

Refugees and Displaced Persons

War, Hunger, and Public Health

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The number of refugees and internally displaced persons in need of protection and assistance has increased from 30 million in 1990 to more than 43 million today. War and civil strife have been largely responsible for this epidemic of mass migration that has affected almost every region of the world, including Europe. Since 1990, crude death rates (CDRs) during the early influx of refugees who crossed international borders have been somewhat lower than CDRs reported earlier among Cambodian and Ethiopian refugees. Nevertheless, CDRs among refugees arriving in Ethiopia, Kenya, Nepal, Malawi, and Zimbabwe since 1990 ranged from five to 12 times the baseline CDRs in the countries of origin. Among internally displaced populations in northern Iraq, Somalia, and Sudan, CDRs were extremely high, ranging from 12 to 25 times the baseline CDRs for the nondisplaced. Among both refugees and internally displaced persons, death rates among children less than 5 years of age were far higher than among older children and adults. In Bangladesh, the death rate in female Rohingya refugees was several times higher than in males. Preventable conditions such as diarrheal disease, measles, and acute respiratory infections, exacerbated often by malnutrition, caused most deaths. Although relief programs for refugees have improved since 1990, the situation among the internally displaced may have worsened. The international community should intervene earlier in the evolution of complex disasters involving civil war, human rights abuses, food shortages, and mass displacement. Relief programs need to be based on sound health and nutrition information and should focus on the provision of adequate shelter, food, water, sanitation, and public health programs that prevent mortality from diarrhea, measles, and other communicable diseases, especially among young children and women.

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ALTHOUGH the end of the cold war brought promises of a new world order, dozens of wars have generated a cycle of violence, hunger, mass migration, and death that affects millions of civilians in several continents and provides one of the great public health challenges of our times. Images of Somalis starving in dusty, makeshift camps, of Kurds huddled in snow-covered mountains, and of Bosnian civilians trapped in their besieged cities dominate the world's television screens and newspapers. The media have selectively focused on a few of these human emergencies, but these represent a small sample of a global epidemic of mass human displacement that shows no signs of abatement.

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In 1990, we described the high mortality associated with mass population displacements in developing countries and proposed preventive strategies.¹ Since then, the number of refugees and internally displaced persons has grown by 40% from approximately 30 million to 43 million.^{2,3} We describe herein the public health impact of mass migrations that have taken place since 1990, assess the adequacy of the international community's response, and suggest approaches for protecting affected populations from the mostly preventable conditions that have caused high death rates in the past. We focus on the prevention of mortality in acute emergencies while recognizing that other critical issues affecting the longer-term well-being of displaced communities warrant serious attention.

REFUGEES

Refugees are defined as people who have crossed international borders fleeing war or persecution for reasons of

race, religion, nationality, or membership in particular social and political groups and are protected by several international conventions.¹ Since 1990, more than 6.9 million refugees have been accorded such protection and assistance by the international community, of whom 2 million have returned to their countries of origin and less than 100 000 have been resettled in third countries (Table 1). Approximately 4.5 million remain in relief camps, bringing the total number of dependent refugees worldwide to almost 19 million.²

During the 1970s and 1980s, most of the world's refugees fled developing countries such as Afghanistan, Cambodia, Ethiopia, Mozambique, and Vietnam, that ranked among the poorest in the world. However, since 1990, an increasing number of refugees have originated in relatively more affluent countries such as Armenia, Iraq, Kuwait, and the former Yugoslavia. Approximately 1 million refugees have sought asylum in one or another of the new republics that once comprised Yugoslavia; in addition, more than half a million refugees from the former Yugoslavia have sought asylum in various countries in Western Europe.⁶ The war between Armenia and Azerbaijan over control of the enclave of Nagorno-Karabakh has generated more than 500 000 refugees.⁷ The internationally accepted definition of refugees excludes large numbers of "economic" refugees, such as Eastern Europeans and North Africans who have migrated to Western Europe, and Central Americans and Haitians who have sought better lives in the United States.

