

アフガニスタンの保健医療概況と MeRU の活動

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20 年以上に亘る戦争の影響を受け、アフガニスタンの人々の劣悪な健康状況はこれまでも多くの機関から報告されてきた。UNICEF・WHO の調査によれば、妊産婦死亡率は世界でも 2 番目に高く（出生 100,000 対 1,700）、5 歳未満児死亡率も世界第 4 位（出生 1,000 対 257）に位置する。タリバン統治下のアフガニスタンでは、保健に関わる年間予算は全体で百万米ドルにも満たなかったという報告もあり、特に女性は医療サービスの受診に制限を課されて虐げられてきた。全分娩の中で、訓練された医療関係者が介助する比率はわずか 8%に過ぎず、毎日 45 人の女性が出産に関連した原因によって死んでいる。子供の 50%は慢性的な栄養失調状態にあり、生まれてくる 20%の新生児は 2,500g 未満の低出生体重児である。

このような状況下において、国の医療保健システムは極めて脆弱である。現在、国内には千を越す数の医療施設があるが、そのうち半数は NGO、1/3 は保健省が運営している。しかし保健省運営の施設もほとんどは NGO からなんらかの形で支援を受けており、援助に依存する医療体制が浮き彫りになっている。母子医療保健サービスをきちんと提供している施設は全体の 1/4 にも満たず、帝王切開を行う病院は全国で 15 ヶ所に過ぎない（15 番の施設は、日本 NGO の MeRU の支援による）。また、医療施設の地理的分布状況は偏っており、当面の目標とされている 30,000 人に一つの施設体制は、全国 1/3 の郡において達成されていない一方で、数千人に一施設以上が存在する地域もある。この不均衡な医療サービスの分布状況は、アフガニスタンの平和の実現にも影を落としかねない。

今後のアフガニスタンにおける医療保健分野の課題としては、まずはサービスの地域間格差を是正することが挙げられる。特に僻地における医療サービスは、医療関係の人材不足により、NGO も援助を行いにくい状況にある。このような問題に対処するためにも、例えば医学部卒業直後の医師の僻地勤務を義務化する等、法制的な対処も必要となってくるかと思われる。また、特にタリバン統治時代に女性の医療関係者に空白世代

が生じ、母子健康の改善が優先課題とされる現状のニーズに対応できないでいる。そのため、女性の医療従事者の育成も急務である。しかし、これらは保健省独自に対処できる問題ではなく、他省庁・セクターとの連携が益々重要になってくると思われる。

また、保健省と NGO との連携強化も当面の課題である。実質的に多くの医療保健サービスが NGO によって提供されている現状では、保健省と NGO との間で役割を分担し、前者がコーディネーションの中心となって地域の計画を立てる役割を担い、後者が実際にサービスを提供する形態が当面の間は妥当であると考えられる。また、このプロセスを促す上でも、地方行政への分権化を促進し、中央の保健省は全体の保健政策を立案するに留め、各々の州で地域の事情を反映した保健計画を策定・実行する体制作りも必要となってくると思われる。このことは、2002年11月に行われた National Workshop for Decentralized Plan でも保健省によって確認された。

マザリシャリフの WHO の職員が、「アフガニスタンの医療保健体制を再建するには10年掛かる」と言っていたように、アフガニスタンの医療保健の復興はまだ始まったばかりである。当面は、いきなり自立した医療保健体制を目指すのではなく、その時々
の段階に応じた再建計画を練っていかなければならない。それを可能にするためにも、国際社会はアフガニスタンが緊急フェーズから脱却しつつある中でも、将来に亘って長期的な支援をコミットしていくことが必要である。

Maternal and Child Health Indicators in two districts of Herat Province, Afghanistan

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Introduction

The challenges to rebuilding health services in Afghanistan have been well documented. The country's infrastructure has been largely destroyed, there is a critical shortage of medical auxiliary personnel, and the population has only limited access to preventive and curative services, particularly in rural areas.

The population of Afghanistan is estimated at 22 million, of which (85%) are engaged in agriculture. Infant mortality is estimated at 165 per 1000 live births, while the under five-mortality rate is 257 per 1000 live births¹. The malnutrition rate for under fives is estimated to be nationwide approximately 52%.² The maternal mortality ratio is thought to be 820 per 100,000 live births.³

Little information is available on health at the household level in Afghanistan. In this letter we report findings from two household surveys carried out in September/October 2002 in Herat Province. These were conducted to provide baseline information of a proposed maternal child health community program.

Methods

The surveys were carried out in the rural districts of Chest-e-Sharif, and Karokh. The Ministry of Public Health (MoPH) in Herat requested the International Assistance Mission (IAM), an Afghan NGO, and World Relief to establish a community health program in these districts. Technical assistance was provided by the Johns Hopkins School of Public Health in the conduct of these surveys which provided baseline information for the project design.

The population of Karokh is estimated by the MoPH to be 60,316, and for the more distant Chesht-e-Sharif district the estimate was 17,300.⁴ Karokh is served by a recently rehabilitated health center. In Chest-e-Sharif the health center had been destroyed and temporary facilities were being used. In each district, much of the population lived 5-7 hours distant from the single health facility. For both districts there were greater than 9000 persons per health worker.⁵

Maps were obtained from the United Nations Afghanistan Information Management Service (UNAIDS) and updated by district leaders. Thirty clusters were systematically chosen in each district. Within each cluster, ten households were selected randomly, using a random number table. Subjects were mothers of children 59 months and younger.

