing quarantine legislation and the containment of diseases of international health importance must be considered. At the same time, undue effort in this regard must not delay or interfere with the provision or delivery of necessary humanitarian or medical assistance.

The 1999 situation in the Southern Balkans was a CHE during which the international community was faced with managing a refugee population from both a regional and international perspective. Many of the exigencies related to formal immigration health requirements had to be dealt with in a manner that was both expedient and responsive to the changing social and political circumstances in the region. Developing the programmes for immigration health, and delivering those programmes while considering the health of the refugees as well as the national requirements of those countries that received the refugees, was accomplished without significant complication.

This article reviews the immigration-related aspects of health management associated with the population of refugees who were evacuated internationally during the Kosovo crisis of spring and summer 1999. The article describes the approaches developed to deal with some of the acute medical needs of the affected population, the humanitarian consideration to ensure fitness to be transported, and the need to be in compliance with the legislative requirements of some receiving host nations. Australia, Canada and the United States of America are specific destination and host countries where immigration and public health legislation governing the admission of refugees was considered during the Kosovo crisis. The model programmes of health assessment for mobile refugee populations undergoing humanitarian evacuation to these countries will be described.

Since its inception in 1951, the International Organization for Migration (IOM), an intergovernmental, humanitarian organization, has acted with its partners in the international community in events such as the Kosovo crisis to assist in meeting the operational challenges of migration. During the crisis in the Southeast Balkans, IOM was responsible for the majority of air transport for refugees being resettled or evacuated from the region to international sites. In 1999, IOM provided direct air transport assistance to 59,993 individuals evacuated from the Former Yugoslav Republic of Macedonia (FYROM) under the Humanitarian Evacuation Programme (HEP) managed by the United Nations High Commissioner for Refugees (UNHCR)[1].

During the past twenty years, IOM Medical Services has provided direct immigration health and travel services to over 1.5 million migrants moving to new international destinations. In providing transportation assistance to migrants, IOM has been active in supporting the health of those individuals. During the provision of those services, IOM has acquired extensive experience in managing the legislative and regulatory health requirements associated with migration. IOM Medical Services has provided technical immigration medical services for Australia, Canada, the United States and other nations for more than 30 years. Basic migration and transport health services for the majority of individuals evacuated by air from FYROM under the HEP were provided by IOM.

The History of the International Movement of Refugees Resulting from the Kosovo Crisis

The humanitarian crisis that followed the commencement of NATO military operations on March 24th, 1999, was the product of a long-standing deteriorating civil situation in Kosovo. During that period of civil instability, before the beginning of NATO air operations, UNHCR estimated that more than 400,000 people had been forced to leave their homes. In this time before commencement of the NATO air strikes some 230,000 people were displaced within the borders of Kosovo itself while others fled to other countries, primarily in Europe.

The beginning of military activity on March 24th was immediately followed by the widespread forced migration of the majority of the ethnic Albanian population living in the Kosovo province of Yugoslavia. UNHCR estimated that 230,000 Albanian Kosovars had been expelled from Kosovo by April 2nd. Displaced populations of this magnitude had not been seen in Europe since the end of the Bosnia conflict in the mid-1990s. The volume and rate of the displacement was dramatic, with up to 40,000 individuals arriving in FYROM within a single 24-hour period.

In the 10 days following the commencement of hostilities nearly 120,000 Kosovo refugees had arrived in Albania, 70,000 in FYROM, 30,000 in Montenegro and 7,500 in Bosnia and Herzegovina. Depending on location, the displaced individuals were housed with local host families, in community structures such as schools or factory buildings, or in refugee camps constructed to deal with the population flow. By April 4th the situation in FYROM had reached the point where UNHCR recommended the beginning of international evacuation of some of the refugees to ease the burden on the humanitarian operations. The initial resettlement was intended to manage the refugees within the immediate region and within Europe, as geographically close to Kosovo as possible. However, by the 30th of April the burden of the human crisis had reached a level where UNHCR made a formal request that non-European nations begin operations to evacuate Kosovo refugees from camps in FYROM.

