REGIONALIZATION OF HEALTH SERVICES

IN

THE CAPE PROVINCE - A FRAMEWORK

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The work in this dissertation is original and has not been submitted to any other University or for any other academic qualification.

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VOLUME I

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LIST OF ABBREVIATIONS

CPA	=	Cape Provincial Administration
NHS	=	National Health Service
PE	=	Port Elizabeth
UK	=	United Kingdom
SMR	=	Standardized Mortality Ratio
CSS	=	Central Statistical Service
PHC	=	Primary Health Care
ESCOM	=	Electricity Supply Commission
TFR	=	Total Fertility Rate
Teen	=	Teenage Pregnancy
IMR	=	Infant Mortality Rate
Life Exp	=	Life Expectancy at Birth
Econ	=	Economic Dependancy Ratio
PCI	=	Per Capita Income
Lit	=	Literacy Rate
Chil	=	Percentage Schoolgoing Age Children not in School
Room D	=	Room Density
CHC	=	Community Health Centre
SRN	=	State Registered Nurse
SEN	=	State Enrolled Nurse
Consumbls	=	Consumables
Non-Cons	=	Con-consumables
Ops Exp	=	Operating Expenditure
PUMA	=	Port Elizabeth-Uitenhage Metropolitan Area
OPD	=	Outpatients' Department
DHS	=	Director of Hospital Services
SAA	=	South African Airways
Medlars	=	Search facility for medical literature
CORIS	=	Coronary Risk factor study

Throughout the text reference is made to the legally defined 'racial' categories. The use of these terms does not legitimate these categories or the terms themselves. It serves to reflect the South African reality and is necessitated by the fact that the information used in this dissertation is made available in terms of 'race'.

PREFACE

Post-graduate students specializing in Community Health, are attached to different health authorities during their training. During these attachments they are exposed to the day-to-day management of health services and experience at first hand, the difficulties as well as the successes that are encountered in tending to the health needs of communities.

It is also expected that post-graduate students do research projects during their attachments, usually on topics on which the health services managers need information.

The topic discussed in this report was an assignment given to the author at the start of his attachment to the department of Hospital (Health) Services of the Cape Provincial Administration. The period of attachment was from February to May 1987.

The whole question of the regionalization of health services is a complex one, and it is necessary that any proposals for a system of regionalization benefit from the inputs of many experts in different fields. However, as has been the experience in the United States of America, such inputs are no guarantee that a successful system of regionalization will result. (1)

In the local front, the Department of Workstudy, at the request of the Director of Hospital Services, began an investigation into the existing system of regionalization of hospital services in 1985.

This attempt was aborted, possibly because of the magnitude of the task, among other things. (2).

What follows hereafter should therefore be seen as merely a framework for the development of a system of regionalization rather than as a blueprint for such a system.

Perhaps a few remarks about the age-old problem of line-staff conflict would not be amiss at this stage.

During the development of this framework, it became apparent that line officials might be expecting a quick proposal of regions and/or sub-regions for the delivery of health services based on a purely management approach.

As a staff official, the author naturally had different expectations. The report is an attempt to marry the two sets of expectations and it is left to the reader to judge to what extent, if at all, the author has succeeded in this attempt.

Much of the data used in the study are new, and computation was done largely by hand. The generation of the data was therefore time-consuming and much of the first phase of the study was devoted to the generation of the data and collection of data that were available from other sources.

The study has proved to be a fascinating one and it is hoped that permission will be obtained to pursue the study in more detail. This report should therefore be seen as a preliminary report which

addresses the question of regionalization of health services in the Cape Province in 'macro' terms.

And finally, the author hopes that some of the information in this report may prove of value to those responsible for the delivery of health services to the people of the Cape Province.

Author

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My special thanks are due to Mr D. Bourne, Research Officer in the Department of Community Health of the University of Cape Town, for providing the Mortality Atlas in draft form, prior to its publication.

Mr R. Sayed, statistician in the Department of Community Health of the University of Cape Town, is thanked for his constant advice and assistance throughout the study.

SUMMARY

An attempt has been made to define the most ideal regions and sub-regions for the delivery of total public sector health services in the Cape Province.

Demographic details of the population in the Cape Province were analysed from the 1985 Census reports.

Standardized Mortality Ratios for a number of conditions were examined as a proxy measure for need.

Discharge diagnoses for all in-patient institutions in the Cape Province were analysed, and the notification rates for Typhoid, Measles and Tuberculosis over a three-year period were calculated. The existing health and other regions in the Cape Province were examined and no uniformity of boundaries was found.

The existing health services in the Cape Province were examined especially spatially.

In spite of adequate doctor:population ratios, bed:population ratios and nurse:population ratios, certain areas in the Cape Province revealed health problems that were peculiar to these areas. As a consequence of the findings, certain sub-regions have been proposed, while the existing Academic hospital regions and the three geographic regions in the Cape Province are to be retained, with certain modifications to their boundaries.

It is suggested that the Planning Regions boundaries be adhered to as far as possible, as these regions are used for statistics and economic planning and will form the basis for all services to be delivered in the Cape Province in the future.

INTRODUCTION

The new National Health Plan, which was announced in August of 1986, proposed a new order in the history of health service delivery in South Africa.

> "If you look at the new dispensation, I think the most important thing is that now, for the first time since 1910, we have curative and preventative medicine in one organization."

This statement was made by the Minister of National Health and Population Development in August 1986 on television, shortly after the announcement of the plan.

This new development forms the external environment in which the regionalization of health services in the Cape Province was addressed.

REGIONALIZATION - THE CONCEPT

The concept of regionalizing health services is not new. The Swedes started regionalizing their health services as long ago as the 1950's. (3)

They used a planned distribution of hospital beds according to the "ideal" bed:population ratio for the different specialities.

It has been suggested by some that the main reason for regionalization is to get health services to people.

However, the word 'regionalization' means different things to different people. There is usually an implied understanding that by regionalization resources are allocated and services are rendered in relation to a plan that has a geographic dimension.

This idea of geography is an important one.

One needs to recognize that the geographical arrangement of various elements of the health delivery system will differ, depending on which aspect of health-related activity one is referring to. For example, the distribution of primary care physicians will be different from the distribution of renal dialysis units.

What is also clear, however, is the fact that the various elements of health-related activity should be inter-related.

The concept of geography does not merely embrace a spatial arrangement on a map. It embraces such things as population distribution, the transport network, socio-economic and cultural boundaries and political boundaries.

It stands to reason therefore that any plans for regionalization need to take account of reality.

Eli Ginzberg, the editor of "Regionalization and Health Policy", which was published by the U.S. Department of Health, Education and Welfare in 1977, defined regionalization as follows:

> 'Regionalization is a form of resource allocation or service delivery rooted in geography, i.e. an ordering or re-ordering of health services within an area.'(4)

Sheps and Madison, writing in the same publication, broaden the concept to include the decentralization of power.

As a matter of interest, the word 'regionalization' is derived from the Latin word 'regio' = I rule.

REGIONALIZATION - THE NEED

Rashi Fein, who is essentially an economist at Harvard, writes that "regionalization is needed for both economic and medical reasons." (5) Most people have felt that in order to improve access to health services, to improve efficiency in health services delivery and to foster greater equity in the delivery of health services, there is a need to regionalize health services.

The movement towards regionalization has been accelerated by the rising costs of health care. Regionalization is one way of ensuring that there is no duplication and overlap of services.(6)

On the other hand, the whole process of regionalization can be costly initially as one requires manpower, money, resources and time in order to implement it. It has been estimated that the cost of health care in Sweden increased by 900% between 1955 and 1968 and in part, the process of regionalization accounted for this increase.

A further imperative to regionalize came in the form of the uneven distribution of health personnel. By a process of regionalization of health services it is hoped to make an impact on the urban-rural disparity in available manpower.

THE INTERNATIONAL SITUATION

In the United States of America most policies of regionalization have been applied in a rather fragmented way. The tendency has been to regionalize sectorially. For example, maternity services would be regionalized differently from other services even though it is accepted that regionalization should ideally be comprehensive.

In Britain, the concept of regionalization of health services was first propounded in the Dawson Report of 1920. (7)

The report was drawn up by the Medical Consultative Council of the day and envisaged self-contained, co-ordinated treatment within a defined territory.

These recommendations were not implemented until the establishment of the N.H.S. in the 1940's.

Each region in England and Wales had a natural centre at which a university with a medical school was situated. The population in these varies from 2 million to 5 million.

In 1974 a second tier was introduced, viz. the Area Health Authority, primarily for administrative reasons. The re-organization of the NHS led to there being 14 Regional Health Authorities in England and 90 Area Health Authorities and 222 Health Districts. The population in the Districts ranged from 85,000 and 500,000. (8)

In Area Health Authorities the population varied from under 250,000 to over 1 million. The boundaries of these authorities were adjusted to be coterminous with that of the local authorities in order to facilitate co-ordinated planning of community health personal social services. This was abandoned in the early 1980's and the NHS now functions at the Regional level and the District level.

The Swedish programme of health service regionalization is very intimately related to the economic and political structure in the country. The regions were defined as areas that were "appropriate, in population and size, for the planning of independent and self-sufficient health services". (9)

Travelling time to a given centre became an important consideration in establishing regional boundaries. Four hours was fixed as the maximum acceptable time for a single journey to a regional hospital.

An inventory of travelling time is represented geographically on "isochrone maps". Isochrones are lines joining points situated at the same travelling time from a given centre. The space between adjoining isochrone lines, called an "umland", represents one hour's travelling time.

The isochrone maps for alternative locations are superimposed on population density maps.

By multiplying umland population densities by isochrone travelling times, the aggregate travelling times were calculated. Regional centres that minimized travelling times were chosen and regional boundaries were selected to coincide with the nearest county boundaries. Travel costs were calculated by constructing "isodapan" maps. Points at the same travel costs to a given centre were joined and superimposed on population density maps. From these maps, aggregate travel costs could be calculated. (10)

With each region, the medical care system has a pyramidal structure, with a regional hospital providing highly specialized tertiary care for about one million people, at the apex. The next level is comprised of specialized tertiary care but at a lower level of sophistication with a catchment of 250,000 to 300,000 people while the third tier is made up of district hospitals serving a population of 60,000 to 90,000 people with some specialized services.

At the base of the pyramid is the health centre which offers ambulatory care to about 10,000 to 20,000 people. (3)

THE SOUTH AFRICAN SITUATION

The Gluckmann Commission Report proposed a system of regionalization of health services for South Africa in 1944. (11)

In this report it is recommended that the Health Centres, the building blocks of the National Health Service, would be administered on a regional basis. This regional organization would be the spatio-conducive means of implementing health policy. It was envisaged that each region would have a network of Health Centres. The delimitation of the regions would involve dialogue with local interests taking account of demography, transport and communications, climate, socio-economic factors and epidemiological factors.

