

A REVIEW OF CHILD HEALTH CARE IN THE
DURBAN METROPOLITAN AREA

by

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A REVIEW OF CHILD HEALTH CARE
IN THE DURBAN METROPOLITAN AREA

1. INTRODUCTION

Every second African and Coloured person who dies in South Africa, is a child under five years^{1,2}. This unacceptably high mortality rate³ is a cause of great concern especially as the figures for White South Africans compares favourably with those in America and England which is less than 5 percent.

In order to ensure that adequate and acceptable health care facilities are available to all children in the Durban metropolitan area (DMA), there is a need to review child health in terms of the epidemiological factors of causation of disease and disability and the possible levels of intervention. This study aims firstly to collect health data relevant to all four population groups in the DMA and then to collate the results in order to establish a health and disease profile. The information obtained will assist in establishing priorities and in making recommendations.

The writer accepts that the health of the young child is an extension of that of his mother, and that maternal and child health services should cover a continuous, intergrated and comprehensive range of activities from antenatal care to supervision of school children and adolescents to family planning. However, maternal health services were excluded from this review

because of the lack of time and other resources required to make a detailed study.

This review is directed to children upto twelve years of age because they constitute 25 - 45% of the urban population and also because of their special vulnerability to personal and environmental circumstances.

2. DEFINITION OF OBJECTIVES

The objectives of this study, which is confined to the Durban metropolitan area (DMA), are:-

- i) To define the area, population and demography of the DMA;
- ii) To identify from the literature the socio economic and environmental circumstances that affect the health of children;
- iii) To define the authorities rendering child health care;
- iv) To define the functions of each authority and the services provided;
- v) To determine health and disease profiles;

- vi) To evaluate the services in terms of need and impact on child health;
- vii) To determine priority areas of child health needs;
- viii) To make recommendations (I have a dream!).

3. COLLECTION OF DATA

3.1 Definition of criteria

CHILD: For the purpose of this study, a child is a person less than 12 years of age. All population groups are included.

HEALTH CARE: Personal health care or medical care comprises professional attention intended to maintain and improve the level of health of individuals and communities by means of preventive, curative and rehabilitative measures.

DURBAN METROPOLITAN AREA: This area extends from Verulam in the north, to Hillcrest in the west and Kingsburgh in the south (Appendix I : Map of DMA).

Map I.

PRIMARY HEALTH CARE (WHO): Essential care made universally accessible to individuals and families in the community by means acceptable to them, through their full participation and at a cost that the community and the country can afford.

3.2 DATA SOURCES

- (1) Department of Statistics (Pretoria) population census figures
- (2) Records - DHWP - Regional Office, Durban
- (3) Report of Director of Hospital Services - Natal
- (4) Annual reports of Medical Officers of Health
- (5) Data from Primary Health Care Subcommittee
- (6) Epidemiological reports of medical students attached to Department of Community Health
- (7) An appraisal of the literature

4. DURBAN METROPOLITAN AREA

The area covered by the study is "Metropolitan Durban" as demarcated by the Traffic consultants and approximates very closely the area defined as the Durban Metropolitan area by the

Bureau of Statistics⁴. The following local authority area fall into the project area:-

MUNICIPALITIES:

Durban

BOROUGHES:

Amanzimtoti

Westville

Kingsburgh

Pinetown

Kloof

New Germany

Queensburgh

Umhlanga Rocks

TOWNSHIPS:

Hillcrest

Isipingo

Verulam

La Lucia

HEALTH COMMITTEES:

Canelands

Everton

Marianhill

Gillitts - Emberton

Umbogintwini

Umdloti Beach

Yellow Wood Park

DEVELOPMENT AND SERVICE BOARD - DEVELOPMENT AREAS:

Crestholme

Duff's Road

Glen Anil

Ottawa

Riet River

Shallcross

Waterfall

KWA ZULU ADMINISTRATION:

Umlazi Township and part of the mission reserve

Kwa Mashu

Ntuzume

Kwandangezi

Malagasi

DEPARTMENT OF HEALTH, WELFARE & PENSIONS:

Inanda	Claremont
Welbadagt	Trust Lands

4.1 GEOGRAPHY

The DMA, situated on the South-East coast of Africa at longitude 31°E and latitude 29°S enjoys a subtropical climate⁵. Because of its subtropical climate and its direct sea communication with Eastern countries, Durban always has been, and still is particularly vulnerable to infectious disease like malaria, cholera and plague. However, there were no local cases of these diseases in the city (1978).

4.2 POPULATION DISTRIBUTION

The DMA is the second largest Metropolitan area in the Republic⁶. It transcends political, administrative, and magisterial boundaries (Natal, KwaZulu and the magisterial districts of Durban, Pinetown, Inanda, Ndwedwe, Umbumbulu and Umlazi).

The nucleus of the DMA is Durban - the best and busiest seapoint in the country, the country's premier holiday resort, and the third largest industrial centre in the Republic. Pinetown - New Germany is a rapidly growing urban commercial/industrial centre in its own right, as are Prospection and Amanzintoti to the south. Kloof, Hillcrest,

Gillitts, Queensburgh, La Lucia and Westville function as White suburbs for Durban or Pinetown⁷.

The White areas comprise the centrally situated areas with spines of development following the main transportation routes north and south along the coast and inland. The relocation of racial groups is discussed by McCarthy⁸. Black residential location, constrained by group areas legislation, spatially occupies the region around the periphery of the white urban core and is concentrated into three broadly definable areas as follows:-

- 1) Southern areas: Chatsworth, Umlazi, Lamontville, Kwa Makhuta, Malagazi etc.
- 2) Northern area: Kwa Mashu, Inanda, Phoenix, Ntuzuma, Newlands.
- 3) The Pinetown area: Claremont, Dassenhoek, St Wendolins, Thornwood, Klaarwater, Northdene, Kwadengezi (See Map II of Townships in DMA).

Most formal African areas fall within KwaZulu, while the informal settlements tend to occupy the urban fringes, adjacent to the formal townships, and make use of services such as health, education and transport that are available in these townships⁹. The distribution of the various population groups, and the availability and accessibility of services (water, sanitation,

housing, education and health).is directly related to formal and informal housing. The opportunity to acquire a house within a formal township (with services) is constrained in terms of prescribed qualifications, whereas the informal settlements have a greater degree of flexibility and mobility and acquisition is simpler.

Durban has fewer Blacks than Whites, because the Black workers live in Homeland dormitory towns e.g. KwaMashu and Umlazi adjoining Durban. With the excusion of KwaMashu from the Durban Municipal area, 150 000 Africans were removed from Durban in 1977, but big increases are found in the immediate periphery of the city. The DMA has therefore approximately 250 000 commuters travelling daily from the Homeland townships to work places in Natal.

4.3 POPULATION COMPOSITION

In any urban agglomeration data on the metropolitan population are more important than those relating only to the central city¹⁰. Various estimates of the total population have been made as in Tables I to IV:-

TABLE I: TOTAL METROPOLITAN POPULATION : 1979-80 ESTIMATES¹¹

Whites	:	336 997
Coloureds	:	57 437
Indians	:	439 460
Blacks	:	<u>900 930</u>
TOTAL	:	<u>1 733 930</u>

TABLE II: ESTIMATED POPULATION IN METROPOLITAN DURBAN¹²

Total	1951	:	459 783
	1960	:	690 459
	1966	:	921 585
	1980	:	1 410 300
	1990	:	2 009 250

Estimates of underenumeration of Africans in certain South African cities in 1970 vary from 17% to 50%¹³. The exact figure is not known.

TABLE III: POPULATION COMPOSITION DURBAN METROPOLITAN
REGION 1970 & 1977¹⁴

RACE	1970	1977
Whites	267 000	322 000
Coloureds	45 000	62 000
Indians	326 000	464 000
Africans	412 000	671 000
TOTAL	1 050 000	1 459 000

The preliminary results of the 1980 population census are available by magisterial districts. The above estimates were compared with the figures for the seven Magisterial districts - Durban, Pinetown, Inanda, Embumbulu, Ndwedwe, Ntuzume and Umlazi.

TABLE IV. POPULATION CENSUS 1980: BY MAGISTERIAL DISTRICT¹⁵

MAGISTERIAL DISTRICT	WHITE	COLOURED	INDIAN	AFRICAN	TOTAL
Ndwedwe	17	21	14	138 474	138 526
Ntuzume	0	262	2 383	234 201	236 846
Umlazi	10	42	0	150 613	150 665
Durban	232 616	44 020	154 943	73 701	505 286
Pinetown	69 368	4 486	224 175	37 540	335 569
Inanda	18 252	8 098	106 884	29 924	163 158
Embumbulu	100	109	13	235 913	236 135
TOTAL	320 363	57 038	488 412	900 366	1 766 179

Unfortunately many of the population figures are estimates, with the total population being in the region of 1,8 - 2 million people. What we do observe however, is that the population in the region has grown rapidly over the last 3 decades. The average annual population growth rates between 1951 - 1970 in the region were: White 2,7%; Coloureds 4,7% and Indians 3,1%. The African population increased by an annual average rate of 6,2% between 1960 - 1970 and by 7,2% during the last 10 years¹⁶ in the DMA. The Nation average growth rate for the African population is 3,4%. This growth has been due in large measure

to migration of all races from the rural areas.

The people who stream into the cities from the rural areas are ambitious for their families for whom they want fuller lives through better education, better earning prospects and better health facilities and so on. Their easing into the warp and woof of urban life is a responsibility developing upon the city¹⁷.

It should be remembered that a large proportion of the population are not rural migrants, but rather people who have been forced into the situation because alternative accommodation is not available, or indeed as in some instances have chosen to live in the area¹⁸.

In reality the DMA straddles the developed and the developing world. The natural population growth rates for Africans, Indians and Coloureds are typical of those of Third World Countries and so too is the rate of rural - urban migration among the Blacks¹⁹.

It is also well known that the actual population in African, Indian and Coloured areas is substantially higher than official figures. There is also a substantial problem with squatters and illegal urban residents. It is quite possible that the actual African population, given as 671 000 in 1977, could be now in the vicinity of 1 million. If this figure is correct it has important implications for health planning for the DMA as a whole.

4.4 POPULATION VITAL STATISTICS AND DEMOGRAPHY

Almost 45 years ago Gear noted the absence of vital and medical statistical information and stressed their importance²¹. While total population figures were obtained from various sources, there are no published data on vital statistics pertaining to children of all population groups in Natal. The only vital statistical information was obtained in the Annual Reports of the City Medical Officer of Health, Durban.

In epidemiology, extensive use is made of rates which have the general form: $\frac{x}{y}$ k, with y being the population at risk²². Although a considerable amount of research has been needed to establish total population estimates, a further breakdown by age and sex is not obtainable.

The very real difficulties of obtaining accurate demographic data which is necessary for the calculation of rates (inaccuracies of the denominator) may give rise to even greater errors than inaccuracies of the numerator²³.

An important demographic feature of the African population of the DMA has been the marked decline in the sex ratio of 6,6 in 1921 to 1,2 in 1970²⁴. This levelling of the sex ratios may be indicative of a more stable population with a greater degree of family life. Today a balanced Black urban population can, without any further influx, grow faster on its own than can the White urban population.

The broad base of the population pyramid (Fig. IA) shows the youthfulness of the Black Homelands population, 48,8% of whom are under the age of 5. Only 30,6% of the urban Black population, 42,6% of the total Black, and 30,8% of the total White population are under 15 years²⁵.