While many people fled the general violence of war, most sought refuge because they were specifically targeted by armed forces. Muslim Rohingyas who left Myanmar for the refugee camps of Bangladesh were victims of religious persecution by their government; ethnic Nepalis were harassed by Bhutanese authorities; Liberians were attacked or murdered because of their ethnicity; and Croats, Serbs, and Bosnian Muslims were victims of ancient ethnic and religious feuds. Women in the former Yu-

Table 1.—Refugees Arriving in the Countries of Asylum Between January 1990 and April 1993*

Country of Origin	Country of Asylum	Year of Arrival	Estimated Refugee Population
Liberia	Güinea	1990	300 000
Liberia	Côte d'Ivoire	1990	200 000
Somalia	Djibouti	1990	30 000
Somalia	Ethiopia	1990-1991	200 000
Sudan	Ethiopia	1990	40 000
Kuwait/Iraq†	Jordan	1990	750 000
Mozambique	Malawi	1990-1992	250 000
Azerbaijan	Armenia	1990-1992	300 000
Armenia	Azerbaijan	1990-1992	200 000
Iraq‡	Iran	1991	1 100 000
Iraq‡	Turkey§	1991	450 000
Sierra Leone	Guinea	1991	185 000
Ethiopia¶	Sudan	1991	51 000
Somalia	Kenya	1991-1992	320 000
Croatia/ Bosnia-Herzegovina	All republics of former Yugoslavia#	1991-1993	1 000 000
Former Yugoslavia	Countries of Western Europe**	1991-1993	555 400
Georgia	Russia	1991-1992	100 000
Somalia	Yemen	1992	50 000
Ethiopia	Kenya	1992	80 000
Sudan	Kenya	1992	20 000
Mali/Niger	Algeria	1992	40 000
Myanmar	Bangladesh	1992	245 000
Bhutan	Nepal	1992	75 000
Mozambique	Zimbabwe	1992	60 000
Tajikistan	Afghanistan	1993	60 000
Togo	Ghana	1993	70 000
Togo	Benin	1993	130 000
Rwanda	Burundi	1993	40 000
Total			6 901 400

*Data from United Nations High Commissioner for Refugees (unpublished data, 1992, 1993) and the US Committee for Refugees.⁵

†Majority were guest workers from Asian countries and were repatriated within 6 months.

‡Majority had returned to northern Iraq by December 1991.

§Majority of Kurdish refugees were either on the Turkish border or just inside Iraq.

¶Includes many Liberian refugees who had previously sought asylum in Sierra Leone and who then fled to Guinea in 1991.

#Ethiopian military and their dependents; most were repatriated to Ethiopia by the end of 1991.

**Number of refugees arriving by republic were as follows: Serbia, 390 000; Croatia, 365 000; Bosnia-Herzegovina, 93 000; Slovenia, 70 000; Montenegro, 51 000; and Macedonia, 31 000.

**Number of refugees arriving by country as follows: Germany, 220 000; Sweden, 74 000; Austria, 73 000; Switzerland, 70 000; Hungary, 40 000; Turkey, 20 000; Italy, 17 000; Denmark, 7000; the Netherlands, 7000; United Kingdom, 4900; Spain, 4600; France, 4200; Norway, 3700; Belgium, 3400; Finland, 1800; Czech Republic and Slovakia, 1700; Luxembourg, 1600; and Poland, 1500.

goslavia and among the Rohingya minority in Myanmar have been the targets of organized sexual violence. Drought and famine, while often cited as primary causes of population movements, are usually only contributing factors. For example, although a severe drought during 1992 affected food production in all countries of southern Africa, only in war-torn Mozambique did hundreds of thousands of hungry inhabitants migrate to neighboring countries in search of food. Likewise, drought exacerbated rather than initiated the flight of refugees from the civil war in Somalia into Kenya during 1992.

INTERNALLY DISPLACED PERSONS

Refugees are clearly defined by international legal conventions and, therefore, are entitled to protection and assistance by the United Nations High Commission-

er for Refugees (UNHCR). In contrast, persons who flee their homes for the same reasons as refugees but who remain inside their own countries enjoy no such legal status. These "internally displaced" persons are in a particularly precarious situation because they are often beyond the reach of international agencies, which rely on the cooperation of national governments to deliver relief aid. The principle of sovereignty, enshrined in the United Nations (UN) charter, protects the right of national governments to control access to their territory. Although the Geneva Conventions guarantee the basic human rights of civilian victims of war, the International Committee of the Red Cross, the custodian of the conventions, is often denied access to these populations by governments or rival political organizations.