The optimal population for a Health Region was deemed to be 500,000.

A statutory advisory body would be the Regional Health Council, while the representatives of all the technical health personnel working in the area, eg. doctors, dentists, nurses, health inspectors, representing on a proportional basis the health centres, hospitals and local authorities, would meet in a Regional Health Conference. A very important function would be for the Regional Registrar to collect epidemiological information which would help to plan health services in the region.

The Regional health authority would implement national policies at regional level while at the same time advising the National health authority about regional needs and the efficacy of national policy.

This admirable attempt to co-ordinate health services and to deliver health services cost-effectively was never implemented.

This was also the year that saw Report no.5 of the Social and Economic Planning Council which proposed economic development along regional lines.

This was followed by the "Border Industry Policy" of 1960, which in turn was followed by the Physical Planning Act of 1967. The Physical Development Plan emerged in 1975 and regional development was spelled out further by the government in its Strategy for Regional Development in 1982.

All this preceded the establishment of Regional Services Councils which were proclaimed early in 1987.

These developments naturally affect the delivery of health services and therefore need to be taken into account in any programme of regionalization of health services.

THE CAPE PROVINCE

The Hospital Services in the Cape Province have been regionalized since the signing of Resolution M377 on the 31st of August 1972. This resolution meant that hospitals and other institutions in the Cape Province were sub-divided on a regional basis for administrative and other purposes, as stated in Section 31(4) of the Hospital Ordinance No.18 of 1946 as amended.

The reasons given for regionalization were:

1. Better co-ordinated services
2. Savings on expenditure without curtailing services
3. Greater involvement of more people in finding solutions to problems
4. Better communication lines

In looking at the aim of the study it became apparent that there were several ways of addressing the issue and what follows is a description of the way in which the study was done.

THE STUDY

The Aim

To attempt to find the most ideal definition of regions and sub-regions for the delivery of total public sector health services in the Cape Province.

In order to meet this aim, the following objectives were set:

1. To identify the existing hospital and health regions in the Cape Province.

2. To ascertain the raison d'etre of these regions.

3. To identify the existing regions in other departments in the Cape Provincial Administration that may be related to health, for example the Roads Department.

4. To determine the demographic profile of the population of the Cape Province.

5. To determine the pattern of mortality in the Cape Province.

6. To determine the morbidity patterns in the Cape Province.

(**Note:** Objectives 5 and 6 were to determine need as this was felt to be an important element in the decision to define regions or sub-regions.)

7. To examine certain measures of health service utilization and efficiency.

8. To examine the proposed economic development in the Cape Province.

9. To examine the existing transport systems.

10. To document as far as possible, the existing public sector health services in the Cape Province.

11. To recommend, on the basis of the above, a practical, manageable, rational sub-division of the Cape Province into Regions and/or Sub-Regions for the delivery of public sector health services.

The Methodology

1. Literature Search

This was done through Medlars.

2. Examination of Documents

All documents at the Department of Hospital Services relating to the regionalization of hospital services dating from 1969, were scrutinised.

3. Interviews

Staff at the Cape Provincial Administration Head Office were interviewed, both in the department of hospital services as well as in other departments.

Researchers at the Medical Research Council were interviewed and consulted.

Staff of other state departments were consulted.

4. Examination of Maps

All maps which could be obtained and on which regional boundaries for the various services, both health and health-related, were shown, were scrutinised.

5. The 1985 Census Reports were consulted extensively and formed the basis for the demographic data which were computed during the course of the study.

An important aspect of this data source was the undercount. The undercount was estimated to be 7.6% in Whites
1.0% in 'Coloureds'
4.6% in Asians
20.4% in Blacks

The undercount also varies with age as can be seen in figure IA. Some authors have attempted to 'correct' the census figures for the undercount. (12)

However, these "corrections" are based on the assumption that the undercount is uniform throughout all areas in the country and secondly, that the age distribution of the populations is the same throughout all census districts.

Clearly, this is not so.

The author felt, therefore, that for the purposes of this study, the 1985 census figures would not be adjusted, and the reader is constantly reminded of this fact throughout the text of this report.

6. Mortality Data as provided by Mr D. Bourne of the Department of Community Health, University of Cape Town, was used. This data related to Whites, 'Coloureds' and Asians only, as the mortality experience of the Black population in this country is so poorly recorded as to be unreliable. This is not to say that information on Black mortality is not of value, however.

The mortality data took the form of SMR's (Standardized Mortality Ratios) for causes of death as listed in the Basic Tabulation List of the International Classification of Diseases, Injuries and Causes of Death - 9th Revision (ICD 9).

These SMR's were calculated by using death information over a five-year period, from 1978 to 1982, with the 1980 Census as the denominator. Mortality rates were standardized against the national mortality rates for each population group. Both 95% and 99% confidence limits were calculated for statistically significant differences.

7. Morbidity was described in terms of discharge diagnoses for inpatients in the Cape Province in 1983.

Notification data for measles, typhoid and meningococcal meningitis were analysed in order to get information on infectious diseases.

8. Immunization coverage for 1985 was used as a measure of efficiency while bed occupancy rates and patient days were used as measures of utilization.

9. Guide Plans issued by the Department of Constitutional Development and Planning were studied in respect of certain Planning Regions.

10. Information on hospital expenditure was obtained from the Annual report of the Director of Hospital Services for 1985. Information on local authority expenditure on health services was obtained by personal communication.

11. Information on the proposed Regional Services Councils was obtained by personal communication.

LIMITATIONS

A. <u>Lack of data</u>

(i) Mortality: No SMR's for Blacks.

(ii) No age-specific mortality rates except for IMR.

(iii) Lack of more detailed morbidity data.

(iv) No data on transport eg. patterns of travelling to health services, time taken to travel to nearest health facility, regional health facility, etc.

(v) No data on other categories of health worker.

B. The SMR is a crude proxy measure of need.

C. Environmental Health Services were not taken into account in the proposed system of regionalization.

RESULTS

I HOSPITAL AND HEALTH REGIONS

Figures I and II illustrate the differing boundaries of the Department of National Health and Population Development regions and the Department of Hospital Services of the Cape Province regions. The important difference is that the Hospital Regions have boundaries that coincide with Divisional Council Boundaries, while the Department of National Health Regions follow the boundaries of the Planning Regions in the National Physical Development Plan. It is important to note that the Divisional Councils may well be phased out in time and this is one of the reasons why the author used the Planning Regions as the smallest unit geographically in this proposal for regionalization. (13)

In addition, the RSC boundaries are coterminous with the Planning region boundaries.

It is also important to note that Figure II does not show the hospicentric regions.

Figure III illustrates the Family Planning Regions of the Cape Provincial Administration.

II THE RAISON D'ETRE

The author was unable to satisfactorily explain the existing Health Regions other than they had risen historically.

The Hospital Regions are discussed in the preceding section and the reasons for their existence are listed.

III REGIONS IN OTHER DEPARTMENTS

A number of regional systems were identified in the Cape Provincial Administration.

It seems as if each department has its own system of regionalization. While regionalization is determined by the purpose for which it is instituted, it seems that a greater degree of co-ordination between departments could well be striven for.

In addition to this, other government departments also have their differing regions.

As an illustration the regions of the department of roads are shown in Figure IV while the different school board regions are shown in Figure V.

Figure VI illustrates the different regions in the Cape Province of the Department of Telecommunications.

In all, the author identified the following geographical sub-divisions in the Cape Province:

statistical regions
magisterial districts
divisional councils
planning regions
development regions
department of national health regions
hospital regions
family planning regions
department of roads regions
school board regions
department of telecommunications regions

TABLE I

CAPE PROVINCE

POPULATION DISTRIBUTION BY DEVELOPMENT REGION

BASED ON THE 1985 CENSUS

	Total	White	'Coloured'	Asian	Black
Region A	2912978	753775	1781911	18896	358372
Region B	621274	111530	263287	1851	244576
Region D	1506939	344112	352226	11242	799359
GRAND TOTAL	5041191	1209417	2397424	31989	1402307
Percentage	100%	24%	47.5%	0.63%	27.8%

Region A = Western Cape

Region B = Northern Cape

Region D = Eastern Cape

IV DEMOGRAPHIC PROFILE

The basis for the following is the 1985 Census Report.

Due cognisance needs to be taken of the problem of the undercount as has been mentioned before.

The total population of the Cape Province is about 5,042,931. This is made up of 1,790,417 Whites; 2,397,424 Coloureds; 31,989 Asians; and 1,402,307 Blacks.

Of the total population of the Cape Province 3,906,143 were urban, i.e. 77.9%. Urban in the Census Report was defined as "any district with some form of local authority".

Over 50% of the population in the Cape Province live in the two metropolitan areas of Cape Town and PE-Uitenhage.

The total populations in the three development regions in the Cape Province are indicated in table I.

The proportions of people living in urban areas in the three development regions are as follows:

Region A	81%
Region B	61.7%
Region D	74.6%

The population distribution per planning regions in the Cape Province is illustrated in Fig. VIII; as can be seen, there is a marked concentration of people around the two metropolitan regions. There are also substantial numbers of people in the areas around Kimberley and the Border area.

Figures IX, X, XI and XII illustrate the 'ethnic' distribution of the population in the Cape Province.

POPULATION PROJECTIONS

The following Table reflects the changing distribution of the population of South Africa between 1970 and 1980. (18)

Region	Whites %		Coloured %		Asians %		Africans %		Total %	
	1970	1980	1970	1980	1970	1980	1970	1980	1970	1980
Cape Metropolitan Planning Region 39	12,16	12,90	36,02	37,54	1,87	2,22	1,65	2,11	9,28	9,92
PUMA Planning Region 40	4,19	4,10	5,98	6,21	0,85	0,88	2,83	3,38	3,53	3,86
Durban/ Pinetown Pietermaritzburg Pl.Rgn 41	8,77	8,81	2,82	2,67	73,97	73,01	7,01	3,21	9,75	7,68
PWV Pl.Rgn 42	40,14	41,18	6,53	7,15	1,10	12,19	29,57	32,67	28,31	30,20
TOTAL										
Metropolitan	65,26	66,99	52,15	53,57	87,79	88,30	41,06	41,37	50,87	51,66
Non-Metropolitan	34,74	33,01	47,85	46,43	12,21	11,70	58,94	58,63	49,13	48,34
TOTAL %	100	100	100	100	100	100	100	100	100	100

N.B: These figures exclude the TBVC countries and the self-governing National States.

Clearly, the population in the metropolitan areas is increasing. This needs to be taken into account in organizing regions and sub-regions. This will be referred to later in respect of the proposals for regionalization and subregionalization.

