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HEALTH AND DEVELOPMENT IN SOUTHERN AFRICA

Volume I

A Review of Health Care in Swaziland:
Issues, Analyses, and Recommendations

this sector assessment was undertaken in conjunction with the Southern Africa Development Analysis Project and has been used extensively, but not totally, in the Main Report and Country Papers

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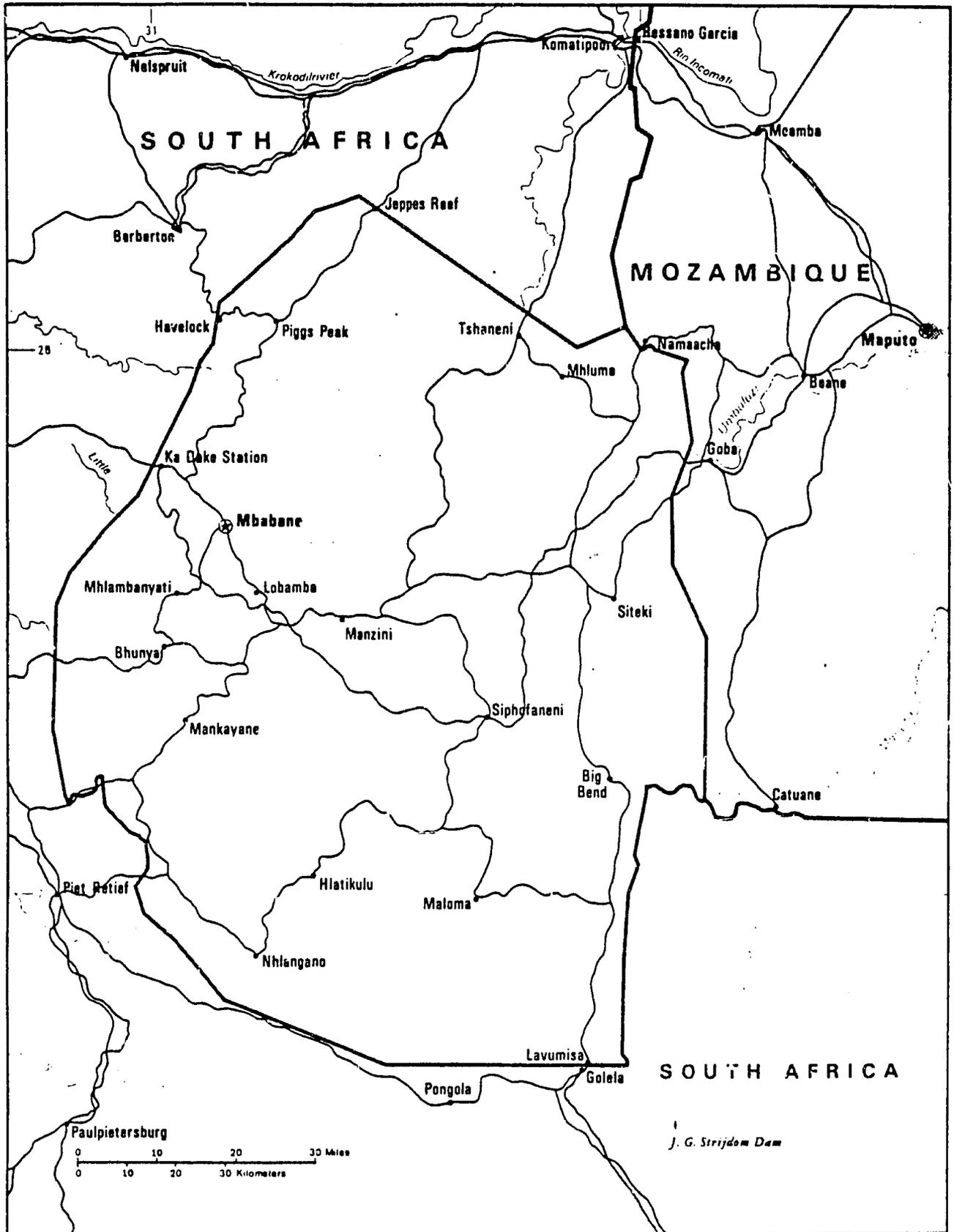
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Swaziland



Lambert Conformal Projection
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I. INTRODUCTION

A. Background and Acknowledgements

This review of the health sector of Swaziland was conducted as part of a comprehensive assessment of the health sectors of all Southern Africa countries being undertaken for AID's Southern Africa Development Analysis Program (SADAP). Performing the review and analysis that are contained in this report was a team composed of professionals from the staff of Family Health Care, Inc.; review and comment were provided by professionals from the staff of Africare.

The field visit phase of the project was conducted from May 29 to June 8, 1978, by the following two-member team (days in-country are in parentheses):

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Associate, FHC (Team Leader) (9)

Carol Carp, "Diplom" in Medical Sociology, Research
Associate, FHC (11)

During the total of 20 person-days in-country, extensive materials were collected and a relatively comprehensive interview and facilities review process was made possible through a tightly scheduled itinerary, arranged with the fullest cooperation of the Ministry of Health staff, both centrally and in the field, representatives of other Ministries, and the missions. In addition, visits and interviews were also conducted by the team over the weekend, primarily in the rural areas. This was made possible

by the accompaniment of Mrs. Elizabeth Mdiniso, Public Health Nurse. Mrs. Mdiniso also provided extensive socio-cultural information during the course of these visits, as well as detailed, direct health-related information. Mr. Andrew Green's constant availability and overall coordination of the SADAP team's program in-country were essential and deeply appreciated.

A list of persons and institutions visited is included in Appendix 1. The team had regular and in-depth discussions with principals in the Ministry of Health, as well as the USAID mission, and spoke with individuals in the Ministries of Agriculture and Finance and Planning. Hospitals visited included Mbabane, Pigg's Peak, the Mental Hospital, and both Raleigh Fitkin and Good Shepherd Mission Hospitals. Siphofaneni and Nkoba clinics were seen, as well as the private Mbabane clinic and the nurse-run Ndomo Motors' Clinic. The government's Public Health Unit in Mbabane and the Central Laboratory and Central Medical Stores in Manzini were also visited. Finally, other individuals and institutions were contacted so that a relatively representative sample of health needs and of health and health-related services and personnel, in both the public and private sectors, was made possible.

In addition, extensive resource materials were collected in the U. S., with the assistance of the Family

Health Care staff. These are referenced throughout the report. The team's own findings appear throughout the text, supported by our observations and resource documents. In general, these are not specifically referenced as such, within the text.

This report should be read in the context of the overall SADAP health strategy report and the priorities and recommendations discussed therein.

The principal author of this report was Carol Carp. In preparation of this report in Washington, D.C., Robert N. Grosse, Ph.D., School of Public Health, University of Michigan, participated in the technical review process.

B. Summary Statistical Profile of Swaziland

<u>GENERAL</u>	<u>Most Recent Estimate</u>	<u>Reference</u>
Per capita GNP (US \$ at current prices)	440	a
Population (mid-year, in millions)	0.5	b
Land Area (thousands of sq. km)	17.4	c
Population density (pop. per sq. km)	28	d
Urban population (% of total)	14	e
Labor force in agriculture (%)	82	-
Age structure of population		
0-4 years	18.7	b
5-14 years	27.3	b
15-59 years	51.3	b
60+ years	2.5	b
Adult literacy rate (%)	30	e
Electrical power consumption (kwh/yr. per capita)	180 (1972)	a
Km of paved roads	220	f
Rate of Exchange	E1 = U.S.\$1.15	

(Swaziland issued its own currency in 1974 but the South African Rand remains legal tender with the Lilangeni (plural = Emalangeni))

<u>HEALTH STATUS</u>	<u>Most Recent Estimate</u>	<u>Reference</u>
Life expectancy at birth (in years):	44	e
Crude birth rate (per 1,000 population)	49 (1975)	m
Crude death rate (per 1,000 population)	22 (1975)	m
Population growth rate (% annual increase)	2.7	c
Infant Mortality rate (per 1,000 live births)	168 (1973)	l
Maternal Mortality rate (per 1,000 live births)	N/A	
Bilharzia (% positive)	2.5	
Venereal disease (new out-patient cases per year)	N/A	
Tuberculosis (deaths)	N/A	
Attended deliveries (% of total)	25	g
Deliveries after at least one prenatal visit (% of total)	60	h

<u>HEALTH RESOURCES</u>		<u>Most Recent Estimate</u>	<u>Reference</u>
Total health expenditures		E 7,604, 534*	
Per capita health expenditures		E 14.9* US\$ 17.14	
Private per capita health expenditures		E 7.2*	
Public per capita health expenditures		E 7.7*	
Ministry of Health recurrent budget (1977/78)		E 3,766,000*	
Population per active physician:	TOTAL	7,600	i
Population per active nurse:	TOTAL	1,020	i
Population per active nurse and midwife:	TOTAL	580	i
Population per hospital bed:	TOTAL	435	j
Community water supply, % urban pop. served		83	k
Reasonable access to water, rural		29	k

*see pages 67-69 of text.

Code for References

<u>Reference</u>	<u>Bibliographic Source</u>
a	(70, pg. i)
b	(3, pg. 8)
c	(46, pg. 896)
d	(29, pg. 50)
e	(31)
f	(16, pg. B 874)
g	(6)
h	(53, pg. 14)
i	(65)
j	(13, pg. 18)
k	(61)
l	(67)
m	(32)
n	(7)

II. A PROFILE OF SWAZILAND: THE CONTEXT OF HEALTH AND DEVELOPMENT

A. PHYSICAL FEATURES

The Kingdom of Swaziland, the second smallest country in Africa, can be divided into four distinct regions:

- the western-most Highveld region, with high altitude, colder temperatures and high rainfall;
- the Middleveld, with lower altitude, slightly warmer temperatures and less rainfall;
- the Lowveld region, sub-tropical and semi-arid, warmest temperatures in the country, and significantly less rainfall; and
- the Lubombo region, with climate and rainfall similar to the Middleveld, though warmer and drier.

Swaziland is a land-locked country; approximately two-thirds of its borders are shared with the Republic of South Africa. It has extensive river drainage by four main systems flowing eastwards across the country; these have significant development potential.

B. DEMOGRAPHIC PROFILE

The estimated 1978 population for Swaziland¹ was 494,396 persons. Of this number, 32,218 were absent from the country, mostly in South Africa. It has been estimated that as high as 54 percent of all Swazi households are without males, with a great majority of these men in South

¹/ The last census was taken in 1966; all census data subsequent to that date are based on estimates.

African mines and others working elsewhere. In addition, Swaziland is a transit country for South African refugees; though statistics vary greatly, a recent source estimates the number to be some 500 such refugees [39]. Besides external labor migration, there are high rates of internal migration from rural to urban areas. [45, pg. I-2]

Ninety percent of the population derives its livelihood from rural activities, mainly agriculture. A large proportion of the population lives in settlements of less than 500 inhabitants [1, pg. 10]. The only significant urban/peri-urban concentration consists of about 80,000 people in the two towns of Mbabane and Manzini, which are 39 km apart, and the 'corridor' which connects them. [6, pg. 9]

The population is extremely young, with some 50 percent under the age of 14, and more female than male, partly because of the large number of migrant males. Approximately 3 percent of the population is non-African. [45, pg. I-7]

C. HISTORICAL AND CULTURAL CHARACTERISTICS

The traditional order in Swaziland was interrupted by colonial rule and control from 1900 to 1968, when Great Britain was the administering authority. When Swaziland achieved independence in 1968, it accepted a constitution drawn on the Westminster model, recognizing the King, who has ruled since 1921, as the constitutional head of state.

It created two houses of Parliament, with members to be elected by the general population, and introduced a civil service. In 1973, the independence constitution was overthrown, and the King took over the government. All political parties were suspended and a coterminous traditional-modern political structure, with the King at the head, was established.

Swaziland, unlike most other African countries, has only one traditional culture and one traditional ethnic group, the Swazi people. There are two official languages, Siswati and English.

Although a large percentage of the population is Christian, many of these still retain some traditional beliefs with the rest of the population not accepting formal western religions.

Homesteads are the major social units, under the control of the headmen; these homesteads or kraals are made up of kinsmen and unrelated dependents. Polygamy is practiced, mainly in the rural areas.

The social structure is based on the traditional Swazi hierarchy; the monarchy derives much of its strength from its control of the Swazi Nation's land.

D. THE POLITICAL SYSTEM

The political system is dualistic, with a modern bureaucracy, but principle political power is anchored in

the traditional hierarchical system of elites. This traditional system, headed by the King, with the advice and consent of the Swazi National Council, decides on all matters pertaining to development in the rural traditional sector.

The important political structures are the Advisory Assembly, made up of King-appointed members for the modern sector. The Swazi National Council is the supreme ruling body of the traditional sector; below it are the appointed chiefs and their councils. The Swazi National Council has communication with the people through the regional meeting centers called tinkundla. "A new trend in the country is to make the tinkundla focal points not only of socioeconomic organization but also for the dispensing of rural social services." [2, pg. 234]

Political participation has been banned, including the formation of political parties. While discussion and voting at the Swazi National Council and at the chiefs' councils are open to any Swazi, in practice "discussion is generally limited to important persons, and voting is often a symbolic affirmation of the Council's decisions." [45, pg. I-12]

E. THE ECONOMY

The Swazi economy, which is relatively diversified, is dualistic in nature. Approximately 55 percent of the

country's total land area is held by the Swazi Nation; the remainder is held under freehold title, mainly by non-Swazi land owners, many of whom are not residing in-country. [9, pg. 49]

The performance of the economy has been mainly determined by the sugar and wood pulp industries, although the mining of asbestos and iron ore, the growing and processing of citrus fruits, the meat industry and cotton have also been of considerable importance. The tourist industry is developing rapidly. Official estimates of the Gross Domestic Product* (GDP) and of national accounts for recent years are not available. Preliminary estimates show overall real growth at about 6 percent in 1974 and 1975 and lower in 1976. Total wage employment, to which the government contributed one-fifth, has shown little growth since 1974, but it is still relatively high by comparison with other countries in the region.

Swaziland is tightly bound to the Republic of South Africa, which is by far the main source of import supplies, and employment offered by South African mines supplements domestic employment opportunities. Because of the continued failure of the port of Maputo, Mozambique, to provide

* Gross Domestic Product (GDP) refers to the total value of production that takes place within the geographical borders of a country, whether or not the means of production are owned by the country's nationals.

transportation for Swaziland's exports, construction of a southern rail link to the Republic of South Africa (RSA) has begun [34]. In addition, Swaziland also depends to a large extent on the RSA for its water supply and storage, its fees from the Southern Africa Customs Union, and private sector investments.

Because of important natural advantages such as varied climate, fertile soils, ample unexploited water resources and extensive mineral deposits, Swaziland has a favorable economic potential, which during the past two decades has been particularly developed by direct foreign investment. The overall positive growth has occurred mainly in the emerging modern sector, rather than the large, traditional rural sector.

F. AGRICULTURE AND LIVESTOCK DEVELOPMENT

Agricultural and pastoral development still form the major economic activity. Agricultural products, both raw and processed, comprised more than half of total exports in 1974. A recent source estimates that approximately 23,000 persons are employed by the modern agricultural subsector, while well over half the population depends directly on traditional agriculture. [2, pg. 238]

The agricultural sector consists both of larger scale, cash crop-oriented farms, mainly owned by expatriates, and

of traditional, mainly subsistence farms on Swazi Nation land.

The growing system of market agriculture, with cash crops replacing subsistence production, "raises new problems for the social structure and much more acutely for the traditional land-tenure system" [2 pg, 236], as well as for related issues of nutrition and health.

The government is focusing its agricultural policy on developing the traditional sector to semicommercial and commercial farming. Rural Development Areas (RDA's) are part of its integrated approach, which includes land use planning, resettlement of homesteads, road construction, terracing of lands, fencing of grazing areas, water resource development, and the introduction of more sophisticated farming technology. The initial RDA coverage of 7 percent population and land is planned to expand to over 60 percent for the next five years. Several government and non-government institutions are to interact with the Ministry of Agriculture in this project, including the Ministry of Health.

Animal husbandry is the largest source of cash income in the traditional sector. An estimated 80 percent of the nation's 600,000 head of cattle belong to Swazi's. National projects are to be launched in the fields of dairy farming, beef production and marketing.

G. MANUFACTURING AND MINING

Manufacturing has rapidly become the second most important economic activity in Swaziland. The two largest industries are sugar refining and wood-pulp processing; other important processing industries are meat packing, cotton ginning and fruit canning. Together these industries account for more than 90 percent of the value added by the manufacturing sector. This sector has had significant diversification over the last few years. [2. pg. 242]

Although mining was formerly a leading sector, in recent years both its relative and absolute roles have been declining. In terms of value, the three main minerals extracted are iron ore, asbestos and coal.

H. TRANSPORTATION RESOURCES

Swaziland has a railroad to Mozambique, which has reduced in a limited way dependence on South Africa; a new railway is planned, as is a sizable road improvement program. The network of roads is well developed, because many are important commercial arteries. In 1975 there were 1,460 km of main roads and 1,170 km of district roads; of the total 2,630 km, 196 km were tarred. [3 pg. 66]

Swaziland also has an airport, situated between Mbabane and Manzini, and its own airline.

I. HOUSING

The traditional Swazi hut is built by the rural people, using branches, sticks and mud, structured in concentric circles which form a circular structure, which is covered by thatch, sometimes to the ground. The floor is natural soil. Increasingly, rural Swazi's "are making use of more modern materials, such as concrete blocks and corrugated iron." [9, pg. 215]

In the urban areas, modern, Western style buildings dominate; in Mbabane there is a large, modern shopping center. Around the urban areas, squatter slums have developed, reflecting the trend of the population shift from rural areas. In Mbabane, for example, slums and squatter settlements may house as many as 10,000 people; many of these areas are without water, electricity, and sanitation and waste disposal facilities. Dwellings are made of materials collected in the area, generally square structures with some kind of temporary roofing.