There are currently an estimated 25 million internally displaced persons

worldwide, an increase of 9 million since 1990; of these, approximately 16 million live in Africa.⁵ Some have been forcibly relocated by their governments, for example, more than 4 million into the black homelands of South Africa and 500 000 into the resettlement areas of Ethiopia. The majority have fled their homes to escape war and persecution and to search for food and shelter. More than 1 million people are internally displaced in each of the following: Mozambique, Philippines, Sudan, Somalia, and the former Yugoslavia. In addition, Angola, Liberia, Peru, Rwanda, and the former Soviet Union each have more than half a million internally displaced persons.⁵

PUBLIC HEALTH CONSEQUENCES

Increased Mortality

During the acute phase of mass population displacements, the most specific indicator of public health impact is the crude death rate (CDR). Since 1990, mortality surveillance systems have been established routinely in most of the world's refugee populations by either the UNHCR or private voluntary organizations. In some cases, information gathered by these systems has been augmented by population surveys. The collection of information on mortality in internally displaced populations has been less complete because access to the affected communities is often difficult; however, mortality surveys were performed in selected displaced communities in Liberia (1990), northern Iraq (1991), Somalia (1992 and 1993), and southern Sudan (1993).

Refugees.—In our 1990 *JAMA* article, CDRs were cited among refugees during the early influx that ranged as high as 45 times the baseline CDRs in their country of origin.¹ In this report, CDRs are expressed as the number of deaths in all ages per 1000 population per month, unless otherwise specified, and are not age-adjusted. Since 1990, CDRs among refugees have generally been lower than those reported earlier among refugees in Thailand (1979), Somalia (1980), and Sudan (1985). Nevertheless, since 1990, CDRs between five and 12 times the baseline rates have been reported during the early influx among refugees in Ethiopia, Kenya, Malawi, Nepal, and Zimbabwe (Table 2⁷⁻⁹). Death rates returned to baseline levels within 3 months among Bhutanese refugees in Nepal and Mozambican refugees in Malawi and Zimbabwe. However, improvement was slower among Sudanese and Somali refugees, who were housed in large camps in remote areas of Ethiopia and Kenya, respectively, where water supply was often inadequate and the logistics of food delivery was problematic.

Table 2.—Crude Monthly Death Rates* for Refugee Populations Between July 1990 and August 1992

Date	Host Country	Country of Origin	Baseline Crude Death Rate [†]	Refugee Crude Death Rate
July 1990	Ethiopia	Sudan	1.7	6.9
June 1991	Ethiopia	Somalia	1.5	14.0
March 1992†	Kenya†	Somalia	1.8	22.2
April 1992*	Nepal	Bhutan	1.3	9.0
June 1992§	Bangladesh*	Myanmar	0.8	4.8
June 1992*	Malawi	Mozambique	1.5	3.5
August 1992*	Zimbabwe¶	Mozambique	1.5	10.5

*Deaths per 1000 population. Baseline crude death rates are from countries of origin.

†Unpublished data. Carol Collins, MD, Nairobi, Kenya, February 1992.

‡Crude death rate for refugees in Ifo camp only.

§Unpublished data. Brent Burkholder, MD, Atlanta, Ga, August 1992.

¶Crude death rate for refugees in Lisungwe refugee camp only, opened January 1992.

‡Crude death rate for refugees in Chambuta camp only.

Table 3.—Crude Monthly Death Rates* for Internally Displaced Populations Between January 1990 and March 1993

Date	Country	Location Within Country	Baseline Crude Death Rate	Internally Displaced Persons Crude Death Rate
January-December 1990	Liberia	Monrovia	1.2	7.1
March-May 1991	Iraq	Zakho	0.7	12.6
April 1991-March 1992	Somalia	Merca	2.0	13.8
April-November 1992	Somalia	Baidoa	2.0	50.7
April-December 1992	Somalia	Afgoi	2.0	16.5
April 1992-March 1993 [†]	Sudan	Ayod	1.6	23.0
April 1992-March 1993 [†]	Sudan	Akon	1.6	13.7
April 1992-March 1993 [‡]	Bosnia	Zepa	0.8	3.0

*Deaths per 1000 population. Baseline crude death rates are from countries of origin.