The humanitarian evacuation operations were required "to preserve the stability of the FYR of Macedonia"[2] and were initiated by a letter from Madame S. Ogata, the High Commissioner of UNHCR, to the governments of Australia, Canada and the United States. Specifically, these nations were asked to undertake planned evacuations from the refugee camps in the Skopje area. UNHCR had indicated that the long-distance evacuations, a process which had been deferred during the initial phase of the crisis in a desire to maintain the displaced refugees as close to their

homes as possible, were now necessary as the numbers of refugees in FYROM approached 170,000. This number of refugees was felt to exceed the physical, economic and political capabilities of the region to provide the humanitarian care required. Following the UNHCR request, Australia agreed to accept 4,000 refugees, Canada 5,000 and the United States 20,000.

The Health/Medical Assessment of Refugees

Three independent processes were involved in the health and medical assessments of the refugees in FYROM:

1. An initial health assessment to deal with acute or pre-existing medical conditions,
2. A "fitness to fly" assessment of individuals identified for international humanitarian evacuation, and
3. Routine immigration medical requirements as determined by the receiving nations.

Prior to initiating the second and third health assessments, individuals had to be identified as being willing to undergo international humanitarian evacuation on a voluntary basis.

Case Selection for International Humanitarian Evacuation

Refugees arriving overland to the FYROM were received and registered in a joint UNHCR/IOM database. Those registered included refugees housed in camp situations and others who found shelter in the community. From the nearly two hundred thousand refugees in FYROM, UNHCR identified individuals and family groups for whom international resettlement was a priority. The criteria for priority determination were:

1. Single parent families,
2. Unaccompanied minor children,
3. Elderly, and
4. Those with serious medical conditions requiring urgent medical or surgical intervention.

These criteria were established by UNHCR, and they assisted in the identification of vulnerable groups within the refugee population, who were in the greatest need of protection. In all cases, humanitarian evacuation was a voluntary process with families and individuals expressing a desire to leave the local situation in FYROM.

The presence of family members at the international destination, a factor which made reception and accommodation easier, and the maintenance of the family unit, were two additional issues considered in the process of selection for international humanitarian evacuation.

Information on those individuals who were identified under these criteria was offered to representatives of nations that had offered to receive refugees from FYROM. During the Kosovo crisis, UNHCR had received offers of placement for over 130,000 refugees. In the case of Australian, Canadian, or United States destined refugees, national immigration and refugee agencies and departments selected individuals for resettlement. Once the receiving nation had agreed to receive the refugees, the travel and immigration related health assessment of the refugees began. That process, while slightly different for each of the three countries, involved the same basic and contiguous, but conceptually separate, medical evaluations that were related to the specific stages of the ultimate journey.

The challenge facing immigration officials was the need to manage immigration medical requirements in the face of a rapidly evolving crisis and the humanitarian imperative to move several thousands individuals over a short period of time. The initial approach developed by nations with mandatory immigration health requirements involved the transport of individuals to transit centers in the country of destination. Upon arrival, detailed immigration medical examinations for the refugees were conducted. While this rapid phase of the evacuation was underway, processes were put in place to quickly complete formal immigration medical screening in FYROM.

Completing the immigration medical examination prior to the departure of refugee populations has both positive and negative attributes. Refugees who have completed their immigration medical formalities can be introduced directly into the general population. Consequently, the need to house or detain the refugees in processing centres, which often tend to be military establishments, is eliminated. Reducing the time spent by families in these controlled and supervised environments may facilitate the introduction to the regular aspects of the new society. Conversely, regular, controlled access to refugee populations housed in controlled environments, such as military installations, after arrival in the host nation, can facilitate the recognition and management of health and medical conditions that may not be adequately assessed during the traditional immigration medical examination.