Two recent surveys conducted by the Central Statistical Office cited the following findings: At Msunduzi, the main squatter area in Mbabane, 72 percent of the dwellings were classified non-durable structure and 82 percent had one or two rooms. With an average of 3.6 persons per dwelling, this indicates overcrowding in a large proportion of these units. In a survey of housing in the town of Manzini as a

whole, almost 30 percent of the dwellings were non-brick construction. [9, pg. 215]

In a further finding it was estimated that some 40 percent of the urban population is presently living in slum conditions and, "if present trends continue, this is likely to rise to 50 percent by 1977." [9, pg. 215]

In addition, there is a "critical shortage of suitable housing" for the middle income population. [19, pg. 217]

J. EDUCATION AND HUMAN RESOURCES

Swaziland has a relatively higher rate of literacy than many African countries. In the past decade there has been a large increase in school enrollment. From 1967 to 1973 the annual increases in primary enrollment were around 8 percent per annum. Secondary enrollment has grown at 15 percent per annum since 1960.

The total primary enrollment is about 70 percent of the 6-12 age group. Universal primary education is projected to be achieved by 1985. Secondary enrollment is estimated at 20 percent of the 13-17 age group, with no major increase expected over the next decade. [45, pg. I-12]

The University of Botswana and Swaziland has some 270 students. The William Pitcher Teacher Training College is the only government sponsored teacher training institution. In the area of non-formal education, the government conducts

a National Adult Literacy Campaign. Technical training is offered by the Swaziland Industrial Training Institute.

There is an overall shortage of skilled Swazis, which necessitates the recruitment of a high proportion of expatriates to fill administrative/technical and skilled positions.

III. THE HEALTH SECTOR

A. A PROFILE OF THE HEALTH SITUATION IN SWAZILAND

1. Health Status and Patterns of Morbidity and Mortality

The only statistics available regarding levels of health in the country are medical statistics from hospitals and clinics, which do not necessarily reflect true disease patterns and may be considered an under-estimate [22, pg. 1]. Table 1 is a compilation by the Ministry of Health of existing hospital and clinic records' statistics, divided according to diseases which are easily and less easily preventable. This table shows that morbidity and mortality rates "reflect disease patterns largely due (directly or indirectly) to low incomes, inadequate or inappropriate diet, lack of access to clean water, and in many cases, a lack of awareness of the causes of ill health." [22, pg. 3]

Schistosomiasis is considered by some to be a major health problem, with, according to one source, an estimated incidence rate of 11 percent among school entrants; some 2.5 percent of the population has schistosomiasis. However, the SADAP team feels that the morbidity associated with schistosomiasis in Swaziland may be rather small (see schistosomiasis discussion in Conclusions and Recommendations). Malaria, which had been reduced to negligible

Table 1

CAUSES OF DISCHARGE & DEATHS AT GOVERNMENT & MISSION HOSPITALS

	Discharges				Deaths			
	Number		% of Total		Number		% of Total	
	1974	1975	1974	1975	1974	1975	1974	1975
EASILY PREVENTABLE TECHNICALLY	4079	7518	14.9	27.4	441	535	41.1	50.8
Communicable	2204	4558	8.1	16.6	280	387	26.1	36.8
By Immunization	1554	2683	5.47	9.8	256	226	23.9	21.5
Measles	651	1643			44	44		
Tuberculosis	614	802			177	148		
Whooping Cough	154	75			3	4		
Typhoid	53	120			5	4		
Tetanus	47	32			25	26		
Diphtheria	25	2			2	-		
Polio	10	9			-	-		
Smallpox, Cholera	-	-			-	-		
Environmental Sanitation	361	1597	1.3	5.8	11	149	1.6	14.2
(Food Borne) Dysentery, Enteritis	87	1347			8	145		
Helminthic	84	41			-	-		
Others	75	52			-	-		
Malaria	33	67			3	3		
(Pest Borne) Anthrax, Brucellosis	1	7			-	-		
(Water Borne) Bilharzia	81	83			-	-		
Sexually Transmitted Diseases	130	45	0.4	0.1	-	-		
Others	159	233	0.6	0.8	13	12	1.2	1.1
Noncommunicable	1875	2960	6.8	10.8	161	148	15.0	14.1
Nutritional Diseases	666	831	2.4	3.0	136	110	12.7	10.5
Complication of Pregnancy	1209	2129	4.4	7.8	25	38	2.3	3.6
NON-EASILY PREVENTABLE	13656	12645	49.9	46.1	628	494	58.5	46.9
Communicable	3051	3478	11.1	12.7	92	137	8.6	13.0
Respiratory Diseases (other than TB)	2256	2514			91	125		
Skin Diseases	419	516	-	-	-	-	-	-
Others	376	448			1	12		
Noncommunicable	10605	9167	38.8	33.4	536	357	50	33.9
Digestive System	3634	2142			331	134		
Injuries & Poison	4120	3774			84	83		
Cardiovascular	562	685			75	73		
Neoplasms	209	288			30	34		
Mental Disorder including Senility	154	147			4	3		
Muscular-Skeletal	312	352			4	5		
Other Genitourinary	1299	1276			2	9		
Others	315	503			6	16		
OTHERS	9609	7290	35.1	26.5	3	23	0.2	2.2
Normal Deliveries	4963	6484			-	-		
Symptoms & Other Ill-Defined Conditions	4646	806			3	23		
TOTAL	27344	27453	100		1072	1052		

Source: Central Statistics Bulletin--1975.

proportions in Swaziland, caused 15 known deaths in 1976 and appears to have had a critical case increase in the past two years (See also disease control recommendation in Section V). Tuberculosis is one of the major debilitating and fatal diseases; in 1977, 618 new cases were reported. [22, pg. 15-16]

Although no details are available on out-patient attendance by diseases, which are classified by group and not individually, Table 2 gives most recent information on main disease categories at government and missions' general hospitals for first attendances only. It should be noted that in 1975 38.5 percent of all first attendances could be attributed to two main diagnostic categories--diseases of the digestive system and respiratory diseases.

2. Food and Nutritional Status

Although "there has never been a full-scale nutrition survey in which biochemical and clinical data have been correlated with dietary intake" [13, pg. 9], a Canadian team which visited Swaziland in 1977 reported on the findings of a survey carried out on rural food consumption in 1976. Based on these findings: "59 percent of the families had a balanced diet and 20 percent of the families had inadequate food consumption. 30 percent lacked protective foods in their diet. Only 10 percent ate body-building food. 68 percent had thick porridge two times per day. 25 percent had thick porridge only once a day. 5 percent had

TABLE 2

main Disease Categories at Government
and Missions' General Hospitals for First Attendances

	NO. OF FIRST ATTENDANCES		PERCENT OF TOTAL	
	1974	1975	1974	1975
Digestive System	31,348	24,415	22.9	18.7
Respiratory System	29,012	25,789	21.2	19.8
Genito-Urinary System	10,927	11,266	8.0	8.6
Injuries	10,740	12,378	7.8	9.5
Infective & Parasitic Diseases	10,301	11,472	7.5	8.8
Skin Diseases	7,214	7,309	5.3	5.6
Others	37,443	37,860	27.3	29.0
TOTAL	136,985	130,489	100.0	100.0

SOURCE: Central Statistics Bulletin, 1976.

(22, p. 3)

thin or sour porridge. 22 percent had mealie meal rice or sac and 50 percent had meat. 36 percent had legumes and 40 percent had bread." [13, pg. 7]

The evaluation on diet adequacy showed that legume consumption was satisfactory because 60 percent had legumes in their diet 2-4 times a week. Consumption of meat was fair because 46 percent of this population included meat 1-3 times a week and 52 percent had meat in their yesterday's diet. Bread consumption was relatively high; 52 percent had bread 4-7 times per week. [13, pg. 8]

A 1978 WHO report noted the following finding: During 1974, malnutrition cases made up a total of 2.8 percent of all admissions treated in hospitals (799 cases). The mortality in this group was 12.7 percent of total hospital deaths. In 1975 the patient figure increased to 941, an increase of 18 percent over 1974. In terms of total admissions the figure increased from 2.8 percent to 3.3 percent [67, pg. 1]. The malnutrition fatality rate is much higher than that of other conditions, especially in the case of kwashiorkor which is six times higher [62, pg. 8]. The fatality rate for kwashiorkor increased from 4.7 percent in 1973 to 18.9 in 1974 and 14.7 percent in 1975 [68, pg. 6] Pellagra was also found to be a significant problem.

WHO reports from 1976 and 1978 list the major agricultural problems related to nutrition as follows:

- soil erosion;
- maize production fluctuates according to rainfall and is declining due to competition with cash crops;

- small-scale farming, mostly on a subsistence basis; low productivity;
- high rate of population growth;
- overgrazing;
- inadequate utilization of 40 percent of freehold farms (non-Swazi), covering 36 percent of area under individual tenure. (62, pg. 6 and 68, pg. 5)

As has already been shown in this report, the increasing trend toward cash-cropping in Swaziland, as in other LDC's, has a significant impact on nutritional status of the population. While crops for export are needed for economic growth, the related shortages of local foods available for consumption should be given attention in the setting of overall development priorities. There is a clear need to encourage appropriate subsistence cropping in the Rural Development Areas, which are discussed in following pages of this report. In addition, nutrition education - in terms of what to buy and how to prepare foods, particularly in the urban squatter areas - is needed, where people with low incomes have little or no land to till for subsistence foods and then purchase very inexpensive but often non-nutritious foods on the markets. All these factors interact and contribute to the mortality associated with diseases such as diarrhea, measles and malaria.

Other aspects of poor nutrition in Swaziland which are related to changing socio-economic developments include an apparent high consumption of alcohol, as well as changing food habits to new foods of little or no nutritional value, such as candy, soda and other high sugar foods. [13, pg. 4]

Finally, certain cultural factors are also related to problems of nutrition. For example, in Swaziland newly married women traditionally do not drink milk or eat eggs or liver. One large family group may not eat black sheep, some Swazis do not eat pork for religious reasons, and many do not like fish. It appears, however, that many food taboos are lessening.

3. Environmental Impacts on Health

Environmental health is seen as a key issue by the Ministry of Health.

a. Housing

Traditional Swazi structures provide good basic shelter, but at the same time present several health hazards which call for improvement. The use of thatch for roofing presents a fire hazard, particularly as people often build their dwellings close to each other, increasing potential rapid spread of fire from one to another. When it rains, these dwellings become damp and wet, which to some degree is related to the high incidence of respiratory illnesses. Crowding is also present, particularly in the winter season, when people come close together in front of the fire.

In the urban areas the most acute housing/health issues relate to the rapid development of squatter slums. These self-built dwellings often cannot provide adequate shelter, and crowding here too is prevalent. The UNDP cites the two major towns of Mbabane and Manzini, in which "over 60 percent of the people are in the lowest economic category

and squatter settlements have begun to appear. Migration from the villages is adding to the problem. The Government has carried out a number of small-scale low-cost housing projects but...the cost of housing units was invariably beyond the financial capability of the lowest income groups." [52]

b. Water

Recent studies and Swazi health records indicate that Swaziland's major health problems center upon diseases related to water² and arise from poor water control as well as unsanitary practices and conditions, related to water shortages. Water is provided mainly by streams, to a lesser extent by springs and marginally by ground sources, as the sub-surface soil structure is not conducive to productive boreholes.³ [54]

UN figures show that in 1975, 57 percent of the urban population was served by house connections and 26 percent by public standposts; in this same year 29 percent of the rural population had "reasonable access" to water [61]. According to the Second National Development Plan, in rural areas there is a "total inadequacy or more usually total absence of good potable water supplies and safe methods of human waste disposal", whereas in urban areas

2 These diseases include schistosomiasis, malaria, dengue fever, typhoid, tapeworm, hydatid, amoebiasis, hepatitis, gastroenteritis and fascioliasis.

3 Rivers in Swaziland, according to one source, are relatively less contaminated than in other parts of Africa.

"water and sewerage systems tend to be well up to international standards." [9, pg. 199]

A critical exception to these assessments of urban water supply is found among the squatter dwellings, where water is generally non-existent. The UNDP cites the rapid growth of "satellite low-income settlements around the major urban centres...in which existing (water) facilities are not only overloaded, but new connections cannot be made to meet increasing demand." [51]

Major obstacles cited by USAID to the control of water-borne diseases include:⁴

- the population's lack of access to safe water sources, especially in the middle and low-velde;
- popular ignorance of and disinclination to employ sanitation and hygiene measures;
- shortages of both technically qualified personnel and resources necessary to mount a comprehensive control program;
- development activities involving irrigation, reservoirs, and other impoundment schemes that contribute to disease (particularly schistosomiasis), especially if appropriate safeguards are not included. [54]

c. Sanitation

Lack of sanitary facilities is an acute problem in rural areas and in squatter settlements, according to most sources. UN figures from 1976 show that 25 percent of the rural population had "adequate disposal", 6 percent of the urban population was connected to public sewerage

4 The APHA conducted an environmental health assessment in May, 1977 in Swaziland. Its main finding was that the major health problems in Swaziland are water-borne diseases or those associated with unsanitary conditions [54]

systems and 65 percent of the urban households systems had a pit privy or septic tank. [61]

d. Occupational Hazards

Little information is currently available on on-the-job health hazards or on those associated with increasing industrialization and development schemes. There is an asbestos plant in Swaziland, Havelock Mine, which, as recent U.S. studies have shown, may well present a critical health hazard, although the team learned during its visit that some direct protection for workers there (masks, helmets) is provided. According to one source, the Havelock Mine, though one of the largest in the world, produces an "apparently less hazardous variety of asbestos." [6, pg. 109]

In the agricultural and milling divisions of the largest trading group in Swaziland, "workers in the packing departments are exposed to high atmospheric levels of sodium sulphite and sodium carbonate dusts and to the dust of ground malted sorghum." There has, however, been no assessment as to whether this presents a serious health hazard.

Road accidents as health hazards should be mentioned in connection with increased industrial development and the parallel rapid development of distributory transportation services. Roads in rural areas where industries are located are often inadequately marked or not at all, and dangerous pits are created, which are hazards to drivers

and which also collect water, thus serving as breeding holes for mosquitoes.

Other problems which may be cited are work safety hazards associated with industrial and mining facilities in which machines and heavy equipment are used.⁵ Dust-related respiratory problems are often associated with sugar and cotton and other processing plants found in Swaziland, but no evidence exists on this issue.

In light of these existing environmental health problems, more extensive mention should be made of the Rural Development Area Program and other planned projects involving water development, as "there is every indication that present plans for increasing the areas under irrigation (mainly in the low and middlelevel areas) and expanding water impoundment will increase the incidence of bilharzia and other water-related diseases." [54]

The author of a recently undertaken environmental assessment of the RDA program reports on potential short and long term positive and negative environmental impacts of RDA. Negative impacts cited are, primarily, increase of water-borne diseases due to irrigation and reservoir, but also possible pesticide and fertilizer contamination and health problems related to closer settlements. "RDA development will have a positive impact on problems caused by poverty and malnutrition. This is offset by the negative impacts expected from closer settlement on communicable

5 During the teams's visit a great number of such work-related injuries/trauma were observed in health facilities.

diseases, and negative effects expected from the development of irrigation gardens, stockwatering reservoirs, and fish ponds on the vectors of waterborne diseases. The focus of concern is on increases expected in the prevalence of bilharzia" [41, pg. 27]. To avoid higher incidence of water-borne diseases, "this report recommends greater and earlier attention to (the kind of) construction of water supply systems by the RDAP..." [41, pg. 46]

4. Population and MCH/Family Planning

Though specific statistics differ on population size and growth, certain clear trends emerge. "The dominating force behind the recent demographic trends in the Kingdom has been the high level of fertility which is reinforced by continuous declines in the level of mortality due to steady improvements in hygienic conditions and health facilities. Swaziland has been registering relatively high rates of population growth."⁶ It was estimated that the natural growth rate of population was about 2.9 percent over the 1965-70 period; for the periods 1970-75 and 75-80 the growth rates are expected to rise to 3.1 percent and 3.3 percent respectively, which implies a greater number of people dependent on the relatively smaller economically active population. Another significant implication is "the predominance of children under 15 years and the associated strain on educational and social facilities, a steady flow

6 The population in Swaziland in mid-year 1975 was estimated to be 494,000; births per thousand in this year were 49 and deaths per 1000 were 22. The rate of natural increase was set at 2.7%. [32]

of the youth from the rural to urban areas and their subsequent migration to the mines and farms of the Republic of South Africa." [1, pg. 7]

The Ministry of Health, in light of the rapid population growth and subsequent bias to the young in the population age structure, "lays great emphasis on the provision of under-five, child welfare clinics and more recently the health of school entrants. Furthermore, apart from the implication of large numbers of children for health services, in absolute terms, there is also increased morbidity when there are many children in a family born soon after each other. Thus one major contributor to ill-health amongst mothers and children is lack of awareness and practice of the principles of good family spacing. The spread of information about good family spacing is increasingly becoming a major component of the Ministry of Health's health education activity." [22, pg. 4]

5. Mental Health Problems

Although little formal research results are available on mental health issues in Swaziland, stresses associated with the transitional development from a traditional, rural way of life to one increasingly characterized by industrialization and urbanization, as evidenced elsewhere in Africa, have an apparent mental health impact. The most common problems seen at the Mental Hospital in Swaziland are, among men, toxic psychosis due to alcohol and marijuana use, schizophrenia, some epilepsy and geriatrics problems;

among women, manic depression and schizophrenic psychoses are most common. Pellagra is frequently observed, as well as tertiary syphilis. Mental retardation is generally cared for in Swazi families. (See also pp. 81-2 and 107-9.)

6. Special Problems: Migration

In comparison to Botswana and Lesotho, Swaziland is the least dependent on migration, because of its more diversified economy and sustained economic growth. However, "although the level of migration (from Swaziland) to South Africa has remained fairly stable at about 8,000 per year over the last decade, since 1974 this level has almost doubled and includes a new element of skilled and semi-skilled workers. The causes of this new upsurge in migration are not fully known, but it occurs at the same time that a shortage of workers exists, mainly on the sugar plantations; the substantial increase in mine wages in South Africa appears to be one of the principal factors." (World Bank document).

