THE IMPACT ON HEALTH IN MOZAMBIQUE OF SOUTH AFRICAN DESTABILIZATION

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March 1987

INTRODUCTION

Since 1982 South African destabilization has had an increasingly devastating effect on the health of the Mozambican people. The displacement of millions of people and the deliberate destruction of health facilities has caused immeasurable suffering and the loss of hundreds of thousands of lives, mostly of children, the most vulnerable section of the population. By August 1986 an estimated 4,000,000 people of the total population of 14,000,000 were in need of urgent food aid owing to the combined effects of war, displacement and natural disasters. The primary health care system built up so successfully over the years since Independence was under attack.

ATTACK ON THE PRIMARY HEALTH CARE SYSTEM

The targetting of health facilities by the bandits has resulted in destruction of many peripheral health units. Thus by the end of 1985, 196 peripheral health posts and health centres had been destroyed by bandits and another 288 had been looted and forced to close (Table 1). This represents 25.5% of the total primary health care network. Without this destruction Mozambique would have had at least 1900 peripheral health units by the end of 1985 instead of only 1416. Although many health posts have been reopened and expansion has continued in some areas, the overall effect has been to halt the previous rapid expansion in the number of peripheral health units(Figure 1). Three rural hospitals have also been looted and forced to close.

As a result of direct destruction, looting and forced closure of health units and displacement of people, over 2,000,000 people had lost access to health care by the end of 1986. Even when health posts have remained open, access has been diminished because the long journey to the health post has become dangerous. In Zambézia province some health posts now close in the afternoon because people have to prepare to hide in the bush as they are no longer safe at night in their houses. In Maputo city, peripheral maternity units now close at night following a series of attacks and kidnappings of health workers. This loss of access has hit people hardest in the rural areas where people are most in need of health care.

Community participation is essential to primary health care. The largescale disruption of rural communities has in many areas destroyed the community organization necessary to support primary health care. Communal villages with village health workers were seen as the cornerstone of the primary health care system. Widespread destruction of communal villages has occurred and many village health workers have abandoned their posts, either in fear or because of lack of support. The number of village health workers trained has fallen off as it has become increasingly difficult to support them. Thus in 1985 only 33 were trained, compared to 303 in 1980. Instead a new type of basic health worker paid by the health services has been trained to staff the more peripheral health posts, and in 1985 223 of these workers were trained.

A successful primary health care system also needs support with regular supplies of drugs and contact with the higher levels of the system. To supply and support the system was difficult in peace, but most peripheral units did receive regular supplies of drugs and supervision. With the war travel on roads has become hazardous, and fuel and transport shortages have become worse. Health vehicles have been frequent targets for attack. In Zambézia province in 1983, 16 of the 17 districts had ambulances. By mid-1986 all but 5 had been destroyed by bandits. In one of the early incidents in this province a health vehicle clearly marked with a red cross was hit by a bazooka on the road from Quelimane to Maganja de Costa. The vehicle was transporting medicines, and the accompanying pharmacist was killed instantly, while the driver was bayonetted to death. Nationwide, more than 20 ambulances have been destroyed, in flagrant violation of the Geneva Convention, which states that "Medical units and transports shall be respected and protected at all times and shall not be the object of attack" (Article 11, Section 1). At least 19 motorbikes used by the preventive services have been destroyed.

Before the war intensified Mozambique had a successful drug supply system and although shortages of drugs at the periphery occurred they did not seriously threaten the functioning of this system. A Joint World Health Organization/UNICEF review mission visited randomly selected health units throughout the country in 1982. They found that three-quarters of the 23 health centres they visited had a regular supply of drugs. Of 12 health posts and six village health workers , two-thirds had essential drugs available with stocks for one month(Ministry of Health, WHO, UNICEF, 1982). A combination of factors has now led to serious drug shortages at all levels. Shortages of foreign exchange have led to a reduction in imports, blocking of normal transport routes has led to accumulation of drugs waiting distribution in the ports and airports of Maputo, Beira and Nacala, while at the more peripheral level lack of transport and fuel and attacks on the roads have made distribution increasingly difficult.

Within the primary health care system, care of mothers and children has a high priority. Ministry of Health statistics show that this care has suffered as a result of the war. Up to 1982, the percentages of pregnant women attending antenatal clinics, of births in hospital and of children attending under-five clinics were rising. In that year 46% of women attended antenatal clinics during their pregnancy, 30% of deliveries occurred in health centres, and 16% of children were recorded as having attended under five clinics. Since then there has been a levelling off(Table 2). In general the provinces less affected by war have continued to improve, while the provinces worst affected by the war have shown a decline.

