SOUTH AFRICA DEMOGRAPHIC AND HEALTH SURVEY 1998

Preliminary Report

Department of Health

Medical Research Council

Demographic and Health Surveys
Macro International Inc.

KEY FINDINGS OF THE SURVEY

Mortality rates

Infant mortality rate: 45 per 1000 live births

Under-5 mortality rate: 59 per 1000 live births

Child mortality rate: 15 per 1000 live births

Maternal mortality ratio: 150 per 100,000 births

***Immunisation coverage in children aged 12-23 months (%)**
Total: 63
Urban: 67
Non-urban: 60
Male: 65
Female: 62

Percent of children 12-23 months with road-to-health card: 75

Breastfeeding (% of infants)
Exclusive breastfeeding 0-3 months: 10
Not breastfed 0-3 months: 17

Knowledge of HIV/AIDS (% of women 15-49): 97

Perceptions about HIV/AIDS (% of women 15-49)
People can protect themselves from HIV/AIDS by using condoms
True: 87
False: 7
People can protect themselves from HIV/AIDS by avoiding public toilets
True: 24
False: 65

Condom use (% of sexually active women 15-49)
Ever used condom: 22
Used condom at last sex: 8

Total fertility rate: 2.9 children per woman

****Contraceptive prevalence (%):** 61

Treatment of women (%)
Ever abused by partner: 13
Abused when pregnant: 4
Ever raped: 4

Antenatal care from doctor/nurse (% of births): 94

Assistance during delivery (% of births in last 5 years)
Doctor: 30
Nurse/midwife: 54

Smoking rate (% of adults age 15+)
All adults: 24
Men: 42
Women: 11
Adolescents age 15-19: 10

Reported asthma prevalence (% of adults age 15+):
Men: 7
Women: 9

Prevalence of hypertension (% of adults age 15+)
Men: 11
Women: 13
Percentage of hypertensives who were controlled
Men: 9
Women: 23

Overweight (% of adults age 15+)
Men: 29
Women: 55

Obesity (% of adults age 15+)
Men: 9
Women: 29

* Childhood immunisation coverage is the percentage of children aged 12-23 months who have received BCG, three doses of DPT and polio, and measles vaccines.
** Contraceptive prevalence refers to the percentage of all sexually active women age 15-49 who are using a modern contraceptive method.

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FOREWORD

The 1998 South African Demographic and Health Survey (SADHS) is the first survey of its kind to be carried out in South Africa since the 1994 democratic national elections. The 1998 SADHS collected information on adult health conditions; sexual, reproductive and women's health; maternal and child health; adult, maternal, child and infant mortality; fertility and contraceptive use. Preparations for the study started in 1995 and the fieldwork was carried out between late January and September 1998.

This report presents preliminary findings from the 1998 SADHS. It provides the results for key maternal and child health indicators including medical care for mothers during pregnancy and at the time of delivery, infant feeding practices, child immunisation coverage and the prevalence and treatment of diarrhoeal disease among children. It also provides information on women's status, fertility levels, contraceptive knowledge and use and adult health conditions. More detailed results will be presented in the final report which will be published towards the end of 1999.

The information collected in the SADHS will be instrumental in identifying new directions for the national and provincial health programmes in South Africa. Data such as fertility levels, prevalence and treatment of chronic health conditions, and infant mortality levels are crucial indicators in evaluating policies and programmes and in making projections for the future. In addition, as one of more than 100 surveys carried out in the international Demographic and Health Surveys programme, it will hopefully contribute to an increased global commitment to improving the lives of mothers and children worldwide.

I am deeply indebted and grateful to all those who contributed to the success of the 1998 SADHS and to their efforts in making the information available. I wish to express my thanks to the staff of the National and Provincial Departments of Health for making the SADHS possible, the Medical Research Council, Macro International and USAID for financial support of the MRC's contribution. I would also like to thank members of the management committee, technical advisers, project technical committee, the Centre for Health Systems Research at the Free State University, the field staff, the data processing team, and, of course, the survey respondents for ensuring that the fieldwork, data processing and analyses and report writing were carried out smoothly.