Survey questions were selected from the KPC 2000 Child Survival Survey and the UNICEF Afghanistan Multiple Indicator Cluster Survey (MICS).^{6,7} The questionnaire was translated into Dari and back-translated before field testing. Ten survey teams were trained in over 4 days. The teams were composed of doctors, nurses and hospital staff. In Karokh district 318 women with 493 children under five were interviewed, while in Chesht-e-Sharif district 304 women with 433 children were interviewed. Hemoglobin was checked using Hemocue methods.⁸ Mid Upper Arm Circumference (MUAC) was measured using the TALC strip.⁹ Data collected were entered and analyzed using the standard statistical software. The study was approved by the MoPH in Herat and the Committee on Human Research of the Johns Hopkins School of Public Health.

Results

The overall results are summarized in Table 1. The mean age of the mothers was 28 years in Karokh and 27 years in Chesht-e-Sharif with only 6.3% of women in both districts being less than 20 years of age. In Karokh, 4.7% of mothers had ever attended school, while in Chesht-e-Sharif the figure was 2.3%. Almost all mothers (99%) had been living in their villages for more than one year.

About half of women had become pregnant before age 16. Half of women had lost at least one child, and a quarter had lost two or more. The estimate of infant mortality using the Brass "West" method was 324.5/1000 live births. The average parity per woman was 6.1 children. The male:female sex ratio was 1.12. In Karokh, 41.5% of mothers wanted another child in the next two years, and in Chesht-e-Sharif the figure was 71%.

Unprotected water sources supplied the majority of households in both districts. Sources included open springs, unprotected wells, rivers, canals or streams. Latrines were used by households of 85.1% of women in Karokh, and 28.4% in Chesht-e-Sharif. The most common type was the open-back latrine from which night soil could be removed for fertilizing crops. The main alternative to this type of latrine was using a field.

In Karokh 40% of women in Karokh had received prenatal care during their last pregnancy, however only 29.9% made two or more visits. Of those making any visits, 32% went to a physician, 39% a Traditional Birth Attendant (TBA) and 24% to a midwife. In Chesht-e-Sharif 17.7% of the women reported having sought prenatal care during their last pregnancy, but only 11.2% of women had two or more visits. Half of the 53 women receiving any prenatal care saw a medical officer, 32% a TBA, and 15% a midwife. Almost all women delivered their last pregnancy in their homes. In Karokh 66% of the women were delivered by a TBA and 56% in Chesht-e-Sharif. Relatives delivered almost all the remaining women. Only 7.6% of women had received three doses of tetanus toxoid. In each district 100 women had hemoglobin checked using Hemocue equipment. More than 40% of women in both districts had a hemoglobin of less than 12g/dl.

The intense emphasis on polio immunization days in Afghanistan is reflected in the comparatively high percentage of children fully immunized against polio. The repeated outbreaks of measles, and recently of pertussis in Afghanistan is consistent with the low coverage seen in these two districts. Less than 1 in 10 children between age 12 and 59 months were fully immunized.

In Karokh, 19% of children had a mid-upper arm circumference (MUAC) of less than 125mm indicating malnutrition. In Chest-e-Sharif the figure was 14%. Breastfeeding was almost universal in the two districts. In each district over a third of mothers did not initiate breastfeeding until the second day. The majority of mothers introduced weaning foods at 4-6 months.

In the past two weeks, diarrhea and dysentery, acute respiratory infection (ARI) and fever were the most common complaints in both districts (table 2). In Karokh ORS was used in 19% of cases, and 10% in Chesht-e-Sharif. Care for diarrhea was sought from the formal health sector by a third of mothers in Karokh, and 14% in Chest-e-Sharif. The figures for location of treatment were similar for ARI and fever. For fever, aspirin was the most common treatment given to children, even though this was a malarious area. For these conditions, the husband was most likely to make the decisions about treatment for the child. For all conditions, sick children tended to be fed the same or less amounts than usual.

Comments

This survey of two rural districts in western Afghanistan shows a pattern of poor health and poor health seeking behavior among mothers and children at the household level. Our findings are consistent with other data (Spiegel). Although considerable effort has gone into development of a national health policy and rehabilitation of health facilities, these are unlikely to have an immediate impact at the household level where most illness and death occurs. Even the rapid reconstruction and reequipping of facilities will be beset by a shortage of qualified personnel, and funds to support them. In both districts we surveyed the majority of the population lived an hour or more away from the single functioning district health facility. Some villages were 7-8 hours away by foot or donkey. This is true for the country as a whole where 78% of the population is rural. The number of midwives with any training is minimal. In some communities there are "village doctors" who may have had some formal association with the health services at some time, but these are few. In the principal town of a district a pharmacy is present. The pharmacist commonly diagnoses and dispenses treatment.

These data show the importance of developing health services which reach the communities where. It is only by providing services at this level that a change can be made in Afghanistan's terrible health indicators. Several priorities for interventions at the household level can be made from these. First there is a major need to improve immunization coverage. In spite of polio eradication campaigns, OPV3 coverage is low. Here the major difficulty is distance and transportation. It is in villages the mosque is the central point and its precincts are commonly used as an immunization site. In western Afghanistan religious leaders are usually willing to promote immunization campaigns.