Although most workers appear to migrate into the mining sector, large numbers also seek work in agriculture and services. This has a social/health significance in terms of recurring disruption of the family and other traditional social structures and effects on children and women who, in the absence of adult males, must take on more agricultural production and livestock-rearing responsibilities.

Some research evidence from elsewhere in Africa points out observed psychological reactions such as confusion and temporary psychoses in migrant workers returning from work in other countries. In addition, the health/occupational effects of mining employment, particularly in regard to, for example, respiratory diseases, may have some significance, although little evidence is available, and sources differ on safety and health conditions in South African mines.

Finally, an additional link to health issues is in regard to migration of Swazi medical and nursing personnel to South Africa, but here too no definite evidence exists on the extent of such migration.

B. THE HEALTH DELIVERY SYSTEM IN SWAZILAND:
AN OVERVIEW

The program of health services in Swaziland has been categorized by the Ministry of Health into six major groups, each with different characteristics, either by type of service offered, fees charged or socio-economic grouping of patients. These are:

- Government personal health services (preventive and curative);
- Government non-personal health services;
- Voluntary non-profitmaking (including religious groups) personal health services;
- Industrial personal health services;
- Private allopathic practitioner personal health services;
- Traditional practitioner personal health services;
[22, pg. 5]

Historically, the development of health services in Swaziland has followed a pattern similar to that of most developing countries. In the pre-colonial period, health services were provided by traditional practitioners only. Later, Western (allopathic) health care was introduced by the colonial government; in 1909, Mbabane Hospital was established, followed by mission clinics and hospital services in the 1920's. Government clinics were established beginning in 1934; recently certain industries have begun providing curative health services. Since independence in 1968, the volume of health services in Swaziland has increased--total O.P.D. attendances for mission and government

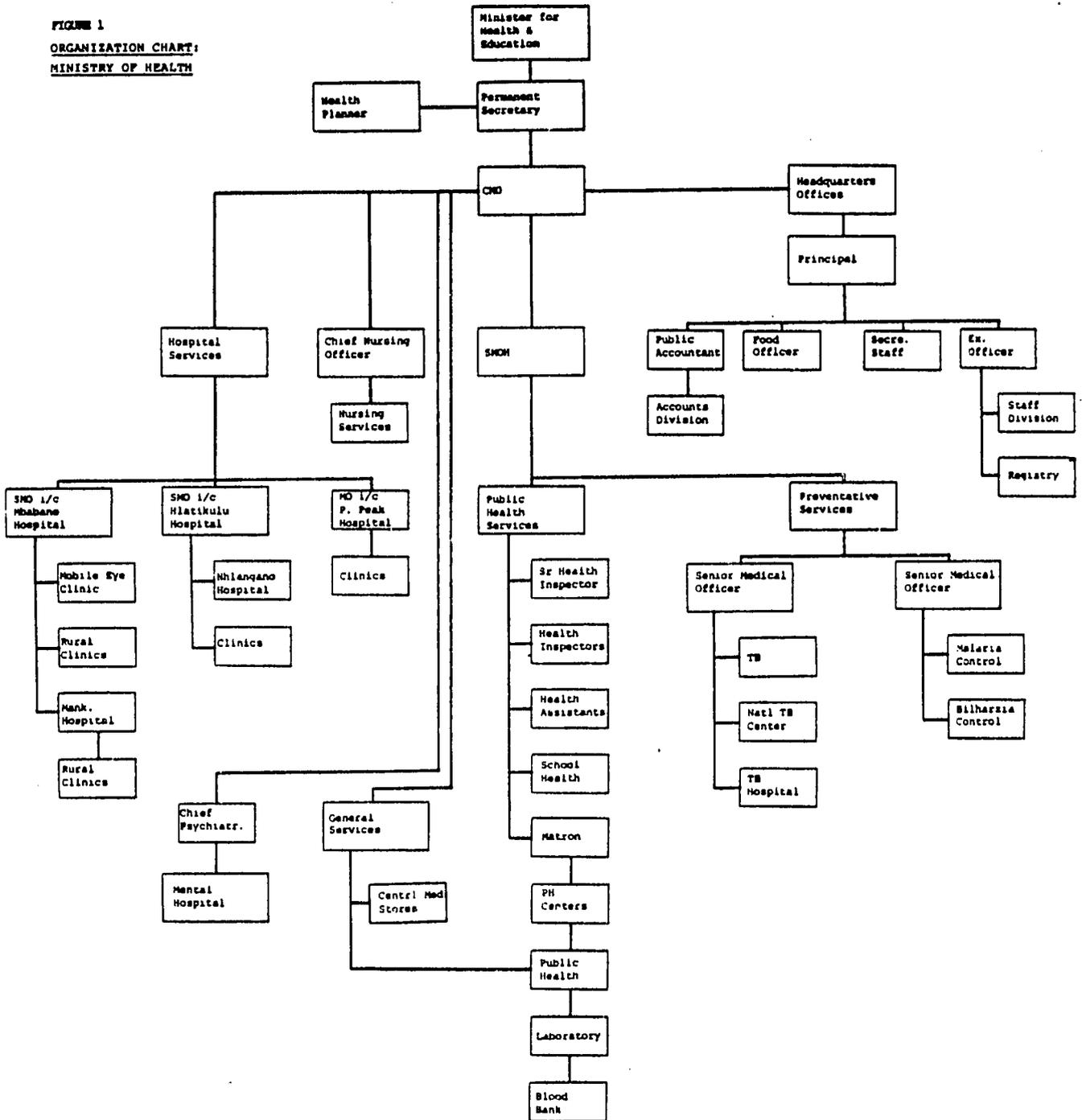
health services has increased from 346,713 in 1968 to 822,130 in 1975; outpatient attendances at rural clinics have grown by 237 percent since independence, while at urban hospitals by only 12 percent, reflecting stated government policy to increase services to rural areas. (22)

Not only does Swaziland have a rather unique traditional and modern dualistic government, as has been shown, but it has facilitated in the past and allows at present a variety of types of health practices to take place within its borders. The willingness of the Swazi's to consider and use such a mix of approaches to health services is unusual and should be recognized in assistance planning.

The major responsibility for organization and provision of health services falls under the Ministry of Health. School health services, for which the Ministry of Education is responsible, are the exception. The military has a very small health capacity and the Ministry of Agriculture has some rural extension workers with an input into nutritional services, as will be discussed later. Certain fiscal aspects of the health services are the responsibility of the Ministry of Finance and Economic Planning; these include current costs, capital outlays and negotiations with aid donors [13, pg. 3].

Figure 1 provides an organogram of the Ministry of Health. Until recently there has been a definite split between curative services and the preventive services.

FIGURE 1
ORGANIZATION CHART:
MINISTRY OF HEALTH



"Though it has been the policy of the Ministry of Health during the last plan period to integrate these services as far as possible, a marked differentiation still exists."
[22, pg. 7]

The government health sector is operated almost entirely by the Ministry of Health, which is headed by the Minister, with the Permanent Secretary being the highest ranking civil servant. The Chief Medical Officer (C.M.O.) is the senior health professional in the Ministry and takes direct responsibility for the curative services. There is a Senior Medical Officer of Health in charge of preventive services, under the C.M.O. The Principal is in charge of administrative matters, including the Central Medical Stores. The Chief Nursing Officer is responsible for nurses, the Chief Health Inspector for sanitarians. The Ministry has currently an expatriate health planner. The SADAP team learned that the Swazi counterpart was scheduled to shortly leave, thus once again leaving the Ministry totally reliant on an expatriate senior planner.

1. Overview of Health Manpower Development

The following tables represent compilations of figures from various sources. They should be viewed with some caution, as many sources use different designations or titles for the same positions and also often do not differentiate between those health workers who are registered, active and non-active, etc. Where available, such specifics are included.

Table 3 gives a listing of public and private health manpower in service for 1974, 1975 and latest available figures from 1977. It also shows for the year 1974 the numbers of health manpower which are Swazi citizens; i.e., the relatively high number of expatriates involved in health care delivery. For 1977 the table shows, where figures were available, the number of Swazi residents employed in the health sector. It appears from this table that in 1977, as compared to 1974, there was a considerably higher percentage of Swazi physicians. Due to the different manpower categories used by the different sources, discrepancies are evident in this table. Note, for example, that the numbers of "nurses" for the year 1975 is significantly lower than for the years 1974 and 1977.

Table 4 is a breakdown of active medical officers by sector, showing number of Swazis and number located in the Mbabane/Manzini area. Note that the number of physicians in 1977 in Table 3, 94, differs significantly from the number in Table 4, 65. Table 4 illustrates the large number of physicians in the urban area (1974: 62 percent; 1975: 54 percent; 1976: 62 percent; 1977: 60 percent).

Table 5 is a summary of figures presented in the Ministry of Health's Establishment Register from 1977. It is organized by those currently active and those projected in medical support services, preventive medicine and curative medicine, by facility. To facilitate its reading, an * is placed in the 4th horizontal column where a significant

Table 3

MANPOWER IN SERVICE: PUBLIC & PRIVATE

	Mid-1974		1975		1977	
	Number Active	Number Citizens		Number		# & # Residents Where Available
Doctors	53	7		65		94/73
Dentists	5	1		5		8/6
Pharmacists		1		8		10
Lab Techs	8	3		8		9
Radiographers	8	2		8		8
Physio-Therapists	3	1		7		9
Public Health Inspectors	6	4		8		13
Other Paramedicals	7**	0		See Below		See Below
Nurses*	410	375		290		460/400
			Midwives	365	Nursing Asst	75
			Assistant Nurses	195	Anaesthetic Assistants	2
			Pharmacist Assistants	24	Chiropodists	1
			Veterinarians	14	Med Techs	3
			Veterinarian Assistants	202	Occupational Therapists	1
			Med Assts	1	Optometrists	6
			Dental Techs	10	Sanitarians	1
			Nutritionists	2	Natural Therapeutic Practitioners (Herbalists)	2
			Med Lab Assts	16		
			X-Ray Asst Technician	35		
			Auxiliary Sanitarians	57		
			Health Assistants	30		
			Health Auxiliaries	150		

* Includes all matrons, sisters and staff nurses who may be either "registered" or "enrolled" as well as 18 auxiliary nurses.

** Two occupational therapists, one optometrist, one sanitarian, one chiropodist, one toxicologist, and one dental mechanic.

Note that traditional healers are not included in this table.

Sources: 1974: (13, p. 20)

1975: (65)

1976: Doctors and Dentists (Dec 31), (23)

Paramed Practitioners (registered October 31), (24)

Nurses and Nursing Assistants (25)

TABLE 4

ACTIVE MEDICAL OFFICERS, BY SECTOR

SECTOR	MID 1974	JANUARY 1, 1975	JANUARY 1, 1976	MARCH 31, 1977
Government	20	21	26	27
Mission	10	11	11	14
Industry	12	16	12	9
Private	11	19	22	15
TOTAL	53	67	71	65
Of Total: # Swazis	7	N/A	N/A	14
Of Total: # in Mbabane/ Manzini	33	36	44	39

Table 5

ESTABLISHMENT REGISTER, MINISTRY OF HEALTH
July, 1977

		1976/ 1977	1977/ 1978	1978/ 1979	Signi- ficant Change
Medical Support Services	<u>Central Medical Stores</u>				
	Pharmacists	3	2	2	
	Dispensers	6	7	7	
	Storemen	3	3	3	
	Orderlies	2	2	2	
	Other	9	7	7	
	<u>Central Laboratory</u>				
	Pathologist	1	1	1	
	Lab Technicians	2	2	2	
	Senior Lab Assistants	1	1	1	
	Lab Assistants	6	8	8	
	Staff Nurses	1	1	2	
	Nursing Assistants	-	1	1	
	Cyto-Technicians	-	1	1	
Microscopist	4	-	-	*	
Orderlies	4	4	4		
Typist	1	1	1		
Preventive Medicine	<u>Mankayane Health Unit</u>				
	Staff Nurses	2	2	2	
	Nursing Assistants	-	1	1	
	Orderlies	1	1	1	
	<u>Mbabane Health Unit</u>				
	Senior Medical Officers	1	1	1	
	Medical Officers	1	1	1	
	Matrons	1	1	1	
	Nursing Sisters	1	1	1	
	Nutrition Officers	-	1	1	
	Staff Nurses	10	19	19	*
	Nursing Assistants	-	2	2	
	Orderlies	1	1	1	
	Visual Aids Assistant	1	1	1	
	Other	3	3	3	
	<u>Hlattikulu Health Unit</u>				
	Staff Nurses	4	4	4	
	Nursing Assistants	-	1	1	
	Other	3	3	3	
	<u>King Sobhuza II Health Unit</u>				
	Staff Nurses	7	7	7	
	Health Assistants	1	-	-	
	Nursing Assistants	-	1	1	
Orderlies	1	1	1		
<u>Siteki Health Unit</u>					
Staff Nurses	2	2	2		
Nursing Assistants	-	1	1		
Other	1	1	1		

		1976/ 1977	1977/ 1978	1978/ 1979	Signi- ficant Change
Preventive Medicine	<u>TB Center</u>				
	Senior Medical Officers	1	1	1	
	Staff Nurses	3	3	3	
	Senior Health Assistants	1	1	1	
	Health Assistants	8	8	8	
	Orderlies	1	1	1	
	Other	11	10	10	
	<u>Health Inspection</u>				
	Senior Health Inspectors	1	1	1	
	Health Inspectors	9	6	6	*
	Senior Health Assistants	1	1	1	
	Health Assistants	5	46	46	*
	Driver	1	6	4	
	Tanker Attendant	-	3	3	
	<u>Manzini Public Health Center</u>				
	Senior Medical Officers	1	1	1	
	Health Inspectors	1	1	1	
	Senior Microscopist	1	1	1	
Senior Health Assistant	2	2	2		
Microscopist	3	3	3		
Health Assistants	32	32	32		
Other	5	4	4		
Curative Medicine	<u>Mental Hospital</u>				
	Specialists	-	1	1	
	Medical Officers	2	1	1	
	Matrons	1	1	1	
	Staff Nurses	7	7	7	
	Medical Attendants	17	17	17	
	Nursing Assistants	4	4	4	
	Hospital Orderlies	21	20	20	
	Other	18	18	18	
	<u>Mankayane Hospital</u>				
	Medical Officers	1	1	1	
	Matrons	1	1	1	
	Nursing Sisters	1	1	1	
	Staff Nurses	16	15	13	
	Lab Assistants	-	1	1	
	Nursing Assistants	3	4	4	
	Hospital Orderlies	7	7	7	
	Other	10	10	10	
<u>TB Hospital</u>					
Staff Nurses	7	7	7		
Nursing Assistants	1	1	1		
Hospital Orderlies	7	7	7		
Other	3	3	3		

		1976/ 1977	1977/ 1978	1978/ 1979	Signi- ficant Change	
Curative Medicine	<u>Mbabane Hospital</u>					
	Specialists	1	1	1		
	Senior Medical Officers	1	1	1		
	Dental Officers	1	1	1		
	Medical Officers	5	5	5		
	Matrons	2	2	2		
	Lab Technicians	1	1	1		
	Nursing Tutor	-	4	4		
	Nursing Sister	13	13	13		
	Senior Radiographer	1	1	1		
	Physiotherapists	1	1	1		
	Radiographers	3	3	3		
	Orthop. Technicians	1	1	2		
	Staff Nurses	102	96	96		
	Dental Technicians	1	1	1		
	Lab Assistants	2	2	2		
	Assistant Physical Therapists	2	2	2		
	Orthop. Assistants	2	2	2		
	Orderlies	62	64	64		
	Nursing Assistants	8	14	14		
	Other	72	67	67		
		<u>Nhlangano Hospital</u>				
		Nursing Sisters	1	1	1	
		Staff Nurses	7	7	7	
		Nursing Assistants	2	2	2	
		Hospital Orderlies	4	4	4	
		Others	4	3	3	
		<u>Pigg's Peak Hospital</u>				
		Specialists	1	1	1	
		Medical Officers	1	1	1	
		Matrons	1	1	1	
		Nursing Sisters	1	1	1	
		Radiographers	1	1	1	
		Staff Nurses	23	16	16	*
		Lab Assistants	1	1	1	
		Nursing Assistants	4	7	7	
		Hospital Orderlies	12	12	12	
		Other	21	21	21	
		<u>Hlatikulu Hospital</u>				
		Senior Medical Officers	1	1	1	
		Medical Officers	5	5	5	
		Matrons	2	2	2	
		Lab Technicians	1	1	1	
	Medical Assistants	1	1	1		
	Nursing Sisters	9	9	9		
	Radiographers	2	2	2		
	Orthop. Technicians	-	1	-		

		1976/ 1977	1977/ 1978	1978/ 1979	Signi- ficant Change
Curative Medicine	<u>Hlatikulu Hospital Cont'd</u>				
	Staff Nurses	73	62	60	*
	Lab Assistants	2	2	2	
	Hospital Orderlies	41	41	41	
	Nursing Assistants	8	12	12	
	Other	41	43	43	
	<u>Mankayane Hospital Clinics</u>				
	Staff Nurses	3	5	4	
	Nursing Assistants	-	3	3	*
	<u>Mbabane Hospital Clinics</u>				
	Staff Nurses	7	6	8	
	Nursing Assistants	-	4	2	*
	<u>Pigg's Peak Hospital Clinics</u>				
	Staff Nurses	8	6	5	
	Nursing Assistants	-	4	2	*
<u>Hlatikulu Hospital Clinics</u>					
Staff Nurses	14	16	16		
Nursing Assistants	-	4	4	*	

Source: (11)

personnel charge is indicated between one or more of the three years shown. It appears that the number of nursing assistants at clinics will be increased significantly from 1976/77 to 1977/78.

Table 6 shows future projections of required established posts of medical officers within the government. The posts include those of Senior Medical Officers and specialists. Because of the introduction of diagnostic nurses over the Plan period, it is intended that some of the medical officers' posts at the hospitals will be upgraded to that of specialist.

Besides the lack of qualified Swazi health personnel, the health manpower situation is characterized by a lack of mid-level workers in all categories. The Ministry hopes to increase the numbers of nurses and auxiliary personnel relative to the numbers of physicians.