Vaccination against the common preventable diseases of childhood has been disrupted, and as a result children are unprotected against tetanus, tuberculosis, measles, diphtheria, whooping cough and polio. Successful vaccination requires a high level of community participation and a good logistics system as the vaccines have to be kept cold. In Maputo city where these

conditions have been met, vaccine coverage levels are higher than in England. A survey in 1986 using World Health Organization methodology showed that 86% of children between 12 and 23 months of age had been vaccinated against measles. The percentage of one year old children immunized against measles in the United Kingdom in 1981-1983 was 50% (UNICEF, 1986). In Inhambane province the improved security situation in 1985 enabled the provincial health authorities to organize an accelerated vaccine programme. One limited survey showed that 60% of children aged 12-23 months had been vaccinated against measles and that between 96 and 100% had Road to Health clinic cards. By contrast in Tete and Niassa provinces estimated vaccine coverage fell sharply between 1983 and 1985. In Sofala province the capital city of Beira had a measles vaccine coverage of 68% when surveyed in July 1985. But in 1986 vaccine could not be delivered to half of Sofala's districts. The fall in vaccination coverage in the war-affected provinces is due to a combination of factors- diminished access to health facilities, difficulties in supplying kerosene for refrigerators and vaccines to peripheral health units, and reduced activity of mobile teams owing to bandit attacks.

The primary health care system aims to diagnose and treat the common severe chronic diseases of tuberculosis and leprosy by providing diagnostic facilities and drugs near to the patient's home. Supplies of diagnostic reagents and drugs to primary health care units have become increasingly erratic, and patients have had increasing difficulty in following through their courses of treatment as access to health services has become more difficult. In 1984 for the first time there was a national shortage of antituberculous drugs. This shortage has now been overcome with an aid agreement, but the difficulties of distribution to the periphery have continued.

The supply of clean water is another essential component of primary health care. As people have been forced to move from their homes and traditional water sources to more secure areas they have often lost easy access to this vital commodity. Bandits often pollute water supplies by placing dead bodies in them. In an interview with a group of traditional midwives from the interior of Inhambane, one of their main worries was how to disinfect their wells as they had all been polluted by corpses. The extension services for water supplies have had increasing difficulty in functioning leading to breakdown of water pumps due to lack of maintenance.

HEALTH WORKERS

Health workers have been targets of the bandits, and have been killed, kidnapped or have lost all of their belongings. The national statistics do not record all cases of murder and kidnapping, but they show that at least 21 health workers have been murdered. Official Ministry of Health statistics list 15 kidnapped workers, but in Zambézia province alone more than 30 health workers were kidnapped in 1985. An official total of 243 health workers have lost all their belongings through looting by bandits. These statistics do not include village health workers and they take no account of the numbers who have left their posts as a result of banditry and the numbers unproductively employed

because their health facilities have been closed. Nor do they take account of the effect of living in an isolated and dangerous situation on the morale of health workers, nor of the reluctance of newly graduated health workers to be posted to rural areas. To improve the quality of rural health workers a constant process of supervision and recycling with courses and seminars is necessary. Supervisory visits have become increasingly difficult and dangerous, and to travel to the district and provincial capital for contact with other workers becomes a hazardous journey to be undertaken as little as possible. In Zambézia in early 1985, the district health director of Gile drove his car along a dangerous road to Pebane, and then walked the 200 km to Quelimane to attend a seminar. At a social services seminar in Quelimane in October, 1986, social services workers from all but two districts made the dangerous journey to attend it.

Mozambique has been heavily dependent on expatriate(cooperante) doctors in the rural areas as at Independence there were only 80 doctors, of both Mozambican and Portuguese nationality. It has taken 10 years to substantially increase the numbers studying in the medical school as there were simply not enough Mozambicans with secondary schooling to train. In 1986 there were 130 Mozambican doctors and 230 cooperantes. But the cooperantes have also been targets of the bandits, and the number working in rural areas has dropped substantially, leaving many district hospitals without doctors. In Zambézia province in 1983, 13 out of the 17 districts had doctors working in them. By mid-1986, doctors were present in only two. Only 27 doctors were working in rural areas at the end of 1985 giving a ratio of one doctor to 443,000 people. In 1982 the ratio was 1 doctor to 161,000 people.