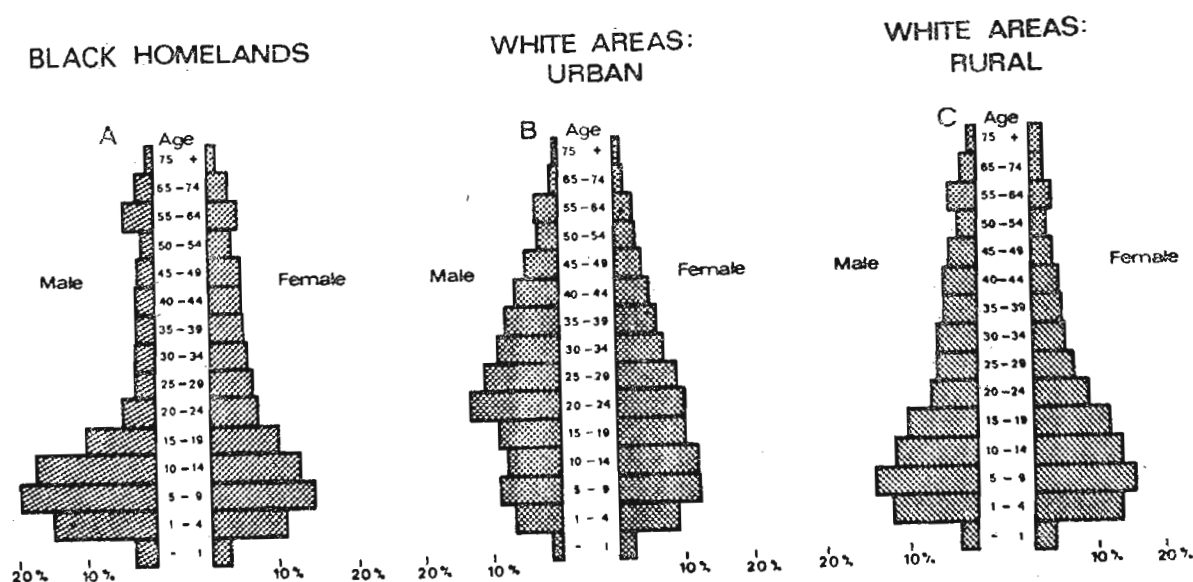


Fig. I. Black population pyramids 1970.

Source : Smit, P. (1976) Op Cit p. 47.

4.5 CHILD HEALTH IN THE SOCIO-ECONOMIC CONTEXT

The health of children is a crucial aspect of the health of the entire population. Development is interpreted today as a process aiming at the promotion of human dignity and welfare and the radical elimination of poverty. Development in the health sector is, in turn, a reflection of conscious political,

social and economic policy and planning and not an incidental by-product of technology²⁶.

Today the Durban-Pinetown region is the third largest industrial centre in the Republic and the Durban-Johannesburg axis the most powerful industrial/commercial axis in the country. It contributes 8,5% to the gross domestic product, while it contained 5% of the total South African population in 1970. The average income of Whites in the region in 1970 was the second highest of all metropolitan areas in the Republic. There is however a considerable income gap between the White and 3 black race groups²⁷. South Africa has an enormous growth rate, but it has not shared its affluence with its Black population²⁸.

A calculation by Ivor Ostby, University of Natal, showed that South African Whites received an annual per capita income of R1 939 compared with R150 for the Black groups combined²⁹. Various studies have allocated 70 - 76% of total income to Whites³⁰. It is anomalous that one section of the community should be enjoying one of the highest standards of living in the world, while the majority are living in poverty³¹.

In South Africa the most common measure of poverty has been the Poverty Datum Line (PDL)³². It is a subsistence measure of poverty and many writers have pointed to its shortcomings³³. A "human" standard of living can be approached only when household incomes attain the Effective Minimum Level (EML)³⁴.

There are however a number of alternative measures³⁵.

Fifty to fifty-five percent of householders receive incomes below the mean PDL of R67,87 per month (Source : Bureau of Market Research, 1970-71). The preponderance of households in the lower income group suggests that 80% of households had an income under the Effective Minimum Level of R102,17 per month³⁶. The primary household subsistence level for the hypothetical Bantu household for Durban (October, '75) is given as R106,26³⁷.

The close agreement between the various independent sets of figures lends strong support to the conclusion that seven to eight out of ten Bantu households in Durban have a legal income insufficient to meet the basic needs for healthy survival. The "culture of poverty" is unduly evident amongst the Bantu in Durban. Perhaps 74 000 Bantu children grow up in Durban and it's immediate environs under conditions of extreme poverty³⁸.

The consistent inverse relationship between socio-economic status and mortality has been documented. This mortality difference is not confined to infectious disease, attendant upon poor nutrition and sanitation and poverty, but holds for many of the chronic diseases³⁹ as well.

4.6 ENVIRONMENTAL CIRCUMSTANCES

The environmental factors which will be considered are:-

- (a) Housing - formal or informal
- (b) Water supply and sanitation

(a) Housing

Suburban and township houses, flats, hostels, mud huts, shanty dwellings and kraals in their various forms, represent the variety of housing types found in the DMA. Their variety of housing forms reflects a common and universal need for shelter, the diversity is a measure of the differing opportunities, circumstances, resources and needs of those who occupy the dwellings⁴⁰. In view of the economic-racial stratification of the population few Europeans are slum dwellers, and slum or poor grade residential conditions have been mainly a feature of Non-European residence⁴¹.

In 1952 there were 10 000 shacks in Durban accommodating an estimated 89 000 persons of whom Africans numbered about 70 000⁴². The lack of water and sanitation made these areas a health hazard to the city. Typhoid fever, gastro-enteritis, and amoebic dysentery were rife. The infant mortality rate for Africans was 330 in 1950, and 167 in 1961 and 103 in 1969..... Child health clinics, better housing, basic sanitation and nutrition has had a marked effect on infant mortality rates⁴³ over the past 30 years.

There has been a massive rehousing programme for Africans removed from Cato Manor from 1958 to 1965 and officially resettled in Umlazi and KwaMashu, which were Council housing schemes.

The provision by 1970 of permanent family housing for an additional 227 000 Africans in fully serviced residential areas in Durban is a noteworthy achievement. The state housing authorities have provided 54 000 dwelling units for Africans at Umlazi, KwaMashu, KwaNdegezi, KwaDabeka and Ntuzume by 1980⁴⁴. The townships have reticulated water, roads, a waterborne sewer system, clinics and transport.

However, more significant is the fact that despite the demolitions that have occurred, and the many thousands of new township houses that have been constructed, the absolute numbers of informal dwellings has increased dramatically in the DMA over the past decade and a half. The first comprehensive aerial survey of the greater Durban area has revealed over 75 000 informal dwellings for this region⁴⁵. At least 500 000 people still live in informal settlements in the DMA in shacks and kraals⁴⁶. The problems at present being encountered with the growth of squatter settlements in Cape Town and Durban are indicants that our cities are likely to move closer to the form of the Third World City⁴⁷.

A more complex definition of the concept of "squatting" has emerged directly from the substantive Malakazi survey findings⁴⁸ which were:-

- 57% of all residents of Malakazi have spent all their lives in or near Durban;
- 80% of the males and 60% of the females are employed formally or informally in Durban;
- 85% of the settlement consists of families⁴⁸.

The concept of "spontaneous urban settlement" is advocated⁴⁹ Spontaneous settlements is a continuous and escalating process that is occurring in Inanda, Marianhill, Thornwood, Dassenhoek, St Wendolins, Umbumbulu, Claremont and elsewhere (Map III).

The population of Malakazi is an urban participant one locked into the major institutions which provide for urban survival. While the economic growth of the DMA depends on this population for its labour supply, it is only right that so called "squatters" should enjoy a dispensation which includes legitimate representation on decision-making bodies concerned with their whole reason for existence, the urban economy of Natal⁵¹.

The "squatters" have solved their shelter problems. The state should concentrate on providing the infrastructure-water, sewerage, health services, refuse removal, etc. Self-help housing is one practical way to provide affordable housing with the essential services⁵². Alternative low-income

housing strategies have also been discussed⁵³.

In 1952 there were 10 000 shacks in Durban accommodating 89 000 persons, with inadequate water, sanitation and an IMR for Africans of 330 in 1950⁴³. The Durban municipal area^u has, to a very large extent, been since cleared of slums (under the Slums Act). However, the shacks have reemerged, the exact same problems of poverty, overcrowding and lack of water and sanitation remain, the difference now being their shift to the periphery with no planning and administrative body directly responsive to the needs of the people. Neither infant mortality rate nor population vital statistics is known. What is known is that for infants and young children, the risk of dying is very closely related to the environment in which they live. Inadequate water, inadequate food, exposure to infection and overcrowding, and the lack of elementary sanitary facilities and care pose obstacles which the child is ill equipped to deal with, and which it cannot escape from.

(b) Water Supply and Sanitation

All formal townships in the DMA have a purified reticulated water supply supplied by the Durban cooperation or the Regional Water Boards. Parts of Dassenhoek, St Wendolins, Northdene and Inanda have water available at standpipes. Nevertheless, 15% of the Black population of

the municipality of Pinetown, 30% of Gillitts-Emberton and 5% of Verulam rely on rivers and rainwater tanks for their water supply.

The Inanda Water Supply Study⁵⁴ covered 30,5 km² and a population of 85,251 (1977). Water was obtained from⁵⁵:-

- (i) Natural water courses, with all their inherent pollution.
- (ii) Private bareholes (most of which yield water unfit for human consumption - as defined by the Department of Water Affairs).
- (iii) Rainwater collection.
- (iv) Three water points supplied by the Durban Corporation - at Lindley Mission, Ohlange Institution and Shembe's Village.
- (v) Water sold in barrels (R1,50 for 35 litres).

The Inanda Steering Committee unanimously agree that the N° 1 priority is the provision of an adequate water supply⁵⁵. Recommendations for water to Inanda have been well documented⁵⁶.

It is a monstrous crime against humanity that 14 000 people (..... the number is probably 27 000 now) in Malakazi rely on one water pump for their water supply⁵⁷.

The provision of an adequate water supply for perurban "squatter" communities is an urgent priority and would be the most important public health contribution for the decade.

As an emergency measure following the Typhoid epidemic last year, water supply by tanker was introduced to Inanda.

The sanitation system in all White residential areas and all Black formal townships in the DMA is a waterborne sewage system, conservancy tank or septic tank. In the white urban areas the pit system is still used by the Non-White population of Ottawa (99%), Pinetown (90%), Kloof (35%), and Verulam (5%). In the informal "squatter" areas around the city, options regarding sanitation are few and simple - any convenient pit, bush or stream may be used as in Inanda the pit (7,7%) and surface (92,3%)⁵⁸.

The goals to be set for the provision of an adequate water supply should be consistent with the International Water Supply and Sanitation Decade (1981 - 1990). A study of the options, costs, feasibility and strategy for developing water supplies and sanitation systems by the Urban Foundation is relevant to the problem⁵⁹.

The all-purpose communal river or stream is a most important source of infection. Until pure piped water and

adequate sanitation facilities are provided, TYPHOID will remain endemic in South Africa. Its eradication remains one of the highest priorities in preventive health measures because of its seriousness and because it is eminently preventable. There were 1 600 proven cases of children under 12 years at King Edward Hospital alone between 1960 and 1976⁶⁰.

A survey on the relation between water supply, disposal of excreta, and health has been conducted through 28 studies in various parts of the world⁶¹. It suggests that a significant relationship does exist between an adequate, safe and convenient source of water-related diseases. Safe drinking water and facilities for disposal of excreta together lead to an improvement in health⁶². (Appendix 1: Diseases relation to Deficiency in Water Supply or Sanitation).

5. DURBAN METROPOLITAN CONSULTATIVE COMMITTEE

The Durban Metropolitan Consultative Committee was established in 1976 to create a forum for the discussion of mutual local government problems of a non-political nature of all race groups within the compass of the Durban City Council⁶³. Consideration will be given to the following services: water, sewage, refuse removal, municipal health services and ambulances in the DMA.

The working party regarding Municipal Health services now includes the Medical Officers of Health - Durban, Pinetown, and Development and Services Board; The Regional Director of Health (Natal); Director of Provincial Hospital Services (Natal) and a medical representative from KwaZulu (not yet effective). Their objective is to prepare proposals to form the basis of discussion for the implementation of the new concept outlined in the Health Act of 1977.

