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Essential Drugs Programs: The transformation of emergency management to a civilian program in Somalia

Beverley Snell

Essential Drugs Programs:
The transformation of emergency management to a civilian program in Somalia

Submitted by
Beverley Snell Ph C

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School of Health Systems Sciences
Faculty of Health Sciences

La Trobe University
Bundoora Victoria 3083
Australia

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Unless otherwise stated, photographs were provided by Philippa Snell

Summary

Primary Health Care services including an Essential Drug Program, were established by the Somali Refugee Health Unit (RHU) in response to the emergency created by the arrival of more than one million refugees following the Ethiopia/Somalia war in 1977. The RHU model was subsequently applied in the general community in Somalia. This study explores the structure and activities of the RHU, in particular the Essential Drugs Program and examines the transformation of this model to the Somali community.

Main sources for the study were direct observation over a period of six years during employment in an action role in the two health programs in Somalia and comparison with health programs in other developing countries during the next nine years. The study is set in context by examination of the history of Primary Health Care (PHC) and the concept of essential drugs and exploration of the developing role of the WHO. Case studies of Bangladesh and Mozambique provide reference points. The RHU program, based on trained Community Health Workers from the refugee community, initially called on both Somali and international professional staff. Excess mortality and morbidity were controlled and preventive and curative health care, along with emergency response capacity were established. In the longer term, the program was sustainable by Somali staff alone. The success of the RHU program provided momentum for the introduction of a PHC program in the general community. This thesis analyses the extent to which the RHU model was transferable, and identifies areas where adjustments were necessary. Expansion and consolidation beyond the RHU model were achieved, but issues remained outstanding. These issues were related to geographical, economic and political factors and included the difficulty of covering a dispersed population, the uncertainty of funding and absence of a National Drug Policy which would govern the import, distribution and use of pharmaceuticals throughout the country. In conclusion, elements which can be disseminated in the wider context, including those related to essential drugs lists and standard treatment guidelines, are considered and several means of dissemination such as exchange through international forums and the WHO Drug Action Program are identified.

Statement of authorship

Except where reference is made in the text of the thesis, this thesis contains no material published elsewhere or extracted in whole or in part from a thesis by which I have qualified for or been awarded another degree or diploma.

No other person's work has been used without due acknowledgment in the main text of the thesis.

This thesis has not been submitted for the awards of any degree or diploma in any other tertiary institution.

Beverley Snell
January 31st, 1996

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I am also especially grateful for the opportunities in Australia and in other countries to interact with key people working in the area of National Drug Policy and Essential Drugs Programs in many other settings and particularly in the Drug Action Program of WHO in Geneva. The wide range of written material which they made available, and their insight was invaluable for placing the Somali experience in the broader international context.

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Abbreviations

Organisations and government bodies

APAC	Australian Pharmaceuticals Advisory Committee
APED	Action Programme on Essential Drugs and Vaccines (WHO, Geneva)
AIDAB	Australian International Development Assistance Bureau (now known as AusAID)
CAA	Community Aid Abroad (Australia)
CDC	Centres for Disease Control and Prevention (Atlanta, USA)
CMC	Christian Medical Commission (Geneva)
DANIDA	Danish International Development Agency
DAP	Drug Action Programme (WHO, Geneva)
DIIFAM	German association for medical aid (translation)
ERDGS	German ecumenical organisation for relief in Somalia (translation)
FRELIMO	Front for the Liberation of Mozambique
GED	German Emergency DoctorsICRC International Committee of the Red Cross
IDA	International Dispensary Association (Denmark)
INRUD	International Network for the Rational Use of Drugs
MOH	Ministry of Health (Somalia)
MSF	Medicins Sans Frontieres
NRC	National Refugee Commission
RHU	Refugee Health Unit
SCF	Save the Children Fund
SDR	Somali Democratic Republic
TALC	Teaching Aids at Low Cost
TSS	Technical Support Services (of UNHCR)
UN	United Nations
UNHCR	United Nations High Commission for Refugees
UNICEF	United Nations Childrens Fund
USAID	United States Agency for International Development
WCC	World Council of Churches
WFP	World Food Program
WHO	World Health Organsiation

Other terms

CHW	Community Health Worker
CMR	Crude mortality rate
CMS	Central Medical Store
EDP	Essential Drugs Program
EHK	Emergency Health Kit
GMP	Good manufacturing practice
GOBI	UNICEF targeted program for growth monitoring, oral rehydration, breast feeding and immunisation
INN	International non-proprietary name
MCH	Mother and Child Health
MPH	Master of Public Health (Sydney University Degree)
NDP	National Drug Policy
NGO	Non-government organisation
ORS	Oral rehydration salts
PHC	Primary Health Care
TB	Tuberculosis
TBA	Traditional Birth Attendant

Somali language conventions

Pronunciation

Only notable differences from English are mentioned for ease of reading by English speakers.

c glottal stop - ignore. eg Sabacaad is Sabaad

x read as 'h' - Bixin Duule is Bihin Duule, Gacan Libaax is Gaan Libah

q read as 'k' - Quran is Koran

Double vowels have a longer sound than single vowels.

Spelling

The conventional Somali spelling for place names is used throughout the text. Maps from non-Somali sources sometimes show different spelling.

Chapter 1.

Introduction

This study arose from work in essential drugs programs in Somalia between 1981 and 1986 and subsequent work in other international settings. It examines the essential drugs programs associated with the Primary Health Care (PHC) services provided for refugee populations and their transformation to services for civilian populations within the developing national system in Somalia. The study reveals key factors that facilitated or impeded the process of development of emergency programs and their subsequent transformation in a PHC framework. In 1979, Somalia, at war with its immediate neighbour, was inundated with refugees crowded into camps and needing international support. A PHC model of delivery of services was developed to address the emergency associated with the influx of these refugees. Local health professionals began coordinating the development of health services with a view to providing a system that was not only appropriate for emergency services, but which would also provide the foundation for sustainable longer term health services in the camps. It is shown how the model that was developed could also be used as the basis of health services for the people of the Somali Republic.

There were two particularly significant aspects of the Somali experience. The first was the use of Primary Health Care principles in a refugee setting and second was the transformation of the program developed in the refugee setting to a model for the general community. Because no detailed account of the Somali experience had previously been compiled, this study provides documentation of a wide range of processes and events that can be helpful to policy makers and implementers in a wide variety of other settings. This approach is in line with that taken by Stephanie Simmonds, staff member of the Ross Institute, London School of Hygiene and Tropical Medicine, who developed training courses in refugee health management at the Ross Institute in London, based on the amassed experiences of contributors who had worked in a wide range of refugee settings including Angola, Ethiopia, Somalia and Thailand. These experiences, published in 1983, concentrated on the broad issues of health planning, practical epidemiology, environmental health and nutrition (Simmonds, 1983). Specific technical areas such as essential drugs were not covered. The importance of documenting amassed experience was also illustrated by Zafrullah Chowdhury (1995) who compiled and published more than 20 years experience concerned with the development of National Drug Policy in Bangladesh.

In Chapter 2, as a prelude to the examination of the formation of the programs in Somalia, the history of the essential drugs concept is traced. The World Health Organisation (WHO) played a crucial role through the establishment of a unit to provide technical support and advocacy for Essential Drugs Programs and National Drugs Policy in individual countries. This unit became known as the Drug Action Program (DAP). The success of the WHO DAP is largely attributed to the leadership of Secretary General Dr Halfdan Mahler. Leadership was a quality encouraged by the DAP in the implementation of Essential Drugs Programs in individual countries. The examination undertaken in this thesis allows essential drugs programs, as tools for the implementation of appropriate health programs, to be seen in the context of development; training of health workers within the community is another major feature of the approach. Prevention of disease, which includes provision of water, sanitation, good nutrition and immunisation, rather than cure alone, is the focus of Primary Health Care (PHC).

However, appropriate curative services and the provision of essential drugs have a crucial place in PHC. The World Health Organisation (WHO) played a central role in the validation of health as a component of development and of essential drugs as one of the eight essential elements of PHC.

In the same chapter, case studies of earlier essential drugs programs developed in Mozambique and Bangladesh are used to illustrate the emergence of essential drugs programs which were precursors to the WHO model. Primary Health Care programs were begun in both these countries in the 1970s. Examination of the Mozambique and Bangladesh experiences exposes both the difficulties which can impede progress in the establishment of essential drugs programs and the positive elements of their implementation. This examination shows how the experiences gained in some countries can be used beneficially in the development of new programs in others. Finally, to set the scene for examination of the Somali experience, a brief geopolitical analysis is undertaken. Historical texts concerned with Somalia in the twentieth century and written materials collected in the field establish the importance of the recognition of nations, states and nation states, the determination of national borders and the border conflicts which resulted in the refugee emergency.

The methodology used in this study is presented in Chapter 3. The case study of the development of Essential Drugs Programs in Somalia was based on direct observation and involvement in an iterative process of planning, implementation and review during extended field experience. Professional training in the disciplines of pharmacy and community development, and expertise in the theory and practice of Primary Health Care and the concept of essential drugs were combined in accord with the principles of grounded theory. Primary fieldwork involved gathering information in the field for later analysis and access to key informants. Reference to relevant literature and examination of the history and development of programs in other settings guided review and reflection concerned with the subject area. This review and reflection became a major component of the methodology, particularly in the formulation of conclusions.

In Chapter 4, the development of the Somali Refugee Health Unit (RHU) and its associated Essential Drugs Program, in response to the refugee crisis, is examined. The initial goals were management of the emergency and establishment of a comprehensive health program including the provision of essential drugs. The health program was based on Community Health Workers and was to be sustainable by national staff in the longer term. The capacity to respond appropriately to emergency epidemics or new influxes of refugees was a further primary goal. The cycle based on planning implementation and evaluation provided for identification of targets for education and for recognition of the need for any adjustments to the program.

In Chapter 5, activities associated with elements that needed to be addressed after the achievement of primary goals are analysed. After achieving the initial goals it was necessary to refine and expand the skills of all health workers and to build up the capacity to respond appropriately to further emergencies. Long term goals were identified and it is shown that several experiences gained in the Somali RHU stimulated the development of international activities that could be useful in other emergency situations. Examples were the development of standard approaches by all health staff, both national and international, and the use of treatment guidelines associated with the use of a standard list of drugs. Coordination by a central unit, the key to the approach, was a further strategy that was advocated.

In Chapter 6, the process of implementation of an Essential Drugs Program, based on the Refugee Health experience, within a Primary Health Care program in the general community is analysed. The use of the WHO Drug Action Program principles is illustrated. It is shown how the success of the PHC program in the refugee camps, described in the previous chapters, provided the momentum for the development of this program. A major element in the implementation of the program was the transfer of RHU experience throughout all stages of the development of the program and it is established that the RHU experience provided a sound basis for the implementation of an Essential Drugs Program in the general community setting. Further, it provided the basis for assessment necessary to recognise where different approaches were required. These different approaches were mainly associated with the dispersed communities, the previous training of health providers and the wider range of health providers available for consultation by the people, in the community setting.

The expansion and consolidation of the community program is examined in Chapter 7. The PHC program was introduced in six villages in one district in North-west Somalia in early 1983 and was expanded over a period of five years to serve almost 100 villages in six districts. This process required an expanded workforce and, as in the RHU program, elements of PHC were strengthened, refined and consolidated. However, the constraints and obstacles which were identified differed from those found in the refugee setting because the program related to a dispersed community rather than a confined community. Further outcomes and issues that remained outstanding are analysed. An enhanced role for women to increase community participation, and strategies to overcome problems associated with sustainable support for Community Health Workers (CHWs) are explored. Because CHWs were almost all men, their access to the women of the community was limited. In addition, their community support, either financial or in kind, was difficult to maintain in times of drought and hardship. Consideration was given to training women who were traditional birth attendants, and who had a recognised role and traditional support in the community as a strategy for gaining wider access to the community which would be sustainable in the longer term. This strategy would have fitted well in the PHC framework but before it could be implemented the whole program was brought to a halt by political instability and war.

The analysis of the transfer of the various elements of the RHU experience to the Essential Drug Program, established as part of a Primary Health Care program based on a three tiered health structure, shows it to be an appropriate tool for the provision of a reliable supply of essential medicines which contributed to improved health in the community. An efficient workforce had been trained to maintain all aspects of procurement, storage, distribution and supply of essential drugs related to needs. The program application in the wider community, particularly in the major urban areas where the commercial sector and large hospitals operated, was limited by the absence of a National Drug Policy to control import, distribution and use of medicines throughout the country.

In Chapter 8, conclusions are drawn in five areas. The first is the value of extended field experience as a basis for study and analysis. Second, the importance of the PHC framework as promulgated by the WHO is established. Next, conclusions are drawn in relation to the implementation of the PHC program in the Somali refugee setting and the subsequent transfer of the refugee model to the general community setting. Final conclusions relate to the sharing of the experiences gained both internationally and within Australia.

Chapter 2.

The concept of Essential Drugs and the context of the study

This chapter sets the context for the study of the transformation of the Essential Drugs Program in the refugee setting to a model associated with the Primary Health Care program established in the mainstream Somali population from three perspectives. First, the history of the concept of essential drugs and its location in the wider framework of Primary Health Care is traced. The focus is on the central role of the World Health Organisation and particular attention is given to the response of the international pharmaceutical industry and the governments of industrialised and developing countries to the WHO approach. Second, case studies of the early development of essential drug policies in Bangladesh and Mozambique are presented; these countries are of particular interest as they are examples of countries where initiatives preceded the development of the formal WHO framework. Further, both demonstrate a number of political factors associated with gaining independence and nation building that influence the development of Primary Health Care programs and their associated essential drugs policies. In the third part of the chapter a brief account is given of geopolitical developments in the Horn of Africa between the establishment of the independent Somali Republic in 1960 and the refugee crisis that emerged in the late 1970s. It was this crisis that provided the impetus for development of an appropriate health management strategy for refugees and it was the resolution of the health crisis which in turn set the scene for extending the strategy to the Somali community population.

History of the concept of essential drugs

At the first World Health Assembly in 1948, WHO was given a mandate to work in the area of pharmaceutical products, focussing on the quality of products. This work remained its main concern for the next twenty years. In the 1960s, the proliferation of new medicines and the observed side-effects of some drugs such as thalidomide, demanded attention in new directions. In addition, appraisal of the role of pharmaceuticals by the governments of economically poor countries such as Costa Rica, Cuba, India and Sri Lanka; and by researchers such as Lauridsen and Walker led the WHO to expand its role through analysis of the health situation of countries emerging from colonialism (Mamdani, 1992).

The importance of the role of the WHO in the process of the development of Primary Health Care and Essential Drugs Programs became apparent during study in the subject area and led to the detailed examination of WHO's role in this chapter. During the early stages of implementation of the programs in Somalia, a limited range of literature produced by WHO had been available but in the years that followed, WHO literature was a major source of information, not only on the development of the concept of the Essential Drugs Programs and National Drugs Policy within the World Health Organisation but on achievements and challenges facing the implementers of programs in many different national settings.

The WHO Drug Action Program also provided written technical materials on the implementation of all aspects of National Drug Policy and Essential Drugs Programs. WHO materials consulted by the author are listed in the first section of the Bibliography. Literature

by a range of authors and concerned with development and with the implementation of PHC programs in many other countries was also consulted and provided a valuable reference basis. There is a very limited body of literature concerned specifically with Somalia.

Colonial health services

Examination of the health services in less developed countries during the colonial period, prompted by preliminary information gathered by governments of newly independent poor countries such as Tanzania and Kenya, led to WHO's involvement in development of models of health care which would be more comprehensive and which would contribute more to the health of communities (Mamdani, 1992). Health services during the colonial period served a small fraction of the populations of the countries concerned and were almost exclusively situated in the main cities. Further, services were provided by foreign practitioners supported by very few national staff (Sheffield, 1987). The health services were essentially curative with little or no attention directed to the improvement of housing, nutrition and sanitation. Zafrullah Chowdhury (1995) describes the inadequate and badly distributed health facilities which had been put in place by the British during colonial times and remained until after Bangladesh's independence from Pakistan in 1971.

Other examples of this general situation were given at the conference of African Students Association at Monash University in 1973 when African students Steven Mutubazi and Ndlama Liomba from Uganda and Malawi respectively, described health services in their countries as being focussed inappropriately on hospitals in the cities. At that early stage these two young African students were advocating training for health workers that was based less on the western model and which would be more appropriate to the rural situation in Africa.

A similar situation in colonial Zimbabwe, then called Rhodesia, under the British was described during a Primary Health Care course for postgraduate nurses at Fairfield Hospital in Melbourne in 1994, in which both the author and Sekai Nzenza, a Zimbabwean nurse studying in Melbourne were involved as resource people. Nzenza explained that although the British were more interested in education than the Portuguese and, by comparison, a higher proportion of Africans was trained, a pyramid existed where very few students had the opportunity for secondary education and very few indeed had access to the tertiary level. This system was further entrenched by the Ian Smith regime of white settlers which unilaterally declared independence from the British in 1965 and continued the white minority rule of what was then called Rhodesia. International Defence and Aid Fund (IDAF), (1977) quoting the Rhodesian Monthly Digest of Statistics, states that only 0.5 per cent of Africans reached the sixth form at school. IDAF points out that further white immigration was encouraged during the Smith regime to fill professional positions. Nzenza described health services under the Smith regime, in the hands of the foreign doctors, with emphasis on cure. Services continued to be provided only from hospitals and missions in the large centres and a few rural centres in the same way as they had been provided during the period of British colonialism, and were surrounded by an air of mythology. Almost all technical and managerial positions were occupied by non-African staff. National staff were rarely trained.

To show that medical services during the period of European colonialism complemented economic activities, Alubo (1990) uses the example of the Imperial British East Africa Company which was a major force in East Africa during the colonial period. Hospitals and private practice were set up to support the economic system. According to Alubo, state involvement in health services was usually developed to support economic activities of colonial companies.

Services were required for the European populations in the colonies and the eventual care of the indigenous populations was due to the need for health defence; that is, maintenance of good health for Europeans settled in the local communities. Mburu (1981) showed that in addition, medical care, provided by missionaries in Kenya during the colonial period, was an important tool for the promotion of acceptance of Christianity.

Post-colonial health services

After the Second World War, the European colonial powers began to withdraw from their colonies. Most African countries achieved independence during the 1960s, but there were cases where independence was not achieved until much later. The Portuguese colonies of Angola and Mozambique did not achieve independence until 1975, after long wars against the Portuguese. Zimbabwe did not achieve independence until 1980 when the Smith regime was overthrown.

In most of the countries where the colonial powers withdrew, during the twenty to thirty years after the second world war, the health care situation changed very little. A system continued where essentially curative services based on urban hospitals remained available only to Europeans and the African elite (Alubo, 1990). Alubo saw Ghana as typical and quotes Anyinam who said of Ghana 'good health was equated with the provision of a physician and a hospital rather than the provision of a disease free social and physical environment.' (Anyinam, (1989) in Alubo, 1990). Another feature of the inherited colonial system was dependence on imported drugs (Alubo, 1990).

Sheffield (1987) discusses the perception of the need, by African governments after independence, to 'Africanise' and expand the education systems. African countries which achieved their independence in the 1960s recognised the colonial legacy where only a tiny fraction of the population had been educated and understood that this education had been almost entirely in the hands of missionaries. Although 'Africanisation' of education became a priority for newly independent countries, 'Africanisation' and expansion of health services, in most cases, did not receive immediate attention, in the same way. An exception was Tanzania (Nyerere, 1968; Onsson, 1986). Tanzania's first President, Julius Nyerere, had recognised health as an integral part of development and embarked on a system of radical change in the health sector but this did not extend to the development of a national list of drugs considered essential to address the health needs of Tanzania until 1983 (Walt and Harnmeijer, 1992).

In most cases the colonial model of health delivery continued for many years after independence. Health services rarely touched the rural areas where most of the people lived and the services remained largely in the hands of foreign graduates. Facilities for training local graduates were not a priority. In 1975 a World Bank Policy Paper (World Bank, 1975), noted that the major causes of poor health in less developed countries were inadequate or poor nutrition, poor housing and sanitary conditions and inadequate water. The report suggested that although these factors could only be addressed by the implementation of long term economic, political and social programs, significant control of many diseases could be accomplished by provision of appropriate drugs thus endorsing the view that modern drugs could play a significant role.

In the Pacific region, Papua New Guinea (PNG) was an exception to the rule where health services exclusively served the urban populations. Rural health workers were trained for work in isolated areas almost thirty years before the Alma Ata Primary Health Care conference which is discussed later in this chapter. Health care providers in PNG were pioneers in the

essential drugs concept. A limited list of drugs considered appropriate to address the health needs of PNG was introduced in 1950 during the period when PNG was an Australian Protectorate after the Second World War. Drugs beyond the list were not imported. Regular review allowed appropriate adjustment of the list in the light of new knowledge. In October 1995, the PNG Representative at the Sydney conference on National Medicinal Drug Policies, Dr Puka Temu, referred to PNG's forty-five years of experience in implementing and financing a pharmaceutical supply system. He described the provision of continuous access to what had proved to be an appropriate range of essential drugs of acceptable quality at a reasonable price, tailored to each level of health care provision. The system was based on a tiered structure with health workers based in the community (Temu, 1995). A national drug procurement system maintained a consolidated system for a regular reliable supply of essential drugs. After forty-five years of implementation, health providers in PNG remained satisfied that their Primary Health Care system which included this essential drugs program was the most appropriate health delivery system for the PNG population. However, evaluation of the program identified new targets to be addressed. These included reduction of a particularly high maternal mortality rate (800 per 100,000 live births), improved access to safe water and an increase in the literacy rate which stood at 52 per cent (Temu, 1995). These indicators provide useful measures for outcomes of comprehensive Primary Health Care.

Development of new drugs

During the 1960s there were enormous advances in the development of drugs. For example, benzodiazepines displaced barbiturates and non-steroidal anti-inflammatory drugs and many new antibiotics were developed. The new drugs were accepted with little question but then the thalidomide disaster led to an interest in drug safety and the development of an information system to document and publicise adverse drug reactions. From this interest, an awareness of inappropriate advertising of drugs developed and the first edition of *Ethical and Scientific Criteria for Pharmaceutical Advertising* was published by WHO in 1968 (Mamdani 1992).

The new medicines used by health professionals were seen by ordinary people and other health workers as magic cure-alls. Newly independent countries became rapidly expanding markets for trans-national drug companies or for local traders who imported medicines from outside countries. Some countries had legislation to control the import and distribution of pharmaceuticals, but the range and scope of pharmaceuticals increased more rapidly than understanding of potential dangers and ahead of expanded legislation. In any case, the means to implement existing legislation was mostly not available. A vast array of potent substances became available in non-regulated markets for all who could afford to pay for them. People who sold medicines were often seen as equal to doctors. At the same time, qualified health professionals were targeted by trans-national drug companies advertising their medicines. The result was a huge proportion of many countries' health budgets being expended on drugs. For example, Thailand spent 30.4 per cent of its government health budget on drugs in 1976 and in Bangladesh the proportion was 63.7 per cent in 1976 (Mamdani 1992). Barker (1983a) describes a health centre in Ghana where pharmaceuticals accounted for up to 80 per cent of the running costs.

The post colonial situation in most developing countries was based on free enterprise and private health care. Choice of supplies was made by individuals and was not based on any analysis of the prevailing problems (Muller, 1982; Mamdani, 1992). With any legislation governing the import, distribution and use of medicines rarely enforced, it was possible, in

many countries, for all available medicines to be sold by people without any qualifications to anyone who asked for them. For example, in Somalia, anyone could import anything they could carry from neighbouring countries, and sell it to anyone who was prepared to pay. Supplies and services to rural areas were very irregular and irrational: tetracycline capsules, for example, could be found at remote tea-shops. In Somalia these products were made available by importers who were mostly wealthy merchants. The activities of these merchants were described by Lewis (1994). The common pattern in less developed countries was that self-medication through over-the counter purchase of uncontrolled substances by the urban more affluent people concentrated on drugs for real and perceived modern life-style problems. Examples of popular pharmaceuticals were expensive nutritional supplements (often injectable) and 'growth stimulants' (Melrose, 1981; Chowdhury Z 1995; Lexchin, 1995).

Shiva (1985) describes the Indian experience where the assumption that western medicine was superior led to excessive dependence on drugs and their import and local manufacture was encouraged to the point where profit maximisation of the trans-national drugs companies became a psychological colonialism. According to Shiva (1985)

> The strong influence of the powerful drug bodies and their corrupting effect on Third World politicians, policy makers and bureaucrats, is as dangerous for a nation as are the health hazards due to some of their drugs.

At a consumer conference in Sydney, Australia, many years later in 1992, Nichter, a medical anthropologist who had worked extensively in India, described the continuing Indian perception that 'pharmaceuticalisation equalled progress and development'.

Critical assessment of the post-colonial health services

During the 1970s, there were many critics of the development theories which were conventional at the time. Among these critics were developers of health services in newly independent countries and calls arose for guidance with the provision and more equitable distribution of appropriate medicines. This movement was reflected both in a World Bank policy paper (World Bank, 1975) and in the deliberations of the member countries of the Non-Aligned Movement at its 5th Conference in 1976. A number of resolutions made at that conference related to the global drug situation and stated, among other things, the need for the development of national limited lists of essential drugs by generic names, control of inappropriate and dangerous medicines, and introduction of policies which would support local industry (Chowdhury Z, 1995).

In 1978, international organisations and medical authorities met under WHO auspices in Alma Ata, in Soviet Central Asia, to try to identify the best way to improve the health of people in less developed countries. The curative work over many years had clearly made little difference to the overall health of communities, as documented in the World Bank Policy Paper of 1975, and a reorientation of health services was indicated.
Detailed analysis of the situation was undertaken at Alma Ata and it was concluded that the problems confronting the less developed countries were mostly those that confronted the industrialised countries last century: lack of understanding about disease, inadequate sanitation and overcrowding. These problems and their resulting morbidity and mortality had been largely overcome in the industrialised world before the invention of antibiotics and many other modern drugs, indicating that provision of drugs alone would not make a major contribution. Further, because the contribution for thirty years of mission based doctors and nurses had made so little impact, more doctors and nurses would not solve the problem.

Diseases making the biggest contribution to morbidity and mortality were found to be: diarrhoea and associated dehydration and malnutrition; respiratory infections; anaemia; malaria; and vaccine preventable communicable diseases such as measles, polio, diphtheria, tetanus, pertussis, and tuberculosis. Other problems contributing to morbidity were found to be worms and parasites in some places, eye diseases particularly trachoma, skin diseases including fungus infections and scabies, and trauma.

Interventions which could address the above problems together with the provision of health care workers in the communities could have a dramatic effect in improving the health of whole communities would be more effective than providing doctors alone. The philosophy of Primary Health Care was articulated and the slogan 'HEALTH FOR ALL BY THE YEAR 2000' was officially launched at the close of the Alma Ata meeting (WHO, 1978a; 1978b).

The Primary Health Care approach

Primary Health Care (PHC), as defined at Alma Ata, is essential health care based on scientifically sound and socially acceptable methods and technology, made universally accessible to individuals, families and communities by their full participation. PHC as defined at Alma Ata encompasses eight areas:

- education concerning disease theory and prevailing problems, and focuses on finding methods of prevention, rather than emphasising cure;
- integration with other social and community activities to ensure an adequate supply of safe water and basic sanitation;
- nutrition education and promotion of adequate production of appropriate food;
- specialised maternal and child health care (MCH) including education towards child spacing;
- immunisation against major diseases;
- education for prevention and control of locally endemic diseases and injuries;
- provision of curative services;
- provision of drugs essential for the real needs of most of the people.

Although the greatest attention is given to preventive activities, access to essential medicines is nonetheless a necessary complement to preventive activities and it is recognised that the role of drugs is not limited to treatment. It does include a preventive component in controlling the spread of common disease as exemplified in prophylaxis of malaria and tuberculosis management. Thus the place of Essential Drugs Programs was secured within the consolidated framework of PHC, the elements of which had previously been implemented in a fragmented and uncoordinated manner.

The developing role of the WHO

The newly independent countries were fortunate that the Secretary General of the WHO between the mid 1970s and 1988 was Dr Halfdan Mahler who worked tirelessly towards addressing their needs (Walt and Harnmeijer, 1992). Under Dr Mahler, the PHC approach to health care, associated with the provision of an appropriate number of essential drugs, strengthened within WHO activities.

To support the concept of Essential Drugs, the WHO had prepared a model list of essential drugs which included about 200 generic drugs and vaccines (WHO, 1977). Generic drugs are known by their International Non-proprietary Names (INNs) rather than the brand names given by the companies who produce them. Safety, affordability, need and efficacy (SANE) were the criteria for selection of drugs in the WHO Model List. The WHO view was that:

> While drugs alone are not sufficient to provide adequate health care, they do play an important role in protecting, maintaining and restoring the health of people ... It is clear that for optimal use of limited financial resources the available drugs must be restricted to those proven to be therapeutically effective, to have acceptable safety and to satisfy the health needs of the population. The selected drugs are here called 'essential' drugs, indicating they are of the utmost importance and are basic, indispensable and necessary for the health needs of the population (WHO 1977).

At the Alma Ata conference the formation of an Action Program on Essential Drugs (APED) was proposed. The stated objective was:

> ... strengthening the national capabilities of developing countries in the selection, supply and proper use of essential drugs to meet their health needs, and in the local production and quality control, wherever feasible, of such drugs. The immediate aim of the action program is to make essential drugs and vaccines available under favourable conditions to governments of the less developed countries in order to extend the essential health care and disease control to the vast majority of the population (WHO 1978 a:3).

Industry response

The international pharmaceutical industry responded aggressively to the WHO initiatives with campaigns to discredit the use of generics, to spread discontent about the limited number of drugs that would be available and questioning the quality of the products. 'Me-too' drugs (drugs very closely related to existing products) which were developed by the drug industry to compete with products already on the market would not be included in essential drugs lists unless they had real benefits and could replace the existing drug of its class. Very new drugs that were protected by patents would rarely be included on national drug lists; as well as being largely priced too highly, their role was minimal except in the case of a few specific drugs.

Industry supported attempts to divide the system into public and private, making the choice of drugs used in the private sector quite open. In many countries, such as Indonesia, Thailand and Philippines, dual systems did develop. Zimbabwe is an African example where the national standard drug list (*EDLIZ*) applied to both the public and the private sector from the time of introduction in 1985 (Kanji, 1992 b). During meetings with Zimbabwean prescribers and pharmacists in Harare in 1985, the author was told of satisfaction with the introduction of the system because drugs on the list would be procured and their supply would become reliable. Even though pressure from industry continued and the economic climate became more restrictive, the Zimbabwe system continues to apply to both public and private sector (Nyazema, 1995).

Industry saw the need to be seen to cooperate rather than attempt to obstruct developments. In the late 1980s, Merck, Sharp and Dohme developed an expensive new drug called ivermectin. Ivermectin could be used to control onchocerciasis, a common cause of blindness in many African countries, but was beyond the budget of these countries. The drug company

saw the opportunity to show commitment to health in developing countries and agreed to supply ivermectin free, a spin-off being better public relations and promotion of their drugs.

Governments' response

While the Nordic countries had supported the use of National Drugs Lists from the beginning, both in their own country and in their aid programs, other countries actively opposed them both internally and in relation to their foreign aid programs (Walt and Harnmeijer, 1992). For example, the United States Agency for International Development (USAID) Manifesto states clearly that US aid should promote the use of US products. An example of implementation of this philosophy was the active opposition to the introduction of legislation in Bangladesh in 1982 to limit the number of pharmaceutical products allowed on the market and to promote the local production of as many products as possible. The US threatened to withdraw its financial support in many areas if Bangladesh limited the importation of US pharmaceuticals. The German and British governments were among others that opposed the new Bangladesh policy. Bangladesh was forced to expand the list which had been limited to 320 essential drugs (by removal of some 1700 non-essential and harmful drugs from the market) to around 700 drugs within the next 2 years (Chetley, 1985). A situation arose in Somalia, in 1984, which demonstrated US opposition to the concept of essential drugs by generic names, see p. 154.

Early initiatives of the Drug Action Program of the WHO

Initially the focus of the Drug Action Program (DAP) was on making drugs available to whole communities so the attention was on availability (procurement and manufacture), quality control, and distribution. There was no attention to the rational use of drugs and associated training until some years later.

It was necessary to determine how the WHO would actually help with implementing the policy of encouraging the development of essential drugs lists, and achieving the goal of greater availability of drugs for those in need. There was major focus on encouraging local production and trying to develop regional procurement programs so that a group of countries could combine their orders to procure drugs at the best prices. It soon became clear that neither of these aims could be realised. The absence, at the country level, of the organisational infrastructure combined with political will made it impossible (Walt and Harnmeijer, 1992).

It took some years before priorities were sorted out and the responsibilities of the Action Program on Essential Drugs (APED) were determined. The obstacles to be overcome such as industry obstruction and philosophical opposition from the USA, were gradually resolved by diplomacy. Significant impetus for action came from the medical adviser of the Danish International Development Agency (DANIDA), Dr Ernst Lauridsen. He had been involved in the development of an essential drugs program in Kenya and, with UNICEF and the Tanzanian Government, DANIDA wished to become involved with a similar essential drugs program in Tanzania. Representatives of UNICEF, DANIDA and the Tanzanian Government met with the WHO and it was suggested that Tanzania provide an example of implementation of such a program. Dr Lauridsen was persuaded to join the WHO as program manager for making the DAP operational in different countries. Industry opposition was largely overcome and the aims of the DAP were published in WHO documents in 1983 (Walt and Harnmeijer, 1992).

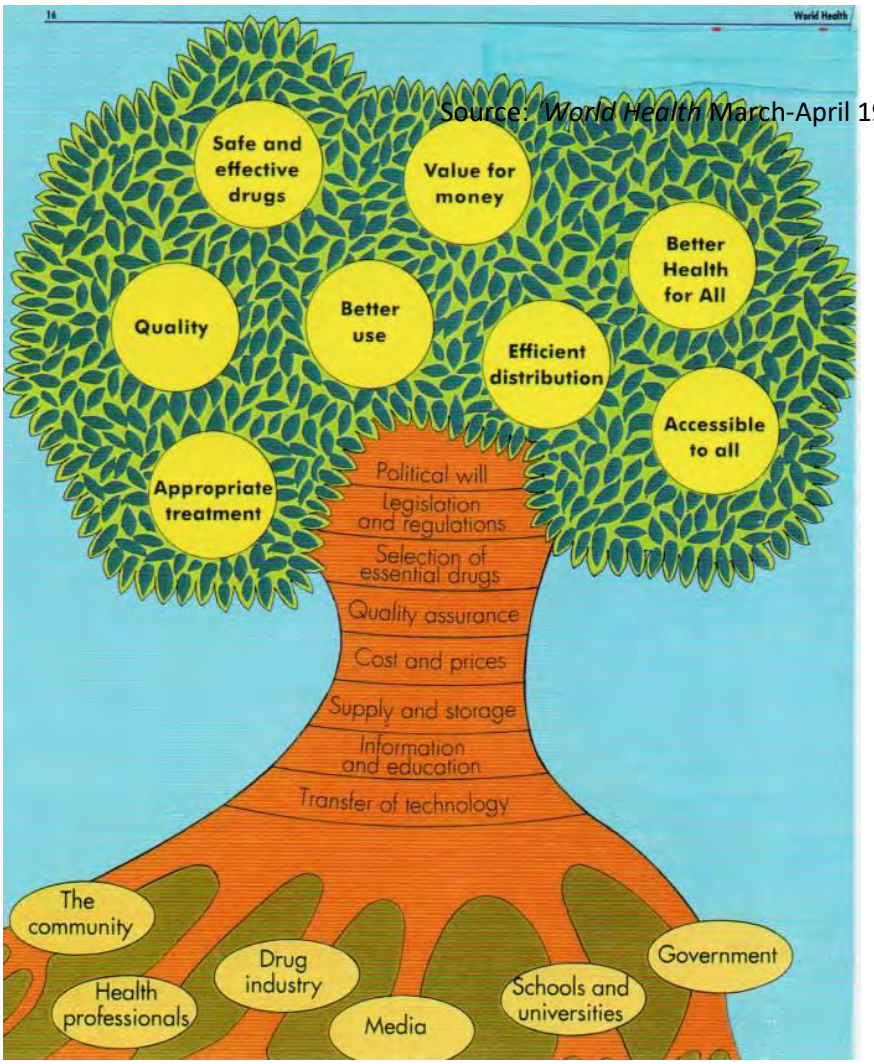
Under Article 21 of the WHO Constitution, two functions of direct relevance to the WHO's drug programs were stated. They were:

- to develop, establish, and promote international standards with respect to food, biological, pharmaceutical and similar programs;
- to promote improved standards of teaching and training in health, medical and related professions.

In addition, under Article 23, the World Health Assembly has authority to make recommendations to Members on any matter within is competence. This includes matters under Article 21 where the Health Assembly also has the authority to adopt 'standards with respect to the safety, purity and potency of biological, pharmaceutical and similar products moving in international commerce' as well as 'advertising and labelling of all biological, pharmaceutical and similar products moving in international commerce'.

Within the WHO, the Division of Drugs Policy and Management was given overall responsibility for technical matters relating to quality, efficacy and safety of medicinal products. It was also given responsibility for updating the WHO Model List of Essential Drugs. However, responsibilities were divided so that the Drug Action Programme (DAP), which was a separate entity, would promote the essential drugs concept at a national level. This work of the DAP was divided into four main areas: country support; development activities; operational research and management; and monitoring, evaluation and information dissemination. Work concerned with the evaluation of the ultimate use of drugs was not included at that stage (Hardon, 1992).

Figure 2.1 'A drug policy that bears fruit'



Source: *World Health* March-April 1992

In 1984, a meeting to explore ways of promoting the rational use of drugs was requested by the World Health Assembly. Related to the use of drugs was concern about the role of marketing practices, particularly in developing countries, and the need for improved knowledge and access to independent information. A meeting called 'Conference of Experts on the Rational Use of Drugs' was held in Nairobi in late 1985. This conference was a significant landmark in the evolving process of development of a framework to help countries develop their own comprehensive essential drugs programs within National Drug Policy and included examination of the use of drugs. The Director General, Dr Halfdan Mahler (WHO, 1985), summed up the conclusions of the conference, stating that the WHO's strategy would include:

- intensifying further the promotion of rational drug policies and the Action Programme on Essential Drugs;
- supporting the setting up by governments of drug regulatory systems;
- enlarging the scope and use of the WHO Certification Scheme on the Quality of Pharmaceutical Products moving in International Commerce;
- enhancing information collation, analysis and dissemination;
- training in rational drug use;
- defining ethical criteria for drug promotion ; and
- research.

An outcome of the conference was the determination that the activities of the WHO Drug Action Program (DAP) would concentrate on technical and managerial support, and training. Further, it was determined that when countries demonstrated the political will to implement essential drugs programs, financial support could also be sought from the DAP. Activities which could be undertaken with WHO support covered all components of national drugs policies: development of legislation and regulation, selection of appropriate drugs, procurement and distribution, training of all staff from managers to prescribers, education of the public and promotion of rational use of drugs. The DAP illustrated the concept of National Drug Policy with a tree reproduced in Figure 2.1.

It was agreed that the Pharmaceuticals Section of the Division of Drug Policy and Management would continue to cover quality control matters, for example, quality assurance, Good Manufacturing Practice (GMP), and biological standards. Its mandate would continue to include production of texts and provision of guidance for setting up and running laboratories associated with quality control and testing. This department's responsibility would cover provision of standardised nomenclature of drugs (INNs) and technical support and information on all of the above. Other areas associated with implementation of drug policy such as regulation and inspection, and involvement in training activities and collaboration with other WHO programs were also included in the department's responsibilities (Walt and Harnmeijer, 1992).

It has been explained that it was not until the mid-1970s that the WHO began to consider comprehensive strategies to improve health in developing countries. By then, several countries had embarked on programs to improve health services to their entire populations. As mentioned above, Bangladesh was one country setting an example in Asia and Kenya was one such country in Africa. Papua New Guinea set an example in the Pacific region. Another African country was Mozambique. The experiences in these and other countries were used as references in the determination of Primary Health Care policies at Alma Ata. However, WHO policy determined that the approach of WHO bodies would be pragmatic and flexible. This meant that technical support could be adapted to local needs and other circumstances. It also

meant that the approach was not advocative. Staff who worked within drug departments in countries where there was insufficient understanding and no political will could not rely on the WHO for support and advocacy. This position came to have particular significance in conflict situations and where people in political positions impeded collaboration with the WHO. Countries had to be members of the WHO before their people could participate in WHO activities or benefit from WHO support.

While the gaining of independence brought the benefits of full membership of the WHO to many developing countries, civil conflicts that divided once unified states had the opposite outcome. For example, in the Horn of Africa Ethiopia was a WHO member state and benefited from WHO support. However, the liberated areas of Eritrea, whose people were fighting for independence from Ethiopia, were excluded from WHO support. This situation was exposed during the author's visit to the liberated areas of Eritrea in 1990. Theoretically areas of Eritrea under Ethiopian control had access to WHO and other UN services.

An understanding of the relationships between national politics, emergent bureaucracies and health development strategies is an essential element in this study.

Case studies: the implementation of essential drug policies in response to need - Bangladesh and Mozambique

Two case studies can be used to illustrate the interaction of these elements and the development of Essential Drugs Programs in response to extreme circumstances: Bangladesh and Mozambique. The first five-year plan formulated by Bangladesh after independence gained from Pakistan in 1971 reflected aspirations towards a Primary Health Care structure which would be accessible to all Bangladeshis. The plans included 'improved availability of essential drugs through the development of domestic manufacture and imports on the basis of actual requirements' (Chowdhury Z, 1995). In Mozambique, the provision of comprehensive health services, including essential drugs, after centuries of Portuguese colonialism was an urgent priority immediately after independence in 1975.

Bangladesh

The case study of Bangladesh illustrates an extreme situation which stimulated the development of a National Drug Policy associated with Primary Health Care concepts (Chetley, 1985, 1993 a, 1993 b) Chowdhury Z, 1995). Zafrullah Chowdhury was a Bangladesh trained surgeon with postgraduate British training who joined the struggle of Bangladesh for independence from Pakistan. After independence he was a leader in the Bangladesh movement for a peoples' health policy. Chowdhury (1995) describes the development of commitment to an egalitarian health structure for Bangladesh during the independence struggle which laid the foundation for the post-independence activities. Following independence from Pakistan in 1971, Bangladesh embarked on a health care strategy which would make health services available to the whole population. The strategy included the provision for essential drugs but because of opposition from people with vested interests and insufficient understanding by other people in positions of power, it was 1982 before the National Drugs Policy could be finally formulated A major reason for the development of such a policy was the availability of large numbers of useless and inappropriate medicines like vitamins, tonics and 'growth stimulants' under a huge range of names, from unqualified outlets, at excessive prices, alongside a totally inadequate supply of essential medicines. Bangladeshis with insufficient money to buy food would save up money to buy medicines

rather than food. Often this was in response to aggressive marketing of pharmaceutical products (Chowdhury, 1995).

In 1982, Bangladesh introduced the National Drugs Policy which included provisions to limit the number of drugs available in the country to 250. The plan was to manufacture, locally, as many essential drugs as possible, and where such drugs were manufactured locally, to prohibit import of the same product. Maximum prices were fixed for the import of drugs and raw materials. Chetley (1993 b) documents the aims of the policy which were to:

- increase availability and accessibility of good quality essential drugs;
- eliminate useless, non-essential and potentially hazardous drugs from the market (this was taken to include allopathic, homoeopathic, and traditional Ayurvedic and Unani medicines);
- encourage local manufacture of drugs and raw materials, particularly essential drugs; and
- develop appropriate legislative and administrative mechanisms.

Dr Zafrullah Chowdhury was among the group of health practitioners who provided early impetus to the development of the program. He publicised the needs of Bangladesh and the planned policy on the international stage. The policy received a great deal of opposition from the USA particularly. There were threats to withdraw aid and trade if Bangladesh went ahead with its program. It was seen as a threat to the Multi National Drug Companies, based largely, in the USA. When it became known that the planned Standard Drugs List included only about 250 drugs (a reduction from many thousands that were available) the private sector, both national and international, tried to convince the people of Bangladesh that such a policy would lead to a number of adverse developments. These included availability of poor quality products, lack of access to life-saving drugs, excessive price control, decreased foreign investment, smuggling of banned drugs. All these factors did need attention. With a population of almost 100 million, organisation and access was not easy. Most of the population was very poor and the illiteracy rate was very high. In addition, the long border shared by Bangladesh with India made inspection of goods moving across that border very difficult. Pressures from the vested interests were so intense that compromises were needed. The drugs list had to be expanded to about 700 (Chetley, 1985).

In the years that followed, the pressures lessened sufficiently for the list to be restricted to about 300 drugs. However, opposition continued from multinational companies, from governments of countries who wished to jealously guard their Bangladesh market, and from the national private sector. Nevertheless, the Bangladesh National Drug Policy survived and produced benefits. Chetley (1993 b) documents the increased production of local essential drugs from 30 per cent in 1981 to 80 per cent in 1991. The prices of raw materials decreased and the price of 25 major drugs increased only 20 per cent between 1981 and 1992, compared with the Consumer Price Index which increased 173 per cent. Chetley explains that in 1981 one third of the import bill was for finished drugs and in 1991 it was less than one eighth. He says that if there had been no drug policy $US 186 million would have been needed to pay for imported finished drugs. Attention to quality control improved the quality of local drugs but Bangladeshis themselves agreed there was more to be done in that area.

As in many countries, there was pressure from both the local private sector and from outside businesses to confine National Drug Policy to the public sector. With the public sector at no more than 40 per cent of the total, such a policy for Bangladesh would be irrational. Education about the role of essential drugs would be difficult and there would always be an alternative source of inappropriate medication - albeit at an excessive price. To circumvent the effects of

these restrictions, some industries entered the market as manufacturers of traditional home remedies making it necessary to cover these products (Ayurvedic medicines) as well. These products were used just as irrationally as allopathic medicines and were equally a subject of excessive spending. It must be noted that traditional medicines were not ignored and their use was addressed alongside the use of allopathic medicines (Chetley, 1993 b; Z Chowdhury, 1995).

Industry argued against price control, proposing that a free market should exist. However, according to Chetley (1993 b) most company officials agreed that the control of prices of raw materials resulted in greater availability of cheaper drugs. Nevertheless the problem of low mark-ups did lead to less money being available for buying raw materials on the international market and a greater margin was considered. All the activities associated with increased local production of pharmaceuticals led to great developments in the manufacturing and administrative sectors, accompanied by training of an increasing number of technicians and administrators. It was demonstrated that a continually expanding trained workforce was needed to cover the regulatory and inspectorate areas associated with expansion of local production.