The Age structure of the population in the Cape Province is examined by looking at the distribution of the elderly and the under 15-year age group as illustrated in Figures XIII and XIV.

The first category is the under 15-year group and the second is the over 65-year group.

These two categories were chosen on the assumption that these two groups would make the greatest demands on the health services and secondly because these two categories would indicate the overall population structure, thus identifying the health needs of any particular area in the Province.

The Old:

The elderly in South Africa make up about 8% of the White Community while it makes up about 3 to 5% of the other communities. (14)

The map (Fig. XIII) indicates areas where the elderly form less than 5% of the total community; between 5% and 7.5%; and finally areas where the elderly form more than 7.5% of the community.

The Calvinia-Sutherland region is an area with a large proportion of elderly people.

The West Coast, Central Karoo, PE-Uitenhage and parts of the Northern Cape have small proportions of elderly people.

The Young:

The Cape Metropolitan region and Somerset East have relatively small percentages of children as can be seen in Figure XIV. The Science Committee of the President's Council reported in the report on demographic trends that 41% of the Black population is under the age of 15 years. The figure for Whites is 28%; for 'Coloureds' is 39%, and for Asians it is 37%. (14)

The areas with a high proportion of children are the far eastern Cape, the magisterial district of Hay, and areas just outside the PE-Uitenhage area.

This distribution of children has major implications for the delivery of health services, and, as we shall see later, the morbidity and mortality pattern in the Province is affected directly by this fact.

V MORTALITY

The Standardized Mortality Ratio has been found to be a good proxy measure of morbidity and need. It was used particularly in the U.K. Naturally, it has shortcomings but Holland states that no single measure superior to the SMR has yet been devised. (15)

Work by Bourne, done in the Department of Community Health at the University of Cape Town, has identified areas in which the SMR for diseases in the Basic Tabulation List of the International

Classification if Diseases, Injuries and Causes of Death, 9th Revision, is significantly higher than for the rest of the country. The methodology has been described before.

Figure XV indicates that Tuberculosis is a major cause of death in the Eastern Cape, Southern Cape, Northern Cape and the Cape Town Metropolitan Region. The magisterial districts of Beaufort West, De Aar and Noupoort also have a problem with tuberculosis.

When the SMR's for Gastrointestinal Infections were examined, the Metropolitan Regions of Cape Town and Port Elizabeth together with the West and Southern Cape are remarkable for the low SMR for this condition. (Figure XVI)

The major problem areas for gastrointestinal infection deaths are the Eastern Cape, Northern Cape and parts of the Karoo. These deaths are mainly among the 'Coloured' group and there is no reason why the picture in the Black community should be different.

Deaths from Respiratory Diseases follows roughly the same pattern as is shown in Figure XVII.

Deaths from Nutritional Deficiency Diseases occur more in certain areas of the Eastern Cape and Northern Cape. (Figure XVIII)

At the other end of the disease spectrum, the SMR for deaths from Ischaemic Heart Disease is higher in the well-known CORIS area of the Southern Cape. (Figure XIX)

A further feature is the clustering of these deaths around the larger towns such as Cape Town, Uitenhage, East London, Kimberley, Queenstown. There are two pockets in the Central Karoo around Frazerburg and Carnarvon.

Figure XX illustrates the areas in which death from Cerebrovascular Disease is significantly more common than in the rest of the country. The Western Cape, parts of the Southern Cape, Port Elizabeth, East London, and to a lesser extent the Eastern Cape interior, are areas where Cerebrovascular disease is a problem. The SMR from Transport Accidents indicate that the Western Cape, the magisterial districts of Cape Town, Wynberg, Stellenbosch, Somerset West, Oudtshoorn, Worcester, King William's Town and Vryburg are 'unsafe'. (Figure XXI)

Deaths from Gastrointestinal Cancer as illustrated in Figure XXII are significantly more frequent in the Western Cape, Mossel Bay, Albany, Namaqualand, Prieska, Kimberley, De Aar, Oudtshoorn and Riversdale.

It is thought that Prieska may be a special case in that the diagnosis of Gastrointestinal Cancer may be complicated and possibly confused with deaths from pleural mesothelioma.

The areas in which Pleuropulmonary Cancer is a cause of death in a significantly greater proportion of the population than in the rest of South Africa, are mainly around the large towns, as has been the international experience, Lung cancer in particular,

being related to the areas of air pollution, and increased rates of cigarette smoking.

Prieska again is the exception. However, the Asbestos mines in the area account for this 'aberration'. This pattern is demonstrated in Figure XXIII.

VI. MORBIDITY

As a further measure of need, the morbidity pattern in the Cape Province was examined.

The top five discharge diagnoses for patients discharged from in-patient establishments in the Cape Province over a three-month period in 1983 (July, August, September) were as follows:

	Whites	**Coloureds**	**Asians**	**Blacks**
1.	Genito urinary dis.	Pregnancy childb.	Genito urinary dis.	Pregnancy childb.
2.	Digestive	Respiratory	Pregnancy	Respiratory
3.	Respiratory	Accidents, poisoning, violence	Digestive	Accidents, poisoning violence
4.	Musculoskel connective tissue	Genito urinary	Respiratory	Infections
5.	Pregnancy childb.	Digestive	Circulatory	Genito urinary

(16)

This table merely illustrates that the utilization of inpatient facilities differs between groups and that needs therefore differ.

We have also examined the Notification Rates for three infectious diseases in the Cape Province, viz. Measles, Typhoid and Tuberculosis.

Figures XXIV, XXV and XXVI show the distribution of these notification rates over the years 1984, 1985 and 1986. These are mean notification rates over these years. A three-year period was chosen in order to allow for epidemics that may have had a distorting effect on the pattern.

It should be noted that notification rates in general are low for South Africa, as is the case internationally. The Notification Rates should be viewed with caution, therefore.

The obvious discrepancy in Typhoid notifications between the Eastern Cape and the rest is very suggestive and the problem of measles in the Eastern Cape as well as the Northern Cape and the Western Cape, to a lesser extent, appear to be confirmed by the pattern of notifications.

SUMMARY

Patterns of Mortality and Morbidity have been studied in order to identify areas of need. The SMR's show up certain "black spots" notably: Cape-Worcester-Tulbagh; Mossel Bay-George-Knysna-

Calitzdorp-Oudtshoorn; Port Elizabeth-Uitenhage-Kirkwood-Hankey-Humansdorp; and De-Aar-Albert. These areas would therefore have to be taken into account of in a system of Regionalization. A summary table and discussion at the end of this section addresses this issue.

The next step was to establish what health services existed in the Cape province and to relate the distribution of health services to the health needs in the Cape Province in a REALISTIC manner taking account of ALL factors that would influence such a definition of regions/subregions.

At the same time the baseline information can be incorporated into the information systems of such regions/subregions, and can form the guidelines to the type of indicators that should be employed to set targets and to monitor and, finally, to evaluate the health services.

Socio-economic factors have a profound influence on health and for this reason the Economic infrastructure as well as economic prospects for the various areas in the Cape Province were taken into account. These will discussed under the section where the proposed system of Regionalization is spelled out.

VII TRANSPORT

The Cape Province is served by an excellent system of roads. The map (Figure XXVII) illustrates this road system.

VIII THE EXISTING HEALTH SERVICES IN THE CAPE PROVINCE

An inventory of the existing health services in the Cape Province was compiled.

What follows now is a list of the different types of services in the public sector.

The Private Sector is not included in the listing but is taken into account when the medical and nursing manpower situation is described. Obviously private sector health facilities would influence regionalization of health services.

A. PHYSICAL FACILITIES

1. Provincial hospitals
2. Day hospitals
3. Province-aided hospitals
4. Community Health centres
5. Maternity services
6. Combined services
7. Municipal clinics
8. Divisional Council clinics
9. State Psychiatric hospitals
10. State Care and Rehabilitation centres.

It should be noted that this is not a complete list of all the services available in the Cape Province.

It is a list of the services that were taken into account in developing this framework for regionalization.

The spatial distribution of health services in the Cape Province is indicated on the map in the sleeve of this report.

B. MANPOWER

1. Doctors:

In 1979 there were an estimated 3,596 doctors in the Cape Province.

Of these 1487 were in Private Practice while 2109 were in salaried employment (CSS Report no. 20-03-02).

This gave a doctor:population ratio of 1:1529.

A further breakdown of the doctors in the Cape Province as given in the same document, revealed the following:

General practitioners	1015
Salaried (non-intern)	1486
Interns	173
Private specialists	472
Full-time specialists	450

DISTRIBUTION OF NURSES - STATISTICS 27 APRIL 1987

	WHITE			COLOURED			ASIAN			BLACK			TOTAL		
	Reg	Enr	Ass	Reg	Enr	Ass	Reg	Enr	Ass	Reg	Enr	Ass	Reg	Enr	Ass
Western Cape	5966	743	2031	3327	1865	6027	91	16	11	373	113	831	9757	2737	8900
Eastern Cape	3097	595	1444	775	752	907	34	5	1	2095	1139	1901	6001	2491	4253
Northern Cape	770	151	370	339	304	583	11	4	6	232	126	331	1352	585	1290
TOTAL	9833	1489	3845	4441	2921	7517	136	25	18	2700	1378	3063	17110	5813	14443
T O T A L	15167			14879			179			7141			37366		

Reg: Registered Nurse

Enr: Enrolled Nurse

Ass: Enrolled Nursing Assistant

TABLE II

S.A. Nursing Association

The Ethnic breakdown as given in the same report was as follows:

Whites	3629
'Coloureds'	171
Asian	143
Black	26

2. Nurses:

The total number of nurses as at 27th April 1987 was as follows:

Western Cape	21,394
Eastern Cape	12,745
Northern Cape	3,227
TOTAL	37,366

(S A Nursing Association)

For a breakdown by occupational category see Table II. These figures give a nurse:population ratio as follows:

Western Cape	1:136
Eastern Cape	1:135
Northern Cape	1:192

These two are not the only categories of manpower involved in health service delivery but were the two groups taken into account in this proposed system of regionalization.

A few more interesting factors about the distribution of doctors and nurses in the Cape Province are the following:

In Metropolitan areas there are 979 people per doctor.
In Major towns there are 1,418 people per doctor.
In Rural areas there are 3,108 people per doctor.

(17)

Nurse distribution in the Cape Province:

In Metropolitan areas there are 118 people per Registered Nurse and 280 people per enrolled nurse.
In Major towns there are 132 people per Registered Nurse and 228 people per enrolled nurse.
In Rural areas there are 230 people per Registered nurse and 429 people per enrolled nurse. These figures highlight the urban-rural disparity in the distribution of health manpower.