A questionnaire which sought information regarding personal and non-personal health services already in existence was forwarded to 26 local authorities in the DMA and in response thereto 22 completed questionnaires were received⁶⁴. Four local authorities, viz. Everton, Marianhill, Umbogintwini, and Lower Illovo do not have health departments. Questionnaires were not sent to the KwaZulu Government Services and the State Health Department and therefore information concerning the population served by these authorities was lacking entirely.

From the available information the following conclusions are relevant to child health in DMA:-

- (1) Population statistics were well provided.
- (2) Vital statistical information was very disappointing.
- (3) Only 50% of local authorities indicated that they had received notifications of notifiable diseases during the year under review. Only Durban provided a breakdown of the number of notifications of each disease.

- (4) Family health services (immunization and child health) were provided by 17 of 22 local authorities.

The data capture ratios¹¹ for specific information was as follows:-

Birth rates	= 13%
Still birth rates	= 3%
Infant mortality rate	= 9%
Notifiable diseases	= 48%
Immunization returns	= 78%

The data capture ratio indicates the percentage of local authorities that were able to furnish statistical returns in respect of specific details. It should be emphasised that the registration and notification of births, deaths and notifiable diseases are statutory requirements in terms of:-

- (1) The Births, Marriages and Deaths Registration Act (Act 81 of 1963).
- (2) The Health Act (Act 66 of 1977, Section 45).

6. AUTHORITIES RENDERING CHILD HEALTH CARE

The authorities rendering child health care within the DMA are:-

- (i) Department of Health, Welfare and Pensions R.S.A. (DHWP)
- (ii) Natal Provincial Administration (NPA)

- (iii) Local Authorities⁶⁶ - Municipalities, Boroughs
 - DHWP (Section 30 services)
 - Health Committees, Townships
 - Development and Services Board (DSB)
- (iv) KwaZulu Department of Health and Welfare (KZDHW)
- (v) Department of Co-Operation and Development (DCD)
- (vi) Private Medical Practitioners and Supplementary Medical Profession
- (vii) Voluntary and Welfare Organizations
- (viii) "Traditional Healers" - Inyangas, faith healers, temples, etc.

The authorities are either public sector (i - v) or private sector (vi - viii) above. The authorities rendering services in "Natal" are (i - iii) above, and the KwaZulu authority is (iv) above.

"Local Authority" means any institution or body contemplated in section 84(1)(f) of the Republic of South Africa Constitution Act, 1961 (Act No. 32; 1961) and includes a board of management as defined in section 1 of the Rural Coloured Areas Act, 1963 (Act No. 24; 1963) and any person declared to be a local authority by the Minister in terms of the provision of section 30(2); (XXIX).

7. FUNCTIONS OF THE AUTHORITIES AND SERVICES RENDERED

7.1 FUNCTIONS OF EACH AUTHORITY

The Health Act (No. 66 of 1977) defines the function of the Department of Health and of the Provincial Administration and the duties and powers of local authorities. This three tier system of health

authorities (central, provincial and local) exists in South Africa, outside the Homelands.

7.1.1 FUNCTION OF THE DEPARTMENT OF HEALTH⁶⁷

In addition to the functions entrusted to the Department of Health by any other law, the functions of the said Department shall, subject to the provisions of this Act, be:-

- (a) with due regard to health services rendered by provincial administrations and local authorities, to co-ordinate health services rendered by the said Department and to provide such additional services as may be necessary to establish a comprehensive health service for the population of the Republic of South Africa;
- (b) to take steps to establish a national health laboratory service;
- (c) to take steps for the promotion of a safe and healthy environment;
- (d) to promote family planning;
- (e) with regard to the provisions of the South African Medical Research Council Act, 1969 (Act No. 19 of 1969), to provide facilities for, and to undertake, research in connection with any matter falling within the scope of the said Department's functions in terms of this Act;

- (f) to provide services in connection with the procurement of evaluation of evidence of a medical nature with a view to legal proceedings; and
- (g) to perform such other functions as may be assigned to it by the Minister.

The Minister may delegate any of the functions of the Department of Health referred to in this section, excluding any function referred to in subsection (a), to a provincial administration, subject to any regulations which he is hereby authorized to make with regard to the procedure to be adopted, the conditions to be complied with or any other matter, to ensure the proper discharge of any function so delegated, and the Minister shall refund to the provincial administration concerned such amount in respect of expenditure incurred by the said provincial administration in performing such function as the Minister, in consultation with the Minister of Finance, may determine.

7.1.2 FUNCTIONS OF THE PROVINCIAL ADMINISTRATION⁶⁸

Without derogating from the provisions of section 84 of the Republic of South Africa Constitution Act, 1961. (Act No. 32 of 1961), but subject to the provisions of this Act, the functions of a provincial administration in regard to health services shall be:-

- (a) to provide hospital facilities and services;

- (b) to provide ambulance services within its province and with due regard to similar services provided by provincial administrations in adjacent provinces, to co-ordinate such services;
- (c) to provide facilities for the treatment of patients suffering from acute mental illness;
- (d) to provide facilities for the treatment of out-patients in hospitals or in other places where patients are treated for a period of less than twenty-four hours;
- (e) to provide and maintain maternity homes and services;
- (f) to provide personal health services, either on its own or in the implementation of a decision made by the Minister in terms of section 13, in co-operation with any authority;
- (g) with a view to the establishment of a comprehensive health service within its province, to co-ordinate the services referred to in paragraphs (a) to (f), inclusive, with due regard to similar services rendered by the Department of Health, other provincial administrations and by local authorities; and
- (h) to perform any other function which, by virtue of a decision made by the Minister in terms of section 13, may be assigned to it.

7.1.3 DUTIES AND POWERS OF LOCAL AUTHORITIES⁶⁹

Every local authority shall take all lawful, necessary and reasonably practicable measures:-

(a) to maintain its district at all times in a hygienic and clean condition;

(b) to prevent the occurrence within its district of:-

(i) any nuisance;

(ii) any unhygienic condition;

(iii) any offensive condition; or

(iv) any other condition which will or could be

harmful or dangerous to the health of any person within its district or the district of any other local authority,

or, where a nuisance or condition referred to in subparagraphs (i) to (iv), inclusive, has so occurred to abate, or cause to be abated, such nuisance, or remedy, or cause to be remedied, such condition as the case may be;

(c) to prevent the pollution of any water intended for the use of the inhabitants of its district, irrespective of whether such water is obtained from sources within or outside its district, or to purify such water which has become so polluted;

(d) to render in its district, subject to the provisions of this Act or any other law, services approved by the Minister for:-

- (i) the prevention of communicable diseases;
- (ii) the promotion of the health of persons; and
- (iii) the rehabilitation in the community of persons
cured of any medical condition,

and to co-ordinate such services with due regard to similar services rendered by the Department of Health or the provincial administration of the province in which its district is situated.

Secretary to be local authority in areas where there is no local authority 30(1) In respect of any area where there is no local authority, the Secretary shall, until a local authority is established for that area, be the local authority for the purposes of this Act.

- (2) Notwithstanding the provisions of subsection (i) the Minister may, on the recommendation of the Secretary, and in consultation with any person, by notice in the Gazette declare that person to be the local authority in respect of any area referred to in subsection (1) and specified in such notice for the purposes of any provision of this Act.

There are two other important statutory bodies. The Health Matters of Advisory Committee which consists of representatives of the service rendering bodies. This committee will investigate, consider and make recommendations to the Minister in regard to any matter relating to health services rendered by any health authority. The National Health Policy Council consists of the Executive Committee

and the Minister of Health. The Minister makes the final decision on any recommendation by the committee after consideration by the Council.

7.1.4 KWA ZULU DEPARTMENT OF HEALTH AND WELFARE

KwaZulu has an autonomous Department of Health and Welfare under the Minister for Health, KwaZulu. This body has executive and financial responsibility for health services for the urban Black population with the DMA. Health services are under a single authority. It provides a comprehensive health care system, geared specifically to the rapid expansion of Primary Health Care⁷⁰.

On the date on which a Black State's own Department of Health was established, the Government concerned accepted by agreement with the Government of the Republic of South Africa, that Health Legislation which has been operative in its territory up to that date, as its own legislation. Health legislation accepted, amended or passed by the Legislative Assembly of KwaZulu applies under, The Black States Act (Act No. 21 of 1971), only to Black persons in KwaZulu⁷¹.

7.2 SERVICES RENDERED BY EACH AUTHORITY

The Department of Health is charged with the co-ordination of its services with the services rendered by province and local authorities and if necessary to provide additional services in order to establish a comprehensive health service. The aim of the Department is to promote, improve or maintain the health of the population of the Republic and very briefly with respect to child health this entails

the care and treatment of tuberculosis,, venereal disease, formidable and other infectious diseases; district nursing services; laboratory services; the supply of certain vaccines free of charge; the control of malaria and bilharzia; vector surveillance; genetic services; health education; the provision of comprehensive psychiatric services; district surgeon services; dental services; the suppression of nutritional diseases; school medical services for Coloureds, Indians and Black scholars in White areas; environmental services; pollution control and family planning. The Department, through its district surgeons, provides extra-institutional medical care for indigent persons (the same services as those rendered by private practitioners to the public). The transfer of this service to the NPA is imminent.

The services rendered by province are of a curative nature (personal health services) and with respect to child health includes: outpatient and casualty services including detached outpatient services; X-ray examination, radiation therapy; occupation and physiotherapy and speech therapy services; orthopaedic workshops, psychiatric services, district nursing and maternity services, school medical services (Whites), and inpatient care ranging from nurseries, intensive-care unites, paediatric wards, infectious diseases hospital, and specialist units (cardiac, neurology, ophthalmology, ENT, etc.).

Separate accommodation is provided at all hospitals and clinics by race. Addington's Childrens Hospital accommodates White and Coloured patients; R.K. Khan Hospital Indians only; King Edward Hospital and Clairwood Hospital are mixed Indian and African patients. Wentworth hospital's specialist cardio-thoracic and neurosurgery units for all races.

The Department of Paediatrics and Child Health, King Edward VIII Hospital has 140 000 children attending the outpatient department especially from the immediate environs of Durban, but also from all over Natal. A Resuscitation Unit in the Out-Patient Department is used for monitoring intravenous fluid therapy to children dehydrated from gastro-enteritis. Up to 1 000 patients have been resuscitated here in a summer month. Many thousands of children are treated and kept under observation in the outpatient department⁷⁴ every year.

Despite admissions to the 224 beds being restricted to the most severely ill, over 7 000 children up to the age of 12 years are admitted to 224 beds annually. Ninety percent are Black children, and the rest Indian. Sixty-six percent of admissions are under 2 years of age. A rapid patient turnover is essential and the average length of stay is 4-5 days. Convalescent patients are sent to Clairwood Hospital.

Infectious fever wards are also situated at Clairwood Hospital. Patients with cardiac or neurological problems are sent to Wentworth Hospital. Up to 9 000 neonates who are in

need of special care, are admitted to the Neonatal Unit annually.

The Respiratory Unit has 18 cots and beds and 2 isolation cubicles for children with severe lung disease and in need of ventilatory support. The speciality of the unit is the treatment of tetanus. There were 90 cases of neonatal tetanus treated during 1979 with a 70% - 80% survival rate.

Addington Childrens' Hospital next door to the main Addington hospital consists of 4 wards with a total of 116 beds and 16 isolation cubicles; an intensive care nursery of 40 to 50 cribs, X-ray facilities, a small outpatient theatre, physiotherapy, occupational therapy, social workers, and a large outpatient department for everyday problems. There are 32 specialist clinics per month. The paediatric surgery ward and intensive care units are in the main hospital.

R.K. Khan Hospital has 90 inpatient beds, a nursery that accommodates 40 newborn's, an outpatient department and a similar range of services.