The importance of sanitation and protected water sources is also a major priority. The absence of latrines, particularly in Chest-e-Sharif was of concern, as was the handing of the feces of children. This, with the paucity of protected water sources undoubtedly contributed to the high prevalence of diarrhea and dysentery among the children in the households sampled. Antenatal care and the training of rural midwives is clearly a major priority. Because of difficulties in access to health facilities, training in home-based treatment seems logical, provided simple medications are available in village shops. Both of these districts are on trade routes from Iran, a source of inexpensive pharmaceuticals. Establishing community health programs in the sparsely populated districts in western Afghanistan may take years to implement. However building

key maternal and child health messages into general community development programs may be able to address some of the principal causes of illness and death. This was in fact done in Chest-e-Sharif where IAM integrated health activities into rural development programs before the Taliban forced work to cease.

The study has limitations. While we believe the findings are broadly representative of neighboring districts in western Afghanistan, the results should not be extrapolated to other parts of the country. Recall of recent illness may have been faulty. Despite training the interviewers may have influenced the response of mothers, introducing bias. The large educational gap between the health professionals who were interviewers and the illiterate mothers may have made for difficult communication. The absence of accurate population figures may have distorted the sampling process. The sample size in this cluster survey was likely inadequate to accurately capture some of the information sought.

There are no easy solutions for health problems which have accrued during decades of conflict and suppression. Effective methods to reach remote populations require both innovative thinking, and a long-term commitment by the international community.

Table 1. Responses from 318 mothers of 493 children in Karokh, and 304 mothers of 433 children in Chest-e-Sharif.

	Karokh Number (Percent)	Chest-e-Sharif Number (Percent)
Maternal indicators		
Age of Mother		
<20y	20 (6.3)	19 (6.3)
20-29y	169 (53)	159 (52.3)
30 and above	130 (40.8)	126 (41.4)
Age of first pregnancy		
<16	156 (51)	138 (46)
16-21	133 (43.5)	147 (49)
21-35	17 (5.6)	15 (5)
Number of children		
Males	287 (58.2)	227 (53)
Females	206 (41.8)	205 (47)
Mother desires a child in the next 2 years	127 (41.5)	213 (71)
Received any Prenatal Care	130 (40)	53 (17.7)
Received TT during last pregnancy	92 (29)	94 (31.4)
Have received at least 3 doses	29 (31.6)	18 (18.3)
Immunization in children under 5 yrs		
Presence of immunization card	75 (15.2)	210 (49)
BCG	43 (11)	174 (47)
OPV (3 doses)	25 (6)	124 (34)
DPT (3 doses)	20 (5)	33 (9)
Measles (12-59 mos)	30 (8)	53 (14)
Fully immunized (card + history) (12-59 mos)	30 (7.6)	31 (8.5)
Nutritional indicators		
Normal (>135mm)	286 (13.5)	45 (11)
Possible malnutrition (125-135mm)	102 (22.9)	91 (22)
Malnourished (<124 mm)	284 (63.7)	271 (67)
Initiation of Breastfeeding		
Within 6 hours of birth	190 (41)	191 (46)
6-24 hours	69 (15)	75 (18)
after 24 hours	208 (44)	152 (36)
Environmental health indicators		
Main water source protected	127 (39.8)	44 (14.7)
Presence of a household latrine	269 (85.1)	83 (28.4)
Disposal of child's stools		
Thrown into toilet or latrine	99 (33)	6 (3)
Thrown outside in the yard	157 (52)	229 (87)
Buried in the yard	15 (5)	2 (1)
Not disposed of or left on the ground	31 (10)	19 (8)

Table 2

<i>Illness in the last 2 weeks</i>	<i>Karokh</i>	<i>Chesht-e-Sharif</i>
	Number (percent)	Number (percent)
Diarrhea	218 (44)	205 (47)
Blood in stool	51 (10)	53 (12)
Cough	96 (20)	100 (23)
Difficult breathing	30 (6)	61 (14)
Fast breathing or short, quick breathing	6 (1)	16 (37)
Fever	119 (24)	109 (25)
Malaria	12 (2)	14 (3)
Convulsions	18 (4)	13 (3)

¹ United Nations Children's Fund. Statistical data for Afghanistan. www.unicef.org/statistics/country_1.html Accessed 23 February, 2003.

² World Health Organization. *Drought in Central Asia, 2000: Background data on affected countries, 2000*; United Nations Development Program. *Human Development Report, 1997*. New York, NY: Oxford University Press; 1997.

³ World Health Organization. *Drought in Central Asia, 2000: Background data on affected countries, 2000*; United Nations Development Program. *Human Development Report, 1997*. New York, NY: Oxford University Press; 1997.

⁴ Received from the EPI Regional Management Team, Herat Province. Estimated Population of Afghanistan for 2002 for EPI. Obtained October 2002

⁵ Ministry of Public Health, US Agency for International Development. *National Health Resource Survey*. Kabul, September 2002

⁶ Child Survival Technical Support. KPC 2000+ Questionnaire. Available at: www.childsurvival.com/kpc2000/kpc2000.cfm. Accessed on July 29, 2002

⁸ Hemocue Co, Anselholme, Sweden

⁹ Teaching Aids at Low Cost. St. Albans, UK.

Communicable Diseases in Complex Emergencies

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The most severe health consequences of conflict, population displacement, food scarcity, and siege situations have occurred in the acute emergency phase, during the early stage of relief efforts, and have been characterized by extremely high mortality rates. Although the quality of the international community's disaster response efforts has steadily improved, death rates associated with forced migration have often remained high, as demonstrated by several emergencies during the 1990s. For example, the exodus of almost one million Rwandan refugees into eastern Zaire in 1994 resulted in mortality rates that were more than 30 times the rates experienced prior to the conflict in Rwanda.