Minister of Health
Date:

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The 1998 SADHS is a project which was initiated and primarily funded by the Department of Health. In its implementation several organisations and numerous individuals put a great deal of effort into ensuring that the project was conducted to the best of our abilities. In the first instance, I wish to express my gratitude to the National Health Information Systems Committee colleagues in the Provincial Departments of Health and the National Department of Health for the various roles they played in the course of this project.

I would like to use this opportunity to thank the staff of the Medical Research Council (MRC) for their role in coordinating the design of the survey and the sample, the questionnaire development and pilot testing, writing supervisors' and interviewers' manuals, and data processing. The MRC also played an important role in organising the field staff training, monitoring fieldwork and drafting reports. My special thanks in this regard goes to Dr Debbie Bradshaw for ensuring the smooth co-ordination of the fieldwork by the MRC.

My thanks also goes to the Centre for Health Systems Research and Development at the University of Free State in partnership with King Finance for implementing the fieldwork. Let me also use this opportunity to express my gratitude to the Human Sciences Research Council for their assistance in the survey planning and design, as well as in the training, fieldwork monitoring, analysis and report writing and to Statistics South Africa, for their assistance with drawing up the sample. Many thanks to Macro International Inc. of Calverton, Maryland for providing technical assistance to the project as part of its international Demographic and Health Surveys program, and the United States Agency for International Development (USAID)/South Africa for paying for the technical assistance to the project.

I would like to express my sincere appreciation to the members of the project management committee, the project technical team and all the technical consultants to the project for their contributions to the project.

I would like to thank Mrs Golda Chimere-Dan (Coordinator of the SADHS in the Department of Health) Ms Nolwazi Mbananga (SADHS Coordinator), and Ms Annie Cross (Macro International) for their effort in producing this preliminary report on time. Finally, thanks go to Dr L E Makubalo for directing the SADHS project.

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I. BACKGROUND

A. Introduction

Following the 1994 democratic elections in South Africa, the Health Department was tasked with the challenges of redressing the unequal distribution of health care and ensuring that health policy and legislation are consistent with the objectives of achieving greater access and better quality of care and other health benefits for all South Africans. In the last four years numerous policies and strategies in the areas of child health, maternal health, adult health, health care financing, and access to preventive and promotive health, to name a few, have been put in place. Implementation of many of these strategies has been met with numerous challenges. A major constraint in the planning and restructuring process has been the paucity of reliable basic health data on the majority of the population for monitoring progress.

The National Health Information System of South Africa Committee of the Department of Health was therefore tasked with the implementation of the 1998 South Africa Demographic and Health Survey (SADHS) which was designed to meet the information needs for effective implementation of services and planning and in some instances will already begin to give indications on successes as well as shortcomings of some of the ongoing programmes. The SADHS was a national-level sample survey designed to provide information on various demographic and maternal, child, and adult health indicators in South Africa. This report presents the preliminary results for some of the principal topics covered in the survey. A more comprehensive and detailed report is scheduled to be published in mid-1999. The final figures are not expected to differ substantially from the findings presented in this preliminary report; however, the results presented here should be regarded as provisional and subject to modification.

B. Survey Objectives

The primary objective of the SADHS is to provide up-to-date information on fertility and childhood mortality levels; fertility preferences; awareness and use of contraceptive methods; breastfeeding practices; maternal and child health; awareness of HIV/AIDS; chronic health conditions among adults; dental health; and habits of lifestyle that affect the health status of adults. In addition, various anthropometric indicators such as height, weight, blood pressure and pulmonary flow were measured for adults. The survey results are intended to assist policymakers and program managers in evaluating and designing programs and strategies for improving health services in the country.

C. Sample Design

The 1998 SADHS employed a nationally-representative, two-stage sample that was selected from the 1996 census data. The first stage consisted of selecting census enumeration areas (EAs) with probability proportional to size based on the number of households residing in the EA according to the preliminary census results. Each of the nine provinces was stratified into urban and non-urban groups. A total of 972 primary sampling units was selected for the SADHS (690 in urban areas and 282 in non-urban areas). Fieldwork in three sample points was not implemented and the questionnaires for another three sample points were lost in transit, so the data file contains information for a total of 966 points.