SUMMARY TABLE

MANPOWER SERVICES

	West	North	East
DOCTORS	2701	193	702
DR:POP	1DR:1117	1DR:3394	1DR:2165
NURSES			
SRN	9757	1352	2491
SEN	2737	585	2491
ASSIST	8900	1290	4253
TOTAL	21394	3227	12745
BED:POP	3.87/1000	4.35/1000	4.04/1000

CLINICS (See map for distribution of clinics)

HOSPITALS (See map for distribution of hospitals)

HEALTH SERVICE UTILIZATION

A. Use of Provincial Hospitals

Region	Established no.beds	Actual no.beds	Inpatients	Inpat days	Daily no.inpats	Length of stay	Bed occupancy	Actua bed oc
NOR	1574	1765	77747	483703	1325,21	6,22	84,19	75,0
EAST	5657	6399	250309	1815517	4974,02	7,25	87,93	77,7
WEST	4944	5296	180255	1363359	3735,23	7,65	75,55	70,5
GSH	1578	1744	76544	545940	1495,73	7,13	94,79	85,7
RX	249	347	24605	134740	369,15	5,48	148,25	106,3
TBH	1611	2106	85036	592983	1624,61	6,97	100,84	77,1

B. Vaccination Coverage 1985 (Epicomments July 1987 Vol.14 No.7)

	PERCENTAGE		
	West	North	East
TB/BCG	53%	72	77
MEASLES	97	79	82
POLIO	116	104	94
DPT	117	98	93

N.B: Only first dose coverage is quoted

WHY THE REGIONS SHOULD EXIST

The summary table illustrates the regional differences in terms of population size and the distribution of the elderly and the young in the different regions of the Cape Province. The Western Cape has the largest population and also contains the only planning region with a proportion of elderly greater than 7.5%. The Eastern and Northern Cape regions, in contrast, have more areas with large proportions of young children.

The SMR's for respiratory diseases and nutritional diseases are higher in the Eastern Cape and Northern Cape while the SMR for Cerebrovascular disease is higher in the Western Cape.

The notification patterns for typhoid and measles are markedly different in the three regions with the Western Cape somewhat better off in this regard.

The differing doctor:population ratios and bed:population ratios together with the different levels of vaccination coverage in the three regions and different bed occupancy rates and lengths of stay of patients, are all indications that the three regions are 'different'.

All these factors suggest that the health problems in these regions need to be addressed at regional level.

PROPOSALS FOR REGIONALIZATION OF TOTAL HEALTH SERVICES IN THE CAPE PROVINCE

The author would have preferred using the smallest geographical unit for which data was available as the building blocks for a system of regionalization.

However, this would have been an unrealistic approach, for the present, as all information is being provided in terms of not only Magisterial districts and Statistical regions, but also the slightly larger Planning regions that are spelled out in the Physical Development Plan.

This Plan is being implemented at all levels of service delivery and in all spheres and it would have been foolhardy not to take it into account.

Furthermore, as the planning region boundaries follow the boundaries of magisterial districts, the variation in circumstances between magisterial districts (the smallest units) could be taken into account in the proposals.

Happily, the proposals for regionalization are based on a 'macro' approach as mentioned earlier, and the use of planning regions for the development of these proposals is therefore not crucial.

A Planning Region is defined in the first proposed revision of the National Physical Development Plan, thus:

> "'n Beplanningstreek is derhalwe 'n sinvolle fisiese, ekonomiese en maatskaplike eenheid, waarbinne daar 'n sekere mate van inter-afhanklikheid en homogeniteit, sowel as 'n streekgevoel onder die inwoners bestaan."
>
> (18)

It should be noted that regional subdivisions are to a large extent determined by the purpose of regionalization, e.g. subdivisions for roads will be different from those of schools. To regionalise health services, the major criteria should be health and health-service related, therefore.

However, "non-health" factors, such as economic development, topography, natural resources, sources of power and transport, have so profound an effect on health service delivery that they need to be taken into account in regionalizing health services. It is significant that the Department of National Health was represented on the Guide Plan Committees that demarcated the various Planning Regions.

At the present time hospitals represent the main concentration of health resources, professional skills and medical equipment. They should, throughout the Cape Province, play a crucial role in the provision of Primary Health Care.

There is no antithesis between hospitals and primary health care as is so eloquently spelled out in the WHO Technical report number 744 (19).

It is this philosophy that should underpin the provision of total health services in the Cape Province.

The existing hospicentric regions in the Cape Town Metropolitan Area, which are attached to the medical schools, should be retained provided that hospitals extend their responsibilities into the communities that they were built to serve and add an important dimension to their traditional curative roles.

Primary Health Care can only reach its full potential if it is supported by the hospitals.

It is salutary to note that the Minister of National Health stated that the thrust of the health services in this country, under the New Health Plan, would be PHC.

What follows now is a description of the various regions and subregions that are identified as forming the basis for the proposed system of regionalization.

THE REGIONS

As mentioned earlier, the Three Academic Hospital Regions in the Cape Town Metropolitan Region, viz. Groote Schuur Hospital Region,

the Red Cross Hospital Region and the Tygerberg Hospital Region, can continue to form the focal points for all health services in the respective regions.

The Western Cape Region, Northern Cape Region and Eastern Cape Region can continue to exist with certain modifications.

The boundaries of these geographic regions need to be adapted as far as is possible to those of the development Regions of the National Physical Development Plan.

Based on the information gathered, it is deemed necessary that sub-regions be established in:

(a) the Southern Cape,
(b) Gordonia
(c) Border
(d) the Port Elizabeth-Uitenhage Metropolitan area.

What follows is an account of each of these proposed sub-regions together with the reasons for identifying them as special areas.

THE SOUTHERN CAPE

A. Location

The Southern Cape sub-region is identified as the area covered by Planning regions 5, 6 and 7.

It includes Statistical regions 03, 04, 05 and 06.

These Statistical regions, in turn, include the Magisterial districts of Caledon, Bredasdorp, Robertson, Montagu, Swellendam, Heidelberg, Ladismith, Riversdale, Calitzdorp, Oudtshoorn, Mossel Bay, George, Knysna, Uniondale and Joubertina.

B. Geography

1. Topography

The region is divided into a coastal plain, coastal plateau and Little Karoo by a series of mountain ranges.

2. Climate

The Winter rainfall area ends in the Caledon, Bredasdorp, Hermanus area with the areas of perennial rainfall stretching from the Swellendam-Heidelberg area eastwards along the coast. The area around Oudtshoorn has dry, hot summers and temperate winters with low rainfall.

3. Vegetation

The vegetation ranges from Deciduous forests to succulents. There are large areas of fynbos together with grasses.

C. Physical Infrastructure

1. Roads

The N2 National road from Cape Town to Durban runs from West to East linking towns like Heidelberg, Swellendam, Riviersonderend, Caledon and Grabouw to Riversdale, George and Mossel Bay through to Knysna and Plettenberg Bay.

Other main roads link Ladismith, Montagu, Barrydale which is linked to the N2 via the Tredoux Pass; roads also connect the coastal towns to the N2 near Bot River; trunk roads reflect the movement of traffic within this sub-region e.g:

(i) from George to Mossel Bay;
(ii) Oudtshoorn and Langkloof via the Outeniqua Pass to George;
(iii) Oudtshoorn is also connected to Calitzdorp, Prince Albert and Beaufort West.

Oudtshoorn, by virtue of its location, is connected with the surrounding towns via mountain passes. This hampers the flow of traffic somewhat and can obviously influence the delivery of health care to the town.

2. Railways

All the major towns in this proposed sub-region are connected to Cape Town and the interior. The railway link serves as the important access route to the inland markets, viz. Orange Free State and Transvaal.

3. Harbours

Hermanus and Gans Bay serve as harbours for the fishing industry while there are mooring facilities at Lower Langvlei, Swartvlei, Knysna Lagoon, Keurbooms River and Gericke Point.

4. Airports

The modern regional P W Botha airport at George fulfills an important function in that it is part of the national network. Air Cape also uses this airport.

There are also smaller airports at Swellendam, Hermanus and Bredasdorp.

5. Electricity

George municipality has a power station of its own, but is also linked to the national ESCOM grid.

Oudtshoorn has a generator which can supply 50% of its needs, but it, too, is connected to the national grid.

6. Water

There are a number of dams in the sub-region.

There are a number of State water schemes, e.g. at Riviersonderend, Elandsvlei, Buffeljagts River, etc.

The Garden Route dam provides water to the George area and the water purification works at George have a capacity of 27 megalitres per day.

Oudtshoorn obtains water from two dams plus the Rust-en-Vrede springs.

D. Economic Activities

The economic activities in the Sub-region ranges from oil exploration to agriculture to forestry and recreation. There were some 110 light industries and 32 heavier industries at George in 1980. There were 21 industries around Knysna in 1983, employing 1400 people. Around Oudtshoorn there are limestone deposits that are mined and while agriculture is limited by shortages of irrigation water; tourism is an important industry in the area.

Fishing is another industry along the coastline.

E. Demography

The following figures were derived from the 1985 Census and the reader is reminded of the problems of the undercount as mentioned earlier.

Total Population	:	398,786
Whites	:	97,506
Coloured	:	270,121
Asian	:	157
Blacks	:	31,002

These are the numbers of people for whom total health services need to be delivered in this proposed sub-region.

Population Growth Rate

The population growth in the sub-region for the different groups between 1970 and 1980 was as follows:

Overall Population Growth	:	4.01%
White " "	:	0.33%
'Coloured' " "	:	1.95%
Asian " "	:	9.76%

No figures for Black population growth in the area could be obtained.

A look at the child population and the geriatric population will give us some idea of the age structure of the population and will also give one some idea of the potential need for the different types of services.

The Young - Under 15 Years

Total number:	127,423	viz. 31.9%	of the population
Whites :	21,503	viz. 22%	of the White population
'Coloureds' :	99,347	viz. 36.7%	of the 'Coloured' population
Asian :	40	viz. 25.5%	of the Asian population
Black :	6,533	viz. 21%	of the Black population

The Old - Over 65 Years

Total number:	25,764	i.e 6.4%	of the total population
Whites :	14,861	i.e 15.2%	of the White population
'Coloured' :	9,921	i.e 3.7%	of the population
Asian :	7	i.e 4.4%	of the Asian population
Black :	975	i.e 3.1%	of the Black population

It is important to note the high proportion of children in the 'Coloured' community while the White community has a high proportion of elderly people.

In order to get some idea of the quality of life in the sub-region it was decided to look at the Quality of Life Indicators used in the Population Development Programme. (20)

	TFR	Teen	IMR	Life Exp	Econ	PCI	Lit	Chil	Room D
W	2.4	3.9	13.9	73	206	245.6	100	5.6	51.3
C	3.6	19.7	64.6	59.2	145.2	43	64.6	17.1	141.5
A	0.0	0.0	83.3	59.8	-	-	-	-	-
B	4.9	18	-	-	126.9	35	60	19.6	110.6

The important features in terms of quality of life are the following:

(i) The of teenage pregnancy rate in 'Coloureds' and Blacks.