Developing the ability to perform complete immigration medical screening services in FYROM allowed the receiving nations the option of having the medical screening performed prior to departure or on arrival.

General Medical Assessment

On arrival in FYROM, refugees from Kosovo who required medical assistance or care received their services from health agencies or organizations working under the umbrella of UNHCR. Depending upon whether the refugees were accommodated in camps or in the community, health care was provided at camp clinics or hospitals by medical nongovernmental organizations or by local health providers in FYROM.

Fitness to Fly Assessment

Independent of the immigration medical requirements of the resettlement nations, the health of the refugee populations selected for international evacuation had to be considered in terms of the journey itself. As the main provider of air transport for the HEP from FYROM, IOM was responsible for the physical movement of those selected for resettlement.

The medical evaluation of refugees selected for international resettlement included an evaluation of the individual's health condition and the fitness to

fly to the destination. For all transport activities, IOM routinely considers the health of migrant passengers in terms of the potential adverse impact of the air and associated ground journey. Medical escorts are provided in situations where ill or disabled migrants are required to travel long distances and where assistance may be required during the flight.

Managing the medical and immigration health aspects of air travel during the initial phase of the HEP from FYROM was logistically difficult. Much of that difficulty resulted from the fact that the movements had to be undertaken within constraints of time and limited access to some medical facilities and services.

For those refugees for whom a detailed medical evaluation was deferred until arrival at the destination, a limited pre-flight evaluation was undertaken. Local, culturally and linguistically appropriate physicians obtained a basic medical history and performed a simple visual inspection. Depending upon the individual history and clinical status of the refugee, more detailed evaluation including vital signs, auscultation and the provision of medications was undertaken. Those refugees deemed fit to fly were then classified into three main categories:

1. Those with no obvious medical problems.
2. Those with pre-existing medical conditions that would require routine follow up in the future, and
3. Those with pre-existing medical conditions that required expedient attention on arrival.

To facilitate the rapid triage of the arriving refugees and to compensate for linguistic difficulties related to limited access to translators on arrival, each of the three groups of departing refugees, as defined above, was provided with a color coded card that indicated the results of the preflight medical assessment. These cards were positioned to readily identify the individual on arrival, and to permit a rapid visual triage to the appropriate level of medical care. To assist triage and detailed medical examination at the receiving destination, each refugee also carried a form noting the presence of health conditions and illnesses identified during the preflight evaluation. Specific questions (cough, hemoptysis, and fever) regarding symptoms of active tuberculosis were asked of the refugees. Individuals with positive responses were referred for more detailed assessment. No cases of suspect tuberculosis were boarded.

Immigration Screening

Routine Immigration Medical Requirements of Receiving Nations

Nations who have long-standing immigration programmes also have regulatory and legislative procedures for the medical evaluation and screening of refugees and asylum seekers. These procedures are often, although not necessarily exclusively, related to national quarantine practices and protection of the public health. The immigration medical examination for refugee populations is generally undertaken to identify conditions and illnesses of public health importance that may affect either the refugee population or the local populations, which receive the refugees. Traditional foci of interest in this regard have been communicable infectious diseases such as pulmonary tuberculosis and sexually transmitted diseases, as well as some psychiatric disorders. Immigration medical screening and assessment may be undertaken either before arrival at the resettlement destination or after arrival.

The post-arrival assessment is practiced in situations where refugee claimants or asylum seekers present at frontier or border locations or alternatively request formal protection following entry to a country as a visitor, student, labor migrant or on arrival by some other irregular means. Depending upon the national legislation, individuals are often directed to specific clinics or practitioners for medical assessment, follow up investigation, treatment or preventive therapy, according to national standards[3].

The other major method of undertaking immigration medical screening of refugees is to perform the process prior to the refugee travelling to the receiving host country. Pre-departure immigration medical evaluation has been the traditional approach practiced by the nations who accept the majority of internationally recognized refugees for permanent resettlement. In this group of nations Australia, Canada and the United States require that identified refugee populations complete immigration health formalities prior to departure to the receiving country.