2. Overview of Health Facilities

Table 7 provides an overview of health facilities by certain selected indicators. In 1976, the overall bed/population ratio was approximately 3.5 beds per thousand; excluding specialist hospitals, the ratio was 2.6 beds per thousand. The overall doctor/population ratio in this year was 1:10,500. [6]

The attached map shows the location of hospitals and clinics in Swaziland (drawn September, 1977). The following changes should be noted: Lundzi government medical facility (northwest) should be deleted; public health centers are

TABLE 6

EXISTING AND PROJECTED GOVERNMENT POSTS
FOR MEDICAL OFFICERS, INCLUDING SPECIALISTS

CENTRE	ACTUAL	PROJECTED				
	1977/8	1978/9	1979/80	1980/1	1981/2	1982/3
Headquarters	2	2	2	2	2	2
Mbabane Hospital	8*	8*	8*	9*	9*	10*
Hlatikulu Hospital	6	6	7*	7*	7*	7*
Pigg's Peak Hospital	2	2	2	2	2	2
Mankayane Hospital	1	1	1	2	2	2
Mental Hospital	2	2	2	2	2	2
T.B. Centre	1	1	1	1	1	1
Malaria/Bilharzia Unit	1	1	1	1	1	1
Public Health Centres	1	1	2	2	3	4
Rural Health Centres	-	1	2	2	2	2
Central Laboratory	1	1	1	1	1	1
TOTAL	25	26	29	31	32	34

* Includes 1 dentist.

Table 7

CAPACITY OVERVIEW OF FACILITIES

	Facility & Type	MDs (April, 1976)	Beds	Admissions 1973	Admissions/Bed	Inpatient Discharges 1975	Out-Patient Attd. 1975	Average Bed Stay, 1	Average Length of Stay (Days)	Est Cost Per Inpatient Day ¹³	Cost Per Inpatient Stay
General, Gov't	Mbabane	11	320	8,361	26	9,677	78,991	88(9)	11.6	R. 6	R. 70
	Hlatikulu	5	180	6,105	34	5,825	25,910	156(10)	5.6	R. 4	R. 32
	Pigg's Peak	2	50	2,064	41	1,309	15,332	N/A	N/A	N/A	N/A
	Mankayane	1	40	1,320	33	1,780	10,824	N/A	N/A	N/A	N/A
	Nhlangano	-	15	3,222	215	1,076	62,256(5)	N/A	N/A	N/A	N/A
	TOTAL GOVERNMENT	19	605	21,072	35	19,667	Footnote(6)	-	-	-	-
Chur. Rel.	R.F.M. Hospital	8	320(3)	8,527	27	7,791	29,344	60(11)	12.0	R. 5.30	R. 64
	Good Shepherd	4	100	3,456	35	3,624	13,959	62(12)	9.1	R. 2	R. 18
	TOTAL CHURCH	12	420	11,983	29	11,415	Footnote(7)	61	10.6	-	-
Spec. Long-Stay	Mental Hospital (Government)	1	200	N/A	N/A	360	N/A	N/A	N/A	N/A	N/A
	T.B. Hospital (Government)	-(1)	100	N/A	N/A	469	N/A	N/A	N/A	N/A	N/A
	Leprosy (Government/Church)	-(2)	30	N/A	N/A	22	N/A	N/A	N/A	N/A	N/A
	TOTAL SPECIALIZED	-	330	N/A	N/A	851	N/A	N/A	N/A	N/A	N/A
	COMPANY (Inpatient)	9	26(4)	N/A	-	9,452	246,128	N/A	N/A	N/A	N/A
	PRIVATE (Inpatient)	-	26	1,067	41	1,402	(clinics) 14,761(8)	N/A	N/A	N/A	N/A

Footnotes:

1. Supervised by nonresident doctor at TB Center, Manzini
2. Visited by RFM doctor
3. Does not include bedded clinics, run by nurses
4. The Ministry of Health advises to view this figure with caution
5. The Ministry of Health advises to view this figure with caution
6. Outpatient attendances, 1975, for government rural clinics was 463,160; thus, including these, government total was 536,240
7. Outpatient attendances, 1975, for church-related rural clinics was 228,481; thus, including these, total was 291,784
8. Visits to nurse-run clinics, but not private doctors
9. April, 1973
10. January, 1974
11. 1972
12. January, 1974
13. These are estimates only, except in the case of RFM

Sources: (22), Tables 4 and 5
(7), p. 25

at Siteki, Manzini, Pigg's Peak, Mbabane and Mankayane; a public health center is planned at Nhlangano (southwest); company hospital at Havelock/Bulembu (70 beds) and company clinics at Tshaneni, Ubombo ranches, Mhlambanyathi, and Rocklands.

In geographic terms for both curative and preventive services, urban-rural inequities are marked. The Mbabane-Manzini corridor contains about 16 percent of the population, 60 percent of hospital beds, 62 percent of doctors and 55 percent of nurses. Furthermore, as hospital outpatient services, primarily curative in nature, comprise approximately one-third of all outpatient attendances, the rural population is clearly comparatively underserved [53, pg. 18]. In light of this problem, the Second National Development Plan states: "There is now an urgent necessity to reorientate priorities for developments in the health field away from conventional institutional facilities centered on urban areas and towards different kinds of programmes which are cheaper and more closely geared to the preventive aspects of health, so that a wider impact may be achieved on the health problems of the rural population at large." [9, pg. 196]

3. Overview of Financing Health Services

a. Health in the Government Budget

To give an accurate overview of the role of health expenditures, as compared to those of other sectors, it is necessary to show government capital and recurrent budgets

over time. (Directly following this section [a] is a breakdown of the Ministry of Health budget only, according to various indicators [section b].) It is not possible to make one uniform table showing the development of the government's budget over the years, due to unavailability of certain data and due to the government's use of different categories of allotment for different years (e.g., by Ministry, by sector, by project, etc.). Therefore, the following five tables must be reviewed:

In Tables 8 and 9, government current and capital expenditures are shown, according to functional classification, for several years. The role of the public sector in the economy has grown over the period covered in these tables, mainly as a result of the government's increased role in rural development. Total government expenditures increased at some 22 percent per annum. Most current expenditures support general administration, mainly salaries, but most capital expenditures go to economic services, including agriculture. A national defense force was formed in 1973 [45]. Percentage figures added to the tables give a clearer view of the government's health commitment.

In 1976, the Ministry of Health absorbed some 8.5 percent of the total government recurrent budget. Expenditure on health amounted to almost E5 per capita.⁷ About 10 percent of total health expenditure went to subsidies for

7 "Which may be the highest figure of any African country." [6, pg. 15]

TABLE 8
FUNCTIONAL CLASSIFICATION OF CENTRAL GOVERNMENT CAPITAL EXPENDITURES, 1971/72-1975

(In millions of Emalangeni)

FUNCTION	1971/72	PER-CENT	1972/73	PER-CENT	1973/74	PER-CENT	1974/75 BUDGET ESTIMATE ¹	PER-CENT	PRELIM- INARY ACTUAL	PER-CENT	1975/76 BUDGET ESTIMATE ¹	PER-CENT	REVISED ESTIMATE ²
General Services	0.89		1.30		2.38		2.14		1.66		3.78		--
General Administration	(0.75)		(1.11)		(1.40)		(1.50)		(1.05)		(2.87)		--
Justice and Police	(0.14)		(0.20)		(0.99)		(0.64)		(0.61)		(0.92)		--
Community Services	0.69		0.79		2.79		3.89		2.03		1.81		--
Sanitary Works	(0.53)	16.5	(0.46)	8.0	(0.72)	7.4	(1.61)	10.5	(0.72)	7.5	(0.15)	.68	--
Other	(0.17)		(0.33)		(2.08)		(2.27)		(1.31)		(1.66)		--
Social Services	0.58		1.43		1.03		2.86		1.84		3.23		--
Education	(0.35)		(1.14)		(0.85)		(2.48)		(1.73)		(2.66)		--
Health	(0.23)	<u>7.1</u>	(0.29)	<u>5.0</u>	(0.18)	<u>1.9</u>	(0.38)	<u>2.5</u>	(0.11)	<u>1.2</u>	(0.57)	<u>2.6</u>	--
Economic Services	1.06		2.22		3.49		6.50		4.02		13.28		--
Agriculture	(0.57)	17.7	(1.13)	19.7	(2.48)	25.5	(3.36)	21.8	(2.94)	30.8	(5.32)	24.1	--
Mining, Manufacturing	(0.25)		(0.56)		(0.49)		(0.93)		(0.55)		(2.70)		--
Public Works, Power, Communications	(0.24)		(0.53)		(0.51)		(2.07)		(0.48)		(3.95)		--
Other	(--)		(--)		(0.02)		(0.14)		(0.04)		(1.31)		--
TOTAL CAPITAL EXPENDITURE	3.22		5.75		9.71		15.39		9.54		22.10		9.00

NOTES:

1. As stated in the Capital Budget Estimates, which traditionally include the total cost of projects which extend beyond the fiscal year in question.
2. As estimated by the Department of Finance and Economic Planning.

TABLE 9
FUNCTIONAL CLASSIFICATION OF CENTRAL GOVERNMENT CURRENT EXPENDITURE, 1971/72-1975/76
(In millions of Emlangeni)

FUNCTION	1971/72	PER- CENT	1972/73	PER- CENT	1973/74	PER- CENT	1974/75 BUDGET ESTIMATE	PER- CENT	PRELIM- INARY ACTUAL	PER- CENT	1975/76 BUDGET ESTIMATE	PER- CENT
General Services	7.65		8.34		10.78		12.40		11.61		16.77	
General Administration	(5.83)		(6.21)		(7.36)		(8.07)		(7.57)		(11.73) ¹	
Justice and Police	(1.83)		(2.13)		(2.67)		(3.11)		(3.02)		(3.71)	
Defense	(--)		(--)		(0.75)		(1.22)		(1.01)		(1.33)	
Social Services	4.58		5.30		6.46		7.57		7.68		8.46	
Education	(3.08)		(3.64)		(4.39)		(5.30)		(5.21)		(5.93)	
Health	(1.50)	8.9	(1.66)	8.9	(2.07)	9.2	(2.28)	8.9	(2.48)	10.0	(2.53)	8.0
Economic Services	4.09		4.41		4.39		4.83		4.75		5.39	
Agriculture	(1.53)	9.1	(1.48)	7.9	(1.77)	7.9	(2.06)	8.1	(2.06)	6.3	(2.29)	7.2
Mining, Manufacturing	(0.32)		(0.28)		(0.22)		(0.37)		(0.40)		(0.43)	
Public Works, Power, Communications	(2.24)		(2.56)		(2.18)		(2.20)		(2.10)		(2.39)	
Other	(--)		(0.10)		(0.15)		(0.20)		(0.19)		(0.27)	
Public Debt Interest ²	0.50		0.59		0.84		0.75		0.77		1.20	
TOTAL CURRENT EXPENDITURE	16.83		18.63		22.47		25.55		24.81		31.81	

NOTES:

1. Includes a provisional allowance of E2 million for a general salary increase which is expected during the year.
2. Partly estimated.

mission services. Fees for medical services met about 5 percent of the total annual expenditure. [6, pg. 15]

Tables 10 and 11 are taken from the Government's Capital Fund Estimates for the Financial Year 1977/78.

Table 10 is a summary of estimated government expenditure; here the classification is by department, ministry, and office. This table shows that of total appropriations estimates for 1977/78, the Ministry of Health received E1,935,000; this represents 3.3 percent of total appropriations. Note that financing (local plus donor) equals this amount. Of this total of finances going to health, local sources (E131,000) make up only 6.7 percent, while donor sources make up the rest. Of the total local financing (E29,913,000), health received only 4 percent (E131,000); of total donor funds (E29,181,000), health received 6.2 percent (E1,804,000).

Table 11 shows estimated capital expenditure for 1977/78, classified by sector.

Table 12 is taken from the government's Estimates of Revenue and Recurrent Expenditure (1st April, 1978 - 31st March, 1979). In 1977/78, health received an estimated 9.6 percent of appropriated departmental expenditure; in 1978/79, 9.2 percent.

b. The Ministry of Health Budget

Similar difficulties in compiling tables as those previously stated necessitate review of several tables in

TABLE 10
SUMMARY OF ESTIMATED EXPENDITURE BY HEAD, 1977 - 1978
(In thousands of Emalangeni)

MINISTRY/DEPARTMENT	ESTIMATED TOTAL COST OF PROJECTS	ESTIMATED EXPENDITURE TO END OF 1976/77	ESTIMATES FOR 1977/78					ESTIMATE FOR 1978/79
			APPROPRIATION TO:			FINANCING		
			MIN/DEPT	WORKS	TOTAL	LOCAL	DONOR	
Private and Cabinet Offices	18	-	18	-	18	18	-	-
Establishments and Training Dept	75	25	25	-	25	25	-	25
Department of Foreign Affairs	40	-	40	-	40	40	-	-
Department of Police	3,542	531	112	875	987	987	-	1,337
Department of Defense	774	274	400	100	500	500	-	-
Deputy Prime Minister's Office	2,354	145	1,227	440	1,667	402	1,265	530
Ministry of Agriculture	44,478	4,189	5,171	968	6,139	2,539	3,600	11,914
Ministry of Commerce & Cooperatives	1,960	815	693	221	914	755	159	221
Ministry of Industry, Mines & Tourism	46,127	4,000	9,286	-	9,286	5,603	3,683	15,654
Department of Geological Survey & Mines	641	198	308	-	308	145	163	135
Ministry of Education	21,510	3,000	6,520	1,143	7,663	2,104	5,559	8,170
Ministry of Finance & Economic Planning	770	504	242	-	242	162	80	21
Treasury and Stores	137	2	20	35	55	55	-	20
Customs and Excise Department	445	147	35	83	118	118	-	110
<u>Ministry of Health</u>	<u>5,304</u>	<u>105</u>	<u>720</u>	<u>1,215</u>	<u>1,935</u>	<u>131</u>	<u>1,804</u>	<u>1,283</u>
Ministry of Justice	270	42	50	60	110	110	-	118
Department of Prisons	1,076	103	50	450	500	500	-	412
Ministry of Local Administration	5,618	1,434	1,163	461	1,624	1,062	562	1,409
Ministry of Works, Power, & Communications	86,611	12,663	20,588	2,232	22,820	10,514	12,306	24,526
Central Transfers	12,237	5,626	4,143	-	4,143	4,143	-	1,772
TOTALS	233,987	33,803	50,811	8,283	59,094	29,913	29,181	67,657
			59,094			59,094		

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TABLE 11

SUMMARY OF ESTIMATED CAPITAL EXPENDITURE BY SECTOR

1977 - 1978

SECTOR	ESTIMATED* EXPENDITURE	PERCENT	LOCAL* FUNDS	DONOR* ¹ FUNDS
General Administration	7,011	11.9	6,621	390
Law and Order	2,097	3.5	2,097	-
Water and Sewerage	1,784	3.0	484	1,300
Housing	1,125	1.9	782	343
Other Community Services	2,531	4.3	1,361	1,170
Education and Training	7,886	13.3	2,313	5,573
<u>Health</u>	<u>1,935</u>	<u>3.3</u>	<u>131</u>	<u>1,804</u>
Agriculture	13,065	22.1	4,188	8,877
Industry and Mining	9,095	15.4	5,249	3,846
Transport and Communications	11,651	19.7	5,931	5,720
Commerce and Handicrafts	736	1.2	736	-
Cooperatives	178	0.3	19	159
TOTAL	59,094	99.9	29,912	29,182

* In thousands of Emalangeni.

1. Major donors are (in thousands of Emalangeni):

African Development Bank	E2,655
United Kingdom	E6,322
The World Bank	E8,309
European Development Fund	E3,133
West Germany	E4,782

(10, p. 1)

TABLE 12

SUMMARY OF EXPENDITURE ESTIMATES

	ESTIMATES 1978/79	% OF A*	ESTIMATES 1977/78	% OF A*
Statutory Expenditure	<u>4,280,000</u>		<u>5,761,000</u>	
Parliament	188,000	0.4	167,000	0.4
Private & Cabinet Offices	192,000	0.4	167,000	0.4
Establishments & Training	2,977,000	6.2	2,649,639	6.7
Foreign Affairs	1,648,000	3.4	1,337,000	3.4
Police	3,392,000	7.1	2,950,000	7.5
Defense	4,228,000	8.8	1,580,000	4.0
Deputy Prime Minister's Office	1,605,000	3.4	1,401,000	3.5
Agriculture	4,898,000	10.2	4,074,096	10.3
Commerce and Co-operatives	459,000	1.0	387,000	0.9
Industry, Mines & Tourism	308,000	0.6	266,000	0.6
Geological Survey and Mines	392,000	0.8	339,000	0.8
Education	10,248,000	21.4	8,812,000	22.4
Finance & Economic Planning	483,000	1.0	412,000	1.0
Treasury and Stores	1,083,000	2.3	944,000	2.4
Income Tax	240,000	0.5	210,994	0.5
Customs and Excise	314,000	0.7	275,855	0.7
<u>Health</u>	<u>4,401,000</u>	<u>9.2</u>	<u>3,774,176</u>	<u>9.6</u>
Justice	647,000	1.4	563,000	1.4
Prisons	1,790,000	3.7	1,385,000	3.5
Local Administration	3,218,000	6.7	2,764,968	7.0
Works, Power & Communication	4,919,000	10.3	4,224,756	10.7
Audit	135,000	0.3	118,900	0.3
<u>Civil Service Board</u>	<u>50,000</u>	<u>0.1</u>	<u>43,967</u>	<u>0.0</u>
A = Appropriated Departmental Expenditure	<u>47,815,000</u>	100	<u>39,252,351</u>	98.0
Central Transfers	78,272,000		28,099,649	
TOTAL RECURRENT EXPENDITURE	<u><u>130,367,000</u></u>		<u><u>73,113,000</u></u>	

* A = Appropriate Expenditure, which also appears in table.

this section for a comprehensive understanding. Table 13 shows the Second National Plan's summary of (planned) health investments. Adding up all planned investments for 1973/74 - 1975/76, the following figures emerge:

	<u>TOTAL</u>	<u>% OF TOTAL</u>
Hospitals	665,000	55.4
Public Health Centers (urban)	72,854	6.1
Rural Clinics	183,893	15.3
Rural Sanitation and Water Supplies	99,000	8.2
Public Health Training Centres	50,000	4.2
Central Medical Store	9,800	.8
Housing	<u>120,000</u>	<u>10.0</u>
TOTAL	1,200,547	100.0

It may be noted that for the three-year period, R450,000 were to go to Mbabane Hospital. This represents 67.7 percent of the total investment to hospitals and 37.1 percent of the total investment.