TABLE V: ANNUAL PAEDIATRIC ATTENDANCES TO 3 PROVINCIAL HOSPITALS

HOSPITAL	OUTPATIENTS	ADMISSIONS	SPECIALIST CLINICS
Addington (1980)	21 945	3 400	3 507
King Edward (1979)	140 000	7 068	
R.K. Khans (1979)			

Sub-section 20(1)(a) to (c) of the Health Act indicate which services a local authority must render and may render 20(1)(d) for which a refund is payable. The services are classed as:-

- (a) Personal health services: which includes ante-natal and post-natal clinics, immunization, well baby and minor ailment clinics, venereal disease clinics, family planning, psychiatric clinics, and infectious disease control.
- (b) Non-personal health services include water supplies and purification, sewerage disposal, disposal of all waste, smoke pollution control, food hygiene, housing (economic and sub-economic), vermin control, urban planning, recreation facilities, etc.

Seventeen local authorities viz. Amanzintoti, Durban, Isipingo, Kingsburgh, Kloof, New Germany, Pinetown, Queensburgh, Umhlanga, Rocks, Verulam, Westville, Duff's Road, Glen Anil, Ottawa, Riet River, Shallcross and Waterfall have well baby and immunization clinics. Home visits are done in Durban, Isipingo, Kingsburgh, New Germany, Pinetown and Queensburgh. There are no minor ailment services in Durban, Isipingo, Kloof and Umhlanga Rocks. Dental and ante-natal clinics are at Pinetown only. All local authorities also provide a high standard of environmental control.

KwaZulu is divided into health wards with a district hospital and "daughter" clinics where equal attention is to be accorded to promotive, preventive, curative and rehabilitative health services. KwaZulu does not have a district or a specialist referred hospital in the DMA. Consequently extensive use is made of all Provincial hospital services - especially King Edward VIII Hospital. There has been considerable acceleration in the development of Prince Mshiyeni Memorial Hospital, Umlazi, while development of KwaMashu hospital has been postponed.

Private Medical, Dental, Specialist and Supplementary Health Professions render personal health services which includes consultations, treatments, home visits and hospital treatment amongst those who can afford to pay for the services directly or indirectly through medical aid schemes. There are some 11 000 doctors registered with the coastal Branch of the Natal Medical Association. The population per doctor was 90:1 for Whites and 600:1 for Blacks in Durban in 1962⁷². Fifteen years later the variation in ratios was reported to be unchanged⁷³. Private sector services (6 vi, vii, viii) although important, will not be discussed because of a lack of information on the subject.

The services provided by district surgeons, voluntary and welfare organizations and Traditional healers in respect of child care, will not be discussed in this review because of the extent and complexity of the subject.

Well baby and immunization services are provided by:-

- i) Local authority clinics
- ii) KZDHW - KwaMashu Polyclinic
 - Umlazi Polyclinic
- iii) DHWP - Kwa Dabeka Clinic
 - Tongaat Health Clinic

An attempt was made to analyse utilization of child health clinics in terms of total child health attendances and the total number of immunization (polio, B.C.G., D.P.T, D.T., Tetanus and Measles) given. The results are in Table VI:

TABLE VI. TOTAL NUMBERS OF CHILD HEALTH ATTENDANCES AND IMMUNIZATIONS BY EACH AUTHORITY

	AUTHORITY	TOTAL NUMBER IMMUNIZATIONS	TOTAL ATTENDANCES: CHILD HEALTH
DHWP (1980)	Kwa Dabeka-Clinic	9 257	5 323
	Kwa Field Team	31 791	31 916
	Tongaat - Clinic	10 357	5 528
	Tongaat Field Team	31 605	29 820
Local Authorities (1979)	Durban	183 938	265 915
	Pinetown	19 895	26 085
	Verulam	8 682	14 505
	Isipingo	6 469	10 014
	Others	23 786	37 365
KZDHW (1980)	Umlazi Polyclinic & 10 Clinics.	54 159	38 512
	KwaMashu Polyclinic & 4 Clinics	31 640	77 414

The KwaDabeka teams work in Clarmont and have 8 visiting points in Ntuzume, Umdloti, Inanda, Shangweni and Dassenhoek. The Tongaat teams have 78 visiting points. The Umlazi Polyclinic runs 10 clinics - 6 within Emlazi township and the others in the Magisterial areas of Umbumbulu and Vulamehlo. KwaMashu Polyclinic serves 4 clinics in KwaMashu, Inanda, and Kwadengezi. It was not possible, for the purposes of this study to limit their immunization services to within the DMA. Table V shows that these services are predominantly in Durban and in the urban areas. The KwaZulu clinics cover a vast area.

8. HEALTH AND DISEASE PROFILE

If the provision of medical care is to be on a rational and scientific basis, then the analysis of morbidity and mortality data is of fundamental importance in the overall assessment of health and disease status and in the guidance of policy decisions. Mortality statistics are probably the best guide available. Morbidity statistics are generally lacking and even data on notifiable diseases in S.A. are unreliable⁷⁵. There are no comprehensive morbidity data-sets available in S. Africa.

In the absence of vital statistical information for all areas of the DMA, data relating to the following parameters of child health were used as a guide:-

- 8.1 Mortality rates.
- 8.2 Notifications of notifiable medical conditions
- 8.3 Hospital attendances
- 8.4 Nutritional Status

The author accepts that this data is biased. Variables like communication, culture, education, treatability of disease will not be considered in the final analysis. The available data will, however, give valuable information to guide policy decisions, and any inaccuracies are unlikely to be of such an order as to affect policy decisions in any way.

8.1 INFANT MORTALITY RATE

The best indicator of the adequacy of the environment for supporting human life is the infant mortality rate (IMR). The IMR is universally recognized as the most valuable statistical marker which has served both as an indicator of how far measures of social policy have affected health and as a guide to directing further efforts^{77,78}.

The severe constraints, reservations and reliability of birth and death notifications and registration in South Africa is discussed by various authors^{79,80,81,82}.

The problems pertaining to vital statistics is worldwide. The United States is financially the richest country in the world and yet ranks only thirteenth among those whose vital statistics

are considered to be reliable⁸³.

Vital and health statistics will never be accurate without good maternal and child health services. The reverse is equally true⁸⁴.

Durban and Queensburgh were the only 2 local authorities which, in response to the questionnaire (See Section 5) provided the IMR for their area.

TABLE VII. INFANT MORTALITY RATE BY POPULATION GROUP FOR DURBAN FOR THE PAST 50 YEARS⁸⁵.

YEAR	WHITE	COLOURED	ASIAN	BLACK	MEAN
1930	37,0				
1935	54,2	100,0			
1940	47,3	142,5	110,6	510,9	
1945	30,0	131,9	99,2	388,0	
1950	28,7	73,1	72,2	330,0	
1955	17,9	60,2	70,2	307,6	
1960	25,4	50,5	59,5	246,0	
1965	26,0	46,8	48,9	116,7	
1970	13,8	35,1	39,5	89,4	54,9
1975	17,8	17,2	32,9	68,2	43,8
1977	22,8	21,7	28,9	62,2	33,3
1978	14,7	18,1	23,4	52,6	28,8
1979	18,8	22,8	36,2	85,1	39,6

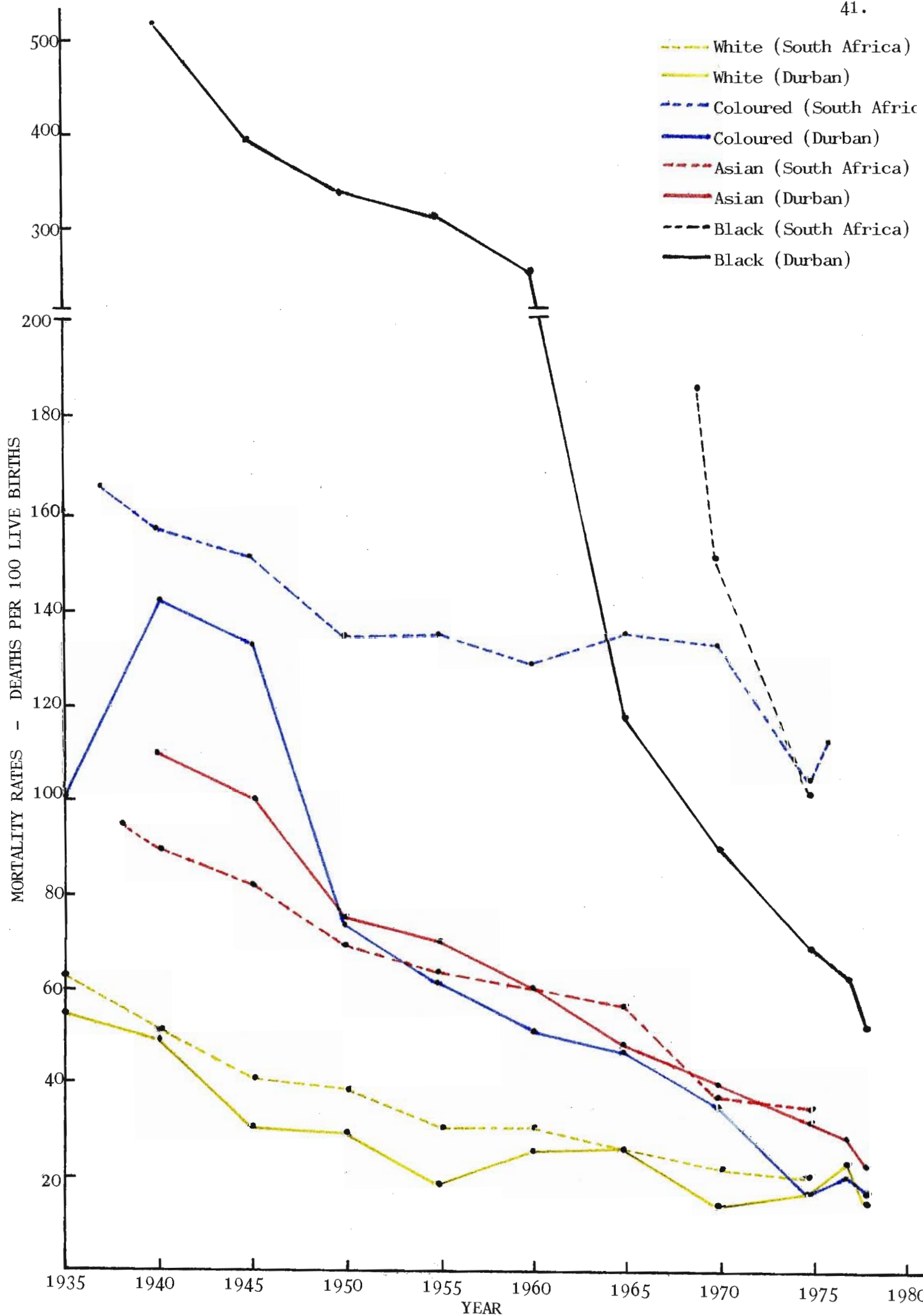


Fig. II. Infant Mortality Rates for each population group in South Africa and Durban over the last 40 years.

From 1940 to 1978 the infant mortality rate (IMR) has fallen from 47,3 to 14,7 (Whites); 142,5 to 18,1 (Coloureds); 110,6 to 23,4 (Asian) and 510 to 52,6 (Blacks) an improvement of 62%, 87%, 79% and 90% for each population group respectively. This is a tremendous achievement. While the mortality rates among Black infants is the highest, the improvement is also the greatest in the Durban African.

Figure II shows the very high infant mortality rates in the thirties and the dramatic fall in IMR in the post war years, and more especially in the last decade. The IMR for Africans and Coloureds in Durban is well below the national levels, while the White IMR is just below the national rate. The Asian rate is almost the same as the national level - probably because 47% of the Indians in the Republic live in Durban.

In addition to IMR, there is a need to look at age specific and cause specific mortality rates to identify groups at risk and the important causes of mortality in all race groups in Durban.

Age and cause specific mortality rates identify the causes of death in each specific age group and are available only at a national level⁸⁸.