The major reported causes of death among refugees and displaced populations in low-income countries have been diarrheal diseases, measles, acute respiratory infections, and malaria, exacerbated by high rates of malnutrition. These diseases consistently account for between 60-95% of all reported causes of death in these populations. Measles epidemics caused high death rates among refugees during the 1980s. Epidemics of severe diarrheal disease have been increasingly common and contribute to high mortality. Cholera case fatality rates (CFR) in refugee camps have ranged between 3% and 30% and dysentery CFRs have been as high as 10% among young children and the elderly.

In Eastern European conflicts, a high proportion of mortality among civilians has been caused by trauma associated with the violence. Nevertheless, there has also been increased mortality in these conflicts due to the collapse of the public health system. Chronic conditions, such as cardio-vascular diseases, cancer, and renal conditions have been inadequately treated because the health system has focused on the management of war-related injuries. Medical services in most parts of Bosnia-Herzegovina were overwhelmed by the demands of war casualties. Incidence rates of communicable diseases, such as diarrhea, dysentery, and hepatitis A increased by up to 1000% in Bosnia during the war; however, even these elevated rates were relatively low compared with emergency situations in low-income countries.

Impact of Communicable Diseases

In most complex emergencies, the high rates of excess preventable mortality have been attributed primarily to communicable diseases. The specific causes of mortality, and their age- and gender- distribution, do not differ from those that prevail in non-emergency conditions. Substandard conditions found in camps do not change the diseases that account for most of the morbidity and mortality in humanitarian emergency settings.

However, they do alter epidemiological patterns in two important ways: the incidence, or attack, rates of commonly occurring and potentially fatal diseases increase, and the case-fatality rates (CFR) are higher than usual.

Measles

Measles has traditionally been among the most feared of communicable diseases in emergency settings. During the 1970's and 1980's, measles epidemics were common and it was not unusual for measles to be the major cause of mortality in large displaced populations. High incidence rates, particularly in populations with low levels of vaccination prior to displacement, high mortality rates, and unusually high CFRs, are typical of measles outbreaks in emergencies. In an epidemic that occurred in the Wad Kowli refugee camp in Eastern Sudan in 1985, the overall measles-specific mortality rate was 13/1000 population/month and the under-5 mortality was 30/1000/month. CFRs in this outbreak reportedly reached an extraordinarily high level of 33%, probably due to a combination of underlying malnutrition, including widespread vitamin A deficiency, and inadequate medical services.

In well-vaccinated populations, such as Bosnian and Kosovar refugees in the Balkans, Kurds in Northern Iraq (1991), and Rwandans in Tanzania and Eastern Zaire (1994), measles has been a less prominent public health problem. However, where unvaccinated populations reside in the midst of better protected ones, measles can still be an important problem. For example, indigenous populations living on the slopes of Mount Pinatubo, Philippines, who had not benefited from health services largely available to neighboring populations, were devastated by a measles epidemic which struck during their displacement following the eruption of the volcano in 1991.

Diarrhea

Unlike measles, which can be easily prevented, diarrheal diseases remain one of the top three causes of mortality in humanitarian emergencies. In Somalia (1979-81), Ethiopia (1982), Sudan (1985), Malawi (1988), Northern Iraq (1991), and Goma (1994), diarrheal diseases were responsible for between 25% and 85% of all mortality and accounted for a major share of all clinic visits as well (70% in N. Iraq). Although most often a condition of young children, cholera and dysentery, the major epidemic forms of diarrhea, affect people of all ages. Of all disease conditions, diarrhea is the most closely linked to poor sanitation, inadequate water quantity, and contaminated water.

Cholera epidemics have occurred frequently in emergency settings. Although deaths due to non-cholera watery diarrhea have been far more numerous, cholera, in addition to being able to cause death rapidly from dehydration, incites fear and even panic in many populations. Its ability to affect other relief activities and to divert health personnel and supplies from other activities may even contribute to higher death tolls due to other diseases. Outbreaks of cholera have occurred in all parts of the world; large outbreaks were recorded in India (1971), Thailand (1979), Sudan (1985), Somalia (1985), Ethiopia (1984), Malawi (1988-91), N. Iraq (1991), Goma (1994), and Rwanda (1996).

In many of these settings, cholera was a recurrent problem, and in Malawi at least 20 separate outbreaks were recorded among Mozambican refugees during a five-year period. Investigations of these outbreaks have documented numerous modes of transmission and risk factors, including contaminated water, shared water containers, inadequately heated leftover food, insufficient soap, and funeral gatherings for cholera victims. One of the most lethal cholera epidemics ever recorded occurred among refugees in Goma, Zaire in 1994, when it was estimated that 45,000 people (about 9% of the total population) died in a three-week period. The source of contamination is believed to have been Lake Kivu, the principal source of water on which the population depended. Epidemics due to *Shigella dysenteriae* type 1 have also been reported from a number of emergency settings and contributed to the high mortality in Goma.

Acute Respiratory Infection

Acute lower respiratory infection (ALRI), or pneumonia, has been an important cause of morbidity and mortality in emergency settings, and was recorded as one of the top three causes of mortality in Thailand (1979), Somalia (1980), Sudan (1985) and Honduras (1984-87). Risk factors have included crowded conditions, inadequate shelter, vitamin A deficiency, and indoor air pollution, especially in societies that cook indoors (such as Nepal). ALRI is undoubtedly a major cause of morbidity and mortality in cold climates, such as N. Iraq, the Balkans, and the war-torn former Soviet republics. ALRI is the leading cause of death among children in low-income countries, but it has been less consistently reported and investigated than many other communicable diseases in emergency settings.