Regarding recurrent expenditure policy, the Second National Plan states the following: [9, pg. 41]

"An overall rate of increase in recurrent expenditure of 5 percent per annum is projected at constant prices. When allowance is made for obligations and other general charges on the recurrent budget, this implies a rate of expansion in expenditures by Ministries of 6.5 percent per annum. In the allocation of finances to meet recurrent expenditures, first priority will be given to the Ministries and Departments concerned with the development of the rural areas and of human resources. In order both to contain the overall growth in recurrent expenditure and to ensure that the

TABLE 13

HEALTH: SUMMARY OF INVESTMENT PROGRAMME*

PROGRAMME	(RAND)		
	1973/4	1974/5	1975/6
1. <u>Hospitals</u>			
Mbabane	50,000	200,000	200,000
Hlatikulu	15,000	40,000	-
Pigg's Peak	45,000	-	40,000
Mankayane	15,000	-	-
Matsapha Mental	-	50,000	-
Matsapha T.B.	-	<u>10,000</u>	-
Subtotal - Hospitals	125,000	300,000	240,000
2. <u>Public Health Centres</u>			
Siteki	22,854	-	-
Pigg's Peak	-	25,000	-
Southern Swaziland	-	-	<u>25,000</u>
Subtotal - PHC	22,854	25,000	25,000
3. <u>Rural Clinics</u>			
New or Replacement Clinics	51,593	36,300	36,000
Clinic Renovation	<u>20,000</u>	<u>20,000</u>	<u>20,000</u>
Subtotal - Rural Clinics	71,593	56,300	56,000
4. Rural Sanitation and Water Supplies	22,000	33,000	44,000
5. Public Health Training Centre	-	50,000	-
6. Central Medical Store	9,800	-	-
7. Housing	40,000	40,000	40,000
TOTAL BY YEAR	291,247	504,300	405,000
TOTAL	1,200,547		

(9, p. 214)

* This table, taken directly from the Second National Development Plan, 1973-77, shows capital costs, given in Rand.

expansion in expenditure conforms to the stated priorities, control figures have been established; these represent the permissible annual rate of growth of recurrent expenditures by Ministries and Departments over the Plan period. These control figures are approximately as follows:

	<u>Annual % Increase</u>
General Administration	5
Law and Order	6
Agriculture	10
Industry, Mining & Tourism	5
Commerce & Cooperatives	8
Education	9
Finance	5
<u>Health</u>	<u>6</u>
Local Administration	5
Works, Power & Communications	6

In Table 14 capital estimates are shown for 1977/78, showing specific projects as well as sources of financing. Adding up total appropriations from this table, the following figures appear:

	<u>Total</u>	<u>% of Total</u>
Hospitals	488,050	25.2
Rural Clinics	469,920	24.3
Public Health Services	460,300	23.8
General Services	159,500	8.2
Training	219,126	11.3
TOTAL	<u>1,935,496⁸</u>	<u>92.8</u>

⁸ See footnote at the bottom of Table 14.

Table 14
CAPITAL ESTIMATES (EMALANGENI)

MINISTRY OF HEALTH

	Estimated Total Cost of Project	Estimated Expenditure to End of 1976/77	Estimates for 1977/78				Estimate for 1978/79	Finance Source	
			Appropriation to:		Financing:				
			Health	Works	Local	Donor			
Hospitals	Mbabane Hospital Extensions	270,200	20,000	105,200	145,200	500	249,700	-	UK Loan, Local Funds
	Hlatikulu Hospital	135,800	-	15,300	120,500	10,000	125,800	-	UK Loan, Local Funds
	Pigg's Peak Hospital	45,000	15,000	4,800	25,200	30,000	-	-	Local Funds
	Mankayane Hospital	10,650	-	3,850	6,800	10,650	-	-	Local Funds
	TOTAL			129,150	297,700				
Rural Clinics	Rural Clinics--UK Project 1	32,500	7,580	24,920	-	-	24,920	-	UK Loan
	Rural Clinics--UK Project 2	450,000	-	65,000	200,000	-	265,000	185,000	UK Loan
	Maternity Units at Existing Rural Clinics	130,000	-	20,000	60,000	-	80,000	50,000	UK Loan
	Rural Clinic Renovations	180,000	-	20,000	80,000	-	100,000	80,000	UK Loan
	TOTAL			129,920	340,000				
Pub Health Services	Pigg's Peak Health Center	60,000	-	10,500	49,500	-	60,000	-	UK Loan
	Mobile Public Health Training Unit	58,800	21,400	10,300	-	10,300	-	22,000	Local Funds
	Rural Health Centers	240,000	-	40,000	-	-	240,000	-	UK Loan
	Mankayane Public Health Center	60,000	-	10,500	49,500	-	60,000	-	UK Loan
	Central Public Health Laboratory	19,000	-	15,000	4,000	19,000	-	-	Local Funds
	Store Rooms for Health Inspectorate	8,000	-	-	8,000	8,000	-	-	Local Funds
	Bilharzia Control	1,940,000	-	178,000	85,000	-	263,000	129,000	US aid
	TOTAL			264,300	196,000				
Genl Svcs	Radio Communications	80,000	-	80,000	-	-	80,000	-	Danish aid
	Ambulances	72,500	-	72,500	-	-	72,500	-	UK Loan
	Trade Fair Pavilion	7,000	-	-	7,000	7,000	-	-	Local Funds
	TOTAL			152,500	7,000				
Training	Health Assistant Training Unit	112,800	40,740	36,040	-	36,040	-	36,040	Local Funds
	Institute of Health Sciences	1,391,390	-	8,706	174,380	-	183,086	781,103	US AID
	TOTAL			44,746	174,380				
TOTAL	5,303,640	104,720	720,616	1,214,880*	131,490	1,804,006	1,283,143		

* Note that, when adding up the individual appropriations to "works," the total comes to 1,015,080, rather than the 1,214,880 as shown. The authors are assuming there is a typing error and are using the figure given for further calculations. It appears that 200,000 is omitted under works appropriation to rural health centers.

Source: (10, pp. 28-9)

Table 15 shows recurrent fund estimates, 1977/78 and 1978/79; this table is categorized by program activities. Curative medical services in both years receive the bulk of the recurrent funds.⁹

Table 16 gives estimates on Ministry of Health grants, subsidies and other transfer payments. The bulk of these payments goes to the Nazarene Hospital.¹⁰

c. Ministry of Health Budget Projections

Tables 17 and 18 are taken in summarized form from the Ministry of Health's Draft Proposals of the Third Five-Year National Development Plan. It was learned from the Ministry, however, that since their development, the Ministry of Finance has reshuffled their proposed projections. They should, therefore, be regarded as indicative rather than definitive.

Table 17 shows the planned investment program, which is to reflect an increased priority being given to the provision of health services as compared with the Second Plan period, with the adoption of three inter-related strategies:

- increased expansion of existing services within the given capital infrastructure, including putting second nurses at clinics and increased staffing of health centers

9 In the summary recurrent expenditure estimate for the Ministry of Agriculture, the program "improved nutrition (home economics)" was estimated to receive 121,165E in 1977/78 and 139,000E in 1978/79. [12, pg. 23]

10 1977/78 estimate, medical and hospital service fees: 130,000E; 1978/79 estimate: 150,000E [12, pg. 6]. These represent a negligible proportion of the total budget. The fee structure within the government has not been revised in several years.

TABLE 15
APPROPRIATED RECURRENT EXPENDITURE - ACTIVITIES BY TREASURY CONTROL ITEMS
ESTIMATES, APRIL 1978 - MARCH, 1979

HEAD AND ACTIVITY	01 PERSONNEL	02 TRANSPORT	04 SERVICES	05 RENTALS	06 CONSUMABLES	07 DURABLES	10 TRANSFERS INTERNAL	11 TRANSFERS EXTERNAL	TOTAL	% OF TOTAL	1977/78	% OF TOTAL
<u>Health</u>												
Minister	18,000	10,000	1,000	-	1,000	1,000	-	-	31,000	0.7	27,128	0.7
Ministry Administration	116,000	46,000	17,000	-	15,000	8,000	427,000	45,000	674,000	15.3	524,086	13.9
Medical Support Services*	106,000	31,000	15,000	-	90,000	65,000	-	-	307,000	7.0	269,238	7.1
Preventive Medicine	345,000	83,000	14,000	-	110,000	22,000	-	-	574,000	13.0	465,374	12.3
Curative Medicine	1,420,000	144,000	93,000	-	1,111,000	47,000	-	-	2,815,000	64.0	2,488,350	65.9
HEAD TOTAL	2,005,000	314,000	140,000	-	1,327,000	143,000	427,000	45,000	4,401,000	100.0	3,774,176	99.9

* Operation of medical stores and laboratory.

(12. pp. 51-2)

TABLE 16

DETAILS OF GRANTS, SUBSIDIES AND OTHER TRANSFER PAYMENTS
ESTIMATES, APRIL 1977 - MARCH 1979

PAYMENTS	ESTIMATES* 1978-79	ESTIMATES* 1977-78
<u>Health</u>		
<u>Ministry Administration</u>		
Nazarene Hospital	280,000	197,191
Nazarene Leper Hospital	3,950	3,445
Siteki Mission Hospital	76,000	58,495
Our Lady of Sorrows Hospital	580	500
St. Phillip's Hospital	460	400
St. Mary's Hospital	700	600
Red Cross Clinic	500	460
St. Juliana Clinic	610	550
Florence Clinic	350	300
New Haven Clinic	350	300
Swaziland Nursing Council	1,500	1,160
Nursing Examination Board	2,000	900
World Food Programme - Local Expenses	39,000	34,000
Siteki Mission Hospital - Training	21,000	18,764
Commonwealth Secretariat	2,000	2,000
World Health Organization	43,000	42,000

* In Emalangení.

TABLE 17
INVESTMENT PROGRAMME, MOH
(£ 000's)

	<u>1978/79</u>	<u>% of Total</u>	<u>1979/80</u>	<u>% of Total</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>	<u>Total</u>	<u>% of Total</u>
<u>All Hospitals</u>	330	13.0	870	38.2	1,530	1,180	300	4,210	40.4
<u>All Clinics</u>	995	39.1	430	18.9	420	420	570	2,835	27.2
<u>(Total Curative)</u>	<u>1,325</u>	<u>52.0</u>	<u>1,300</u>	<u>57.1</u>	<u>1,950</u>	<u>1,600</u>	<u>870</u>	<u>7,045</u>	<u>67.6</u>
<u>Preventive</u>	575	22.6	180	7.9	20	160	295	1,230	11.8
<u>Training</u>	578	22.7	578	25.4	56	38	20	1,270	12.2
<u>Medical Support</u>	80	3.1	220	9.7	150	190	240	880	8.4
<u>Total</u>	<u>2,548</u>	<u>100.4</u>	<u>2,278</u>	<u>100.1</u>	<u>2,176</u>	<u>1,988</u>	<u>1,425</u>	<u>10,425</u>	<u>100</u>

Source: (22)

- increase of services through the implementation of capital projects
- increase of services through the re-organization of existing services and their more efficient utilization, (e.g., nurses increasingly use as screeners and diagnosticians, better co-ordination between Ministry of Health and other, especially church-related, services.) (22, pg. 39-40)

Table 18 shows recurrent budget projections through 1983. The Ministry states that, over the Second Plan period, expansion of services occurred "without a planned expansion of capital, and consequent planned recurrent expenditures. In the Third Plan, explicit awareness of this is being taken into account.... Over the Plan period, real increase in recurrent budget arising from new capital investments of 23.7% is required. This will occur with a large increase in 1979/80 to raise the base and to clear the Ministry from the over-expenditure cycle into which it has fallen. In addition to this, a further growth rate of 37.7% over the plan period is required to finance regular expansion of services uncatered for by capital investment. An average annual real growth rate of 10 percent is therefore necessary." [22, pg. 39].

The Ministry's budget projections show a greater concentration in the allocation of financial resources to the rural areas and to preventive care.¹¹

¹¹ The reader is referred to 1976 USAID source (53), pages 27-28 and pages 73-74. Tables in this source show Ministry of Health recurrent budget projections, based on the Ten-Year Health Development Plan. Figures differ somewhat from these in Tables 17-18, but the general trends are similar.

TABLE 18
RECURRENT BUDGET PROJECTIONS, MOH
(£ 000's)

	<u>1977/78</u>	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>	<u>% of 1977/78</u>	<u>% of 1982/83 Total</u>
<u>All Hospitals</u>	2,236	2,253	2,291	2,421	2,546	2,695	59.4	44.3
<u>All Clinics</u>	254	274	410	485	558	625	6.7	10.3
<u>Curative Total</u>	<u>2,490</u>	<u>2,527</u>	<u>2,701</u>	<u>2,906</u>	<u>3,104</u>	<u>3,320</u>	<u>66.1</u>	<u>54.6</u>
<u>Preventive</u>	467	669	939	1,090	1,205	1,342	12.4	22.1
<u>Training</u>	-	18	208	210	229	240	-	-
<u>Medical Support</u>	268	280	292	339	356	376	.7	6.2
<u>Minister</u>	27	28	29	30	31	32	.1	.1
<u>Ministry Administration</u>	524	565	611	660	712	770	13.9	12.6
Total	3,766	4,167	4,780	5,215	5,637	6,079	99.5	99.6
% Increase on Previous Year		10.6	14.7	9	7.6	7.8		

Source: 22

The SADAP team's preliminary estimate of total national (public and private) expenditures on health is shown on the following pages. These figures are based on assumptions which were derived and generalized primarily from information obtained during the visit and also from resource documents, and should be viewed as a working estimate. The authors' objective in compiling these figures is to promote discussion and development of better estimates of private and public health expenditures and thus to facilitate clearer understanding of the total health delivery system in regard to functions and associated costs.

Total National Health Expenditures

PRIVATE SECTOR:*

Private Physicians:

average office visit (incl. assoc. treatments)	E8
# patients/week	150
weeks of work/year	<u>48</u>
	E57,600
(surgical fees = increase of 20 %)	<u>11,520</u>
	E69,120
# in country	<u>15</u>
TOTAL	<u>1,036,800</u>

Private Nurses:

average fee per visit	E3.5
# patients/day	50
# days of work/year (48 weeks x 5 days/week)	240
# in country	<u>19</u>
TOTAL	<u>798,000</u>

Private Pharmacists:

prescriptions/day	100
prescriptions/year	26,000
cost per prescription	E4
# in country	<u>5</u>
TOTAL	<u>E520,000</u>

Traditional healers in the private health sector have not been included in these estimates. Assuming 400 practicing traditional healers, who see some 25 patients a week, at 2E per visit, the total annual expenditure for traditional healers, cash equivalent, may be in the range of E 1,040,000. This increases the per capita private expenditure from E 7.25 to E 9.28 and the total per capita expenditure from E 14.9 to E 16.9.

Private Physiotherapist:

average fee per visit	E4
patients/week	75
week of work/year	48
# in country	<u>1</u>
TOTAL	<u>E14,400</u>

Mbabane Clinic:

average cost of one illness episode	E200
admissions/year	<u>550</u>
TOTAL	<u>E110,000</u>

Industry:

Total health expenditures for:

Havelock Asbestos Mines	145,416
Ubombo Ranches	130,300
Usutu Pulp C .	87,748
Peak Timbers, LTD	30,864
Manang Mhlume Medical Service	<u>110,941</u>
TOTAL	<u>E505,269</u>

Religious Organizations:

Raleigh Fitkin Memorial Hospital

Recurrent expenditure (1976) E532,000

Good Sheperd Hospital

Recurrent expenditure (1977) E180,000

SUBTOTAL: PRIVATE

E3,696,469

PUBLIC SECTOR:

Ministry of Agriculture

Nutrition Program (1977/78) E121,165

Military

1 MD
Several nurses and radiologists
plus supplies, equipment E3,000
(30% of above) E900

TOTAL E3,900

Ministry of Education

School Health Program E17,000

Ministry of Health

Recurrent (1977/78) E3,766,000

SUBTOTAL: PUBLIC E3,908,065

TOTAL EXPENDITURES E7,604,534

Per Capita Expenditures E14.9
(U.S. \$17.14)

Per Capita Expenditures: Private E7.2

Per Capita Expenditures: Public E7.7

C. THE HEALTH DELIVERY SYSTEM IN SWAZILAND: PERSONAL & PREVENTIVE SERVICES

1. Personal Health Services (Curative and Preventive)

Following is a description of the facilities, workers and services provided in Swaziland's health delivery system, organized for the most part according to geographic location--rural to urban--and, at the same time, by point of patient contact--primary, secondary and tertiary care. There are clearly overlaps in this division. The resource overview tables in the previous section III B should be referred to for further details.

a. Front-Line Services

Government front-line services are provided by the rural health clinics, of which there are presently 32 in Swaziland. All the clinics are staffed by at least one nurse; "as part of the Ministry's policy of integration, a second nurse trained in preventive health methods is being posted to these clinics as funds and manpower permit." [22, pg. 7]

While mainly curative services have been provided by the nursing personnel in rural clinics in the past, attempts are being made to integrate preventive measures. Nurses see a large volume of patients, give a provisional diagnosis and prescribe certain medicines. Doctors visit clinics approximately twice a month. Babies are most often treated for diarrhea, worms, fever, chest conditions and childhood diseases; penicillin is available. The nurse may also

assist in deliveries; she is also responsible for supervision of nursing assistants working at the clinics. The assistants' training consists of 18-20 months in hospital practice after seven years of schooling.