(ii) The high infant mortality rate in 'Coloureds'.

Note that the high Asian figure is accounted for by the small number of Asians in the area.

(iii) The low per capita income of 'Coloureds' and Blacks.

(iv) The overpopulation of 'Coloured' houses.

F. Health Needs

The health needs of the Southern Cape have been identified in the earlier part of this report.

G. Health Services

The following is merely a list of all the health services in the area. The list is not necessarily complete but includes the major health services.

1. Provincial Hospitals

Knysna	Hermanus
George	Oudtshoorn
Mossel Bay	Ladismith
Riversdale	Swellendam
Bredasdorp	Caledon

i.e 10 Provincial Hospitals

2. Province-aided Hospitals

Villiersdorp

Uniondale

i.e. 2 Province-aided Hospitals

3. CPA Day Hospitals or Clinics

Karatara	George
Pacaltsdorp	De Rust
Oudtshoorn	Calitzdorp
Herbertsdale	Groot Brakrivier
Albertinia	Stilbaai
Barrydale	Stanford
Hawston	Kleinmond
Grabouw	

i.e. 15 CPA Day Hospitals/Clinics

4. Municipal Clinics

Knysna	Plettenberg Bay
George	Blanco
Oudtshoorn	Swellendam
Bonnievale	Caledon
Villiersdorp	Grabouw
Hermanus	Mossel Bay

i.e 12 Municipal Clinics

5. Divisional Council Clinics

Plettenberg Bay	Knysna
George	Elim
Herold	Stanford
Dysseldorp	Hawston
De Rust	Kleinmond

Groot Brakrivier	Betty's Bay
Pacaltsdorp	Botrivier
Mossel Bay	Oudtshoorn
Herbertsdale	Klein Brakrivier
Calitzdorp	Albertinia
Zoar	Vanwyksdorp
Ladismith	Riversdale
Stilbaai	Heidelberg
Zuurbraak	Barrydale
Slangrivier	Swellendam
Stormsvlei	Riviersonderend
Napier	Bredasdorp
Skipskop	Waenhuiskrans
Struisbaai	Agulhas
Greyton	Genadendal
Caledon	

i.e 41 Divisional Council Clinics

6. Maternity Services

Grabouw

Kleinmond

Oudtshoorn

i.e 3 units that deliver infants

7. Combined Services

Grabouw	Kleinmond
Hawston	Barrydale
Oudtshoorn	Groot Brakrivier

i.e. 6 units where services are combined

8. Community Health Centres

Pacaltsdorp

Albertinia

Calitzdorp

i.e 3 'custom-built' CHC's

Inpatient Beds

The following is a list of inpatient beds in both public and private institutions as was the case in 1983. The beds are listed per magisterial district.

Magist. District	Total	White	'Coloured'	Asian	Black	Unclass-fied
Uniondale	16	8	0	0	0	8
Oudtshoorn	228	99	0	0	0	129
Ladismith	48	20	0	0	0	28
Knysna	126	36	0	0	0	90
George	268	111	0	0	0	157
Mossel Bay	105	48	0	0	0	57
Riversdale	98	39	0	0	0	59
Caledon	107	50	0	0	0	57
Hermanus	33	10	0	0	0	23
Bredasdorp	54	22	0	0	0	32
Swellendam	57	20	0	0	0	37
GRAND TOTAL	1140	463	0	0	0	677

Source: CSS Report 20-06-07

Bed:Population Ratio

The bed:population ratio for this proposed sub-region is 2.85 beds per thousand people.

For the White population it is 4.74 beds per thousand, while for the rest it is 2.25 beds per thousand.

Doctor:Population Ratio

According to the Central Statistical Services Report no.20-03-02 there were a total of 149 doctors in the Southern Cape sub-region in 1979.

Using the 1980 Census as denominator, the doctor:population ratio was found to be 1:2,173. Naturally, this figure would have changed by now, but it does give one some idea of the medical manpower situation in the area.

Nurse:Population Ratio

According to Bradshaw, Botha and Gonin, the nurse:population ratio is at best 1:132 for SRN's and 1:228 for SEN's, and at worst 1:230 for SRN's and 1:429 for SEN's.

These ratios are all very favourable and are far better than the 1:2,500 recommended in the National Health Services Facilities Plan.

H. Budget

The figures are at best speculative and should be viewed as providing no more than a very rough guide to the possible cost of health service delivery in this sub-region.

For example, the figures derived from the Annual Report of the Director of Hospital Services do not include figures for administrative costs.

The following is a table illustrating the operating costs of hospitals in this sub-region as per the DHS Annual Report for 1985.

Town	Personnel	Cost in Rands		Ops exp (%)	Total
	(%)	Consumbls (%)	Non-Cons(%)		exp.
George	4364415 (59)	2443122 (33)	173663 (2.3)	367846 (5)	7349046
Knysna	1740609 (64)	797085 (29)	41562 (1.5)	140187 (5)	2719443
Mossel Bay	1371526 (67)	539665 (67)	10421 (0.5)	106445 (5.2)	2028057
Oudtshoorn	3331872 (68)	1220076 (25)	38269(0.78)	277690 (5.7)	4867907
Bredasdorp	412771 (69)	134304 (22.5)	8379 (1.4)	39449 (6.6)	594903
Caledon	999006 (68)	354757 (24)	21780 (1.5)	79901 (5.4)	1455444
Hermanus	450067 (70)	132852 (20.6)	8358 (1.3)	52936 (8.2)	644213
Ladismith	420989 (81)	60064 (11.5)	8523 (1.6)	29062 (5.6)	518638
Riversdale	1037966 (72)	295490 (20.6)	12148(0.84)	87731 (6.1)	1433335
Swellendam	618470 (71)	172465 (20)	12197 (1.4)	59644 (6.9)	862776
TOTAL					R22,473,762

The calculation of the cost of preventive services for 1985 was based on the budget for the Health Department of the Cape Town City Council for that year at worst, and the cost of primary health care as delivered in Section 30 areas by the Department of National Health and Population Development, at best.

The figure is calculated by applying the cost of preventive health services per capita of population to the population as enumerated in the 1985 census.

The reader is again reminded of the undercount in the census and is also advised to consult the three different projections or estimates of population figures by the HSRC, the CSS and the Section Epidemiology of the Department of National Health and Population Development, should the extent of the undercount be sought. (12)

The per capita expenditure on services rendered by the Department of Health of the City Council for 1985 was R13.89c. (19)

The per capita expenditure in Section 30 areas by the Department of NHPD for 1985 was R3.00c for PHC. (16)

The application of these figures to the population in the sub-region gave the following results:

At worst : R5,499,259

At best : R1,196,358

N.B: See comments on the financial implications of regionalization later in this report.

THE REASONS WHY THE SOUTHERN CAPE SHOULD BE PROCLAIMED A SUB-REGION

1. The Southern Cape forms a geographical sub-unit. It is separated from the Cape by mountain ranges so that its proximity to the Cape is somewhat offset by this fact.

2. The discovery of offshore oil has set the scene for a tremendous boom in this sub-region which will have an inevitable impact on the health requirements in this area.

3. The health needs in this area has certain regional characteristics which will require a regional approach, e.g Ischaemic Heart Disease, teenage pregnancies, low per capita income. The health indicators for this sub-region would therefore differ from those in the rest of the Western and Eastern Cape.

   The mortality and morbidity data that form part of this report can form the basis for a system of regional indicators.

4. The existing health services as evidenced by the bed:population ratio as well as the excellent network of clinics in the sub-region makes it viable in terms of health service delivery. The doctor:population ratio is not satisfactory which, in turn, means that the strategy for health care in this part of the world needs to be different from more 'doctor rich' areas.

5. The increase in required resources need be minimal as the region can be administered from the George hospital. The exact cost implications are being looked into at present.

   Whatever cost is incurred should be offset by the expected cost savings that accrue from regionalization.

   At the same time, rendering a comprehensive service would save costs as unnecessary duplication together with more effective use of available staff should follow.

THE COUNTER-ARGUMENT

Obviously one cannot anticipate all the problems that might arise when such a sub-region may be proclaimed but the only problem that the author foresees is that people who live nearer to the Cape may not traditionally regard George as their main centre. This can be overcome by merely extending the boundaries of the Cape Metropolitan region, thus excluding some of the magisterial districts from this sub-region.

The other argument is that regionalization costs money and, in spite of the longterm savings, the economy does not allow additional expenditure at present. (See Comments later.)

GORDONIA

A. Location

This sub-region would include Planning Regions 16 and 17 which in turn include Statistical Regions 15 and 17.

It encompasses the magisterial districts of Gordonia, Kenhardt, Carnarvon and Prieska.

B. Geography

1. Topography

There are isolated koppies in some parts of this sub-region with numerous hills and ridges.

The area is crossed by the Orange River from east to west. Sand dunes are found mainly in the north.

2. Climate

The climate is generally hot and dry desert/semi-desert in nature. Rainfall averages less than 200mm per annum and is mainly Summer rainfall.

The coldest months, viz. June and July, have temperatures of -5 C.

The average temperature is 28.4 C with the hottest months, viz. December and January, having temperatures of 35 C.

3. Vegetation

The Natural vegetation is sparse and consists mainly of dwarf bushveld and grass. In the Orange River bed one finds lush karee and thorn trees.

C. Physical Infrastructure

1. Roads

Upington is the natural centre for this proposed sub-region and has trunk roads linking it with SWA/Namibia via Nakop; it is linked to the National Road at Springbok via Concordia; it is linked with the south via Keimoes, Kenhardt, Brandvlei and Calvinia; it is also linked to Kimberley via the trunk road to the east; and it is also linked with the north via Vryburg.

2. Railways

There are rail links to the north and south via Upington, which is an important railway centre owing to its strategic position. Trains from SWA/Namibia pass

through Upington daily and a Railway Bus Service runs to Cape Town every week.

These rail links, including those to towns within the sub-region, are very important as the area is mainly agricultural and the railways are a cheap form of transport.

3. Airports

The SAA has regular flights to Upington and in addition there is a private air service, viz. Walker Flying Services.

4. Electricity

Escom is the supplier of electricity to most of this sub-region.

5. Water

The Orange River is a major source of water in the area. In 1977 Upington consumed 7,830 kilolitres per day.

D. Economic Activities

The intensive agriculture on the Orange River banks and its surrounds is an important economic activity.

Asbestos mining in the Prieska area was an important activity but with the falling sales worldwide of blue asbestos this source of income and employment may well be jeopardized.