DEATHS AND DISEASE

The number of people who have died owing to the war is unknown. Children are the most vulnerable section of the population and their mortality rate rises under conditions of stress. Thus a survey in the famine area of Inhambane in 1983 gave a mortality rate for children under one of 233 per thousand per year and for children of 1-4 of 125 per thousand per year(Rutherford and Mahanjane). In 1985 Mozambique's infant mortality rate was estimated to be 200 per thousand/year and the under five mortality rate 325-375 per thousand. War and destabilization was estimated to have caused 84,000 child deaths in Mozambique in 1986 alone, with a total of 320,000 child deaths between 1981 and 1986 (UNICEF, 1987). Most of these deaths are due to diseases that are preventable or can be cured by simple treatment. The major childhood killers are diarrhoea, malaria, measles, pneumonia and malnutrition. Diarrhoea is caused by poor hygienic conditions, and displaced communities with overcrowding and limited access to a clean water supply are particularly vulnerable. Death can be prevented with oral rehydration. Malaria can be treated with antimalarial drugs, and pneumonia with penicillin. Measles is preventable by vaccination, and malnutrition is a direct result of the war. The prevention and treatment of all these killing diseases is an integral part of the primary health care system.

Malnutrition has increased owing to the combined effects of low food production, displacement and infectious diseases. The combination of war and severe drought in 1983 caused a famine in Tete, Gaza and Inhambane provinces with an estimated 100,000 deaths. This figure may well be an underestimate as a more detailed survey in Gaza and Inhambane provinces alone estimated that of 750,000 displaced people, 72,000 had died (Rutherford and Mahanjane). In Tete a major contributor to the famine was the difficulty in moving food supplies from the rich agricultural areas in the northern part of the province to the drought-hit south owing to the war. In Inhambane and Gaza the war contributed more directly as the famine was worse in the most affected areas. In agriculturally rich Niassa province, between 1981 and 1984, malnutrition was the least commonest cause of hospitalization of children (5-8% of the total). By September 1986 as the province faced a famine due to a combination of war and excessively heavy rains, malnutrition had become the commonest cause of childrens' hospital admission(40% of the total). But famine is the most dramatic manifestation of hunger. Both acute and chronic malnutrition in children is worse in war affected areas. Analysis of 28 nutritional surveys carried out between 1983 and 1986 showed that in all the areas with severe malnutrition(10% or more of children below the 3rd centile, weight for height), the major causes were a combination of drought and the actions of armed bandits(Direccao Nacional de Saude). Although the severe drought broke in 1984, the cereal deficit has been increasing and had reached a high point of 50% for the agricultural year 1986/87. The percentage of average calorie intake, relative to requirements was estimated to be only 79% in 1984, the lowest in the region(UNICEF, 1987).

Relief efforts have also been hit by the war, and food aid trucks have not been spared. In June 1986 an attack on a food aid truck just south of Inhambane city killed 14 people and wounded 26.

The war has also directly killed and maimed hundreds of thousands of people. Accurate figures are difficult to calculate, but it is hard to find a Mozambican family which has not had a relative killed or injured in the war. The estimate of the number directly killed by bandit action up to 1986 is a conservative 100,000. The only community survey on the number of deaths showed that in Inhambane and Gaza alone in 1983 an estimated 6480 people died as the result of trauma(Rutherford and Mahanjane). In Maputo province where the security situation worsened after the signing of the Nkomati Accord in 1984, 375 wounded patients were treated in 1984 and 758 in 1985. In 1984, 181 people died in the province's health units as a result of injuries and 206 in 1985.

Most of the dead and injured are civilians. Many people have met their death in massacres, often hacked to death. Children and old people have not been spared. In many areas old people have refused to leave their homes when their sons and daughters moved to safer areas, and they have been indiscriminately murdered. Attacks on public transport have been a particular target and in Maputo province alone dozens of people have been killed in attacks on buses and trains. Mutilations such as cutting off of the ears and nose have been

frequent. The indiscriminate planting of mines has resulted in many injuries. In Quelimane city the large number of people with part of a leg missing can easily be seen on a walk through the streets. The evacuation of wounded has often been difficult, so that people often die of relatively minor wounds that become infected, or when they do arrive at hospital it is too late to operate to save a limb as infection and gangrene have set in. In Zambézia province a Red Cross plane evacuated wounded to the provincial hospital from the districts and delivered medicines back to the districts. It was forced to stop its flights in July 1985 when bandits attacked the plane on the ground at Luabo on the Zambezi river, wounding a Swiss Red Cross nurse. The large numbers of wounded have put a big strain on the capacity of the provincial and district hospitals. Large numbers will pour in after an attack on a bus or a village, needing the mobilization of all staff. Patients with serious wounds take a long time to recover, and thus take up precious hospital beds. Over half the hospital beds in Tete are now occupied by longstay patients, causing serious overcrowding. Once they are cured it is difficult to find transport home. Quelimane hospital had to stop sending patients home by road after incidents in which they had to return to hospital after being wounded in attacks. The corridors of the hospital are now full of patients awaiting air transport.