Alongside these development there were attempts to influence the training in medical schools and institutions and to conduct research to provide a basis for planning. Although the production, quality and availability of essential drugs significantly increased, little was known about the patterns of actual drug use, apart from the fact that almost all consultations resulted in prescriptions. In 1992, the Community Medicine and Pharmacology Departments of four medical colleges conducted a survey to assess patterns of drugs use for six common diseases in the public sector at the Primary Health Care level. This study was coordinated by the 'Improvement of Essential Drug Management at the PHC Level Project', and assisted by UNICEF and members of the International Network for the Rational Use of Drugs (INRUD). It was documented in the WHO *Essential Drugs Monitor*, Number 16, 1993. Involvement of the medical colleges was a strategy that raised awareness of inappropriate prescribing among medical educators.

A large sample (80 facilities) was studied and the variability of results was low. Because of these factors it was considered that the results were representative. In each facility data were collected from registers, by observation and from dispensing records (36 of each). An average consultation time for the total study, of 54 seconds, was considered very unsatisfactory. There was some variability between the results at different types of facilities but overall only slightly more than one third of the patients were considered to have been adequately examined and only around 40 per cent received drugs in accordance with the Standard Treatment Guidelines. However, on average, 85 per cent of drugs was dispensed from the Standard Drugs List with 78 per cent by generic names. An average of 81 per cent of prescriptions was accurately dispensed and 81 per cent of patients had adequate knowledge of their dispensed drugs. An average of 54 per cent of facilities had stocks of twelve major essential drugs and the actual Drugs List was present in only 16 per cent of facilities. However, most of the prescribers had a list of the drugs currently available and this influenced their prescribing.

The results of this survey proved very valuable for identifying targets for education, and for planning interventions aimed at improving the use of medicines in Bangladesh. Unfortunately there were no previous data associated with availability of drugs and their prescribing in the same facilities with which to compare the 1993 data. However, these data will be a very useful baseline against which to measure the impact of subsequent interventions.

In early 1994, Mostafa Kamal Majumder reported that the Bangladesh Drug Policy was hanging in the balance as the government decided whether to curtail or continue it, partly because the policy was associated with the ousted dictator General E M Ershad. This uncertainty is ironic in the light of the recent World Bank support for the policy in the 1993 World Development Report. The new draft Bangladesh policy is said to recommend that drugs for self-medication should be available without prescription, that price restriction should be abolished and that multi-ingredient preparations should be allowed again. Thus, the struggle to maintain the policy which was considered such a positive international example, continues.

Mozambique

The case study of Mozambique shows how a newly independent country with very few resources set out to provide health services and essential drugs to the population using PHC concepts before the Alma Ata formalisation of the concepts. Mozambique achieved independence from the Portuguese in 1975. Walt (1983) describe the situation after the Portuguese withdrew, where health care was in the hands of a total of 550 doctors, based in the major cities. The illiteracy rate was around 95 per cent and there was only a handful of Mozambican professionals. This situation illustrates the colonial Portuguese lack of interest in training national staff. The situation was exacerbated when nationalisation of the health sector occurred after independence in 1975 and all except 15 per cent of the doctors left the country.

This post-colonial situation provided the impetus for the commitment of FRELIMO, the Mozambican liberation front, to the provision of health care for all the Mozambican people, wherever they lived. Elements of a comprehensive health care system were developed by FRELIMO in the liberated areas during the war for independence and these were the basis for the civilian system. Walt (1983) analyses the state of the health sector and describes the initiatives taken by the new FRELIMO government, after 1975, to develop a Primary Health Care program with the features later set out at Alma Ata. In the first year of independence, a health policy was enthusiastically established to address the needs of the Mozambican population. The government recognised that health is largely determined by social, economic and political conditions and only partly by access to health services, and even less by access to a large number of expensive drugs. The policy therefore focused on the provision of essential drugs.

The Mozambique experience is another example of a critical approach to the development of health services. Post-independence Mozambique allocated 26 per cent of the health budget for pharmaceuticals based on a standard drug list as part of the socialisation of medicine and the plan to extend services to the whole country. Because Mozambique did not achieve independence until 1975, appraisal of the post-independence experiences of other countries was possible and influenced planning for their health sector (Barker 1983).

Samora Machel, who became Mozambique's first President, was a trained nurse and this may have provided a firm foundation for an interest in health. He affirmed, in his 'hospital speech' in 1976, that health was the basic right of every citizen. He spoke of health as being largely determined by prevailing social, political and economic conditions and emphasised that improvements would mainly come from better water supply and nutrition, less overcrowding and more education (Machel, 1976). These were the elements later formalised as components of PHC at Alma Ata.

The rationale for the introduction of central control of pharmaceuticals in Mozambique and the introduction, the same year, of a National Standard Drugs List, with only 300 drugs, was described by Carol Barker (Barker, 1983) and Marzagao and Segal, (1983). Only pharmaceuticals on a limited list of generic names were imported, manufactured and used in all sectors of the country. Compendia which included appropriate drugs and guidelines for use were prepared for different levels of health care. Production of the written material in the *lingua franca*, Portuguese, was accompanied by training of the relevant personnel. Health cadres were trained for different levels of the services so the base of the service could be served by workers with six months training to manage about 80 per cent of the problems. Health workers with two years training managed the referral level for problems beyond the base level and efforts were put into upgrading the training of nurses and medical technicians. The University Medical School was opened and training of doctors began. However, because it would be some years before their training was complete, the responsibility for running the health services fell on the network of newly trained cadres. Regulations covered the prescribing and distribution responsibilities for different levels of the health services. During a visit by the author to Mozambique in 1981, Dr Julie Cliff, who was employed by the Mozambican Ministry of Health, explained that the period between 1975 and 1980 was very exciting and for the first time in history, the people of Mozambique had access to health services supported by sufficient essential drugs, imported by the State company Medimoc.

The events of 1980, when neighbouring Zimbabwe gained independence from Rhodesian white minority rule, had a profound impact on the future development of Mozambique. The white minority governments of both South Africa and the former Rhodesia could not tolerate the concept of majority rule, so Mozambique presented an extremely threatening example. Therefore elements in those governments saw it as a major priority to destabilise Mozambique by any means possible. From 1982, destabilisation of Mozambique was accelerated by South Africa and this had an increasingly devastating effect on all aspects of life in Mozambique and particularly on the health of the people. Millions of people were displaced and by August 1986 an estimated four million of the 14 million population were in need of urgent food (Gersony, 1988; AIM, 1986-1992). The RENAMO (South African backed insurgents) forces targeted the Mozambican Government successes - the education sector and the health sector. Cliff , Kanji and Muller, (1986) describe how, as a result of direct destruction, looting and displacement of people, over two million people had lost access to health care by the end of 1986. They describe how maternity units on the periphery of the capital city, Maputo, had to close at night because of attacks by RENAMO bandits who killed and kidnapped health workers.

Travel became hazardous and health vehicles were targets for attack. Transport and fuel shortages became worse. The attacks continued to increase throughout the 1980s and early 1990s. Meanwhile there were some attempts to try to 'save' Mozambique. International aid agencies attempted to implement programs in the few secure areas. In *Mozambique - Who calls the shots?* Joseph Hanlon (1991) describes the activities of agencies working in Mozambique and in many cases the total lack of respect for national policy or initiatives.

Conflict caused the disruption of the health system and the supply of drugs with four especially negative consequences. The first was the destruction of community participation, which was essential to the organisation of Primary Health Care. Second, in 1987, the World Bank implemented a structural adjustment program which had an adverse effect on people's capacity to procure medicines. According to the World Bank agreement, the economic situation dictated that health services and medicines could no longer be free as they had been since the implementation of the health policy in 1975. Mr Joaquim Durao, Director General of

MEDIMOC, the state pharmaceutical company, stated at the annual meeting in 1988 that studies showed that between 14 and 16 per cent of patients attending the various health services were unable to buy the medicines prescribed for them. It became necessary for the state to provide help for patients with no money 'provided the situation of the patient is duly proven' (Durao, 1988 in AIM Information Bulletin No. 7, 1989). Many commodities became available in the shops but few people could afford them. Poor people became poorer, crime increased and Mozambique's debt increased (Hanlon, 1991). The third negative effect was the decrease in drugs procured by the health department and the regular supply of drugs, difficult enough during peace time, became impossible. A final development described by Cliff during a discussion with the author in 1989 was that the country was forced to accept 'donations' of medical supplies according to the dictates of the donors. At the same time, against the better judgment of many in the health department, UNICEF was at last permitted to supply pre-prepared kits. In the war situation these could be dropped by air to peripheral clinics. Distribution of medical supplies in kits was a feature of many aid programs including those in Somalia and this mechanism is discussed further in Chapter 6.

In 1992 the political climate in South Africa began to change. Eventually, African majority rule replaced white minority rule, and the prospects of peace and development in Mozambique emerged again. Travel through the country became possible and during discussions in Melbourne in 1993, Cliff described her visits to the periphery where she had found health workers, trained soon after independence, who were still trying to work according to the national treatment guidelines and using only the essential drugs used in their training (Cliff, 1993, personal communication).

In 1994, elections in Mozambique led to the establishment of a democratic government representing all political aspirations. Mozambique remains in the category of the poorest countries in the world with very little bargaining power. During follow-up discussions with the author in December 1995, Cliff explained that although the 1993 World Bank Development Report recognised the need for international support for health programs, the Mozambique Health Policy did not received the international support needed to revitalise the structures of the health service. Lack of funds to pay health workers became a major problem. In the absence of reliable salaries health services are more likely to be provided for people who can afford to pay for them. (Cliff, 1995; personal communication). A similar situation is described below in relation to the Somali Primary Health Care program.

Outcomes of implementation of National Drug Policies

Analysis of the cases of Bangladesh and Mozambique suggests that the implementation of elements of National Drug Policy can be stimulated by a favourable political climate, in these two cases, provided by the successful struggle for national independence. Further, these two case studies have shown that implementation of National Drug Policies had a significant positive impact on the availability of essential drugs which are safe, appropriate to the needs of most people, affordable and effective. While implementation of the policy in these two countries was challenged by external factors peculiar to their circumstances, policy implementers in different settings can nevertheless learn much from these and other case histories. The case of Somalia demonstrates both its own unique features and features in common with other countries.

The Somalia setting

To set the scene for this study, it is necessary to provide an explanation of the events which led to the influx of refugees into Somali in 1979. Major sources of historical literature are Lewis (1980, 1981, 1983, 1994) who has written prolifically on Somalia and Fitzgibbon (1982). Both these authors are respected as authorities on Somalia. Other authors such as Samater (1991) and Dines (1988), Cliffe (1988) and Pateman (1990), and have written more generally about events in the Horn of Africa and were also consulted. From this historical literature it was established that determination of the political boundaries in the Horn of Africa in the late 19th century and the subsequent conflict caused by those boundaries lay behind the Somali refugee emergency. This view was supported by the findings of the Australian Joint Committee on Foreign Affairs and Defence (1984).

Nations, states and nation states

To form the modern Republic of Somalia, the two protectorates of Italian Somaliland and British Somaliland were separately prepared for independence. In 1960, the British Protectorate became self-governing on June 26th and was united with the Italian Protectorate one week later, on July 1st, to form the Republic of Somalia as shown in Figure 2.2. In spite of the extreme friction caused by the differences in the two previous bureaucratic systems, language, judiciaries and so on, there was considerable integration by the mid sixties (Lewis, 1980).

Lewis demonstrates that before colonial partition in the late 19th century, there was no single national government in the geographical area which became the modern Somali State. The affairs of each clan family and their sub-groups were managed by traditional elders. Relationships between the clan families to do with water, grazing, use of land and breaches of law were handled by traditional means of consultation between the elders of the different groups. However, with the creation of the new nation state, the clan system had to yield to a single legislative body. The philosophy of the clan system and the rhetoric supporting it were officially discouraged by the new government for the whole country, formed by a democratically elected parliament representing all constituencies. The new Somali state was recognised and accepted internationally.

However, throughout the 1960s, the Somalis were always aware that their new country included only two of the five parts of the Somali Nation which they defined as the total territory occupied by Somali people. Figure 2.3 shows the spread of the Somali people in the Horn of Africa. Somali people occupied an area which included Djibouti in the North, Eastern Ethiopia to the West, which was known as 'the Ogaden' after a major clan-group which occupied the area, and Northern Kenya, in the south (Lewis, 1980, 1981; Fitzgibbon, 1982). Military and diplomatic exercises to unite all the Somali people were opposed by American and Western support for Ethiopia and by Kenyan wishes to keep Somali-speaking areas within their territories (Lewis, 1980).

In the Somali Republic, the replacement of the clan system by one parliament was not so easy. Clan-based fragmentation can be seen as a major factor which would plague Somalia for the next three decades (Lewis, 1994). The difficulty was illustrated in the last democratic elections to take place in Somalia, in 1969, when the 123 seats were contested by representatives of 62 parties based primarily on former clan ties (Lewis, 1980).

In 1969, a group of army offices, impatient with the inefficiency and nepotism of the Somali government, staged a 'bloodless coup' (Lewis, 1980). General Siyad Barre became the new Head of State and President of the Supreme Revolutionary Council of the new Somali Democratic Republic. Siyad Barre had studied politics in Italy (Lewis, 1980) and embarked on energetic administrative reform. Identifiable structures were formed which established lines of communication and authority from the community to national level. Disenchantment with the previous pro-western policies led to interest in the Soviet Union and exploration of Scientific Socialism which, when translated to Somali language, was 'wealth-sharing based on knowledge' (*hanti wadaaga cilmi ku dhisan*) (Lewis, 1980). This policy was officially adopted on the first anniversary of the coup which became known as the 'bloodless revolution'. The 'bloodless revolution' based on scientific socialism was celebrated annually on October 1st from then on and including the years throughout the 1980s when the author was present. In addition, to overcome the friction caused by clan differences, Siyad Barre tried to unite Somalis around the issue of re-unification of all the Somali people who were spread through the five areas.

Early in the presidency of Siyad Barre, in 1972, the Somali language had been written for the first time. This led to a major campaign focussed on literacy. Young people were sent to the more remote areas to teach reading and writing and this program was received with enthusiasm. Although spoken and written Arabic language was known in a small section of the Somalia population, it was decided that the Somali language would be written in Roman script because Roman script was felt to be more universally accepted (Lewis, 1980). Health, according to Lewis (1980), did not receive much attention. Nursing schools which had been started in the British sector particularly, continued, but standards deteriorated.

After initial concentration on internal problems, the drought of 1974 stretched Siyad Barre's resources to the limit. He could not control the effects of the drought and this may have contributed significantly to his insecurity and the implementation of harsher penalties for dissent. Reasons for his insecurity were the subject of discussions between the author and Dr Mohamed Warsame, Regional Coordinator of the Refugee Health Unit and Dr Aden Yusuf, Medical Director of the Hargeysa Hospital in 1981. According to these two doctors, Siyad Barre saw the unification of the Somali nation as the way to the hearts and minds of Somalis. This position was supported by Lewis (1980). In addition, Siyad Barre believed unification could be achieved with the support of the Soviet Union (Lewis, 1980). Another trigger supporting the thrust for control of the Ogaden by Western Somalis was the proclamation of independence in Djibouti, the former French Somali territory, in 1977. Hassan Guled, a Somali, was elected as President. Superficially, it appeared to Somalis in the Republic that the former 'French' Somalis were now governed by a fellow Somali (Lewis, 1980).

Meanwhile, it was clear that Ethiopian ruler Menghistu Haile Mariam, who controlled the Ogaden area and who had deposed Haile Selassie in Ethiopia in 1974, had no intention of relinquishing the Ogaden region to the Somali nation nor of allowing any form of self-government in that area. The Western Somali Liberation Front (WSLF) was established to fight for liberation of the Ogaden region from Ethiopia and re-unification with Somalia. The Somali government came under more pressure from Somalis in the Republic and those in the Ogaden region to re-address the Pan-Somali issue. Lewis (1980, 1981) identified tacit and cautious support from the Somali Democratic Republic, and military equipment from the Soviet Union, as factors which allowed the WSLF to intensify its campaign in the Ogaden region. By late September 1977, the WSLF had captured the major centres of Jigjiga and Diredawa and had come to the gates of the historic walled city of Harar. This was the turning point. The Soviet

Union had become interested in Ethiopia and the demoralised Ethiopian forces were saved from retreat by a massive airlift of sophisticated Soviet military equipment and East German and Soviet military advisers (Lewis, 1980).

The beginning of the refugee emergency in Somalia

Inevitably Somali-Soviet relations deteriorated. They collapsed totally within two months, just one month after the hijacked Lufthansa aircraft arrived at the Somali capital, Mogadishu, in October 1977. The Somali support of the German initiatives to release the aircraft was accompanied by conditions which led to a massive influx of western money for a wide range of projects (Lewis, 1980; p. 235). This action was intended to return Somalia to the Western bloc but the influx of western capital did not include support for the war against Ethiopia. A Soviet backed advance in the Ogaden region in Ethiopia began in early 1978, and led to the displacement of one and a half million people who became refugees in camps on the Somali Republic side of the border during the next year (Fitzgibbon, 1982).

Unlike many refugee situations, the host country, Somalia, was not dealing with refugees from a different culture or nationality. The refugees displaced by the 1977 war were all ethnic Somalis. Nevertheless, the balance of one refugee to three Somali citizens created an enormous burden on the Somali government. The subsequent formation of the Refugee Health Unit within the Somali Ministry of Health to manage the health services for refugees led to the recruitment of the author to participate in the development and implementation of a refugee health program. It was explained to the author during orientation by Dr Ali Osman Nur, the National Director of the Refugee Health Unit, in early 1981, that although the situation was reported extensively by international news media, the western nations did not respond to the Somali appeal for help with the management of the refugee problem until more than one year after it began.

Figure 2.2. Republic of Somalia, 1960

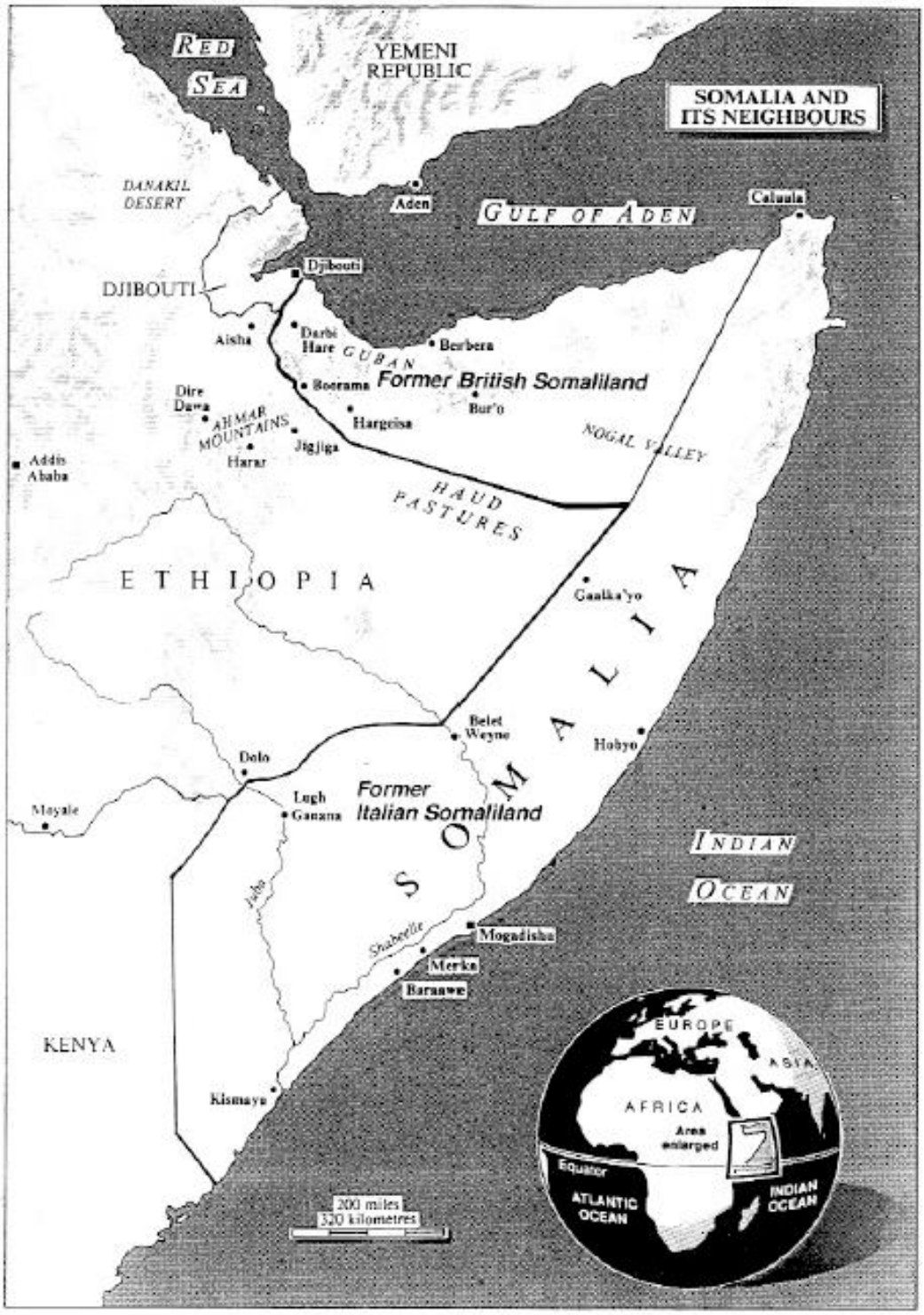
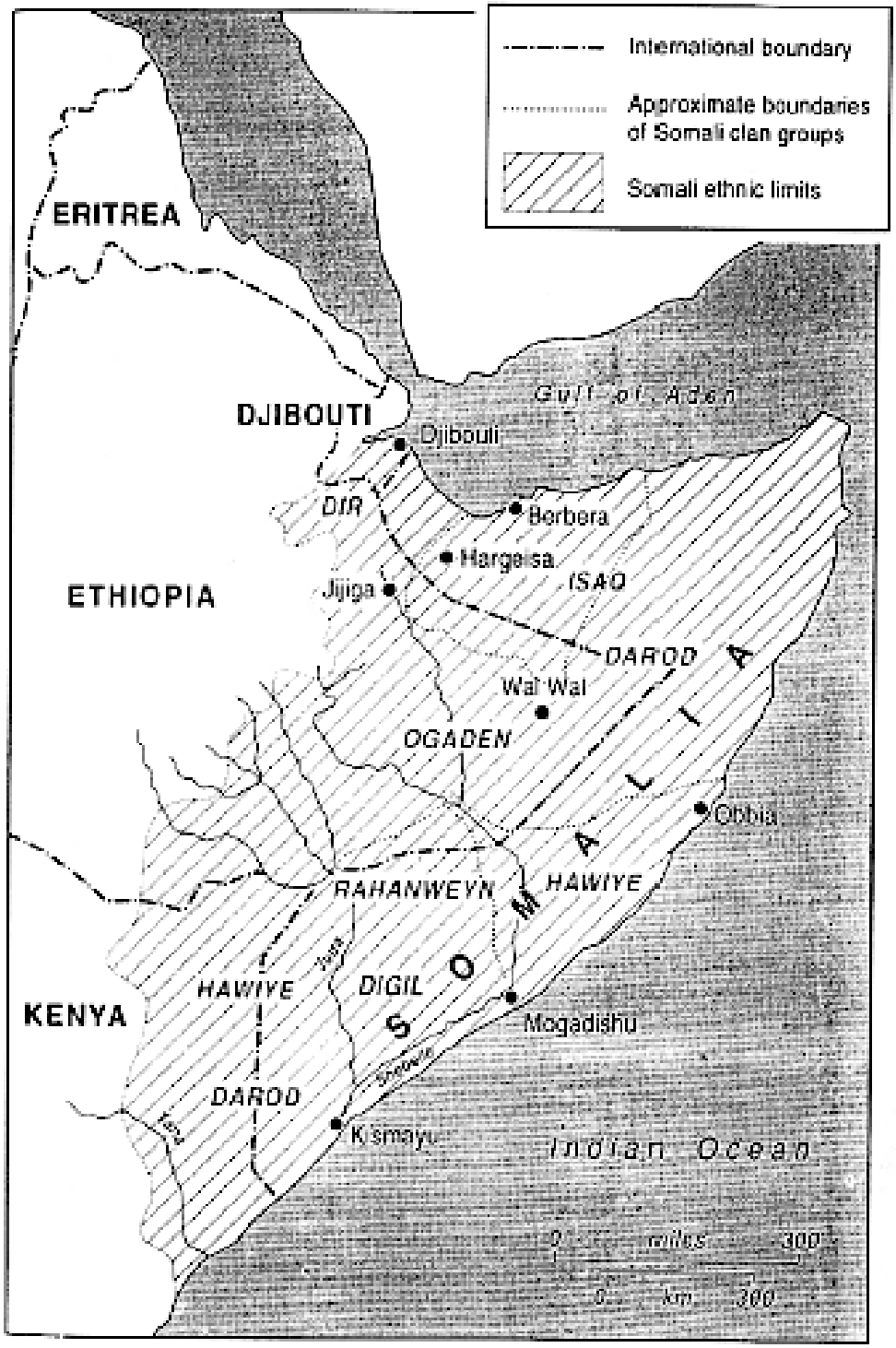


Figure 2.3. Horn of Africa showing the geographical spread of the Somali people.



The Refugee Health Unit was established to coordinate the provision of health care for the refugees using a Primary Health Care (PHC) approach. The staff assigned by the Ministry of Health to manage refugee health care considered the PHC approach, as defined not long before at Alma Ata, to be more appropriate than the *ad hoc* approach which was the result of the uncoordinated services provided by the many international agencies who ultimately responded to the emergency.

The resulting Primary Health Care program in the refugee population proved successful and provided the momentum for the introduction of a similar approach to health services management for the mainstream population of Somalia. The author was transferred to work in two Ministry of Health Primary Health Care programs which were to be established in northern Somalia, namely the North-west Region and the Sanaag Region, where she continued work until late 1986.

The refugee camps remained in Somalia until 1988. Throughout the 1980s, dissatisfaction with the government of Siyad Barre increased. In April 1988, the author visited the capital, Mogadishu, but was unable to visit the northern capital, Hargeysa, her former base, for security reasons. In May 1988, Somali government aircraft bombed Hargeysa, forcing the population to flee, mostly to Ethiopia. Dissidence in the south escalated and finally Siyad was deposed in 1991. The area which corresponded with the former British region of Somalia in the north seceded and declared unilateral independence. The new state was called Somaliland with Hargeysa its capital and remained relatively stable. However, since 1991 there has been no government in the south and a situation of civil unrest continues.

These geopolitical factors brought the development of health programs in Somalia and Somaliland to a standstill. Nevertheless, during the decade of the 1980s, when the refugee and civilian health programs were operating, considerable progress was made in the establishment and consolidation of Primary Health Care programs for both populations. This thesis examines the history and development of the Primary Health Care system from its beginnings in the Somali Refugee Health Unit and its subsequent transformation for the civilian population in northern Somalia. The essential drugs component of the system is the particular focus.

Chapter 3.

Research design and methods

This chapter details the methods used in carrying out this study. The design of the study has combined a variety of primary and secondary sources, following the principles of grounded theory. The main source of primary information was direct observation during field experience over an extended period in Somalia, drawing on professional training in the discipline of pharmacy and expertise in the theory and practice of Primary Health Care and the concept of essential drugs. Access to key informants in the field and in other international forums contributed further to the primary material.

The secondary sources that were consulted can be grouped into four categories. The first category was WHO literature. The second was literature related to health and development and the implementation of essential drugs programs in other comparable settings. Third, historical literature concerned with the Horn of Africa contextualised the study. Finally, working documents and information gathered in the field allowed detailed retrospective analysis of the subject area.

Primary and secondary information were integrated through processes of review and reflection. There were also a number of opportunities for critical appraisal with key informants with experience in Somalia and elsewhere. The analysis of the diverse material collected in the study identified a number of continuing issues, and resolution of these issues led to the formulation of conclusions around these themes.

Case study design and grounded theory

This study was developed on the basis of direct involvement over a total of more than six years in Somalia and subsequent involvement in the design and study of essential drugs programs in other settings for a further nine years. The direct involvement which was followed by application, in other programs, of principles learnt led to reflection on the practical experience, and subsequent use of the knowledge gained. These experiences led to the present study. A systematic analysis of the Somalia case identified a number of areas, particularly those associated with facilitation of development of the program and those impeding developments, that could be further examined.

The design of this study can best be described as a case study of the Essential Drugs Program in Somalia using the principles of grounded theory (Glaser and Strauss, 1967; Strauss and Corbin, 1990; and Glesne and Peshkin, 1992). A knowledge of the elements of essential drugs programs associated with National Drug Policy, on the foundation of qualification and experience in pharmacy and community development, provided a framework for evaluation of the elements which were observed. This formal knowledge formed the basis of interaction with health workers and members of the public. The author's experience in Somalia was analogous to anthropological fieldwork and provided the opportunity to analyse the human milieu in which implementation of the programs was possible or not possible. This technique depends on the researcher using a strong grounding in the relevant disciplines and as much knowledge of the country and its people as possible, as a basis for observation and analysis. The approach taken in this study, conducted from a perspective related to both technical disciplines and a wide knowledge of the country and its people, is widely associated with social

and medical anthropology. The principles of this approach have been accepted as strategies for gaining wider information, and identification of new subject matter that could be explored further. The use of these principles is further illustrated by the work of Hardon and le Grand (1993) who investigated the use of pharmaceuticals in communities in developing countries.

The importance of this medical anthropological approach, in the development of an essential drugs program in an appropriate context, was emphasised by Nichter (1992) in his presentation to an Australian colloquium. According to Nichter (1992), it needs to be recognised that public demand for medicines is constantly changing and continuing study is needed. Changing perceptions need to be identified and accommodated. Information directed at encouraging sensible use of medicines needs to address such changing perceptions. Identification of perceptions is not possible during brief fact-finding missions.

Examples of the medical anthropological approach are shown in the studies of self-medication practices in Nepal and injection practices in Indonesia, Senegal and Uganda (APED, 1992 a, 1993 b). These studies were developed by World Health Organisation Drug Action Program (DAP) as technical references in their 'Research Series' for implementers of essential drugs programs in developing countries. Titles of the publications: 'Self-medication and its impact on essential drugs Schemes in Nepal', 'Injection practices research' and 'People's perception and use of drugs in Zimbabwe' reflect the anthropological approach that was employed in their preparation.

Discussing the interrelationships between disease, nutrition, social conditions and poverty, in developing countries, in a chapter called 'How outsiders learn', Chambers (1983) noted that although there is increasing acceptance of the concept of development anthropology where a practical contribution is made by the researcher,

> ... there are still chances lost. Social anthropologists have precious opportunities in their fieldwork. They have access to a world of experience normally shielded from the outsider (Chambers, 1983).

To explain his point, Chambers (1983) cited Srinivas, Shah and Ramaswamay:

> .. the field worker cannot anticipate the developments which inevitably guide the course of his investigations. Hypotheses formed without regard to these considerations may turn out to be trivial if not banal. ... What most field workers do is go to the field with a grounding in the theory of the discipline, especially in the sub-area of their interest, and with as much knowledge of the region as can be derived from secondary material. The field then takes over, and the outcome depends on the interaction between the fieldworker and the field (Srinivas et al., 1979 in Chambers, 1983, pp. 60-61).

Chambers further emphasised the point that social anthropologists can develop extensive knowledge and insights of which they may not be aware and that opportunities to .. 'illuminate and help others can be lost because of self-isolation' (Chambers 1983). Application of what has been learnt was felt, by the author, to be a crucial element in the implementation of essential drugs programs. Sharing of experience gained during prolonged field work was therefore a major motivation for the preparation of this thesis.

In Somalia, engagement was initially in the capacity of a team member of the Somali Refugee Health Unit which coordinated all health services for refugees from the 1977 war between

Ethiopia and Somalia. This assignment was followed by work within Primary Health Care programs in the mainstream community of two regions in northern Somalia.

The achievements, the failures and the factors influencing these outcomes are difficult to determine during short consultancies to evaluate programs. In contrast, study on the basis of long involvement and extended first hand experience, together with considerable personal contact with the implementers of the programs provides a unique perspective.

Following the assignments in Somalia, in the capacity of Monitor for health related projects supported by Australian aid funds during the Eritrean war for independence, the author was provided with an important opportunity to compare Eritrean developments with those in Somalia. This comparison prompted interest in the study of programs in other settings which allowed the Somali experience to be contextualised. Further analysis of the Somali experience was enhanced by the author's work as a resource person for the developing National Essential Drugs Program in Eritrea, in the years after independence had been achieved. In that capacity, the author was asked to share her experience with a view to strengthening the program in Eritrea. Technical and academic skills were exchanged with the leaders of the major components of the National Drug Program. These components covered legislation, registration of products, regulation of distribution of pharmaceuticals, quality control of products and manufacturing methods, optimal use of pharmaceuticals and quality assurance procedures to cover all these areas.

Field experience in an action role

Methods of study of the programs in Somalia draw on direct observation, interaction with other health workers and members of the community and interviews, and so are essentially qualitative. Information gathered by these methods was supplemented by reference to published texts and unpublished reports and case studies. The combination of these different sources of experience allowed a critical interpretative analysis to be undertaken. Although quantitative data were scarce and the value of those available for evaluation of essential drugs programs was restricted, there were indicators available to help measure the observed process of implementation of various components of the programs. Field experience over a long period in Somalia provided extensive scope for observation beyond the opportunities available to many researchers.

Employment in Somalia

Experience in the Somali programs was gained from the position of full time employment between early 1981 and late 1986 and subsequent contact with program implementers as a resource person. Employment was in the capacity of the Essential Drugs Program Adviser and Primary Health Care Regional Coordinating team member first with the Refugee Health Unit of the Somali Ministry of Health and later with the Primary Health Care programs in the North-west Region and to a lesser extent in the Sanaag Region of northern Somalia. Visits to other health programs between 1981 and 1986, during the employment in Somalia, provided opportunities for comparison with the North-west Somalia Primary Health Care (PHC) program together with lessons which might help that program. Programs visited included others within Somalia, and in Kenya in 1985, in Zimbabwe in 1981, 1983, 1985, and 1988 and in Mozambique in 1981.

The main area of knowledge gained from these visits was the universal relevance of the Primary Health Care approach. But also, it was apparent that the approach needed to be appropriate for each community and that there were great variations in communities and approaches that were found to be suitable. Several characteristics of the different programs can be noted briefly to illustrate this point. For example, Zimbabwe had a very strong middle level of health professionals but in Somalia, community based health workers were the strongest level of the program. The programs visited in Kenya used a system of a small payment for health services which was not possible in Somalia. The Kenyan payment was possible because the soil in the area was very fertile allowing significant income generating activities in contrast with the arid Somali situation where cultivation was impossible. Mozambique had developed a standard drug list for both private and public sectors as part of their PHC program in 1975. It was also apparent that the responsibilities of workers and community perception of workers and the drugs used at different levels varied from country to country. Thus, while the principles of PHC and essential drugs remain relevant to all, it was equally evident that they need to be adapted to the particular circumstances.

Consultancies

Following employment in Somalia, a number of consultancies further developed the experience gained. These consultancies included five visits to Eritrea as both a Monitor of health related and women's programs and resource person for the Department of Pharmaceutical Services in the Ministry of Health; and organisation of Australian multidisciplinary workshops associated with the promotion of rational use of drugs and publication of proceedings of these workshops. In addition, work for Universities and non-government aid agencies in Australia and USA included provision of training workshops for medical and development students, and for non-government agency staff. The preparation of a training manual for the management of medical supplies in emergency situations was also undertaken for the Disaster Unit of the University of Wisconsin in 1989. These experiences generated further relevant information.

In 1994 and 1995, the author contributed to an updated edition of guidelines for donors and recipients of pharmaceutical donations (Hogerzeil, 1995). This activity, coordinated by the WHO Drug Action Programme, called on her experience in Somalia and Eritrea and her involvement with health and drug education of Australian aid agencies' staff. The guidelines for donations of pharmaceutical products were based on the concept of essential drugs and it was necessary to include explanation of this concept of essential drugs together with the rationale for the use of guidelines for donations. The aim was to promote appropriate public response to appeals for help for both emergency situations and health programs in developing countries as opposed to a response which results in large quantities of inappropriate items and very little which can be of use. In 1995 the author also contributed to the preparation of Australian guidelines for donors of pharmaceutical supplies. The final version of these guidelines will be endorsed by the Australian government and published under the auspices of the Australian Pharmaceuticals Advisory Committee (APAC).

These consultancies provided opportunities to review, analyse, evaluate and consolidate experiences in order to prepare valid teaching modules which addressed the practicalities of program implementation. These processes were another example of the use of grounded theory where experience was analysed in the light of theory, thus generating new information for wider application. Subsequent contact with the implementers of programs in India, Sri Lanka and Bangladesh during participation in workshops associated with the promotion of the

rational use of drugs in West Bengal, and later in Australia, in 1995 provided further analytical perspectives.

Monitor's role

During the final stages of the war for Eritrean independence and the first year after independence, in the years 1990 and 1991, the author was engaged in the capacity of the Monitor for health related programs supported by Austcare and AIDAB in Eritrea.

The monitoring assignments were more akin to research assignments and provided excellent opportunities for analysis in comparison with the Somali context. Subsequently, in 1993, 1994 and 1995 visits were made to Eritrea to work as a resource person and adviser in the development of National Drugs Policy and the associated Essential Drugs Program. The performance of this assignment in Eritrea was facilitated by the application of experience that was gained in Somalia. The wider experience which resulted made further contributions to research findings.

Role as a Resource Person

In this setting, the role of a 'resource person' can be described as the sharing of technical and academic skills, the provision of reference and educational support materials and the development of links with other bodies which could also be helpful. In the capacity of a resource person in Eritrea, evaluation of activities was undertaken and targets were identified for further study by local program implementers and for further education of staff. The need for a campaign to encourage appropriate management of diarrhoea with oral rehydration therapy was one example that was identified during evaluation. Participation by the author in the resulting campaign that targeted 20,000 mothers in Eritrea was a major focus of the 1995 visit to Eritrea.

In the role of resource person there are opportunities for reciprocity. Glesne and Peshkin (1992) describe the difficulties encountered by qualitative researchers who do not wish to appear as if they are taking all and giving nothing. Glesne and Peshkin submit that there are few opportunities for reciprocity between the qualitative researchers and their interviewees. In contrast to their submission, the relationship between the author and the national staff in both Somalia and Eritrea was based on reciprocity from the beginning. Both Somalia and Eritrea had appealed for international aid and Australian agencies responded. The appeal from Somalia in 1980 led to a six year development assignment in which the author was involved. The author's assignment to monitor Australian aid to Eritrea led to the acquisition of information, but also identified further specific areas where Australians could provide additional support. Publication of reports following field visits to Eritrea increased Australian knowledge of the Eritrean situation and led to wider and greater support for health-related projects, from the Australian community (Snell, 1990, 1992, 1993, 1994).

Key actors and informants

Key actors and informants who contributed material for the study can be grouped into those encountered in the field in Somalia, and those encountered in other international settings. These groupings are not however, mutually exclusive as many individuals working in Somalia were from international agencies, while Somali individuals subsequently moved into the

international arena. Individuals are assigned to one or other group on the basis of the author's main contact with them.

Contacts in the field

In the implementation of the various programs, there were several key people without whom the programs may not have been successful. Some of these people were catalysts, who made a brief but vital contribution at a crucial time. Others were key actors over a longer period, making a significant contribution to the continuing success and consolidation of the programs. In addition, information was specifically sought by the author from several key informants in the field. Reflection raised specific questions during the preparation of this thesis and key informants who had also been key actors were contacted for clarification of certain issues.

Table 3.1 Key informants and key actors associated with the implementation of the Essentials Drugs Programs in Somalia.

Name	Position	Role
Key Informants		
Nur, Ali Osman	Medical Coordinator, RHU	Coordination, Policy implementation, 1981/82 - Central level
Dualeh, Mohamed Warsame	Medical Coordinator, RHU/NW Medical Coordinator PHC/NW	Coordination, Policy implementation, - North-west Region
Other informants		
Holmes Brown, Barbara	OXFAM, Help the Aged	Relief nurse, 1979 Eye Unit 1981- 1986
Lenz, Marie Theres	German Emergency Doctors	Relief nurse, 1980. MCH expatriate counterpart in the North-west PHC program, 1983/84.
Key Actors		
Toole, Michael	Expatriate doctor/adviser. Central RHU, 1981/83	Co-Coordinator. Support for policy implementation
Albert, Christel	RHU Pharmacist	Pharmacist/Adviser, Central RHU 1980-82
Heide, Lutz	RHU Pharmacist	Pharmacist/Adviser, Central RHU 1983-86

Key informants were primarily people directly associated with the programs in Somalia. A summary of the positions and activities of key informants and key actors is presented in Table 3.1. Other government staff and staff of non-government organisations also provided important information. Several Somali key informants were also contacted in other countries during the development of this thesis. These key informants were enthusiastic about the author's analysis of the program and provided support and encouragement.

Form of address

Somali forms of address need to be clarified in identifying key informants. A person's first name is the name given to the person and is the name by which they are always addressed and referred to in their own community. For example Mohamed Warsame Dualeh refers to one person. Mohamed is his name, Warsame is his father's name and his grandfather's name is Dualeh. Females are named in the same way and they do not change their names to their husband's names when they marry. However, in academia and work outside Somalia it is a common practice that Somali names are modified to suit a Western system. Mohamed Warsame Dualeh is known as MW Dualeh. Therefore references to publications by Somalis in the text will use the grandfather's name. For example Dualeh, 1984, and Nur, 1994 refer to Mohamed Warsame Dualeh and Ali Osman Nur respectively.

Language of spoken and written communication

Communication in the main centres in the field was mostly in English and Somali program leaders spoke good English. Field trips were always undertaken in the company of local colleagues who spoke English in addition to Somali, the local language. Communication with non-English speaking people was always facilitated by English-speaking health workers. A reasonable knowledge of Somali language was acquired by the author during the prolonged work in Somalia. This language skill permitted one to one communication with Somalis beyond the senior program implementers and in the more peripheral areas where English was not usually known.

Program material for middle and peripheral level workers in Somalia was written in the Somali language but the resource material for the senior workers was prepared in English. English language international references were used. Meetings including international people were conducted in English. Resource material was prepared in English from mainly English language references and this material was used as a basis for preparation of Somali language material for health workers.

International contacts

Other key informants were WHO staff and participants in international workshops and conferences, and meetings within Somalia. Further informants were identified during consultancies and other activities associated with health and development work such as conferences and workshops in Australia and in other locations. A series of workshops associated with the development of National Drug Policy in Australia was held between 1991 and 1995. Key international actors such as Göran Tomson, Alfredo Bengzon, Jonathan Lomas and Mark Nichter were among participants at the Australian workshops who were available for consultation. Their information, although not of direct relevance to this study, provided a wider perspective for review and reflection. Examples of international activities were a workshop in Harare (Zimbabwe) conducted by the Zimbabwe Essential Drugs Program (ZEDAP)

in 1985, a meeting in Geneva conducted by the Drug Action Program of WHO in 1988, and a symposium conducted by the Georgetown University in conjunction with the United Nations High Commission for Refugees and the Centres for Disease Control in Washington D.C. in 1988. Within Somalia, workshops and conferences involving international participants were also held.

A follow-up visit to the Drug Action Program of the World Health Organisation in Geneva, in 1994, provided the opportunity to gather resources for the program implementers in Eritrea and to discuss strategies for developing various components of the Essential Drugs Program which had been found lacking. This visit also provided more information about the DAP methods employed to support and strengthen national essential drugs programs.

Discussion with key actors and implementers of programs in India, Sri Lanka and Bangladesh in 1995, first during a workshop in West Bengal and later at the International Conference on Medicinal Drug Policies in Australia, provided further information on which to base analysis of the Somali case.

Table 3.2. describes the positions and activities of significant international informants who were available for discussions with the author at international and Australian meetings.

Table 3.2. Significant international informants.

Name	Position	Role
World Health Organisation Drug Action Program staff in Geneva.		
Helling-Borda, Margaretha	Director, Drug Action Program, formerly Senior Scientist.	Technical and practical advice: all aspects of EDPs and NDP.
Eshetu Wondemagegnehu	Drug Action Program	Technical and practical advice: all aspects of EDPs and NDP.
Habiyambere, Vincent	Drug Action Program	Technical and practical advice: all aspects of EDPs and NDP.
International professionals participating in workshops and meetings in other countries		
In Australia:		
Bengzon, Alfredo	Former Minister of Health, Republic of the Philippines	Philippines National Drugs Policy and Generics Act. Dissemination of information
Cliff, Julie	Medical Faculty, University of Maputo, Mozambique USA)	Activist, educator, writer (also in Mozambique, UK and
Hogerzeil, Hans	Drug Action Program WHO	Technical and practical advice: all aspects of EDPs and NDP.
Lomas, Jonathan	Coordinator, Centre for Health Economics and Policy Analysis, McMaster University, Canada.	Studies on role of opinion leaders. Dissemination of information.
Nichter, Mark	Associate Professor, Anthropology and Family and Community Medicine, University if Arizona, USA.	Studies on the social science aspects of pharmaceutical behaviour. Dissemination of information.
Tomson, Göran	Professor, Clinical Pharmacology, Karolinska Institutet, Sweden.	Drug utilisation studies, Sweden and Asian countries. Dissemination of information.
Weerasuriya, Krishantha Sri Lanka	Professor of Pharmacology drugs concept nationally and in	Activist. Promotion of essential medical education
***In Eritrea*:**		
Eyassu Habte-Gabr	Family Medicine Centre Michigan State University, USA. Previously involved with PHC training in Ethiopia.	Studies in rational use of drugs. Dissemination of information.
In India		
Shiva, Mira	Voluntary Health Association of India	Studies of drug use in India Dissemination of information Activist role
Chowdhury, A Qasim	Executive Director Gonoshasthaya Kendra community based health service. of Gonoshasthaya Kendra,	Activist role, promotion of essential drugs concept in Bangladesh. Foundation member

Written information sources and documentation

In order to study particular programs, information would normally be collected from historical documents, project reports and, where possible, interviews with people involved in the implementation of the programs being analysed. However, because of the unique nature of the topic under investigation, and the fact that little has been written, the main source of information was direct observation, supplemented with interaction and detailed interviews with people working in the field in the same and related programs. Research of literature related to health and development facilitated the interpretation of experience and allowed it to be set in context. Four main sets of written information were consulted: WHO literature which included material related to the implementation of Primary Health Care in general and Essential Drugs Programs in particular; material related to development and to the implementation of PHC programs in other settings which facilitated analysis of the Somali cases; historical texts concerned with Somalia in the twentieth century which contextualised the study; and finally, working documents and written materials collected in the field which facilitated critical analysis of the programs.

The important role of the WHO in the process of the development of Primary Health Care and Essential Drugs Programs became apparent during study in the subject area and led to a detailed examination of WHO's role as presented in Chapter 2. In addition, WHO literature was a major source of information. Study of WHO literature focused particularly on the development of the concept of the Essential Drugs Programs and National Drugs Policy in the World Health Organisation. Ultimately, the appropriate use of the right drugs was confirmed as a legitimate strategy associated with the improvement of health.