Refugees often arrive in the country of asylum after a prolonged period of deprivation and require focused attention to address their health problems, as is illustrated by the high death rates among newly arriving Mozambican refugees. During July and August 1992, the mean daily CDR among Mozambicans who had been in the Zimbabwean camp of Chambuta for less than 1 month was 0.8 per 1000. This was four times the death rate of refugees who had been in the camp between 1 to 3 months, and 16 times the rate reported for nondisplaced populations in Mozambique.¹

In Guinea and Cote d'Ivoire, mortality rates among Liberian refugees may not have been elevated, although surveillance information from these countries is incomplete. These refugees may have been spared excessive mortality because many were housed in local villages, avoiding the problems associated with crowded and unsanitary camps. Mortality data from refugee populations in Armenia, Azerbaijan, Yemen, and the former Yugoslavia are not available.

Internally Displaced.—Civil wars in Bosnia-Herzegovina, Iraq, Liberia, Mozambique, Somalia, and Sudan have led to widespread violence, food shortages, population displacement, and unusually high death rates (Table 3¹⁰⁻¹²). Crude death rates among internally displaced populations in Liberia (1990) and northern Iraq (1991) were six and 12 times

the CDRs, respectively, for nondisplaced populations in those countries.¹⁰⁻¹² In Somalia, seriously diminished food production, continued fighting between rival warlords, and widespread looting and banditry led to extensive hunger and the displacement of up to 2 million civilians. Population surveys conducted in Merca, Qoridley,¹² Baidoa, Afgoi,¹¹ Bardera, and North Mogadishu found that the average CDRs among internally displaced populations between April 1991 and January 1993 ranged from 14 to 51 per 1000 per month, seven to 25 times the baseline rate of two per 1000 per month (unpublished data, Centers for Disease Control and Prevention and United Nations Children's Fund [UNICEF], Mogadishu, Somalia, 1993).

Since 1990, increased fighting and food shortages in southern Sudan have led to displacement of large numbers of persons. Population surveys conducted in March 1993 at three sites, Ame (Eastern Equatoria region), Ayod (Upper Nile), and Akon (Bahr el Ghazal), found average monthly CDRs for the previous 12 months of 19.5, 23.0, and 13.7 per 1000, respectively, compared with monthly CDRs reported in nonfamine times in the Horn of Africa of 1.7 to 2.0 per 1000.^{11,15}

Since April 1992, more than 1 million persons have been internally displaced in Bosnia-Herzegovina. Death rates among the displaced have not been directly estimated; however, there are indirect indicators of the public health im-

port of displacement in this war-ravaged nation. For example, in the central Bosnian province of Zepca, whose population has been swollen by displaced Muslims from eastern Bosnia, the perinatal and child mortality rates doubled between 1991 and 1992.¹³ In the eastern Bosnian enclave of Zepa, where the pre-war population of 7000 increased to 33000 as a result of an influx of displaced Muslims, the annual CDR between April 1992 and March 1993 was 36 per 1000, four times the prewar death rate in Yugoslavia.¹⁴

High-Risk Groups

Consistent with earlier reports, most deaths among refugees and internally displaced persons during the past 3 years have occurred among young children. Sixty-three percent of deaths among displaced Kurds in northern Iraq occurred in the 17% of the population younger than 5 years.¹⁶ Death rates among Somali children in displaced-persons camps were among the highest ever recorded. In one camp in Baidoa, 70% of children younger than 5 years of age may have died in an 8-month period.¹⁷ At the time of the survey, only 8% of the remaining population constituted children younger than 5 years, compared with the normal 18% to 20% found in most African populations. The surveillance system in refugee camps in Bangladesh provided rare data on sex-specific mortality. In Gundhum II camp, the death rate among Rohingya girls younger than 1 year of age was almost twice that for boys. Among refugees older than 5 years, the death rate among females was 3.5 times that for males (unpublished data, UNHCR, Cox's Bazaar, Bangladesh, 1992).