Upington has been identified as a growth pole and one expects that there will be an increasing tempo of economic development in the area. There is an expanding light and service industry sector.

E. Demography

The following figures are derived from the 1985 Census and the reader is again reminded of the undercount.

Total Population	:	145,374
Whites	:	21,894
'Coloured'	:	105,914
Asian	:	54
Black	:	17,512

As can be seen, the number of people in this proposed sub-region is small and one may ask, why propose this an area for special health care delivery. This question will be addressed later in this section.

The Young : Under 15 Years

Total number:	53,110	viz.	36.5%	of the population
Whites :	5,866	viz.	26.7%	of total White population
'Coloured' :	42,623	viz.	40%	of total 'Coloured population
Asian :	21	viz.	38%	of total Asian population
Black :	4,600	viz.	26%	of total Black population

The Old : Over 65 Years

Total number:	7,899	viz.	5.8%	of the population
Whites :	2,471	viz.	11.2%	of total White population
'Coloured' :	4,822	viz.	4.5%	of total 'Coloured population
Asian :	1	viz.	1.8%	of total Asian population
Black :	605	viz.	3.4%	of total Black population

The high proportion of children in the 'Coloured' group is again notable while the geriatric section of the White group is larger than the average for the country.

Population Growth Rate

The population growth rate between 1970 and 1980 was as follows:

Whites	: 0.56%
'Coloureds'	: 1.49%
Asians	: 20.81%

The reader is reminded of the small number of Asians in this sub-region. The growth rate should therefore be interpreted with caution.

Similarly, the growth rate of the Black population for this sub-region is not known and the overall growth rate can therefore not be calculated for the total population.

The Quality of Life Indicators used in the Population Development programme gives some idea as to the quality of life people in the Gordonia sub-region. (20)

	TFR	Teen	IMR	Life Exp	Econ	PCI	Lit	Chil	Room B
W	2.55	4.4	15.5	71	164.2	270.5	100	8.4	54.5
C	3.6	17.2	81.4	55.1	201.6	37	54	21.05	140.5
A	0.1	25	0.0	66.1	-	-	-	-	-
B	4.1	23.1	-	-	110.8	21.5	55	20.8	131

The high 'Coloured' IMR together with the low life expectancy (which is to be expected) gives cause for concern, to which one can add the high TFR in 'Coloureds' and Blacks.

The low literacy rate in 'Coloureds' and Blacks reflect a generally poor quality of life, which is reflected in turn, by the mortality and morbidity profile of the area.

The low Per Capita Income in these two groups further suggest that health needs in the Gordonia sub-region are different from elsewhere in the Northern Cape.

F. Health Needs

The health need in this sub-region is indicated by the SMR's for Tuberculosis, Gastrointestinal infections, Respiratory diseases, Ischaemic heart disease, Nutritional deficiencies, and Digestive and Respiratory neoplasms.

G. Health Services

List of Services

1. Provincial Hospitals

Upington
Kakamas
Prieska

2. Province-aided Hospitals

Keimoes
Pofadder
Kenhardt
Carnarvon

3. CPA Day Hospitals, Clinics

Rietfontein

Askham

Noenieput

4. Divisional Council Clinics

Upington	Kakamas
Vanwyksvlei	Carnarvon
Prieska	Marydale

i.e 6 Divco clinics

5. Municipal Clinics

Upington	Keimoes
Kakamas	Kenhardt
Onseepkans	Pofadder

i.e 6 Municipal clinics

Inpatient Beds

There was a total of 483 beds in this sub-region as at 1983. These were located as follows:

Magist. District	Total	White	'Coloured'	Asian	Black	Unclass-fied
Gordonia	304	121	27	0	0	54
Kenhardt	50	17	32	0	0	1
Prieska	63	25	0	0	0	38
Carnarvon	66	20	46	0	0	0
TOTAL	483	183	105	0	0	93

Source: CSS Report 20-06-07

Bed:Population Ratio

The bed:population ratio for this sub-region is 3.32 beds per thousand population.

It is made up as follows:

Whites : 8.3 beds per thousand population
Unclassified : 1.6 beds per thousand population

The overall bed:population ratio is more than double that recommended in the National Health Service Facilities Plan for Whites but the distribution of beds for the other groups leaves much to be desired.

Doctor:Population Ratio

According to the CSS Report no.20-03-02 there were a total of 27 doctors in this sub-region in 1979.

This gave a doctor:population ratio of about 1:5335. This highlights the problem of shortage of skilled medical man-power which bedevils the whole of the Northern Cape Region. The distribution of doctors is as follows:

Carnarvon	2	private		2	full-time	= 4
Gordonia	14	"		3	"	= 17
Kenhardt	2	"		0	"	= 2
Prieska	4	"		0	"	= 4
TOTAL	24	"	+	5	"	= 27

Nurse: Population Ratio

The figures for the Northern Cape Region is again worse than those quoted by Bradshaw and others.

Using the information provided by the Nursing Association, the ratio for the Northern Cape is as follows:

1 SRN	:	459 people
1 SEN	:	1062 people
1 Nursing Assistant	:	481 people

The reader is advised that the figures quoted above are better than is really the case as the boundaries of the Nursing Association include 3 more magisterial districts than was used to determine the denominator population.

H. Budget

What follows serves to give some idea of the cost of health care in this proposed sub-region.

The cost of hospitals in this sub-region is indicated below and the reader is again reminded that these figures are from the Annual Report of the Director for Hospital Services for the year 1985 and do not include administrative or capital costs.

PROVINCIAL HOSPITALS

Hosp.	Personn.	Consum.	Non-con.	Op. Exp.	Total
Kakamas	340815	116695	7870	52837	518217
Prieska	438415	113162	14439	53520	619536
Upington	1980706	945914	43715	209640	3179975
TOTAL					4,317,728

PROVINCE-AIDED HOSPITALS

Pofadder	R122,286	
Carnarvon	598,117	
Keimoes	574,229	
Kenhardt	241,657	
TOTAL	R1,536,289	1,536,289
	GRAND TOTAL:	R5,854,017

Preventive services are again estimated on the basis as before, viz. the Cape Town City Council Health Department expenditure on the one hand, and the Section 30 areas expenditure, on the other.

At worst : R2,004,707

At best : R436,122

TOTAL health care costs therefore at worst: R7,858,724

at best : R6,290,139

THE REASONS WHY GORDONIA SHOULD BE PROCLAIMED A SUB-REGION

1. The population of the proposed sub-region is sparse and spread over a large area, thus making the delivery of services unique. The nature of the service would depend largely on 'wheels', i.e. mobile services.

2. The health needs as reflected by the SMR's indicate a need for PHC in the area.

3. This is reinforced by the poor doctor:population ratio and the lower than average nurse:population ratio.

   The use of scarce manpower would therefore need to be 'different'.

4. Upington has been identified as a growth point and the hospital in Upington would be the ideal headquarters for this proposed sub-region.

5. The sub-regional division of Gordonia will take the pressure off Kimberley.

   The presence of fragments of Bophutatswana in the Eastern section of the Northern Cape with the inevitable cross-boundary flow of patients, makes this move even more feasible.

THE POSSIBLE PROBLEMS

The major problem may be one of population size. The proposed sub-region only has 145,374 people (1985 census figures) and it may not therefore warrant its independence from Kimberley.

THE EASTERN CAPE

The Eastern Cape is an area which has major health problems as is indicated by the SMR's and possibly by the notification data listed earlier in this report.

The author has identified three sub-regions in the Eastern Cape worthy of mention. These are the Port Elizabeth-Uitenhage Metropolitan Area (PUMA); the Border Area; the Eastern Cape Rural Area.

A discussion of the Port-Elizabeth-Uitenhage Metropolitan Area now follows.

THE PUMA

A. Location

The PUMA includes Planning Region 40 which in turn coincides with Statistical Region 47.

B. Geography and General Background

The development of agriculture in the Eastern Cape has made Port Elizabeth a major port for export and import of especially wool and mohair. These two products also led to the establishment of industry in Port Elizabeth.

Food processing and leatherworks followed in the wake of this agricultural development.

During the 1920's, the PE-Uitenhage complex emerged as the prime motor assembly area in the country. This was largely due to the presence of the port, the cheap land and cheap labour. The motor industry led to the development of many related activities in the area.

However, since the 1960's, various industries have tended to migrate to the north in order to be nearer its markets. The added attraction was the presence of raw materials plus cheap labour near to the markets in the north.

Manufacturing accounts for 40% of the gross geographical product and at the same time provides employment for 33% of the workforce. The motor and related industries account for 60% of all economic activities in the area.

The only minerals found in the hinterland of the PUMA are salt, limestone and kaolin.

Tourism has not been developed optimally even though the potential exists.

Development Problems

The area has a number of development problems. Firstly, it is situated far from the markets.

Secondly, the economy of the area is dependent on the very fickle motor industry.

The social infrastructure is limited and the labour in the area is largely unskilled.

These problems have inevitably affected health services and the delivery of health care.

Demography

The total population in this sub-region is 651,993.

Whites	:	173,273
'Coloureds'	:	172,186
Asian	:	7,346
Black	:	299,188

The reader is again reminded of the problems with the undercount in the 1985 census from which these figures are derived.

The Young : Under 15 Years

Total number:	197,806	viz. 30.3%	of the population
Whites :	44,512	viz. 25.7%	of White population
'Coloured' :	1,820	viz. 35.9%	of 'Coloured' population
Asian :	2,319	viz. 31.5%	of Asian population
Black :	89,155	viz. 29.8%	of Black population

The Old : Over 65 Years

Total number:	31,585	viz.	4.8%	of total population
Whites :	14,797	viz.	8.5%	of White population
'Coloured' :	5,272	viz.	3.1%	of 'Coloured' population
Asian :	304	viz.	4.1%	of Asian population
Black :	11,212	viz.	3.7%	of Black population

The well-known distribution of the young and the old in this area is in keeping with the average for the country.

Population Growth Rate

Reliable estimates of the population growth rates are not available.

The quality of life indicators used in the Population development Programme are as follows: (20)

	TFR	Teen	IMR	Life Exp	Econ	PCI	Lit	Chil	Room D
W	1.8	8.4	10.1	71.2	136.2	287	100	8.9	63
C	3.5	14.6	50	55	-	48	-	-	147
A	2.8	2.3	5.7	61	140.1	144	97	7.4	93
B	-	-	-	-	-	36	-	-	143

The lack of indicators for the Black population is interesting and one can speculate about the reasons for this. One

must bear in mind that the Black population form by far the majority of the people in this area.

The figures overall are better than in the Gordonia district but room density is worse in the PUMA.