Second, the study of literature concerned with development issues and with the implementation of essential drugs programs in a range of different countries and settings expanded the author's understanding of essential drugs programs in the global context and thus enhanced analysis of the Somali cases. Of particular significance were the experiences of Philippines, Mozambique, Zimbabwe, Eritrea and Bangladesh while reference to the experience of a wide range of other countries including Indonesia, India, Thailand and Tanzania provided a wider perspective for analysis. Texts prepared by authors such as David Werner (1977), Werner and Bower (1982), Maurice and Felicity King (1978) and David Morley (1973), were based on experience of the development of Primary Health Care programs in a range of countries and provided information as well as practical examples of the use of principles included in the WHO PHC model in a form useful for teaching purposes. These books were made available through Teaching Aids at Low Cost (TALC) a voluntary organisation established by Dr David Morley and several of his colleagues in the UK to make reference material available to people based in developing countries at the lowest possible prices.

Third, to set the scene for this study, it was necessary to provide an explanation of the events which led to an influx of refugees into Somali in 1979. A summary account of these factors has been given in Chapter 2. and further reference to contemporary political considerations is made where relevant throughout this study. From this historical and geopolitical literature it was established that determination of the political boundaries in the Horn of Africa in the late 19th century and the subsequent conflict caused by those boundaries lay behind the Somali refugee emergency.

The final source of information was written material and documents collected in the field. These documents included information collected in the course of work such as forms and statistics, reports to meetings, reports to government and agencies and documentation of events. Evaluation was an important component of the implementation of the program and documentation of work going on was needed for such evaluation and further planning. The value of the documentation was recognised even during the implementation of the program. It was therefore collected and stored by the author and by other program implementers such as Dualeh and Toole. It was recognised even then that the program was important and that it should be documented.

Employment in the Refugee Health Care program and the Primary Health Care programs in Somalia involved the preparation and use of a wide range of documentation. Work plans, education programs, workshop reports, communications, curricula and treatment forms were examples. It was necessary for the running of the program that material be filed appropriately and be readily retrievable. The author also recognised the value of this material as a record of the processes involved with the implementation of the program and examples of this wide range of paperwork were kept. Key informants, representing a range of disciplines including MCH and training, and who have been identified in this study, had similar feelings about the importance of the program. They also collected documentation. Sharing of these collections has proved extremely valuable in the subsequent research.

Periodic reports about the Essential Drugs Program (EDP) of the Somali Refugee Health Unit were submitted, by the EDP coordinators, to the regular RHU review meetings but these documents were not widely circulated outside Somalia. Reports of some individual activities of the RHU Essential Drugs Program were documented internationally, for example, the use of colour coded labels for drugs was published by Abdi Shire Jama and Lutz Heide in *Tropical Doctor* in 1985. Toole (1987) briefly, but importantly, analysed the Sanaag PHC program in the context of health and development and reports were prepared on specific aspects of the PHC program, for example the oral rehydration study and the management of the cholera epidemic (Dualeh, 1987 and Heide, 1986). Material supplied by the author was included in the report of the management of supplies for the cholera epidemic of 1985 which was published by Lutz Heide in 1986. The author of this thesis alluded briefly to the importance of the RHU program in 1988 in *World Health Forum*, in a description of the North-west PHC program (Snell and Dualeh, 1988). Also in 1988, the RHU experience was the basis of a workshop, concerned with the development of guidelines for management of health services for refugee and displaced populations, that was conducted by the author at Georgetown University in Washington DC as part of a Symposium on the Management of Health Care for Refugee and Displaced Populations (Georgetown University, 1989).

After the implementation of the PHC programs had begun, some written materials prepared by consultants and representatives of various agencies, covering the implementation of limited sections of Primary Health Care programs in Somalia, were undertaken as part of each agency's evaluation of its own programs. None is comprehensive and none examines the essential drugs programs specifically. Interim reports of the development of the PHC program in North-west Somalia were prepared for funding agencies and for the purpose of evaluation and planning. Examples of such reports are the annual reports of Dr Mohamed Warsame Dualeh in 1983 and 1984 and of Dr Abdilahi Hassan Farah in 1985. The author was involved in

the preparation of these and other reports. A report of the developments in the Essential Drugs Program in North-west Somalia was prepared by the author for submission to UNICEF, the WHO and the Somali Ministry of Health, but the experiences were not analysed in detail (Snell, 1986). Nothing has been written in the context of a historical evaluation of the Refugee Health Unit Essential Drugs program and the role played by that program in the stimulus of the development of a National Essential Drugs Program. This thesis therefore makes a major contribution to the documentation of both the refugee and PHC experiences in general but more important, provides a detailed examination of the implementation of the essential drugs programs in both settings.

Employment in, or contact with programs for prolonged periods provided a unique and privileged position from which to analyse the programs. Direct field work involved visits to facilities in both urban and rural areas. A prolonged action role within the programs provided opportunities for gathering information and working documents that might not have been available to pure researchers. In preparation for the implementation of the PHC programs, anthropological literature prepared by Thomas (1982) and Lewis (1980, 1981) was consulted by program implementers. Although Thomas specifically studied attitudes to health and provided relevant background material, the anthropological data of greatest value in the implementation of the programs were provided by primary sources in the field. Lewis had studied Somali culture for more than ten years at that stage and made a major contribution to the understanding of Somali society but his specific references to health were very few.

The author's work in Eritrea and other countries provided the final stimulus to document the implementation of the Essential Drugs Programs in Somalia. Comparison confirmed the importance of the Somali Essential Drugs Programs and it was considered important to document the processes of program implementation so the information could be shared with others involved in developing such programs. Dualeh's and Toole's collections have provided valuable supplementation to the author's collection of information from the field.

Review and reflection

Review and reflection occurred on several levels both during extended periods in the field, later in consultancy work and then during the preparation of this thesis. While working in the field, both as a team member in Somalia and as a monitor and subsequent resource person in Eritrea, routine reporting was required. In the course of preparation of reports for program implementers and supporters, areas were identified where key informants had to be contacted again for additional information.

Reflection during the research associated with this thesis prompted further consultation with key informants and further comparison with programs in other settings. Analysis of the Eritrean program, reference to WHO reports concerned with implementation of essential drugs programs in other countries and re-consideration of the programs in Somalia raised a number of questions. For example, the Refugee Health Unit was already established when the author's assignment began and it was accepted as given. On reflection it was realised that establishment of such programs is fraught with problems. They do not just happen. It was realised that there must have been significant factors which made establishment of the RHU possible. In addition, reconsideration of the subsequent transformation of the RHU model for

application in the general Somali community raised many more issues. It was in order to analyse and explain these factors that this study was undertaken.

Review and reflection were aided by follow-up contact with a number of key informants. Most notably, the former Director of the RHU, Dr Ali Osman Nur, was contacted in Darwin in early 1994. In addition, a field trip to Europe was organised in August 1994, to discuss the early stages of the RHU program. Barbara Holmes Brown, a member of an OXFAM emergency team in 1979, before the RHU was established was one person consulted and Dr Mohamed Warsame Dualeh, who had been one of the first RHU Regional Medical Coordinators before he became the first North-west Regional Medical Coordinator of the PHC program was contacted in his new position in the Technical Support Service of UNHCR in Geneva. It was determined that the RHU was a product of intense planning and iterative processes of implementation, review, planning and implementation. These processes are described in detail in Chapter 4. Dualeh was also able to provide additional details relating to the early stages of the North-west PHC program and his insights helped contextualise some later events.

The range and depth of material that was assembled in the course of this study meant that conclusions about the implementation of the Somali programs could be drawn with some confidence. Different perspectives could be taken into account and similarities and differences in views were reconciled.

Chapter 4.

The Refugee Health Unit (RHU), Somalia 1980-88: Establishment of a model for management of health care in emergency settings

This chapter presents an account of the planning and implementation of a model in Somalia between 1980 and 1988, for the management of health care in emergency populations. The chapter begins with an outline of some principles of the Primary Health Care model which provides a framework for analysis of the RHU program in Somalia.

The second part of the chapter deals with the management planning for the emergency. The establishment of the refugee camps is described and an account of the responses to the emergency is given. A number of problems arising from these responses could only be addressed by a coordinated approach based on Primary Health Care principles. The development of the Primary Health Care approach that was forthcoming is seen to have been influenced by the central roles played by a number of key individuals, who, while taking separate actions, all did so within an agreed Primary Health Care framework. The planning of the program, and the essential drugs program within it, established the model for implementation.

The third part of the chapter discusses four aspects of the implementation of the program: the scope of the essential drugs program, the supply of drugs to the program, the training of health workers and the coordinating and supervising role of the Refugee Health Unit (RHU). These four aspects are then examined in practice in a case study of the activities of the North-west regional store, one of five such stores through which the essential drugs component of the health program was implemented.

Framework for analysis

In focusing on the place of the Essential Drugs Program in the work of the Refugee Health Unit in the management of the health care of refugees, particular attention is given to aspects of training of health personnel, the use of a standard drug list and treatment according to protocols. These three elements have been identified by Coninx (1988), WHO coordinator in Peshawar, Pakistan, as critical to the contribution of essential drugs programs to the development of comprehensive health programs in emergency populations. This chapter includes a review of their significance. It explores the reasons for the success of the program and shows how this experience contributed to the development, in 1988, of international guidelines for the management of health care in emergency populations (UNHCR, 1989).

The analysis of the Somali refugee health management situation, following the 1977 war between Ethiopia and Somalia, applies the framework later recognised by Coninx, (1988) and will also investigate other additional factors necessary to make essential drugs programs effective.

Coninx emphasised the importance of the development of a consistent training program for local staff as a base for a uniform approach to disease treatment. He endorsed the use of standard treatment protocols which are aimed at the prevailing problems, using drugs from a standard list. This standardised approach would facilitate procurement, storage and distribution as well as providing the best management of the problems with scarce resources. He noted that many foreign physicians stay for a relatively short time, bringing 'a kaleidoscope of drugs representing their different prescribing practices', and saw standardised protocols as a means of reducing the problem. He argued that 'a Standard Treatment Protocol, outlining in an unequivocal manner the agreed upon treatments for the most common conditions the expatriate as well as the local health worker might encounter, should be initiated in a very early phase of the operation'. He went on to comment that this practice would avoid therapeutic confusion and would minimise conflicts between physicians of different backgrounds and prescribing behaviour. He saw that, if the epidemiology were known, the combination of Standard Treatment Protocol and an Essential Drugs List could be used for planning purposes, as it could be estimated which drugs are likely to be consumed in large quantities (Coninx, 1988).

In this particular study, attention is drawn to outcomes in these three areas: training, use of standard treatment protocols and use of a standard drug list. In addition, it will be shown that there are further key elements which determine the success of the program. These further elements include the influence and participation of key people from the international community and the local community, cooperation and mutual respect between these people. Most important also, are appropriate strategies, negotiating skills and strong coordination involving all players. The development of a structure which can maintain contact from the centre to the periphery for constant evaluation and review is imperative. This constant evaluation provides for adjustment of protocols, where necessary, to respond to emerging circumstances and new knowledge. For example, as well as training in direct management, skills can be developed in related areas such as situation analysis, research methods and management skills. An expanded pool of trained people will be able to contribute new ideas and strategies based on the experience that has been gained.

Essential Drugs Programs do not occur in isolation. The context in which appropriate management systems such as Essential Drugs Programs are developed was described by Toole and Waldman et al (1988, 1990 a, 1993). The management procedures described by these authors were agreed at the Georgetown Symposium in 1988, where discussions covered host country capacity, food distribution, shelter, technical resources, water and sanitation, measles vaccination and other related areas. The significance of the Georgetown Symposium is described in more detail towards the end of the next chapter.

Planning for management of the emergency

Establishment of refugee camps

The historical circumstances which led to the establishment of thirty-five refugee camps in Somalia, in late 1979, have been outlined in Chapter 2. The camps were established on land provided by the Somali government following the war between Ethiopia and Somalia over territory allocated to Ethiopia under the Anglo-Ethiopian Agreement of 1955 that was populated by Somalis (Fitzgibbon, 1982). Figure 4.1 shows a map of Somalia and the location of refugee camps. The refugees from the disputed territory arrived weakened and with no

possessions. In Figure 4.2, a newly arrived refugee child is examined by a senior Somali health professional. Camps grew to enormous populations; some were as big as 70,000 people. Most had at least 30,000 people. The camp shown in Figure 4.3 had a population of more than 40,000 refugees.

Figure 4.1. Map of Somalia in the Horn of Africa, showing locations of refugee camps

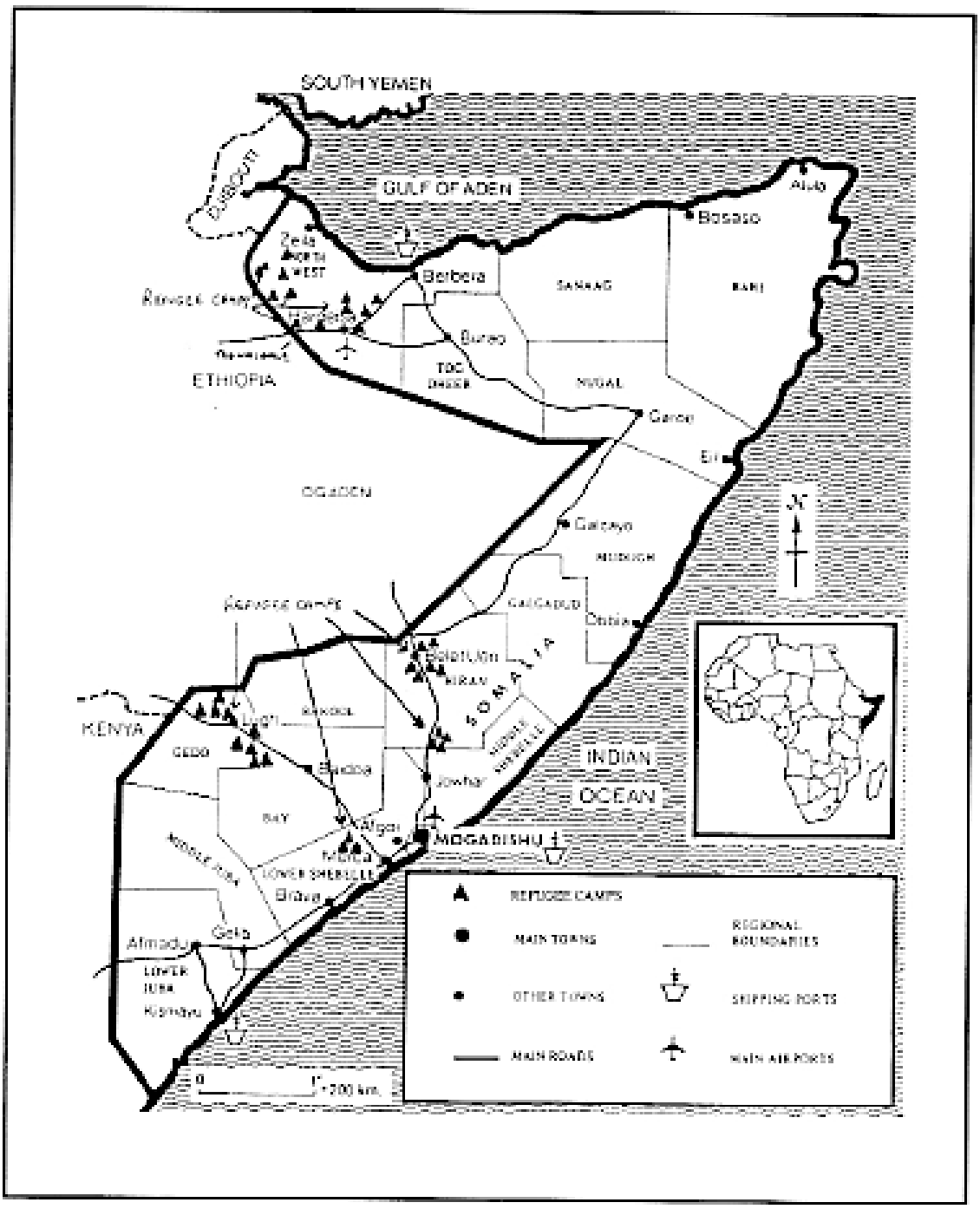


Figure 4.2. **Hussein Samater, a senior health professional, examines a distraught baby, newly arrived with its family in Bixin Duule refugee camp, North-west Somalia**

Figure 4.3. **Agabar camp in North-west Somali with a population of more than 40,000 refugees**

The military situation remained tense long after the Ethiopians regained control of the territory in the Ogaden region. Because the refugee camps were a product of a war situation, they were seen as the responsibility of the Somali military authorities. The National Refugee Commission (NRC) was set up by the military authorities to manage the affairs of the refugees. The NRC was particularly interested in security and set up a military structure in the camps. It was the NRC who had jurisdiction over who could enter the camps or work there. The Ministry of Health (MOH) assigned Somali doctors who had just completed their university training at the National University in Mogadishu to work in the camps but the doctors had no orientation and they were under the jurisdiction of the NRC, not the Ministry of Health. The Ministry of Health had no input except the allocation of staff.

The Somali people and government acknowledged the refugees as fellow Somalis and wanted to feed and support them. With a population of little more than four million and around 1.5 million refugees added to the population, this was a seemingly impossible task. Simmonds, Vaughan and Gunn (1983) referred to 1.34 million refugees in camps in Somalia. It was then the largest recorded ratio of refugees to host population in world experience. Somalia appealed for international assistance to support the refugees.

Internationally, little notice was taken for more than a year and although the Somali Government did its best, the mortality rate was extremely high and the conditions in the camps deteriorated. A few international organisations such as OXFAM and Centres for Disease Control (CDC) responded and together with a small group of Somali doctors, tried to organise health care where they were assigned, and to develop, with very limited resources, a coordinated scheme for the management, particularly, of the nutritional emergency. Barbara Holmes Brown was a member of the OXFAM emergency team who was assigned to one of the southern camps late in 1979. During discussions with her in the UK in 1994, about the early conditions in the camps and the origins of the RHU program, Barbara Holmes Brown described her group's expedition to all the local 'pharmacies' to find some medical supplies to use in the camp. All antibiotics were bought, together with anything else that could be useful, and they were charged to OXFAM in England.

Holmes Brown's account illustrated the *ad hoc* approach to the emergency at that stage. According to her the need for coordination and organisation was recognised by very few and there was no support for those who recognised the need. During a follow-up conversation with RHU Director, Ali Osman Nur, in 1994, Nur explained that the Somali Government and the NRC did not recognise any advantages of health services being coordinated through the Ministry of Health even though the NRC had no experience in the management of health care. This attitude possibly reflects the attitudes illustrated by 'development' writers such as Freire (1972) and Rodney (1972) who were most concerned about development seen in terms of literacy, empowerment and freedom from colonial exploitation. Health was not specifically mentioned by them as an area that needed a development approach but was still referred to in terms of indices such as doctor / population ratios.

Responses to the emergency

The mortality rate, which is considered to be a prime indicator of health status (Toole and Waldman, 1988, 1990) increased in the camps until the problem was at last seen by the world press in 1980. In August 1980, it was reported that the crude mortality rate (CMR) in Somali refugee camps was 30.4 per thousand population per month. This was in contrast to the reported baseline mortality rate of two per 1000 population per month in the refugees'

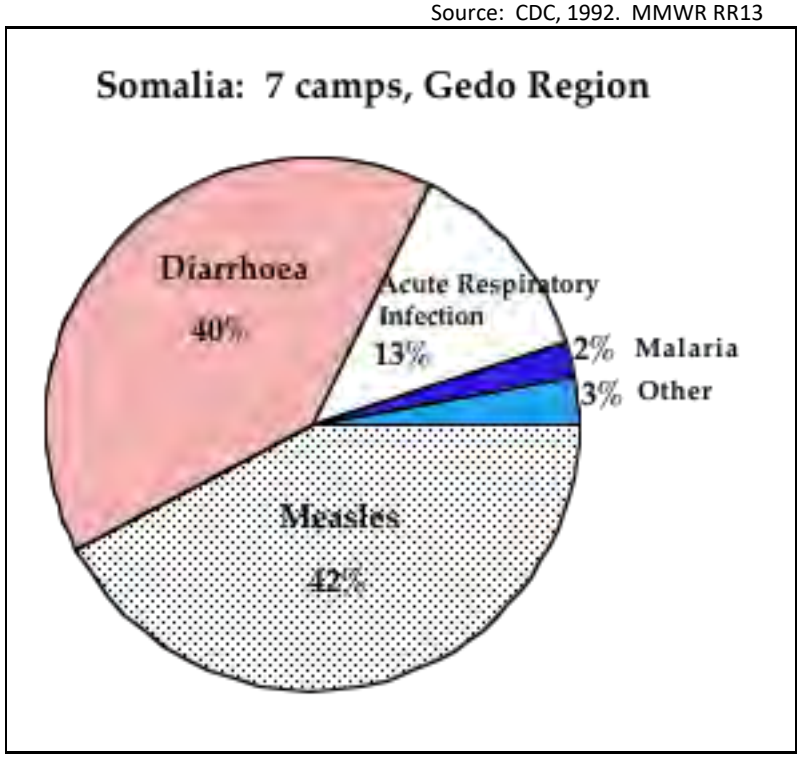
country of origin (Toole and Waldman, 1990; Toole and Malkkii, 1992). During a follow-up conversation with Nur in 1994, he emphasised the importance of reports by individuals such as Sue Peele from OXFAM who were present at the time. Nur's view is supported by Simmonds (1983). Agencies and governments began to respond to the Somali appeal in late 1980. The responses, however, brought problems of their own which in turn had to be addressed. Agencies arrived with their own staff, supplies, egos and philosophies. There were church related organisations such as World Vision, Tear Fund, Project Concern, CARITAS; international organisations like UNICEF and Red Cross, from a variety of countries including Norway, Sweden and Belgium; government related organisations like CARE (USA), Swiss Disaster Relief, and Italian Government Program; non-government organisations like Community Aid Abroad (Australia), Save the Children Fund (UK, USA and Norway), Medicins sans Frontiers (Belgium and France) and German Emergency Doctors. The NRC allocated agencies to camps where those agencies were to provide staff and medical supplies and implement the health services with the help of Somali National health staff.

More than 35 medical teams had arrived to work in the 35 camps, with infinitely variable nationality and ideology, even between the individuals in one team, and all with their own chosen medical supplies. Most foreign members of the medical teams were only available for short periods so there was constant change of people and methods. Somali staff were often ignored. The problems created by the proliferation of agencies and the wide range of approaches demonstrated the need for coordination.

As in most emergency situations the major problems were malnutrition (including anaemia) diarrhoea with dehydration, acute respiratory infections, measles and malaria. After about a year in the camps it was obvious that there had been no improvement in the health status of the refugees. Infant mortality was not decreasing and there was no decrease in overall morbidity from largely preventable diseases. It had not even been possible to conduct immunisation programs and the death rate from measles was enormous. This situation is illustrated in Figure 4.4. The major factors contributing to this situation were the lack of appropriate training and the absence of coordination of both services and medical supplies and clearly indicated the advantages that would be gained by using standard treatment protocols based on a standardised drug list. This situation was explained to the author by the RHU Coordinator, Dr A O Nur, when she arrived to take up her position in 1981.

Figure 4.4. Major causes of death in the refugee population in Somalia, January 1980

Source: CDC, 1992. MMWR RR13



Inappropriate donations of medical supplies

When the international response to the Somali emergency began, donations of medical supplies from individuals and organisations started to arrive. These were no doubt well meaning but mostly they helped very little. Donations varied from suitcases of assorted samples addressed to the suffering in Somalia, to a whole plane load of eye wash, near expiry, accompanied by a film star and announced as a shipment of essential drugs. Examples of donations which were inappropriate are too many to detail. It would have been so much better if donors had a list of essential drugs and adhered to it.

This experience was one of the triggers that led to the development, in 1988, of Guidelines for Donors and Recipients of Pharmaceutical Donations. This outcome will be discussed in more detail in the next chapter. The guidelines recommend that donations should fit into standard drugs lists where they exist in the host country or concur with the WHO essential drugs lists. They also specify that donated drugs be of known good quality and have a shelf life of at least a year after arrival. Larger quantities which are more suited to the workflow are recommended, and best of all, a financial contribution that enables purchase of documented needs locally or from procuring agents at a fraction of the cost of the same products from commercial sources in the donor country. (Christian Medical Commission, 1988, 1990.) These guidelines were a major step towards developing a rational approach to the response to appeals for medical supplies for later emergencies.

Need for coordination

The Refugee Health Unit (RHU) was established to coordinate the provision of health care for the refugees. The Unit was led by a Somali Coordinator, supported by an international medical Adviser. Other Unit staff at the central level were Somali and International staff from a range of health-related disciplines such as epidemiology, statistics, health worker training, Mother and Child Health, Nutrition, and Pharmacy as well from disciplines concerned with management, accounting and logistics. International staff included a training adviser from UNICEF and an epidemiologist from the Centres for Disease Control (CDC). Dr Both Dr Ali Osman Nur and Dr Mohamed Warsame Dualeh, Somali doctors assigned to the refugee camps, and who became Coordinators of the Central Unit and North-west region respectively, referred during conversations in 1994, to the sensitivity of the issues arising from direction of health services for refugees arising from the Ministry of Health as opposed to the NRC.

It was not until many years later, when the author was compiling material for this study, that a number of questions were raised about how the coordinated PHC response became accepted. Study of the implementation of programs in many different situations showed that acceptance of the concept of Primary Health Care and Essential Drugs Programs could be very difficult to achieve. Why and how had the RHU model program for Somalia been accepted in the beginning? In 1993 and 1994 Dr Ali Osman Nur and Dr Mohamed Warsame Dualeh were approached to seek answers. Their information highlighted the importance of key individuals in key positions.

Dr Ali Osman Nur was among a group of Somali doctors who had been impressed by the rationale behind a coordinated approach to management of the nutritional emergency and supported the idea that, to cope with the overall problems, this approach should be extended across the whole health program. The RHU recommended the adoption of the Primary Health Care (PHC) approach, as defined not long before at Alma Ata and described in Chapter 2. Ali Osman Nur explained that he and others were very frustrated by the lack of impact of health provision and the fact that it had not even been possible to implement measles vaccination. According to him, lack of a cold chain, a system which guaranteed appropriate temperature control for vaccines from manufacturer to patient, led them to 'begging for coordination of health services' (personal communication, 1994). It was evident that these problems could only be addressed by a more coordinated approach, including the adoption of standard treatment protocols which were respected by all health workers in all the camps, whether they be foreign or local.

Dr Ali Osman Nur identified Sue Peele, a nutritionist from OXFAM, as one key to the acceptance of development of a coordinated program of health care. She had prepared a paper for OXFAM on the implementation of supplementary feeding procedures for emergency populations in 1977 (Peele, 1977) and had undertaken a survey of nutritional status in the camps in the south of Somalia in 1979. In the light of the results, she recommended that the only way to achieve success in the management of the emergency was a coordinated approach to all health care.

Development of a coordinated response to the emergency

The activities of the Refugee Health Unit showed that in the context of emergency situations, where it is necessary to deal with large populations, adherence to a appropriate system would provide the best management. The system which was developed in the RHU based a standardised approach to management of both curative and preventive services on a

comprehensive situation analysis This system could address the emergency stage efficiently and develop a health program that could be maintained long after the emergency passed. The way in which the elements of the system were developed is described below.

Nur mentioned the importance of chosen consultants, who had been assigned to Somalia by the Centres for Disease Control (CDC), as being very significant in the development of training programs for health workers in the camps. However, there were several other key people whose presence was catalytic and without whose influence the program may not have functioned successfully. Nur and Dualeh both emphasised the importance of Dr Abdilahi Deria, who had been head of Mother and Child Health (MCH) services in the Ministry of Health. Before that Dr Deria had been involved in the establishment of a Primary Health Care program in Yemen. Dr Olavi Elo, WHO country representative, was also helpful.

Dr Deria, a Somali, was familiar with the cultural and political environment. Nur and Dualeh explained how Dr Deria had worked out a strategy to gain acceptance for transfer of the health care of the refugees to a special unit within the Ministry of Health, but independent of the Ministry of Health, because there was still resistance to the coordinated PHC approach within the Ministry. Dr Deria had been involved in the smallpox eradication campaign which led, in 1979, to the diagnosis of the last case of small pox in the world, at Merka, in southern Somalia. Dr Deria, himself, had diagnosed what turned out to be the final case, and he had pronounced smallpox as being eradicated. The smallpox campaign in Somalia had been very significant and had led to international exposure for Somalia's President Mohamed Siyad Barre. Dr Deria was able to influence the President to accept and endorse the management of the health care of the refugees by a Refugee Health Unit within the Ministry of Health. The NRC accepted the decision of the President but maintained a role in the management of refugee services by remaining responsible for security, for food and shelter distribution and for control over who could enter the camps.

The procedure involved the Ministry of Health setting up a Refugee Health Unit within the Ministry which would develop and coordinate a system of management for refugee health care. The United Nations High Commission for Refugees (UNHCR) would be the lead agency in the management of all refugee affairs, including health. This was the first time that UNHCR had ever been involved in health care and Dr Deria was assigned, on the recommendation of Dr Elo, the WHO Representative in Somalia, to the position of Medical Adviser to UNHCR. Dr Deria was available for consultation by the RHU team and with his WHO and Primary Health Care experience was a valuable mentor for the members of the RHU team. The Somali experience led to UNHCR involvement in health care in all subsequent refugee emergencies (personal communication, Dualeh, 1994). This is another outcome which is covered in more detail in the next chapter.

It is now evident that achieving the placement of the right people at the right time had a significant impact on establishment and ultimate success of the RHU venture. The key individuals identified here made contributions in four significant areas at the crucial stage of development: identification and quantification of major problems, endorsement of a National coordinating body, institutionalisation of UNHCR as the lead agency and development of the concept of training health workers as the basis of the program. Thus the scene was set for the development of the PHC approach. As the program proceeded, other key individuals were associated with particular elements. Most important, all recognised the importance of the PHC framework and acted within it.

Planning the health program

To plan the PHC approach, there was a initially a series of preparatory working groups of experts in different areas, for example health worker training, therapeutic feeding, Maternal and Child Health, and so on. Community Health Worker (CHW) training was accepted as being the key to the provision of a successful health service and commitment to this aim was essential. Treatment Guidelines based on the selection of a limited list of appropriate drugs were devised to assist in the training of health workers, to maintain a uniform approach and to develop a program which would be sustainable after the emergency. The political situation in Somalia suggested that the refugees could remain in camps for many years as at that stage their was no sign of the conflicts in the Horn of Africa being resolved. Therefore, planning was aimed at long term management as well as emergency management.

After the preliminary planning by small groups of experts, plenary workshops to share the planning and gain consensus were held. These involved representatives of all the agencies working in the camps as well as national staff and some resource people from agencies like the CDC and UNICEF. This consensus approach was considered, by the participants in its planning, to be an innovative approach to the management of a refugee health crisis. Negotiation was critical to balance the different national and individual approaches to the problem. At that stage the 'PHC formula' had not been attempted for the management of a refugee health crisis. An important decision was the provision for six monthly review. It was decided, at the first workshop, that review workshops would be held every six months to evaluate the program, make any changes that were identified as being necessary, plan for expansion of training and services and to accommodate the input of different ideas. This plan supported the recognition that the refugees might remain in the camps for many years.

The system formulated at the first plenary workshop was based on the PHC concept. The formula included the three elements that Coninx (1988) recognised as central to the development of a comprehensive health program. First, was training of community health workers (CHWs) to manage 80 per cent of the health services in the camps. Their duties included community investigation and information gathering, reporting, health education, management of the most common problems and referral.

Second, one of the early tasks of the RHU was to develop a manual of standard treatment guidelines. This was done in consultation with all the workers in the health program. Originally the document was reproduced in the country with an ink duplicator. OXFAM helped greatly by publishing the Guidelines in the UK as a pocket sized compendium that could be carried by all health workers. This pocket sized manual could only accommodate brief guidelines and over the years the manual was revised several times. It became very comprehensive but no longer pocket sized: by 1986 it had developed into a book weighing more than one kilogram.

The third central element concerned the choice of drugs for use in the program. This choice was based on the most prevalent diseases, taking into account safety, efficacy and cost. The WHO Model List was used as the major reference (WHO, 1979 b). Choosing the drugs was very democratic with participation from all the people working in the camps including Somalis, and every other nationality, and all the 'experts' with their individual ideas. But consensus was reached. For example, Baralgin™ was included because the provision of narcotic analgesics for severe pain was logistically difficult and the Italians and Somalis trusted this drug. The packs of Baralgin™ that were available in the country gave no indication of the

active ingredients and it took some time to determine the content. The major component was dipyrone, a drug banned in most countries because of the danger of causing agranulocytosis and, by injection, the danger of precipitating severe hypotension. However, in this situation, it was considered rational to include Baralgin™. This decision demonstrated the flexibility that contributed to the success of the RHU. Later, the provision of educational material describing the problems associated with dipyrone helped the health workers make their own decisions about whether or not it should be used and they developed their own education campaigns to discourage the use. These activities were concurrent with international campaigns which led to restriction of the drug in Italy and Germany, its major sources.

The importance of Christel Albert, the first Essential Drugs Program coordinator for the RHU, another key person, was immeasurable. She was present during the planning stage of the essential drugs component of the RHU health program and provided references on which to base decisions. Christel Albert was a German pharmacist, who had previously worked in Tanzania. She was supported by a consortium of German church-related organisations, ERDGS, which in particular supported medical supplies and water programs. This organisation had access to a procuring agency in Germany (DIIFAM) which responded to the requisitions for drugs and medical supplies for the Somali RHU Essential Drugs Program. Consignments were organised and dispatched from Germany. She was given the task of calculating appropriate quantities of medical supplies to begin management of the health problems. There were no data at that stage so her calculations had to be based on incidence that was accepted as common in emergency populations. As time went on information was gathered as the basis of more accurate calculations. Albert was also responsible for negotiation of storage facilities, clearance at the port for stock coming in, transport, fuel and drivers, porters for unpacking, etc., each time a consignment arrived. In the early stages there was no structural support for these activities. Insufficient communication meant there was usually insufficient notice of consignments arriving. Donations of inappropriate supplies were still arriving from time to time and needed to be sorted, stored and often destroyed. The bureaucracy needed to free shipments was immense, but the staff assigned had no previous experience in record keeping or report writing so she had to teach all these concepts as well. Another significant aspect of Albert's work was her establishment of the position she held. She developed a framework for management of the Essential Drugs Program which could be continued by subsequent people assigned to the same position. Her training of the Somali counterpart led to development of his skills to such an extent that he could take up the position of Manager of the RHU Essential Drugs Program within the following year. This situation meant that the foreign pharmaceuticals adviser, who continued to be assigned to the RHU Essential Drugs Program, had more time for training and other development activities.

The work of Christel Albert in publicising the problems associated with inappropriate donations contributed greatly to the development of international awareness of these problems and to the development of guidelines for donors and recipients of pharmaceuticals which were mentioned earlier in this chapter (Albert, 1992).

In late 1981, the Emergency Logistics Unit of CARE (USA) took responsibility for fuel allocation and supply, and transport. This action streamlined the operations greatly. The staff of the Central Medical Store learnt quickly and soon the store was running well with National Staff, and the foreign adviser who replaced Christel Albert spent more time in other parts of the Essential Drugs Program such as supervision and education, which by then had taken shape.

Agreement to work with the RHU according to PHC principles

Agencies wishing to work in the health programs in the camps were required to sign a Tripartite Agreement between the agency, the RHU and UNHCR. Through UNHCR, the NRC provided travel permits for agencies who had signed the agreement. Without a travel permit, no-one could pass the numerous military check points on the roads nor enter the camps. To maintain distance from the RHU, the NRC was responsible to the President separately through the National Refugee Council of the army, chaired by the Somali Vice-President. The NRC, representing the military interests, remained in charge of security and camp administration and this division between health and military administration was a potential problem throughout the period covered here and needed sensitive management to avoid conflict.

As described by Simmonds (1983) there had been a number of refugee crises throughout the 1970s, most notably in south-east Asia. Some agencies had been involved in Thailand and felt they had a lot of experience but they were not used to the idea of coordination. According to Dr Ali Osman Nur there were two cases where agencies did not understand the need for signing the Agreement and for working according to the RHU program. The services of these agencies were terminated. Another agency signed the Agreement but ignored the provisions; that agency was denied travel permits and could not work.

When new agency staff arrived in the country, as part of the Agreement, they were to go through the central RHU for orientation. They were not to be picked up from the airport and taken directly to the agency compound in the camp. This provision was not always taken seriously at first. In many cases orientation of personnel in their own country, before leaving for Somalia, did not cover the need for coordination by the national body (RHU). Some health professionals perceived that they came from 'experienced agencies' and some had their own previous experience in other settings and thought that experience was sufficient. According to Marie Theres Lenz, a German paediatric nurse who had been recruited in Germany to work in the emergency in 1980, and who was later transferred to the North-west PHC program, some nurses were told they were going to Somalia to help with the emergency and 'they didn't need to know any more than how to put up a drip' (personal communication). Members of agencies who slipped past the RHU and went straight to the camps were visited promptly in the camps by RHU team members and given orientation.

The RHU was funded by several international agencies who understood the value of such a body. However, some of those agencies would only provide support if the Unit included an expatriate medical adviser. The expatriate doctor in the position when the RHU was in the formative stages was Dr Mike Toole. His skills included epidemiology, management and training and he participated in all aspects of the RHU work as a partner with national staff. He made a great contribution to setting the precedent of skill sharing and teamwork between expatriates and national staff which made the RHU successful. Dr Toole was another key person who not only facilitated the development of the Somali program, but shared his knowledge and experience in other settings to improve standards of emergency health management and public health internationally. Chambers (1983) noted that dissemination and sharing of knowledge was an aspects of development work which had been given insufficient attention. As the International counterpart Coordinator in the RHU team Toole also facilitated the appreciation by some agencies of the RHU policy and laid the groundwork for others who followed him in the position.

Emerging elements of the RHU approach

By the time Toole was coming the end of his two year contract, the main approaches of the RHU had been accepted. Based on coordinated public health procedures for management of health care, the goal was a system that would be sustainable beyond the emergency stage. The philosophy was based on prevention rather than cure. However, the need for appropriate curative services was recognised and these were based on the use of standard treatment of common conditions using a standard drug list. The main elements were a sound primary level based on trained health workers from the community, a strong secondary referral level for problems beyond the management of the community health workers and a coordinated approach to ongoing training and support from the tertiary level which would also be a source of tertiary expertise. An iterative cycle which included regular supervision and support for all health workers provided for ongoing evaluation and adjustment of procedures where necessary. Health information from all levels of the program also influenced action and education. In addition, being built into the structure of the health program, was the capacity for emergency response, should epidemics such as cholera or scurvy eventuate. This PHC framework coordinated and supervised by the RHU, provided the structure for the implementation and development of the Essential Drugs Program.

To support the training programs a library of reference books was developed by the RHU. A valuable source of books for the library was the organisation, Teaching Aids at Low Cost (TALC), set up in London by David Morley, a London based physician who had worked extensively in Africa, to make health-related texts available to workers in developing countries at reasonable cost. Examples of texts made available through TALC were *Where there is no doctor* by David Werner (1977) and *Primary Child Care* by Felicity and Maurice King (1978). They were based on experiences of implementation of PHC programs in South and Central America in the case of Werner, and Africa in the cases of Morley (1973) and the Kings. These texts endorsed the idea of health care based on Community Health Workers, standard treatment guidelines based on a limited list of essential drugs and they proved very popular with Somali staff as well as expatriate staff.

Implementation of the Essential Drugs Program

Scope of the Essential Drugs Program

The scope of the Essential Drugs Program (EDP) was very focused and strictly controlled. From the beginning, drugs were categorised therapeutically and were given code numbers for recognition. It was found that a list of only forty-six drugs could cover the common health problems of the refugees. It did not take long for local and international staff to learn the numbers and the codes were very helpful for storage, ordering, and training purposes as was the limited range of drugs. The RHU standard drugs list shown in Table 4.1 served as a very effective management tool in several ways.

Three measures used to control the supply of drugs were especially important in maintaining the focus of the EDP. First, after the ratification of the RHU Drugs List, no other drugs were to be used in the camps unless by referral to the central RHU for special circumstances. For example, filarial infections were not normally present, but if a case did occur, it would need special drugs for treatment and this could be arranged. The drugs for use in the program were initially selected by a small specialist working group. The draft list prepared by this group was used as a basis for determination of the list at a subsequent meeting of representatives of all

agencies working in the camps, both international and National. Provisions were set in place for review of the list. The six monthly review meetings mentioned previously provided a forum for evaluation of the drugs list and adjustment if required.

Second, accurate records for drugs used were very important to enable procurement in advance to maintain stock levels. Orders for drugs took nine months to arrive. Calculation of quantities to order had to be based on usage in the previous months and what was expected in the next eighteen months, allowing for fluctuations in needs and possible emergencies. There were also attempts to maintain a buffer stock. The documentation of drug usage which was necessary to maintain stock levels in the RHU program proved very valuable later, when the UNHCR guidelines were developed and also when the Emergency Health Kit was being devised.

Third, individual agencies were not allowed to bring in their own medicines. This rule was very clear. If they did bring them, they were collected and pooled with RHU stock. Drugs not on the list were not used. It was not considered appropriate that camps supported by particular agencies might have a greater supply than others. At first, some agencies could not believe this policy was serious and they wanted to bring in medicines for their own use. But medicines were allocated equally to all camps on the basis of disease statistics. Agencies were not discouraged from donating appropriate medicines or money to the central pool. If an agency or doctor disagreed with the protocols for treatment they had the opportunity to prepare a case for presentation at the six-monthly RHU workshop meetings.

Table 4.1. RHU Standard Drugs List

1. ANAESTHETICS

General
* 1.1. Ketamine HCl inj. 10 mg/ml
* 1.2. Ketamine HCl inj. 50 mg/ml

Local:
* 1.3. Lignocaine HCl inj. 1%
* 1.4. Lignocaine HCl inj. 2% with Adrenaline 1:100.000

2. ANALGESICS/ANTIPYRETICS
2.1. Aspirin tablets 300 mg
2.2. Paracetamol Elixir paediatric 120mg/5ml
* 2.3. Baralgine inj.
* 2.4. Morphine inj. 10mg/ml

3. ANTHELMINTICS
3.1. Mebendazole tablets 100 mg

4. ANTIBIOTICS and SULPHONAMIDES

Parenteral:
4.1. Benzylpenicillin inj. 1 Mill. I.U.
4.2. Procaine Penicillin inj. 3 Mill. I.U.
4.3. Triple Penicillin inj. 1.25 Mill. I.U. (Benetham.Penic.500.000/Proc.Penic.250.000/Benzylpenic. 500.000)
4.17. Benzathine Penicillin G inj. 2.4. Mill. I.U.
+ 4.18. Chloramphenicol Sodium succinate inj. 1g
+ 4.4. Ampicillin inj. 500 mg

Oral:
4.5. Penicillin V tablets 125 mg
4.6. Penicillin V tablets 250 mg
4.8. Ampicillin capsules 250 mg
4.9. Ampicillin suspension 125mg/5ml
+ 4.10. Chloramphenicol capsules 250 mg
4.11. Chloramphenicol suspension 125mg/5ml
4.12. Tetracycline capsules 250 mg
4.14. Co-Trimoxazole tablets 480 mg
4.15. Co-Trimoxazole suspension 240mg/5ml
4.16. Co-Trimoxazole paediatric tablets 120 mg

5. ANTICONVULSANTS
* 5.1. Diazepam inj. 5mg/ml
5.2. Phenobarbitone tablets 30 mg
* 5.3. Magnesium sulphate inj.

6. ANTIHISTAMINES
6.1. Promethazine tablets 25 mg
6.2. Promethazine syrup 5mg/5ml
6.3. Promethazine inj.

7. ANTIPROTOZOALS
7.1. Chloroquine tablets 150 mg base
7.2. Chloroquine syrup 50mg base/5ml
7.3. Chloroquine inj. 30 or 40 mg base/ml
7.5. Primaquine tablets 15 mg base
* 7.6. Quinine diHCl inj. 300mg/ml
7.4. Metronidazole tablets 250 mg

8. ANTISCHISTOSOMIASIS DRUGS
8.1. Metrifonate tablets 100 mg

9. ANTITUBERCULOUS DRUGS
9.1. Isoniazid tablets 100 mg
9.2. Isoniazid tablets 300 mg
9.3. Isoniazid 300mg + Thiacetazone 150mg tablets (TB 1)
9.4. Streptomycin inj. 1g
9.5. Streptomycin inj. 5g
+ 9.6. Ethambutol tablets 400mg
9.7 PYRAZINAMIDE tabs 500mg

11. BRONCHODILATORS
* 11.1. Aminophylline inj. 250mg/10ml
* 11.2. Ephedrine HCl tablets, 15 or 30 mg
11.3 THEOPHYLLINE tabs 100 mg

12. CARDIOVASCULAR DRUGS and DIURETICS
* 12.1 Adrenaline inj. 1mg/ml (1:1000)
* 12.2. Atropine sulph. inj. 0.5mg/ml
* 12.3. Frusemide inj. 10mg/ml

13. DISINFECTANTS
13.1 Cetrimide 40% conc.

14. GASTROINTESTINAL DRUGS
14.1 Aluminium hydroxide tablets 500 mg

15. HAEMATINICS
15.1 Ferrous sulph. 300mg + Folate 250 mcg tablets
15.2 Ferrous sulph. syrup 125mg/5ml
15.3 Ferrous sulph. powder in sachets of 100g

16. HORMONES (CORTICOSTEROID)
* 16.1. Hydrocortisone Sod. succ. inj. 100mg/ml

17. OBSTETRIC DRUGS
* 17.1. Ergometrine inj.
17.2. Ergometrine maleate tablets 0.2mg

18. OPHTHALMIC PREPARATIONS
* 18.1. Oxybuprocaine eye-drops 0.4%
* 18.2. Atropine eye-drops 1%
18.3. Tetracycline eye-ointment 3%

19. OTIC DRUGS
19.1. Locorten – Vioform ear drops

20. PLASMA SUBSTITUTE
* 20.1. Dextran 70, 6% solution in Normal Saline

21. REHYDRATION
* 21.1. Lactated Ringer (Hartmann's) solution i.v.
* 21.2. Darrows solution ½ strength with Dextrose 2.5% i.v. or Lactated Ringer ½ strength in Dextrose 5% i.v.
21.3. Oral rehydration salts (ORS)

22. TOPICALS
22.1. Benzyl benzoate application
22.2. Gentian violet powder (for solution)
22.3. Whitfield's (Benzoic acid compound) ointment
22.4. Tetracycline skin ointment 3%
22.5. Vaseline

23. VITAMINS
23.1. Vitamin A caps. 200.000 I.U.
23.2. Vitamin C tablets 50mg
23.3. Vitamin B Complex tablets
23.4. Vitamin B6 tablets

24. WATER FOR INJECTION
24.1. Water for injection 2ml
24.2. Water for injection 5ml
24.3. Water for injection 100ml (with preservative)
24.4. Water for injection 10ml

25. DIAGNOSTIC AGENTS
25.1 Uristix (Combur-Test)

* EMERGENCY MEDICATION

+ FOR PHYSICIAN USE ONLY

Supply to the health program

Five regional stores were supplied from the Mogadishu Central Medical Store. They in turn supplied the camps in their regions. Four aspects of supply required attention for establishment and optimal operation of the EDP.