The numbers of wounded have overextended the capacity of the rehabilitation services. Until November 1986, the only artificial limb service in the country operated from Maputo, which made it difficult to serve the whole country. The number of patients fitted with artificial limbs by this service has risen from 53 in 1981 to 392 in 1985. Most of the patients are civilian war victims. In November 1986 a second centre opened in Beira and a third is soon due to open in Quelimane.

Another area that has been badly affected by the war is the health of mothers and newborn babies. Without antenatal assistance and with home delivery of high risk mothers, maternal mortality is high in Mozambique owing to haemorrhages, infections, eclampsia and anaemia. The percentage of deliveries in health facilities had increased to 30% in 1982, and has since decreased to 29% owing to closure of maternities and the dangers of travelling, especially at night. If we consider that women with no access to the health services have a maternal mortality of 2000/100,000 live births, then because of the war an additional 1000 women may be dying annually in childbirth.

Neonatal tetanus, a fatal disease of newborn babies born under unhygienic conditions was a common disease in Mozambique before vaccination programmes got under way, with at least 10 of every 1000 newborn babies dying of the disease. In the capital city, Maputo, the number of hospital deaths fell steadily from a high of 195 in 1976 to 5 in 1985 as a result of vaccination of women. No statistics are available from rural areas, but a similar, although probably less dramatic fall would have occurred as a result of the national mass vaccination campaign from 1976-1979 and the subsequent routine vaccination programme. Now, in areas affected by the war the combination of a fall in

immunization of pregnant women and delivery under unhygienic conditions will have caused a new increase in neonatal tetanus deaths. An estimated extra 800 children are dying annually from neonatal tetanus. In the first semester of 1986 even Maputo city's successful vaccination programme did not fulfil its target for tuberculosis vaccination of newborn babies owing to a drop in deliveries in peripheral maternities which had to close at night after a series of bandit attacks and kidnapping of personnel.

Tuberculosis is a common disease in Mozambique. An estimated 23,715 new cases of tuberculosis occur annually, of whom half would be expected to die without treatment. The war has played havoc with the programme to diagnose and treat tuberculosis. The number of cases notified fell from 15,718 in 1980 to 9603 in 1985. Of these only 4734 were in treatment. Had the health services been allowed to function normally, 8300 could be expected to be in treatment. Of the approximately 3500 adults not in treatment because of the war, half would be expected to die, giving an excess mortality of 1750 in 1985.

The effects of the war on the leprosy control programme can be clearly seen. The total number of cases under control fell from 14,681 in 1981 to 12,796 in 1985. In most provinces numbers remained stationary or increased. But in Zambézia the number of patients controlled fell from 4871 in 1981 to 829 in 1985 and in Tete from 410 to 47.

The war has created ideal conditions for the spread of infectious diseases. Malnutrition has made large numbers of children more susceptible to severe disease, and crowded living conditions with limited access to water has resulted in an increase in all the common infections such as pneumonia, diarrhoea, measles and skin diseases. This increase can be seen most dramatically in the severe epidemics of infectious diseases that have occurred in recent years in war-affected areas. In 1983, a severe cholera epidemic with over 10,000 cases and 447 notified deaths swept through southern Mozambique. Control measures and the distribution of life-saving packets of oral rehydration salts were severely hampered by bandit activity in the same areas. People fled in panic to areas where they could obtain treatment. In 1985 16,507 measles cases were notified, the largest number since the immunization programme began in 1980. Severe epidemics occurred amongst populations who had fled from bandit activity, particularly in Tete and Zambézia provinces. In people sheltering in Chinde on the mouth of the Zambezi from fighting higher up the river a measles epidemic caused 42 deaths before it was controlled by vaccination. In Maputo city the increasingly crowded conditions due to an influx of people led to a scabies epidemic in 1984. Over half the city's children developed scabies and when the scabies became infected with a new strain of a bacteria causing kidney disease over 500 children were admitted to the Maputo Central Hospital with acute kidney disease (glomerulonephritis). In Inhambane province a poliomyelitis epidemic occurred at the end of 1984 owing to a drop in the vaccination coverage. These are the more dramatic manifestations of the increase in infectious diseases caused by the war. But for every person affected by a dramatic epidemic, there are thousands with common, but still lethal diseases such

as measles and diarrhoea.