Besides the 32 government clinics, there are 60 mission-run clinics and 16 private clinics¹² [25, pg. 21], five pharmacists in private practice, plus some 19 nurse-run private clinics. Nurses in private practice tend to be situated in smaller settlements and must obtain authority to practice from the Ministry, with regular supervision by a physician. They may see between thirty and fifty patients a day and deliver MCH and curative services. These nurses form an important part of the private health sector.

Future government plans are for rural health clinics to provide more comprehensive services through provision of limited bed facilities for maternity cases and certain basic laboratory services. In order to increase accessibility of clinic services, the Ministry has set the target of coverage at 75 percent of the population to be living within eight kilometers of basic health facilities by 1983.

A National Rural Environmental Health Program has been instituted to educate and assist rural communities to improve water and sanitation facilities. Health assistants, auxiliary health workers with limited education, as well as their supervisors, Health Inspectors, are employed by the Town Councils of Mbabane and Manzini.

12 Industry-provided health services are described in the following section.

Health assistants encourage and instruct in protection of springs, construction and wells and latrines, hygiene in general, and assist in data collection and demographic surveys, under supervision. In August 1977, 45 such preventive workers were trained by a WHO sanitarian. By 1980 it is expected that 100 health assistants will have been trained. In addition, activities of the urban public health centers, which are described later, spread to the rural clinics.

Government rural health activities are backed up by a corps of village health workers. These village workers are a very high government priority and the backbone of the government's program to extend services in rural areas. The village health workers are rural people, literate in Siswati, and chosen by the community to work parttime looking after the health of some 50 homesteads. They receive an eight week course at a rural clinic in hygiene and basic first aid. Their tasks include collection of certain basic statistical data, supervision of home treatment, motivation in completion of vaccination schedules, basic health/environmental sanitation /nutrition education and first aid for emergency cases. The Ministry hopes that the development of rural health visitors will increase community contacts and coordination between traditional and modern health practitioners,¹³ as well as communication

13 In the recent class of rural health visitors, one student was a traditional practitioner, as well as the first male.

between communities and ministeries involved in rural development. It is proposed that by the end of the Third Five-Year Plan, 800 such workers will have been trained [22, pg. 13]

Since 1976, a School Health Project has been started in conjunction with the Ministry of Education. Four district teams aim to visit all school children in the first and second grades, to perform basic screening tests and, where necessary, to treat and refer. Due to lack of resources, the program is limited to first and second grades only. Provision of this preventive service "is to ensure early recognition of any disability that might interfere with the child's learning process, so that effective treatment can be given before lasting effects can be produced." [26, p.4]

Traditional healers, such as the Inyange and the Sangoma, are still popular in Swaziland, and visited by well over 80 percent of the population. [17, p.1] Although they are called upon for all kinds of illnesses, in questions of childcare--where traditional beliefs and taboos are particularly deep-seated and prevalent [17, p.3] and psychogenic illnesses--they appear to be particularly in demand. Patients clearly avail themselves of both modern and traditional healers concurrently and may use drugs provided by both. Basically there are three types of healers--those who only practice divining or diagnosis, those who treat, and those who do both. Charges vary among these healers.

In addition there are several herbalists in Swaziland and an herbal clinic, which appears to be very popular.

The Ministry of Health, at the direction of the King, recently announced the development of a National Organization of Traditional Healers in an attempt to integrate traditional and modern medicine. At a recent national meeting, over 200 traditional healers were present.

The Ministry of Agriculture, with its Home Economics Extension Department, contributes to the major nutrition programs in the rural areas. In 1977 there were 36 home economics extension workers or domestic science demonstrators, scattered over the rural areas. They work with the Swazi women's organization. Some of the current activities include the promotion of fruit trees, use of legumes as a source of protein, fish farming and consumption of fish. [13, pp. 5-6]

In addition, many services of the Swaziland Red Cross, described in the next section, reach the rural Swazis, with the assistance of mobile units, including visits to rural clinics.

Nutrition demonstrations are carried out in the nine mobile subcenters attached to the Mbabane Health Center. The MCH/FP/Nutrition Service has at present 25 public health nurses, very few of whom have the required post-graduate training.

b. Mid-Level Services

Swaziland's nursing cadre forms the basic unit of the delivery of mid-level services in clinics and hospitals' O.P.D.s. In 1977, there were a total of 460 trained nurses in Swaziland, 316 employed by the government; out of the total, 60 were noncitizens. There were a total of 75 nursing assistants. [25, p.2] The Manpower Overview tables in the previous section provide additional information on nursing personnel.

The Ministry of Health is the main employer of nurses in Swaziland. The SADAP team was told by the Chief Nursing Officer that most nurses do not leave Swaziland and that nurses in South Africa often apply for positions in Swaziland. However, it also appears that a significant number of Swazi nurses are not practicing nursing but are employed in nonrelated positions, which appears to be related to differentials within the government salary structure as well as between the public and private sector. There is a shortage of public health nurses as well as trained staff nurses.

The five major public health centers in Swaziland care for maternal and child health, plus family planning/spacing (UNICEF-assisted), health education, and nutrition. The activities of these centers spread to subcenters and rural clinics, which act as subsidiary centers on an integrated basis, whether they be government/mission, private or industrial. Some of the nurses staffing public health

centers are holders of Nurse/Midwifery/Public Health certificates. Other services provided at these centers are:

- antenatal sessions
- child welfare
- group and individual health education
- nutrition education
- immunization of preventive diseases (BCG, DPT, polio, measles)
- followup through home visits
- school health, through a team consisting of four local staff nurses, five nursing assistants, and six Peace Corps volunteers, one of whom is a doctor. They examine children, treat minor ailments, and make referrals, as well as advise on personal and environmental hygiene.

A school feeding scheme has been established to provide a cooked balanced meal for children at lunch time, with assistance from Save The Children Fund. Schools join the scheme on a voluntary basis. Although a small charge is made, about 5-10 percent of children who cannot afford the charge are given a free meal. Presently, about half of all primary school children are involved in the program. The Ministry is promoting greater participation. [26, p.9]

It is intended that the public health centers will soon become MCH centers with an expansion of services to vulnerable groups.

The Swaziland Red Cross is also active in health and nutrition education, family planning, emergency aid and welfare programs such as aid to abandoned children, elderly and refugees, immunizations, recruitment and motivation for

the Ministry of Health's blood program, and the operation of MCH mobile units, with two nurses and two volunteers. They conduct monthly visits to rural clinics. Their annual budget is set at E22,000, with minor support from the Ministry of Health and local administration.

Industry: In 1976, five industrial organizations employed physicians on a fulltime basis and provided medical services of their own. The physicians are all expatriate while the great majority of the nurses are Swazis. Table 19 provides information on companies with fulltime physicians.

Some medical provision is made by other companies, including Tambankula Estates, Swaziland Railway, Swaziland Iron Ore Development Co., Ltd., Swaziland Collieries Ltd., Royal Swazi Spa and Libby Swaziland Ltd. This generally consists of medical screening, simple first-aid treatment, and, in some cases, clinic and ambulance services and normal deliveries.

Indirectly some companies agree to either pay the medical expenses of employees and dependents or have a more precise contractual agreement with a medical institution (e.g. mission hospital), particularly in the case of smaller companies.

Appendix 2 provides information on legislation in Swaziland, old age invalid and death benefits for employed persons and work injury benefits.

TABLE 19

INDUSTRIAL MEDICAL SERVICES
COMPARATIVE EXPENDITURE - LOCAL PROVISION
1974 - 1975

COMPANIES EMPLOYING FULL-TIME MEDICAL OFFICERS	EMPLOYEES	TOTAL POPULATION ¹	BEDS	BEDS PER 1,000	EXPENDITURE ²	
					TOTAL	PER EMPLOYEE
Havelock Asbestos Mines	1,948	9,545	70	7.3	145,416	74.65
Ubombo Ranches	2,657	13,019	30	2.3	130,300	49.04
Usutu Pulp Co.	2,414	11,829	10	0.9	87,748	36.35
MMMS ³	5,099	24,985	16	0.6	110,941	21.76
Peak Timbers Ltd.	2,055	10,070	12	1.2	30,864	15.02

NOTES:

1. Assuming an average of 3.9 dependants per employee. It is impossible to be certain but this figure is compatible with population statistics and is true at Usutu where it is usual for families to live on the estate.
2. In Emalangeni.
3. Mananga Mhlume Medical Service, made up of Swaziland Irrigation Scheme, Mhlume Sugar Co., Vuvulane Irrigated Farms, and Mananga Agricultural Management Center.

c. Referral/Consultation/Supervisory Services

General in-patient services are provided at five government hospitals, which accept patients referred from the clinics or the out-patient departments.

The following hospital improvements are aimed for in the Third Development Plan:

- o "Improving the existing facilities, within the given recurrent budget. At present actual facilities at all the hospitals are inadequate or in poor condition. A start has already been made within the Second Plan period which will continue. Upgrading or renovation programs will be carried out which will have no incremental recurrent implications.
- o Expanding the hospital services offered will be made possible by investment programs. These will either expand the number of beds available or expand the services (e.g. provision of x-ray) offered to the existing bed numbers. As indicated, it is the Government's intention to emphasize the provision of rural and preventive services. However, at the same time it is seen as necessary to expand the bed capacity in line with the population growth in order to maintain real in-patient standards. Thus, provision of 120 beds will be made by Government by 1983. This will be financed by an equivalent recurrent budget increase." [22, pg. 29]

The major hospital improvements are to be directed to Mbabane Hospital and Hlatikulu Hospital, the country's two largest government hospitals.

"It is the Government's ultimate intention that there shall be one central hospital offering a full range of specialist services and a small number of subsidiary district hospitals to meet local needs." Plans for this development are at this time at the discussion stage, with two possible alternatives: either expansion and upgrading of one of the existing hospitals over a period of years or

construction of a completely new referral hospital on a centrally situated site. [9, pg. 203]

In addition to the five government hospitals there are two mission hospitals, Raleigh Fitkin Memorial at Manzini and Good Shepherd at Sitiki, plus the Havelock Mine Hospital and the private Mbabane Clinic, a small but excellent private community hospital in Mbabane.

Raleigh Fitkin Hospital, which also has a nursing training school, is subsidized approximately 1/3 by the Government, 1/3 by patient fees and the rest by the Church of the Nazarene in the U.S. It also runs 20 clinics and has its own laboratory. There are five doctors and 285 beds in this hospital, which last year had a \$200,000 deficit. There is virtually no collaboration between Raleigh Fitkin and Good Shepherd Hospitals. Good Shepherd also runs rural clinics and trains nursing assistants. It has a mobile health team and has done public health work and Red Cross nursing for some time. It has three doctors - one public health and 2 generalists - and 110 beds, with an average occupancy rate of 86 percent. It also provides a "waiting dwelling" for pregnant women. Recurrent budget last year was R145,000; this year 180,000.

In 1977/78 approximately 8 percent of the Ministry of Health recurrent budget was spent on subventions to the mission hospitals and clinics. In total, the missions provide 34 clinics, some of which are bedded. The two mission hospitals account for over 40 percent of total

general hospital beds. "Though the hospitals are regarded as district hospitals and perform medical duties for the government, they have not, until recently, been involved in government health service planning... government is at present reviewing the relationship between the mission and government health services and... will attempt to coordinate more closely the activities of government and mission." [26, pg. 2]

As of April 1977, private out-patient facilities in Swaziland are offered by 15 doctors at private surgeries, 13 of whom practice in Mbabane and Manzini. The government has no developed policy as of yet toward the private delivery sector; large fee differentials exist between private and public health services.

The army also has one physician and several nurses and radiologists.

Specialized government in-patient services are provided at three hospitals for T.B., mental disorders, and leprosy. The T.B. Hospital at Matsapa, staffed by seven nurses, one auxiliary, and seven orderlies, has some 200 beds. Also at Matsapa is the Mental Hospital, situated in barracks donated in 1962, which have been deteriorating seriously since that time. Its particularly critical status merits more detailed description. The physical facilities have been condemned by the Ministry of Health as "unfit for human habitation". Major acute problems are lack of resources such as basic equipment, drugs and even food,

inadequate financial resources and staff; patients, sometimes as many as 250, are cared for by seven nurses and a matron, mental health orderlies, an expatriate social worker, and a psychiatrist. A contaminated stream of water running through the grounds is used both for bathing and for drinking.

As persons with mild and early symptoms are often culturally accepted or else see the Inyanga, the mental hospital receives later cases and those who have acute psychotic breakdowns.

Psychiatric care consists of drug therapy, including an outpatient maintenance program using long-acting phenothiazine, allowing patients to live at home, some electro-shock, as well as occasional individual consultation and some occupational therapy. In 1978/79 the total budget was set at R187,264.

The Leprosy Hospital at Mbuluzi had 30 beds in 1975 [65], with 467 admissions and 337 discharges [3, pg. 143]. Leprosy is on the increase, and because of the critical lack of adequate finances and staff at the hospital, need was voiced to the team regarding additional support.

In regard to preventive care, supervision of the environmental health assistants is provided by five Health Inspectors plus one Senior Health Inspector in Mbabane, who is the only Swazi. "Government is facing great difficulties in filling the Health Inspectors' posts" [66, pg 4,]. It was reported to the team by the WHO Sanitarian that there

is a need for at least 25 Health Inspectors for the whole country and at least one health assistant for each 5000 inhabitants.

2. Community Preventive and Public Health Services

In regard to preventable health problems, the Second National Development Plan states: "...it is Government's intention to give much greater emphasis over the Plan period to programmes in the public health field in order to counteract the present imbalance between curative and preventive medicine." [9, pg 197]

The responsibility for dealing with community health issues lies with the Public Health Section of the Ministry of Health. The office of the Senior Medical Officer of Health in Mbabane, in addition to holding administrative responsibility for the public health program as a whole, deals with environmental health and hygiene, health education, the enforcement of health legislation, as well as supervision of the two town health departments and the public health nursing unit. A newly formed Health Education unit is located in the Mbabane Public Health Unit. A second health office at Manzini, under the other Medical Officer of Health, has the responsibility for the control of malaria and schistosomiasis. It is supported by the services of the pathology laboratory in Manzini, where routine biochemical, bacteriological, and haematological investigations are carried out. [9, pg. 198]

The main centers for preventive services are the urban public health centers. At these five centers, personal preventive services are offered daily aiming at MCH, family spacing, immunization, general health and nutrition education and medical examinations. In addition, fortnightly 16 mobile rural sub-centers are run from the urban centers. The health centers are also responsible for the supervision of preventive services at clinics.

The T.B. control unit, based in Manzini, is responsible for major BCG immunization campaigns and supervision of diagnosis and treatment of T.B. Surveillance and control programs for malaria and schistosomiasis are also centered in Manzini. The schistosomiasis control program is based on the detection and treatment of infected persons, destruction of snails by mollusciciding, provision of safe water and provision of toilets and health education. [26, pg. 6]

A recurrence of malaria in Swaziland, particularly in the south and along the Mozambique border, has led to intensified spraying by the Manzini unit, which receives WHO assistance. This unit reports a particularly serious lack of resources, especially transport for the spraying teams and pumps.

Other important disease control activities are undertaken with the assistance of voluntary agencies. The Swaziland Red Cross, with OXFAM and Ministry support, recently completed a nationwide measles and polio vaccination campaign; the Ministry has taken on the maintenance

phase of this program by making measles vaccine available to all hospitals, health centers and rural clinics. [9, pg 201]

The Central Laboratory at Manzini serves public health facilities and private physicians; all services, including those for private patients, are free. Six persons work in the lab, of which two are Peace Corps volunteers. A central blood bank is also located here. Malaria smears are read, and there is some testing for tuberculosis and other infectious diseases, as well as water testing; they do not test for gonorrhoea. The Establishment Register of 1976/77 reported a central lab staff of one medical officer; one nurse, four orderlies, 11 lab assistants, and two lab technicians.

A central laboratory, to be effective, must relate to ongoing programs in health protection, in both rural and urban areas. For example, there must be systematic collection and timely delivery of water samples from piped water sources or protected water sources. In the case of determining the safety of the source, the collection must be done in an appropriate manner and the delivery timely, otherwise the contaminated source may appear safe, because of bacterial death which takes place during the storage of samples. In like manner, in the analysis of dairy products, sampling methodology must be developed, and the results of the test have to be fed back to those portions of the Ministry which

are responsible for decision-making. Not only must there be a system to collect samples and distribute test results, but the tests have to be performed in a timely manner, and be accurate and reliable. The public health laboratory at Manzini does not appear to be strongly related to field programs; the field programs in health protection themselves need strengthening. The internal management of the laboratory needs assessment and probable improvement; quality control procedures may not be well developed.

An Eye Department exists at Mbabane Government Hospital where measures for prevention of blindness and restoration of eyesight (where possible) form an important component of the programme. In addition, there is a Mobile Eye Unit which provides a service in remote areas and where no facilities exist, which is staffed by nurses who have been well trained in eye diseases under the supervision of an Ophthalmologist.

The Ministry of Health also has supervisory control over the public health activities run by the Mbabane and Manzini Town Councils and is directly responsible for public health outside these areas. For this purpose the health inspectors and assistants are stationed throughout the country. [22, pg. 7-8]

The Ministry is also concerned with the protection of springs. Water is checked for bacteria and, if a community requests, springs are checked for pollution. This work is

done through the Health Inspectors, with community financial support.

The Rural Water and Sewage Board, a quasi-independent, state/local agency, begin its activities in 1975 in the construction and maintenance and, in a limited way, operation of water supplies. It focuses primarily on routing water in rural areas to reasonably sized communities and institutions, particularly schools. The staff of approximately 28 is entirely expatriate at the professional level. It now has 22 projects underway; the average project costs E20,000. The major problem is the agency's lack of recurrent budget funds, which has necessitated funding of maintenance costs through a Ministry work order request.

Water concerns are also the responsibility of a ground water development unit in the Department of Geology; there is a lack of coordination between this unit and the Rural Water Board.