First, initial needs had be calculated. The first supplies of drugs to the regional stores were based on camp populations for each region, and Christel Albert's calculations of the number of courses of treatment that would be appropriate, on the basis of common incidence of diseases per population. Figures were made available from CDC which indicated approximate numbers of respiratory infections, for example, in a refugee population in similar circumstances. This meant that as soon as the program got underway all camps had rational medical supplies. Time would tell whether the initial quantities were appropriate. Six monthly review provided for possible changes in treatment protocols that could also affect the calculation of quantities.

'Special requests' were the second issue that had to be addressed, as illustrated by the following example. Among the refugees were people who felt they were more important than others, as in any community. One such group had settled together in one camp and demanded more drugs, particularly vitamins, because they were important Sheiks. Their connections with influential people in government made what should have been of petty insignificance a time consuming negotiation. Drugs were supplied strictly in accordance with surveillance data that were regularly collected by camp health staff, so use of the essential drugs list served as a means of controlling such requests. In some cases it was necessary to bring in staff in positions recognised by the people making inappropriate requests, as being authoritative, before the policy of supply according to determined principles could be accepted. Sometimes some small compromises were necessary.

The third aspect of supply was the printing of requisition books with the drugs in order of their therapeutic codes. In the regional stores, coordination of monthly orders from the camps was organised so they didn't all arrive at once, but also so camp orders fitted in with the supply from Mogadishu. The requisition forms included a column for quantity requested and another column for quantity supplied. The quantity requested was not automatically given and excessive requests prompted a follow up visit to the camp to check usage. It was not possible to maintain stock levels if drugs were prescribed outside the guidelines. Replacement stock from Mogadishu could not be varied very much because orders for the total refugee population had to be submitted many months ahead. However, variable patterns could gradually be accommodated as more information was collected. In times of crisis, for example during the scurvy and cholera epidemics, emergency supplies were airlifted, but this was avoided as much as possible. These epidemics are discussed in more detail, in relation to emergency preparedness, in the next chapter.

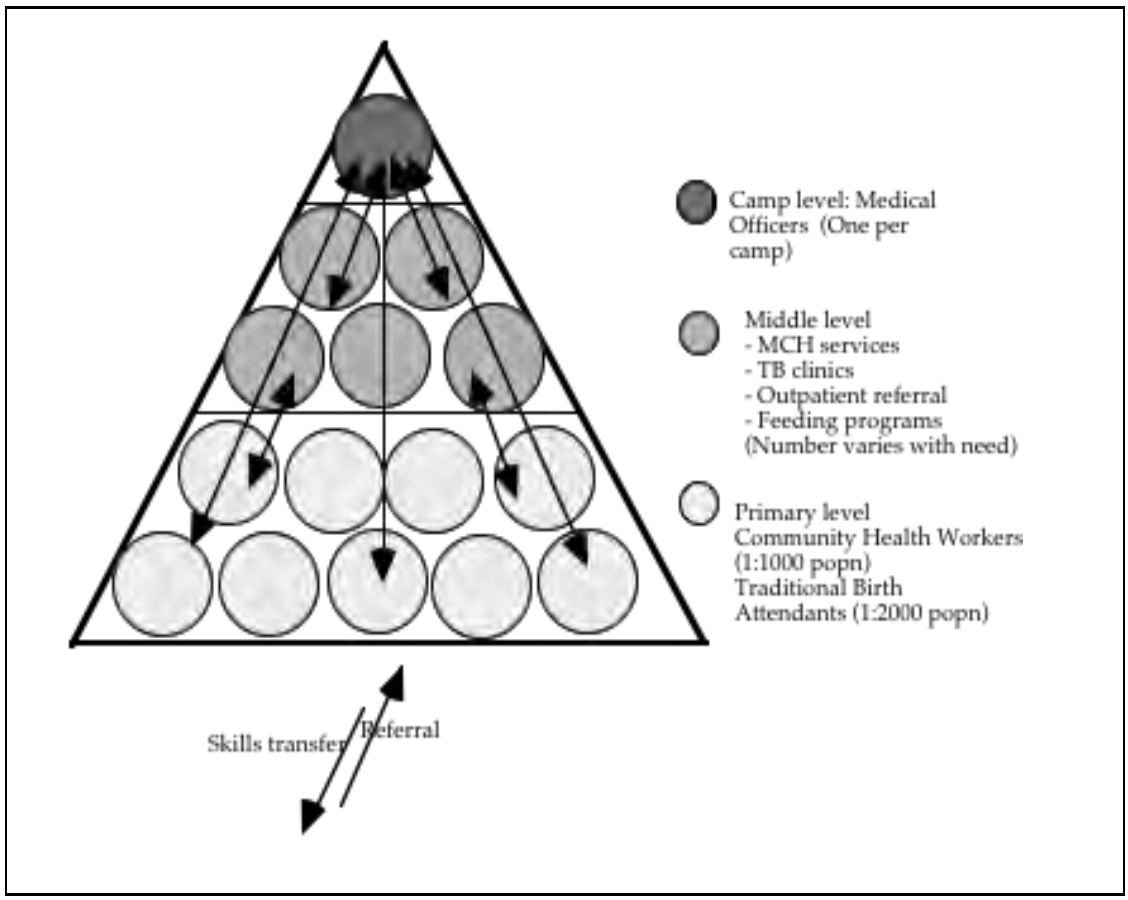
Finally, security of drugs was very important as drugs were a very saleable commodity. However, sometimes burglaries occurred, such as in Dam camp, near, the North-west Regional Capital, when the entire camp stock disappeared immediately after delivery of a new consignment. It never proved possible to implement appropriate investigations, so change of staff and strengthened physical security were the only options. These occasional events were unsettling, but part of the environment to be dealt with.

Training health workers

In implementing the essential drugs program, training the Community Health Workers (CHWs) was a major task for the agency personnel and the national health professionals. The RHU policy was that health care should be based in the small units of the community so health workers could work in these communities in the sections of the camp rather than base their work in clinics in the centre of the camp. Implementation of this policy involved both primary level health work and the development of a strong middle level of health care. Medicines were dispensed by health workers at all levels and supplied in small plastic bags provided by the central medical store. They were accompanied by verbal and written instructions. Camp medical officers saw only occasional patients whose diagnosis or management was beyond the capacity of trained middle level health workers. Their role was primarily associated with training and coordination. Figure 4.5. illustrates the three tiered structure of the refugee health system and activities at each level .

Figure 4.5. Pyramid structure of a Primary Health Care program used in Somali refugee camps

Camp population varied between a few thousand and 70,000 refugees.



Primary level health work

Common diseases such as respiratory infections, diarrhoea, worms, and skin disease were managed by CHWs with appropriate drugs. Most important in CHW training was the development of knowledge to determine when to refer patients to higher levels of health care or to seek a second opinion.

Other important areas of specialist CHW training were concerned with under five year old children, including nutritional surveillance, and antenatal and post-delivery care for women. Traditional Birth Attendants (TBAs) were identified from the refugee community and given special training in delivery techniques, as well as training in the above areas, and the use of drugs where appropriate. For example ergometrine given after delivery of the placenta controlled excessive bleeding. Monthly surveillance included statistics related to nutritional status, maternal mortality and infant mortality. All these data influenced ongoing training and health related activities.

Development of a strong middle level of health care

A middle level of care was developed and strengthened to provide efficient, appropriate care when required. This middle level included supplementary and intensive feeding centres, Maternal and Child Health (MCH) services, TB clinics and outpatient referral centres for individuals who were identified in the community as needing referral to special services. Trained Somali Ministry of Health staff, and sometimes expatriates as well, provided these services working together. The base of trained staff from the refugee community was continually increasing with people trained for special tasks in all health facilities. Certain CHWs were given special training in basic laboratory techniques so they could identify TB bacilli, malaria parasites and some worms and protozoa.

The management of tuberculosis (TB) illustrates the importance of training and the importance of strict protocols for treatment which included adherence to the determined range of drugs. According to CDC and WHO policies, treatment of TB is not undertaken in the early stages of management of a refugee emergency. Successful treatment of this disease depends on careful diagnosis and treatment over a long period. It was not until it became clear that the refugee population was going to stay in Somalia for an extended period that TB management was addressed. In Somalia, treatment involved one year of supervised therapy. The organisation and infrastructure to undertake this sort of regime and try to maintain compliance had not been present in the emergency stages. The decision to exclude TB treatment during the early stages in emergency populations remains firm in the guidelines for management of health in emergency populations (UNHCR, 1989; Toole and Malkkii, 1992).

When TB programs were introduced in the Somali refugee camps, CHWs were involved in both case finding and follow up of cases to encourage compliance. Tuberculosis was diagnosed by sputum analysis by trained CHWs. When patients were diagnosed as TB positive, and diagnosis confirmed by the Camp Medical Officer, an intensive phase of treatment was given with three drugs (streptomycin injection, isoniazid and thiacetazone) daily for three months, or until a total of 50G of streptomycin was given. Then a maintenance phase was continued for another nine months. Unless patients were very sick they were not hospitalised. If patients failed to respond, or reacted adversely to the combination, a different ratio of isoniazid to thiacetazone was tried in consultation with the Camp Medical Officer. If a patient still reacted adversely, ethambutol was substituted for thiacetazone. Major changes in treatment were not initiated by the CHWs although some CHWs were specially trained in TB

management. They were trained to recognise adverse reactions and the need to refer patients to higher levels of health care.

Children were treated with three drugs during the intensive phase, as with adults. However, the ratio of thiacetazone and isoniazid was different because they tolerated a smaller dose of thiacetazone and needed a high dose of isoniazid. The same alternative drugs as for adults were used if resistance was present or adverse reactions occurred.

Records of the daily treatments were kept in the TB Clinic. Patients also carried their own treatment records. During the maintenance phase, patients were given a daily supply of drugs for one month. If patients did not appear to collect the ongoing supply they were promptly followed up. As TB patients usually felt better after the first few weeks, they often did not believe they needed daily treatment for so long. In addition, people (including refugees) move and cannot be found for long periods.

Education about compliance with TB treatment received much attention, with CHWs and other more senior health providers comparing notes on the best ideas. Innovative programs set up to try to encourage compliance included prepared food, given when the patient came for treatment and goats provided for TB patients to milk when they came. Compliance with TB treatment was a continuous challenge for the health workers. Each patient's nutritional state was monitored throughout the treatment and supplementary food given as necessary.

It was considered particularly important that monthly TB surveillance information be sent to the Central RHU. However, collation of statistics relating to all diseases was considered important and monthly surveillance forms were required from all camps. The surveillance forms were compiled as a result of the records kept at all levels of the health service. Compilation of surveillance forms, on the basis of data collected from all levels of the health service in the camps, was one of the responsibilities of the Camp Medical Officer. Monthly information was submitted to the regional RHU coordinator and from there, it was sent to the Central RHU office. If the surveillance forms did not arrive, RHU staff pursued camp staff until the information was supplied. Analysis of the monthly data indicated the success or otherwise of the health management system and identified targets for further intervention. This procedure illustrated the iterative cycle which was built in the system. In addition, the data facilitated the calculation of essential drugs requirements.

Camp level: coordination and supervising by RHU

When the RHU program began, a Somali doctor and an expatriate doctor were assigned as joint coordinators of all the camp health services in each camp with teaching, supervising and coordinating making up the major part of their role. They were, in turn, supported by the regional and central RHU teams. These two doctors also provided for tertiary referral for the few patients beyond the diagnosis or management capacity of the staff at the middle level.

The central RHU team considered a visit to each camp every three months to be extremely important. This schedule was not always easy to achieve because of the pressure of tasks at the central level but it was a priority and provisions were made so at least two key people were available for the visits. Contact with the workers, both National and expatriate, on the job, was extremely valuable. Central RHU team members had good trouble shooting skills as well as advanced technical skills. They were able to advise on medical, nutritional and epidemiological matters as well as policy matters.

Throughout the RHU system, hospitals were not to be set up in the camps. People were to be cared for in their sections as stated before, but this was one aspect some agencies took considerable time to understand. In the early days, one camp in the north was found by RHU staff to have a 30 in-patient hospital set up with beds. There were no patients in the beds as they did not understand them and they lay beside the beds. All the camp's staff were busy around the hospital and nothing was happening in the sections. That situation was addressed and the reasons for the policy of no hospitals were explained. Direct access to the health system was provided through the CHWs based in the community. People were allowed care under observation by professionals for short periods, but most cases could be managed in their own houses with the strong CHW link to the referral levels. Another reason that hospitals were hard to manage was that food rations were allocated to families not to places. If a person was in a 'hospital' other family members would have to travel across the camp with prepared food for each meal for that person.

All health-related activities were coordinated centrally by the RHU which included Somali and expatriate Public Health doctors, training coordinators, statisticians, logistics and fuel coordinators and essential drug program managers. The basic elements of this pattern were repeated at the regional level where there were offices and stores to look after groups of camps in particular regions but, except for the north-west, there was no foreign staff in the regions. There were four regions in the south and one in the north. The strength of the structures at regional levels varied. The Regional team in the North-west was the most comprehensive with strong staff in all major positions including training, logistics, essential drugs and their coordination. The Essential Drugs Program of the North-west Regional RHU program was based in the regional store and warrants a detailed case study.

Case study: Activities of the North-west regional store

It was only, on average, a half-day journey from the central store in Mogadishu to any of the regional stores in the south but a journey to the north took almost two days by road. The North-west regional store served the camps situated within the North-west region as shown in Figure 4.1. Originally there were twelve camps but further influxes of refugees across the Ethiopian border near the town of Tog Wajaale, in 1984 and 1985 necessitated the establishment of three more camps within the region.

The author was assigned to work in the North-west to coordinate supplies for twelve camps in that region and to strengthen the North-west RHU Regional team. The Regional Store was staffed by three or four workers who were responsible for stock management and helping with the assembly of orders. Before the author's assignment, the regional medical store had been in the charge of a Somali nurse who had little orientation towards the RHU plan for coordinated health care and supply of essential drugs. It is doubtful whether she was involved sufficiently in the planning of services for the region. In any case, there was intense resentment when the author was assigned to the position of coordinating the development of the essential drugs program in that region. For three weeks access was denied to the store. When, eventually, consultation and negotiations resulted in more cooperation, the former store keeper agreed to become a partner in the development of the program. However, that store-keeper never came to terms with supply according to needs and records of disease patterns.

Drugs in the store were only for use by the refugee population and the store-keeper responded to pressure from unapproved people such as the head of the local nursing school and representatives of the military to supply them with drugs. Her cooperation with the RHU was never absolute, and she reverted to uncooperative behaviour which involved 'losing' the key. Because of her connection to certain power figures, having her transferred and replaced with someone more suitable involved sensitive diplomacy on the part of the Regional Medical Coordinator of RHU, supported by the National Medical Coordinator. It was two years before a completely suitable manager was found for the North-west Regional Store. This case illustrates the complex nature of implementing a drug supply program and the negotiation skills needed to not only keep key people in place, but also to transfer others who can impede progress.

Use of medicines

The author saw it as part of the program to follow up the deliveries of the supplies to the camps to gather information about the actual use of medicines and for on-the-job interaction with the camp staff. This follow-up was to determine the level of understanding of the health workers, to help with on-the-job education and to determine the need for further education programs. It was also considered useful for the staff of the Regional Medical Store to understand the camp management set-up and to understand appropriate use of medicines as well as efficient distribution. Regional drug program staff accompanied the author to the camps and discussed all aspects of the program with the camp staff. Workshops were held where the use of medicines was the focus. Role plays by Somali staff illustrated their understanding of perceptions of the workers, the patients and the teachers.

Activities around the use of medicines did not become part of the program in the south until some time later. Pressure to keep things in order at the centre and to cope with the logistics of procurement, clearance from the port, storage and distribution kept people very busy. In most regional stores in the south, the regional store managers did not have the experience to consider activities associated with the use of medicines and they were not supported by a comprehensive RHU team as in the north. However, late in 1982, a workshop for regional staff, around the issues described here, was held in Mogadishu. Examples from experiences in the North-west were used in the workshop. It is interesting to consider the evolution of the concepts in the RHU Essential Drugs Program. As in the development of the WHO Drug Action Programme, and Essential Drugs Programs in many countries, the availability and distribution of appropriate medicines were initially the main focus. Supervision of diagnosis and use of medicines took some time to evolve as part of the on-the-job health worker training. Attention to rational use of drugs was first debated at a WHO workshop in Nairobi in 1985 and the actual use of medicines became the subject of analysis and training.

Team approach in the North-west region

The author became involved in all health care planning and other activities of the North-west RHU team. She became the 'secretary' of the RHU team for the monthly Regional meetings which included all the agencies and Somali staff working in the refugee communities. This move was not planned but falls into line with the common practice of pharmacists being the secretaries of the drugs and therapeutics committees of hospitals in Australia. The agendas of the meetings included current topics which ranged from training experiences, trachoma campaigns, problems associated with security and immunisation campaigns in which management and coordination of the cold chain was critical. As there were no refrigerators in the camps, the campaigns were managed with cold boxes from the Hargeysa store.

One problem which occurred from time to time, particularly in the early years, was the attempted recruitment of health workers by the military. There was continuing insecurity associated with insurgence against the government of Somalia as well as perceived and actual threats from Ethiopia. The dropout rate from the Somali military was high. There were a number of occasions when the local military commander ordered recruitment of refugee health workers from the camps at gun point. Under international law, recruitment of refugees is not permitted so representatives of UNHCR were responsible for negotiating with the military commander for the return of the refugees. Until the health workers returned, the work was interrupted. This potential problem was a constant worry for camp staff and strategies to prevent illegal recruitment were discussed at regional meetings.

Management problems were shared at the meetings, logistics were worked out and education programs were discussed. The team approach to the management of the refugee health care was totally accepted.

Continuing education of health workers

Members of the regional teams participated in ongoing education of health staff in the camps in their regions and visited each camp regularly in a supervisory and advisory capacity. Surveillance data from camps were collected by the regional teams and submitted to the central level for collation and analysis. These data identified targets for further education.

Problems unique to each region were managed as far as possible by the regional staff but where a problem potentially significant to all regions arose, a coordinated program of management was organised. The scurvy epidemic which began in the southern camps and the cholera epidemic which began in the north, and which are discussed later, were examples of such problems.
Over just a few years, the Somali RHU had changed a chaotic refugee situation to an established system for management of emergency populations based on Primary Health Care.

Benefits of implementation of a PHC approach

It has been shown that, under the direction of the RHU, a sustainable PHC system with emergency response capacity had been set in place. This PHC system was based on trained health workers working within the refugee community. It was a three tiered system where the CHWs at the primary level dealt with 80 per cent of the problems and were also responsible for preventive activities and surveillance. A strong secondary level provided facilities for specialist management of antenatal care, children under five years, TB patients and other situations beyond the capacity of the first level. The tertiary level provided for specialist referral and training and supervision as well as overall organisation an coordination. The whole program was coordinated and supported by the RHU, based in the national capital, Mogadishu, at the central level.

A structured iterative cycle was developed to promote continuous evaluation, implementation and re-planning. The cycle also provided for identification of targets for education and for the recognition of any need for adjustments to the program.

The system had achieved its goals. It managed the emergency and provided for a health program that was sustainable beyond the emergency. It was being run by national staff following public health procedures, including an essential drugs component. It also established the capacity to respond appropriately to extra emergencies like scurvy or new influxes of refugees.

Chapter 5.

Consolidation and integration of the Essential Drugs Program of the Refugee Health Unit

This Chapter covers some of the special developments that grew out of the implementation of the health program in the refugee camps. As the system settled down and the initial crises were under control, further scope for training and refinement of services became apparent. For example, there were opportunities to extend the training of health workers and there were opportunities for technical innovations such as colour-coded labels that could facilitate Community Health Worker (CHW) understanding. Extended training of health workers contributed to emergency response capacity. The management of scurvy and cholera epidemics will be used as examples.

In addition, the experience contributed to the development of broader initiatives such as the routine involvement in health care of the United Nations High Commission for Refugees (UNHCR) and the development of UNHCR guidelines for emergency management which included an essential drugs program, and which could help stream line responses to emergencies. Further, the Somali RHU Essential Drugs program experience contributed to the development of the Emergency Health Kits which include standard drugs and treatment guidelines and other management principles and to the development of guidelines for management of donations of medical supplies.

The situation where the experience gained within the Somali model could be used as a reference for development of other programs will be examined. It will be shown that it had a significant impact on the development of a national Primary Health Care (PHC) program in Somalia and that this model of transfer of experience could be beneficially employed in other countries. The importance of documentation and dissemination of experiences will be stressed. Knowledge shared internationally, for example at the Georgetown Symposium, contributed to the development of a model for the management of emergency medical supplies and essential drugs programs for emergency populations.

It will be concluded that several major lessons were learnt. Of particular importance were coordination and consensus based on good negotiating skills. The crucial role of key people and opinion leaders will be emphasised.

Significant developments

By 1983, the situation in the camps was stable and the health programs were being run almost entirely by national staff. However, there were still international staff employed in the RHU at the central level. The stable situation provided the time and opportunities for the exploration of initiatives to facilitate the implementation of the program and for the organisation of training programs to expand the local skills base. In these training programs, RHU staff were often integrated with the staff of the newly developing North-west Primary Health Care

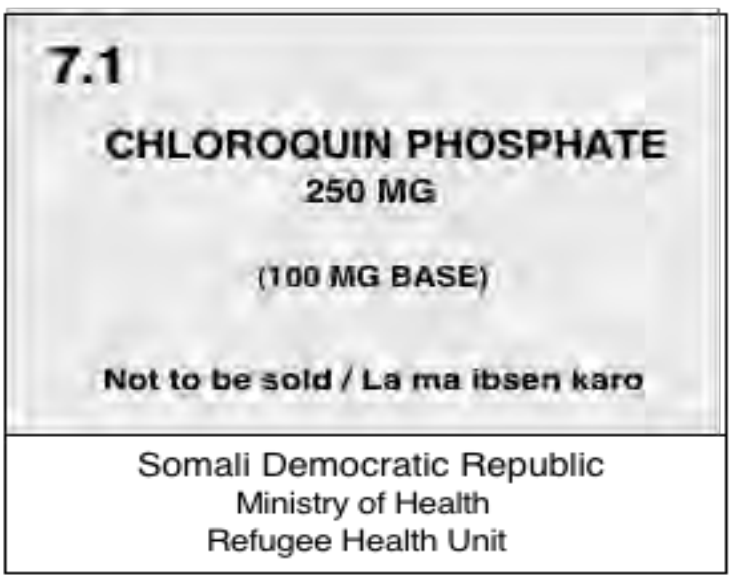
program, the subject of the next Chapter, which was established at the beginning of 1983, using principles learnt in the RHU program. One very basic innovation was the introduction of colour coded labels for essential drugs.

Colour coding for drug labels

In 1983, the Central Medical Store (CMS) staff in Mogadishu initiated the exploration of colour codes to be associated with the drug code numbers, in consultation with the staff of the developing Essential Drugs Program in North-west Somalia, which was using the same numbering system. Initially the drugs supplied largely by Unipac and International Dispensary Association (IDA), for both programs, were labeled in blue on white background. This labeling added to the problems faced by health workers who were not very experienced with reading and writing. On many of the packs the name of the substance was so small it was almost impossible to read. Many tablets were similar: ephedrine and ergometrine, for example, both very small white tablets, were packed in small bottles, labeled in very small print.

Procurement for the RHU program was undertaken in collaboration with DIIFAM, a procuring agency in Tubingen in southern Germany. RHU staff, in consultation with DIIFAM staff recommended, in June 1983, that labels could be improved to make them not only easier to read, but also to help with training concerned with therapeutic categories of drugs and increased safety. It was recommended that colour-coded labels be produced with the generic name, strength and composition of the product written clearly in the biggest letters in comparison with the other information, and code numbering in line with the RHU system of labeling drugs. The recommendation was accepted and the colour coded labels were produced and attached to the containers in the Central Medical Store before distribution to the regions for the refugee program, and also to the North-west PHC program for use in their program. This sharing of ideas and resources was an example of the cooperation between the RHU program and the developing PHC program in the mainstream population which was maintained. Figure 5.1. shows an example of the colour-coded labels.

Figure 5.1. Example of a standard colour-coded label, developed by RHU staff for use in the RHU and PHC Essential Drugs Programs in Somalia



Code 7 (antiprotozoals) were orange coloured, antibiotics (Code 2) were yellow, analgesics (Code 3) - blue, TB drugs (Code 8) - brown, external preparations red, and so on. Labels included, where appropriate, the words 'for external use only' or for restricted substances 'for doctors' use only'. It was hoped that the colour coded labels, clearly coming from the program, would also discourage diversion of the drugs to unauthorised outlets.

It was recognised that medicines should never be dispensed by the appearance of the product and that the label of the container should always be thoroughly checked. It was also recognised that because many workers had little experience in reading and writing English, there was need to accommodate the disadvantage. Efforts to impress the health workers to check labels thoroughly before dispensing were never neglected and the health workers took their responsibilities very seriously. They were not offended and the colour coding for therapeutic categories helped greatly with easy recognition, orderly storage and re-ordering. Reading and writing skills also improved as staff had to complete reports and other records.

This simple innovation was considered very effective and was reported in *Tropical Doctor* by Shire Jama and Heide (1985). Although by 1985 the UNIPAC labels changed, and there was a vast improvement, a disadvantage remained in that all labels were in black print on white. UNIPAC medicines were labeled clearly with the generic name in large print according to the WHO Essential Drugs Program and also showed the Essential Drugs Program logo. Confusion was still caused by the large number of large white tablets that looked similar: aspirin, paracetamol, chloroquin, metronidazole, cotrimoxazole, etc., and the fact that all labels were white with black lettering. The colour coded labels continued to be added by the RHU central medical store, to the containers with the UNIPAC labels, and their use became standard practice.

Expanding skills base and handover to National Staff

In line with the concept of PHC, training remained a priority within the program. However, it was recognised that training is never 'finished' and, with the help of central RHU, the skills base of the camp staff was developing all the time. In addition, special training sessions were conducted from time to time by resource people from outside. For example epidemiologists from CDC conducted training sessions associated with survey techniques and analysis of information.

The extent of training was evident when, two years after the launching of the RHU programs, all the foreign staff had left the camps and they were being run totally by trained Somali staff supported by funds from foreign agencies. There were still a few foreign resource people in the central RHU. It had become recognised that a major objective of emergency management is the development of a system that can be maintained by the members of the affected community. For most international health workers who had worked in the Somali refugee program the experience of working within a PHC concept, with the main aim of handing over to local staff was something new. The approach was seen to be effective. Evidence of the effectiveness of the approach was the decrease in crude mortality. The crude mortality rate (CMR) had decreased constantly from the beginning of 1981. In the RHU Newsletter Issue 12, it was reported that the monthly CMR had decreased to five per 10,000 population in all the North-west camps for January, February and March of 1982. The CMR in the southern camps varied between four and nine per 10,000 population over the same months and between camps. This rate was less than the CMR for the Somali mainstream population which was

estimated as between 17 and 20. Reference to the monthly surveillance reports from all the camps which were collated by the RHU, showed that the low CMR in the camps was maintained.

Regular reports were sent to the funding agencies by the central office of the RHU. These provided a commentary on the developments in the program and possibly contributed to a better international awareness of emergency management. It was considered that international health professionals who had been personally involved in Somalia, might model any future activities in emergency populations along these lines.

Emergency response capacity

Emergency response capacity is now affirmed as one of the objectives of appropriate emergency management. It is recognised that priority interventions must address food, water, shelter and sanitation. Priority public health measures must address the development of health information systems; diarrhoeal disease control; measles immunisation; appropriate curative care including maternal and child health care, standard case management, essential drugs and health worker training. Attention must be given to emergency and epidemic preparedness and the development of feeding programs where necessary (Toole and Waldman, 1990).

These objectives associated with emergency and epidemic preparedness evolved during the Somali refugee health experience where occasional outbreaks of disease and other emergencies needed to be addressed at the same time as routine management continued. The sudden appearance of scurvy and cholera emphasised the need for preparation for such emergencies. The issue of training of health workers for the management of emergencies had been well addressed but the buffer stocks of essential drugs needed for such emergencies could not have been foreseen. In the management of scurvy and cholera essential drugs play a major role. The experience gained contributed to the management objectives which were formalised at the Georgetown symposium which is discussed towards the end of this chapter.

The appearance of scurvy indicated that little attention had been given to the possible development of this disease when the refugee rations were being calculated. When the standard drugs list was developed, ascorbic acid deficiency was considered a possibility and Vitamin C 50 mg was one of the drugs included on the standard list, but no attention was given to the possibility of scurvy which would need more aggressive prophylaxis and treatment.

Figure 5.2 Example of data analysis following a scurvy survey in Ganad B camp

The standard random cluster method was performed by trained CHWs and other health workers.

Source: Ganad B Scurvy Survey, September 1985; attachment to Minutes of the meeting held on the general food ration situation, North-west region, Sept. 9th, 1985.

Sample:

A total of 254 aqals were included in the sample with a total of 1038 persons. The average number of persons per aqal was 4. The age distribution of the sample was:

6 mo - 5 yrs	20%
6 yrs - 14 yrs	30%
15yrs - 45 yrs	38%
over 45 yrs	11%

Approximately 30% of the children sampled were attending supplementary or intensive feeding centers, and 8% of the adults. Over 80% of the sample said they had been in Gannet for the past 7 - 9 months.

Findings:

Overall 25 % of those examined had positive signs of scurvy. Of the total 258 cases; 69 had both bleeding gums and painful joint symptoms, 161 had only bleeding gums, and 28 had painful joint symptoms but no signs of bleeding gums.

- Age and sex distribution:

The highest percentage of cases were found in pregnant and lactating women 15 - 45 years, and in women and men over 45 years. Males 6 months to 5 years, and 15 yrs-45 yrs had the lowest percentage of cases. Distribution by age and sex group was:

	Total	Scurvy cases	% Scurvy
Females			
6 mo - 5 yrs	108	21	19%
6 yrs - 14 yrs	148	30	20%
15 yrs - 45 yrs			
not preg/lact	195	53	27%
preg/lact	64	24	38%
over 45 yrs	61	27	44%
Total	576	155	27%
Males			
6 mo - 5 yrs	103	14	14%
6 yrs - 14 yrs	165	51	31%
15 yrs - 45 yrs	140	19	14%
over 45 yrs	54	19	35%
Total	462	103	22%

- Attendence in feeding centers:

No difference was noted in the percent of scurvy cases of those attending feeding centers versus those not attending. This was found for both children and adults.

Scurvy

During 1983, scurvy was diagnosed when the refugee camps in one region lost access to the local food market where they exchanged their rations for other food commodities including tomatoes, onions and lemons. The loss of access was due to control of population movements in response to increasing challenge to the Siyaad Barre regime. Refugee food rations can be fortified with B group vitamins and vitamins A and D but Vitamin C is unstable and cannot effectively be included in the cereal and oil which make up the bulk of rations. Surveillance of the other camps showed scurvy to be endemic, though not so acute or widespread as in the first camp where it was discovered. Unlike some countries, it is not possible for people to grow small gardens in Somalia. Investigations by RHU yielded information that camel milk, which was not available in the camps, was the traditional dietary source of Vitamin C for Somali people. Camel milk is the only animal milk which contains significant quantities of this vitamin (Vagil, 1982). Mozambican refugees in camps in Zimbabwe were able to grow some vegetables in and around the camps. In Somalia, there was no alternative to the distribution of Vitamin C tablets. No procuring agent in Europe had sufficient stock for the immediate emergency treatment of all the Somali refugees. A company in Denmark made eight million 50 mg tablets specially, to respond to the emergency.

Health workers, trained in surveillance techniques, were able to document the extent of the problem and devise strategies for its effective management. Figure 5.2 is an example of research by trained health workers to document scurvy prevalence and the results show that attendance at feeding centres, where supplementary rations were provided, had no positive impact on the condition.

Cholera

The management of the cholera epidemic associated with the formation of a new refugee camp that was not officially recognised, is especially worthy of note. In 1984 Ethiopian President Menghistu's resettlement policies in the Ogaden region of Ethiopia stimulated a further flow of refugees into northern Somalia. They congregated and formed an unofficial settlement of about 40,000 people at Ganad on the outskirts of the northern capital, Hargeysa, early in 1985. There was no budget for the health care of these refugees and the Somali Government had not recognised the settlement. With no food, sanitation or shelter, the people were very vulnerable. Ultimately, the RHU felt that it was absolutely necessary to share what resources were available and to begin services in Ganad. At the same time, in March 1985, the rains started and people began to collapse with what was diagnosed as cholera. It was known that there had been an epidemic in Ethiopia which the Ethiopian Government would not name, but which fitted the description of cholera.

It became necessary to acquire special medical supplies to address the cholera epidemic and extra help from international agencies to cope with the continuing new influx of refugees. In line with the essential drugs concept, a list which was very specific to cholera management was circulated internationally. As well as the essential drugs, the list included sanitation equipment and ancillary medical supplies. This list was respected and the response was prompt. Consignments of inappropriate supplies were very small. The author was assigned to the position of cholera supplies coordinator. This assignment involved setting up a special cholera store using the RHU system and training staff to maintain management in the longer term. The experience gained in the drug system of the RHU and the North-west Primary Health Care program made it possible to implement, without delay, an efficient system for distribution of supplies to manage the epidemic both in the refugee camps and in the general

population. It was felt that this contributed greatly to the quick control of that epidemic. It was possible to deal promptly with subsequent sporadic outbreaks. The three-tiered PHC system provided the framework for rapid response and control. Figure 5.3. shows that in the camps where the PHC system was operating the deaths from cholera were very few, where-as within the Ganad camp where the system was not developed and there were no CHWs, almost one quarter of those infected, died.

Organisations arriving to help with the cholera emergency were surprised to be asked to fit into an operating system. Some also wanted to provide their own supplies for their own workers and the communities in which they were asked to work. One international organisation was very offended initially, when asked to pool the supplies they had brought, that were within the standard list of requirements, and to refrain from using other medicines they had brought, but the issue was again resolved by sensitive diplomacy. The management of the cholera epidemic and the associated procurement and use of medical supplies was documented by the Cholera Control Committee of which the author was a member (Cholera Control Committee, 1985). The RHU central pharmacist, Lutz Heide, subsequently prepared a report on the medical supplies management for the epidemic which covered the appeal for supplies, the international response and the consignments in more detail. Heide analysed the experience in order to document problems and provide recommendations to help others who might need rapid mobilisation of international help for cholera control. Heide's documentation and sharing of experience in relation to cholera control supplies (1986) is yet another example of an effort to pool experience for the benefit of others involved in provision of health services.

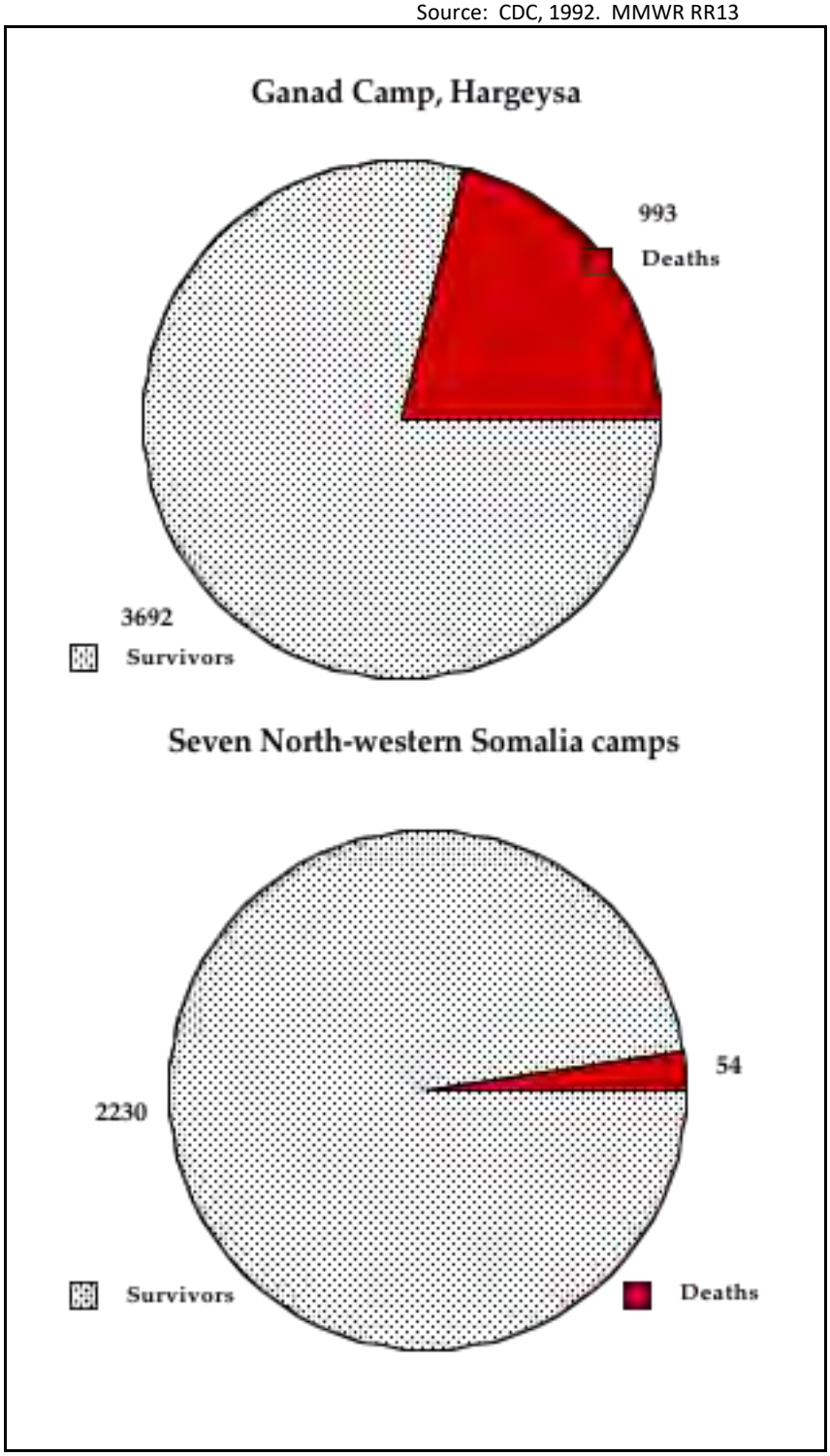
Other epidemics among Somali refugees included louse born rickettsial fevers and hepatitis, then known as Hepatitis non-A non-B, and now renamed Hepatitis E, (Toole and Waldman, 1990, Toole, 1990 b) which were associated with particular new influxes of refugees in 1985 and 1986. Neither of these epidemics required modification to the drug supply.

The refugee camps as training institutions

The RHU program proved to be an exceptional training ground, both for RHU staff and for staff from the PHC programs that were being established in the mainstream communities. Improvements were being made to all aspects of the refugee health program. RHU staff contributed to ongoing evaluation and showed great interest and resourcefulness in the refinement of programs. Talents became apparent in different areas and staff were reassigned to positions that could benefit from their talents. A nurse from a camp team was recognised for her organisational ability and interest in drug education. She was the ultimate coordinator of the North-west regional RHU Essential Drugs Program. Another staff member developed a card record which facilitated the record-keeping concerned with the medications for TB patients. Other staff were identified for leadership and training positions and some were recruited for National PHC programs. This willingness to work with all staff as team members, and to recognise aptitudes in different areas, rather than simply filling placements, was a particular advantage of the RHU leadership. The Somali doctors assigned to the camps came straight from university. During a conversation in Geneva in 1994, Dr Mohamed Warsame said this was a distinct advantage: they had not been polluted and were fertile ground for training in PHC concepts for application in the refugee setting. This also meant that there was a base of trained RHU doctors who would be ideal leaders for a wide range of health programs. One such program is discussed in the next chapter.

Figure 5.3. Cholera cases and deaths in Ganad and seven other refugee camps in North-west Somalia, 1985

Source: CDC, 1992. MMWR RR13



The Primary Health Care (PHC) program which began in the North-west region in 1983 used the camps, where practical application of principles being taught was in place, in the training program for health workers. In the camps, PHC trainees from primary and middle levels of the mainstream programs had opportunities for on-the-job training in an established PHC program and program leaders who had no previous experience in such a program could see an example of the system being applied. The PHC program being implemented in the remote Sanaag region (adjacent to the North-west) was also able to send district level health workers for training in the camps. The North-west PHC Program is the subject of the next chapter of this study.

Outcomes of the Somali RHU experience and their dissemination

It has been shown that many lessons were learnt along the way which were used to improve the provision of health services to the refugee community in Somalia between 1980 and 1988. Essential drugs, used wisely, were an important tool for the provision of appropriate health care. Coordination of all services and the involvement of local health professionals was the key to success.

Coninx listed seven advantages of an Essential Drugs Program in refugee settings:

1. it meets the need
2. it facilitates logistics
3. it is the best use of the available money
4. a limited list can be used in conjunction with standard treatment protocols
5. it is a useful training tool for health workers
6. it can be linked with the Emergency Health Kit
7. it is a powerful tool to assist with the banning of inappropriate or harmful drugs.

Coninx (1988)

All these points were illustrated by the Somali refugee health experience. As well as explaining the context of the Essential Drugs program, lessons learned beyond those mentioned by Coninx are identified. The importance of documentation of experiences and the sharing and dissemination of the knowledge gained must be emphasised. A report of the activities of the Essential Drugs Program during the first year of its operation was presented in the RHU 1981 Annual Report. Details of logistics and management operations were presented as well as the details of the process of development of the Standard Drug List and Treatment Guidelines and the response of health providers to those tools. It was reported that the process had ensured that sufficient appropriate drugs were available and that their consumption rate compared favourably with documented emergency situations in other parts of the world. Meticulous documentation of drug requirements and use over a period of more than a year had provided enough information on which to base calculations of requirements for the future. Allocations of drugs for the camps would be provided on the basis of average consumption rates /10,000 population and would be calculated by the staff of the central medical store. A structure had been set in place which would provide a firm foundation for the development of the Essential Drug Program. The structure also provided for continuous evaulation of all the elements of the program. For example, the tendency to overprescribe antibiotics was identified early and the need for strengthened drug education in CHW training was emphasised as well as the need

for drug education in the refugee community, both of which were planned as part of the continuing program.

In addition the experience contributed to the development of broader initiatives such as the routine involvement in health care of the United Nations High Commission for Refugees (UNHCR). The involvement of international agencies such as the UNHCR in discussions of the experiences gained has led to wider application of the principles learned. The sharing of knowledge internationally, for example at the Georgetown Symposium, contributed to the development of a model for the management of emergency medical supplies and essential drugs programs for emergency populations.

The importance of exchanging experience: the Georgetown Symposium

During the 1980s there had been a number of refugee crises calling on the international community for help. These crises included emergencies in Thailand, Afghanistan, Pakistan, southern Africa, the Middle East, Sudan and the Horn of Africa. In 1988, the Georgetown University in Washington DC celebrated its 200th anniversary. Funds set aside to celebrate the anniversary were put towards bringing together, at a conference, people who had worked during the 1970s and 1980s in the management of emergency situations. The aim was to draw on experience to develop policy and guidelines for coping with such situations in the future, as efficiently as possible.

During the 1970s and 80s the problems of conflict, accompanied by drought, leading to development of emergency populations, were rarely resolved quickly so that large settlements of people displaced both within and outside their own countries remained for many years. Examples were the refugees and displaced people from Mozambique who had already remained in Malawi, Zimababwe and Tanzania, and in other areas of Mozambique for ten years. Displaced people and refugees in camps in south-east Asia were expected to remain until the conflicts causing their displacement were resolved and there were similar situations in Sudan and the Middle East.

In the preamble to the Georgetown Symposium it was explained that this sort of pattern was likely to continue. Therefore it would be necessary to recognise and cope with emergencies as necessary, but in the process to set up structures that would remain appropriate in ongoing situations or equally appropriate when the population was later resettled. The Somali RHU system was recognised as a model for this extended operation and health professionals involved in that system were asked to contribute to the Symposium. The recognition of useful experience and the provision of a forum for sharing the experience so it can be used in other settings is a vital tool for improving systems.

Workshops at the conference included one on the development of an essential drugs program for emergency populations, conducted by the author. The role of a standard list associated with treatment guidelines was promoted. It was explained that the use of a standard list addressed the majority of problems and was the best use of money. It excludes inappropriate drugs available by donations and makes sure the best drugs are available for the real needs. The concept was still new to some participants. The outcome of the conference was published

in the Journal of the American Medical Association (JAMA) as a Special Communication in 1989. Conclusions were drawn in three main areas.

First, cooperation and consensus were considered to be imperative. Early successful management of emergency situations depends on cooperation and consensus with all local and international players participating. The importance of recognition of local expertise cannot be overemphasised, including recognition of the importance of the local political situation and local power brokers.

Second, priority interventions to prevent excess mortality were identified as food (including energy, protein and micronutrients), water, shelter and sanitation. These are mentioned earlier in this chapter during the discussion on the elements of emergency management.

Third, as mentioned before, also, nine priority Public Health interventions were identified. These were health information systems; diarrhoeal disease control; measles immunisation; appropriate curative care including mother and child heath care, standard case management and essential drugs; health worker training; epidemic preparedness; and, where appropriate, feeding programs.

UNHCR health responsibilities

The Somali refugee emergency which began in 1979 provided the first opportunity for UNHCR to be involved in health care of refugees (Dualeh, 1994, personal communication). Following the second World War, when UNHCR was established, its activities were mainly concerned with relief operations such as the provision of shelter and security. During the Somali experience UNHCR developed a vital role in the provision of health services for refugees. The development of this new role is explained at the beginning of this chapter during discussion of the protocols for work in the refugee community. Agencies accepting work in the refugee community were required to sign a tripartite agreement between the agency, the Somali Ministry of Health Refugee Health Unit and the UNHCR. Under the agreement they accepted the coordinating role of the RHU and the leadership of UNHCR.

Since the Somali experience, the UNHCR's mandate to coordinate health care in refugee populations has been developed and formalised. A Technical Support Service (TSS) of three medical specialists was established as a resource and advisory centre for health workers in refugee communities. In collaboration with WHO, UNICEF and experienced agencies and individuals, the TSS produced a manual for management of refugee emergencies and ongoing health care which includes a standard drug list and treatment protocols. TSS staff, which include Dr Mohamed Warsame Dualeh, are available for advice and help internationally. Because the three TSS staff cannot personally cover the increasing international emergencies, they have trained a contingent of consultants with relevant experience in the necessary fields, to travel, advise and attempt to coordinate health programs in refugee communities (UNHCR, 1989).