TABLE VIII: AGE SPECIFIC MORTALITY RATES AS PERCENTAGE OF
TOTAL DEATHS - DURBAN (1975)

RACE GROUPS	1 year		1-4 years		5-14 years	
	M	F	M	F	M	F
Whites	3,43	4,13	0,29	0,22	0,49	0,33
Coloureds	22,89	13,33	2,41	3,70	2,41	3,70
Africans	38,44	44,83	7,04	8,90	1,76	2,00
Indians	18,97	22,23	3,08	2,68	2,85	2,35
TOTAL: Non-Whites	27,96	32,14	4,82	5,65	2,33	2,28
TOTAL: All races	21,15	23,09	3,56	3,89	1,89	1,65

Table VIII gives the number of deaths in various age groups expressed as a % of all deaths in Durban, 1975⁸⁶.

Amongst Non-Whites, 29,72 percent (Coloured 18,60%; Africans 41,18% and Indians 20,30%) of all deaths occurred under the age of one year as compared with 3,76 percent in the White group.

Deaths under five years of age constituted 4,02 percent of all deaths in Whites compared with 34,9 percent in Non-Whites (Coloureds 21,59; Africans 49% and Indians 23,22%)⁸⁶.

The total wastage of life represented by the death of 50% of black children under 5 years is enormous. The risk of dying, for an

African child born in Durban, before the fifth birthday is as high as 1 in 2 or a 50/50 chance. In most prosperous parts of the developed world, as in Durban's White population, the proportion is less than 5% - i.e. a 1 in 20 chance of dying.

The 1975 vital statistics are used because KwaMashu was still part of Durban at the time and Africans comprised 20% of the total population as compared to 13% of the total population in 1978.

TABLE IX: CAUSE OF DEATH IN RESPECT OF INFANTS (1 YEAR) -
DURBAN (1975)

Classified according to International Intermediate List of 150 causes from English Revision, WHO, 1965.

CAUSE OF DEATH	W	C	A	I	TOTAL
Enteritis & other diarrhoeal diseases	0	3	89	60	152
Measles	0	0	27	3	30
Other Pneumonia	2	4	43	31	80
All congenital anomalies	10	0	30	35	75
Anoxic & hypoxic conditions	11	2	33	36	82
Other causes and perinatal morbidity & mortality	42	37	357	212	648
Ill defined conditions	-	3	99	23	126
TOTAL OF ALL DEATHS	73	56	862	445	1 436

The IMR and cause specific mortality rates for Durban were compared. The commonest cause of death in infancy relates to perinatal morbidity and mortality (45%), enteritis and diarrhoea (10%) and other ill defined conditions (8,7%) for all population groups.

TABLE X: LEADING CAUSES OF INFANT DEATH - DURBAN (1975)

WHITE	NON-WHITE
1. Other causes of perinatal morbidity and mortality (57%)	1. Other causes of perinatal morbidity and mortality (44,5%)
2. Anoxic and hypoxic conditions (15%).	2. Diarrhoea, Enteritis (11,2)
3. All congenital anomalies (14%)	3. Ill defined conditions (9,2%)
	4. Hypoxic and Anoxic (6,0%)
	5. Pneumonia (5,7%)

There are differences not only in the numbers of deaths, but also in the leading causes of death. Age and cause specific mortality rates are available at a national level only, the white infant⁸⁸ show a typical "developed" country spectrum of mortality (Table X). Infectious and parasitic diseases (including diarrhoeal disease and TB) are important causes of infant mortality in Blacks (52%) and Coloureds (28%), while diseases of the respiratory system and certain causes of perinatal mortality also important. There is a large number of deaths due to ill defined conditions particularly in the Black community⁸⁸.

Two aspects of age-cause specific mortality rates require emphasis. Firstly, these rates are influenced by the incidence of the fatality rate of a specific disease, for example, a decrease in the mortality related to gastro enteritis will be influenced by a decreasing incidence of this disease and also by improved prevention at primary, secondary and tertiary levels of intervention which will decrease the fatality rate. Secondly, while rates are important for comparative purposes, actual numbers are also important for providers of health care, particularly in those groups who contribute a comparatively large proportion to the total population.

The mortality rates for gastro enteritis in S. Africa has dropped dramatically from 1929 to 1970 for White children under the age of 5 while the rate has increased for coloured children⁸⁹ under a year as shown in Table XI.

TABLE XI: MORTALITY RATES FROM GASTROENTERITIS IN WHITE AND COLOURED CHILDREN : 1941 & 1970

		1941		1970	
		M	F	M	F
White	1 year	14,12	11,33	1,76	1,48
Coloured	1 year	45,95	40,79	64,64	58,32
White	1 - 4 years	0,93	0,72	0,10	0,07
Coloured	1 - 4 years	8,34	8,50	6,23	5,86

To improve the morbidity and mortality related to gastro-enteritis, there should be appropriate intervention at primary, secondary and tertiary levels of health care.

8.2 NOTIFICATIONS

All notifiable diseases that occur in or are treated in Durban are notified to the Medical Officer of Health. A register is kept of all notifiable infectious diseases at the City Health Department, Durban. Each case is classified as "City" (from Durban municipality; "Ex City" (out of Durban) or Imported (became ill elsewhere). The City MOH's report reflects all "City" cases only. This register was consulted to establish the numbers of "City" and "Ex-city" cases of Polio, Typhoid, Tetanus, Diphtheria, Measles and Viral Hepatitis that occurred in children up to 12 years in 1979. The results obtained are shown in the following table and are compared with the Department of Health figures for 1979 for Natal and KwaZulu.

The very large number of "Ex-city" cases of notifiable medical conditions is a reflection only of the number of patients that come to King Edward Hospital or Clairwood Hospital for treatment. The number that are crippled, blinded, mentally retarded or die from these diseases are not known.

TABLE XII: NUMBERS OF NOTIFIABLE DISEASES IN DURBAN, NATAL
& KWAZULU (1979)

DISEASE	DURBAN "CITY" ^x	"EX-CITY" ^x	NATAL ⁺	KWAZULU ⁺
Diphtheria	1	23	9	4
Tetanus	0	103	30	45
Polio	0	35	6	5
Typhoid	3	136	328	265
Measles	94	501	N/A	-
Viral Hepatitis	114	43	335	31

^x children under 12 years as at 31/12/79

⁺ Dept. of Health - all ages, as at 3/1/80

These results (Table XII) show that there is no relationship between the numbers notified in Durban and the Natal and KwaZulu figures. Many notifications to the City Health Department, classified as "Ex City" are lost before they reach the Department of Health.

There were 90 cases of neonatal tetanus. The under five age group accounted for 29 of 136 case of Typhoid, 14 of 23 cases of Diphtheria and 34 of 35 cases of Polio - recorded as "Ex-City". The large numbers of "Ex-City" cases is a cause for concern. Diphtheria, pertussis, tetanus, measles, poliomyelitis are preventable by immunization. The DHWP Section 30 services

began in 1978. The immunization status of children on the periphery is not known. The Health wards of Emlazi and KwaMashu are extensive and have a chronic shortage of staff and transport. There is a need, at regional and national level to extend and expand immunization services into the periphery.

Durban can be justifiably proud of the high number of fully immunized children and of the low ^{net} modification rate for conditions 1 - 4 (Table XII).

8.3 HOSPITAL ADMISSIONS

An attempt was made to collect and collate categorised final diagnoses for admissions to Addington, King Edward VIII (KEH) and R.K. Khan Hospitals' paediatric wards. Unfortunately, because of the methods of record keeping, this became a futile exercise. Reference is therefore made to two studies^{90,91}, an analysis of final diagnosis registers at the Paediatric Department, R.K. Khan Hospital; and Paediatric surgery (KEH) and personal communication with the Principal Paediatrician, Addington Hospital. The most important causes of child admission are tabulated in rank order (Table XIII).

TABLE XIII. LEADING CAUSES OF CHILD ADMISSIONS TO THREE
HOSPITALS IN DURBAN

RANK	KING EDWARD VIII ⁹²	R.K. KHAN	ADDINGTON ⁹³ (White)
1	Respiratory Inf. (20%)	G.E. (30%)	Respiratory Inf. (15%)
2	G.E. (12%)	Bronchopn. (11%)	Ingestions (12%)
3	Infectious fever (10%)	Asthma (7%)	G.E. (10%)
4	CNS (meningitis, epilepsy, etc.) (9%)	Poisoning (5%)	Asthma (9%)
5	Tuberculosis (7%)	CNS (all) (12%)	CNS (all) (10%)
	Poisoning (1%)		
	Kwash & marasmus (44%)	Kwash (0,05%)	Kwash (0%)
	Mortality rate (21%) (kwash = kwashiorkor)	Mortality rate (2%)	

Important aspects of the KEH study⁹² are:-

- (i) The seriously ill under 2 years who accounted for 63% of admissions and 80% of deaths. 64% of deaths occurred within 48 hours of admission.
- (ii) Infections and malnutrition are the outstanding problems. That 44% of children were suffering from either kwashiorkor or severe marasmus is a "nutritional disaster".
- (iii) The high incidence of gross multiple pathological processes in patients precluded firm decision about the role played by any one condition.

- (iv) The 12% of patients admitted with gastro-enteritis are invariably severely malnourished and with complications. The majority are managed in the outpatient department and do not require admission.
- (v) The major problem with infectious fevers could be prevented with adequate immunization. The admission rate for measles is high.
- (vi) Admission for Tuberculosis remained at a steady 7%.

At R.K. Khan Hospital, the nutritional state of children admitted is good. The main cause for admissions is childhood infections. The hospital child mortality rate is about 2%. The number of children admitted for swallowing toxic substances (mainly household chemicals) is high. The incidence of low birth weight babies is 17% and 6 - 7% of these children die.

A small sector of Durban's White children are seen at Addington - either the low income group, or children that require highly specialised care. There were 3 507 attendance to specialist clinics. Young patients are encouraged to stay at home. Diagnostic procedures are performed in the outpatient theatre and patients go home and return for treatment or examination. The ingestion of toxic substances accounts for 12% of admissions. Fifty percent of these swallow drugs that have been prescribed for adults. An important problem is the 808 White and Coloured children who were seen either in the paediatric, surgical or orthopaedic department with Non-Accidental Injuries last year⁹³.

The Paediatric Surgery wards at KEH admitted 2 453 children in 1979. Major causes for admission were:-

1. Accidents (30%)
 - Burns (18%)
 - Others (12%)
 - motor accidents (6%)
 - others (6%)
2. Abscesses (13,5%)
3. Neonatal and congenital surgical problems (7,5%)
4. Hernias (6%)
5. Circumcision (5%)
6. Massive worm infestation (5%)

Ward I2B (KEH) is on continual intake and is "loaded with burn patients"⁹⁴. The neonatal surgical unit, in care facilities, would not pass even a casual scrutiny as a neonatal unit⁹⁵ (yet serves the Province).

The Neonatal unit at Addington Hospital provides a 24 hour service to sick neonates throughout the Province. The care of neonates is highly specialised, associated with expensive equipment, complex biochemistry and a large and highly trained staff. Neonatal intensive care, important in all 3 hospitals, is mentioned for completion of this study, but it is safer to steer clear of this battlefield.

8.4 NUTRITIONAL STATE AND ANTHROPOMETRIC DATA

The various indices (weight for age, weight for height, weight for age, etc.) measure different aspects of malnutrition and each indicator defines a specific aspect of malnutrition. There are many studies on the nutritional status of children in Natal^{96,97,98,99} which demonstrate the high incidence of malnutrition in Black children, and these studies, from a community health point of view, serve to identify individuals or populations at risk. There is a high incidence of morbidity and mortality in children rendered immunologically incompetent by malnutrition¹⁰⁰. The damage done by severe malnutrition in the first¹⁰¹ and first two¹⁰² years of life is manifest in gross irreversable intellectual impairment despite later improved environmental and nutritional conditions - thus impairing the potential for a full and active adult life.

The incidence of kwashiorkor and severe marasmus in 3 provincial hospitals is given (Table XIII). The problem of malnutrition is indeed complex, with many more socio-economic aspects than medical aspects. In the long run only a rational socio-economic development will eliminate the basic causes of malnutrition.