Three objectives of the SADHS caused the sample design to be non-self-weighting. The first objective was to provide separate survey estimates for each province. A second objective was to provide estimates for racial groupings separately, insofar as possible. Finally, USAID/South Africa provided additional funding to increase the sample size in Eastern Cape Province to allow separate survey results to be produced for each of the five health regions. These three objectives resulted in an increase in the sampling rate for smaller provinces such as Northern Cape and Free State, as well as for Eastern Cape. In order to try to increase the number of Indian/Asian households selected, the sampling rate for urban areas in Gauteng and KwaZulu-Natal Provinces was also increased relative to the overall rate. Thus, the SADHS sample is not self-weighting and weighting factors have been applied to the data in this report. Due to the confidentiality of the census data, sampling experts at Statistics South Africa selected the primary sampling units, in this case, the 1996 census enumeration areas (EAs) according to the specifications developed. In about half of the selected EAs, Statistics South Africa also provided lists of

the names and in some cases, addresses, of the households. In these cases, staff at the Medical Research Council selected the specific households to be interviewed. In the other selected EAs, only maps were provided, some of which showed individual plots and others not. In such cases, field teams were instructed to systematically select the appropriate number of households based on strict criteria. In urban EAs, ten households were selected, while in non-urban areas, 20 households were selected. This resulted in a total of 12,540 households being selected throughout the country. Every second household was selected for the adult health survey, meaning that, in addition to interviewing all women age 15-49, interviewers also interviewed all adults age 15 and over. It was expected that the sample would yield interviews with approximately 12,000 women age 15-49 and 13,500 adults. In total, approximately 17,500 people were interviewed.

D. Questionnaires

Three types of questionnaires were used for the SADHS: a Household Questionnaire, a Woman's Questionnaire, and an Adult Health Questionnaire. The contents of the first two questionnaires were based on the DHS Model Questionnaires. These model questionnaires were adapted for use in South Africa during a series of meetings with a Project Team that consisted of representatives from the National and Provincial Departments of Health, the MRC, the Human Sciences Research Council, Statistics South Africa and Macro International. Several additional organisations were represented on a larger Steering Committee that reviewed the draft questionnaires, namely: the National Population Unit of the Department of Welfare and Population, the Development Bank of Southern Africa, the United Nations Population Fund (UNFPA), the Reproductive Health Research Unit of the University of the Witwatersrand, and USAID. Draft questionnaires were then circulated to other interested groups. The questionnaires were developed in English and then translated into and printed in all 11 official languages in South Africa (English, Afrikaans, Xhosa, Zulu, Sotho, Tswana, Sepedi, Swati, Tshivenda, Zitsonga, and Ndebele).

The Household Questionnaire was used to list all the usual members and visitors in the selected households. Some basic information was collected on the characteristics of each person listed, including his/her age, sex, education, and relationship to the head of the household. The main purpose of the Household Questionnaire was to identify women and adults who were eligible for individual interview. In addition, information was collected about the dwelling itself, such as the source of water, type of toilet facilities, materials used to construct the house, and ownership of various consumer goods.

The Woman's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following topics:

- Background characteristics (age, education, race, residence, marital status, etc.)
- Reproductive history
- Knowledge and use of contraceptive methods
- Antenatal and delivery care
- Breastfeeding and weaning practices
- Child health and immunisation
- Marriage and recent sexual activity
- Fertility preferences
- Violence against women
- Knowledge of HIV/AIDS
- Maternal mortality
- Husband's background and respondent's work.

In every second household, all men and women age 15 and over were eligible to be interviewed with the Adult Health Questionnaire. The respondents were asked questions on:

- Recent utilisation of health services

- Family medical history
- Clinical conditions
- Dental health
- Occupational health
- Medications taken
- Habits and lifestyle
- Anthropometric measurements (height, weight, blood pressure, etc.).

E. Training and Fieldwork

The SADHS questionnaires were pretested in November/December 1996 under contract with a private research firm, Markinor. Sixteen female interviewers, most of whom were part of Markinor's regular pool of interviewers, were trained by two MRC staff for 10 days at Markinor headquarters in Randburg. After training, teams conducted interviews in several provinces under the observation of staff from MRC and Macro. Areas were specifically chosen in order to test the questionnaires in all the major ethnic groups and in several languages. The approximately 150 pretest interviews completed provided a wealth of invaluable information regarding length of interview, response rates, questionnaire design, cost implications, and survey procedures, which were discussed during the debriefing session with field staff. Based on observations in the field and suggestions made by the pretest field teams, the Project Team made revisions in the wording and translations of the questionnaires.