Once the decision had been made to endorse the long-distance resettlement of refugees from FYROM, those nations receiving refugees began to balance the need to move the individuals in a humane, but expedited manner, while still satisfying their national immigration medical requirements. As noted above, the Kosovo-related refugee crisis in FYROM created a situation in which both of the approaches (pre-departure and post-arrival assessments) were utilized under less than optimum circumstances.

Pre-Departure Immigration Assessment

During the course of the Kosovo crisis, some nations established procedures that allowed for the normalised immigration medical assessment of groups of refugees selected for resettlement. In certain situations, the United States and Canada arranged for the completion of formal immigration medical evaluation of selected refugees prior to departure. The Canadian Government also established an additional selection stream for refugees with family members already in Canada, separate from the 5,000 refugees accepted through the UNHCR-requested HEP. Individuals in these cohorts completed full immigration medical formalities prior to resettlement, in common with other refugee operations in other areas of the world. Having completed legally required medical investigations, these groups of refugees were allowed to immediately proceed into the local envi-

ronment on arrival and did not require passage through transit facilities.

Post-Arrival Immigration Assessment

For those refugees who were evacuated internationally without having completed full immigration medical investigation, the required medical assessments and follow up were undertaken in transit facilities at the destination. A single location in the United States (Fort Dix, New Jersey), two sites in Canada (Trenton, Ontario and Greenwood, Nova Scotia) and a single site in Australia (Sydney) were used to perform the immigration medical screening assessments.

Following the completion of the post-arrival medical screening and other immigration formalities, refugees were introduced into the local community. The duration of time between arrival and dispersion into the local community varied between reception nations. In some of these situations completion of formalities, determination of appropriate destinations and transfer to the community took several weeks.

Outcomes of Systems Put in Place to Effect Immigration Medical Assessments

The Process for Canada

Humanitarian evacuation cases for Canadian destinations were assessed under the IOM fitness-to-fly protocol (colour-coded IOM cards to indicate medical conditions) immediately prior to embarkation. Refugees were allowed to proceed if they were determined able to complete the flight without serious in-flight medical events and were in possession of adequate medication for pre-existing medical conditions for the duration of the journey. Of the more than 5,000 individuals assessed for HEP to go to Canada, only 4 were found to be unfit to travel for medical reasons. Of those, two were elderly females with severe lung disease, while the remaining cases involved poorly managed psychiatric conditions.

Refugees were transported to Canadian Military installations in Trenton, Ontario and Greenwood, Nova Scotia. At these locations the refugees were triaged on the basis of the pre-departure medical assessment and colour-coded card classification. Those with red cards (in need of expedient medical assessment) were often transferred to local hospitals for more complete evaluation and treatment where required.

Medical screening on arrival in Canada included a chest X-ray, and serologic assessment for syphilis and hepatitis B. These investigations, carried out soon after arrival, were completed to satisfy immigration medical requirements related to infectious diseases of public health importance. A medical examination and a health history were also obtained before the refugees were dispersed to host communities throughout Canada.

The Process for the United States

During the initial phase of the HEP, Kosovar refugees destined for the United States received the "fitness to fly", predeparture examination and colour-coded card categorisation as described above. They then entered the United States through McGuire Air Force Base, where they were temporarily housed at Ft. Dix Base. At that installation, the refugees completed the required immigration assessment formalities and other processes for resettlement in US communities.

Later in the course of events it became possible to perform complete US immigration medical evaluation in Skopje and those refugees departing for the US after that time had their health assessment performed by IOM in FYROM. Routine US immigration medical examination includes the following:

1. detailed history and physical examination.
2. chest radiograph for those older than 15 years of age.
3. serological test for HIV for those older than 15, and
4. serological test for syphilis for those older than 15.