The measurement of growth is a fine yardstick of the health of children, perhaps the best there is.¹⁰³ Percentile growth charts are widely used by all authorities.

9. EVALUATION OF SERVICES

In evaluating the services provided, mention has been made of:-

- (i) Input data - authorities (6)
 - their functions and services provided (7)
- (ii) Outcome data - disease profile (8)

In the evaluation of services within the DMA, there are two areas of completely different dominant pathologies and different needs. In the centre is the City of Durban and other white areas. The urban fringe is predominantly Black (See Fig. III).

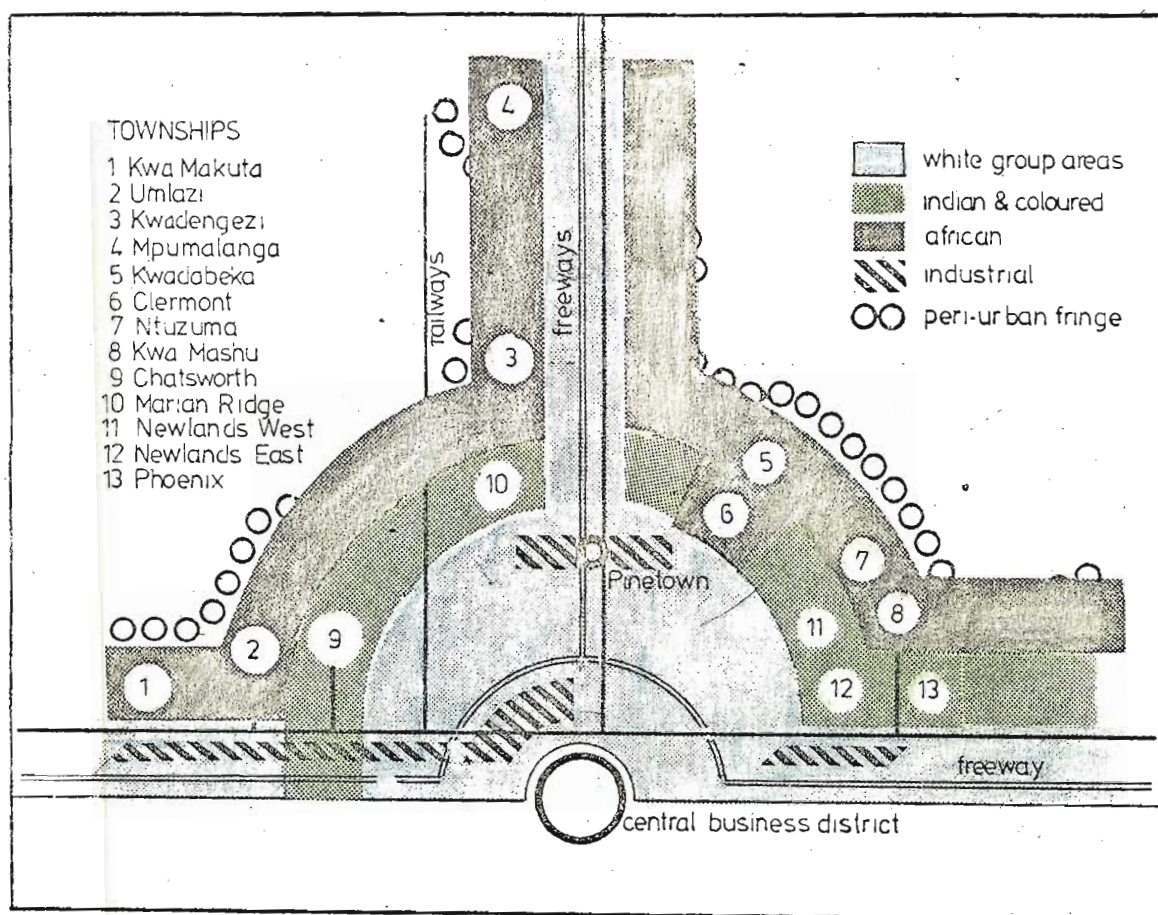


FIGURE III. Diagrammatic map of the Durban Region showing Residential and Industrial areas.

Source : Haarhoff, E. (1979) Op Cit p. 45.

In the city generally, the child is a healthy member of a healthy child population, he suffers from illnesses where a single causative agent is involved. Highly trained staff is at hand, and services are free, or at a cost the person is prepared to pay. There is regular supervision and immunization of all children as well as strict environmental control. Unfortunately, there are pockets of want - and accidental and non-accidental injury accounts for a fair proportion of childhood morbidity.

On the urban fringe, the child is ill fed, parasitised, malnourished and unhealthy - a member of an "at-risk" group, where preventive and promotive services are minimal. The child suffers severe illness and help is a great distance from his home, and treatment and transport is expensive. Recourse to traditional treatment may be ineffective or dangerous. Water supply and sanitation are inadequate.

In Durban a standard of excellence has been achieved at all levels of health care, which for the White community is on par with most developed countries of the world.

During the past decade and a half, the population of children on the urban fringe has increased dramatically, but facilities for caring for these children has not grown at the same pace. The Department of Health, Welfare and Pensions, while providing Section 30 services, lacks the infrastructure and authority to provide basic services in Inanda and Clarmont.

The author accepts that while there are errors in the details of my statistical calculations, there are revelations in this epidemiological review which medical responsibility within the DMA cannot ignore.

10. PRIORITY AREAS OF CHILD HEALTH NEED

The priorities for the racial groups are different. With the White the priority is a change in lifestyle and behaviour, whereas with the Black, it is the need for water, food and shelter. The National Health Plan focuses on the provision of these basic needs.

Since health is an outcome of a complex web of interactions, rather than a chain of events which can be interrupted, then the points of intervention to achieve an aim need to be identified. The aims of a maternal and child health service should be that:-

- (i) Every expectant mother maintains good health and bears a healthy child;
- (ii) Every child grows up in a healthy environment, and receives adequate food and protection from disease;
- (iii) Communicable diseases be controlled;
- (iv) Sickness be detected and treated early;
- (v) Simple statistical data be maintained.

These aims can only be achieved if there is co-ordination of services rendered by the various authorities, to ensure that

adequate health services are available to all. Reciprocal service provision between Natal and KwaZulu is essential. Rabid dogs, Anopheles mosquitoes, rodents, or polluted water courses do not recognise political or administrative boundaries. Representation by KZDHW on Metrocorn is absolutely essential for health service provision on a regional basis.

Through a historical accident¹⁰⁴, the false and disastrous idea that preventive and curative medicine could be separated was introduced. The provision of comprehensive health care through peripheral clinics, health centres and district hospitals^{105,106} is essential so that services are simple, available and easily accessible to mother and child. The Provincial Administration has an important part to play in the development of peripheral units for ultimate outreach into the community.

The 2%¹⁰⁷ (increased to 2,88%) 1st year) of health expenditure expended on preventive medicine is inadequate for present demands. There is an urgent need to reallocate funds away from expensive hospitals and sophisticated manpower to preventive services, so that a balance between preventive and curative services is attained. For the DMA, the solution to the overcrowding at KEH lies in preventing the eminently preventable diseases that occur on the periphery.

The provision of safe and adequate water supply and hygienic waste disposal facilities remains an urgent need in all "squatter" populations. A programme in line with the targets established for

the International Drinking Water Supply and Sanitation Decade should be established.

There is a need to expand and extend immunization services to the areas of greatest need: KwaZulu and other "squatter" areas.

While malnutrition has its roots in a multiplicity of social, economic and environmental factors, and while there is a research for high protein food from exotic sources, breast milk should not be allowed to disappear from the scene. Breast feeding should be encouraged always. For populations that are not economically or culturally prepared and who live in an insanitary environment, bottle feeding of children with milk formulas is extremely dangerous. Nutritional education and food handouts are unsuccessful in improving dietary practice. Significant nutritional improvement can be made with a better utilization of locally available and acceptable food. The Valley Trust socio-medico-nutritional experiment is quoted as an example¹⁰⁸ of a community development approach to combat malnutrition.

The control of diarrhoeal disease in the long term depends on water, sanitation, child care practice and health education. Meanwhile the mortality can be substantially reduced by the promotion and widespread use of oral rehydration therapy.

In all population groups in Durban, childhood accidents are an important cause of morbidity. It is difficult to obtain an overall view since different clinical presentations end up in different

departments. Accidents are an important part of paediatrics today. The general conclusion is that safety devices built in as a constant feature of the environment are more effective than attempt to alter peoples behaviour¹⁰⁹. Well conceived construction and product safety regulations are more effective than dollars spent on ineffective health messages¹¹⁰.

Scherz showed in 1970 that child resistant medicine containers could significantly reduce child poisoning and their use has become widespread in the United States¹¹¹. In Britain¹¹² safety packaging has resulted in a fall in household analgesic poisoning among young children, and in Australia it has reduced antidepressant poisoning¹¹³.

Non-accidental injury to children is no longer to be regarded solely as the product of a psychopathic personality, for it often follows a spiral of stress twisted over generations¹¹⁴. The complexities of child abuse will not be discussed further.

The great difficulty experienced in bringing this treatise to a final completion was the lack of health data. Policy decisions and health care programmes should be based on health data, but statistical information was generally unavailable or unreliable, except in Durban. There is a need for population statistics, vital statistics and demographic information on a regional and national level.

11. RECOMMENDATIONS

It is recommended that:-

- (1) The National Health Policy Council be congratulated for the Nation Health Services Facilities Plan for South Africa. The starting point is health services for the greatest part of the population, with the Department of Health, Welfare and Pensions as co-ordinator. This plan, which focuses on the provision of basic needs such as safe drinking water, adequate food, sewage and waste disposal, housing, health education, primary health care, community health centres and community nursing care will adequately fulfil priority child health care requirements in the DMA, and should be implemented with respect to levels I, II and III of the Plan.
- (2) Appropriate resources be allocated for implementation of the National Health Plan.
- (3) Adequate water and sanitation systems be provided throughout the DMA.
- (4) A realistic endeavour be made to improve salaries, education, training and social circumstances of Black manpower resources.
- (5) A greater proportion of resources be allocated to comprehensive maternal and child health care.

- (6) Primary health care centres be developed and doctors, nurses and other staff be suitably trained to function in these units.
- (7) The Provincial authorities be encouraged to extend their services into the community through community health centres.
- (8) A suitable health information system be devised and implemented.
- (9) Child resistant medicine containers and safety packaging should be advocated.
- (10) Primary Health Care¹¹⁵ be accepted as an important method of health care service delivery, to extend services in the urban fringe.

Only health care that is easily accessible to all communities can fulfil its basic aim of disease prevention, early diagnosis and treatment, and alleviation of disability. Difference in the degree of development of child health care services' organization, structure and function are related to economic, social, political, educational and cultural conditions that prevail in various communities. There is a need to co-ordinate health service provision within the DMA in order to discharge a definite problem orientated function. While the need for more care to those in greatest need should be treated as urgent by all authorities, the formation of the Maternal and Child Health Sub-Committee augers well for the future.

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APPENDIX I.