D. Health Needs

The SMR's for Whites, 'Coloureds' and Asians reflect major problems relating to Tuberculosis, gastrointestinal infections, Respiratory Diseases, Ischaemic Heart Disease, Nutritional Deficiencies and respiratory and Thoracic Malignant Disease. Health needs, or rather demand, are further reflected in the PUMA REPORT which spells out the problems relating specifically to hospitals in this area. (22)

Suffice it to say, that compared with the other Metropolitan areas in the Cape province, the PUMA needs to have the health profile of its inhabitants improved.

F. Health Services

What follows is a list of the major health services available in this area.

Provincial Hospitals

Provincial Hospital, Port Elizabeth

Livingstone Hospital

Dora Nginza Hospital

Provincial Hospital, Uitenhage

Province-Aided Hospitals

Nil

CPA Day Hospitals/Clinics

Port Elizabeth

Despatch

Uitenhage

Divisional Council Clinics

Coega x 1

Uitenhage x 6

Municipal Clinics

Port Elizabeth x 14

Despatch x 3

Uitenhage x 8

Inpatient Beds

Mags D	Total	White	'Col'	Asian	Black	Unclass.
PE	2247	707	35	0	30	1475
Uitenhage	404	143	0	0	0	261
TOTAL	2651	850	35	0	30	1736

Source: CSS Report 20-06-07

Bed:Population Ratios

Total	White	'The Rest'
4/1000	4.9/1000	3.8/1000

There is certainly no shortage of inpatient beds in this area.

Number of Doctors

The number of doctors in the area in 1979 were:

Port Elizabeth	154	private	191	full-time	
Uitenhage	25	"	16	"	
TOTAL	179	"	207	"	= 386.

Doctor:Population Ratio

This gives a doctor:population ratio of 1:1689.

This ratio, while not as good as in developed countries, compares more than favourably with the WHO recommendation for 'Underdeveloped' countries.

F. Budget

The following are the figures given in the DHS Annual Report of 1985:

Hospital	Personn.	Consum.	Non-con.	Op. Exp.	Total
Dora Nginza	5222044	1338615	18616	404238	6983513
Livingstone	22519193	10735110	386208	4319980	37960491
PE Provincl	17984765	9450813	1939959	2002259	31377796
Uitenhage	6370352	2724220	102036	836464	10033072
TOTAL					86,354,872

This figure gives a per capita expenditure of R138 for 1985. It should be noted, however, that the DHS Report does not give figures for administration.

The cost of running the Divisional Council and Municipal Clinics can only be determined if and when the figures become

available. These figures were not to hand at the time of this report.

However, if one uses the figures of the Cape Town City Council for 1985 and applies the per capita expenditure to the population of the PUMA, the cost of preventive services at worst will be R8,8990,983. When one applies the cost of providing PHC to the Section 30 areas, the cost will be about R2,000,000.

At worst, therefore, total health care could cost in the region of R95,000,000 and at best R88,500,000.

These figures do not include State Health Institutions or the private sector.

THE REASONS WHY THE PORT ELIZABETH-UITENHAGE METROPOLITAN AREA SHOULD BE A SUB-REGION

1. The size of the population is sufficient justification for regarding the area separately.

2. The obvious health problems in the area further justify a regional (or sub-regional) approach in order to address these.

3. The parlous state of the economy in this area makes its needs 'special'.

4. The influx of people from the surrounding homelands inevitably tax the health services in this area.

5. The advantages of addressing the problems in the PUMA as distinct from those in the rest of the Eastern Cape lie therein that services can be streamlined to address the peculiar needs of this, the only other metropolitan area in the Cape Province. It is interesting to note that the Cape Metropolitan Area has no fewer than 3 regions. While one accepts that the Medical Schools are situated in Cape Town, it is difficult to justify the situation if one is looking at population figures and health needs.

A comparison between the Eastern Cape and Western Cape hospital regions as spelled out in the PUMA Report serve to emphasize the imbalance in budgetary expenditure in these regions.

The following table compares the Academic Hospital Regions with the Eastern Cape Region:

	Academic	**Eastern Cape**
Actual no. of beds	3874	6466
OPD attendances	2,489,061	2,862,842
Expenditure	R292,428,109	R169,128,495
Cost per bed	R75,484	R26,156

OR

Cost per OPD visit	R117	R59
No. of posts per bed	4.5	2.07

Source: DHS Report 1985

Clearly, the use of the scarce resources in the Eastern Cape can only be optimized if the PUMA is administered regionally. The Provincial Hospital in Port Elizabeth can serve as the headquarters for this sub-region.

THE BORDER SUB-REGION

This sub-region has problems which relate directly to location.

A. Location

This sub-region includes Planning regions 21, 20 and 11, and this in turn means Statistical Regions, 35, 36, 37 and 38. The most important feature is its proximity to the Transkei and the Ciskei.

B. Background

The Border Region is subject to the same problems of unemployment, lack of economic growth and all the social ills associated with it.

The major towns in the area are:

East London
King William's Town
Queenstown

C. Physical Infrastructure

1. Roads

Major roads connect East London with most of the major towns in the Border sub-region, e.g King William's Town, Cathcart, Queenstown and Aliwal North in the north.

Major roads in the north connect towns like Molteno in the west with Maclear in the east.

The National Road links East London with the Transkei and Ciskei and via the N2 she is linked to the Southern Cape and through the coastal road to Cape Town.

2. Railways

Railway connections link East London to the inland areas in the north, as well as with Natal and the Cape.

East London is the natural centre of the Border region.

3. Airport

East London is part of the SAA network and this makes the Border region eminently accessible.

D. Economic Activities

A strong development axis is developing between East London via Berlin, Mdantsane and King William's Town in the direction of Queenstown.

E. Demography

Figures are derived from the 1985 Census Report and readers are reminded of the undercount.

Total Population	:	437,396
Whites	:	110,221
'Coloureds'	:	47,386
Asian	:	3,278
Black	:	276,511

The figures for the Black population, especially, bear no relationship with the health care needs in the area, as there is a continual flow of people from the homelands, making rational planning of health services impossible.

The Young : Under 15 Years

Total	: 160,742	viz. 36.7%	of total population
Whites	: 28,358	viz. 25.7%	of White population
'Coloured'	: 18,229	viz. 38.5%	of 'Coloured population
Asian	: 1,070	viz. 30.0%	of Asian population
Black	: 113,099	viz. 40.9%	of Black population

The youthfulness of the Black community is reflected quite clearly by these figures.

The Old : Over 65 Years

Total	: 30,623	viz. 7%	of total population
Whites	: 13,359	viz. 12%	of White population
'Coloured'	: 1,938	viz. 4%	of 'Coloured population
Asian	: 107	viz. 3.2%	of Asian population
Black	: 15,219	viz. 5.5%	of Black population

The large proportion of elderly Whites again has important implications for health service delivery.

Population Growth Rate

Reliable estimates of the population growth rate are not available.

On looking at the quality of life indicators used in the Population Development Programme a very bleak picture emerges:

	TFR	Teen	IMR	Life Exp	Econ	PCI	Lit	Chil	Room D
W	2.7	4.7	8.2	71.2	161.6	263	99.3	11.2	54.3
C	3.7	16	68	55.2	184.2	42	63.3	18.4	146.3
A	0.96	1.2	24.1	61	-	-	-	-	-
B	4.96	15.8	-	-	159.3	14.3	42.3	28.9	175

Source (20)

Striking by its absence is the IMR for Blacks. The IMR as calculated by Irwig et al for the Transkei was 130/1000 and one can assume that this figure applies to some parts of the Border sub-region.

In fact, the IMR for 'Coloureds' in Planning Region 11 is given as 137.7 in the Population Development Programme Report.

The literacy rate, per capita income, room density and economic dependency ratio, all indicate a poor quality of life.

F. Health Needs

The poor quality of life is reflected in the SMR's for this area.

Gastroenteritis, respiratory disease, tuberculosis, nutritional deficiencies on the one hand, and Ischaemic heart disease in certain areas, cerebrovascular accidents and respiratory malignancy on the other hand, are important causes of a disproportionate number of deaths in the Border sub-region.

Notification data, with all its shortcomings, suggest that this is a sub-region of extreme deprivation.

It stands to reason, therefore, that these health needs should be addressed on a regional basis with regional strategies and regional indicators for monitoring of progress in improving the health status of people.

G. Health Services

As was done in the foregoing sections, a list of the more important public sector health facilities in this proposed sub-region is provided.

As before, the list is provided in order that the spatial order of facilities can be appreciated and does not always include the actual numbers of the facilities.

List of Services

1. Provincial Hospitals

East London	King William's Town
Cathcart	Elliot
Barkly East	Queenstown
Steynsburg	Burgersdorp
Aliwal North	

2. Province-Aided Hospitals

East London	Komga
Stutterheim	Tarkastad
Sterkstroom	Molteno
Dordrecht	Indwe
Maclear	Jamestown
Aliwal North	Lady Grey

3. CPA Day Hospitals/Clinics

East London

King William's Town

Venterstad

4. Divisional Council Clinics

East London	Kei Mouth
Komga	Kei Weg
Stutterheim	Cathcart
Sterkstroom	Molteno
Tarkastad	Dordrecht
Wodehouse	Elliot
Ugie	Maclear
Barkly East	

i.e 15 Divco clinics

5. Municipal Clinics

East London	Komga
Stutterheim	King William's Town
Cathcart	Queenstown
Tarkastad	Indwe
Elliot	Steynsburg
Burgersdorp	Venterstad
Aliwal North	Beacon Bay

i.e 14 Municipal clinics

Inpatient Beds

Magist. District	Total	White	'Coloured'	Asian	Black	Unclass-fied
East London	967	372	11	1	22	561
K.Williams	225	72	0	0	0	153
Komga	34	11	0	0	0	23
Stutterheim	69	16	2	0	51	0
Cathcart	89	16	0	0	0	73
Queenstown	312	89	0	0	208	15
Tarkastad	63	20	0	0	0	43
Molteno	68	11	2	0	55	0
Barkly East	67	21	0	0	0	46
Wodehouse	66	16	0	0	0	50
Indwe	34	12	0	0	0	22
Elliot	56	12	0	0	0	44
Maclear	70	10	10	0	50	0
Lady Grey	58	14	5	0	39	0
AliwalNorth	276	47	20	0	81	128
Albert	50	16	0	0	0	34
Steynsburg	60	20	10	0	30	0
TOTAL	2564	775	60	1	536	1192

Source: CSS Report 20-06-07

Bed:Population Ratio

This gives a total bed:population ratio of 5.86 beds per thousand people.