The Nutrition Council of Swaziland is an interministerial body, originally established in 1945 and recently reconstituted. It is the view of the Government to strengthen the policymaking and executive functions of the council, and changes in the constitution have been proposed. At present its advisory function concerns investigations and reportage on all matters pertaining to the prevention of malnutrition and improvement of diet. [67]

Drugs, equipment, hard furnishings and other supplies are ordered in bulk from the government-run Central Medical

Stores in Manzini and distributed to the various health delivery facilities. Central Medical Stores is responsible for the bulk of purchasing of government supplies and their distribution. Supplies include drugs, dressings, sundries, galenicals and liquid preparations, dry chemicals and crude drugs, ligatures and sutures [28], most of which are obtained from the Republic of South Africa. Some mixing and packaging of drugs and medicines also take place. In 1976, the staff consisted of three pharmacists, six dispensers, and three orderlies.

A brief visit to the Stores suggested that management and administration could be substantially improved. Wastage and spillage of materials were in some storerooms excessive, and the storage of vaccines was questionable. Consideration should be given to handling biologicals and drugs separate from dry goods, such as mattresses, sheets and uniforms. In fact, given the proximity of the Stores to the Laboratory, conjoint management might be reasonable.

Fundamentally, however, the Stores issue represents a subset of the problems of management, management depth and strength throughout the Ministry system, and as that is addressed, the Stores issue will in time resolve itself. The Central Laboratory issue, on the other hand, requires not really management, but program development, technical training and technical assistance in order to achieve a central public health laboratory unit that is sufficient to

meet the minimum needs, to assure that basic health protection programs are effective and to assist in the identification of new disease threats.

There is at present no statistics unit within the Ministry of Health. Though collection of basic hospital and clinic statistics is done by the Central Statistical Office, there is no trained health statistician in the country, although one such statistician is planned through USAID assistance in 1978.

D. TRAINING

Training of health professionals in Swaziland is currently being carried out chiefly by the Ministry of Health, by religious organizations, and by other donor agencies. Physicians, nurses, health inspectors, and specialized nurses (public health, nurse tutor, orthopedics) are also being trained abroad. "There is little evidence of coordination of training programs." [53, pg. 21]

Table 20 provides a summary of training courses of health professions.

Training by the Ministry of Health

The Ministry of Health is conducting a program to upgrade enrolled nurses to R.N. status. Approximately 25 enrolled nurses (two years' training and some work experience) participate in the one year course each year.¹⁴ The faculty consists of two nurse tutors, plus

¹⁴ In fact, many students require more than one year of study because they are unable to pass the external examination.

TABLE 20

SUMMARY OF HEALTH PROFESSIONS TRAINING COURSES SWAZILAND (1976)

<u>School & Site</u>	<u>Category of H. Professional Trained</u>	<u>Entrance Requirements</u>	<u>Duration of Training</u>	<u>Number of Students Enrolled</u>	<u>Faculty Size (Full Time)</u>	<u>Sponsoring Agency</u>
Raleigh Fitkin (Manzini)	Nurses	9 years (J.C. exam) 18 yrs. old minimum	4 years	84 (4 years)	7	Nazarene Church
Good Shepherd (Siteki)	Nurse Assistants	7 years exam 17 yrs. old minimum	18-20 mos.	36 students (3 groups)	10	Catholic Church
Enrolled Nurse (Mbabane)	Nurse	Enrolled Nurse 9 years (J.C.)	1 year	25	2	Ministry of Health
Village Health Worker (Rural Area)	Village Health Worker	Literature Seswathi Chosen by Chief	6 weeks	40 (projected for first course)	?	Ministry of Health
Health Assistant (Mbabane & Rural area)	Health Assistant	9 years (J.C.) Aptitude test Interview	1 year	28 (2 groups)	2	W.H.O

Source: (53)

one clinical instructor. Students receive two hours of didactic instruction per day; the remaining time is spent on wards at Mbabane Hospital.

Major problems are the lack of educational resources and lack of transport for purposes of allowing students to work in rural health centers and clinics. Attempts are made to rotate students through the clinical services, but this is often extremely difficult.

A Ministry of Health nutritionist is responsible for in-service training of nurses attached to the Mbabane Health Center [67]. A WHO Health Educator trains nurses in health education. He also works closely with the Ministry of Education to involve health in their training curriculum.

The curriculum for the program of two-months' training of rural health visitors is taught in Siswati and conducted by a public health supervisor and a matron. The District Chief selects individuals for training based on established criteria such as literacy and leadership potential. Four weeks of basic training are followed by practical experience and review of problems and procedure. [53, pg. 21-22]

Religious Organizations - The Raleigh Fitkin Memorial Hospital and Nursing School has been training nurses for over 50 years, primarily to staff the hospital and 20 clinics which the church operates in rural areas. Some Nazarene graduates are employed by the Ministry of Health and the private sector.

There are three different training programs, one for general nursing, one for midwives, and one for community health nursing assistants. In 1976 the faculty consisted of seven tutors (one clinical) and 74 students. In order to enroll, students must have completed their Junior Certificate (nine years of education), be 18 years of age and must have passed the entrance exam. Training is traditional and hospital-oriented and "more than half" of the students drop out before completing the course [53, pg. 22]. The team learned that the school is run very strictly, according to a code of Christian ethics and standards which are unacceptable to many Swazi young women.

There is no training in clinical diagnosis and treatment of common illness in the nursing curriculum, although these skills are needed by the nurses in their later practice, where they are the primary care providers in rural clinics.

The Good Shepherd Hospital and School in Siteki train two groups of 12 students each in a 20 month Nurse Assistant course of studies. Students are trained in both hospital and public health nursing. To qualify, students must have completed grade 9 and be 17 years of age or more.

Between its inception in 1974 and 1976, the school had trained 55 Nurses Assistants; the attrition rate is very low. "The school has a forward-looking faculty anxious to collaborate with the Ministry of Health Nurse Practitioner Program." [53, pg. 22]

The curriculum includes a five-week Public Health rotation. Students also conduct home visits, where they provide health education programs. Special seminars are conducted in the field, as well as work practice at Mankayane Hospital.

Other Donors - A WHO Sanitarian/Tutor has developed and implemented a program to train health assistants to assume public health responsibilities in rural areas. At the time of the team's visit, 44 health assistants had been trained since 1974. Of these, five or six assistants had the Junior Certificate; most could not speak English. The curriculum includes three months' rural-oriented didactic work and nine months' practical training in the field. The following areas are taught: first aid, communicable diseases in Swaziland, vector and rodent control, housing sanitation, food hygiene, water supply, collection and disposal of household refuse, sewage, sanitary surveys and health education. The WHO sanitarian¹⁵ conducts all lectures himself except for classes on malaria and meat hygiene.

Training was scheduled to continue until 1980 when 100 Health Assistants would have been trained. However, the team learned that in July, 1978, the course was to be interrupted until further notice due to lack of recurrent funds.

All training of Health Inspectors is currently conducted outside of Swaziland. In August, 1977, there was one student

15 At the time of the team's visit there was no counterpart trained for the WHO sanitarian.

in training, due to complete in 1979 for Town Council. Under the USAID Institute of Health Sciences project, it is intended that eight Health Inspectors per year will be trained." These would then allow by 1984 an average coverage of one Health Inspector to every 20,000 people." [22, pg. 22]

In order to meet the Government's health manpower requirements, the Ten-Year Development Plan lists the following needs for professional personnel:

	<u>No. Required</u>	<u>Average Annual Output required (training)</u>
<u>Medical Officers</u>	73	7-8
<u>RN's (including Matrons and Sisters)</u>	195	19-20
<u>Auxiliary Nurses</u>	156	16
<u>Health Inspectors</u>	19	2
<u>Health Assistants</u>	<u>103</u>	<u>11</u>
TOTAL	546	55

With the exception of Medical Officers, including specialists, the manpower training requirements for the other four categories do not take into consideration the requirements of missions and the private and industrial sector. [53, pg. 24]

The USAID/Swaziland Health Manpower Training Project is designed "to address present shortcomings in health manpower training and help relieve the seriously over extended planning and administrative capacity of the Ministry of

Health" [4, pg. 45]. Training at the Institute of Health Sciences, scheduled to open in September, 1979, will concentrate on qualified registered nurses using integrated programs for general nurse/midwife and for GN/psychiatric nurse; these are expected to collaborate closely with auxilliary (trained in mission hospitals) and rural health visitors. Other categories to be trained at the Institute are health inspectors and later laboratory assistants. Post graduate training of one year each in Diagnostic Nursing (Nurse Practitioners), especially for the rural nurse in the delivery of primary health care, and in MCH/FP will be made available. While USAID and the U.K. will be primarily involved in the training of nurses, WHO is expected to play an active role in the training of health inspectors and laboratory assistants. "Based on the design of the project, the IHS will satisfy national requirements for health inspectors by 1983 and for nurses by about 1985." [41]

E. FOREIGN DONOR ASSISTANCE IN HEALTH*

HEALTH & HEALTH-RELATED FOREIGN ASSISTANCE PROJECTS

	Sponsors	Past, Inprogress Projects		
		Title & Type	Funding	Year
U.S. Voluntary Organizations**	Church of the Nazarene	FFM Hospital, Manzini: General Hospital with facilities for maternity care, TB & leprosy cases; nurse training school; rural health centers & clinics; leprosy hospital, Mbuluzi	See (37)	Ongoing
	Direct Relief Foundation	Pharmaceuticals, medical supplies, and equipment	\$2,898	1976
	MAP International	Medical students to mission hospitals, drugs and medical supplies	N/A	Began 1971
	Medical Mission Sisters	Staffs Good Shepherd Hospital, Siteki; nurse-aide training; clinics, vaccination campaigns	N/A	Ongoing
	Mennonite Central Committee	Supports social welfare workers with youth center, Mbabane; refugee aid; some health personnel	N/A	Ongoing
	World Rehabilitation Fund	Equipment & supplies to Mbabane Hospital	N/A	1975-76
U.S. Government	USAID	Rural water-borne disease control project; national bilharzia committee established; rural water supplies; irrigation schemes; mollusciciding; health education; treatment	3,200,000	Begin FY79
	USAID	Health manpower training; Institute of Health Sciences	4,300,000	Begin late FY78
	Peace Corps	Volunteer living allowance; volunteers, 12 m/months, primary school health screening officers	N/A	1976
	US	Special population activities fund; MCH & family planning	25,000/year	Ongoing
	USAID	RDA infrastructure support	N/A	Begin FY79
	USAID	Southern Africa Manpower Development; Director of Lab Services, MOH; Medical Officer for Pediatrics; Senior Water Resources Engineer; Water Engineer	10,423,000	Begin Late FY78

* See the following sources for more information:
 U.S. Voluntary Organizations: (49), (37)
 U.S. Government: (42), (54), (34)
 U.N.: (42), (51), (52), (62)
 Others: (42)

** Some of this information is from source (49), dated 1976 and may be somewhat outdated.

		Past, Inprogress Projects		
		Sponsors	Title & Type	Funding
US Govt	USAID	Swaziland Institute for Manpower & Public Administration	4,476,000	Begin 1980
	USAID	Swaziland Lower Income Shelter, urban area housing	N/A	Begin 1978
United Nations	UNDP/FAO	Southern Africa Regional Food Advisor	162,000	75-78
	UNFPA/UNDP (WHO, UNICEF)	Basic health services; equipment; Mbabane	334,400	76-79
	UNICEF	Support to BHS project, family planning component; equipment to PH centers & rural clinics	72,200	72-76
	UNICEF	Support to BHS project, basic health component; supplies	70,100	73-76
	WHO	Health sanitarian	80,000	73-77
	UNICEF	TB control/BCG campaign; supplies	22,500	Ongoing
	WHO	Malaria control; supplies	N/A	Ongoing
	WHO	Malaria program, 2 consultants, Manzini	30,000	73-76
	WHO	Fellowships, doctors & nurses	N/A	Ongoing
	UNFPA (FAO)	Assistance to Swaziland National Family Planning Project	49,500	1976
	UNDP (UNOTC)	Development of housing; housing officer two technical officers, equipment	189,312	73-78
	UNDP (UNOTC)	Water & sewage management personnel	231,930	74-77
Other	World Food Program	Feeding of vulnerable groups (health component); protein-rich foods to mothers & children	1,500,000	70-77
	World Food Program	Institutional feeding	572,000	71-76
	Korea	Hospital staffing; surgeon & physician; financial aid to Hlatikulu hospital	282,000	70-78
	Israel	Establishment of Ophthalmological dept; Mbabane Hospital (doctor, equipment, fellowships)	120,000	74-78
	Netherlands	3 MDs, Mankayane, Hlatikulu and Pigg's Peak	45,000/yr	74-77
	Netherlands	Literature program	2,000	Ongoing
	Denmark	3 Asst MD volunteers, Mankayane	10,000/yr (estimate)	Ongoing
	UK	1 OSAS officer, lab technician	12,000 (76)	Ongoing
	UK	Rural water supply project; small projects in four districts	N/A	(Several Years)
Canada	Rural water supply development	N/A	(3 years)	

IV. GOVERNMENT PLANNING AND GENERAL ISSUES OF CONCERN

The Ministry of Health's Third Five-Year National Development Plan (1978/79-1982/83) of 1977 sets the following development objectives and specific development targets. Objectives:

- To increase the proportion of resources devoted to preventive services, to allow special emphasis on the protection of certain vulnerable groups -- mothers and under-five children, and to reduce the incidence of water-borne diseases, and diseases of insanitation.
- To maintain the present national level of curative health services, as indicated by the bed-population ratio, and to improve their standards, and to redress the distributional balance by attempting to achieve a more equitable distribution of health services by population area.
- To increase activities in the field of health education with particular emphasis on nutrition, and to strengthen the activities of the Nutrition Council so as to reduce the incidence of malnutrition.
- To create a situation in which a substantial moderation in the rate of population growth can be achieved, and where family spacing for the benefit of the family is practiced.

Targets (to serve as goals and as evaluation indicators):

- To increase clinic coverage so that 75 percent of the population are living within 8 km of basic health facilities by 1983.¹⁶
- To work towards the integration of preventive and curative health services, by double staffing clinics.
- To increase the quality, quantity and distribution of personal and environmental preventive health services so that in particular at least:

16 The Ministry of Health hopes to cover the country with clinics that are no more than 2 1/2 hours walking distance from any individual homestead or Kraal.

- i. not more than five percent of school entrants are suffering from bilharzia.
- ii. 75 percent of pregnant women receive ante-natal care.
- iii. 75 percent of under-five children receive the recommended course of immunization, i.e., BCG, DPT (2 doses).
- iv. To increase the coverage of family planning services, with special emphasis on the education of males, in order that family spacing for the health of the individual occurs.
- v. To improve the efficiency of hospital services within the given recurrent budget, by a more rational assignment of staff duties and better forward planning-to increase the quality, quantity and distribution of services provided.
- vi. To allow the number of in-patient facilities to grow, so that the bed-population ratio remains constant, i.e. an addition of 115 beds by 1983. [22, pg. 27-28].

The development objectives and development targets in the Third Five-Year National Development Plan of the Ministry of Health are, in substantial part, consistent with the proposed overall SADAP health goals. Discrepancies are in the following areas and merit discussion:

- Bilharzia is emphasized and the Development Plan is silent on malaria. As a practical matter, malaria is growing in Swaziland and morbidity associated with schistosomiasis is reportedly quite low, even though infection rates are high:
- The Development Plan is silent in terms of balancing objectives against costs.
- Further, the Development Plan makes no mention of the areas of water, housing and sanitation. Granted, these in substantial part lie outside of the Ministry of Health, but they are certainly health-related goals.

- Given the Ministry's stated interest in housing and the importance of adequate housing as a basic preventive strategy, it appears to be worthwhile to explore this further with the Ministry.

In order to meet the objectives of the Plan, a financial commitment to health and health-related activities by the Swaziland government is clearly called for. The SADAP team is aware of and notes here the considerable discussion of and conflicting opinions on the nature of Swaziland's national development priorities, which heavily emphasize industrial, estate agriculture and transport investment, and the impact of this emphasis on the poor majority. The team feels that regardless of the nature of these commitments, U.S. program assistance to health should go forward; in the planning of this assistance, particular attention should be given to those aspects of socio-economic development schemes which impact upon and relate to health issues.

Two additional macro issues directly related to health concerns should be mentioned. The first is the economic dependency of Swaziland on the Republic of South Africa, which has significance for the health sector--supplies, manpower and training--and for nutrition (approximately 90 percent of consumable imports originate in the RSA), as well as for all for other sectors.

The second issue relates to the current international "trend" in foreign assistance to the health sector to provide support to preventive rather than curative health

services. While there is an acute need for improved and expanded preventive measures in Swaziland, basic curative demands are not being met adequately. Past experience has shown that both popular acceptance and the success of less visible preventive measures are dependent on adequate curative care; integration of preventive and curative services present the most effective care, where possible. The following section presents specific recommendations in both areas.

V. PRIORITIES AND PROGRAM RECOMMENDATIONS

The following recommendations represent major areas of emphasis and are based on the SADAP team's visit to Swaziland, intensive discussions with representatives of the public and private sectors and analysis of available materials. Importantly, the authors have incorporated specific suggestions and areas of need which were expressed to us during the visit and which we feel are meritorious. It is felt that these should be very seriously considered in the identification and development of specific projects meriting external donor assistance.

Our recommendations are directed not only to activities of the Ministry of Health, but also to Ministries involved in health-related and rural development activities, which have an impact on health problems in Swaziland.

All of these recommendations should be viewed in light of other donor activities in these areas and in light of current Swazi priorities and actions, as well as in the context of the overall SADAP strategy for health assistance in Southern Africa. Clearly, it is critical for support to be developed and implemented within the framework of existing and planned programs and projects. Such support should act to accelerate the current pace and to complement ongoing activities.

Management/Planning and Data Systems

(See section V.A. in the Southern Africa overview)

Strengthening of management, planning, and data systems capacities is essential for the efficient operation of existing programs and the development of new programs, as well as the oversight and review of private sector performance. This includes vital and health statistics, public health and medical care data; management methods in regard to budget and personnel, and relationship of resources applied to outputs achieved. Strengthening the breadth and depth of senior and mid-level management, administration and planning cadres in the Ministry is warranted. The identification of a small number of Swazis for training abroad in management techniques, public administration and health planning is warranted, coupled with short-term assistance to the Ministry vis-a-vis the development of improved management techniques for ongoing programs. The latter activity should include the development of inservice training and continuing education capability for MOH managers and planners.