Table 1
DISEASES RELATED TO DEFICIENCIES IN WATER SUPPLY OR SANITATION

Group	Diseases	Route Leaving Man (a)	Route Entering Man (a)	Relevant Measures		
WATERBORNE DISEASES						
Water acts as a passive vehicle for the infecting agent. The contamination of the water occurs through poor sanitation.	Cholera	F	O	Improve quality. Aim for maximum microbiological quality of water. Improve sanitation.		
	Typhoid	F,U	O			
	Leptospirosis	U,F	P,O			
	Giardiasis	F	O			
	Amoebiasis	F	O			
	Infectious hepatitis	F	O			
WATER-WASHED DISEASES						
Inadequate quantity of water and poor personal hygiene create conditions favourable for their spread. The intestinal infections in this group also relate to lack of proper human waste disposal.	Scabies	C	C	Improve quantity. Provide a greater volume of water, facilitate access, and encourage its use. Improve sanitation, personal hygiene.		
	Skin sepsis	C	C			
	Yaws	C	C			
	Leprosy	N(?)	?			
	Lice & typhus	B	B			
	Trachoma	C	C			
	Conjunctivitis	C	C			
	Bacillary dysentery	F	O			
	Salmonellosis	F	O			
	Enterovirus diarrhoea	F	O			
	Paratyphoid fever	F	O			
	Ascariasis	F	O			
	Whipworm (Enterobius)	F	O			
WATER-BASED DISEASES						
A necessary part of the life cycle of the infecting agent takes place in an aquatic animal. Some are also affected by waste disposal. Infections spread other than by contact with or ingestion of water have been excluded.	Urinary schistosomiasis	U	P	Reduce contact with infested water. Protect water source. Improve sanitation.		
	Rectal schistosomiasis	F	P			
	Dracunculosis (Guinea worm)	C	O			
	WATER-RELATED VECTORS					
Infections are spread by insects that breed in water or bite near it. Adequate piped supplies may remove people from the biting areas or enable them to dispense with water storage jars where the insects breed. Unaffected by waste disposal.	Yellow fever	B	B mosquito	Clear vegetation. Avoid need to visit source. Provide reliable supply. Get rid of stagnant water.		
	Dengue + dengue hemorrhagic fever	B	B "			
	West-Nile & Rift Valley Fever	B	B "			
	Arbovirus encephalitis	B	B "			
	Bancroftian filariasis	B	B "			
	Malaria (b)	B	B "			
	Onchocerciasis (b)	B	B (Simulium Fly)			
	Sleeping sickness (b)	B	B (Tsetse fly)			
	FECAL DISPOSAL DISEASES					
	A group of water-based type infections likely to be acquired only by eating uncooked fish or other large aquatic organisms.	Clonorchiasis	F		Fish	Proper disposal of fecal materials. Eat well-cooked fish.
Diphyllobothriasis		F	Fish			
Fasciolopsiasis		F	Edible plant			
Paragonimiasis		F,S	Crayfish			

(a) F = feces; O = oral; U = urine; P = percutaneous; C = cutaneous; B = bite; N = nose; S = sputum

(b) These are usually related to natural standing or flowing surface water.

Source : World Bank Research Publication: **Village Water Supply — Economics and Policy in the Developing World**, 1976, p. 32 (Adapted.)

APPENDIX II. LIST OF HOSPITALS AND CLINICS IN THE DURBAN METROPOLITAN AREA

1. DEPARTMENT OF HEALTH

King George V Hospital

Springfield Sanatorium

KwaDabeka Clinic

+ 8 Visiting Points

Tongaat Health Centre

+ 78 Visiting Points

2. NATAL PROVINCIAL ADMINISTRATION

Addington Hospital

Beatrice Street Clinic

Clairwood Hospital

R.K. Khan Hospital

King Edward VIII Hospital

Wentworth Hospital

3. LOCAL AUTHORITY CLINICS

Amanzimtoti

Kingsburgh

Duff's Road

Kloof

Glen Anil

New Germany

Ottawa

Pinetown

Riet River

Queensburgh

Shallcross

Umhlanga Rocks

Waterfall

Verulam

Durban

Westville

Isipingo

4. PRIVATE HOSPITALS

Entabeni Hospital

Parklands Hospital

St. Augustine's Hospital

Shifa Hospital

Tongaat Group Hospital

5. KWAZULU HEALTH AND WELFARE

Prince Mshiyeni Memorial Hospital (to open soon).

Umlazi Polyclinic - 6 clinics in Umlazi township and one each in Umbumbulu, Dududu, Magabeni and Makuta.

KwaMashu Polyclinic - 2 clinics in Umlazi township and clinics at Molweni, Inanda and KwaDenzezi.

6. WELFARE/MISSION AND VOLUNTARY SERVICES

Ekukhanyeni Clinic

Fosa Settlement, Newlands

Happy Valley Clinic

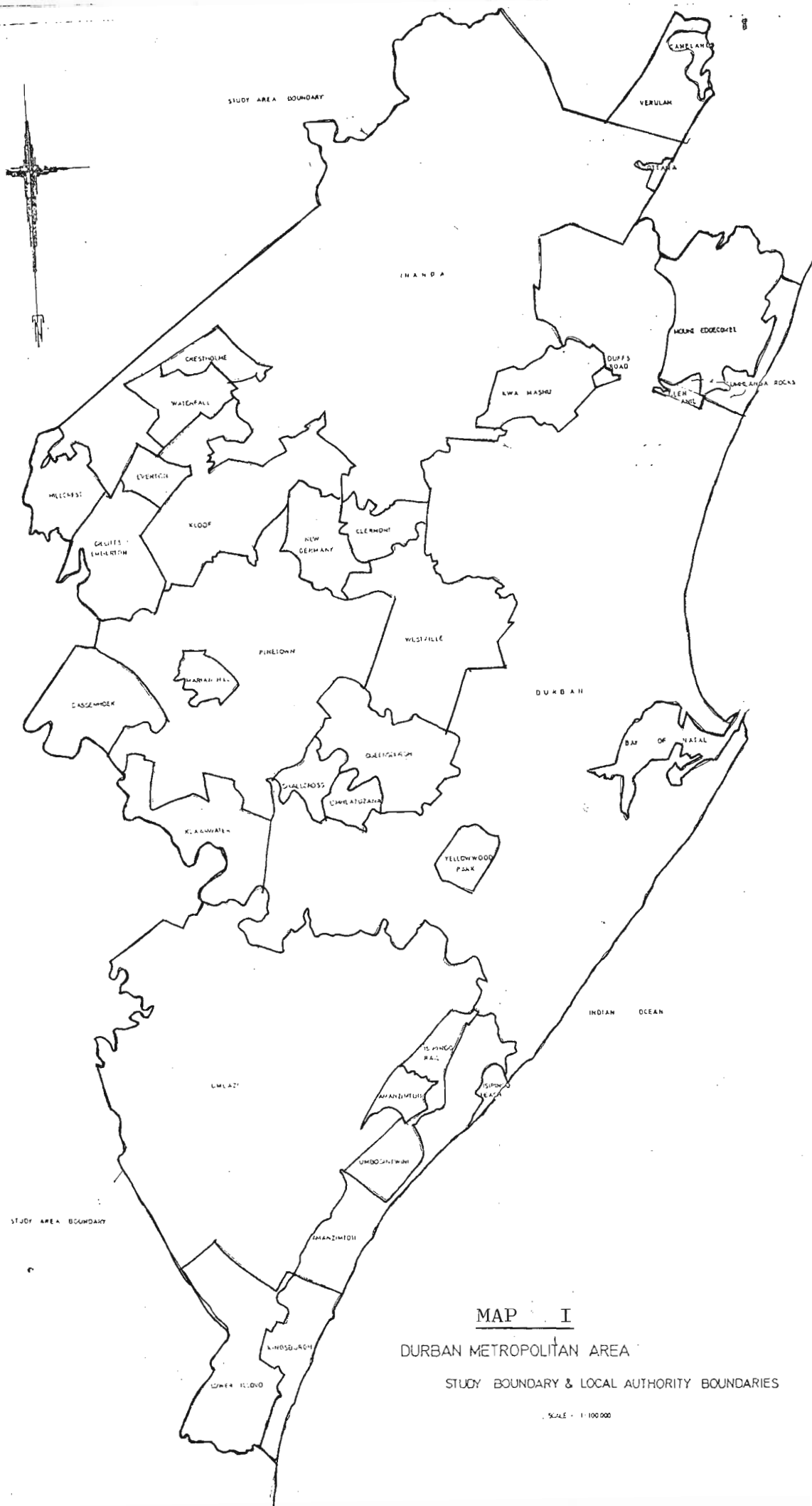
Mahathma Gandhi Clinic

McCords Hospital

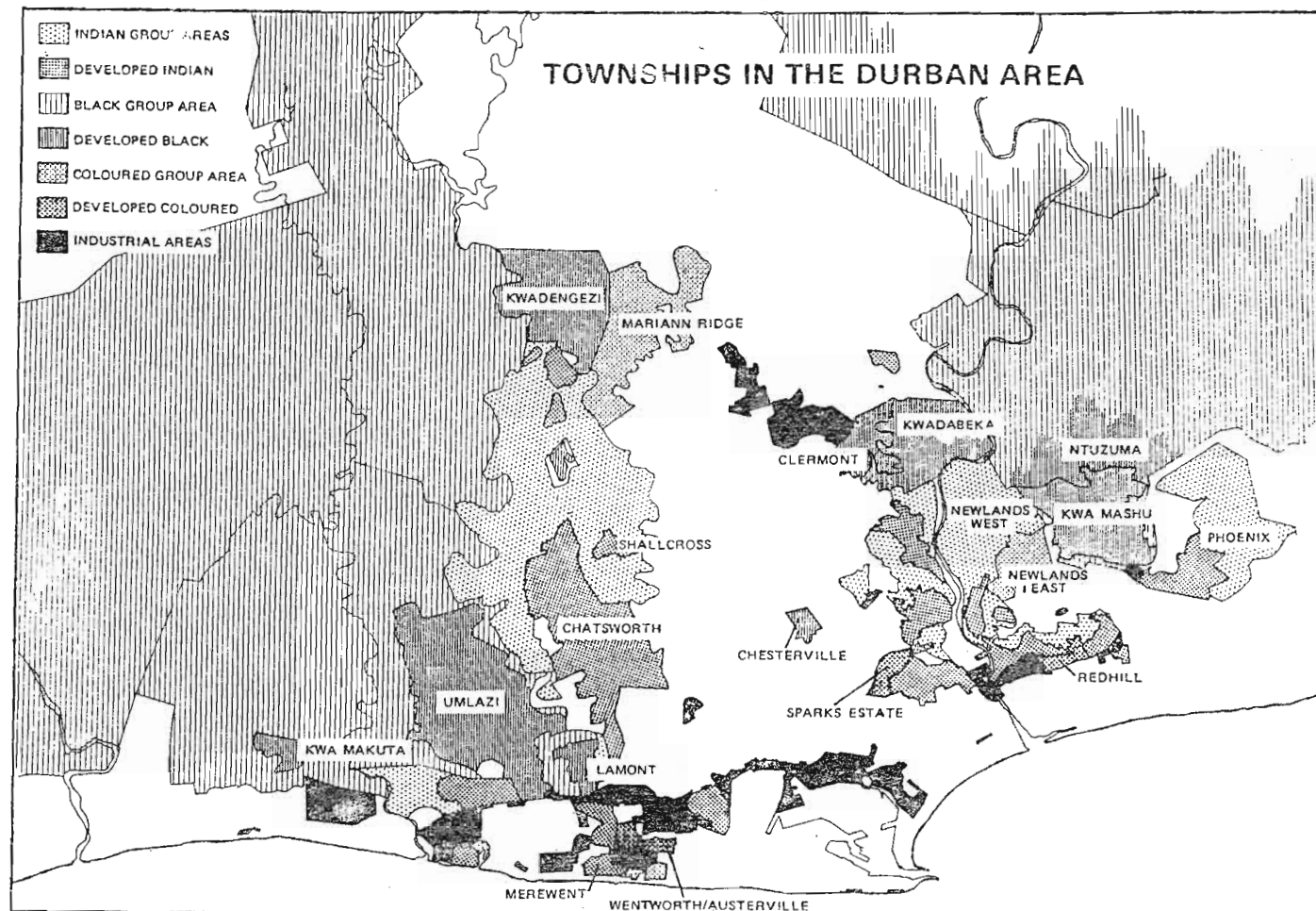
Orendisweni Hospital

St. Aidan's Mission Hospital

St. Mary's Hospital, Marianhill



MAP II TOWNSHIPS IN THE DURBAN AREA



Source: African, Indian and Coloured Housing in the Durban - Pietermaritzburg area.
December 1977. Urban Foundation