In mid-1997, the field work group, the University of Free State, recruited 175 candidates for involvement in the field work. Participation was based on appropriateness with regard to several areas including education, maturity, field experience, and languages spoken.

Training was done in two phases. During the first four days, editors, supervisors, provincial managers and representatives of provincial Health Departments were given an overview of the content of the questionnaires and the objectives and design of the survey, as well as a brief training on editing questionnaires. They also carried out a field practice exercise on the Household Questionnaire during this week. During the second week, the interviewers joined the editors, supervisors, provincial managers and health representatives for more detailed training on the questionnaires. This was followed by a third week of field practice and discussions.

The training was conducted by personnel from the MRC, the Human Sciences Research Council, Free State University and Macro International. Training consisted of plenary sessions on more general issues like contraceptive methods, conducted for the whole group in one venue and more specific discussions by sections for each of the nine provinces, in separate venues. There was also intensive training in anthropometric measurements, taking blood pressure and measuring lung capacity.

Due to the large number of trainees and the short time allowed for training, arrangements were made to hold an additional day of field practice after teams returned to their respective provinces. Trainers were assigned to each province to oversee the field practice and to monitor the first few days of fieldwork.

Fieldwork for the SADHS was carried out by 33 interviewing teams. Each province had three teams, with the exception of Eastern Cape, where there were seven teams and KwaZulu-Natal which had five teams. Each team consisted of 2-5 female interviewers, a supervisor, and a field editor. In each province there was a provincial manager who was an overall supervisor of the fieldwork operations. In addition, two fieldwork coordinators based at the Free State University provided logistical and management support for the field operations. In many provinces, staff from the provincial Department of Health offices who had attended the training course formed fieldwork quality control teams to check on the field teams and conduct revisits. Finally, staff from MRC, HSRC and Macro International conducted periodic quality control visits during fieldwork. Fieldwork commenced in late January 1998 and was completed in September 1998.

F. Data Processing

All completed questionnaires for the SADHS were submitted to the provincial offices of King Finance (which was in partnership with Free State University), which then forwarded them to the MRC for data processing. The processing operation consisted of office editing, coding of open-ended questions, initial data entry and subsequent re-entry of all questionnaires to ensure correct capturing of data, and editing of inconsistencies found by the computer programs. The SADHS data entry and editing programs were written in ISSA (Integrated System for Survey Analysis) by staff of Macro International. Data processing commenced in mid-March 1998 and was completed in October 1998.

G. Coverage of the Sample

Table 1 shows response rates for the survey and reasons for non-response. A total of 12,860 households was selected for the sample, of which 12,247 were successfully interviewed. The shortfall is primarily due to refusals and to dwellings that were vacant or in which the inhabitants had left for an extended period at the time they were visited by the interviewing teams. Of the 12,638 households occupied, 97 percent were successfully interviewed. In these households, 12,327 women were identified as eligible for the individual women's interview (i.e., age 15-49) and interviews were completed with 11,735 or 95 percent of them. In the one half of the households that were selected for inclusion in the adult health survey, 14,928 eligible adults age 15 and over were identified, of which 13,827 or 93 percent were interviewed.

The principal reason for non-response among eligible women and men was the failure to find them at home despite repeated visits to the household. Refusals accounted for about two percent.

Table 1 Sample results

Number of households, number of interviews and response rates, South Africa 1998

Result	Number	Percent
Households selected	12860	100.0
Households occupied	12638	98.3
Households absent for extended period	76	0.6
Dwelling vacant/destroyed	146	1.1
Households occupied	12638	100.0
Households interviewed	12247	96.9
Households not interviewed	391	3.1
Eligible women	12327	100.0
Women interviewed	11735	95.2
Women not interviewed	592	4.8
Eligible adults	14928	100.0
Adults interviewed	13827	92.6
Adults not interviewed	1101	7.4

H. Background Characteristics of Women and Adults

The distribution of women aged 15-49 and adults aged 15 and over interviewed in the 1998 SADHS by selected background characteristics is presented in Table 2. As expected, the proportions decline with age. This is similar to the pattern observed in the 1996 census (Statistics South Africa, 1998).