Communicable Diseases

Since 1990, the most common reported causes of death among refugees and internally displaced persons during the early influx phase have been diarrheal diseases, acute respiratory infections, measles, and other infectious diseases.¹⁸⁻²⁰ While measles was cited as a major cause of death prior to 1990, fewer measles epidemics have been reported among refugee populations in the past 3 years. However, measles outbreaks were reported among new refugees in camps in Malawi, Nepal, and Zimbabwe, contributing to high death rates. In Somalia, extensive measles epidemics occurred. Surveys indicated that 23% to 50% of deaths in Baidoa, Afgoi, and Bardera in 1992 were caused by measles.¹³

Epidemics of severe diarrheal disease have been increasingly common since 1990. Cholera has occurred in refugee camps in Bangladesh, Iraq, Malawi, Nepal, Turkey, Swaziland, and Zimbabwe.

In addition, outbreaks of dysentery caused by *Shigella dysenteriae* type 1 have been reported in Bangladesh, Kenya, Malawi, Nepal, and Somalia, and by *Escherichia coli* O:157 in Swaziland.¹⁷ Among displaced Kurds on the Turkey-Iraq border, 74% of deaths were associated with diarrhea and dehydration.¹⁸ Morbidity data from some Kurdish camps indicated that almost 70% of clinic outpatients in early April 1991 presented with diarrheal illness. In Somalia during 1992, between 22% and 56% of deaths in Baidoa, Afgoi, and Bardera were reported to be due to diarrhea.¹² Malaria was reported as a major cause of death in camps in western Ethiopia and Malawi.¹⁹ Refugees in camps in the Horn of Africa continue to be at risk of hepatitis E outbreaks.

Malnutrition

Malnutrition has often been a major contributing factor to high death rates among refugees and internally displaced persons. Prevalence rates of acute malnutrition were reported in children younger than 5 years of age as Sudanese refugees arriving in Ethiopia during 1990 (45%, unpublished data, Rita Bhatia, MSc, Addis Ababa, 1990); 29% among Somali refugees in Kenya in 1991 (unpublished data, Carol Collins, MD, Nairobi, February 1992); and 48% among Mozambican refugees arriving in Zimbabwe in 1992. Malnutrition rates remained high in some Kenyan refugee camps during late 1991 and the first half of 1992. High prevalence of acute malnutrition has not always been associated with food shortages. For example, in 1991, the malnutrition prevalence among Kurdish refugee children younger than 5 years was only 4% after 2 months of displacement; however, among children 12 to 23 months of age the rate was 13.5%.¹⁰ This elevated rate was almost certainly associated with the high incidence of diarrheal disease in this age group during time spent in mountain camps where water and sanitation were inadequate.¹⁵

The highest malnutrition rates have been reported among internally displaced populations in Somalia and southern Sudan. In Somalia, acute malnutrition prevalence rates (mid upper-arm circumference less than 12.5 cm) in displaced children ranged between 47% and 75% during 1992.¹² In March 1993, population surveys of internally displaced communities in Ame and Ayod in southern Sudan found prevalences (weight-for-height z score less than -2) of 81% and 75%, respectively.¹⁴ Since 1990, there have been fewer reports of micronutrient deficiency disease outbreaks. However, sporadic cases of pellagra were reported among Mozambican refugees

in Malawi and Zimbabwe during 1992. A severe outbreak of scurvy occurred among demobilized Ethiopian soldiers in Sudan in 1991.¹⁹

Injuries

War-related trauma has also caused many deaths among certain internally displaced populations. In Somalia, an estimated 14 000 residents of Mogadishu were killed during battles that raged between December 1991 and March 1992.²⁰ A survey of Merca and Qorioley found that approximately 10% of deaths between April 1991 and March 1992 were caused by war-related injuries.¹² Refugees and internally displaced persons in the former Yugoslavia have perhaps suffered most from intentional injuries inflicted during the course of bitter inter-ethnic fighting. The Bosnia-Herzegovina government estimates that more than 130 000 people have died in that country during the last 2 years of conflict.²¹ In addition, reports of sexual violence against displaced women have been common. One study in January 1993 estimated that 12 000 rape incidents involving Croatian, Muslim, and Serbian women had occurred since the war began.²²