line density is an indication of relative density

arrow direction is an indication of decreasing density towards rural hinterland

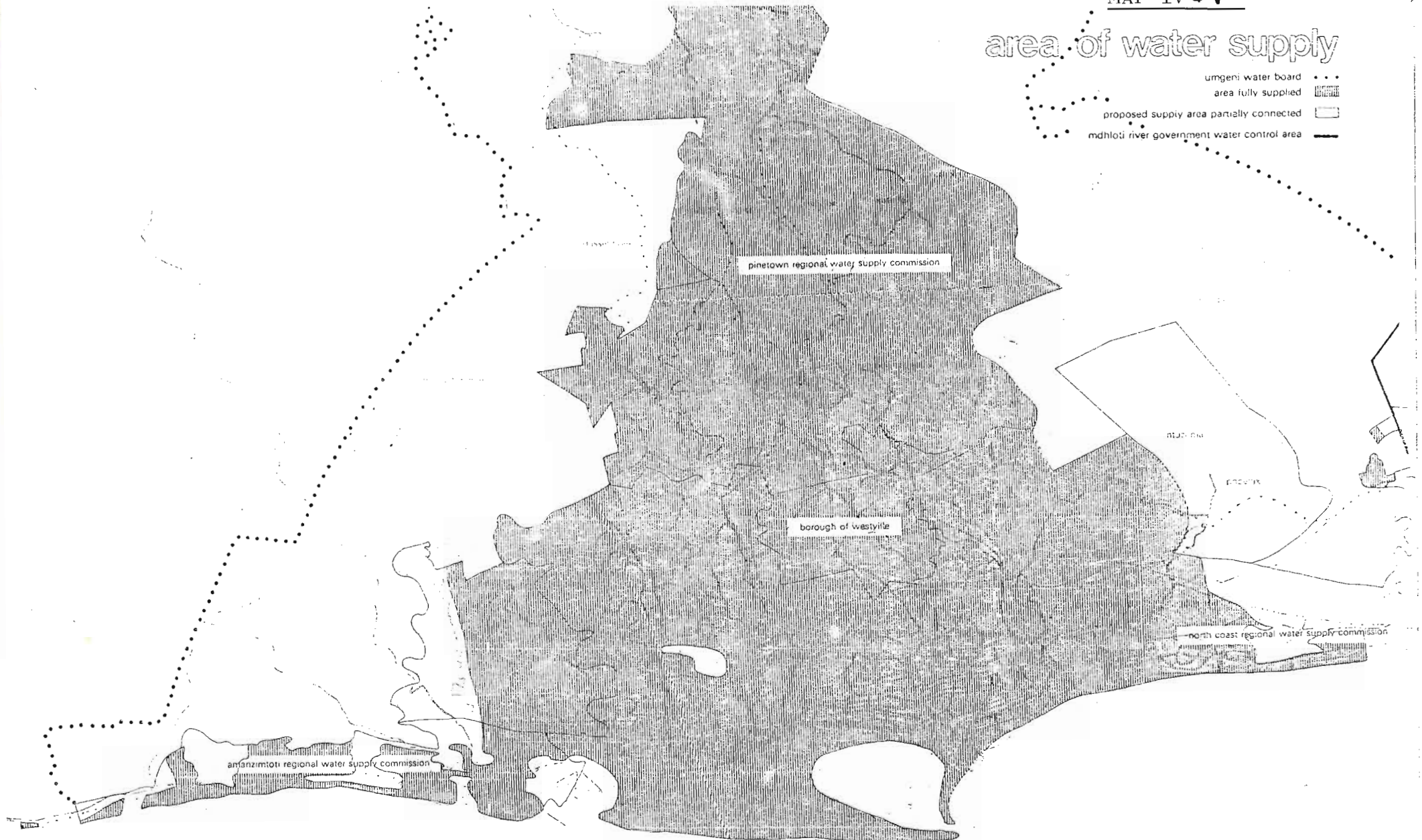
location of spontaneous settlements

MAP III

Source: An Urban Needs and Resources Survey : Urban Foundation (1977)

area of water supply

- umgeni water board
- area fully supplied
- proposed supply area partially connected
- mdhloti river government water control area



proclaimed group areas

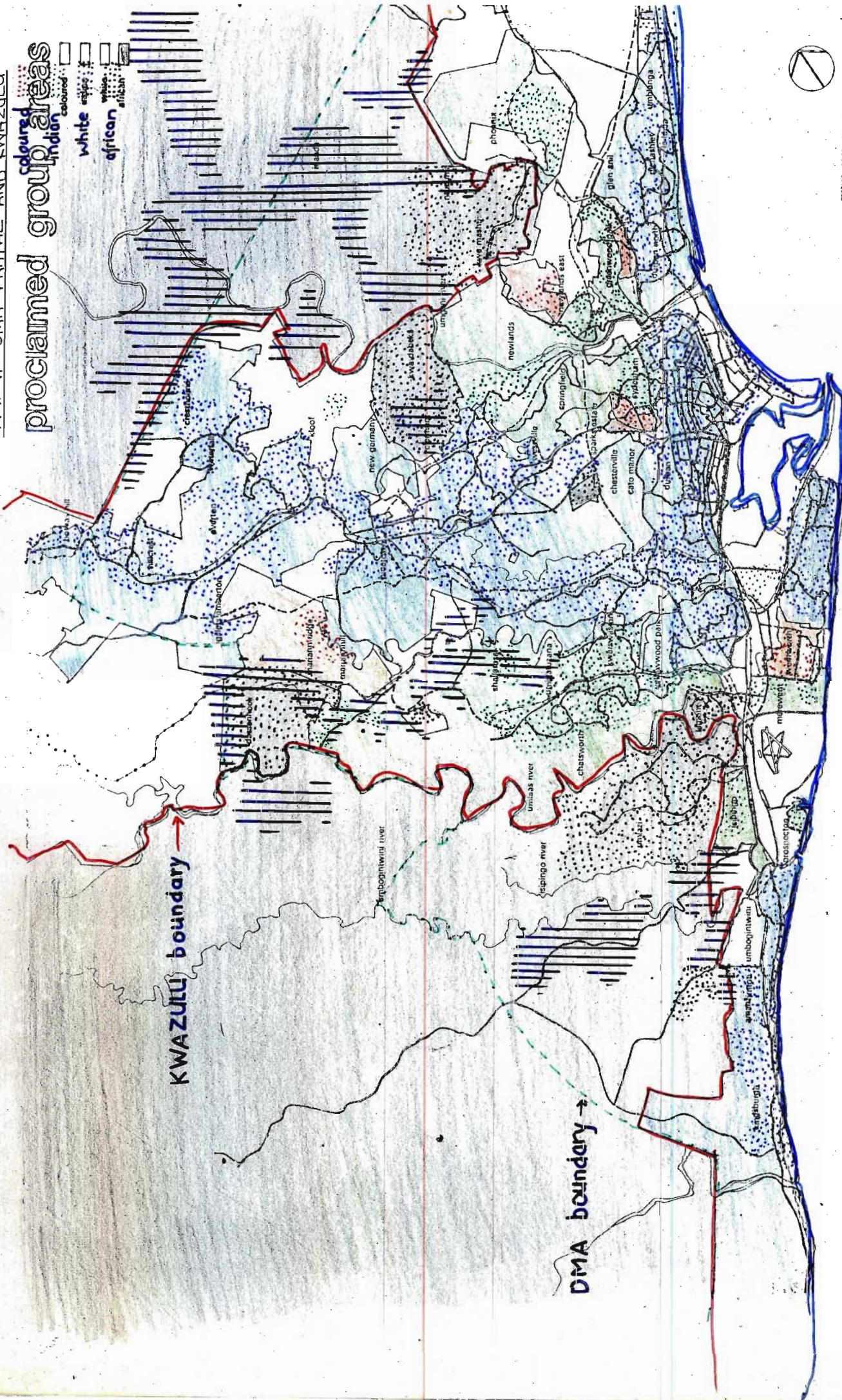
- coloured
- white
- afican

KWAZULU boundary →

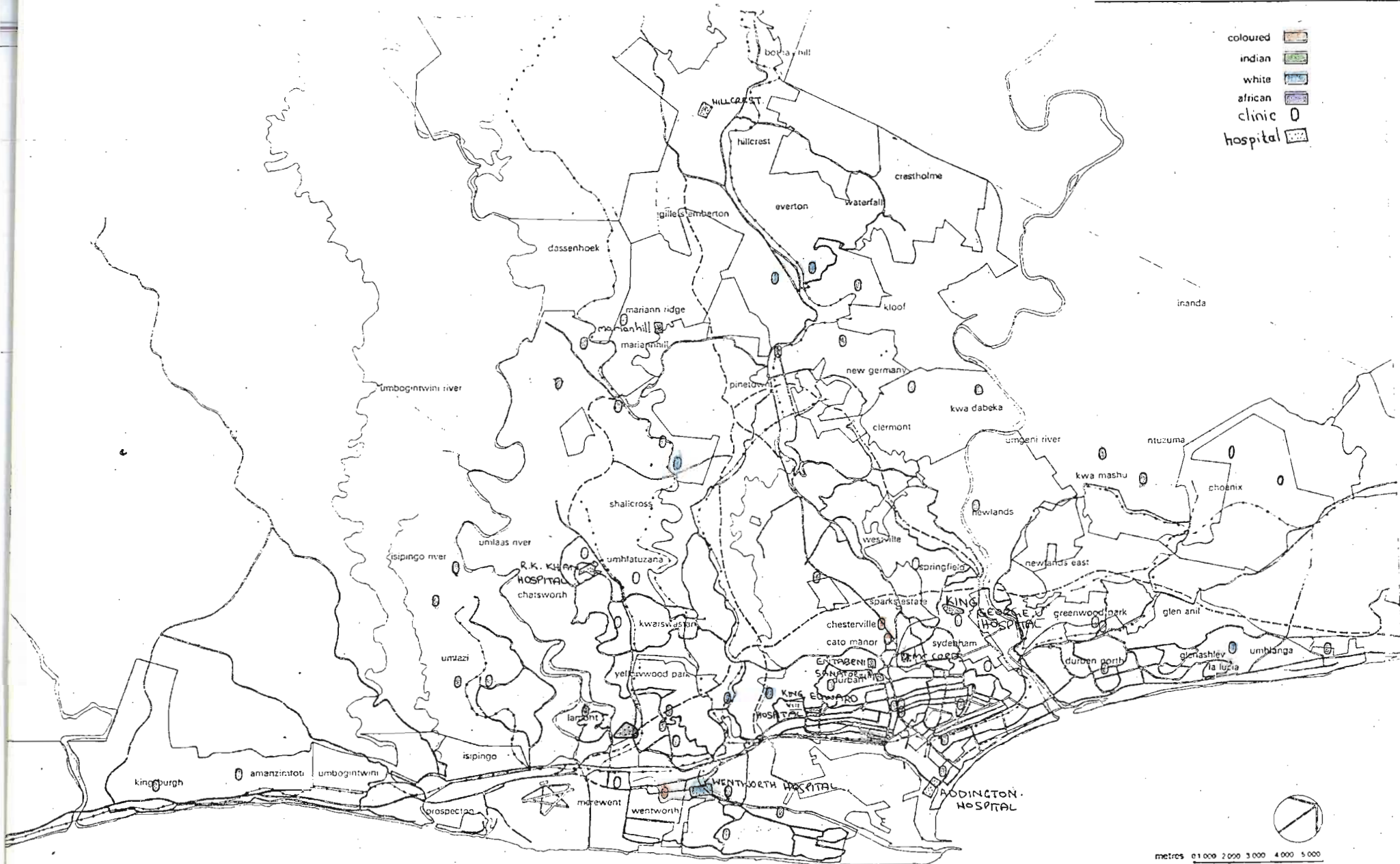
DMA boundary →

location of spontaneous settlements
developed residential areas

metres 0 1000 2000 3000 4000 5000



MAP VII - HOSPITALS AND CLINICS



Source: An Urban Needs and Resources Survey : Urban Foundation (1977)