The development of UNHCR's technical capacity in the health field is another example of the dissemination of experience from the Somali refugee experience. The employment of Dr Mohamed Warsame Dualeh emphasises the perceived value of the Somali refugee health management experience.

The New Emergency Health Kit

The documentation of disease patterns and the drugs and quantities used for their management in the Somali RHU experience provided valuable assistance for the draft of an Emergency Health Kit in 1987. This draft kit was extensively field tested by Red Cross workers, UNHCR workers and Medicins Sans Frontieres (MSF) workers in refugee communities in southern Africa and the Middle East in the mid 1980s and as a result, a revised New Emergency Health Kit (EHK) was developed (APED, 1989 b). The EHK became a rapidly available source of appropriate medical supplies for emergencies.

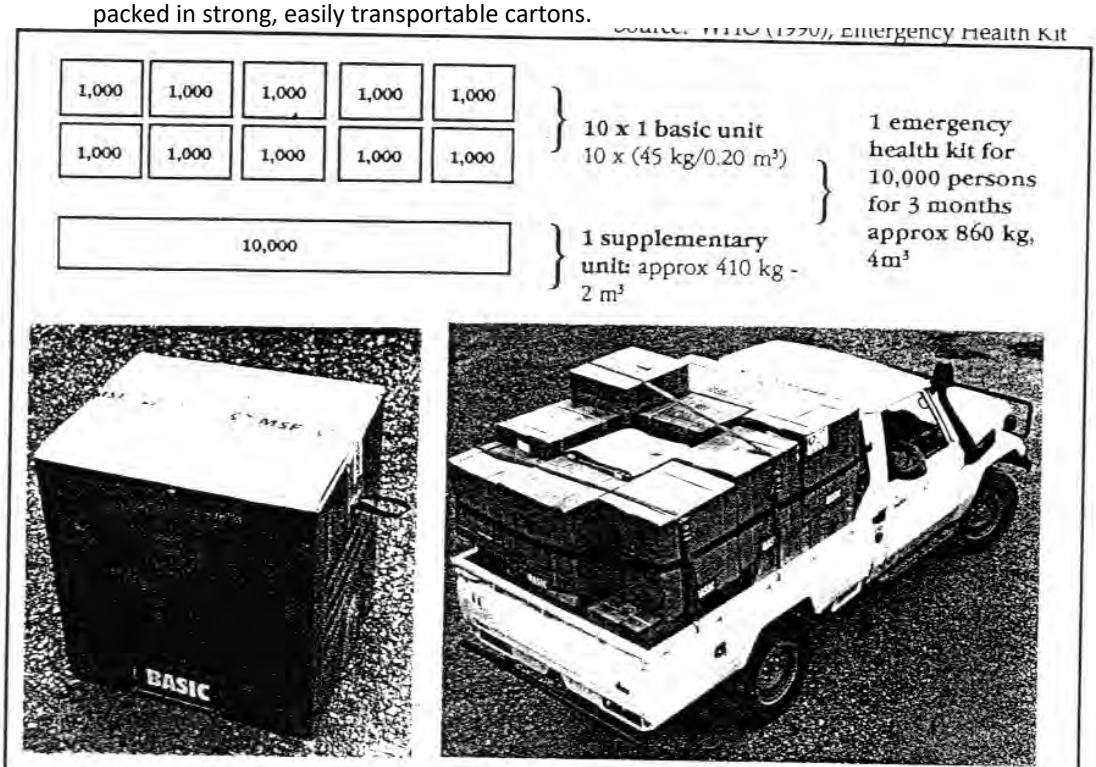
The Kit includes written management principles based on an Essential Drugs List for emergency populations and treatment guidelines. Medical supplies for a population of 10,000 people for a period of three months are provided. The Kit is made up of ten basic kits of medical supplies and equipment and one supplementary kit of more specialised medical supplies and equipment, each for 1000 people for a period of three months. Use of the supplementary kit depends on the use of the basic kits within a PHC management program, based on the work of community health workers referring to secondary and tertiary levels of care. Figure 5.4. illustrates the principle of the EHKs.

This EHK which was developed and field-tested in the light of surveillance of common diseases and problems found in emergency populations has continued to prove relevant to the major problems in emergency populations. (Coninx, 1988; Toole and Waldman et al, 1990, 1993). In the initial management phases of an emergency, the kits can be extremely useful. They are not meant to be used as a continuing source of supply. However, in the early stages, before information has been gathered, the contents of the kits can be used and drug use can be documented to form a basis for ongoing procurement. During one week using EHKs in population samples, enough information can be gathered, which when extrapolated, can indicate trends, identify problems and give some quantitative data. It is usually impossible for health information concerning the whole population to become available soon enough to influence the initial procurement of materials. Concentrating on pilot sections, the following information can be gathered: number of patients, breakdown of age and sex, nutritional status of patients, disease statistics, treatment given including drug, dosage and duration, from whatever source, Kit or other.

Figure 5.4. The Emergency Health Kit and example of Standard Treatment Guidelines

The kit contains drugs and medical supplies for 10,000 people for three months packed in strong, easily transportable cartons.

Source: WHO (1990), Emergency Health Kit



Basic unit: Treatment Guidelines

DIAGNOSIS SYMPTOM / WEIGHT	4 kg	8 kg	15 kg	35 kg ADULT
AGE	2 months	1 year	5 years	15 years
ANEMIA				
Severe anemia (oedemas, dizziness, shortness of breath	Refer			
Moderate anemia (pallor and tiredness)	Refer	*Ferrous sulfate + Folic Acid* 1 tab. daily for at least 2 months	*Ferrous sulfate + Folic Acid* 2 tab. daily for at least 2 months	*Ferrous sulfate + Folic Acid* 3 tab. daily for at least 2 months	*Ferrous sulfate + Folic Acid* 3 tab. daily for at least 2 months
PAIN				
Pain headache, joint pain toothache		*Paracetamol* tab 100 mg ½ tab. x 3	*Paracetamol* tab 100 mg ½ tab. x 3	*ASA* [1] tab 300 mg 1 tab. x 3 for 3 days	*ASA* [1] tab 300 mg 2 tab. x 3 for 3 days
Stomach pain			Refer	Aluminium hydroxide ½ tab. x 3 for 3 days	Aluminium hydroxide 1 tab. x 3 for 3 days

Appeals for help are often issued in the early stages of emergencies. People who wish to respond can be informed that donations of funds to procure EHKs are greatly appreciated. One total kit costs around $US 8,000. This is a much more appropriate use of funds than the collection of miscellaneous donations which are almost invariably very bulky and costly to transport, and in addition, of very limited use.

Donation guidelines

Emergency situations requiring international help continue to occur. Problems caused by inappropriate donations are frequent. The Somali experience with inappropriate donations, which was referred to earlier in this chapter, contributed significantly to the development of international Guidelines for donors and recipients of pharmaceutical donations. Christel Albert, the first essential drugs program coordinator of RHU whose work was described earlier, later became the pharmaceuticals advisor for the Christian Medical Commission (CMC) of the World Council of Churches. Church organisations involved in health care in developing countries had, in the past, acquired most of their medical supplies by donations. Some church organisations still procure medical supplies in this way. Christel Albert's work in the CMC involved advising these organisations about development of Essential Drugs Programs. She is now employed by a major German Church organisation which has the responsibility of providing medical supplies for health services in Tanzania. Her work involves procurement and supply of essential drugs and equipment. Albert's activities illustrate a key person's ability to transfer her important experience to a setting where it could have a long term impact. Her work in Somalia illustrated the development of a position that could continue when her contract had finished.

The 'Donation Guidelines' that were prepared within CMC, initially in 1988, in consultation with WHO and other major organisations like the International Committee of the Red Cross (ICRC), have proved extremely helpful for all people consulted about, or involved in, soliciting and donating pharmaceutical supplies. The guidelines were revised in 1990 and work began on the development of guidelines for equipment donations which were subsequently published by CMC in 1994.

According to the *Guidelines for donors and recipients of pharmaceutical donations*, (CMC, 1988 and 1990) existing national and WHO Essential Drugs Lists should be respected by donors, and donations only of known good quality, with a shelf-life one year beyond the estimated date of arrival, should be offered. Generic names should be clearly included and packaging units of larger quantities are much preferred. These precautions take into account local distribution systems, climate, work-patterns and qualifications of health workers. For some donors a financial contribution may be more appropriate, as this can allow purchase of listed drugs and transport from procuring agencies closer to the scene, at a fraction of the cost of the same products supplied from the donor countries.

National governments and NGOs have been encouraged by WHO (DAP) and individual activists, to disseminate the CMC guidelines. Governments have been encouraged to include policy on collection of pharmaceutical donations in their own National Drugs Policy. The Queensland Department of Health prepared such a policy in 1994. The author contributed to the realisation of this outcome by raising awareness of the need for an appropriate response to appeals through articles in journals and presentations at conferences, by disseminating the

CMC guidelines and by being available as a consultant for interested committees. Continuing experience with troublesome inappropriate donations in other refugee settings in Eastern Europe as well as in developing countries has led to more aggressive publication of the need for appropriate response to appeals (Forte, 1994). In 1994, DAP began the preparation of more comprehensive guidelines for donors which includes documentation of experiences in many countries (Hogerzeil, 1995.). Review was necessary to address the new dimensions of need, particularly in the former Yugoslavia and Eastern Europe. The author was a member of the review committee for this new edition of WHO guidelines for donors of medical supplies. In late 1995, the author and three other pharmacists prepared an Australian policy on collection and donation of pharmaceuticals based on the specifications of the international guidelines and in consultation with DAP staff. The policy was endorsed by the Australian Pharmaceuticals Advisory Committee (APAC) and will receive the imprimateur of the Australian Government.

Effects on National programs

When setting up an essential drugs program in an emergency population it is important to integrate it into the essential drugs program of the host country, if one exists. The provision of a different set of drugs from those in an established program is inappropriate. Zimbabwe is an example of a host country with a strong Essential Drugs Program which includes a national standard list and treatment protocols. The management of health care for Mozambican refugees in Zimbabwe was integrated with the Zimbabwean health care system. This integration minimised disputes between health professionals from different backgrounds and facilitated the prompt implementation of health services. Among the points mentioned by Coninx, coordination of expatriate input with the national system and use of a standard drug list and treatment protocols are imperative.

Where the country has a program which is not implemented, the momentum for strengthening national policy can be gained from the refugee population. When the country has no Essential Drugs Program, as was the case in Somalia, the implementation of an effective Essential Drugs Program in the refugee communities can be a stimulus that extends the concept of essential drugs to the national program. The development of an Essential Drugs Program as part of a national Primary Health care program is described in the next chapter.

Implementation of an Essential Drugs Program in a refugee setting is an extremely complex task and a number of important differences and similarities with ongoing national programs warrant comment. It is necessary to address power relationships within the local community, the host community and in the aid community. The task can be facilitated greatly with the help of key people and in the Somali refugee health case, it would seem that their role was crucial to success. The team approach, with coordinating team members possessing technical skills, negotiating skills, flexibility to recognise staff aptitudes and the power to place them appropriately, together with the ability to teach and encourage, added to the success of the program.

Although cost-effectiveness is a requirement in the management of refugee health care, cost recovery for medical supplies and services is not usually an issue. Payment by refugees for services and medical supplies is not expected. Continuing financial support for the whole refugee situation is the issue before the international community. This is an increasing

problem as the number of refugee situations and donor fatigue increase together. This climate emphasises the need for the most efficient and cost-effective management.

The process of developing efficient and cost-effective management of the health program for displaced people in Eritrea during the war for independence was a stark contrast. The Eritreans, themselves, were responsible for providing medical supplies with very limited support from the international community. Procurement and supply had some significantly different dimensions (Snell, 1990).

Further lessons of the Somali Refugee Health Unit experience

Coninx recognised three specific key elements in the successful implementation of Essential Drug Programs in refugee health settings: training of health personnel in the community, use of a standard drug list and treatment according to standard protocols. He emphasised the importance of the development of a consistent training program for local staff as a base for a uniform approach to disease treatment. He endorsed the use of standard treatment protocols which are aimed at the prevailing problems using drugs from a standard list. This standardised approach would facilitate procurement, storage and distribution as well as providing the best management of the problems with scarce resources. Coninx also recognised the value and role of the Emergency Health Kit (Coninx, 1988).

It is confirmed that there are a number of important advantages of an essential drugs program in refugee communities. Beyond the advantages based on the three elements listed by Coninx, six of these further outcomes emerged in the RHU framework and consolidated the approach. These elements emerged in areas of practical operation of the RHU program and during the application of management principles. Several practical lessons are noted and three management principles are discussed here. In conclusion some comments are made in recognition of these further lessons.

Practical lessons

Most important, as a result of an appropriate essential drugs program, a system was developed which would be sustainable after the emergency. Skills were developed in the community and the principles learnt could be applied in new emergency settings or in settled communities.

Second, skills were acquired by individuals which could be shared, used and enhanced globally. RHU health workers became resource people in Australia, Yemen, Namibia, Geneva, Nigeria, Liberia, Bangladesh and Eastern Europe. Some stayed working in their own community. Dr Hussein Mursal, the last RHU Medical Coordinator, worked in Mogadishu throughout the 1991 emergency and subsequent breakdown of society.

Third, concepts were shared. They were carried by key people to key places, especially within international lead agencies. For example, UNHCR's involvement in health management was established. UNHCRs mandate to coordinate health care was initiated in Somalia. The benefit of the Somali experience was made available through Dr Mohamed Warsame Dualeh who joined the UNHCR Technical Support Service (TSS) in 1988. Subsequently UNHCRs role has

expanded. Lessons learnt in the continuing emergencies in eastern Europe as well as the developing world have been added to the pool of experience in the TSS.

Fourth, the work of Christel Albert in publicising the problems associated with inappropriate donations contributed greatly to the development of international awareness of these problems and to the development of guidelines for donors and recipients of pharmaceuticals. Media treatment of emergencies can stimulate sympathy for victims and the wish to 'do something'. In the first analysis of emergency there is often a statement about lack of medicines, which may or may not be true. Popular response to collect and donate medicines is common. It has been the author's experience that people can be offended if it is suggested they should not collect medicines. Acceptance of guidelines avoids the problems associated with inappropriate response to appeals.

Fifth, the experience of Dr Mike Toole and other consultants was used internationally in the development of management protocols. Toole's Somalia experience was pooled at CDC where he was coordinator of emergency health management. His skills have been used in the evaluation of other crises and the development of recommendations to develop optimal health care. Together with others he has developed a range of relevant literature concerned with emergency management of health care (Toole et al, 1987-1994).

Sixth, documentation of experience provides valuable reference material for the development of other programs. For example, accurate documentation of drug usage which was necessary to maintain stock levels in the RHU program proved very valuable later, as a guide to calculation of quantities needed for other emergencies, as a reference in the development of UNHCR guidelines and also when the Emergency Health Kit was being devised. Documentation of the experiences gained during the management of the scurvy and cholera epidemics provided valuable material on which to base prevention and control measures in other communities. This principle applies to sharing of all experience. Recognition of the importance of documentation, was a major impetus for this study.

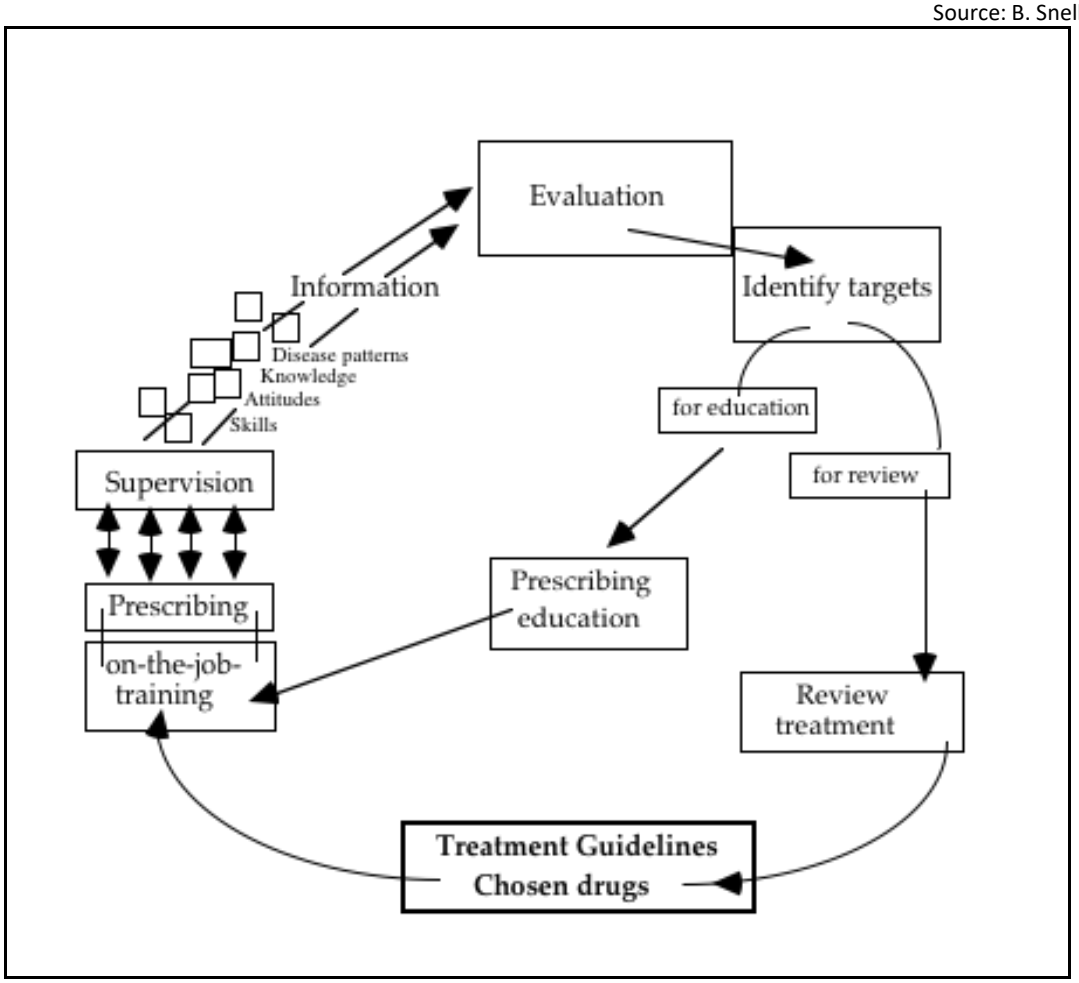
Management principles

Several major management principles were learnt. These included first, the importance of an iterative cycle of management. The importance of supervision of diagnosis and use of medicines took some time to evolve as part of the on-the-job health worker training. The importance of the information gathered through supervision and on-the-job training became apparent as the program evolved. Targets for education were identified along with areas where adjustments to the program would be appropriate. These principles were the basis of the quality assurance cycle of management which also provided for input from newly involved individuals. The cycle was relevant to all components of the health program and Figure 5.5. illustrates its application to the Essential Drugs Program.

Second, cooperation between the RHU program and the developing PHC program was developed and was maintained. Overall, it was shown that the three tiered health structure illustrated by Figure 4.3. was appropriate for efficient emergency management and for sustainable management of health care beyond the emergency.

Figure 5.5. Iterative cycle of management as applied to an Essential Drugs Program

Source: B. Snell



The success of the refugee program provided the momentum for development of a similar program in the general community by providing an example of PHC as an illustration when the general community did not yet understand the concept.

Third, there are opportunities for experimentation with ideas that can be transferred, if successful, to other programs. These included the use of colour coding for labels and initiatives to encourage compliance in the TB program.

Synthesis

Important factors associated with cooperation and coordination between national and international staff were identified. It has been shown that when those elements were present, significant achievements in the provision of health care were possible. In the context of Somalia, most important of all was the development of a model for provision of health care for refugees, using a basic list of drugs and standard treament guidelines, which later provided the stimulus for and basis of the development of a Primary Health Care program in the national population of Somalia.

It became apparent that negotiating skills were critical to balance the different national and individual approaches to the development of all components of the program. In addition, it was shown that it was vital to involve all players perceived to be in authority, such as the local professionals, government and military. At the same time, key people and opinion leaders, both national and international, were the catalysts without whom the program would probably never have been effective. The development of the Essential Drugs Program, within the PHC program, was an area which required particularly sensitive management both to balance the perceived needs of the range of health professionals involved and to address the problems associated with drugs as a marketable commodity.

The willingness to share experiences and disseminate lessons made a vital contribution to the success of the program. Regular regional and national RHU meetings provided valuable opportunities for exchange and coordination. Field visits of the central RHU team provided further vehicles for sharing experiences and dissemination. The RHU Newsletter was another avenue for communication. The Newsletter was a forum for exchange of a wide range of ideas and information generated as a result of particular studies or campaigns in individual camps. Examples were training strategies, studies of delivery practices, attitudes to TB, prevalence of schistosomiasis in a particular area and a trachoma management program undertaken in several northern camps where this disease was particularly common. It was reported in the 12th Issue of the RHU Newsletter that a survey in one northern camp found no case of trachoma after a six week campaign implemented by CHWs using tetracycline eye ointment 3% once daily. A previous survey had shown trachoma in almost all children under 15 years of age.

The monthly surveillance forms sent from each camp to the central RHU included information on disease prevalence, nutitional status and immunisation coverage which was published later in the Newsletter. The collated information that was published in May 1982, only about 18 months after the establishment of the RHU system, demonstrated that there were no cases of measles in the North-west camps and only 10 cases in the southern camps. No case of neo-natal tetanus was recorded in the refugee population. After the first few months of RHU

operation, when diarrhoea was a common problem, the pattern of morbidity documented each month in the RHU Newsletter continually showed respiratory infections as the most common problem. Information collected in this way provided ongoing documentation of the activities of the program. Further, the sharing of experiences internally contributed to the integrated approach to health care management and internationally, made a significant contribution to the development of management protocols for emergency populations, wherever they might occur.

According to the 1981 RHU Annual Report, there were 2000 CHWs and 1000 TBAs working in the camps by the end of that year. The report documented early resistance by international health professionals to the training of the CHWs based on their perception that the CHWs were merely helpers or 'crowd controllers'. CHW training was the core of the RHU philosophy and by the end of 1981, the RHU leaders were satisfied that the health professional's attitudes had changed markedly and the CHWs were trained and accepted as most important health team members thus providing a sound base for the subsequent developments in the program.

These outcomes demonstrated that the model of health care developed for the refugee population came to provide services that were more effective than those operating concurrently in the national health programs. The transformation of this model to provide health services in the general population is examined in the next chapter.

Chapter 6.

Establishment of the Essential Drugs Program within a Primary Health Care Program in Northern Somalia, 1983 - 1988.

This chapter gives an account of the development of a Primary Health Care program in northern Somalia. It illustrates the application of the WHO Drug Action Program principles and describes the process of implementation of an Essential Drugs Program within the framework of the Primary Health Care program developed to cover the community population in the North-west Region of Somalia. The implementation of the community program, although not planned in its initial design, drew extensively on the experience of the Refugee Health Unit (RHU) in the camps. Detailed analysis of several aspects of the implementation and organisation of the Essential Drugs Program shows the mechanisms and processes by which the RHU principles and practices were transformed into the community program. Two areas which demonstrate strategies whereby essential drugs were integrated with other elements of the PHC program are given particular attention: the training of Community Health Workers and the management of tuberculosis. The chapter concludes with a summary of the three main areas of transfer within the program: the employment of staff with RHU experience in the community program, extensive training of other staff at all program levels and the adoption and adaptation of RHU procedures and protocols in management of the program.

Need for and design of a mainstream Primary Health Care program

From the colonial legacy to the RHU model
The refugee camps as training institutions

The RHU program proved to be an exceptional training ground, both for RHU staff and for staff from the PHC programs that were being established in the mainstream communities.

Improvements were being made to all aspects of the refugee health program. RHU staff contributed to ongoing evaluation and showed great interest and resourcefulness in the refinement of programs. Talents became apparent in different areas and staff were reassigned to positions that could benefit from their talents. A nurse from a camp team was recognised for her organisational ability and interest in drug education. She was the ultimate coordinator of the North-west regional RHU Essential Drugs Program. Another staff member developed a card record which facilitated the record-keeping concerned with the medications for TB patients. Other staff were identified for leadership and training positions and some were recruited for National PHC programs. This willingness to work with all staff as team members, and to recognise aptitudes in different areas, rather than simply filling placements, was a particular advantage of the RHU leadership. The Somali doctors assigned to the camps came straight from university. During a conversation in Geneva in 1994, Dr Mohamed Warsame said this was a distinct advantage: they had not been polluted and were fertile ground for training in PHC concepts for application in the refugee setting. This also meant that there was a base of

trained RHU doctors who would be ideal leaders for a wide range of health programs. One such program is discussed in the next chapter.

In the early 1980s, the Somali national health services were still provided according to the post-colonial model described in Chapter 2. Under that model the focus was on curative services which were based in the main urban centres. As a consequence, maldistribution of health services continued throughout the country. The data in Table 6.1, based on statistics provided by the Ministry of Health for 1984, illustrates the contrast in distribution of the health work-force and the hospital beds between Mogadishu, the capital city, and the rest of the country. All hospitals were government owned and a major problem was that because staff salaries paid by the government were very small, official daily working hours were from 7 am until 2 pm to allow time for work in private practice to supplement the small salaries. Inadequate support for even the existing services limited their operation.

Table 6.1. Distribution of population, medical and paramedical professions and hospital beds in selected regions of Somalia.

Region	Population	Population per doctor	Population per nurse	Population per midwife	Hospital beds/ 10,000 pop.n
Mogadishu (capital city)	566,000	2,340	950	5,600	28.2
North-west	713,000	31,000	2,900	89,000	13.0
Middle Shabelle	383,000	48,000	8,300	42,500	2.6
Sanaag	235,000	235,000	7,300	235,000	6.8
Bari	N/A	120,000	7,100	120,000	N/A
Mudug	339,100	339,000	11,300	339,000	4.9
Somalia average	**5,528,000**	**17,100**	**3,600**	**34,000**	**9.5**

Source: Somali Ministry of Health 1984.

Health services in the small villages were non-existent. If people needed services they went to traditional healers, travelled to the bigger towns and cities, or bought medicines from unqualified store keepers. Dualeh (1987) described the concern of Somali people that hospitals were not adequately serving the public. He reported that the health budget of US$8 per person per year was spent mostly on salaries leaving almost nothing for administration, medical supplies and equipment, drugs, maintenance or training. The addition of around one million refugees in camps in Somalia was seen by Somali people as further stretching the resources of the health system (Dualeh 1987).

The refugees were drawing on the national health work-force. Somali national staff were working in the camps rather than in the national health facilities, thus depleting community health services even further. However, supplies and other resources for the refugees were provided by the international community. The situation that developed transgressed one of the

rules for the provision of health care for refugee populations - to avoid provision of services better than those provided to the main population (Toole and Waldman, 1990). It was considered that the refugee health services would need to be maintained because the political situation in Ethiopia at the time continued to force waves of refugees from eastern Ethiopia to Somalia. This environment also meant that refugees could not return to Ethiopia and would remain in camps in Somalia for the foreseeable future. In some ways the presence of the refugees was beneficial for the Somali people. Somali staff were needed to support international agencies and commodities associated with international aid for the refugees tended to trickle out into the general community. In addition, the Somali infrastructure was strengthened to cope with the communications and transport associated with refugee aid. However, there was growing resentment against the refugees, particularly associated with their superior health services.

Earlier recognition that the Primary Health Care approach could address the nation's health problems had led the Somali government to begin to train community health workers in rural areas in Bay Region in the south and Togdheer Region in the north with the support of United States Agency for International Development (USAID) in 1979. Training covered basic prevention and treatment of endemic diseases (Dualeh, 1987). The program was weakened when USAID reduced its support to financial support only. The success of the Primary Health Care **(**PHC) program in refugee camps provided the momentum for the re-introduction of PHC in the non-refugee population of Somalia. The camps also provided, inadvertently, a training ground for health personnel who were subsequently to staff the national program, giving them skills, knowledge and concepts which could be transferred. The camps were seen to be providing a better service than that provided in the general community. The health services in the camps were maintained entirely by funds from the international community. Increasingly, people from the ordinary communities were seeking health care in the refugee camps, a good indication that a beneficial health program was available there. The United Nations High Commission for Refugees (UNHCR) mandate of responsibility did not extend outside the refugee population so in most cases outside people had to be turned away. In some cases health workers turned a blind eye and treated the people but that was no permanent solution.

The principle of avoiding the introduction of better health services for refugees was later emphasised at the Symposium on Health Care for Refugees and Displaced Populations at Georgetown University in December 1988 (Georgetown University, 1989; Toole and Waldman, 1990). To address the anomaly that had arisen in Somalia, the RHU leaders tried to convince the Ministry of Health (MOH) and the major international agencies such as UNICEF and WHO of the need to concentrate on the development of PHC services for mainstream Somalia. Although the MOH had been given the credit for development of the RHU program, with the RHU a Ministry department, only a few people in the Ministry understood the reasons for its success and the significance of its structure and training for application in the general community. Nevertheless, the MOH saw the benefits of international financial support for mainstream health services and accepted the plan including a new approach to the introduction of Primary Health Care throughout Somalia.

Design of the National Program

While the Ministry of Health supported the RHU program in principle, commitment to the development of a Primary Health Care program in the general community was not comprehensive. Divergence between the principles of PHC and the design of the national program arose in the initial planning process, and while the Plan of Operations that was drawn up recognised the need for essential drugs, several aspects of the way in which this element of

the program was to be introduced were at variance with the implementation of an essential drugs strategy as an element of PHC. It was only when the problems arose during implementation that the RHU experience was revisited and transferred into more effective practice.

A design for a national PHC program was prepared by UNICEF staff working mainly in other countries, in consultation with people appointed by the MOH and representatives of WHO. Unlike the RHU staff, most of these people were based outside Somalia. The problems associated with planning from distant offices was emphasised by Cole, a Liberian Lofa County Health Officer. Cole was discussing the implementation of the PHC program in Liberia, during the round table discussion entitled 'Leadership in health' featured in the tenth anniversary edition of *World Health Forum* (Cole, 1988). He suggested that to be sustainable, communities must be involved from the start, a policy followed successfully in the Liberian program. There was no community participation in the design of the PHC program prepared for Somalia. Nor was advantage taken of the experience gained in the RHU program by involving Somali RHU leaders in the development of the design.

Instead, the Somali Ministry of Health invited external international agencies to be responsible for financing and developing the program in the (then) sixteen different regions. These regions are shown in Figure 6.1. UNICEF, granted funds by the Dutch Government, was asked to support the North-west Region in the north of Somalia. Shortly after that, Community Aid Abroad, Australia (CAA) agreed to participate and that agency, granted funds by the Australian International Development Assistance Bureau (AIDAB), was asked to support another region in the north, Sanaag region, adjacent to the North-west Region. Other agencies were allocated different regions throughout the country. The other Region in the north, Togdheer, was to be supported by USAID.

A Plan of Operations for a Somali Primary Health Care Program in the North-west region was drawn up between the government of the Somali Democratic Republic, UNICEF and the WHO (Somali Democratic Republic, 1982). In the planning of this program the elements of PHC, including the need for essential drugs, were recognised and included in Plan of Operations. The Plan was launched by Phyllis Gestrin on behalf of UNICEF at the RHU national workshop in Mogadishu at the beginning of 1983. Gestrin described the formalisation of PHC concepts at Alma Ata, along with the eight broad components of PHC which have been described in more detail in Chapter 2: community participation; safe water and associated basic sanitation; food production and attention to good nutrition; maternal and child health care including immunisation against major diseases and education towards child spacing; control of common communicable diseases, provision of curative services and essential drugs. Prevention, rather than cure, was emphasised.

The Plan of Operations included a list of medicines for PHC use. This list was not based on the WHO Essential Drugs List current at the time, nor on the analysis of Somali disease patterns. Rather, it was based on the Ministry perceptions of what had been useful and what was thought might be useful. 'Kits' of predetermined drugs were to be provided for different levels of the PHC program. The term 'kit' describes a standardised set of drugs and equipment. In the previous chapter, the development much later, in 1988, of a standardised kit for emergency use, the Emergency Health Kit (EHK), was described. The EHKs were developed on the basis of extensive experience of emergency needs, including RHU experience, followed by careful field-

testing in contrast to the kits intended for use in the PHC program which lacked this development in their design.

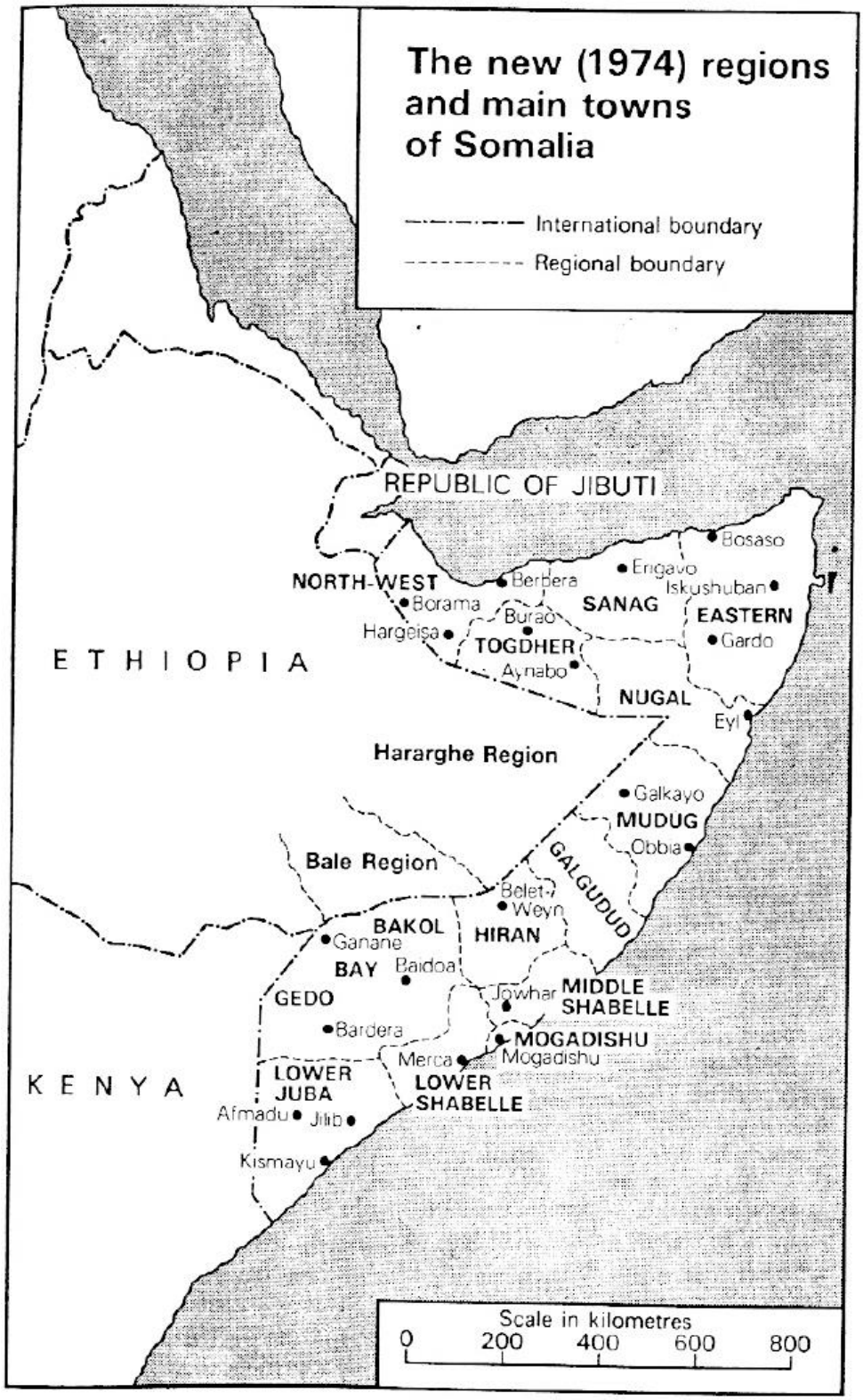
The kits intended for the PHC program were designed before the programs started, and were not based on any experience of program implementation in Somalia. They were to be pre-packed in Copenhagen by UNIPAC, the warehouse arm of UNICEF. This scheme was contrary to the philosophy of PHC where essential drugs are chosen after investigation of the needs of the community. The kits, which are discussed in greater detail later in this chapter, were to be purchased by the agencies as required, for use in the programs they were to support. The choice of drugs and plans for their distribution in kits, were found to be inappropriate very early in the implementation of the program in the North-west region of Somalia; this outcome and subsequent response are detailed below.

Two other anomalies in the program design for North-west Somalia were linked to supply in kits. These were the absence of specifications for an Essential Drug Program and the absence of a Mother and Child Health training component. Dr G Monasta, Head of the UNICEF Somalia office, explained during a meeting in 1983 that provision of these two major elements was felt, by UNICEF and the government, at the time, to be too expensive. Rather than include extra staff and the necessary support structure, the program was to depend on the provision of the UNIPAC kits of medicines and equipment for the different levels of the health services.

Recruitment of staff for the North-west PHC program

Staff recruited for the North-west PHC program included individuals with RHU experience. These staff became key actors in the application of PHC principles and practice learned in their RHU work. The WHO representative to Somalia, Dr Olavi Elo, had a significant influence in the appointment of Dr Mohamed Warsame Dualeh, Deputy Head of the Refugee Health Unit, to the position of Coordinator of the North-west PHC program. Dr Elo, supported by Dr Mohamed Warsame Dualeh, the only Somali health professional with RHU experience who had been transferred from RHU, was eventually able to influence UNICEF to include both the MCH and Essential Drugs Program components in their program. UNICEF still maintained that it was impossible to include staff for those components so it was agreed that CAA would cover the cost of an Essential Drugs Program trainer, so long as that person would be available to the Sanaag program as well and both programs would benefit from the same approach. The implementers of both these programs understood the advantages of cooperation and sharing experiences. The author of this study was recruited because of her relevant experience in the RHU program. Similarly, the cost of an MCH training nurse, who was also recommended because of her performance in the RHU program, would be covered by another outside agency, German Emergency Doctors.

Figure 6.1. Regional boundaries in the Somali Democratic Republic 1969-1986.



The Ministry of Health (MOH) allocated doctors, nurses and logistics staff to work in the various regional programs alongside the staff from the international agencies. In discussion with potential support agencies, the MOH did not present the RHU as a model which could be helpful. Geographical isolation from areas where refugee camps were situated meant that some agencies could be unaware of the structure of the health programs in the camps and had years of difficulty in developing any structure for their PHC programs. The northern regions were most fortunate with twelve camps situated within the North-west region. In addition, the Somali Medical coordinator appointed to the North-west region had played a leading role in the RHU and was interested in developing the same concepts in the PHC program. He was fortunate to be supported by international staff with RHU experience. The team allocated to Sanaag region also included RHU staff but their Somali Medical Coordinator did not have RHU experience.

A final factor affecting the transfer of RHU experience was the geographical element. Both UNICEF and CAA embarked on their programs promptly, at the beginning of 1983 in the North-west and Sanaag Regions respectively. Although the Sanaag program benefited from expatriate staff who had been working with the RHU program in one of the southern refugee camps, it was difficult to get trained Somali staff to work there. Because of the remoteness of the Sanaag region and the logistical difficulties associated with travel in the region, it also took many months to acquire sufficient demographic and cultural information about the region to start the actual program. In addition there were great variations in seasonal conditions, and many communities were nomadic or semi-nomadic. Families migrated to a variety of areas. This movement made it hard to maintain contact with the communities which were to be served by the PHC program and to plan for its implementation.

The problems associated with the program implementers' isolation from the RHU and the lack of opportunities to share experiences were not addressed until July 1984, more than a year later, when a workshop was held in Hargeysa, the North-west capital, to share experiences between the implementers of PHC programs from all the regions to help overcome some of the problems. That event and its significance is discussed in detail later in this chapter.

Implementation of the Essential Drugs Program in the North-west Region

The following account concerns the essential drug program (EDP) developed and implemented in North-west Somalia between January 1983 and June 1986. Several elements of the EDP are examined in order to show how some principles could be transferred directly from the RHU model while others needed modification. Four elements addressed at an early stage were community assessment, community orientation, establishment of a standard drugs list and arrangements for necessary supplies and development of staff and structure for the program.

Recruitment of staff for the North-west PHC program

Staff recruited for the North-west PHC program included individuals with RHU experience. These staff became key actors in the application of PHC principles and practice learned in their RHU work. The WHO representative to Somalia, Dr Olavi Elo, had a significant influence in the appointment of Dr Mohamed Warsame Dualeh, Deputy Head of the Refugee Health Unit, to the position of Coordinator of the North-west PHC program. Dr Elo, supported by Dr Mohamed Warsame Dualeh, the only Somali health professional with RHU experience

who had been transferred from RHU, was eventually able to influence UNICEF to include both the MCH and Essential Drugs Program components in their program. UNICEF still maintained that it was impossible to include staff for those components so it was agreed that CAA would cover the cost of an Essential Drugs Program trainer, so long as that person would be available to the Sanaag program as well and both programs would benefit from the same approach. The implementers of both these programs understood the advantages of cooperation and sharing experiences. The author of this study was recruited because of her relevant experience in the RHU program. Similarly, the cost of an MCH training nurse, who was also recommended because of her performance in the RHU program, would be covered by another outside agency, German Emergency Doctors.

Community assessment and community orientation

The Plan of Operations specified that PHC programs should concentrate initially on the rural areas on the basis of information that would indicate the major health problems in the region. The North-west regional team agreed with this specification. In that region a formal baseline study was to have been undertaken by WHO but did not occur. Therefore coordinating staff who had been allocated to the program by the beginning of 1983 (including the author) undertook a fact finding mission in a selection of villages in the region. During this mission the principles of PHC, which included the eight concepts mentioned earlier, were discussed with the village people. The idea of training a community health worker was carefully introduced. Notes were taken in Somali and English and a report was written by the author in consultation with the other staff. During a brief mission such as this it was not possible to obtain detailed quantitative data but enough relevant information was gathered to begin the program (Primary Health Care Program, North-west Region, Somali Democratic Republic. 1983 a).

It was quite difficult to establish which were the greatest health problems in the communities. Typically, the PHC group met mostly the male leaders of the villages. The initial response to the visits was almost always a request for doctors, hospitals, and more medicines, but closer discussion got beyond that concept that hospitals and doctors equalled better health. It was agreed that malaria was a great problem but the men were not very aware of the problems of women and children. Many women died during child-birth, there was a lot of diarrhoea and trachoma was a serious problem particularly in dusty villages where there were many cattle. These things were considered 'normal' Discussion about the epidemiology of these problems and their management indicated little real understanding. Ramprasad (1988) discussing community health workers as an evolving force in Bangalore, India, found a similar situation. He found awareness of common disease but little knowledge of their causes.

The PHC leaders suggested to the village leaders that they might be interested in proposing a candidate, or two depending on the size of the community, for training as Community Health Workers (CHWs) to be supported by the community and to work in the community. There were several follow up visits to the communities by the PHC leaders, to talk about this concept before it was accepted. It had been thought by the program planners that a balanced selection of male and female health workers would be ideal. However, only two female health workers were ever chosen for the North-west program. The reasons were that young girls were not allowed to walk around alone and older women were extremely busy looking after the children, the home and the animals as well as collecting water and firewood. Initially six villages were chosen as a pilot group to start the program. Two CHWs from each village were given initial training in the district town. Notwithstanding the limitations noted, both the community assessment and the

community orientation in the North-west region achieved the appointment of local CHWs, who were to be the core of the program as they were in the RHU program.

Establishment of a standard drugs list

As explained in the beginning of this chapter, the Essential Drugs Program was only one part of the PHC program and it is necessary to bear in mind that the aim of the PHC program was to provide a comprehensive health program, not just essential drugs. However, the focus of this study is on the Essential Drugs Program as a component of PHC. Accordingly, the plan for the Essential Drugs Program in the North-west Region was based on the philosophy that:

- a regular and reliable supply of appropriate medicines is a vital part of any primary care program;
- just as important is the training of personnel to use the medicines correctly;
- four groups of associated activities are involved:
  - record-keeping, evaluation of information, drug list adjustment if necessary; calculation of future needs and ordering in good time to avoid shortages;
  - education of staff;
  - education of community leaders; education of the public; working and developing good relationships with the private sector, including pressure groups;
  - orientation of all concerned as to the concept of disease and the role of essential medicines.

In order to achieve the above aims the first step needed was to look at the list of drugs included in the Plan of Operations. When that drug list was first drawn up by UNICEF and the MOH, little reference was made to the RHU list which had proved so appropriate. The opportunity for transfer of RHU experience had not been taken and the range of drugs included several inessential medicines such as cough mixtures, mixed vitamins and fixed combination analgesics as well as other items such as tetracycline syrup for children, which were internationally condemned. Major problems were lack of appropriate antibiotics for both children and adults and inadequate supplies of iron preparations for pregnant women. Anaemia was a major problem in Somalia, particularly during pregnancy.

The opportunity to review this initial list arose early in the preparation for the implementation of the Primary Health Care program and its different levels of operation when a tentative standard drug list and treatment guidelines were drawn up for each level, by the staff allocated to the new program. The drugs and the quantities of drugs expected to be needed were estimated on the basis of their experience in the RHU, bearing in mind the drugs that were to be supplied in UNIPAC kits. In preparation for the development of a reliable supply of appropriate drugs, North-west staff needed, therefore, to cull the inappropriate list and to start first with the RHU list and to adjust that as necessary, according to experience. The ultimate list of drug for the North-west PHC program was determined as a result of analysis of the common problems and reference to the RHU experience. The RHU drug list is shown in Table 4.1. and the list of drugs and their levels of use in the PHC program are shown in Table 6.2.

Three aspects of the list warrant comment. First, the inclusion of antibiotics for use by CHWs who were to be isolated from continuous supervision, in contrast to the close supervision available in refugee camps, was questioned by some visitors to the program, and by others at international meetings. However, it was justified on the basis of giving workers in the communities, where there was no other access to health facilities, the capacity to control

common infections. Plans for training and supervision were felt to be adequate to ensure appropriate use. Related to the issue of antibiotic use, tetracycline capsules, which were present in the RHU list, were excluded from the PHC list because they were so widely available in the community that it was felt that health workers would be under too much pressure to provide them for irrational reasons. The issue of resistance was also of concern. Later, when the cholera epidemic occurred, tetracycline was used as part of management of the epidemic. It was useful to be able to resort to an antibiotic that was not already used in the PHC program and to direct that antibiotic solely for use against cholera rather than widen the use of an antibiotic already used in the program for specific indications. The second major diversion from the RHU list was the exclusion of TB drugs. It will be explained why the responsibility for management of TB was not within the mandate of the PHC program later in this chapter. Third, in contrast to RHU, there was to be no access to injectables in the villages for CHWs working in the PHC program. There was no need for the range of injectable antibiotics used in the RHU program because there were far fewer acute or critical cases than in the refugee population. In the community covered by the PHC program, patients whose problems could not be managed with the oral drugs provided to CHWs would be referred to the middle level where supplementary drugs were available, including one long-acting injectable antibiotic, procaine penicillin. Injectable ampicillin and benzylpenicillin were not included in the PHC list because four-times daily administration was necessary and this was not easy in the community situation. In the refugee camps, these drugs were used because patients were more easily accessible. Another diversion from the RHU list was the exclusion of a general anaesthetic (ketamine) and only one local anaesthetic was needed.