Malaria

In endemic areas, including Southeast Asia, the Indian subcontinent, and most of Africa, malaria is consistently among the leading causes of morbidity and mortality. It has been responsible for incidence rates as high as 1034/1000 per month (Thailand, 1984) and for as many as 30% of all deaths in displaced populations (Rwanda, 1994). It was the leading cause of mortality among Cambodian refugees in Thailand in 1978, Ethiopian refugees in Sudan in the mid-1980's, and Mozambican refugees in Malawi in the 1980's. It has been well established that populations that are displaced to areas of higher malaria endemicity than their place of origin have higher incidence rates and higher mortality. Following the collapse of health services during and following the conflict in East Timor, along with mass population displacement, the incidence of malaria increased significantly. In October 1999, approximately 30% of all morbidity was attributed to malaria compared with 10% the previous year. The occurrence of epidemic malaria has also been more frequent in these circumstances. There is, however, little risk of displaced populations from areas of high malaria incidence causing increases in the diseases in areas to which they are displaced, because transmission is largely vector-dependent.

Major risk factors for malaria in emergency settings include the lack of adequate housing, poor siting of refugee camps (especially when they are placed in marshy areas), overcrowding, proximity to livestock (which may be the primary targets of mosquito vectors), and a general lack of competently trained health personnel. Although it has not been clearly documented in emergencies, the association of malaria with low birth weight

(especially in the offspring of first and second pregnancies) and with iron-deficiency anemia may cause increases in incidence and CFR from a variety of causes, especially in children.

Meningitis

Although not a consistent problem in emergencies, the threat of meningococcal (Group A) meningitis is a formidable one. Overcrowding, especially during the drier seasons of the year, can be an important risk factor for this disease, which is transmitted via the respiratory route. In the Sakeo camp in Thailand in 1980, a large outbreak of Group A meningococcal meningitis had an attack rate of 130/100,000 population and an overall CFR of 28% (50% in children less than five years old). Other epidemics have occurred in Sudan (1989), Ethiopia (1993), Guinea (1993), and in Goma, where attack rates ranged from 94-137/100,000 population over a period of two months. Outbreaks of meningitis tend to be protracted, lasting from 1-2 months. Unless they are detected and controlled at an early stage, they can be directly responsible for high mortality; in addition, they can be resource-intensive and detract attention from other high-priority health programs.

Hepatitis E

Like meningitis, outbreaks of hepatitis E have not been frequent occurrences in emergencies but have had major consequences when they occurred. An enterically transmitted disease, usually linked to contaminated drinking water, especially when water quantity is compromised, hepatitis E is associated with a particularly high CFR in pregnant women. Clinical attack rates appear to be higher in adults, with children relatively spared. In Somalia, in 1985, an outbreak of more than 2,000 cases was associated with an overall attack rate of 8% in adults. The overall CFR of 4% was more than quadrupled in pregnant women (17%). Outbreaks of similar magnitude occurred in Ethiopia (1989) and among Somali refugees in Liboi Camp, Kenya, in 1991. In the latter, the overall case-fatality rate was 3.7%, but CFR in pregnant women was 14%.

Tuberculosis

Tuberculosis (TB) is one of the most important communicable disease to control in the post-emergency phase. Its re-emergence as a public health problem in many parts of the world is characterized by its close association with immune deficiency disorders, especially HIV/AIDS, and with the identification of multiple drug-resistant strains. TB can be quite common in some post-emergency situations. It is highly prevalent during the emergency as well, but because of the difficulties in developing programs to control its transmission, to diagnose and to reliably treat for adequate periods, other more acute conditions are appropriately accorded priority. In Somalia, in 1985, more than one-quarter of all adult deaths were attributed to tuberculosis, which was the third leading cause of death overall. In Sudan in the mid-1980's and Pakistan, throughout the protracted displacement of Afghan refugees, TB has also figured prominently.

Other Important Communicable Diseases

HIV/AIDS and other STDs are major problems among emergency-affected populations from areas where there is a high prevalence of these conditions. They are discussed in the section on reproductive health. Other communicable diseases that have

occurred in emergency or post-emergency settings have had a relatively minor impact. In the individual setting in which they occur, however, they command an important allocation of resources and may be important contributors to morbidity and mortality. Yellow fever, typhoid fever, relapsing fever, Japanese B encephalitis, dengue hemorrhagic fever, typhus, and leptospirosis are all real threats. Nevertheless, morbidity and mortality in complex emergencies has been shown time and again to be due to the same conditions that are responsible for the bulk of the disease burden in low-income countries in non-emergency settings.

Control of Communicable Diseases in Complex Emergencies

Concern for the potential impact of communicable diseases has dominated the public health response in many emergency settings. This attention has been frequently warranted. Although many of the technical interventions and public health programs used in emergencies draw heavily from their counterparts in stable settings, a few important differences should be considered. Most important among them include addressing the needs of the local, non-displaced, population; maintaining respect for national health policies when dealing with refugees; and promoting substantial community involvement as early as is feasible.