Whites	:	7.03 beds per thousand
The Rest	:	5.46 beds per thousand

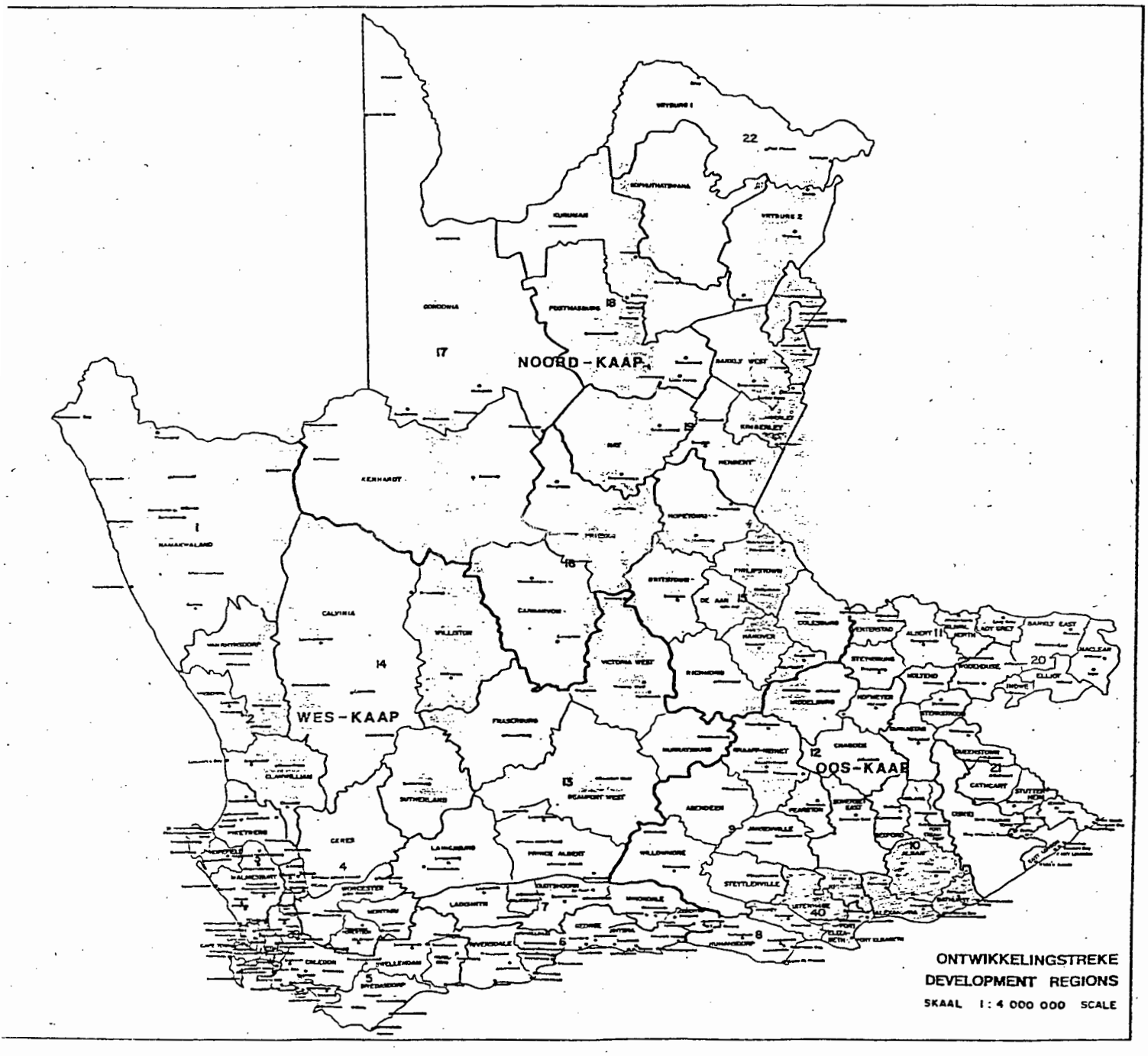
The ratio of beds to population is better than the 4/1000 recommended in the National Health Facilities Plan.

Doctor:Population Ratio

The distribution of doctors in this proposed sub-region is as follows:

Aliwal North	5	private	0	full-time
Barkly East	2	"	0	"
Cathcart	2	"	2	"
Elliot	2	"	2	"
Indwe	1	"	0	"
King William's	14	"	8	"
Komga	3	"	0	"
Lady Grey	1	"	0	"
Maclear	4	"	1	"
Molteno	2	"	0	"
East London	94	"	87	"
Queenstown	14	"	12	"
Steynsburg	2	"	0	"

Stutterheim 2 " 2 "



Tarkastad	1	private	0	full-time	
Wodehouse	1	"	0	"	
TOTAL	148	+	112	=	260

The doctor:population ratio therefore was 1:1682.

(Source: CSS Report 20-03-02)

Nurse:Population Ratio

The figures for the whole of the Eastern Cape are as follows:

72 people per SRN
175 people per SEN
102 people per Nursing Assistant

This ratio between nursing staff and population is more than satisfactory.

H. Budget

The figures below are from the Annual Report of the Director of Hospital Services for 1985.

Hospital	Personn.	Consum.	Non-con.	Op. Exp.	Total
Aliwal North	884344	272913	27512	75929	1260698
Barkly East	492678	140767	6031	63739	708295
Burgersdorp	485469	238453	6153	60435	790510
Cathcart	803376	151152	1778	69455	1025756
Elliot	491872	120395	4322	102847	719436
King W's T	2538450	813782	25914	195666	357812
East London	22023219	8165482	576365	1412798	32177859
Queenstown	3745689	1335163	46619	267192	5394663
Steynsburg	383195	88501	1559	40242	513497
TOTAL					46,159,446

Province-Aided Hospitals : R4,692,991

Preventive Services: At worst : R6,031,690

At best : R1,312,188

These two figures were calculated using the same basis as before, viz. the per capita cost for 1985 of the Cape Town City Council and the per capita cost of the Section 30 areas to the Department of Health.

Total Health Services excluding the Department of National Health and Population Development institutions and excluding private enterprise, therefore would at worst be R56,884,133, at best be R52,164,631.

Again, these figures are merely as at 1985 and do not include administration costs.

THE REASON WHY THE BORDER SHOULD BE A SUB-REGION

In spite of an adequate doctor:population ratio and in spite of the more than adequate number of inpatient beds per 1,000 population, the morbidity and mortality profile of this sub-region compares poorly with the rest of the Cape Province. This leads one to the conclusion that the problems of this sub-region are unique.

Furthermore, the geographical location of this corridor between the two homelands, makes rational planning of health services without health information from the homelands, impossible. The continual stream of patients from the homelands to the Border area makes any planning based on population data totally unfeasible.

The author's personal experience of the Transkei and Ciskei health services has made it abundantly clear that the lure of better quality health care will continue for a long time to come.

The problems of health service delivery, especially in the Transkei, are major ones and the whole health service is in a parlous state.

This strengthens the case for a Border sub-region which can address these unique problems in order to find unique solutions.

The rest of the Eastern Cape, viz. the Eastern Cape Rural Areas, will have a population of 451,862 people with a 336-bed hospital

at Grahamstown, which can form the epicentre of this rural sub-region.

THE CASE FOR A WEST COAST SUB-REGION

A West Coast Sub-region comprising Planning Region 3 and including the magisterial districts of Hopefield, Piketberg, Malmesbury and Vredenburg, was considered.

The region has a total population (1985 census figure) of 163,331 with 32,647 Whites,
126,311 'Coloureds'
94 Asians,
4,279 Blacks.

This sub-region would be blessed with 4 Provincial hospitals and 2 Province-aided hospitals.

There are 6 CPA day hospitals, 20 Divisional Council clinics and 6 Municipal clinics.

In toto, there are 310 inpatient beds, giving a bed:population ratio of 1.89 beds per thousand people, which is low. However, in view of the small population and close proximity with easy access along transport routes, to the larger centres in the Cape Town Metropolitan Area, it was deemed that a sub-region could not be justified.

However, the West Coast would qualify as a smaller unit, viz. a "District".

DISTRICTS

It is envisaged that the smallest unit for health service delivery would be a district.

The district boundaries are to be determined by consultation with all those authorities involved in health service delivery together with the communities.

A district would in most cases involve more than one Planning Region but may comprise areas overlapping the Planning Region boundaries, where unavoidable. They should at all times follow magisterial district boundaries, however.

The District should ideally be centred around a district hospital whence health services can be delivered.

THE ECONOMIC IMPLICATIONS OF REGIONALIZATION

Theoretically, the proposals for sub-regionalization should incur minimal additional expenditure, as the administrative work presently being done at regional level would devolve to the level of the sub-region. The posts at regional level can be allocated to the sub-regional office, so that the only additional cost would

be that of office accommodation. This should be well within the compass of the Provincial Administration, economically.

THE NEED FOR A PHILOSOPHY

A philosophy of need?

In identifying additional sub-regions for the delivery of health services in the Cape Province, it has been assumed that the underlying philosophy of any system of regionalization is based on the desire to maintain and improve the health of the people in the Cape Province.

It is this philosophy that underpins the use of indicators of need rather than those of demand in attempting to regionalize health services.

The use of SMR's is in keeping with this philosophy.

However, the purpose for the regionalization of health services is not only to provide equal opportunity of access to those in equal need, but also to deliver health services in the most cost-effective manner possible.

For these reasons it is important that there be a system of indicators whereby monitoring and control of health services can be instituted. These indicators should ideally be adapted to local circumstances and each region/sub-region should develop its

own system of indicators. The indicators should be able to monitor not only efficiency (doing things right), but also effectiveness (doing the right things), so that both process measures as well as outcome measures would be built into the regional/sub-regional indicator system.

And, finally, it is important that the system of regionalization be adapted as circumstances change, so that regionalization is, in the long term, a dynamic ongoing process.

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POPULATION DISTRIBUTION BY PLANNING REGION
BASED ON THE 1985 CENSUS

Planning Region	Total	White	'Coloured'	Asian	Black
40	651993	173273	172186	7346	299188
8	67534	11674	38314	29	17517
9	66849	9716	43430	30	13673
12	109461	14191	31612	80	63578
10	173706	25037	19298	479	128892
21	320308	96581	36980	3190	183557
20	60417	5744	1885	25	52763
11	56671	7896	8521	63	40191
22	74671	10589	7658	392	56032
18	67403	17499	20878	16	29010
19	251508	48897	71593	1335	115827
17	115891	17674	84694	30	13493
16	29513	4220	21220	24	4019
14	25894	5411	20192	1	266
43	16652	5000	4407	7	7238
1	59534	9187	47454	8	2885
2	61273	12322	47545	6	1400
6	171477	49205	107319	82	14871
39	1911521	542705	1068921	18389	281506
5	141606	31190	98173	43	12201
7	85703	17111	64630	32	3930
4	212904	38127	150364	201	24212
3	163331	32647	126311	94	4279
13	63083	10870	46596	33	5584
15	82288	12651	43388	54	26195