Provision of basic medical equipment was also the responsibility of the Essential Drugs program. Later, when CHWs were trained in suture technique, lignocaine and sterile syringes and needles were included in their suture kits. Table 6.3 shows the basic equipment provided for CHWs including the contents of the suture kits. This equipment was determined on the basis of experience and feedback from CHWs concerning the scope of their activities under the guidance of the PHC training staff who had also been involved in training the CHWs in the refugee camps. The equipment needs were only slightly different from the needs of the CHWs in the camps and took account of the activities of the community people and the limited facilities available. For example potable water was reticulated in the camps while in the communities, water had to be collected, sometimes boiled and stored. Equipment was assessed, reviewed and modified as necessary, again in line with RHU practice.

Table 6.2. Standard Drug List for PHC in North-west Somalia.

Standard drug list for primary health care in Somalia, showing levels of use

A: Health posts staffed by community health workers
B: Referral centres and mother and child health centres with staff trained in primary care
C: District medical officers

	Level of use		
	A	B	C
Adrenal			
Hydrocortisone (sodium succinate) inj. 100 mg		(3)	× (3)
Anaesthetics			
Lidocaine 2 % (local)		×	×
Analgesics			
Acetylsalicylic acid tablets 300 mg	×	×	×
Paracetamol syrup 125 mg/5 ml	×	×	×
Anthelmintics			
Mebendazole tablets 100 mg		×	×
Niclosamide tablets 500 mg			×
Antianaemia			
Ferrous sulfate + folic acid tablets	×	×	×
Antibacterials			
Procaine benzylpenicillin inj. 3 g		×	×
Phenoxymethyl penicillin tablets 250 mg	×	×	×
Ampicillin capsules 250 mg		×	×
Chloramphenicol susp. 125 mg/5 ml			×
Sulfamethoxazole + trimethoprim tablets 400 mg/80 mg	×	×	×
Sulfamethoxazole + trimethoprim syrup 200 mg/40 mg	×	×	×
Anticonvulsants			
Phenobarbital 30 mg	(1)	(1)	×
Antihistamines			
Promethazine tablets 25 mg		×	×
Antiprotozoals			
Chloroquine tablets 150 mg base	×	×	×
Chloroquine syrup 50 mg base/5 ml	×	×	×
Chloroquine inj. 40 mg base/ml		(3)	× (3)
Metronidazole tablets 250 mg		×	×
Antischistosomals			
Metrifonate tablets 100 mg	(2)	(2)	×
Antiseptic, disinfectant			
Chlorhexidine conc. 20 %	×	×	×
Antitubercular (see notes)			
Isoniazid tablets 100 mg/300 mg	(1)	(1)	(1)
Thioacetazone + isoniazid tablets 300/150 mg	(1)	(1)	(1)
Streptomycin inj. 1 g/5 g	(1)	(1)	(1)
Bronchodilators			
Theophylline tablets 300 mg	(1)	(1)	×
Dermatological			
Benzyl benzoate lotion 25 %	×	×	×
Gentian violet powder for solution	×	×	×
Benzoic acid + salicylic acid	×	×	×
Gastrointestinal			
Aluminium hydroxide tablets 500 mg		×	×
Obstetric			
Ergometrine inj. 0.2 mg		×	×
Ergometrine tablets 0.2 mg	×	×	×
Ophthalmic			
Oxytetracycline eye ointment 3%	×	×	×
Plasma substitute			
Dextran 70 i.v. soln.		(3)	× (3)
Rehydration			
Oral rehydration salts	×	×	×
Vitamins			
Vitamin A capsules 200 000 IU			× (4)
Ascorbic acid tablets 250 mg			×
Water for injection		×	×

Notes:

(1) Phenobarbital tablets, theophylline tablets and antitubercular drugs can be dispensed to named patients after prescription by an authorized person.

(2) Metrifonate tablets may be available at health posts or referral centres in areas with high prevalence of schistosomiasis.

(3) Chloroquine injection, hydrocortisone and dextran 70 are intended for emergency use only, before patients are referred to hospitals. They will be supplied in very limited quantities and only replaced after they have been used for a patient referred to hospital and after the regional office has been notified.

(4) Vitamin A is not generally available in the health services. It is distributed at particular times, e.g., during campaigns, or on a six-monthly basis where deficiency is found.

Table 6.3. Basic equipment for CHWs.

General equipment	
Hurricane lamp	Carrier bag
Record books	
Bucket, galvanised for carrying water	
Bucket, SS with lid. for storing water	
Soap dish and soap	Nail brush
Towels	Thermometer
Mixing and measuring equipment	
1 Litre measure	
Plastic bottles: 1 Litre, 500 mL, 250 mL, for making and storing solutions of chlorhexidine, gentian violet, benzyl benzoate.	
Tongue depressors for stirring, transferring ointment, etc.	
Plastic medicine measure to demonstrate doses	
Dressing equipment	
Bowl for dressings	
Forceps	
Scissors	
Suture Equipment	
SS minor surgery instrument box	Sterile gauze
Small SS box for suture needles	Suture needles and sutures
Needle holder	Forceps
Scissors S/B or S/S	Small kidney bowl

Arrival and distribution of initial medical supplies

The kits described earlier in this chapter and which had been prepared without reference to the RHU essential drugs list, had already started to arrive in the North-west region in December 1982. In the Plan of Operations, separate kits had been devised for community health workers, Mother and Child Health centres, referral centres, and district health centres because it had been envisaged that each of these levels would need a different set of supplies. However, none of the kits were ever distributed. As the program began, the stages that developed first required limited amounts of particular drugs and equipment. It was felt, at the time, that it was fortunate that some supplies were available so early in the program, but much of the content of the kits was not relevant to needs and the kits had to be opened to supply what was needed immediately, leaving what was not required in storage, and where possible borrowing from other sources, usually the RHU, items that were not present. At that early stage it was thought that the problems with supplies in a kit form might be temporary. It was recognised that the kit contents were inappropriate and would need modification if the kit system were to be continued.

As the program developed, it became apparent that the biggest problem of all was the actual concept of the kits. It became very clear that a system involving pre-determined quantities of drugs would be an absolute hindrance to the program. Experience in the PHC program validated the view that it would have been better to have ordered separate stocks of basic items according to the Standard Drug List so the different levels of the program could be supplied as they developed. Refugee camps were supplied from separate stocks of basic items from the time the RHU system began and this method of maintaining supply was soon established in the North-west PHC program, so that from 1983 stock was ordered to supply the program as it developed.

It was almost two years before all the UNIPAC kits were opened and the necessary items separated from the unnecessary items. Accumulation of inappropriate stock made prompt and efficient storage and recording very difficult. Many unnecessary items were added each time a kit was opened to find just one or two necessary items. It was almost two years before everything became orderly with the standard drugs and equipment stored systematically.

The shortcomings associated with the UNIPAC kit system devised in preparation for the North-west PHC program described earlier in this chapter can be summarised as follows:

- Not one of the kits, as such, was appropriate for any specific level.
- Many items were included which were unsuitable for use in any part of the program, for example tetracycline syrup for children. Given a choice of appropriate items for inclusion, others would not have been included such as sulphadimidine mixture, Vitamin A&D capsules and tincture of belladonna. Equipment was generally excessive and included examination beds and a large variety of stainless steel containers but some necessary items were absent. RHU experience had shown that a small range of equipment tailored to the needs of each level of service was more appropriate and much less costly.
- Basic items which are logical needs for PHC and which were generally needed in Somalia, were either not present in the kits, or present in insufficient quantities. For example only 1000 ferrous sulphate/folate tablets were present in what was to be a three-month supply. Anaemia is a very big problem in Somalia, particularly during pregnancy. Diarrhoea and dehydration are also major problems and there was insufficient Oral Rehydration Salts and no suitable antibiotic in the kits.

Further, it was considered by the program staff that the introduction of a regular pre-determined supply of medicines such as that supplied in a kit, without supervision, would be a backward step. As in the RHU program, supervision and support at all levels were vital aspects of the program. Haak and Hogerzeil (1991) commented, in a review of the kit system, that the Somali episode was not well planned and would not occur today. They concluded that the use of well designed kits can be appropriate for certain circumstances. They emphasised the need for training programs and standard treatment guidelines to accompany the kits and confirmed the need for supportive supervision as well. They do not address the issue associated with a continuing supply without supervision which can result in mistakes in diagnosis and management continuing undetected. However, their evaluation confirms the need for experienced staff even in the presence of kits and thus supports the early assertions by Elo and Mohamed Warsame Dualeh that the program as initially designed by UNICEF for the North-west was short sighted.

Because of its failings, the kit system was abandoned. As the program developed, the drug list was adjusted to meet specific needs. The Sanaag program which got underway some months later than the North-west program benefited from the negative experience of the North-west's program concerning kits. For Sanaag, drugs and supplies were ordered according to their Standard List which was the same as the new list developed by the North-west program, and according to the projected needs. This outcome was in line with RHU practice.

Organisation of the Essential Drugs Program and training of staff

The aim of the EDP was to maintain a regular and reliable supply of appropriate medicines, to equip staff to manage all areas of the program efficiently and to foster the participation of EDP staff in activities of the PHC team.

The role of foreign staff and counterpart training

The North-west PHC regional team was made up of a majority of Somalis and some foreigners. Some Somali staff had extensive RHU experience while others were new to PHC concepts and needed further training. The foreign staff, most of whom had RHU experience, were to act as trainers and resource people. Somali and foreign staff would work together sharing skills and training more staff for program expansion. Ultimately, the foreign staff would withdraw as they had withdrawn from the refugee camps. For major components of the PHC program such as training, MCH and Essential Drugs, foreign resource people worked with Somali counterparts.

The Ministry of Health was responsible for all health program appointments both in the RHU and in the PHC programs and this could lead to some inappropriate placements. In the RHU, the use of diplomatic skills by people in the central Unit usually resulted in consultation concerning the best placements. Consultation with the Ministry concerning appointments was always attempted by the North-west PHC leaders. Sometimes the process was difficult as the following example shows.

In the beginning, no National counterpart to lead the Essential Drugs Program had been identified. It was felt that selection should not be rushed and that with time an appropriate person would be identified. However the Regional branch of the Ministry of Health became aware there was no counterpart in the position and was receptive to an approach by a totally unsuitable person with strong connections to lines of authority. Appointment of that person would have been disastrous so a hasty search for a more suitable candidate was begun by the PHC Coordinator and the Regional RHU Coordinator.

A Somali staff member from one of the refugee camps had already been identified as most suitable because of his management and teaching skills but RHU had not been ready to release him until an adequate replacement was found. Under the circumstances, RHU agreed to help the PHC program by releasing him immediately, after consultation with the person himself. Negotiations to have his appointment accepted by the Ministry of Health, rather than their candidate, were begun. After a week of anxiety, the negotiations were successful. The appointed person played a major role as a team member in the PHC program and was able to transfer his RHU experience.

The North-west PHC program was fortunate that this Essential Drugs Program coordinator had extensive experience in the RHU program. As explained above, he was recruited for the program because of his clinical and teaching skills as well as his managerial qualities. He made a major contribution to the special training in supervision and teaching, as well as in stock management that staff for the essential drugs programs received. Apart from managing the stores and being responsible for overseeing distribution, senior staff were teachers in the PHC program and supervisors of health workers on the job. In the store, senior Essential Drugs Program staff were supported by workers who helped with stock management and filling orders. All PHC staff, including peripheral field staff, were made aware of the principles involved in maintaining the supply of essential drugs.

Management of stock and procurement for the program

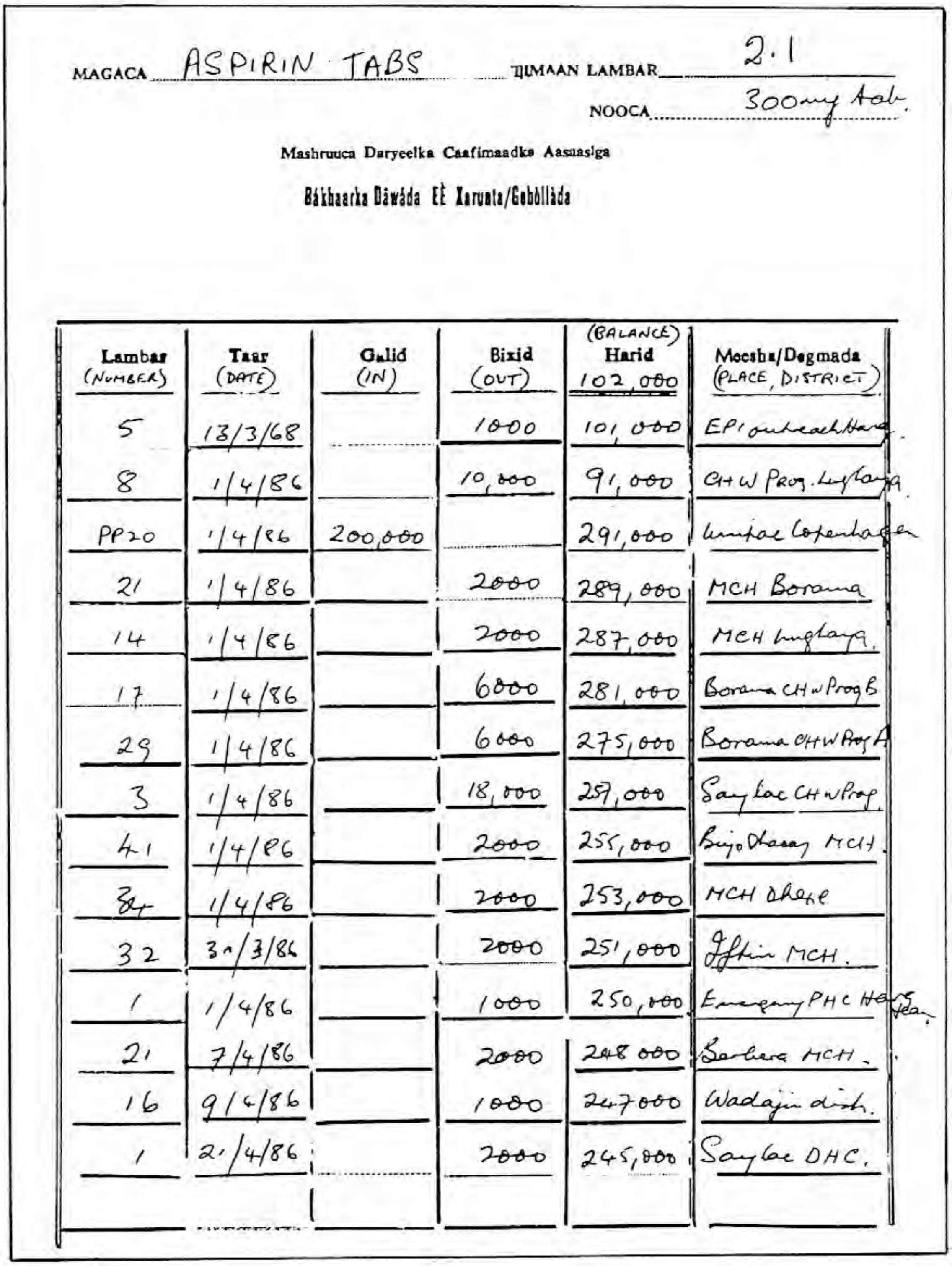
The management of stock and procurement for the community program followed procedures established in the RHU very closely. The basic management practice was for all drugs to be given code numbers, the same as those in the RHU system, according to therapeutic category, and all transactions (orders, requisitions, stock records, etc.) were kept in the order of the code numbers. This greatly facilitated the work. When colour coding of labels was introduced into the RHU program (see previous chapter) it was planned that the same labels would be acquired for the drugs used in the PHC programs.

As in the RHU, all movements of all items, in and out of the PHC drug store, were recorded by hand on stock cards so a running total was always available. Information included the date and source or destination of each item. An example stock card, this card for Aspirin 300 mg tablets, is Figure 6.2. Cards were filed in order of the items' code numbers, as was the stock on the shelves. Requisitions from the field were made in the same order as can be seen by reference to the CHW requisition form Figure 6.3, to facilitate record keeping. After each requisition was filled, staff of the medical store filled in the stock cards to maintain the records of current stock. It was a great help to have the requisition list in the same order as the order in which the stock cards were filed. Periodic physical stock takes were made to correct any mathematical errors or omissions and to be sure of the items in stock. A total physical stock take, involving counting all items by hand, was performed every six months.

Procurement policies were based on principles learnt in the RHU. It was absolutely essential that drugs be used according to the standard treatment guidelines to be able to predict needs and calculate quantities to be ordered. Supplies for the North-west program were ordered through UNICEF and usually took around nine months to arrive. Therefore it was necessary to calculate what had been used in the preceding period as a basis for ordering and to take into account the plans for program expansion and possible emergencies. Orders were submitted for the period from nine months beyond the present for a subsequent nine months. There were attempts to overcome the need to make supplementary orders in between, but stock was not always available and there were sometimes items to follow which caused occasional stock-outs.

Data in Table 6.4. illustrate the procedures for calculating requirements. The figures in the table relate to a total population of around 100,000. All the PHC staff were aware of the cycle involved in maintenance of supplies. The procedure for calculation of drug requirements was worked out by the author and the EDP coordinator. He had an excellent understanding of the concept and was able to take full responsibility. He also saw the need to train a partner who could be responsible in his absence. Calculation of requirements was more difficult than the RHU procedure because the PHC target population was expanding in contrast to the RHU target population that remained relatively stable.

Figure 6.2 Example of a stock card showing movements in and out of the store and source or destination of the products.



MAGACA ASPIRIN TABS TIJMAAN LAMBAR 2.1

NOOCA 300mg tab.

Mashruuca Daryeelka Caafimaadka Aasaasiga

Bakhaarka Dawada EE Xaruuta/Gobollada

Lambar (NUMBER)	Taar (DATE)	Galid (IN)	Bixid (OUT)	(BALANCE) Harid 102,000	Meesha/Degmada (PLACE, DISTRICT)
5	13/3/68		1000	101,000	EPI outreach Harg.
8	1/4/86		10,000	91,000	CHW Prog. Lughaya
PP20	1/4/86	200,000		291,000	Unicef Copenhagen
21	1/4/86		2000	289,000	MCH Borama
14	1/4/86		2000	287,000	MCH Lughaya.
17	1/4/86		6000	281,000	Borama CHW Prog B
29	1/4/86		6000	275,000	Borama CHW Prog A
3	1/4/86		18,000	257,000	Saylac CHW Prog.
41	1/4/86		2000	255,000	Bujo Dhaay MCH.
34	1/4/86		2000	253,000	MCH Dhere
32	30/3/86		2000	251,000	Iftin MCH.
1	1/4/86		1000	250,000	Emergency PHC Hargeisa.
21	7/4/86		2000	248 000	Berbera MCH.
16	9/4/86		1000	247000	Wadajir dist.
1	21/4/86		2000	245,000	Saylac DHC.

Figure 6.3. CHW requisition form showing the range of supplies available to CHWs.

M. DARYEELKA CAAFIMAADKA ASAASIGA
GWG/AWDAL.

CODSI DAAWO/
MEDICAL SUPPLY REQ. LAMBAAR/NO._____ TAAR./DATE_____

KA/FROM_____ DEGMADA/DISTRICT_____

STAFF_____ TARGET POPn/TIR._____ MUDDO/DURATION_____

KU/TO.ISTOORKA GOBOLKA _____

Tilmaan Code	Magac./Name	Nooca Unit	Intaad doonaysid Qty required	Intaa lasiyey Qty supplied
2.1	Aspirin tabs			
2.2	Paracetamol syr.			
4.6	Penicillin tabs 250 mg			
4.14	Cotrimoxazole tabs			
4.15	Cotrimoxazole syr.			
5.2	Phenobarb tabs.			
7.1	Chloroquin tabs			
7.2	Chloroquin syr.			
11.3	Theophylline tabs.			
13.2	Chlorhexidine			
15.1	Ferrous sulphate/fol tabs			
18.3	Tetracycline eye oint.			
21.3	ORS			
22.1	Benzyl benzoate			
22.2	Gentian Violet			
22.3	Whitfield's ointment			
	Gauze roll			
	Bandage			
	Plaster			
	Cotton			
	Soap			
	Envelopes.			

Codsade/req,by	Siyey/issued by	Qaadey/received by

Table 6.4. Tabulated calculations of stock requirements for the North-west PHC program.

Name of drug	Qty used in six mths	in stock	coming	TOTAL	Duration	ORDER
Aspirin tabs 300 mg	458,000	96,000	520,000	616,000	eight mths	200,000
Paracetamol syr 125mg/5ml 100 ml	9651	4435	5000	9435	six mths	18,000
Ampicillin caps 250 mg	30,000	-	100,000	100,000	one year?	not yet
Penicillin V tabs 250 MG	370,000	120,000	100,000	220,000	Four mths	1,000,000 some needed by air
Chloroquin tabs 150 mg	296,000	-	350,000 -75,000 borrowed	275,000	« six mths	750,000

Drugs as currency and the problem of security

Security of the PHC drug store was a constant concern in Somalia whether in the refugee camps or in the community, in the port, in transit or in the stores. In countries where jobs and salaries are scarce, there is always the possibility of pilfering or large scale burglary. Even when culprits were detected, it was not always possible to do anything about the culprit, only to try to secure the stocks better. The following account from the author's experience illustrates problems the drug store keepers had to contend with.

> In 1984, the drug store staff had become aware that a large quantity of cotrimoxazole syrup was newly available in local 'pharmacies'. It was not possible to find out from pharmacy owners where it had come from. There had been a long history of inappropriate management of diarrhoea and other infections by pharmacy owners and the PHC program had been very active with education. Information about the place of cotrimoxazole had clearly reached the community and it was in demand from pharmacies.
>
> Stock of cotrimoxazole syrup in the store was counted and recounted. Each carton contained 144 bottles and the cartons were securely sealed and stacked in rows. The correct number of cartons was present. However, when some new generators arrived for storage, workmen attempted to place them on top of the stack of cartons. The cartons collapsed. They were all empty and had been resealed with the same tape and equipment as before.

It was known that staff in an adjacent store could have access to the PHC store after hours through a large door, which although locked, could be manoeuvred with appropriate equipment after hours because the door was sheltered from the outside by a further external door. The watchman was outside the external door. The PHC staff were aware of the potential problem but were also aware of the state of local politics. They knew that UNICEF would call the police if they knew what was happening. Staff of the other store were related to people in power and it was known that if they were accused, the PHC staff would be imprisoned for accusing them. PHC staff did everything possible to secure the door but it was not enough.

When the theft of 12,000 bottles of cotrimoxazole syrup was discovered, the PHC Essential Drugs Program Coordinator had been absent for more than two months, attending a seminar in Tanzania. UNICEF called the police. The following week the Coordinator was imprisoned immediately on his return from Tanzania. Eventually he was released and although the real culprit was known, (he had a new car and a new house) no action was taken against that person. Instead UNICEF had a substantial dividing wall built to separate all access to the PHC store.

Although it added greatly to the workload, it became clear that stock takes would have to include the checking of all sealed cartons.

Members of the PHC staff who made informal enquiries about the use of cotrimoxazole bought from pharmacies felt that it was largely being recommended appropriately but insufficient attention was being given to rehydration associated with diarrhoea. Oral Rehydration Salt (ORS), which had been made available free to pharmacies through the PHC program, was being advocated additionally, to a certain extent. However, ORS was very cheap and more profit could be made by selling the antibiotic cotrimoxazole for a wider range of indications than was taught in the PHC program.

PHC workers and their training

Parallel with the RHU model, the PHC program operated at three levels: village, district and regional levels. At the district level, secondary referral facilities were planned, and district teams made up of three or four trained Somali nurses, midwives where possible, and sanitarians were appointed to help with training and supervision of the CHWs. The CHWs who had been chosen from their communities, attended a series of training sessions in preparation for management of the common diseases and health problems in their target areas. They were to be totally supported by their communities whereas the district team staff had government salaries. The government salaries were very small; one month's salary was only enough for meals for two or three days therefore supplementary incentives were paid by the supporting agency, in the case of the North-west program, UNICEF. This system did little to contribute to sustainability of the program and the implications are taken up in the next chapter.

As with the RHU CHW training program, the CHWs training occurred in a series of sessions of up to one month each. It was considered important that they be trained close to their villages, and that they stayed together in a dormitory setting so they could share ideas throughout the training. It was fortunate that, in each area, there were refugee camps which could be visited to observe and participate in programs in operation. Practical involvement was a very useful teaching method, particularly where CHWs had limited formal education. The CHW training curriculum was based on the RHU model which was skills based with progressive development

of knowledge. Early in the development of the program reference books had been ordered for use by the trainers. The texts were the same as those used in the RHU program, together with newer books as they became available and as in the RHU, David Werner's book, *Where there is no doctor*, (1977) was extremely popular with trainers.

Variations which were necessary because of conditions specific to individual villages or needs in the communities were identified throughout the training and on-the-job review. Following the RHU model, after the first training session, which included concepts of disease theory and disease management with the emphasis on prevention, the CHWs were provided with chloroquine for malaria, ferrous sulphate/folate tablets for pregnant women and Oral Rehydration Salts for dehydration. On returning to their communities for the first time they were to register all children under five for immunisation against diphtheria, pertussis, tetanus, polio, measles and TB, and to talk to the people about the concepts they had learnt.

There was a perception that the communities expected them to return with a good supply of medicines for curative services. Even in the sections of the refugee camps, the CHWs were expected to have a wide range of medicines after their first training. The pre-registration for immunisation was a great opportunity for CHWs to interact with their communities and for the communities to know them. The subsequent involvement in the total immunisation campaigns kept the CHWs in touch with their whole communities and eventually, after four rounds, over a period of several months, they had gained excellent coverage together with a high sense of achievement and a good knowledge of their communities. The process also ensured that communities gained a good knowledge of the CHWs. It was felt, by the program implementers, that it was important for the CHWs to feel they were achieving right from the beginning so the program was designed to address this need while following what was considered to be an entirely appropriate course. A step by step process of learning was necessary for workers who had no previous training in health concepts but their organisation and negotiating skills could be used from the start. Orientation of the community and registration for immunisation together with the organisation needed for the actual immunisation provided plenty of scope for use of CHWs skills very early in the program.

After three months back on the job following their first training, the CHWs had much to talk about during their second training session which covered management of infections including respiratory infections. After their second training session, they were provided with cotrimoxazole which could be used, according to strict guidelines, for the management of bacterial diarrhoea and respiratory infections.

Subsequent training sessions with at least three months between, increased the repertoire of conditions the CHWs could manage and the number of drugs they could handle. They were trained to use epilepsy drugs and asthma drugs and these drugs were made available on a name/patient basis. All the strategies employed in the training, supervision and support of CHWs in the North-west program were based on strategies learnt in the RHU.

Training in supply strategies

All parts of the program were supplied on the basis of supervision and evaluation of the work going on. Before any component could be resupplied, information had to be submitted giving details of all activities, disease patterns, and drug use. Two main devices used to this end were supervision forms and patient registers. As in the RHU system, patient registers were consulted both to observe the disease patterns recorded and as part of on-the-job training when visits were made to the periphery by senior staff. Supervision forms were a new device developed to overcome the problem of distance between the supply source and the periphery in the PHC

program. Distance from the source of supply was also a problem in the RHU program which had not been overcome. RHU regional store staff attempted to visit camps frequently but some were many hours away by road and travel was not easily possible. The supervision forms which were developed, when submitted by the district teams, or other supervisors, gave a succinct picture of drug use patterns. An example is set out in Figure 6.4. Analysis of these forms prompted questions such as those listed at the bottom of the form and regular visits to the health posts, ideally every six weeks, provided opportunities to discuss the work going on. The need for these forms as a training tool was prompted by the need to enhance new district team members' supervision skills as well as overcoming the distance from the centre to the periphery of the program. In addition, this approach promoted integration between drug supply and the rest of the PHC program. Pharmacists and their co-workers had traditionally seen themselves almost solely as distribution managers and record keepers.

In PHC, in both refugee and community settings, EDP workers played an active educational role. This meant that requests for medicines were evaluated by the pharmacy staff rather than just being automatically filled. Regional and district staff discussed the requests and the health statistics recorded in the patient register, to understand the implications of the information provided, during visits to the health services. Presentation of order forms and interviews in the regional capital alone, could not possibly give a picture of what was really happening in the program. Analysis of patient records together with drug requests could raise questions, the answers to which could provide an important picture of what was going on.

The following examples show how discussion of simple drug order forms, and/or supervision forms, during a visit by pharmacists to a health clinic, could link into the whole range of PHC activities. Such discussions reinforced the view that the supply of medicines was an integral part of the whole development of improved health of the community, not an isolated component of the program. Supervision on-the-job, in the community, by Regional staff including EDP staff, was an important priority. This supervision ensured that there was correct understanding of what had been taught, and it would help orientate the community towards the correct use of medicines. Patient registers and morbidity statistics, if accurate, gave a picture of disease patterns, diagnosis, and the competence of treatment. They also indicated where correction or support was required and showed whether the drugs supplied were relevant to needs. It was important that the patient registers were compiled in detail. It was necessary to include the patient's name, age, sex, signs and symptoms, diagnosis, treatment in detail (drug, dose, duration) and a record of other action or advice. During supervisory visits, common problems like the overuse of antibiotics could be identified, neglect in the treatment of anaemia and certain other conditions could be seen and quantities of drugs could be amended if necessary. In the absence of supervision before supply, mistakes could go uncorrected for a long time and queries could remain unanswered. The following are examples of queries prompted by analysis of drug use and possible responses:

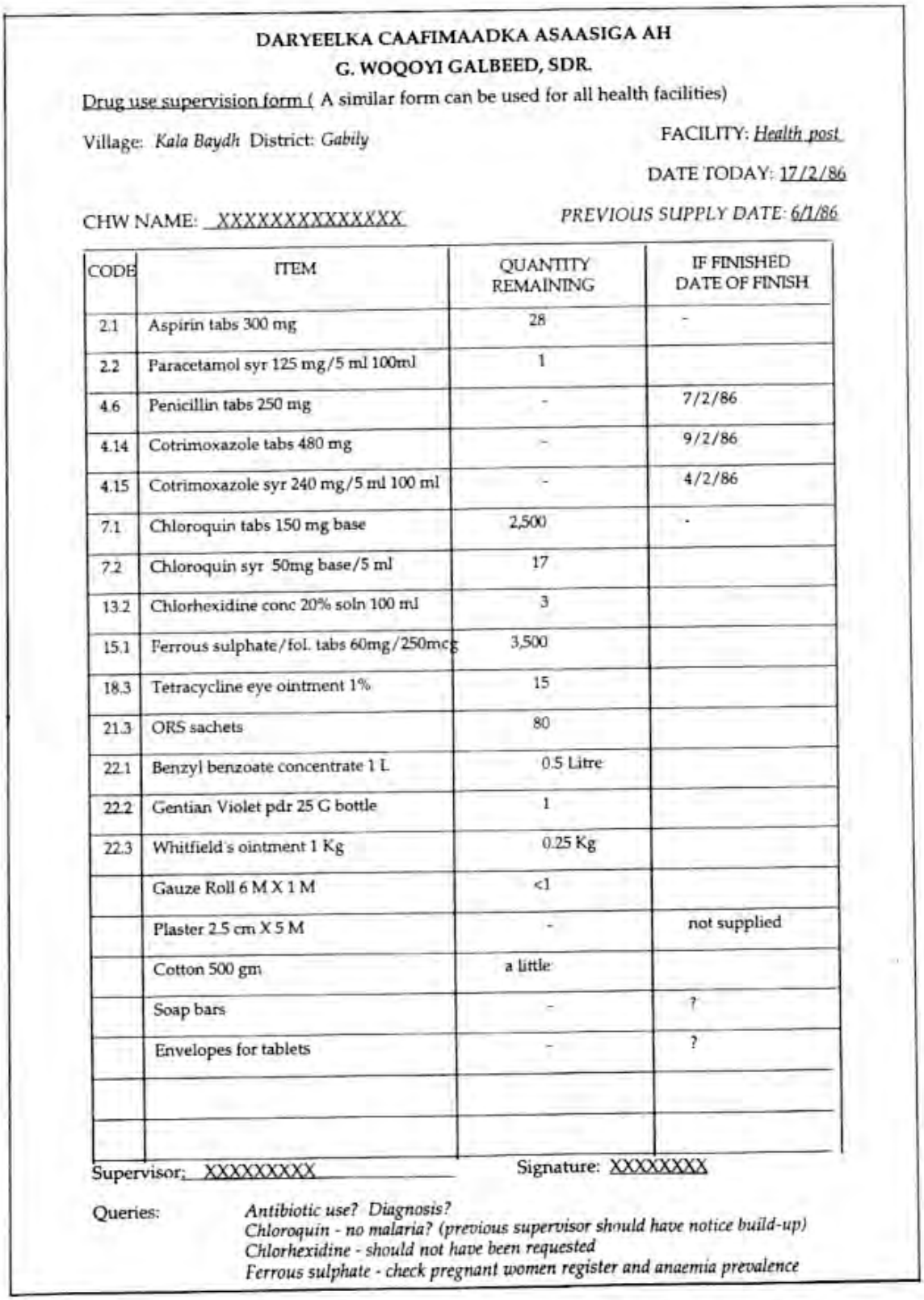
- Antibiotics are used very quickly - find out why.
- Many iron tablets are left over - find out why. Perhaps pregnant women and others needing treatment are being neglected.
- There is a reported increase in certain diseases resulting in increased orders of certain medicines. Is the diagnosis correct, or is there a disease cause that needs addressing?
- Excessive quantities of antiseptic, benzyl benzoate, and gentian violet powder are ordered. Are they being diluted and dispensed correctly?
- Alternatively none of the above are being ordered? Is there laziness about cleaning minor skin lesions and treating the relevant problems?

The use of records as described here shows that record keeping was not mere bureaucracy, it was the basis of planning and evaluation. It was important that appropriate records were kept and consulted. Records showed changes and could identify targets for education. It was important that feedback from perusal of records be discussed with the record keepers. Although collection of information with the help of a form such as that illustrated by Figure 6.4 had not been introduced in the RHU program initially, the idea was shared with the central RHU Unit and it was introduced with training in 1983.

The following are further examples of integrated activities which resulted from analysis of drug orders. Insufficient use of oral rehydration or iron for pregnant women led the supervisor to question whether the health workers needed the support of experienced team members to convince community members about appropriate management of diarrhoea or the role of iron tablets. It was a common belief in Somalia that iron tablets taken during pregnancy increased the size of the baby's head, thus making delivery difficult. It was necessary to convince women that iron made the women stronger and more capable of delivering a healthy child and the MCH services were involved in this education.

District supervisory teams were also trained to expect that many nomadic or semi-nomadic families migrated to a variety of areas as a result of great variations in geographical and seasonal conditions. This movement made it hard for community health workers to provide adequate cover all the time as well as making it hard for the CHWs to be located by the district teams. The provision of health services to nomadic communities remained a constant challenge.

Figure 6.4. North-west Primary Health Care Program drug use supervision form



DARYEELKA CAAFIMAADKA ASAASIGA AH

G. WOQOYI GALBEED, SDR.

Drug use supervision form (A similar form can be used for all health facilities)

Village: *Kala Baydh* District: *Gabily* FACILITY: *Health post*

DATE TODAY: 17/2/86

CHW NAME: XXXXXXXXXXXXX *PREVIOUS SUPPLY DATE: 6/1/86*

CODE	ITEM	QUANTITY REMAINING	IF FINISHED DATE OF FINISH
2.1	Aspirin tabs 300 mg	28	-
2.2	Paracetamol syr 125 mg/5 ml 100ml	1	
4.6	Penicillin tabs 250 mg	-	7/2/86
4.14	Cotrimoxazole tabs 480 mg	-	9/2/86
4.15	Cotrimoxazole syr 240 mg/5 ml 100 ml	-	4/2/86
7.1	Chloroquin tabs 150 mg base	2,500	-
7.2	Chloroquin syr 50mg base/5 ml	17	
13.2	Chlorhexidine conc 20% soln 100 ml	3	
15.1	Ferrous sulphate/fol. tabs 60mg/250mcg	3,500	
18.3	Tetracycline eye ointment 1%	15	
21.3	ORS sachets	80	
22.1	Benzyl benzoate concentrate 1 L	0.5 Litre	
22.2	Gentian Violet pdr 25 G bottle	1	
22.3	Whitfield's ointment 1 Kg	0.25 Kg	
	Gauze Roll 6 M X 1 M	<1	
	Plaster 2.5 cm X 5 M	-	not supplied
	Cotton 500 gm	a little	
	Soap bars	-	?
	Envelopes for tablets	-	?

Supervisor: XXXXXXXXX Signature: XXXXXXXX

Queries: *Antibiotic use? Diagnosis?*
Chloroquin - no malaria? (previous supervisor should have notice build-up)
Chlorhexidine - should not have been requested
Ferrous sulphate - check pregnant women register and anaemia prevalence

Case study: Management of tuberculosis (TB)

Tuberculosis was a major problem in Somalia and, if not controlled, the incidence would increase. Treatment of the disease was therefore not only a curative measure but a preventive measure to reduce the pool of infection and control the spread of the disease. The management of TB, which was under consideration in the North-west PHC program, provides some detailed insights into the application of the RHU guidelines. PHC program implementers were very aware of all the problems associated with TB treatment; especially the need for regular therapy for a period of one year. Comprehensive and effective TB management programs had been established in the refugee camps but even in the camp setting, success was hard to achieve and to maintain. In the camp setting it might be expected that maintenance of treatment would be easier because the population was more accessible than in the general community setting. The expectation of difficulties associated with maintenance of compliance caused hesitation in including TB management in the PHC program. Ultimately the Finnish Government TB team was asked to set up a national TB Program throughout the Republic of Somalia and in 1984, the Finnish Government was given responsibility for management of the national TB Program for a period of 20 years. The lessons learnt in the refugee setting proved valuable in making this National program operate effectively.

An initial step was to establish the incidence of TB as a basis for planning and management. There had been no reliable collection of statistics in the general population of Somalia but information was rigorously collected and analysed in the refugee camps. The RHU data was a very useful starting point for estimates about disease prevalence in the general population and for plans for TB management. Prevalence of TB was accepted as around five per cent of the population. This was a lower figure than the figure accepted for the refugee population where overcrowding and often inadequate sanitation contributed to spread of the disease. Some refugee camps had rates of 20 per cent TB incidence (Hassler, 1983). Analysis of all the activities associated with the management of TB in the refugee camps provided ready reference material for the consideration of TB management in the Somali community. The refugees were Somalis who had lived in Somali communities before the war caused them to flee from their homes. In the refugee communities, not only had TB incidence been documented, but attitudes to the disease, understanding of treatment schedules, the need for compliance and maintenance of compliance had all also been studied and documented in RHU Newsletters (RHU, 1981-1986). The transfer of staff who had worked in the RHU TB programs to the new PHC program was an additional advantage.

The next step was to circumvent inappropriate self-treatment. As in the refugee community, people in the towns and villages were aware of the disease and attempted to treat it themselves with medicines bought from shops in the community, or with a remedies from traditional healers ranging from spiritual approaches through infusions to burning and cutting of the skin . There was no apparent awareness of appropriate treatment and various methods were employed for short periods. The attempts were therefore ineffective and also resulted in common side effects and multi-drug resistance. In the refugee setting the same problems had been the subject of numerous reports and meetings in the RHU and had been well documented in the proceedings of meetings and in RHU Newsletters.

TB management regimen in the community

Problems associated with management of TB throughout Somalia included the need for accurate diagnosis, the need for understanding by the patient of the lengthy period of regular treatment (at least nine months) and the need for structures which would allow regular and frequent patient follow up. Inclusion of TB treatment in the PHC program could not be

undertaken lightly, knowing the potential for default which contributed to development of multi-drug resistance together with irreversible side effects to drugs. However, it was known that if cases were left untreated, patients would die and at the same time the pool of infection in the community would increase thus causing higher incidence of the disease. This knowledge led to the PHC program support for the introduction of a TB management program in the community.

The National TB Program supported by the Finnish government in the northern regions was based in the Hargeysa TB Hospital. Appropriate modern apparatus such as X-ray machinery, laboratory equipment and sterilisation equipment was provided within the program. Diagnosis was undertaken by X-ray and sputum examination. Treatment during the intensive phase of management was carried out in hospital and following completion of this phase, drugs for the maintenance phase were provided from the hospital. There was some controversy about the choice of drugs in the Finnish-supported program. Rifampicin, pyrazinamide and ethambutol, all very expensive drugs, were included as first-line drugs. The exact combination was worked out individually for each patient. It had been the practice, in the RHU, to reserve these drugs for resistant cases. Experience of TB management had suggested that default from treatment could be just as common on an expensive regime as it was on a less expensive regime. TB management that had been documented by the RHU confirmed that repeated default was common and led to resistance to the drugs being used. It was important to have second-line drugs available. It was consideration of these factors that led the managers of the National TB Program to treat patients in hospital, where they could be supervised, during the intensive phase. Inpatient treatment was not part of RHU policy and would have been impossible within the PHC community program in the absence of the Finnish Government program.

In the RHU management program, the regimen had included streptomycin injections daily together with tablets of isoniazid and thiacetazone for a period of three months followed by thiacetazone and isoniazid in tablet form daily for a further nine months. Sterile disposable syringes and needles were supplied for all injections in the camps. During the 1980s, HIV infection was not an issue but Hepatitis B was common and abscesses resulting from bad injection practices were also common. The practice of providing sufficient disposable needles and syringes resulted in a great deal of waste but there were no facilities for sterilising sufficient re-useable syringes. In resistant TB cases and cases where there were adverse reactions to the first line drugs, ethambutol and pyrazinamide were available for addition to the regimen. Even in refugee camps, where the population could be expected to be relatively accessible, there was a problem with compliance. Patients moved or did not return for a further supply of drugs because they felt better, or did not take medication when they had it.

Compliance strategies

Follow up in the camps was a major responsibility for CHWs as explained in Chapter 6. Energetic education was a fundamental part of the program and there were a number of extra strategies employed to encourage patient compliance in the refugee camps. These included provision of extra food, provision of goats in the TB centre which would belong to the TB patients and which they would milk when they came for medication and a garden plot to grow vegetables. But nothing was totally successful and so it was felt that keeping more expensive and more potent drugs like rifampicin for second or third line treatment was a safeguard. The streptomycin /isoniazid /thiacetazone regime was effective if taken appropriately and was not too expensive. The new National TB Program covered the general population so compliance was even more of a problem than in refugee camps. But the Finnish team and their Somali co-workers were aware of this and other problems. The program involved full training of the staff and technical and

administrative support for the whole program. Suspected cases were referred to branches of the TB program in the district capitals. In the district capitals, at first, the National TB Program used the RHU/PHC regimen and referred resistant cases to Hargeysa but later staff were trained in the districts and two hospitals were upgraded to implement the more sophisticated treatment when necessary. Education about the nature and duration of the treatment was a major component of the program and TB program staff tried to devise effective strategies for compliance.

Although there was very good cooperation between the National TB Program and the PHC program, some patients still felt they could manage their own disease in their own way. At first it was still possible to buy TB drugs from unqualified vendors. This had been less of a problem in the refugee camps where there were no shops selling TB drugs and appropriate health services were all located within the camps. It had been the plan, when management of TB according to the RHU regimen within the PHC program was adopted, that all streptomycin be withdrawn from unqualified outlets. The means of implementing such a plan had not been worked out. However, the plan was realised when the National TB Program purchased all streptomycin and rifampicin from the government store and from pharmacies and other outlets in the North-west. The Regional Medical Officer of the Ministry of Health was asked to see that the stores were provided with no more of these drugs and the store keepers, who could import their own supplies, were prohibited from importing further TB drugs. In order to reserve streptomycin for TB treatment only, its use was banned in hospitals other than the TB hospital. However, a team of Chinese doctors working in the Hargeysa hospital remained difficult to convince of the rationale. The aim of the exercise was to force TB patients to attend the TB program for treatment. It was felt that a much better understanding had developed and that it had become possible to control TB.

Integration with other PHC activities

Another concern of the PHC program was that the TB program supported by the Finnish government could become a 'vertical' program. A 'vertical' program is one which operates without integration with other health programs in the community. Malaria management and immunisation are both programs which can be undertaken by a particular agency without reference to the programs already in place. The plan for North-west Somalia was to develop a comprehensive PHC program where all the necessary elements were integrated. This aim did not rule out specific technical support from specialist agencies when that was required. For example, generators and refrigerators for vaccine storage associated with an immunisation program, and training of staff to maintain this sort of equipment could be provided by a specialist agency as part of an integrated PHC program which included immunisation.

The potential problem with a 'vertical' TB program had been addressed as soon as Finnish staff arrived to begin the program. They were approached by RHU and PHC staff and matters of concern were identified. Meetings were organised for the new TB program staff, and staff from both the PHC program and the RHU to share their knowledge about TB management in the Somali community. It was agreed that continuous cooperation and communication between all the programs was imperative. In the PHC program, health committees in the villages were included in discussions concerning the proper management of the disease to encourage better understanding, particularly of the need for compliance, and to minimise the likelihood of patients going to inappropriate sources for treatment.

TB patients identified by the PHC program who were found to have serious or complicated TB were transferred to Hargeysa TB Hospital and treated as inpatients for three months. Less serious and maintenance phase cases were referred back to the PHC program, thus contributing

to integration. In addition, the Hargeysa MCH centres, part of the PHC program, were given responsibility for daily treatment with drugs supplied by the National TB Program, of patients living in Hargeysa, and their follow up. Rural cases were the responsibility of CHWs in their area. CHWs knew their TB patients and were able to follow them up to maintain compliance. The result was integration of what might have been a 'vertical' program into a comprehensive PHC program. This result was largely possible because of the diplomacy and negotiating skills of all the players involved.

Record keeping and organisation is the biggest part of a TB management program. Patient compliance and follow-up are crucial to successful treatment. One of the many skills of the PHC program's new Essential Drugs Coordinator was his inventive approach to management of TB records. He had earned a reputation in the RHU for his ingenious ideas for keeping records to enhance compliance and follow-up of patients. These ideas were shared with the CHWs in the PHC program who became responsible for follow-up of patients in their areas. New ideas for record keeping were continually tried because nothing was totally successful. The health facilities maintained patient records and patients were meant to maintain their own medication records as well. But more was needed to achieve compliance. The strategy found most effective to encourage compliance in the National TB Program was having the patients swear on the Quran that they would comply, and to make their thumb print on a record. This successful practice was observed by the author towards the end of her assignment when she visited the National TB Program operating in the extreme south of Somalia, and coordinated from Kismayo.