WORLD'S RESPONSE SINCE 1990

New and renewed conflicts have led to a cycle of violence, hunger, and displacement in many parts of the world, including Europe. In some countries, such as Bosnia-Herzegovina, Liberia, and Somalia, governments have become literally nonfunctional. Millions of people in these countries lack the most basic protection and services usually afforded by a government. The international response to these situations needs to include timely political decisions by donor governments to provide adequate resources, followed by technically effective interventions implemented by international and nongovernment relief organizations. The response to recent emergencies is reviewed below.

Technical Response

Emergency relief programs must address the critical needs of refugees and internally displaced persons—adequate food, water, shelter, sanitation, and public health programs that prevent mortality due to measles, diarrhea, and other communicable diseases. Since the 1980s, there has been an increased recognition among major relief agencies of the importance of certain basic public health programs. First, the collection of health information has improved; standardized mortality surveillance has been instituted relatively early during recent refugee influxes in Bangladesh, Ethiopia, Malawi, Nepal, and Zimbabwe. Armenia has recently estab-

lished an emergency public health surveillance system that includes the collection of data from refugee communities.²³ In other situations, such as in Kenya and on the Turkey-Iraq border, surveillance was established promptly only in certain camps by experienced aid agencies. The establishment of standardized public health surveillance of internally displaced populations in war zones such as Somalia and Bosnia-Herzegovina has been difficult and sometimes dangerous.

In some countries, timely analysis and dissemination of surveillance data have been obstructed by host country governments that are wary of the political implications of the data. Too often, key decision makers in relief organizations and government agencies fail to respond in a timely fashion to health information generated by field workers. In Nepal, appropriate public health programs were not implemented until a measles epidemic among Bhutanese refugees was well established. Adequate water and sanitation programs in some Kenyan and Zimbabwean camps were not developed until some time after extensive outbreaks of enterically transmitted diseases had occurred.

International consensus has been reached on the minimal nutritional requirements of refugees, in terms of both macronutrients and micronutrients.²⁴ Population surveys of nutritional status using standardized methods have been routinely performed in refugee camps managed by the UNHCR. However, the timely delivery of adequate quantities of all food items listed in refugee rations is problematic in some settings, especially in Africa. The problem lies partly with the ambiguous division of responsibilities between the UNHCR and the World Food Programme. While the UNHCR has the mandate of ensuring that refugee needs are adequately met, the World Food Programme physically delivers and distributes food on behalf of donor governments. There is no clear accountability for the quantity and quality of food actually received and consumed by refugees. Thus, when nutritional deficiencies are identified in refugee communities, the channel through which a response should be mounted is often unclear. Also, there is still no durable solution to the problem of including adequate niacin and vitamin C in refugee food rations.

Prompt provision of adequate clean water and sanitation need to be top priorities for relief planners in order to prevent diarrhea and other enterically transmitted diseases that routinely cause between 30% and 50% of deaths in displaced populations. Technical standards are already well defined²⁵; however, the remote locations of many camps and the difficult

logistics in many refugee-hosting countries are genuine constraints. In 1992, for example, the amount of clean water that could be trucked to the Nyangombe camp, on the Zimbabwe-Mozambique border, provided less than 5 L per person per day for all purposes, compared with the 20 L recommended by the UNHCR.²⁵ In an 8-month period in 1991, only 3 to 5 L of water per person per day were available in the Kenyan camp of Liboi during a time when 1700 cases of hepatitis E were reported, causing 63 deaths.⁷

Awareness of oral rehydration therapy as an effective treatment of dehydration has grown. Nevertheless, many relief agencies rely on traditional clinic-based services. Busy health staff are unable to supervise aggressive oral rehydration therapy and frequently rely on unnecessary and potentially dangerous intravenous therapy or issue packets of oral rehydration salts to mothers without adequate explanations. Integrated rehydration and nutritional management of the dehydrated child is still rare. Moreover, the rapid spread of multidrug-resistant *Shigella* dysentery has created serious problems because the effective management of this disease using affordable antibiotics is no longer feasible.