Measles control

Because of the devastating impact that measles has had in many emergencies, it has become almost universally accepted that mass measles vaccination, regardless of vaccination history or place of provenance, should be instituted as early during an emergency as possible. Leading reference publications (MMWR, 1992; Médecins Sans Frontières, 1997, Sphere Project) accord measles immunization the highest priority of all interventions and recommend that it be undertaken immediately after an initial rapid assessment regardless of the circumstances. If children cannot be vaccinated upon arrival or registration, a mass vaccination campaign should be undertaken. In general, this is a rule that should be followed, although any mass vaccination program must be planned very carefully if it is to be implemented successfully. Sufficient vaccine should be on hand (with a reserve in case of excess wastage) and stored in a functioning cold-chain of adequate capacity. Only auto-destruct syringes should be used and safety boxes must be available for their storage and disposal.

The target population for measles vaccination in emergencies is usually children aged 6 months to 12 or 15 years. WHO recommends reducing the usually recommended minimum age for measles vaccination from 9 months to 6 months because high attack rates and very high CFRs have occurred in younger children, especially in large displaced populations living in relatively crowded conditions. Still, because vaccine efficacy in children 6-9 months may be lower than optimal because of the persistence of maternally-transferred passive antibodies to measles virus, children in this age group should be vaccinated again at the age of 9 months. The upper age limit for mass vaccination is more flexible and depends, to a large extent, on the amount of measles vaccine, injection equipment and health personnel available, and the pressure of competing health care priorities. Because age and undernutrition are such important risk factors for complicated

measles and for high CFR, all children up to 12 years old who are eligible for selective feeding programs or who are hospitalized with other illnesses should be vaccinated against measles on a priority basis. Then, depending on the factors mentioned above, all children less than 2 years old should be considered for vaccination, followed by all children less than 5 years old. Finally, if the circumstances allow, the target population can be expanded. In any case, a mass vaccination campaign should seek to achieve at least 95% coverage of the target population.

Because a mass vaccination campaign can reach such a high proportion of the most vulnerable population, there are frequently demands to attach other services to it. Vitamin A, for example, can be offered to the same target group during the course of the campaign. There have been suggestions to provide polio vaccination along with measles vaccine, although the logistical burden of doing so must be carefully considered because complicating the mass measles vaccination campaign by adding other interventions may interfere with the primary objective of the program. In any case, a routine vaccination program for all children using the standard antigens recommended by WHO should be established during the post-emergency period. Other vaccines, such as yellow fever and meningitis, are effective in interrupting transmission after an epidemic has been detected, and should not be offered routinely at the time of measles vaccine. Cholera vaccination has also been recommended at the time of measles vaccination. But the most commonly available cholera vaccine, a killed whole cell/B sub-unit vaccine cannot interrupt transmission during an outbreak (unlike measles vaccine), because it requires two doses one week apart and does not induce immunity until at least one week after the 2nd dose. In addition, cholera vaccination has been shown to be not cost-effective for epidemic control.

The early detection of measles cases when they occur is an important feature of an effective community-based surveillance system. Measles treatment includes the administration of two doses of vitamin A and the appropriate treatment of common complications such as pneumonia, diarrhea, malnutrition and meningo-encephalitis. Children with measles should be closely monitored in regard to their nutritional status and, if indicated, should be enrolled in supplementary feeding programs during their convalescence.

Measles remains an important threat to the health of children in many emergency settings. However, as vaccination programs in many parts of the world have progressed and as vaccination coverage levels increase, measles vaccination should be considered alongside other priority interventions. In northern Iraq, in Rwanda, and in the Balkans, measles vaccination was delayed in order to address other more urgent problems. In spite of the clear threat that measles poses to the health of populations in emergency settings, it is always appropriate to weigh the public health needs in light of the available resources and to order priorities accordingly.

Control of Diarrheal Diseases

The importance of diarrhea as a contributor to morbidity and mortality in emergency settings cannot be underestimated. The detection and reporting of diarrhea should be part

of the routine surveillance system in emergencies. Acute watery diarrhea and bloody diarrhea should be reported separately by age (under five and over five years old are minimum age groups).

All health personnel should be sensitized to the potential impact of diarrhea and should be skilled in most aspects of prevention and of treatment. The key to prevention lies in providing adequate sanitation facilities and at least the minimum recommended quantity of water of acceptable quality (see above). The mainstay of diarrhea case management is oral rehydration therapy (ORT). Although any fluids can be used to prevent the development of dehydration, oral rehydration salts (ORS) can be used in all cases and is the treatment of choice for all levels of dehydration. In fact, the first large field trial of ORS took place in a refugee camp in West Bengal, India, where it was shown that cholera patients treated with what was standard treatment at the time were 3.8 times as likely to die from dehydration as those treated with ORS.

Rehydration facilities should be available in all health facilities, including health posts and outreach sites within the community. Keys to the success of ORT in emergencies, where the case load can be substantial, include careful organization of ORT centers and the presence of concerned and skilled staff. Mothers or other caretakers are important contributors to ORT and must be instructed as to the quantity of fluid that their children require. Breast-feeding should be continued and the nutritional status of children recovering from diarrhea must be carefully monitored. Rehydration of unaccompanied children should be carefully overseen and appropriate follow-up ensured.

Cholera

Early detection of possible cases of cholera is essential to the effective management of an epidemic. Although non-cholera diarrhea is a far more common cause of morbidity and mortality in children, the death of an adult from dehydration should raise suspicions of cholera. Attack rates can be higher in refugee camps than in non-camp situations. Laboratory confirmation should be obtained as quickly as possible at the start of a suspected epidemic, but need not be continued. Whenever cholera is suspected, aggressive attempts to educate the community should be made, in order to limit the panic which frequently accompanies this disease. During the course of an epidemic, cases and deaths should be reported on a daily basis through the institution of an active surveillance mechanism.