Mental Health*

The rationale for using Swaziland as one country where problems of mental health are perceived as an important health issue has already been made in the SADAP health overview, entitled "A Strategy for Health Assistance in Southern Africa."

* See Southern Africa Strategy: Summary & Recommendations.

In brief, the SADAP team recognizes the primacy of the mental health issues in Swaziland and the legitimacy of Swaziland's request for both technical and capital assistance in the further development and elaboration of a decentralized mental health program, emphasizing balanced preventive and curative services. An assessment of mental health needs is recommended, leading to a proposed initial program that would, whenever possible, consider preventive strategies, fully integrated into the overall development process (e.g., primary prevention) and only as necessary fall back on secondary and tertiary preventive approaches. It is in this context that FHC/Africare recommend a mental health program reconnaissance team to collaborate with the Ministry of Health staff, particularly Dr. F. Friedman, Dr. M. Dlamini, Mr. A. Green, and Dr. F. Reinhold, in regard to mental health problems and a program strategy. Within that context the team should develop a specific program that includes, as appropriate:

- a) Capital assistance for the renovation/new construction of decentralized inpatient facilities as integral parts of district hospitals. This would reasonably include construction of a new, smaller facility at the St. George's Barracks site. These smaller units would be visited by the psychiatrist from St. George's site, with hospital matrons taking on a role similar to that of psychiatric nurses. Emphasis would be on home care and expansion of the type of outpatient maintenance program already existing in the Mental Hospital. Integration of traditional healers in the treatment program should be developed within the context of an overall mental health program strategy.
- b) Identify short and long-term training needs for Swaziland.

- c) Identify specific in and out of country training approaches.
- d) Review the impact of development on family and other traditional structures, the changing role of women and mental health in both rural and urban areas.
- e) Consider possible indirect Ministry of Health interventions through such vehicles as the Rural Development Areas, community development programs, women's programs, Rural Health Visitors, Domestic Service Demonstrators and Traditional Practitioners.
- f) Propose a comprehensive program package that includes:
 - facility development and renovation
 - training of Ministry of Health professional and paraprofessional staff, emphasizing integration with other curative and preventive services
 - a determination of on-going technical assistance and discussion of the appropriateness and relevancy of on going collaboration between Swazi and external mental health professionals.
- g) Explicitly consider approaches to primary prevention in the context of national development strategies.

A small and carefully chosen team of three to five persons with appropriate skills in clinical psychology, community psychiatry, sociology and health programs in developing countries is recommended. The team would make a 10-14 day trip in the winter of 1978-79.

Rural Development Areas

- 1) In general, assist and stimulate the development of RDA's through the provision of capital and technical assistance
- 2) Health strategy for RDA's:
 - a) Water
 - Assure that each RDA project has sufficient resources to:

- design and install water supplies in each RDA
- maintain water supplies in operable and safe condition
- In non-RDA rural areas develop a comprehensive program for the development, protection and maintenance of safe and adequate water supplies which may, for instance, include simple wells, natural springs, streams and bore holes.
- Any program emphasis or program assistance directed at water supplies must involve the Rural Water Board, which has substantial financial difficulties, the Ministry of Health, the Department of Geology and local administration, as well as coordination with the RDA program and the rural development ministries.

b) Housing

- Coordination between the Ministry of Housing and the Ministry of Health in regard to the development of prototypical, adequate housing, based on locally available, low-cost materials which are culturally acceptable, should focus on increasing environmental protection, available space and to control temperature excesses and dampness.
- Promote community participation in the provision of building materials and in construction, and offer incentives to home-owners/home builders in RDA areas to incorporate proven design improvements in their homes; for example: the full cost of materials relates to improving the quality of housing, 10% of cost of basic housing plus technical assistance to insure that design goals are met.

c) Sanitation

- Assure that provision for human waste disposal (probably latrines) are properly designed, constructed and situated.

- Assure that supplies for construction and onsite local technical assistance are available to assure that design goals are met.

Environmental Health

- 1) Develop a ten year plan for environmental health, including:
 - water quality maintenance and assurance
 - food safety
 - industrial hazard assessment and regulation
 - intensified malaria control and, if warranted, schistosomiasis control
 - housing adequacy
 - public health laboratory improvement: facility, equipment and manpower.

Such a plan should consider water, sanitation and housing needs of rural and squatter areas, as well as urban areas.

- 2) Define environmental health training needs, identify individuals for training and make provision for their further education.
- 3) Develop and support the expansion of environmental health assistants in-county training program.
- 4) Provide five years of basic supplies for small and "self-help" rural water and sanitation projects, e.g., plastic pipe, taps, cement.
- 5) As urban water supplies are expanded and improved, consideration should be given to the possibility of adding fluoride to the urban water supplies, an effective dental health preventive measure if naturally occurring fluoride levels are low.
- 6) The industrial health issues in Swaziland, both in terms of occupational health and work hazards, as well as environmental pollution, particularly

effluents in the air and water, should be further defined with a view toward project identification. In particular, areas of potential health concern include the asbestos mine, built without consideration of health impacts; certain aspects of industrial transportation hazards, such as, large holes near the road which remain as breeding sites for mosquitoes, may be dangerous for small children in terms of drowning, as well as basic design defects which may not adequately consider guard rails, safe shoulders, road markings, etc.; dusts associated with industrial and agricultural processing plants; hazards in connection with the rapid development of roads built without consideration of health impacts; inadequate work safety measures and associated high incidence of accidents and the related issue of the need for development and/or improvement of medical services in industry.

- 7) It is reported that milk pasteurized in Swaziland may, because of high demand, be processed at flow rates which preclude adequate pasteurization. Testing of milk for bacteriological contamination is warranted and assistance in acquiring greater pasteurization capacity may be warranted.

Health Education

Related to the above issues is increased support to health education activities, directed particularly to use and storage of water, selection of storage and preparation of foodstuffs, and housing improvement and micro-environmental control, including sewage and solid waste. The need for community education in each upcoming project should be recognized and built into the project, based on the health education capacity in the Ministry of Health.

Disease Control

Of the six WHO "special emphasis" diseases, only malaria, schistosomiasis and leprosy are found in Swaziland.

- 1) Malaria control has been good but the changes in Mozambique's control activities on the Mozambique side of the Swazi border and/or border crossings of infected persons are contributing to an upsurge in malaria, particularly along the southeastern Mozambique border. Reported new cases are: 1977: 911; July 1977 - June 30, 1978: 1,500.

Recommendations:

- a) Provide the Ministry of Health's Malaria Control Unit 60 Hudson X-Pert sprayers, or the equivalent. These are available at an estimated cost of less than \$100 per sprayer.
 - b) Also provide the necessary insecticide.
 - c) Assess the need for additional vehicles and associated spares for malaria control activities.
 - d) Provide further training to the Chief of the Malaria Control Section at the Malaria Unit at the London School of Tropical Medicine at a time when substitute malaria control supervisors are available. Mr. Mathews has had an on-going relationship with this component of the school and requiring such training elsewhere would disrupt appropriate professional relationships, with little assurance that the training will be either better than or as good as that available in England.
 - e) Assess the need for and appropriate provision of in-country training for workers to carry out surveillance, spraying and microscopy. Consideration should be given to short-term support of salaries for expansion of the malaria control staff, as malaria represents a growing threat to Swaziland.
- 2) Regarding schistosomiasis, it is noted that at least two major studies on schistosomiasis have been done in Swaziland (one study by Jones-Jobin, another by a Dr. Bruce); they were at least in part financed by AID. These reports could not be found in Swaziland or the U.S. (see recommendations for

Central Working Library). No schistosomiasis decision should be made until these reports are read. However, our tentative recommendation is to put a low priority on schistosomiasis control, as the apparent associated morbidity and mortality is low and additional health resources can yield more results if invested elsewhere (e.g., water, housing, prenatal care, immunizations).*

- 3) Leprosy is reported by some to be increasing with better case finding and/or a real increase in new cases. The Leprosy Hospital, in the High Veld is outside of Mbabane, though not visited by the SADAP team, was said to be very overcrowded and understaffed. Although control of leprosy will probably come about as living standards improve, timely diagnosis and provision of appropriate long-term therapy are needed now. Inquiry should be made as to the need for modest assistance in leprosy control and treatment programs.

Central Laboratory

The Central Laboratory is understaffed and under-equipped and the quality of results must be questioned. The need for a Central Laboratory of good quality and appropriate capacity that is used regularly is an essential part of a viable public health program. (See section V, B1 in the Southern Africa Strategy for Health).

Recommendations for this facility are:

- 1) renovation/expansion
- 2) supplies and equipment
- 3) staff** - assist in the recruitment and financial support of expatriate management and technical staff and finance long-term training for selected Swazis in public health laboratory sciences and management.

* See Schistosomiasis/malaria comments in Southern Africa Strategy

** This may in part be met by laboratory training at the Institute of Health Sciences. However, there is a need for one or two Senior Lab Technicians and one physician with laboratory experience.

Health Manpower

Increase the supply of new health workers and extend the skills of existing workers:

1) Rural Health Visitors

Swaziland has a program for training and employing rural health visitors. Donor interests in this program are such that additional external support is not needed.

Coordination of frontline workers is needed. The Ministry's intent is that rural health visitors can provide some coordination themselves between communities, traditional practitioners and rural development ministries at the decentralized level.

It should be emphasized that as mid-level and frontline services are increased and the USAID supported Nurse Training Program begins to take effect, the supervisory, management and logistic demands upon Ministry staff--central and peripheral--will increase. FHC/Africare note that this is just one further area that supports our recommendation to improve the depth of management capacity in the Ministry.

2) Environmental Health Workers

Environmental health measures are severely limited by the lack of health assistants and health inspectors. For example, specific need projection of 60 more health assistants was expressed.

3) Physicians

Swaziland has an inadequate number of doctors, of which the majority are expatriates. Most are working as general

practitioners, and there is a need for specialists. For example, there is currently no orthopedic surgeon, and very limited or absent speciality capacity in internal medicine, general surgery, anesthesiology, and clinical pathology.

As the population is small, complex elective cases are appropriately referred to South Africa. However, a minimum number of basic specialities in association with the government health services are needed for the direct provision of service, training of paramedical and nursing cadres, supervision and planning.

Approach:

- identify speciality gaps and determine the number of individuals/speciality needed.
- assist in locating and financing support of qualified expatriates over the short run.
- develop and assist in financing a long-term educational and training program abroad for Swazi nationals at the undergraduate and graduate medical levels (e.g., medical school and speciality training).
- there is at this time no need for construction of a medical school in Swaziland, nor is a medical school likely to be warranted in the foreseeable future. Medical training should rather be undertaken in good institutions elsewhere in Africa, Europe and North America

4) Nurses

Nurses are the backbone of the Swazi health care delivery system. They are the primary providers of health care.

- a) There is a need to increase the number of nurses in government service as well as the retention rate in government service.

- b) It is necessary to expand the skills of nurses in-service; specifically
- clinic and community health program management
 - diagnostic and treatment skills for common illness
 - integration of personal preventive and curative services at the primary care level
- c) It is recommended that the curriculum of existing nursing schools be modified so that the graduates will be adequately prepared with the skills demanded of them in nursing practice; specifically
- develop and update job descriptions based on the health services delivery plan of the Ministry of Health
 - determine skills required to fulfill job descriptions
 - assess curriculum and training methods for adequacy
 - revise curriculum at the Nursing School as appropriate
 - implement revised curriculum
 - monitor graduates' performance
 - revise curriculum periodically as experience dictates

Training of trainers and training of supervisors is a critical part of expansion of capacity and increasing the relevance of health services. However, to meet the non-physician health needs of Swaziland, we particularly note the need for SRN (State Registered Nurse) curriculum review and revision, expansion of skills of nurses already in service coupled with the further training of supervisors.

The professionalism, dedication and skill of Swazi nurses are impressive. The SADAP team feels that building on this strong base of concerned professionals is a wise and prudent choice by the government. The level of nursing care and the knowledge of front-line practical nurses (clinic and hospital) and their supervisors were very reasonable, often comparing favorably to many graduates in developed countries. Thus, the strengths of existing training programs need to be fully recognized and built on in the further development and expansion of nursing cadres.

It is noted that the government salary structure is such that for physicians there is a strong incentive to move out of government service and into private practice. It is reported that for nurses, pay for work available to women in the private sector not of a nursing nature may often exceed that which is available from the government for work as a skilled nurse. In addition, it is clear that some number of nurses, perhaps twenty, have opted for their own private practices, clearly more remunerative than government service.

Other Programs

To the extent that expatriate volunteers are used in health projects, particularly health projects which are donor funded or related to donor interests, efforts should be made to readily allow the extension of their services when specifically requested by the Government

of Swaziland and when the volunteers wish to extend in the requested role. This would apply, for example, to Peace Corps volunteers.

Architecture: Dwellings, Hospitals, Clinics and Front-Line Outposts

It is probable, although not determined by the team, that Swaziland is very dependent on South Africa for architectural support. There may, therefore, be a need for the training of Swazi architects, particularly to work with government in the critical stages of preliminary design and early planning, where program and facility concepts must be jointly considered if the fullest benefits of capital investments are to be realized. In Swaziland, thoughtful and contemporaneous architectural and program review of the following is recommended:

- 1) Rural housing.
- 2) The St. George's Barracks Mental Hospital and existing District Hospital in regard to renovation/new construction to accomplish decentralized mental health programs.
- 3) Capital support may be necessary to build small outposts for some categories of front-line workers; consultation with the Ministry is required to determine need for and possible design of such outposts.
- 4) Assess clinics designs being used as the basis for new construction with regard to functional lay-out, choice of materials, construction techniques and maintenance costs.
- 5) Assess all government hospitals in regard to renovation and modernization to increase efficiency, maintain in-patient capacity and increase ambulatory capacity and efficiency.

One or two architects with backgrounds in the design/renovation of low-cost health facilities in company with a health professional familiar with clinic and hospital operations are recommended to visit Swaziland and overlap or coincide with the visit of the Mental Health Program Reconnaissance Team. This team of architects should assess:

- a) architectural training needs
- b) consulting needs and capital assistance costs and approaches in regard to:
 - rural housing in RDAs*
 - mental health program
 - clinic construction
 - hospital renovation

Library

A central public health library was specifically requested, directed to concerns such as environmental health, food and drug issues, medical administration and health planning in LDC's. Basic medical texts and journals and possibly cassette tapes for continuing education are needed, to cover the areas of basic medical sciences and specialities, public health, preventive medicine and mental health.

* See section on RDAs.

Appendix 1

LIST OF PERSONS INTERVIEWED AND INSTITUTIONS VISITED

MINISTRY OF HEALTH

Mr. Mboni Dlamini, Permanent Secretary
Dr. Z. Michael Dlamini, Senior Medical Officer
Dr. Fannie Friedman, Director of Medical Services
Mr. Andrew Green, Health Planner
Matron A. C. T. Mabuza, Chief Nursing Office
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PIGG'S PEAK HOSPITAL

Nursing Staff on-duty

RALEIGH FITKIN MEMORIAL HOSPITAL

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Mr. Jim Wetter, Administrator
Nursing Staff on-duty

GOOD SHEPHERD HOSPITAL, SITEKI

Matron Mulder

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SIPHOFANENI CLINIC

Nurse on-duty

NKOBA CLINIC

Nurse on-duty

NDOMO MOTORS' CLINIC

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Dr. C. C. Tredway, Private Physician, Mbabane
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Swazi families in rural homesteads

Appendix 2

USDHEW: Reports on the Following Social Security Programs in Swaziland

Dates of Basic Laws & Types of Programs	Coverage	Source of Funds	Qualifying Conditions	Cash Benefits for Insured Workers (except permanent disability)	Permanent Disability & Medical Benefits for Insured Workers	Survivor Benefits & Medical Benefits for Dependents	Administrative Organization
<p>OLD AGE, INVAIDITY, DEATH First & Current Law: 1974 Provident Fund System (1 emalangeni equals US \$1.15)</p>	<p>Employed persons; Exclusions: Casual employees, domestic servants & aliens; Special system for public employees</p>	<p>Insured person: 5% of earnings; Employer: 5% of payroll; Government: None; Maximum earnings for contribution & benefit purposes: 100 emalangeni a month</p>	<p>Old-age benefit: Age 50 or 45 & retired from regular salaried employment, also payable member emigrating permanently; Invalidity benefit: Permanent total incapacity from any work or permanent partial incapacity & inability to earn reasonable livelihood; Survivor Benefit: death of member prior to retirement. Provision for reciprocal agreements with other countries operating a provident fund.</p>	<p>Old-age benefit: Total employer & employee contributions paid in, plus at least 3% interest per year; May be paid as a lump sum or in installments; convertible to annuity at member's option</p>	<p>Invalidity Benefit: Total employer & employee contributions paid in, plus at least 3% interest per year; May be paid as a lump sum or in installments; convertible to annuity at member's option</p>	<p>Survivor Benefit: Total employer & employee contributions paid in, plus at least 3% interest per year; Payable to widow, other dependents, or persons designated by member of Fund</p>	<p>Ministry of Finance and Economic Planning general supervision; National Provident Fund, administration of program, managed by tripartite board and director.</p>
<p>WORK INJURY: First & Current Law: 1963. Compulsory insurance with private carrier</p>	<p>Employed persons earning up to 3,000 emalangeni a year; Exclusions: Non-manual employees earning over 3,000 emalangeni a year, domestic servants & sheperds.</p>	<p>Insured person: None; Employer: Whole cost, through insurance premiums Government: None</p>	<p>Work Injury Benefits: No minimum qualifying period.</p>	<p>Temporary Disability Benefit (work injury): 50% of earnings</p>	<p>Permanent Disability Benefit (work injury): Lump sum of 48 months' earnings, if totally disabled. Maximum: 6,000 emalangeni. Minimum: 600 emalangeni; Partial disability: 1/2 of full benefit proportionate to loss of working capacity Medical Benefits (work injury): medical treatment and transportation</p>		<p>Department of Labor, enforcement of law; Employers must insure liability with private insurance company.</p>

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