By 1984, when there were 85 CHWs in the North-west program, six of them had been infected with TB. This number supported the estimated prevalence rate of at least five per cent. They were compliant patients and were all cured. They became excellent ambassadors for the appropriate management of TB in their region.

The measures described here were only possible because close consultation had taken place between all the medical authorities in the region. The Regional Medical Officer had the authority to control health-related practices and in this instance he used his authority beneficially. It is doubtful whether action to collect all TB drugs from unauthorised outlets could have taken place in the national capital, Mogadishu.

Processes and outcomes of transformation of the RHU model

Although not part of the original plan, the PHC program in the North-west region of Somalia was based largely on the model developed in the refugee camps by the RHU. There were four main areas of transfer in the Essential Drugs Program. Following community assessment and community orientation, community based health workers (CHWs) were appointed to be responsible for preventive aspects of health care and the curative care of simple problems. The CHWs were to be provided with appropriate drugs for common problems. Second, a standard drugs list was established and third, arrangements for necessary supplies were put in place. Finally, development of staff at three levels and structure for the program were also based on the RHU model.

By 1984 the framework for a comprehensive PHC program had been developed in the North-west region of Somalia. The model was based closely on the RHU model and only differed in application because of the community environment and the dispersed settlements to be covered. Expansion of the program was necessary to cover the whole region and evaluation had identified several areas which needed further consolidation. These elements are dealt with in the next chapter.

Chapter 7.

Expansion and consolidation of the Essential Drugs Program within a Primary Health Care Program in Northern Somalia

This chapter examines the expansion of the PHC program, introduced initially in six villages in one district in North-west Somalia in early 1983. Over the next three years the program expanded to serve almost 100 villages in six districts. The process required an expanded workforce and as in the RHU program after its establishment, elements of PHC were strengthened, refined and consolidated. However, the constraints and obstacles which were identified differed from those found in the refugee setting because the program related to the wider community rather than confined refugee camps.

The main lessons that were learnt relate to local community attitudes towards health care, the need for adequate training, supervision and support for community health workers, the importance of getting hospital staff to understand and accept the program, and the vital role of National Drug Policy.

Finally, a number of issues which remained outstanding needed to be examined in order to suggest approaches to resolution.

Commitment to an expanded program

The implementation of the program began at the beginning of 1983 with eventual equal coverage of the six districts in the North-west region as its objective. Evaluation was part of all the monthly team meetings, and was of particular value after regional team visits to the districts. A major evaluation after the first fifteen months identified elements which influenced the direction of many of the activities which were undertaken during the next phase of the program's implementation. There were activities related to the program as a whole but which also impacted on the Essential Drugs Program and others were specific to the Essential Drugs Program. Further encouragement for the staff of the North-west to strengthen the program was an important outcome of a National PHC workshop held in Hargeysa in July 1984. After eighteen months of operation several key areas were identified that needed further investigation in order to plan appropriate management strategies.

As a priority, the PHC team felt that examination of the factors influencing community coverage was needed to determine community attitudes to the program and to the CHWs working in the communities. Of particular interest was women's health and the extent to which the program was reaching women in the communities. Women's contribution to the general program needed to be encouraged and further, there was also an urgent need to encourage women's participation in the management of their own problems, such as high maternal mortality. Analysis of community structures together with investigations concerned with community attitudes to the program and to health issues in general could help provide the answers.

Weaknesses in program elements were identified during evaluation by the regional team members. Many of these were associated with underdeveloped technical and supervisory skills and with inadequate confidence of staff. In this chapter, strategies that were proposed to overcome these weaknesses will be described and strategies for consolidation of the program will be examined. Enhanced technical support for implementation was also needed and the communication tools that were recommended to enhance teaching of PHC concepts will be described.

In relation to the essential drugs program, several issues were identified which needed to be addressed. First, a framework which would cover the distribution and use of essential drugs throughout the community, including the distribution and use by hospitals and pharmacies, was needed. Second, the skills of prescribers at all levels needed upgrading to encourage the rational use of drugs. Third, the sustainability of the program needed examination because drugs are the single most costly category of renewable supplies associated with PHC delivery.

Investigation of strategies to strengthen program elements

The review process that occurred during the first 18 months led to the identification of several strategies for strengthening PHC elements. In pursuing these strategies in the field, RHU experience and the developing experience of members of the North-west regional team who had not worked in the RHU were drawn on. Wider information about community perceptions of the program and its staff was identified as necessary before work was commenced.

National endorsement of the North-west approach

Strong encouragement for the implementers of the North-west program was an outcome of the national PHC workshop held in Hargeysa in mid 1984. In spite of the difficulties recognised by the program implementers in both the North-West Region and in neighbouring Sanaag Region, considerable progress had been made in both programs by July 1984. Both these programs had benefited from input of staff who had worked with the RHU. Programs in other regions did not have that advantage and they were having severe problems getting started. News of the progress in the North-west reached the southern regions and program implementers from the south were interested to visit the program. Several individuals visited the North-west from time to time but in 1984 a formal workshop was organised to share experiences. The North-west program hosted a National Workshop in Hargeysa, the northern capital, so that workers in all programs could share their problems and solutions and have the opportunity to see what was happening in the North-west program. A major focus of the workshop was development of policy in several areas. This example of policy development illustrates the importance of adapting PHC and all its components to local needs, rather than applying a formula. Discussion focused on the drug list being used in the North-west and Sanaag regions. This list was modified slightly in the light of new information and consensus among all program implementers was reached.

At the workshop, in relation to funding for a National Essential Drugs Program, there was also some negotiation with the representative of the United States Agency for International Development (USAID), the agency responsible for funding the program in Togdheer Region, also in northern Somalia. The USAID Manifesto stated that an aim of the USAID was to promote loyalty to US products, therefore contribution to the drug supply in support of a

National Standard Drug List according to generic nomenclature could not be supported by that agency. However, the representative suggested that USAID money allocated for drugs be redirected to other areas such as buildings and other structural requirements where there would be no conflict. The Standard Drug List, as set out in Table 6.2. was officially accepted as the basis for drug use in the National Primary Health Care Program. Acceptance of the Standard Drug List was a major achievement.

The interaction between PHC program implementers from regions throughout Somalia, at the Hargeysa workshop, was found to be very helpful. Ideas and strategies were shared which could be considered to enhance further development of programs in other areas and field visits were organised for visiting participants to observe program activities.

Examination of the structure and coverage of the North-west PHC program

The regional three tiered structure was well matched to the functions that needed to be carried out. The whole program was planned and coordinated at the regional level; the regional team was responsible for teaching, supervision and evaluation, with the help of district personnel, included in the middle level, who were meant to be primarily responsible for village matters. The middle level also included the MCH and other referral centres. The staff at this level helped with teaching and supervision and were the referral point for cases beyond the capabilities of the CHWs. It was the responsibility of the CHWs to cover the families in their communities, under the supervision of the district teams. However, fuel was not allocated to the program in sufficient quantities to allow supervisory visits to widely scattered settlements. The time needed to travel between settlements on unmade roads was a further constraint.

The health program was meant to serve populations in northern Somalia who lived in three main types of communities:

- Permanently settled communities, in small towns with commercial centres and scattered nomadic families in the surrounding areas, each with a population of around five to ten thousand people.
- Seasonally settled communities often surrounded by small market gardens with some livestock often with a total population of around ten thousand people each. Some or all of the people moved in search of adequate grazing for their animals as the seasons progressed.
- Communities (*reeraha*) made up of small groups of dwellings, housing mainly women and children were very scattered. Men frequented central teashops and other meeting places. The families were nomadic, moving with the seasons to different areas. *Reeraha* were seldom more than a dozen people but there was often a total of several thousand people in a geographical area around one central ‘village’.

The population dispersal in the remote areas of Somalia posed enormous difficulties for the provision of health services. Writing about the provision of health services in Alaska, Haraldsan (1988) describes communities dispersed in isolated settlements, with a population distribution similar to that in Somalia. He describes the use of trained health workers, chosen from, and based in communities, as the only appropriate way to provide health services to those isolated communities. However, in the area he describes, the health workers have daily

contact by radio-phone with tertiary level health professionals and patients are transported promptly by air to sophisticated facilities as required. Haraldson acknowledges that features of the Alaskan program, such as modern air transport and radio facilities, may not be available to many rural health programs, particularly in Africa. However, he emphasises the importance of community based health schemes to raise the standard of health care in isolated communities. He sums up his report by recommending that exchanges of information about health services should not be restricted to certain latitudes. He suggests that some of the lessons learned in the Arctic will be relevant to problems encountered in sparsely populated areas in the tropics and elsewhere. He does not suggest ways to cope with supervision in the absence of air transport and radio facilities. Communication with and access to the dispersed population of northern Somalia was much more difficult. In Somalia, the national radio network provided effective one-way communication but communication from the periphery to the centre was usually through messages relayed by travellers or eventual arrival of individuals from the periphery.

Community perceptions and the 1986 ORS study

Questions raised about community perceptions of the PHC program and the role of CHWs were addressed by a study which would provide valuable information concerned with community perceptions, the need for supervision and the role of CHWs. The first medical coordinator of the North-west PHC program, Dr Mohamed Warsame Dualeh, had embarked on a Master of Public Health (MPH) degree at Sydney University early in 1985. During his time as North-west Coordinator, he had been interested to investigate the extent of community understanding of Primary Health Care concepts and the effectiveness of the CHWs in carrying out their role. He took advantage of research support as part of the MPH course to pursue these matters. His research grant included funds for transport and fuel.

In 1986, Dualeh organised a comparative study to assess mothers' knowledge of management of diarrhoea and the role of ORS as indicators of the effectiveness of CHWs' work and community understanding of the PHC program. He assessed and compared knowledge about management of diarrhoea, its association with dehydration and the use of oral rehydration salts (ORS) in Middle Shabelle Region, in the south of Somalia, and in the North-west Region. The prepacked form of ORS, which is picture in Figure 7.1, was the subject of the study as that was the form used in both Middle Shabelle and the North-west. The study of the knowledge of the role of rehydration provided Dualeh with opportunities to assess attitudes to other aspects of PHC and the role of PHC staff. In both Regions he studied both isolated groups such as the family shown in Figure 7.2, as well as the centres of communities, despite opposition from male community leaders, who believed it unnecessary to visit the women and children living in the isolated settlements. The men considered that they could adequately reflect the feelings and the knowledge of their families.

Although the pattern of men speaking for the women was similar in both cases, he found that there was a great difference in the women's knowledge of the subjects in which he was interested. He found that 93 per cent of mothers from the North-west but only 33 per cent of mothers from Middle Shabelle had heard of ORS. Nearly 80 per cent of those from the North-west and 21 per cent of those from Middle Shabelle had used it once. Questioned about the appropriate mixing of the ORS, 59 per cent of the North-west women knew the correct proportions whereas only 8.5 per cent of the Middle Shabelle women knew the correct

proportions. Dualeh concluded that although it was traditional for men to pass information to the women, they could not be relied on to pass on the information completely. He attributed the apparently better access to ORS and knowledge of its use in the North-west to the better on-the-job training and back-up for CHWs. This could be further attributed to the training of the trainers. The Middle Shabelle trainers did not have the advantage of RHU experience.

Dualeh did not only collect the information to be studied later. While he was in the field, he discussed communication about health matters with the members of the communities with a view to solving some of the problems there and then. In nomadic communities the women did not communicate directly with the community health workers; instead the men discussed the health of their family members in their absence. The community health workers gave medicine without seeing the patients and instructions were given to the men, who may or may not have passed them on accurately. Dualeh felt that the men's assessment of the health problems they described was also questionable. The women accepted that the men spoke for them and did not normally challenge the status quo. Although lengthy discussions were held with community leaders about the service available to women and children from community health workers, the wives were not allowed opportunities to communicate with health personnel.

In Bangladesh there had been similar concerns about community understanding of the management of diarrhoea and of understanding of the role of CHWs. AMR Chowdhury et al (1988) described an example of a successful training program for mothers to understand and use rehydration in Bangladesh. Although the problems with understanding and use were found to be similar to those encountered by Dualeh, the major difference was the nature of the communities. Chowdhury et al conducted their program in densely populated communities which made it possible to access mothers in 5 million Bangladeshi households. In addition, the accessibility of the Bangladesh households made it possible for health workers to contact women very easily for further training, a major difference from the Somali situation.

The information from the Dualeh study was shared with the members of the North-west PHC team. It was agreed that it had been assumed too readily that efforts to educate the people about the needs of women and children had been successful and that knowledge gained by the CHWs would be shared directly with mothers. It was recognised that it was unlikely that centuries of tradition could be changed overnight, especially when communication was hampered by distance and no roads. Nevertheless, it was accepted that serious consideration would have to be given to finding the best way to initiate progress in this area and the need to enhance the role of Traditional Birth Attendants (TBAs) was put on the agenda again. Because of the difficulties associated with reaching women in isolated communities, the training of TBAs had not been a priority at the beginning of the program. In the refugee setting, TBAs were trained and played an important role in the health care of women and children. In the PHC setting it was much more difficult to reach the TBAs because of the vast distances and the spread of communities. The North-west program gained valuable information from a study concerned with women's health and their role in the community which was undertaken in Sanaag region.

Figure 7. 1. **An example of the Oral Rehydration Salts sachets commonly used in the North-west PHC program**

Figure 7.2. **A Somali family living in an isolated settlement (*reer*) in the North-west Region of Somalia**

Enhancing the role of women: Traditional Birth Attendants (TBAs) in Sanaag

In Sanaag region, where the communities were even more isolated than those in the North-west, a study was undertaken to determine the feasibility of involving women in their own health care, particularly in relation to reducing maternal mortality which was associated with delivery. Information gained in this study helped greatly in decision making concerned with the direction of the North-west program. As in the North-west program, program staff saw the need for education and empowerment of women and were interested in an enhanced role for TBAs.

When Primary Health Care was introduced in 1983 to provide health services to the outlying communities of Sanaag Region, through training community health workers, an Australian midwife, Sue Selden, was focusing on the MCH component. Maternal mortality was a serious problem in Somalia. Investigations coordinated by Selden in Sanaag Region and documented in her MPH Thesis 'Put Mothers First' showed that 50 per cent of the deaths were due to post partum haemorrhage (Selden, 1986). Her investigations also showed about one third of pregnant women had haemoglobin of less than nine and a significant number as low as six. Fear of death due to haemorrhage was very common but most women felt helpless even though remedies were sought.

The innovative program to both train women and to prevent maternal mortality that was undertaken in Sanaag Region involved training of female Traditional Birth Attendants (TBAs) and providing them with access to a potent drug, ergometrine, to control excessive bleeding after delivery. Ergometrine, when administered after delivery of the placenta, causes the uterus to contract and stem the flow of blood.

In the Sanaag region, the population was extremely scattered and semi-nomadic, moving two or three times a year in search of grazing for stock. There were no roads. Isolation of family groups contributed to most rural pregnant women being delivered by a family member or close friend and a few by experienced TBAs. Town women were delivered by people with more experience. Therefore training 'official TBAs' would be of little practical help for outlying families. Referral to hospital for delivery was unfeasible and would be of little help even for town women because the hospital had very limited resources to offer at that time.

Selden began by coordinating training for volunteer birth attendants in and near the town of Erigavo after consulting women in the outlying areas about their attitudes to Community Health Workers, almost all male. The male CHWs were found to be acceptable for giving advice to women and for identifying risks, but not for attendance during delivery, nor for examination of women. Emphasis in training of the male CHWs was therefore on caring for the mother and baby in the antenatal period before labour and after delivery. TBAs and CHWs worked together to identify pregnant women and distribute iron and folate tablets and follow up to see they were taken. Use of ergometrine injection after the delivery of the placenta was taught and understood. Ergometrine was provided to both the newly trained birth attendants in and near Erigavo, and to CHWs for provision to the person doing the delivery in remote communities. Isolated women who might have had to deliver without trained help were given the ergometrine ampoules and sterile needles and syringes in preparation for the delivery.

The use of the ergometrine was explained and it was established, on investigation by Selden and her staff, that it was understood. However, a three faceted approach was necessary to

affect the mortality following delivery. The approach involved massage of the fundus and putting the baby to the breast immediately after delivery as well as administration of ergometrine after delivery of the placenta. These three interventions promoted contraction of the uterus and helped stop bleeding. Breast feeding during the first 24 hours was against accepted practice and women were not easily convinced so this aspect of practice needed intensive education. Again, it could not be expected that hundreds of generations of belief could be changed over night. However, because breast feeding was an important component of PHC, impacting on nutrition, disease transmission and child spacing, it did receive a great deal of attention. The problem with breastfeeding during the first 24 hours was associated with belief that the colostrum was bad for the baby and that therefore the baby must be fed sugar and water only for the first day. That practice, in itself, contributed to early infections in the baby as well as depriving the baby of the protective antibodies present in the colostrum.

Selden (1986) reported that it was difficult to assess the impact of the above interventions when she left the region in 1986. However, she perceived that the new measures were meeting a need. Men from villages not included in the first training had begun to ask when the next training of TBAs would take place. Follow-up assessment showed that trained birth attendants were seeing pregnant women and were distributing iron/folate tablets. It was reported that they were attending many of the births in their areas and had been able to treat haemorrhage when it occurred. Selden gave details of cases reported to her but suggested that measurable impact on perinatal mortality would take much longer to show. She suggested that death due to poor maternal health would gradually decline as the use of iron/folate became more widespread and nutritional advice was heeded.

Selden's project illustrates the provision of a potent drug to illiterate members of the community, provided they are trained well, as an appropriate means of addressing a major health problem. This obviously curative approach to the problem of maternal mortality was quite controversial. The decision to provide ergometrine, a potent drug, to illiterate nomadic women for administration to their clients was not made lightly. Health education, which was quite aggressive when undertaken by Somali health workers, was not neglected and included nutritional factors including those affected by culture; and some delivery, post delivery and breastfeeding practices. In addition, provision of what proved to be a visible cure was opening the door to the concepts of prevention which was the aim of the PHC program, and was providing access to the program which had been previously unavailable to most remote women.

A further outcome of that intervention was the change in pattern of purchases from local ‘pharmacies’. People working in the Erigavo ‘pharmacies’ told PHC staff that customers were no longer asking for Vitamin K injections when a delivery was imminent. Gillian Lang, an Australian nurse who was involved in CHW training in Sanaag and who was subsequently involved in similar work in Mozambique and Namibia, was consulted in Australia in 1994 for more information about outcomes of the TBA training. Erigavo pharmacists had explained to her that customers had begun to ask for ergometrine injections in place of Vitamin K and they were interested to know what training had occurred in the PHC program. It was a common belief that injection of Vitamin K could help the blood clot and stop the bleeding. Until Selden’s TBA training took place it was not understood that the bleeding occurred because the muscle of the uterus had not contracted. The training of CHWs in which Lang was involved also included education about this aspect (Lang, 1994, personal communication).

During PHC team members' review of the program, it had frequently been suggested that upgrading the knowledge of TBAs would surely make a positive contribution. This was the concept to which Selden subscribed when she undertook the project. TBAs would continue to be needed no matter what happened to the PHC program. TBAs did not depend on outside finance but were paid by the women they delivered, either in kind or with money. Women would choose help from a TBA with a good reputation so improved methods would improve a TBA's economic potential. Any learning acquired by a TBA would never be lost and she would continue to be needed, even during circumstances which might curtail other activities of a PHC program such as wars and droughts. Knowledge gained would be passed to her students in the traditional way.

The studies of both Dualeh and Selden were undertaken as post-graduate research associated with Sydney University MPH. Both researchers undertook their studies because they believed the information which would be gathered would be crucial to the success of the programs and could make a very positive contribution to the health of the people in the communities. Although each study had a particular focus, Dualeh's on management of diarrhoea and Selden's on reduction of maternal mortality, the findings addressed many of the wider questions raised during the program evaluations concerned with the need for adequate supervision, community involvement and the role of CHWs as well as enhancing the role of women. In addition, their findings can be applied to other communities in similar settings. Further the findings of Dualeh and Selden endorsed the subjects which had been identified as targets for educational campaigns using posters.

Enhancement of staff capabilities across program elements

At the peripheral level in North-west Somalia, new villages were being added to the program in groups and the existing villages were continually having their workers upgraded. As in the refugee program, CHWs skills were extended to include survey techniques so they could assess problems like allegedly increasing diarrhoea and incidence of trachoma. They were able to assess the impact of targeted intervention campaigns. The refugee camps were excellent training grounds for these subjects and CHWs were able to see similar work going on in the camps. Also, as in the refugee camps, CHWs were taught to prepare for emergencies. This training was put into practice later, when they became active in the prevention, surveillance and management of cholera during the 1985 and 1986 epidemics. The cholera epidemics also tested the skills of the staff of the Essential Drugs Program who were in an ideal position to calculate, order and supervise the supply of appropriate medical supplies and equipment for the speedy control of the epidemics.

By June 1986, supplies were being provided for 90 CHWs in six districts, nine Mother and Child Health centres in five districts, two primary care referral centres, and one district health centre in the North-west Region, and the program was continuing to expand but expansion of the program had not been undertaken without assessment of what was already in place.

First, supervision was recognised as vital to the program but very difficult to maintain. This skill was related to other capabilities which also needing upgrading. Supervision should occur on two levels. It was recognised that the staff of the district level of the program which included the district teams and the staff of the referral centres and MCH centres should participate in training and supervision of the CHWs. The regional staff were involved in

training and supervision of both the district level staff and the CHWs. The communities' understanding of the program related directly to community support for CHWs and this support was shown to be difficult to maintain in some cases.

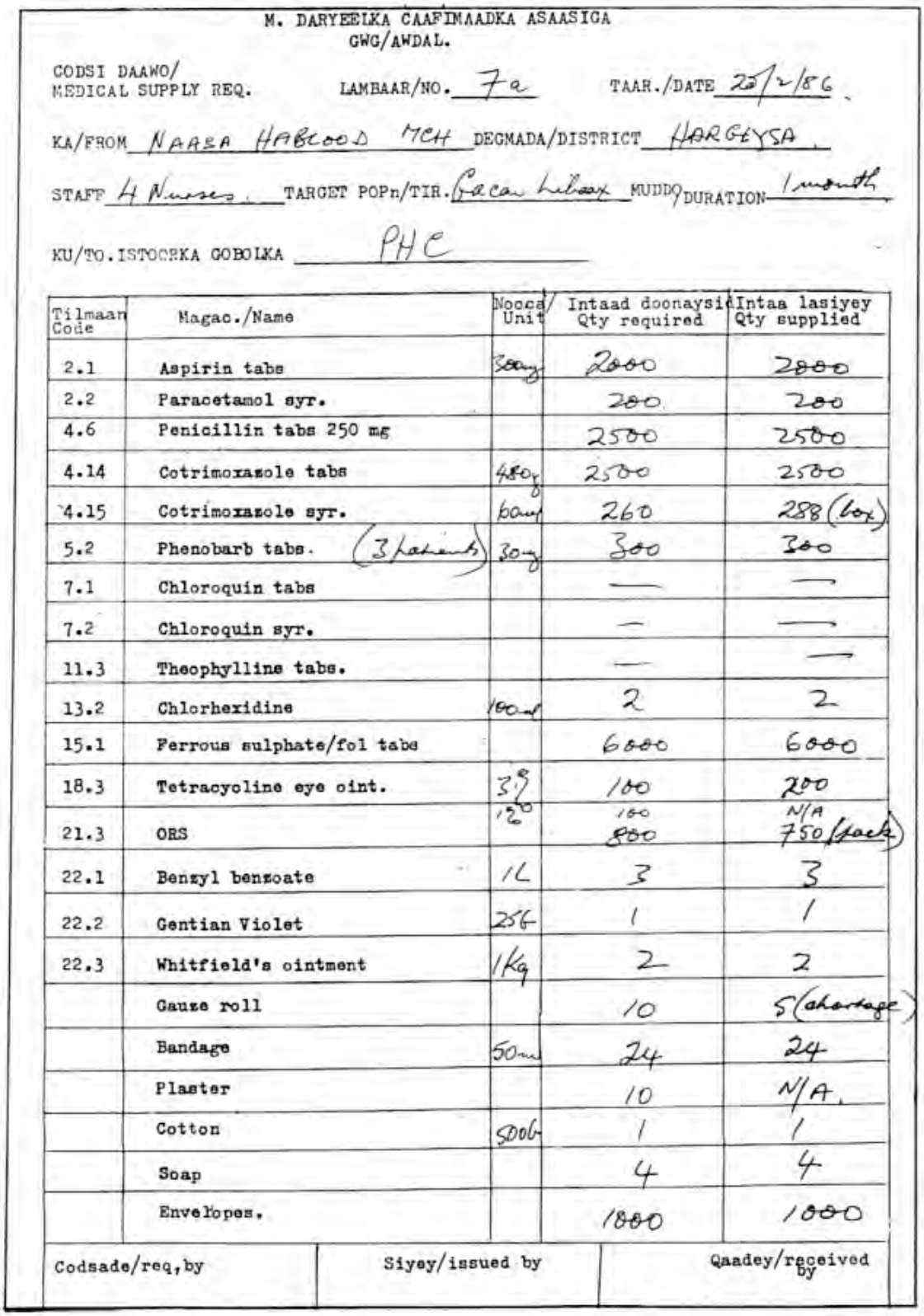
All senior and middle level staff were required to be active PHC team members, helping with teaching and supervision as well as doing their routine tasks. It was necessary to see work going on in order to be able to evaluate, help, correct mistakes, and determine the relationship between the work and the reports submitted. Reporting was a relatively new, but vital, aspect of health delivery, and accuracy was needed so that medical supplies could be adapted to needs. These goals were not achieved early in the program.

Several strategies to strengthen staff capabilities were undertaken. Greater involvement of the MCH and referral centre staff in planning and consultation gradually led to better understanding and opportunities for upgrading their own training through participation in workshops which were provided. Leaders of the various elements of the program who had a major training role, for example, the training section, the essential drugs section and the immunisation program had opportunities to attend workshops and study tours in other African countries. The head of the training section made a study tour which included PHC programs in Kenya, Zimbabwe and Tanzania and the head of the EDP toured essential drugs programs in Tanzania. These tours provided opportunities for the staff to learn from what was being done well in other places and also to feel proud of their achievements which they could share. Closer to home, exchange with the Sanaag region program provided learning experiences and exchange of ideas. The list of medicines ultimately available for use at the referral level, including MCH services, is illustrated by the requisition form for middle level services presented in Figure 7.3.

Following heavy emphasis on training in seminars, and in the field, an appropriate service developed in most places. Two referral centres were opened early in the program but had to be closed because of staff problems. Two years later, when a much better understanding had developed, two more were opened. The medical supplies given to all of these middle level centres were the same as those provided for CHWs, with the addition of items for special or more serious problems. An example of an additional item is shown on the requisition form for MCH centres where phenobarbitone is available for epilepsy. The centres were supplied in accordance with information returned and the competence of their staff.

By June 1986, some of the centres were giving appropriate service and their staff showed absolute dedication to the program. The wide experience of health workers who had not worked in the RHU program was valued and contributed significantly to the program's success. They had led mass immunisation campaigns throughout the region, including the capital city of Hargeysa, where, after four rounds against six vaccine-preventable diseases, coverage amounted to 85 per cent. The effectiveness of these campaigns was illustrated when Hargeysa was bombed in 1988 and the whole population fled to refugee camps in Ethiopia. There was no outbreak of vaccine preventable diseases in the camps because of the immunisation coverage that had been achieved in that community. Unfortunately, facilities were not available in the new refugee camps to keep up the coverage until more than one year later (Toole, 1989)

Figure 7.3. MCH and 'middle level' order form showing range of drugs requested and supplied



M. DARYEELKA CAAFIMAADKA ASAASIGA
GWG/AWDAL.

CODSI DAAWO/
MEDICAL SUPPLY REQ. LAMBAAR/NO. 7a TAAR./DATE 25/2/86

KA/FROM NAASA HABLOOD MCH DEGMADA/DISTRICT HARGEYSA

STAFF 4 Nurses TARGET POPn/TIR. Gacan Libaax MUDDO/DURATION 1 month

KU/TO.ISTOORKA GOBOLKA PHC

Tilmaan Code	Magac./Name	Nooca/ Unit	Intaad doonaysid Qty required	Intaa lasiyey Qty supplied
2.1	Aspirin tabs	300mg	2000	2000
2.2	Paracetamol syr.		200	200
4.6	Penicillin tabs 250 mg		2500	2500
4.14	Cotrimoxazole tabs	480mg	2500	2500
4.15	Cotrimoxazole syr.	60ml	260	288 (box)
5.2	Phenobarb tabs. (3 patients)	30mg	300	300
7.1	Chloroquin tabs		—	—
7.2	Chloroquin syr.		—	—
11.3	Theophylline tabs.		—	—
13.2	Chlorhexidine	100ml	2	2
15.1	Ferrous sulphate/fol tabs		6000	6000
18.3	Tetracycline eye oint.	3g	100	200
21.3	ORS	1ltr	100 800	N/A 750 (stock)
22.1	Benzyl benzoate	1L	3	3
22.2	Gentian Violet	25G	1	1
22.3	Whitfield's ointment	1Kg	2	2
	Gauze roll		10	5 (shortage)
	Bandage	50mm	24	24
	Plaster		10	N/A.
	Cotton	500G	1	1
	Soap		4	4
	Envelopes.		1000	1000

Codsade/req,by	Siyey/issued by	Qaadey/received by

Strategies for program consolidation

Four strategies are discussed here to illustrate transfer and consolidation of knowledge and skills associated with PHC concepts within the North-west PHC program, and the sharing of the experience with PHC program implementers in other regions of Somalia. Although the strategies are associated with strengthening implementation of PHC concepts in a general sense they have specific application to the Essential Drugs Program.

Expanding skills: Mother and child health centres and referral centres

At the district level, establishment of mother and child health centres and referral centres was attempted for a second time during 1984. At the beginning of the program attempts to introduce these middle level facilities had been largely unsuccessful. The staff at this level were weak because they had no exposure to PHC concepts in their former training. The focus on prevention rather than cure together with integrated services took some time for them to understand. Mother and child health centres had existed in Somalia for many years but before the PHC program started they were not perceived by communities or staff as places concerned with improving the health of mothers and children. World Food Program rations were distributed through them and when the PHC program began they were seen solely as food distribution centres.

Staff received payment from community members for the food they distributed. This payment supplemented totally inadequate salaries. Any medical supplies they had received from time to time were treated similarly to the food with supply to anyone who was prepared to pay. Criteria for distribution to the most needy on the basis of nutritional status or medical need were not considered. In addition, the nurses staffing the previous MCH centres felt 'qualified' and were initially offended by suggestions that they needed new or different training in contrast with CHWs who had no previous training and were extremely enthusiastic and excited about learning new concepts.

To address these problems, changes in approach were proposed by members of the regional team in several areas. As Ministry personnel appointed to MCH centres, staff had status in the community. Discussions between experienced Somali members of the Regional Team led to the suggestion that the status was largely associated with the perception that they were 'qualified' as MCH staff and therefore had control of WFP food and of the medical supplies. Payments from the community were an additional benefit. Regional team members could therefore understand that introduction of the PHC program in the MCH area was seen by MCH staff as antagonistic to their whole position. Incorporation of the vital MCH element into the PHC framework required sensitive management. Involvement of MCH staff in planning, decision making and training gradually helped to change their attitude. In addition, their valuable contributions to organisation of immunisation programs in the urban areas and to management of the cholera epidemic provided the MCH staff with extended opportunities to work alongside other PHC team members and to develop an appreciation of the PHC philosophy. It took a long time to overcome the resentment caused by the proposed changes, including the changes to the practice of selling supplies, and to implement a service for improving the health status of mothers and children. Some staff became valuable ambassadors for the essential drug program in the region. In particular, MCH staff visited villages and taught communities the appropriate management of diarrhoea through oral rehydration. In Figure 7.4 an MCH nurse emphasises the problems associated with bottle feeding and in Figure 7.5, correct mixing of ORS is demonstrated.

Figure 7.4. **MCH nurse emphasises the problems associated with bottle feeding in a village in North-west Somalia**

Figure 7.5. **Demonstration of correct mixing of ORS by MCH staff in a North-west Somali village**

Another area where skills of MCH staff could be usefully applied was in strengthening the capabilities of the members of district teams who, in most cases, had been appointed soon after their qualification as nurses or sanitarians, and therefore had little practical experience.

Issues of field supervision and expanding skills: the role of the district teams

The second area of consolidation was associated with strengthening the capabilities of the district teams who were supposed to be responsible for most of the supervision at village level. However, these teams consisted largely of young people and they were a new and unfamiliar level in the political structure of the districts. Part of the responsibility of district supervisors was to communicate well with village leaders so as to detect problems early. Detailed discussions should have led to solutions, but, if they did not, a report submitted to the regional office prompted an experienced regional worker to visit the community. Because of inexperienced district teams, problems usually were resolved only after intervention of experienced regional team members.

In order to develop recognition for the role of the district teams and to increase their own confidence, members of regional teams regularly visited communities with the district teams. Several strategies addressed the problems. Increasingly, senior MCH staff were involved in the community visits. Regional support for district teams in the field helped to demonstrate what had to be asked and seen, and how to interpret, understand and respond. Data on forms collected by the district teams, and interviews with them in the regional capital, could not possibly give a full picture of what was happening in the communities. It was very important that the staff of the drug program should not neglect their duties in the field because of pressure to keep things in order centrally.

Communication between tertiary and primary levels in refugee camps was easier in comparison because the distances were so small. The population numbers and services in one refugee camp were analogous to the population and services dispersed throughout an entire district with huge distances and unmade roads between settlements. Community health workers received supplies every two months. A strategy was suggested to make it easier for district teams to visit the peripheral villages. It involved less frequent visits with replenishment of CHWs supplies every three months instead of every two months. However, since it was evident that CHWs found it hard not to over prescribe in the first weeks after distribution, it seemed inadvisable to have more widely spaced supply dates; a supply intended to last three months might have been used as quickly as a two-month supply. Other means to strengthen the capabilities of district team members were explored.

A further strategy to help enhance the supervisory skills of the members of PHC teams was organisation of exchange visits to other PHC programs. The PHC program that was being developed with the support of CAA in Sanaag region was the one other new PHC program which made good progress. It benefited greatly from staff who had worked in the southern refugee camps. But the Sanaag Region was a full day's journey from the nearest refugee camp, so trainee staff in the Sanaag Region were sent to the North-west Region periodically to gain experience in the refugee camps and in the North-west PHC program. In addition, senior staff from the North-west and from the Sanaag region travelled the long distance as often as possible to work for a few weeks in each others' programs.

Staff benefited enormously from the interaction and learnt a great deal from each other. The interaction also boosted morale which was often threatened by seemingly impossible tasks. The staff of the essential drug component of the program, particularly, had ideas and strategies to share. Streamlining of storage, record keeping, ordering and supply was a constant challenge. New ideas for training concerned with rational use of drugs according to the guidelines were a common subject of discussion.

Teaching aids: the use of educational posters

On a practical level, throughout all components of the program, it was recognised that the use of teaching aids needed investigation. Communication in the Somali culture was largely oral (Cawl, 1974, Snell BF & P, 1987) and the introduction of a new medium for communication of ideas needed careful examination. It had been demonstrated that teaching aids from other countries' programs were not necessarily suitable. Involvement of local staff and communities in the preparation of teaching aids should lead to greater understanding of the aims of the programs together with 'ownership' of strategies.

Education about the use of ORS and the role of breast-feeding in the management of diarrhoea and dehydration was a priority in the community. Among the tools for intervention that were developed were educational posters. These posters were prepared with great care. It had been found that line drawings and diagrams were not understood by Somalis. Posters made up of line drawings had been prepared by UNICEF before the program began and these had proved useless (except for writing on the back). Somali culture was heavily dependent on oral communication as a traditional means of sharing information and poetry and role plays had very significant roles. In Somali culture, poets were very highly respected in the society (Cawl, 1974). Several CHWs were also community poets and composed poetry to deliver PHC messages. Some of these poems were recorded and broadcast by Radio Hargeysa. Radio was very popular and fitted in well with the tradition of oral communication. The Somali language had not been written until 1972, early in the Presidency of Siyad Barre as part of his literacy campaign. The late introduction of written language may have contributed to the low priority given to written communication and visual communication.

Nevertheless it was felt that there was a role for educational posters provided they were well understood. Research was undertaken to determine the images that would be understood and photographs were found to be a good means of communication. It was also necessary for pictorial messages to be understood alone. The high level of illiteracy meant that it was inappropriate for messages to depend on the understanding of captions. Two designs were prepared with the help of Somali staff and field tested to determine whether the images conveyed the intended messages. One depicted a set of weighing scales, commonly found in the market, with one pan full of a variety of medicines. The other pan, with one packet of ORS, appeared much heavier. People interpreted the message as there being something very special about the ORS packet because it was heavier than the pan containing all the medicines. The other picture showed a very sick child beside a bunch of dirty feeding bottles hanging on a pole, in front of a graveyard. People saw the child as being very sick, maybe about to die, and it had something to do with the feeding bottles. Captions were added by Somali PHC staff in consultation with the community. The first said that the use of ORS far outweighs treatment by all other medicines. The other said bluntly that feeding bottles kill babies. Reproductions of the posters appear in Figures 7.6 and 7.7.

The use of feeding bottles involved several elements contributing to ill-health in babies. First, cleaning of the bottles and their teats and caps was very difficult. It required boiling in water which was in short supply in utensils that may or may not be available. Firewood was needed to provide the heat to boil the water and this would have to be collected. Busy mothers had insufficient time to devote to the sterilisation of bottles. Second, the water to reconstitute the milk powder needed to be sterile. That involved all the same procedures as those necessary to clean the utensils.

Third, the powdered formula was very expensive and was often diluted more than it should have been, to make it last longer, so the baby would be getting insufficient nutrients. Therefore the blunt statement that feeding bottles kill babies was accepted. Posters had not been prepared for use in the camps but RHU staff felt that the posters prepared for the PHC program would be appropriate and some of them were shared with the RHU program where they also proved to be understood.

Strategies associated with consolidation of the Essential Drugs Program

All of the strategies for consolidation of the various elements of the program - supervision, community coverage and the role of CHWs, staff roles, women's health and the use of educational posters - were associated with rational use of drugs. However there were matters associated specifically with the framework of the Essential Drugs Program which needed to be addressed and these are now discussed.

The broader PHC framework in which an EDP could operate needed consolidation. A National Drug Policy to cover all aspects of drug procurement, distribution and use, including private channels such as 'pharmacies' was absent, so strategies had to be undertaken at the North-west regional level. The tertiary level of care such as hospitals also had to be covered by National Policy to address the care needed for people whose management was beyond the capacity of the PHC programs. However, in the absence of a National policy, steps were taken to develop a comprehensive framework in the region as an example which might influence later development of a national policy. This action was taken in spite of the questionable sustainability of the North-west program in the light of both uncertain security as well as uncertainty about continuing funding.

Figure 7.6. **Reproduction of poster prepared to discourage the use of feeding bottles**

The caption reads 'Bottles are the death of babies'.

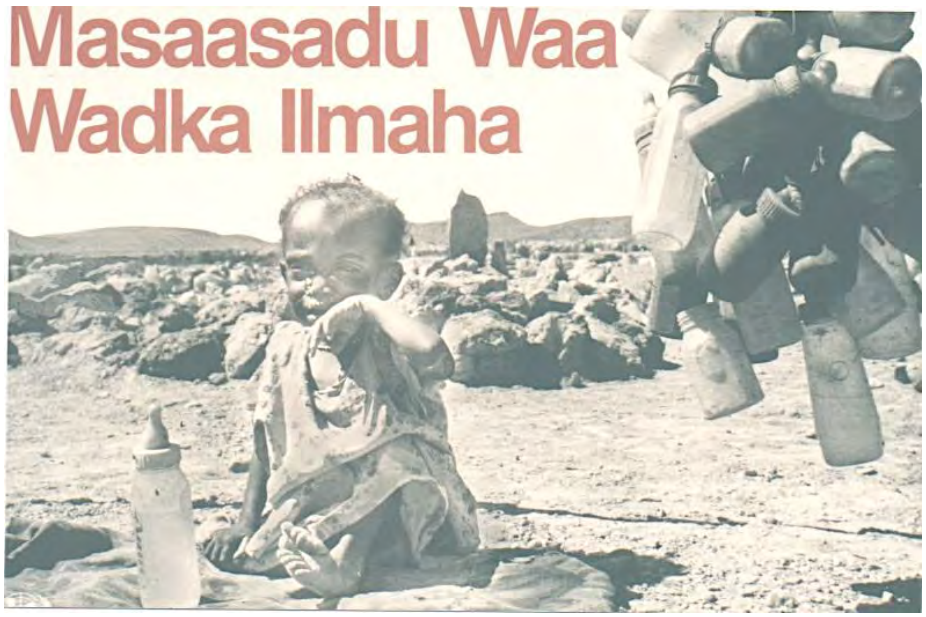


Figure 7.7. **Reproduction of a poster prepared to encourage the use of oral rehydration fluid for diarrhoea rather than other medicines**

The caption reads 'Rehydration fluid is better for diarrhoea than all other medicines'.

The role of pharmacies

In Hargeysa, about 100 pharmacies were available to the 350,000 people. The drug discussion group of the North-west first PHC workshop, held in March 1983, concluded that pharmacies presented the following problems:

- There were too many of them, since almost anyone could obtain a licence.
- They could be run by people with no special training, and customers did not understand that it was vital for medicines to be supplied by trained people.
- Pharmacies often did not have appropriate medicines for common problems and released drugs that were inappropriate and, sometimes, dangerous.
- Some pharmacies imported relatively sophisticated and expensive but inappropriate medicines from foreign countries.
- The government's central store, from which pharmacies could buy stocks, frequently contained drugs dumped by manufacturing countries that were not permitted to sell them on their own markets.
- Hospitals often did not have the medicines necessary for their patients, who were therefore sent to pharmacies where they were exposed to all the above problems.

The group involved in that early discussion felt that the introduction of a standard drug list and treatment guidelines for the whole country was the only real solution. In the refugee setting the role of hospitals and pharmacies was not an issue because the populations were confined and hardly exposed to the commercial health sectors.

The first approach considered was through campaigns aimed at improving the knowledge of people who ran pharmacies. While such interventions were discussed from time to time from the beginning of the program, the pressure of routine work and the shortage of trained staff limited progress. However, in Sanaag region, where the capital city was much smaller than Hargeysa, meetings were held with people who ran 'pharmacies' and valuable interaction took place. The group was small enough for discussion about PHC principles and the role of essential drugs. It was felt that cooperation was possible. In contrast, in Hargeysa there were more than 100 known 'pharmacies' with several employees and many more small stores selling pharmaceutical products. It was not possible to organise meetings with such a huge group.

The second approach was through radio programs which reached all of northern Somalia. The programs were prepared by PHC staff, and focused on particular problems that needed immediate attention, including the misuse of antitubercular drugs, the sale of tranquillisers without authority, the sale of incomplete or inappropriate courses of antibiotics, and the treatment of dehydration without rehydration therapy. However, a complete coordinated campaign was needed and although this presented an enormous challenge in Hargeysa, plans were being discussed.

The role of hospitals

In Somalia, hospitals were government owned. A major hospital was situated in each regional capital and a smaller hospital was situated in each district capital. PHC program implementers were concerned that patients referred to hospitals, or attending hospital outpatient departments in the first place, could be treated in a way which was not in line with PHC policies. For example, drug treatment considered inappropriate by the PHC workers could be prescribed. From the beginning, hospital doctors had been invited to participate in the determination of PHC treatment guidelines but very few showed interest. It was felt by PHC staff that the contrast in management approaches between doctors in both their private and hospital practices and the PHC program health providers could undermine the credibility of the PHC program, while a common approach would be of great benefit to the community.

To gain cooperation of hospital staff, it was considered essential to involve them in all aspects of planning for a hospital component of the Essential Drugs Program. The opportunity that arose from cooperation between PHC programs and two donor agencies - Community Aid Abroad (Australia) and German Emergency Doctors - was used to attempt the introduction of standard drug programs in Erigavo and Hargeysa hospitals. Suitable drugs for use in hospitals were chosen from the WHO's essential drugs list and were to be bought from specialist agencies at prices allowing programs to be more sustainable than they might otherwise have been. It was thought that this assurance of a reliable supply of appropriate drugs would encourage sensible and effective treatment, make education about medicines much easier, facilitate the recording of drug use, and permit planning for the future. The whole concept of the system was developed in association with the regional medical authorities and the hospital doctors. Lists were drawn up and orders procured for both hospitals.

Despite the careful choice of drugs, however, waste and inappropriate treatment continued because the health professionals and workers in the hospitals did not fully understand or accept the system. It proved hard to get staff to keep regular records and accept that the drugs in the hospital wards were for inpatients only. Supplies were sometimes used for outside purposes, and this both confused the records and caused shortages on the wards. Furthermore, hospital staff were unable to live on their salaries and had to obtain additional income from private practice, which in fact received the greater part of their attention.

It became evident that when planning hospital services, a strong policy on essential medicines had to be developed so as to meet the real needs of most of the patients. As well as helping to avoid wasting money on ineffective, unsuitable, dangerous and needlessly expensive drugs, the use of a standard drug list in hospitals simplified storage, distribution and ordering. The issue associated with sustainable salaries for staff was less easily addressed.

While the application of the program at the primary and secondary levels of health care was considered largely successful, the attempt to develop a comprehensive Essential Drug Program in the region, which applied at primary, secondary and tertiary levels of care was not fully successful at that stage. Outstanding issues were recognised and there were attempts to address them. In some cases, resolution of problems was constrained by external factors. The issues are discussed below.

Outstanding issues and approaches to resolution

Maintenance of the PHC program was heavily dependent on an infrastructure of strong staff at community, district and regional levels. To maintain commitment to the program, middle level and senior staff needed political security and security associated with their careers and salaries. At the community level the health related activities were coordinated by the CHWs with the support of the communities. The communities were meant to be responsible for the material support of CHWs and for the maintenance of their morale. However, to survive, CHWs needed technical, financial and moral support from the district and regional level staff within a strong PHC framework.

Reinforced role and sustained support for CHWs at community level

Community support for CHWs is central to the success of PHC. Where funding agencies provide salaries or incentives for CHWs, the program faces problems of sustainabilty. Support may be in kind, in the form of support for the CHWs other commitments, or in the form of a salary. Support may be easy to achieve in good times but in times of drought or hardship it may be very difficult as was the case in the North-west region.

Careful study of community support involves consideration of national development, sustainability, and the economic status of the communities. Cole (1988) describes difficulties encountered in developing a PHC program for Lofa county in Liberia. He lists support for village health workers as one of the main difficulties. He explains that it had been assumed that since traditional healers were so well remunerated in that community, support for health workers would follow. In the Liberian setting it was felt that support might improve when the health workers had 'earned their place'. That experience is similar to the Somali experience. From the beginning of the development of the PHC programs in the North-west and Sanaag regions, consultation with traditional healers was felt to be important. It had been hoped that at least some traditional healers would be interested to become CHWs. In a few cases male traditional healers did become CHWs. The additional training possibly contributed to their economic capacity. It was not determined whether this did occur but support for CHWs remained difficult to maintain.