The need to establish rehydration facilities at multiple sites within the community has been dramatically highlighted by the occurrence of epidemics of cholera. In an outbreak in Somalia in 1985, a new camp with only a centralized treatment facility and no trained community health workers reported a CFR of 23.3%. In contrast, in seven camps in which peripheral ORT corners with trained personnel had been established in the framework of a primary health care system case-fatality was limited to 2.4%. Even more dramatically, during the devastating outbreak in Goma in 1994, more than 90% of the approximately 45,000 deaths that occurred during a three-week period occurred beyond the reach of the health system. Active case finding and rehydration therapy within the

community, rather than reliance on overwhelmed and understaffed health facilities may have averted a significant fraction of these deaths.

Although as many as 90% of patients during a cholera epidemic can be treated orally, intravenous rehydration will be required for the most severe cases. A referral system must be in place and cholera treatment sites should be identified and prepared with adequate bed capacity, human resources, water, drugs and other supplies, and disposal facilities. The normal treatment for cholera is one dose of doxycycline in adults and a three day course of cotrimoxazole in children. In emergency settings, selective chemoprophylaxis is usually not indicated. Resources can be used more efficiently and effectively in other ways, such as establishing adequate water and sanitation, and ensuring that all patients are identified and treated quickly and appropriately.

Dysentery due to *S. dysenteriae* type 1

The management of epidemics of dysentery in emergency settings is very difficult. As is true of other diarrheal diseases, ensuring adequate water and sanitation facilities is essential, but because of the highly communicable nature of *S. dysenteriae* type 1, its role in reducing transmission may be limited, especially in the crowded conditions of refugee camps. Nevertheless, the use of narrow-neck containers for water storage in order to reduce contamination and the distribution and use of soap for hand-washing have been shown to be useful. Early case detection and prompt treatment are the keys to limiting spread. An epidemic of *S. dysenteriae* type 1 should be suspected whenever a case of diarrhea with blood in the stool is reported. Laboratory confirmation and sensitivity to antibiotics should be obtained immediately, with careful attention paid to the transport of stool specimens.

The key to dysentery case-management is antibiotic therapy. However, there are severe limitations to effective case-management on a large scale. These include the large case loads which may require treatment, the resistance of organisms to first-line antibiotics, and the difficulty of ensuring patient compliance with 3-5 day courses of treatment. In the relatively sheltered environment of refugee or IDP camps or settlements, where an international relief effort may be instituted, access to sophisticated antibiotics and better patient supervision may be possible. However, because outbreaks frequently involve the surrounding, local population, careful consideration should be given to the level of care provided. During the Goma epidemic, for example, the United States military donated a large quantity of ciprofloxacin, then a relatively expensive antibiotic, for the treatment of refugees. The local population, also severely affected by the epidemic, had recourse only to nalidixic acid, an antibiotic to which many of the isolated strains of *S. dysenteriae* type 1 were resistant. This situation created tension between the local public health authorities and the international organizations working with the refugees.

In general, during epidemics of *S. dysenteriae* type 1, an effective antibiotic should be given to all patients, under close supervision of health staff. If supplies of an effective antibiotic are limited, patients who are severely ill or most vulnerable (children, pregnant women, the elderly) should be given antibiotics and others given supportive treatment

only. This would include nutritional support, rehydration when necessary, and other specific measures.

Malaria

Malaria control in emergencies depends to some extent on knowledge of the local vectors. In any case, site planning and selection should be done with the possibility of malaria in mind and areas with swamps, marshes, and other vector-dense characteristics should be avoided. Where mosquito density is high and immunity of the population is low, periodic residual spraying of interior walls can be undertaken, although it is less effective where temporary and shoddy shelters are in use and may be damaging to the environment. Aerial spraying should usually be avoided except in special circumstances. Barrier protection methods can also be useful, and the impregnation of materials, including bed nets, curtains, and even clothing has been effective. The level of transmission, biting habits of the prevalent vectors, sleeping habits of the population, and cost should all be taken into consideration before embarking on mass impregnation programs. In emergencies where people are displaced with their livestock, periodic permethrin sponging of the animals has been shown to reduce vector density and malaria transmission.

Although chemoprophylaxis of selected, highly vulnerable groups can be implemented in emergencies, it is logistically complicated, resource-intensive and, when implemented, should usually be instituted in the post-emergency phase. Widespread resistance of plasmodia to chloroquine is making chemoprophylaxis less attractive as a strategy, although the administration of pyrimethamine/sulfadoxine in a single dose each trimester to pregnant women (especially during their first and second pregnancies) is a potentially effective strategy which should be evaluated. Chemoprophylaxis of children attending feeding centers can also be considered, although antimalarials other than chloroquine, which can be used in areas where Plasmodia remain sensitive, are not generally recommended in children.

Whenever feasible, the diagnosis of malaria should be confirmed microscopically. If facilities are not available to do so, malaria should be treated on the basis of a presumptive diagnosis, although other causes of fever should be suspected as well. In determining who should be treated, with which drugs, according to what dosage schedule, it is important to consider the national guidelines of the host country. Strategies for uncomplicated malaria, for severe malaria, and for treatment failures should be developed and explained to all health service personnel.