Immigrants destined to the United States received at least a single dose of routine vaccinations, according to US standards. Refugees were referred for immunization and vaccination on arrival in the United States.[4]

The Process for Australia

Refugees destined for Australia were faced with the longest travel distances of any of the populations relocated during the crisis. Flights for Australia departed from either Thessaloniki, Greece or Rome, Italy, necessitating considerable time and some transport even before the final flight began. It was not unusual for refugees travelling from FYROM to Australia to spend in excess of 36 hours travel time.

To reduce the risk of in-flight medical events Australian immigration medical officers established a three layered medical assessment process. Refugees accepted for evacuation to Australia initially received a preliminary medical examination performed by an Australian medical officer. Immediately prior to departure, pre-embarkation medical screening was undertaken. Finally, on arrival in Australia, the refugees underwent a more detailed medical examination, which included radiological examination for pulmonary tuberculosis.

Balances Between Rapid Integration vs. Camp Life at Destination

At the time of the writing of this article, evaluations of some of the details relating to the operations and outcome of the processes described above have only begun to be reported.[5] Some general observations, however, are possible.

The fitness to travel pre-departure screening process was effective. For some 41,000 individuals transported by IOM for whom pre-departure fitness to fly assessments were undertaken, only one serious in-flight medical event occurred. The single fatality was an acute cardiovascular death in an individual with identified underlying illnesses who was travelling with medical escort. Several individuals with unstable conditions, such as angina pectoris, severe fever of unknown origin, impending la-

bour and delivery and acute psychiatric conditions, were temporarily deferred to allow for treatment. During the course of the programme, less than 10 individuals were permanently unable to travel by air.

Prolonged contact with government medical personnel was available for those refugees who were housed in processing centres after arrival. This sustained health care provider contact and follow up allowed for more enhanced recognition and quantification of health care issues than was provided by routine immigration medical screening.[6] This was particularly true in the quantification of pharmaceutical and medication use and the recognition of some mental health conditions. Longer term health and integration outcomes between cohorts of refugees housed for extended periods of time military or controlled environments pending medical screening, compared with those screened overseas and introduced directly into the community, are currently undefined.

Issues That Could Be Examined In Greater Detail Over The Near Future Will Include the Following

1. Whether post-arrival screening in transit areas, procedures that were used for those refugees who had not completed immigration medical formalities prior to departure, affected the intent or desire of the refugees to return to Kosovo following the cessation of hostilities.

2. The cost of providing immigration medical procedures at the point of origin as opposed to following arrival.

3. The degree and nature of differences in the health, mortality and morbidity of populations who had their medical screening before departure as compared to those examined on arrival.

4. The differences in the health, mortality and morbidity of populations who were rapidly integrated into the community compared with those who stayed in camps in the host country before integration.

Conclusions

The 1999 Kosovo crisis and the associated Humanitarian Evacuation Programme from FYROM created several logistical and operational challenges to those refugee-receiving nations that require formal immigration medical screening. Meeting those challenges in the midst of a complex humanitarian event was accomplished in a flexible manner with the assistance of international organizations, national public health and immigration health officials.

The development of standardised approaches allowed for the rapid movement of selected refugee populations within the technical and legislative requirements of national screening guidelines.

The effectiveness and long term impact of required medical screening completed prior to departure, as compared to screening on arrival in these situations should be evaluated in detail.

As noted above detailed studies are underway, but from preliminary reports it appears that secretion positive tuberculosis in the transported population was in the range of 50 – 60 cases per 100,000. Total active cases of tuberculosis (smear positive and smear negative) was in the range of 175 – 200 cases per 100,000.[7] Hepatitis serology in Kosovar refugee populations examined in Italy in 1999 suggest that exposure to hepatitis A was universal in this population by the second decade of life and that the prevalence of hepatitis B surface antigen (HbsAg) was approximately 3.0% in those tested.[8] ■

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