The numbers of orphaned children have also increased. In 1983 and 1984 in the drought and war-affected provinces of Inhambane and Gaza thousands of children were orphaned, lost and abandoned as entire communities were forced to leave their homes in search of food and security. In Inhambane province alone, 1135 children were still registered in September, 1986. Many provinces have had to set up temporary centres to deal with these children. In September 1986 there were 322 children housed in 11 of these centres in five war-affected provinces. A further 362 children were in provincial orphanages. A total of 1548 children had been adopted or re-integrated into their communities. These figures underestimate the true extent of the problem as many abandoned children are unregistered, either because they are in remote districts, or because they are quickly reintegrated into the extended family.

The war has also affected the mood of people. For people living in war-affected areas life is grim. People are scared to work in their fields and to sleep in their houses at night. Most react by fleeing to safer areas, often leaving behind food and clothes. Huge concentrations of displaced people have sprung up where people are dependent on handouts for basic necessities. The stress of the war has also led to an increase in anxiety and depression.

COSTS OF THE WAR

The costs of the war to health in monetary terms are almost impossible to quantify. How do you put a price on 320,000 children dead because of the war, or on the additional burden of disease that an increase in chronic malnutrition brings? The costs of damage to health buildings alone to the end of 1985 is estimated at US dollars 16,500,000, while that of their contents at US dollars 2,750,000.

These costs to the health services have come at a time of economic crisis when the health services can least afford them. Much of the destroyed health centre equipment can only be replaced by foreign exchange which Mozambique simply does not have. Owing to the economic crisis and increased expenditure on defence the health budget in local currency has been cut. Previously, per capita expenditure on health had risen steadily from 1.5 US dollars per capita in 1974 to 4.7 US dollars per capita in 1982, and the proportion of the budget spent on health rose from 3.3% in 1975 to 11.2% in 1982. It fell to 4.1 US dollars per capita in 1985 (8.1% of the total).(See Table 3).

CONCLUSION

Although the picture is grim, the current state of the Mozambican health services also offers an example of a people's ability to continue working under the most difficult conditions and to rebuild after destruction. Most health workers are still at their posts and they do make the dangerous and difficult

journeys to get medicines and to vaccinate people. The provinces and Ministry of Health still hold training courses and seminars to which health workers from the most remote parts of the country come. In Niassa province the lack of kerosene means that vaccines cannot be stored in refrigerators in the districts. But vaccination has not stopped in the province, as health workers now travel out from the provincial capital with a large cold box that keeps vaccines for 12 days. All over the country health posts have been rebuilt. Thus in 1985, 88 peripheral health posts and centres which had been closed by bandit activity were reopened, and 53 new posts were built. To the end of 1985 a total of 158 closed health posts had been reopened. In Inhambane province the improvement of security conditions in 1985 enabled the provincial health authorities to carry out a successful accelerated vaccine programme followed in 1986 by a mobile mother and child clinic programme. Mozambique still offers an example of how a successful primary health care system has been able to resist attempts to destroy it.

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Table 1. Health units destroyed, looted and/or closed, Mozambique, 1982-1985.

	Year									
	1982		1983		1984		1985		Total	
Province	D	L/C	D	L/C	D	L/C	D	L/C	D	L/C
Niassa	-	-	-	5	17	18	2	7	19	30
C.Delgado	-	1	-	-	4	3	1	7	5	11
Nampula	-	-	-	5	12	4	12	5	24	14
Zambezia	9	18	2	4	19	27	11	36	41	85
Tete	-	2	-	2	-	1	4	19	4	24
Manica	29	1	1	1	2	2	1	3	33	7
Sofala	45	4	-	-	-	11	1	26	46	41
Inhambane	15	6	-	-	-	19	-	16	15	41
Gaza	-	1	4	-	-	2	1	5	5	8
Maputo P.	-	-	-	-	2	12	2	14	4	26
Maputo C.	-	-	-	-	-	1	-	-	-	1
Total	98	33	7	17	56	100	35	138	196	288

D= Destroyed, L/C= looted and/or closed
Three rural hospitals also looted and closed in 1985.

Table 2. Percentage of women attending antenatal clinics and delivering in health facilities, and children attending 0-5 clinics.

	Year						
	1979	1980	1981	1982	1983	1984	1985
Antenatal clinic attendance(%)	40	43	49	46	46	56*	47
Health facility delivery(%)	27	29	29	30	28	27	29
0-5 clinic attendance(%)	7	12	16	16	17	21	18

*incorrect. True value 46 or 47%.

Table 3. Per capita health expenditure, Mozambique, 1974-1985.

Year	% of state budget	Per capita expenditure (US dollars)
1974	3.3	1.5
1976	9.7	2.5
1978	10.1	3.8
1980	10.6	4.0
1982	11.2	4.7
1984	8.9	4.2
1985	8.1	4.1

Fig.1 Evolution of the peripheral health care network, 1975-1985