Meningitis Control

The detection of outbreaks of meningococcal meningitis at an early stage is essential. During emergencies, a high level of suspicion should be maintained. All cases which are clinically suspicious should be diagnosed by either visual inspection of cerebrospinal fluid or, where available, by the appropriate microscopic, serological, and bacteriological analyses. Background rates of meningococcal disease vary considerably from one area to another and cases are highly seasonal. The detection of an epidemic therefore, requires a sensitive surveillance system. It has become customary to institute epidemic control

measures when a threshold incidence rate of 15/100,000 population/week has been exceeded for two consecutive weeks. In small populations, or where the population has not been accurately determined, a weekly doubling of the number of cases over a three-week period can also signal the early stages of an epidemic.

Meningococcal vaccine (for Group A and Group C *Neisseriae meningitidis*) is effective in conferring at least short-term protection to all population groups and can also contribute to reducing transmission during the course of an epidemic. Mass vaccination campaigns are an intervention of choice in areas in which an epidemic is occurring, and have been implemented in Burundi (1992), Guinea (1993), and Zaire (1994) as well as in other situations. Vaccination campaigns usually target the entire population aged 1 year and older, although resource limitations may require limiting the age group to be vaccinated. As is the case with *Shigella* dysentery, epidemics of meningitis usually occur in both displaced and local populations simultaneously and arrangements should be made to provide vaccine to the host population as well.

Neither mass chemoprophylaxis nor prophylaxis of household contacts has proven to be an effective intervention during outbreaks and neither should be instituted. Most cases can be effectively treated with a single intramuscular injection of chloramphenicol in oil, although intravenous penicillin remains the treatment of choice. Its use is limited at times, however, by the need for hospitalization and attentive nursing care.

Tuberculosis

Tuberculosis control should be instituted only after mortality rates have fallen below 1/10,000/day or when an emergency situation has stabilized and it is apparent that the displaced population will remain for at least 6 months. From a public health standpoint, the objective of TB control is to treat patients so that they cannot infect others while helping to restore health in infected individuals. For this reason, only sputum smear-positive individuals are usually included in TB control programs, although individuals who are severely ill with non-infectious forms of TB can also be included. Patients should be treated according to WHO guidelines, which stress directly observed therapy with a short-course (6-8 months) of a combination of anti-tuberculosis drugs (DOTS). Because both infection with HIV and malnutrition are associated with tuberculosis, the presence of these conditions should be determined and dealt with appropriately.

TB programs are complicated. The decision to implement one should not be made unless there are clear written guidelines that will be followed. Laboratory facilities must be available and the regular provision of supplies ensured. Drugs, also, must be stocked and re-supply guaranteed. Finally, a system for tracing those who are unable to adhere to treatment regimens must be in place in order that they can be identified and assistance provided to ensure treatment completion. Successful implementation of a TB control program requires a high level of community awareness, education, and involvement. Each of these needs to be carefully and meticulously developed and nurtured over time. Agencies that intend to implement TB control programs in post-emergency settings should have a clear commitment to continue for at least 12-15 months, have an adequate

budget, and have the personnel and material resources necessary to run a successful program.

Sexually transmitted infections

HIV/AIDS and other STIs are major problems among persons displaced from areas where there is a high prevalence of these conditions. During the initial emergency phase, efforts to control HIV should focus on blood safety, universal precautions in clinical settings, the provision of condoms, and the dissemination of relevant information on prevention.

HUMAN RIGHTS AND HEALTH

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Universal Declaration of Human Rights (1948)

Article 25(1): "Everyone has the right to a standard of living adequate for the health and wellbeing of himself and his family, including food, clothing, housing, medical care and necessary social services."

I. The concept of human rights

Human rights are an ethical subject. The first trace can be found in the code of Hammourabi, dating from 1700 BC in Babylon. This first known written set of laws aimed to protect the individual against abuse from arbitrary power. Today's concept of human rights is based on the theory of the 17th century English philosopher John Locke. He stated that every human being had certain rights that derived from their nature, and that the legitimacy of government rested on the respect that it accorded to these rights. The modern concept primarily refers to the relations between governments and their citizens. As a result, the subject has been neglected by the social sciences and become the domain of political science, the discipline that describes and explains the variations in the degree to which governments respect their citizens' rights.

The UN introduced the concept of human rights into international law. Traditionally, the leading concept of international law was that of 'state sovereignty', which prohibits interference of states in each other's internal affairs. Since the notion of sovereignty was not changed, the legal framework is highly politicised. This is not necessarily harmful, but it may lead to selective attention to human rights problems. It was in this context that international human-rights law began to develop together with the emergence of NGOs campaigning for its implementation.

Lawyers sometimes rely on the philosophy of legal positivism, equating human rights to human rights law. This interpretation is not only wrong, it also has dangerous implications. The concept of human rights implies that they are often not legally enforceable, because if they were, it would be possible to appeal to legal, rather than human rights in case of violation. Historically, human rights were developed to criticise legal authorities and laws that violate human rights. The concept of human rights is concerned with the misuse of power.

The basis or justification of human rights is an important philosophical problem. While the theory of Locke assumed that God was the source of human rights, the Universal Declaration had to make abstraction of religious beliefs, in order to allow universality. We therefore have to search for a new "source," either social origins or ethical justification.

There are various strong reasons for supporting human rights, derived from respect for human dignity, the bases of moral action, the demands of human sympathy, or the conditions of human flourishing. Human rights do NOT constitute the whole of morality or politics; they have to be balanced with other values, such as social order. They are not absolute, because human rights can conflict with each other.