The community understanding of the role of the CHWs still needed reinforcement. The CHWs were supposed to be supported by their communities as a reward for their services and it was recognised by both the communities and the program implementers that in times of hardship this could be difficult. Where there was insufficient understanding of the PHC or Essential Drugs programs, or if the services were unsatisfactory, support may not have been given. Problems associated with support were becoming more common, but it should be noted that from the beginning of the North-west PHC program in early 1983 until June 1986 only three of ninety community health workers in the six districts of the North-west program had dropped out. It has been mentioned before that the CHW level of the program was the strongest level of the program. Enthusiasm for new knowledge and energy in carrying out tasks were notable features of the CHWs' attitudes. This enthusiasm contrasted noticeably with that of many health workers at the middle level who had perceived themselves to be already sufficiently trained. As mentioned before the difference was probably the result of the new access to training for Somalis who had not had such an opportunity before. The CHWs sustained their work even when material support from the community was limited. However, in the absence of support, some community health workers, particularly in the larger villages, and in villages

on the main roads, resorted to selling some of their medicines, usually the antibiotics, to whoever asked for them. Two villages had to be dropped from the program because the Village Health Committees preferred not to participate rather than change the practices which allowed CHWs to sell medicines rather than receive the necessary support from the community.

CHWs mostly functioned in and near the village centres. In isolated areas particularly, men played an intermediary role and transmitted advice from health workers to mothers. This was unsatisfactory; it had to be made clear to the communities that women should be reached directly by health workers, preferably other women. But it was not easy for women to become CHWs. They had far too much work to do: collecting water and firewood, cooking, caring for the family and the animals. In addition, they were not allowed to walk around alone. Training of respected traditional birth attendants, in maternal and child health care and in the correct use of medicines, could be a strategy to overcome the problem of having almost all male CHWs.

The difficulties associated with recruitment of female health workers were recognised, but the plan to involve TBAs in the role of health workers which was under investigation would both provide access to women in the community and overcome the problems associated with support for health workers, in this case TBAs because, as traditional healers, they were paid by the community. It was felt that increased knowledge provided by the PHC program could enhance the TBAs' value to the community and thus TBAs with PHC training would be more popular. During discussions with the author in Siliguri in India, in 1995, the Director of the Gonoshasthaya Kendra community health project, Dr A Qasim Chowdhury, described the Bangladesh experience where the TBAs' role was expanded much further to include most general CHW activities. The Bangladesh TBAs received most of their financial support from the community but their work was supplemented with a small number of essential drugs for free distribution where necessary. This model of integrating tradition workers in PHC could be helpful in the development of a sustainable community based health program in many developing countries.

Supervision and support role of the district teams

The district team members, who were primarily responsible for supervision of the community work of the CHWs, needed ongoing support to become sufficiently reliable in their supervising and trouble shooting roles. The demands on experienced regional staff to resolve problems with a series of visits to explain the concept of primary health care and the need for community participation remained. The role of the district supervisory teams was not understood adequately by the district team members themselves and hardly at all by the village communities and their CHWs. The district teams rarely became involved in problem-solving in the communities, although problem solving was included in the responsibilities defined for that staff level in the PHC program. Unfortunately, district teams were seen by communities mainly as drug distributors for the peripheral staff. At the same time, regional supervision of the districts was not being properly implemented. The supervisory skills of the district teams had to be upgraded and control and monitoring of their activities exercised. This procedure was not easy in the presence of inadequate fuel, inadequate salaries and the increasing political insecurity which penetrated all activities.

Support for middle level and senior staff

Salaries

The Somali government was meant to be responsible for salaries of middle level and senior staff but the monthly Government contribution was minute, about enough to pay for one or two decent meals. The essential drugs program of a PHC program provided a source of ready currency to which PHC staff had access. Theoretically, if PHC staff were allowed to collect payment for drugs, their income could be supplemented sufficiently to maintain their commitment to the program. However, in practice there were several factors which indicated that course would be inappropriate. First, members of the PHC staff not involved in clinical practice would be excluded. Second, indiscriminate use of drugs for people who could pay would increase and people who could not pay would be denied drugs. Third, greed could result in excessive attention to sales.

The Somali PHC program relied on the health workers' commitment to equal access by all members of the community to the services provided by the PHC program. However, many of the staff had to work in private practice to supplement the incentives provided by UNICEF, the agency which funded the program for the duration of its planned implementation. At the same time the expenses incurred by UNICEF staff in the UNICEF office, which included salaries and living expenses for expatriate administrative staff and Somali administrative support staff, were greater than the budget of the whole PHC program. This information was supplied by Dr Mohamed Warsame Dualeh, the first Coordinator of the PHC program, during follow-up consultations about the program, in Geneva in 1994. He suggested that situation also contributed to resentment and low morale in the National staff.

Morale

Morale was flagging by 1986 even though the Essential Drugs Program staff had many reasons to feel proud of their achievements. The coverage of the program had extended to the six target districts thus covering the region as planned and sufficient Somali staff had been trained to manage all administrative and educational activities. An expatriate trainer on the staff was no longer required. The Somali staff were totally capable of running and expanding the activities of the program and training more staff. At about the same time, the North-west Region was divided into two regions, the northern part being called Awdal Region. The result was two regions, with three districts each, rather than one region with six districts. The drug distribution was still centred in Hargeysa but the regional supervision was split so the northern districts could be coordinated from Borama, a one and a half hour journey north-west of Hargeysa.

The significance of good morale at regional level, for the whole program, was only fully realised when reflecting back on achievements. Throughout the program the greatest achievements occurred when Somali health professionals, committed to PHC concepts and with good leadership skills were in the coordinating and leadership roles at regional level. When they were transferred or left for other reasons, maintenance of the team spirit, which contributed greatly to the success of the program, was much more difficult. The first Somali Medical Coordinator had been an excellent leader and troubleshooter. When he left the program to study in Australia, he was replaced by another excellent leader who was

subsequently transferred by the Ministry to another region. The third Coordinator possessed neither the same leadership qualities nor exhibited the same commitment to PHC concepts. The instability in leadership, combined with other staff movements and the increasing threats to security contributed to decreasing cohesion in the team. Although there are often different qualities needed in people required to set up programs and those needed to maintain them, there remains a need for leaders who can deal with internal political and practical difficulties which may arise as well as being able to guide the PHC Program when it is threatened by external difficulties.

Low morale was exacerbated by the salary situation and the political climate was becoming increasingly unstable making visits to the periphery impossible. Many other activities were curtailed. The team spirit was also being affected by the political situation and by staff transfers. The strain under which the staff were working was validated by a 'Top Secret' Report from Somali Brigadier General Mohamed Hersi ('Morgan') to the President and to the Ministries of Defence and Interior in early 1987. The report requested further support for military initiatives and described the measures that had been undertaken in the northern regions of Somalia during 1986 to cope with perceived insurgence. General Morgan described, among other things, avenging raids, 'weeding out those people in the civil services who are suspected of collaboration with the enemy' and 'rendering uninhabitable the countryside between our forces and the enemy, knowing that this could only be possible by destroying water-holes and villages in the areas used by the enemy as hide-outs'. This document, which was provided to the author in the original Somali language and in an English translation, reflects the climate that was increasingly affecting the implementation of the PHC program during 1986.

Impact of the Essential Drugs Program

There were several issues which had significant effects on the impact of the Essential Drugs Program as one particular component of the PHC program. The first was the absence of a National Drug Policy. Other issues associated with uncontrolled importation, sale and distribution of drugs and the education of all personnel involved in these processes may have been addressed if such a policy had been introduced and implemented.

National Drug Policy

There was a clear need for a national policy on the importation, sale and distribution of drugs. If community members were not provided with what they thought they required, they could go to pharmacies and other sources where they were exposed to an unregulated supply of pharmaceuticals and unqualified advice about treatment with a variety of medicines. A National Drug Policy would provide a framework for legislation, regulation, inspection and control of all pharmaceutical services and products. It would include mechanisms to govern procurement, quality control, distribution and prescribing, and use of medicines. The PHC program touched a relatively small section of the population and, particularly in the big towns, many people still went to the hospital, pharmacies and unqualified providers for the treatment of any problems.

At a workshop focussing on rational use of drugs in Harare, Zimbabwe, in 1991, Kanji (1992 b) described the tendency to assume that essential drugs programs in one selected region of a country, and usually only in the public sector, would lead to development of national policies including all the necessary elements: legislation, formularies, treatment guidelines and quality

assurance. He went on to suggest some of the reasons why this did not happen. They included opposition from pharmaceutical companies, doctors and pharmacists, economic pressure from other countries, lack of understanding in the political and academic sectors and imposition of financial and administrative systems by donor organisations.

Nevertheless, in Zimbabwe, National Drug Policy effectively controlled both public and private sectors and Kanji suggested this example could be used to encourage implementation of comprehensive National Drug Policy in other countries. The Zimbabwe model had developed when the country gained independence after the overthrow of the Rhodesian Smith regime. Rhodesia, under Ian Smith, had been the subject of international sanctions which had restricted imports for many years. The development of a national Standard Drug List (*EDLIZ*) for both sectors after independence had provided a strategy for maintenance of a reliable supply of necessary medicines which was welcomed by both health providers and the community. At the International Conference on National Medicinal Drug Policies in Sydney in 1995, Zimbabwe representative Dr Norman Nyazema explained that although the Zimbabwe policy was under threat because of World Bank structural adjustments, the policy had so far remained intact and legislators had resisted pressure to develop an unrestricted private sector.

Reflecting on the past in discussion with the author in 1994, Dualeh suggested that had the security situation been different and had the Dutch government continued support for the program it might, ultimately, have led the Ministry of Health to develop a comprehensive National Drugs Policy. Such a development could be encouraged through the donor organisation's influence on the national government to promote understanding of the issues.

Sustainable Funding

The Dutch Government which provided the funding for the PHC program evaluated the program systematically every two years. They did this in the country, together with program staff, at a retreat setting. Program evaluation techniques were shared with staff and taught at the same time. The Dutch government did not withdraw funding as a result of factors exposed during evaluation and it was explained by Dualeh, in Geneva in 1994, that had the political situation been different, the Dutch government may have agreed to continue funding for many years.

Self-sustainability of a program such as the North-west PHC program was not possible and since the publication of the 1993 World Development Report, it is becoming increasingly accepted that poor countries cannot be expected to sustain their health programs. Thus, external funding will be needed for a long time, maybe twenty years. PHC program implementers were aware of the vulnerability of the programs in the face of the increasing political instability in Somalia together with the possible termination of funding from outside agencies. Discussions among program staff often centred around what would be the most sustainable contribution that could be made in the light of knowledge that the security situation would ultimately curtail the program's activities. International agencies support for provision of enhanced skills for TBAs was frequently suggested as a most sustainable contribution to improved health as births continued through war and drought and TBAs remain in the communities wherever they were.

In contrast, the drugs component of a PHC program had far less capacity for self-sustainability. In the North-west PHC program, the drugs were the largest item of expenditure in the

program. Patient contributions to cover the cost of at least some drugs was beginning to be considered. The Somalia case was just one of many that was of concern to international aid agencies. By 1985, UNICEF had become concerned with the high cost of PHC programs they were involved with in many developing countries, particularly the drug component. The proposal developed by Heide (1985) for an integrated medical supply system for PHC in Somalia included the recommendation that dosage forms of several drugs including aspirin and aluminium hydroxide be manufactured in Somalia to offset some of the costs of procurement. The recommendation was not followed up.

In September 1987, James Grant, the Director of UNICEF, had proposed an alternative solution to the high cost of PHC programs during a conference in Bamako, in Mali in West Africa (Grant, 1987). His proposal became known as the 'Bamako Initiative' . The 'Bamako' plan was that people would pay for their drugs and the income would go some way to finance PHC programs. This idea sparked a great deal of response with communication back and forth through international journals and meetings (*Lancet*, 1988 (editorial); Kanji, 1989; Nickson, 1990). In Somalia it had been felt that payment for drugs could not work. In the absence of reliable financial support for CHWs and other PHC staff, they would be put in a position of having to choose to sell drugs to people who were willing to pay and probably overlook those who could not. The preventive and educative aspects of PHC could easily be neglected even in the presence of targeted programs such as those for immunisation and TB supported by international agencies. Community coverage could be expected to be very poor. Internationally, debate had begun to centre around whether a selective approach to PHC which addressed only selected targets might be more feasible and less expensive than a comprehensive approach. UNICEF devised an acronym GOBI (Growth monitoring, Oral rehydration, Breast feeding and Immunisation) to indicate appropriate targets to address selectively. GOBI later became GOBI FFF to include Family spacing, Female literacy and Female education (Wisner, 1988; Smith and Bryant, 1988). The Somali experience indicated that comprehensive coverage only resulted when a horizontal program based on CHWs was in place in the community. The Somali experience also indicated that to be universally accessible, the program had to include drugs freely available or available at a nominal agreed fee to those who could pay while those who could not pay were exempt by defined agreement.

In 1987, the Christian Medical Commission of the World Council of Churches (WCC) conducted a study of various community financing strategies for health programs in a variety of countries (Christian Medical Commission, 1987) . The WCC was primarily interested in the sustainability of church supported health programs but the information gathered was relevant to all community health programs. Their conclusions were that there was no one strategy that could be appropriate for all programs and that different communities would be able to raise funds in different ways. In consultation with community members, strategies could be devised to support different elements of programs. The WCC report concluded that in all countries, in situations of drought and war, community support for any element was difficult to maintain.

Writing for *World Health Forum*, Foster and Drager (1988), submit in general terms, without reference to any particular program, that most of the problems encountered when setting up schemes to make it possible to provide ongoing funds for the purchase of drugs can be anticipated. They argue that careful attention to political, social, managerial and financial factors can make it possible to plan a system for funding drug supplies. They suggest that

funding might be provided through participation of various groups such as Ministries of Health, private wholesalers and retailers, and health practitioners. The model described is not shown to be based on any examples of implementation but the authors emphasise the need to determine a short list of appropriate drugs and to calculate appropriate quantities. They also understand and emphasise the importance of adherence to standard treatment schedules. It has been shown that these elements are vital to maintain a reliable supply of essential drugs and intelligent use of those drugs. These elements are the basis of a National Essential Drugs Program.

More emphasis on building onto traditional elements as described above, including training of healers and TBAs in PHC concepts, could solve some problems of support. As traditional healers and traditional birth attendants are paid by the people they serve, sometimes in cash but mostly in kind, a structure is already in place to maintain support of these individual people as health workers. Maintenance of a community service is more difficult and requires an infrastructure not present in Somalia. In some other countries visited by the author, communities were responsible for purchase of medical supplies. In Eritrea, for example, urban municipal health services were provided with a budget from the Municipal Authority, resourced through municipal rates and taxes, to cover purchase of medical supplies from the national Eritrean Pharmaceuticals Corporation, Pharmecor. The Eritrean plan was for all health services to be responsible for generating funds to buy medical supplies. Patient charges would contribute to funds where possible.

In India, Sister Lucia, Director of the Holy Family Hospital in Delhi, described her hospital's system to raise funds for medical supplies and to cover hospital running costs to the author in 1995. Sister Lucia explained that her hospital had received external funding for a finite period of three years as an incentive for the development of selfsustainabilty. The system which was developed included charges for private patients and sale of produce from an agricultural project and vegetable garden in the hospital grounds. A method used in parts of Kenya was described by Yusuf Mohamed Abdilahi, North-west PHC training coordinator, after he visited community projects in Kenya in 1985 (Abdilahi, 1985). Maintenance of drug supply and salaries for staff were based on income generation from sale of vegetables and other local products and small charges for patient's services and medications. The Indian and Kenyan systems described here depend on fertile soil, an infrastructure for managing accounts and political stability. None of these conditions were available in Somalia.

Geopolitical factors

There were external factors contributing to uncertainty and threatening sustainabilty that ultimately had a grim impact on the whole region. The final blow came in May 1988, when Hargeysa was bombed and totally destroyed by Somali Government aircraft. The population of Hargeysa fled, mostly to Ethiopia. Dr Mike Toole described the conditions of around 400,000 people from northern Somalia, mostly from around Hargeysa, who had fled in May and June 1988, in the reports of his missions to refugee camps in Eastern Ethiopia. Toole was impressed by evidence of the effectiveness of the North-west PHC approach in that there was no measles epidemic because of the high immunisation coverage in the refugee population (Save the Children Fund et al, 1989; Toole, 1989). In addition, he found trained health workers interested to begin their programs again, but with little support from the Ethiopian authorities. During a subsequent visit to the refugee camps in Ethiopia, Toole found the Somali health workers making a good contribution to the health services in the camps (Toole, 1990 b). The

establishment of this trained workforce which could use its skills even when dispersed, was a lasting achievement of the Somali program.
Some Hargeysa people escaped to other destinations. The author has received personal communications from a number of senior staff now working in key positions in international agencies while others are becoming demoralised with unrecognised qualifications in Europe, America and Australia.

Following increasing civil unrest throughout the Somali Republic, President Siyad Barre was overthrown in 1991. No central government has been installed in the capital, Mogadishu, but the area known before the establishment of the Somali Republic as British Somaliland seceded in 1993 under the name Somaliland, with its capital Hargeysa. Since secession from the Somali Republic, Somaliland has remained relatively peaceful. The people of Somaliland were trying to begin again in all sectors and some international agencies were trying to re-establish programs again with expatriate staff. An example was the circulation of an appeal for an expatriate pharmacist to re-establish an essential drugs program in the new Somaliland; the author was approached to fill this position. It was later filled by a German pharmacist who had worked in the RHU program in Mogadishu in the later stages before the overthrow of Siyad Barre, and the subsequent civil war. The return of the training coordinator, Yusuf Mohamed Abdilahi, to work at the Hargeysa School of Nursing sets another example. Such appointments need support. In 1995, he returned to the position in charge of training at the Hargeysa Nursing School after several years as a refugee and working with the PHC program in Yemen.

The appointment of foreigners seems incongruous when Somalis are already trained and capable of the work. Rather than support foreigners to train more Somalis, it would seem more logical for agencies to recruit trained Somalis and support them to return and contribute to the programs. The German Government is currently providing funds to support refugees to return and become re-established in their former countries where possible, for example Eritrea. This is a good example for other countries to follow. Former German Green MP, Ushi Heide explained to the author during a meeting in Eritrea in 1993, that this scheme costs less than supporting refugees within the German system. In addition, implementation of the scheme overcomes the erosion of morale associated with living as refugees in a society where PHC experience and training is considered irrelevant. However, only continuing stability of the region will encourage a significant numbers of former PHC workers to be confident that return to Hargeysa and re-establishment of programs is possible.

Outcomes and obstacles

Throughout the implementation of the North-west PHC program, implementation was based on planning, evaluation and re-planning. This iterative cycle was employed in the course of implementation of a model that had been shown to be effective. It proved an important means of gaining planning experience and maintaining control of the program as each stage was established before proceeding to the next. Various elements of the program proceeded as a result of agreement and *ad hoc* actions were avoided. In the Somalia refugee setting, the development of an essential drugs program in a PHC framework occurred for the first time and provided the model for this approach, albeit without the framework of National Drug Policy. (Toole et al 1990, 1992, 1993).

The limitations of the transfer from the refugee setting to the community setting were exposed and they were largely associated with the lack of the structural support of a National Drug Policy and uncertain financial sustainability of the program. During the process of implementation of the program in the Somali population a range of other elements which affected the transfer became apparent. These elements included community attitudes to health care, shortage of trained personnel and inadequate salaries for personnel, lack of support from the private sector, lack of political will at the government level and increasing political insecurity.

Nevertheless, it was demonstrated that the Essential Drugs Program (EDP) had been established as part of a Primary Health Care program based on a three tiered health structure in six districts of the North-west Region and new Awdal region and that this EDP was an appropriate tool for the provision of a reliable supply of essential medicines to the target communities, and thereby contributed to improved health in the community. An efficient workforce had been trained to maintain all aspects of procurement, storage, distribution and supply related to needs. The program's application in the wider community, particularly in the major urban areas where the commercial sector and large hospitals operated, was limited by the absence of a National Drug Policy to control all aspects of import, distribution and use of medicines throughout the country.

While the sustainability of the program was contingent upon all the factors affecting the Primary Health Care program described above, it was demonstrated that the experience had a lasting impact both in lessons that could be shared and the training of a workforce which could use the skills and experience gained in a wide range of international settings.

Chapter 8.

Conclusions

Conclusions to the study are drawn in four areas. The first set of conclusions are drawn regarding the methodology and the perspectives from which the study was conducted. The second conclusions relate to the significance of the Primary Health Care (PHC) framework and the effectiveness of the PHC approach for refugee health management. The third relate to the transferability of the refugee model to the national Somali community and the final conclusions concern the applicability of the PHC model as exemplified in Somalia to other settings and lessons that can be applied universally.

Perspectives

As no detailed account of the Somali experience had previously been compiled, this study provides documentation of a wide range of processes that can be applied in a variety of other settings.

The range and depth of material that was assembled in the course of this study meant that conclusions about the implementation of the Somali programs could be drawn with some confidence. First, employment in the field over an extended period provided unique opportunities for study of those programs, not usually available to pure researchers. A first conclusion is that such involvement in an action role provides a valuable perspective from which to study a case. The work of Dualeh and Selden showed how their involvement in an action role provided stimulus for research and both achieved practical results. Dualeh's work associated with management of diarrhoea and Selden's on reduction of maternal mortality provided results which were crucial to the directions of the programs and could make a very positive contribution to the health of the people in the communities. Their results could also subsequently be applied more widely.

The author's involvement in the planning, implementation, evaluation and replanning that was built into all levels of both the refugee health program and the Somali community health program provided information without which the analysis of the Essential Drugs Programs in Somalia could not have been authoritatively undertaken. Many of the author's direct observations were recorded during the implementation of the programs and the reporting associated with implementation. Identification and solution of problems in the field were experienced, rather than observed in a controlled environment.

The collection of a wide range of primary materials including reports, documents and action plans generated by the programs facilitated subsequent critical analysis. This analysis could then be made with reference to information provided by key informants and a range of secondary sources such as WHO reports and technical resources. The volume and range of materials published by the WHO and the Action Programme on Essential Drugs after 1981, and used as secondary reference material for this study is illustrated in the bibliography where they warrant separate categories. International activist publications, such as those produced by Health Action International (HAI), personal and non-government organisation documents

and reports, historical texts and anthropological and development-related studies were further secondary references. The author's increasing experience in the international application of the Essential Drugs concept provided access to all the above and the means to analyse the information gained.

Successful application of the PHC framework in the Somali refugee community

The Alma Ata meeting on Primary Health Care (PHC) in 1978 proved to be particularly timely with the emergence of the Somali refugee crisis so soon after. The PHC approach was receiving exposure internationally and an integrated approach such as that advocated at Alma Ata was dictated by need in Somalia. Coordination was central to the PHC approach and coordination of all elements was identified as crucial to resolution of the refugee health problems in Somalia. This study has identified several of the elements and the process by which they were integrated. Based on scientific assessment as described by Toole (1994), needs were determined and management procedures to address the needs were put in place. After initial goals were achieved, refinement and expansion of practices were undertaken. A model was developed which could be applied subsequently to manage health care in emergency populations and which could also be used in general populations.

In the Somali refugee camps, malnutrition and measles were major problems and neither of these problems could be controlled by a fragmented approach. Case finding for malnutrition and registration for measles immunisation could only effectively be undertaken by community based health workers. The establishment of a system based on Community Health Workers thus provided a firm foundation for integration of all health related activities. Strong committed staff, both Somali and international, were central to the success of the program. The recruitment of international health professionals from agencies such as UNICEF, CDC and OXFAM who had been actively involved in the deliberations at Alma Ata, in the formation of the central Refugee Health Unit strengthened the approach.

Integration of staff was promoted by several means. A three-tiered structure of tertiary, middle level and community health workers provided for transfer of skills, in a strong framework, for the implementation of all elements of the health program. Young Somali doctors straight from medical school were given a framework in which to work where they were supported and could see effects of their work quite fast. They were prepared for subsequent positions of leadership in the program.

Individuals such as Dr Abdilahi Deria, a Somali who had been involved with the implementation of a PHC program in Yemen promoted this tiered approach locally. Strong RHU leadership developed the necessary emotional and intellectual commitment, and maintained this commitment by involvement of all health personnel in the implementation, review and development of the system. Technical and cultural expertise were equally important. The amalgamation of the expertise of national and international staff led to increased appreciation of the team approach. This approach contrasted with the health care delivery during colonial times when foreign professionals rarely worked with local staff on an equal basis.

The identification of staffing needs and establishment of a pool of more than 2000 trained CHWs and more than 1000 trained TBAs managing the major health problems in the community indicated the effectiveness of the 3-tiered staffing model. The handover to national staff, within two years, of a sustainable uniform system throughout 35 camps including all the elements of primary health care was yet another achievement. In the event of the population leaving the camps, a pool of trained health workers would be transferred to new communities.

The presence of staff seconded by UNICEF who had been partners in the Alma Ata conference, strengthened the PHC and associated essential drugs approach. These mechanisms for integration were all the more significant given the limited written resources available. At that stage, the range of WHO produced texts on the implementation of PHC and EDP was limited but books by authors such as David Werner (1977) based on experiences of implementation of PHC programs in South and Central America, reflected the WHO principles of PHC, especially the role of community based health workers, and the concept of essential drugs. The Action Program on Essential Drugs (APED) of WHO had been in place little more than one year when the Somali refugee emergency developed and its technical support program was still undeveloped.

The development of an Essential Drugs Program in the RHU setting was facilitated by publication of the WHO model list of essential drugs (1979 b). The developing role of WHO in the dissemination of the concepts associated with essential drugs as part of Primary Health Care was covered in Chapter 2. The successful introduction of a standard list of drugs associated with treatment guidelines in the Somali refugee setting was a major achievement. Adherence, by health professionals at all levels, to a standard list of drugs according to specified guidelines, was considered innovative for refugee health management. Its acceptance by the health providers in the refugee program provided a mechanism to prevent the introduction to the system, by donor agencies, of inappropriate medical supplies. The essential drugs list thus provided a link between various activities.

It was demonstrated that the essential drugs approach to the provision of medical supplies met the needs of the refugee population. A reliable supply of appropriate drugs was available. Reports to RHU workshops and agencies, prepared by drug program staff, showed no serious 'stock-outs' following the introduction of the RHU system. There was no need to conduct appeals for medical supplies and the drug program coordinators' work was not hindered by the need to receive, sort and dispose of or distribute a miscellaneous collection of medical supplies. Because of the standard drug list's link to standard treatment guidelines and records of patient's conditions, calculation of needs and reliable procurement of supplies was possible. A budget for medical supplies could be estimated, thus making the best use of the available funds. Sustainability of the refugee health program was not an issue as the international community was committed to funding the health services so long as the camps existed.

Further, the RHU Standard Drug List, and its associated standard treatment guidelines provided the basis of treatment by both Somalis and international staff throughout all levels of all the camps and also facilitated the training of community health workers. Continuing commitment to the list and associated treatment guidelines by established staff and new staff was ensured by regular review of the list and treatment guidelines which involved both groups

of staff. New national staff or international staff could fit into the system promptly, thus providing continuity of appropriate management with drugs.

Several indicators of the success of the RHU model have been identified in the study. They include the establishment of preventive services based in the community, supported by curative services and the necessary infrastructure and information systems. The curative services included MCH and a comprehensive immunisation program, treatment according to standard guidelines with essential drugs and provision for control of major endemic diseases such as TB and malaria. Maintenance of accurate health information supported the system. Evidence that the RHU aims were achieved was provided by the decline in mortality, the numbers of health workers trained, the immunisation coverage, and the emergency response capacity. Other indicators of success came from analysis of documented disease patterns and numbers of patients attending different facilities.

Steadily decreasing mortality and morbidity from the time the PHC program was introduced were important indicators of the effectiveness of the RHU approach. The crude mortality rate (CMR) had decreased constantly from the beginning of 1981 until it was lower than the rate in the general population of Somalia. The details have been reported in Chapter 5. The eradication of measles in one year, through immunisation, was another indicator of success. Measles had been responsible for 42 per cent of deaths in the early stages.

'Ownership' of the program was illustrated by the feedback from all levels of operation which contributed to regular review. This feedback provided for modification and refinement of procedures where required, and identification of new directions and targets in the light of what was happening. For example, attitudes to antibiotics and understanding of TB treatment became targets for educational interventions when the need was identified. Internal evaluation of communication and understanding between the different levels of the program and externally, between the program implementers, the community, the government and the international agencies depended largely on cross-cultural sensitivity. The goal associated with implementation of the program, based on a team approach to planning implementation and evaluation, was achieved.

Emergency response capacity within the RHU system, as indicated by the management of the scurvy and cholera epidemics, was further evidence of the success of the approach. The RHU system provided for prompt relay, from the camps to the central Unit, of information concerning the symptoms which were subsequently attributed to scurvy and an immediate response to assess the situation. Timely management procedures involving Vitamin C therapy were put in place and surveillance of all other camps determined the presence and extent of scurvy in other areas. Routine surveillance for scurvy was instituted and scurvy prevention with Vitamin C became mandatory for at risk individuals. The emergency epidemic control capacity of the RHU system was demonstrated by the difference between the number of cholera cases and associated deaths in the camps where the RHU system based on CHWs existed, and the camp where no such system existed. After the 1985 cholera epidemic hit northern Somalia, 2284 cases of cholera were recorded in the seven North-west camps where the RHU system operated. Of these, only 54 were fatal. More than twice that number, 4685 cases, occurred in the one new camp where no system operated and there were 993 deaths.

Finally, it can be concluded that a secure and defined political position underpinned the success of the RHU. Without this secure position, the RHU would not have been able to operate. The position of the RHU was secured on two levels, first as a political entity in the Somali government system and second as the recognised coordinating body for health services in the refugee camps. The negotiating skills of a nucleus of Somali health professionals, supported by Dr Abdilahi Deria who had been transferred to work in Somalia as WHO adviser, were critical to the establishment of the RHU.

RHU coordination of all refugee health services and support from the National Refugee Commission (NRC) and the military authorities, two potentially antagonistic bodies, were secured through two linked strategies. The planned program could not operate without the help of international staff and funding, and their commitment to the development and management of the system was crucial. Commitment to working within the RHU PHC system in the refugee community was formalised by the tripartite agreement between each international agency, the RHU and the UNHCR, the lead agency associated with relief work; without this agreement no new agency's participation was accepted. The involvement of the UNHCR in the agreement secured that body's participation in the RHU program and provided the UNHCR with its first experience of coordinated health management for refugees. The tripartite agreement was the prerequisite for travel permits, fuel coupons and permission to enter the camps issued by the Military authorities and the National Refugee Commission. These two procedures, the tripartite agreement and the protocol for allocating travel and work permits, supported by the President's endorsement, secured the framework to implement the program.

All the above outcomes were not only indicators of success, but were reinforced by the cycle of evaluation, re-planning and implementation. The increasing call on the refugee facilities by the mainstream population that led to recognition of the usefulness of the camps as learning grounds for work in the general community was perhaps the major indicator of the overall success of the RHU approach.

Transfer of the RHU model to the Somali Community

The transfer of the RHU model to the general community demonstrated that the model and the staff implementing it were sufficiently flexible to achieve application of the principles in that wider setting. Conclusion are drawn about four main aspects of the transfer process that secured these outcomes.

First, as a foundation for the program, staff with RHU experience were essential. The appointment of key people was very significant in the prompt implementation of the PHC programs in two northern regions. Absolutely crucial to the successful launch of the programs, because of his leadership and negotiating skills as well as his technical skills, was Dr Mohamed Warsame Dualeh, the only Somali transferred: from the position of coordinator of the North-west Regional branch of the RHU to the position of Coordinator of the new North-west PHC program. Within the first six months, consultation between Dr Mohamed Warsame and the North-west Regional RHU team resulted in transfer of more staff who had worked in the refugee camps to key areas in the North-west program. In contrast, the Coordinator of the Sanaag program did not have the benefit of RHU experience so that program did not benefit

from the background of shared experience to the same extent as was apparent in the North-west program. Several international staff, transferred from the RHU program as a result of handover of camps to national staff, also brought RHU experience to the PHC programs.

The second set of conclusions relate to the application of a three tiered structure based on CHWs. This structure which was fundamental to the PHC approach proved equally successful in the general community. The staff transferred from RHU did not hesitate in applying the framework of the RHU system but they were aware of the differences between a dispersed community in an open society as opposed to a confined community in a refugee camps so evaluation and re-planning were built into the program from the beginning. The strategy resulted in development of an effective system based on CHWs trained and working in their own villages, supported by a middle level of more experienced health workers. The two levels of personnel were trained, coordinated and supported by experienced team members at the regional level.

The third conclusion, that the use of the Essential Drug Program template developed in the refugee setting was appropriate for the wider community, is based on features of its structure and practices that allowed for flexible application. Of particular value were the procedures associated with management of the program which were transferred intact. Examples of useful procedures were calculations of requirements, procurement, stock management, teaching methods and procedures for supervision and distribution. The supply of drugs related to patient records and on-the-job support by senior staff was found to be a much more appropriate distribution method than pre-determined quantities of drugs such as those supplied in kits.

Because the culture of the refugees was similar to the culture of the Somalis in the national setting, lessons to do with attitudes to medicines learnt in the camps could be applied, with care, in the national setting. Examples of these lessons were those concerned with attitudes to antibiotics and to TB treatment. Further, educational and communication strategies used in the camps could be transferred to the general communities. The TB program was an example of extensive transfer of strategies for case-finding, and recording and maintaining patient compliance.

The knowledge that Somalis did not understand the use of symbols like drawings of the sun and moon to indicate when medications should be taken, or diagrams to illustrate health concepts, was acquired in the refugee setting. The same situation was found in the national setting and led to the exploration of educational posters based on photographs, which were field tested and found appropriate. The conclusions reached from that experience was that PHC principles can be applied in different settings but each has to be tested in the particular setting. Further, it is not necessary to attempt to implement all elements of the PHC model at the same time. It may be necessary to wait for understanding to develop or for suitable staff to be appointed. The suspension of the introduction of a middle level of services in the North-west PHC program was an example of the deferment of one important element of the PHC program until staff and understanding were sufficiently developed.

Other areas of the program where flexibility was needed were associated with the dispersed nature of the general community as opposed to the confined nature of a refugee community.

Elements not present in the camps included private practice, unregulated supply and use of pharmaceuticals, inadequate salaries and long distances between communities. New staff and community members unfamiliar with Primary Health Care perceived that more doctors and hospitals would solve the existing problems associated with inadequate health services. A choice of health care sources remained available as opposed to the camps where only the RHU model was available. Through the essential drugs component of the PHC program, a free supply of drugs from CHWs provided an incentive to accept oral treatments from the essential drugs list when medicines were necessary, in the absence of injectables, which patients initially requested. Patients then found that essential drugs in the list were effective and their support for the concept increased.

Another area of difference was that there was no need for a legislative framework to enforce the essential drugs approach in the refugee community as responsibilities were clearly defined and services provided complied with agreed principles. In contrast, the principles of an Essential Drugs Program could only be applied in a limited sense in the Somali community in the absence of a National Drug Policy that would have governed all aspects of drug availability, distribution and use throughout the country. It is not possible to determine what the impact might have been given a longer period of operation before war destroyed the program. A forthcoming National Drug Policy could have changed the map of the Essential Drugs Program completely, but it did not eventuate.

Again, in contrast to the refugee setting, contributions to the cost of essential drugs were an issue in the community setting. In Somalia, very few people could pay sufficient money to have an impact on the procurement of essential drugs. Support from international funders over a longer period could have allowed communities time and opportunities to develop their own plans to cover the purchase of medicines which would be appropriate for their own setting. It has been recognised internationally that health services in developing countries may need financial support from richer countries for many years (World Bank, 1993).

Maintenance of community support for CHWs was identified as an increasing problem that needed to be addressed. Some local solutions were considered. Enhancing the skills of Traditional Birth Attendants (TBAs) to include most CHW tasks could perhaps provide one solution to the problem of community maintenance for a community based health worker as payment by the community for TBAs' services was a traditional custom. TBA training had been planned as part of the North-west PHC program in the beginning but TBAs proved difficult to locate during the initial contact with the villages in contrast with the refugee camps where they were easily found. Consideration of their training was therefore postponed. The Bangladesh experience where TBAs training was expanded to include most CHW tasks, related to the author by Dr A Qasim Chowdhury in 1995, endorsed this idea as a possible solution.

The final and broadest conclusion to emerge about the transfer process is that application of the PHC framework on a comprehensive or a selective basis is not mutually exclusive. In Somalia, a comprehensive approach was integrated with vertical, or selective programs which had resources to address a specific target. The immunisation program was one such program; the TB program was another. Although the immunisation program was supported with technical resources like refrigerators and vehicles from a specialist organisation and that specialist organisation also conducted specialist training sessions, the immunisation coverage

could not have occurred without the community structure developed by a comprehensive PHC program. Similarly the TB management and followup in the community could not have occurred without the community based workers, either CHWs or MCH staff.

International dissemination of Somali experience

The Primary Health Care program in the Somali refugee community which included preventive and curative services, capable of controlling excess mortality and morbidity and of maintaining a service which was sustainable in the long term by Somali staff, was recognised beyond Somalia as a successful model. Those who worked within it felt that it was a model that could be applied in other emergency situations. The knowledge gained was disseminated through individuals directly, through written program material and procedures, and through inclusion in training courses and written teaching materials, for use at an international as well as a national level.

The first means of dissemination was through individuals who worked in Somalia with the RHU. They had a range of opportunities both through personal representation such as reporting to supporting agencies and through publication. There were around 50 international agencies working in the Somali camps. It is not possible to determine the extent to which the agencies provided for staff debriefing which would allow experience gained through working with the RHU to be incorporated into the agency's philosophy. Nor is it possible to assess the extent to which all the individuals involved used their experience in subsequent work.

It is known however, that several individuals did move to key positions where they actively shared the Somali RHU experience in the course of their work and three cases illustrate this process. Notably, Dr Mohamed Warsame Dualeh joined the Technical Support Service of the UNHCR where he helped with the development of UNHCR guidelines for emergency management based extensively on the RHU experience. Since the late 1980s, Dualeh has been increasingly involved as an adviser for the implementation of health services in emergency settings in the Middle East, Asia, Africa and Eastern Europe.

Christel Albert, in her position as pharmaceuticals adviser to the Christian Medical Commission (CMC) of the World Council of Churches participated on several Geneva based committees which included representatives of International Red Cross and Red Crescent, WHO and other aid agencies and activist groups working on the preparation of material which promoted the concept of essential drugs. Her role in CMC was to disseminate the essential drugs concept among church-related agencies, and to encourage them to use the PHC approach which included essential drugs in their development programs. During her time with CMC, Albert produced a special issue of *Contact,* the CMC publication, called *Essential Drugs: a convincing concept* which drew heavily on her Somali experience (Christian Medical Commission, 1989). Another article by Albert in a special issue of *World Health* on essential drugs drew on the Somali experience of inappropriate donations (Albert, 1992). It appears that the later article was widely read and contributed significantly to the understanding of the need for guidelines for donors of pharmaceutical donations.

From Somalia, Dr Mike Toole joined the Melbourne staff of CAA where he had considerable influence on policy concerned with emergency management and community development.

From there, he went to the International Health Program Office of the Centres for Disease Control (CDC) in Atlanta, USA. In his role as Medical Epidemiologist associated with the coordination of emergency management at CDC, Toole drew extensively on the RHU experience, and with Waldman and others, based much of the management strategy, developed and advocated by CDC for emergency populations, on the RHU model (Toole and Malkkii, 1992). His work complemented the work of Dualeh and Albert and health professionals from other emergency settings.

To take advantage of the emergency management experience amassed to that date, the University of Georgetown coordinated a Symposium in Washington in 1988 to develop and disseminate management strategies to cope promptly with emergencies. This was the first attempt to develop a coordinated strategy for emergency management. Staff of UNHCR and CDC were involved in the organisation of the Symposium, which was attended by representatives of academia, relief organisations and government bodies. At the symposium, an essential drugs program associated with a PHC approach was identified as a central strategy and a case study of the RHU experience was presented by the author. Conclusions of the symposium were published in the form of a declaration and the proceedings were also summarised in the Journal of the American Medical Association (Georgetown University, 1989; Toole and Waldman, 1990 a). The conclusions included recommendations for priority interventions to address mortality and for priority public health interventions, including the provision of essential drugs.

The Somali refugee program provided the first experience of the value of a defined list of essential drugs as opposed to drugs donated in an *ad hoc* manner. In Somalia, the success of the essential drugs approach in the emergency situation prevailed over the lack of success of the use of donated medical supplies which, without adherence to a standard list were no help at all, and in fact a hindrance. Guidelines for donors of pharmaceutical supplies can have an important influence on the policies of relief organisations. The original CMC donation guidelines which drew heavily on the RHU experience have been reviewed and rewritten to accommodate the needs of the wider range of emergency settings which developed in the late 1980s and early 1990s and the needs of Eastern European countries as well as developing countries (Forte, 1994).

A further application of the Somali experience was in the preparation and promotion of Australian Guidelines for Pharmaceutical Donations. The development of these guidelines was stimulated by the author's experience with irrational donations in Somalia, combined with similar experience in Eritrea and followed by exposure in Australia to agencies and individuals perpetuating the practice of collecting miscellaneous drugs as donations for developing countries. With three other pharmacists, she prepared draft guidelines in collaboration with WHO DAP staff. The document was ratified by the Australian Pharmaceutical Advisory Committee in October 1995 for endorsement by the Commonwealth Government of Australia. The document was shared with WHO DAP staff for publicity in their publications. At the Sydney conference on National Medicinal Drug Policies in October 1995, DAP staff members, Margaretha Helling-Borda and Hans Hogerzeil, expressed the view that the Australian example of promoting guidelines for pharmaceutical donations should be followed by other countries. The demonstration that a standard drug list associated with treatment guidelines, is the most appropriate means of ensuring appropriate treatment with a reliable

supply of drugs is a powerful tool to assist with the banning of distribution of inappropriate or harmful drugs. The Somali experience provided such a demonstration.

Another development which exemplifies the application of the experience gained in Somalia and linked to donations of medical supplies was the production and refinement of the Emergency Health Kits. The conclusion from the Somali general community experience, where untested sets of medicines and equipment in kits had been ordered before the program began, was that predetermined sets of medicines should not be recommended for routine use in Primary Health Care programs. It has been found that their distribution without supervision could reduce the importance of communication between the centre and the periphery and flexibility of drug supply on the basis of disease patterns. Health worker training could not be achieved if drugs were supplied in predetermined quantities such as those supplied in kits. This negative experience of the use of kits suggested that the 'kit' form of packing and distribution of medical supplies would usually be unhelpful. However, an emergency health kit which could be used in the initial stages of an emergency was developed later. The documentation acquired during the Somali refugee health management experience contributed significantly to its development. The EHK provides essential drugs for 10,000 people for a period of three months and can be transported quickly for management of early stages of an emergency. In the absence of calculated requirements in the early stages, until sufficient documentation is available, donors can provide funds for purchase of the kits rather than sending miscellaneous inappropriate drugs. It is accepted that the best procedure for ensuring a reliable supply of essential drugs is the supervision and documentation of usage and calculation of appropriate ongoing supplies but the EHKs play an important role in the short period before requirements are calculated on the basis of need. They are specifically designed for the emergency stage and are not intended for indefinite use.

The third vehicle for dissemination has been through training. In Somalia neither national staff nor international staff had received orientation concerned with the PHC approach during their formal education or in preparation for work in the field. This meant that they were faced with completely new concepts. Many health professionals trained in formal disciplines have never been exposed to information about Primary Health Care in developing countries and would be at a distinct disadvantage if they were called upon to work in an emergency setting or community program in a developing country. On the basis of his experience in Somalia and elsewhere, Toole (1994) recommended that relief agencies place increased emphasis on training personnel to address public health emergencies caused by population displacement.

This recommendation has been put into practice by including health management concepts, such as those learnt in the emergency management and in the community health program in Somalia and other settings in developing countries, in the formal education of health professionals in both developing countries and donor countries. Alternatively, targeted courses have been set up. In Australia, Toole, the author and other health professionals with experience in emergency settings and developing countries, have provided sessions in medical, health and development education courses and conducted short specialised orientation courses. Although direct transfer of programs from one country to another is rarely possible, the transfer of concepts is possible through training sessions, audio visual materials, reports and publications. The specific application of the concepts requires as much knowledge of the setting as possible together with a culturally sensitive approach in partnership with national

staff. The widest sharing of experiences, demonstrating the need for political sensitivity and respect for lines of authority, can prepare newly assigned health professionals for the challenges they might face in these areas.

A central agency responsible for international dissemination of the experiences gained in developing countries is the WHO DAP. WHO, through collection and circulation of literature from the field, plays a significant role in the dissemination and sharing of information between different countries where programs are being implemented. WHO literature is particularly helpful for program implementers, who, in the absence of political will, seek first to convince government authorities of the benefits of essential drugs programs and second to promote interest in seeking active DAP assistance at government level. In addition, the DAP staff run short targeted courses for program implementers. Apart from learning from the experienced international presenters at such courses, participants can benefit greatly from interaction with other participants from a range of different countries and settings. Since its inception in 1981, DAP has developed research tools, indicators, targets, models, and methods, drawing on experience in Africa, Asia and South America, for policy makers and management personnel who are attempting to introduce and implement Essential Drugs Programs. When requested, the DAP can provide technical support for governments who are attempting to implement PHC and Essential Drugs Programs. They may help with evaluation to assess progress and identification of targets for interventions.

While international conferences provide useful forums for exchange of experience related to management of emergency and development aid programs, they also promote development of donor countries' own National Drug Policies and thus provide a common frame of reference between the donor and recipient countries. Australia developed a National Drug Policy in 1992 following a series of activities over a period of four years which included conferences involving government, industry, academia, health providers and consumers in the formulation of that policy. As a contributor in that process, the author drew on the Somalia experience as well as Australian experience. In recognition of Australia's leadership role in this area, the WHO jointly convened an international conference on National Medicinal Drug Policies in Sydney in October 1995 with the Australian Government, thus providing for further interaction between Australians and program implementers from Asia and the Pacific regions. Through experiencing the process of development of an Australian National Drug Policy, and interacting with program implementers from other countries, Australia is better equipped to provide assistance to less developed countries pursuing the same goals. Norway is another example of an industrialised country with its own National Drug Policy which has a history of appropriate response to appeals for medical assistance. From these international experiences it can be concluded that Essential Drugs Programs will be more effectively promoted in emergency situations and development programs when they are also part of the internal policy of the participating nations.

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The bibliogaphy contains three distinct sub-sets of material.

Part 1. General bibliography;

Part 2. Action Programme on Essential Drugs and Vaccines materials;

Part 3. World Health Organisation materials;

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