The major relief organizations recognize the critical importance of vaccinating children against measles immediately after they arrive in a camp. Nevertheless, since 1990, relatively severe outbreaks of measles occurred in refugee camps in Zimbabwe and Nepal and among internally displaced Somalis, causing many preventable deaths. There remains a gap between recognition of the problem and prompt implementation of an effective immunization program. In some emergency-relief programs, efforts focus almost solely on the provision of food, with insufficient attention to providing measles vaccine and associated vaccination equipment. This was evident on the Turkey-Iraq border in 1991. In early April, the week after the arrival of Kurdish refugees, appeals were made from the field for measles vaccine and equipment through the UNHCR, UNICEF, and US government agencies, including the armed forces. Not until early May did complete supplies arrive, even though the camps bordered on a European country. Problems experienced with all aspects of vaccine and equipment supply could have been avoided if a planned system of procurement, transport, and storage had been in place.

Other communicable diseases remain significant problems in some displaced populations. Malaria is increasingly difficult to manage because existing control programs have collapsed in several war-affected countries, and widespread chlo-

roquine resistance has necessitated more expensive drugs for treatment. Infection by the human immunodeficiency virus has been recognized by the UNHCR and some governments as a problem that affects both refugees and surrounding local populations. The UNHCR has implemented innovative projects that seek to provide human immunodeficiency virus prevention services to both refugees and local residents in Ethiopia and Sudan.

An enduring problem is the failure to detect and adequately respond to sudden, unexpected changes in the health situation of refugees and internally displaced persons. New influxes of refugees and epidemics of communicable diseases such as cholera and meningitis are the most common of these emergencies. For example, in 1991, a sudden influx of approximately 40 000 Sudanese refugees occurred in the otherwise stable camp of Itang in western Ethiopia. The refugees were in a poor state of nutrition and quickly succumbed to communicable diseases such as diarrhea and malaria. Death rates remained higher than among other refugees in the camp for at least 6 months; adaptation of the existing camp health care system to the new emergency conditions was slow. Emergency preparedness plans need to be integral elements of a refugee health program.

Political Response

The world's response to mass migration is most prompt and adequate when refugees cross international borders and, therefore, are protected by international legal conventions. In the case of more complex emergencies involving civil war, famine, nonfunctioning governments, and mass internal displacement, the world has been slower to respond. In the case of Somalia, existing early warning systems provided adequate information on the evolving disaster in late 1991. However, the international community did not respond fully to the scope of the crisis until 1 year later. Currently, in southern Sudan, internally displaced persons are experiencing among the highest malnutrition rates ever documented¹⁴; however, the world's response has so far been quite inadequate. It is not surprising that internally displaced populations, such as those in Somalia and Sudan, have experienced the highest mortality rates.¹⁵

While the UNHCR has clear responsibilities for the care of refugees, no such organization has a clearly mandated role in caring for the internally displaced. The UN has taken different steps to address different emergencies related to internally displaced persons. Sometimes, special humanitarian assistance coordinators have been appointed (eg, in Ethiopia, So-

malia, and Iraq). On other occasions, the head of an existing UN agency has been designated to lead assistance efforts (eg, the director of UNICEF to lead Operation Lifeline Sudan, and the UNHCR to run the assistance program in the former Yugoslavia).

The current UN secretary-general has taken steps to address this inconsistency with the creation of the Department of Humanitarian Affairs to oversee international assistance to people affected by all manner of disasters, including war and displacement. The Department of Humanitarian Affairs will only be useful if it succeeds in reducing interagency competitiveness, clarifying organizational roles, and minimizing bureaucratic delays in mounting an emergency response. Hopefully, decisive action by the Department of Humanitarian Affairs would prevent situations such as that which occurred during the early days of the Kurdish crisis when there was a vacuum of leadership. The International Committee of the Red Cross has made commendable efforts to reach internally displaced persons in war zones, but its resources are limited and its delegates have recently been unable to ensure safe access to affected populations (eg, in Bosnia-Herzegovina). Although civilians affected by war are protected by the Geneva Conventions, the international community has not always taken an activist stance in ensuring their well-being. Nevertheless, in recent years, bold new steps have been taken in some instances.

A new development common to the disasters in Kurdistan and Somalia was the appearance of UN-mandated military forces whose role was to ensure security and to provide logistical support to the relief programs. However, these forceful actions disguise an underlying sense of confusion within the international community. When and how should the international community, either through the UN or through unilateral action, forcibly ensure that humanitarian assistance reaches the needy when governments and armies intentionally obstruct relief efforts? What is the role of military force in this process? What criteria should be used in deciding where and when to intervene? Military forces undoubtedly have major logistical advantages over conventional relief agencies; however, their deployment is politically determined and extremely expensive. The use of military firepower and logistics in Kurdistan and Somalia represents an important precedent for intervention by the world community on behalf of war-affected civilians trapped within their country. However, current ambivalence by western governments toward the protection of Bosnian civilians suggests that

such action is by no means a firm international principle.

CONCLUSIONS

Refugee camps are the emergency departments of international public health. Over the past few years, the emergency departments have filled and patients are lining up for admission. Death rates among refugees and internally displaced populations have remained unacceptably high, and the most common causes of death remain largely preventable. However, less preventable injuries and deaths caused by armed conflict have become increasingly common. We cannot expect that mass migrations will diminish in the years to come; we must be prepared for them to increase in number and in scope. In the absence of world peace—the most desirable preventive measure—technically effective, well-managed relief programs may limit the intolerable excess mortality that results from war, hunger, and displacement.

Epidemiologic data have identified those health problems that consistently cause most deaths and severe morbidity. In addition, young children and, in some settings, women are most at risk of these adverse outcomes. Relief program managers, therefore, must channel all available resources toward addressing measles, diarrheal diseases, malnutrition, acute respiratory infections, and, in some cases, malaria, especially among women and young children. In addition, new solutions to recurring problems need to be explored. Refugees and internally displaced persons will continue to find refuge in remote regions where the provision of basic needs requires innovative

approaches. Therefore, there is an urgent need for systematic operational and evaluation research in the areas of nutrition, water supply, and disease control.

The planning and design of relief programs need stronger input from experienced technical specialists, and emergency management decisions need to be based on sound technical information. Timely public health and nutrition data need to be more widely disseminated. For example, a routine "State of the World's Refugees" report issued at regular intervals might be a useful tool in monitoring health trends in these populations, and might make relief organizations more accountable for the effectiveness of their programs. Relief programs need to be systematically evaluated, not merely for their quantity and content, but for their impact and effectiveness. Greater resources need to be allocated to personnel training, emergency preparedness planning, and the maintenance of regional reserves of essential relief supplies. These activities need to include government and nongovernment agencies in developing countries where emergencies are likely to occur.

The international community needs to address urgently the issue of access to internally displaced and war-affected civilians in countries where the government either has ceased to function effectively or intentionally obstructs aid efforts. An international agency should be designated to provide both protection and assistance to internally displaced populations in the same way that the UNHCR has a mandate to protect and assist refugees.

War and public health are incompati-

ble. Despite the fact that the provision of health care to refugees and internally displaced populations has generally improved over the past few years, shifts in the geopolitical balance of power have resulted in a substantial increase in the magnitude of the problem. As is too often the case in areas of public health, only the symptoms, not the root causes, are being adequately addressed. Arguments can be made that the solutions lie primarily in the realm of politics and economics, and are beyond the scope of public health action. We disagree for three reasons: (1) public health practitioners are often able to document the magnitude of a disaster using scientifically rigorous methods, thereby drawing the public's attention to the situation with credible information; (2) once access to an affected population has been achieved, much excess mortality may be prevented by implementing focused, technically effective public health programs; and (3) ensuring access to adequate health care should be considered a basic human right for all people, no matter what the circumstances.

Until there is more effective advocacy by public health officials at the highest levels for increased protection of human rights, including the development of guidelines for international intervention wherever and whenever gross abuses are occurring, the challenge of providing care and hope to millions of refugees and internally displaced persons in every corner of the world will remain.

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