Just over 60 percent of respondents live in urban areas, according to the definition of urban (within a proclaimed municipality or the boundaries of a local authority) used by Statistics South Africa. This compares with a figure of 54 percent urban for the total population from the 1996 census. Approximately one in five respondents lives in each of Gauteng and KwaZulu-Natal Provinces.

Table 2 Background characteristics of respondents

Percent distribution of women and adults by background characteristics, South Africa 1998

Background characteristic	Women 15-49				Adult men 15+			Adult women 15+		
	Weighted percent	Weighted women	Unwght. women		Weighted percent	Weighted men	Unwght. men	Weighted percent	Weighted women	Unwght. women
Age										
15-19	19.2	2,249	2,373	**Age**						
20-24	17.7	2,075	2,086	15-24	32.0	1,816	1,844	25.6	2,084	2,102
25-29	15.8	1,857	1,811	25-34	19.8	1,123	1,091	21.1	1,721	1,635
30-34	14.1	1,654	1,616	35-44	17.7	1,005	1,016	17.9	1,460	1,396
35-39	13.9	1,636	1,628	45-54	12.4	701	715	13.7	1,116	1,088
40-44	11.0	1,294	1,255	55-64	9.1	518	529	11.2	914	938
45-49	8.3	970	966	65+	8.9	507	558	10.6	861	915
Residence				**Residence**						
Urban	60.5	7,095	6,518	Urban	62.9	3,569	3,341	61.3	4,999	4,412
Non-urban	39.5	4,640	5,217	Non-urban	37.1	2,102	2,412	38.7	3,157	3,662
Province				**Province**						
Western Cape	10.2	1,193	919	Western Cape	12.7	721	545	9.8	799	602
Eastern Cape	13.3	1,566	2,756	Eastern Cape	13.4	758	1,311	14.2	1,161	2,063
Northern Cape	2.2	253	1,041	Northern Cape	2.4	135	560	2.1	168	701
Free State	6.5	763	936	Free State	7.8	444	554	6.4	519	646
KwaZulu Natal	20.1	2,364	1,826	KwaZulu Natal	18.8	1,064	823	19.7	1,608	1,230
North West	7.7	909	931	North West	9.7	551	571	7.9	647	670
Gauteng	21.7	2,552	1,057	Gauteng	19.4	1,099	408	23.1	1,887	704
Mpumalanga	7.0	819	1,131	Mpumalanga	6.7	377	528	6.2	507	713
Northern	11.2	1,316	1,138	Northern	9.2	521	453	10.5	859	745
Education				**Education**						
No education	6.8	804	810	No education	9.9	562	659	14.5	1,186	1,278
Sub A - Std 3	11.0	1,291	1,359	Sub A - Std 3	13.7	777	824	13.3	1,088	1,156
Std 4 - Std 5	13.8	1,625	1,775	Std 4 - Std 5	13.3	755	835	13.9	1,136	1,215
Std 6 - Std 9	44.2	5,181	5,175	Std 6 - Std 9	40.5	2,297	2,258	37.9	3,094	2,983
Std 10	16.4	1,922	1,754	Std 10	14.1	801	737	13.7	1,120	950
Higher	7.8	912	862	Higher	7.8	440	407	6.1	495	459
Missing	0.0	0	0	Missing	0.7	40	33	0.5	37	33
Population Group				**Population Group**						
African	77.9	9,147	8,993	African	75.1	4,257	4,283	76.9	6,269	6,174
Afr. urban	41.5	4,873	4,274	Afr. urban	41.9	2,375	2,158	41.1	3,349	2,840
Afr. non-urban	36.4	4,274	4,719	Afr. non-urban	33.2	1,882	2,125	35.8	2,921	3,334
Coloured	10.2	1,201	1,533	Coloured	11.2	637	772	9.9	806	1,008
White	7.8	916	755	White	9.9	564	500	9.4	767	603
Asian	3.5	406	393	Asian	3.4	195	183	3.7	300	279
Missing	0.6	66	61	Missing	0.3	18	15	0.2	14	10
Total	100.0	11,735	11,735	Total	100.0	5,671	5,753	100.0	8,156	8,074

Among women age 15-49, only seven percent have had no formal education at all, while almost one-quarter have matric or higher. As expected, educational attainment of all adults age 15 and over is lower than that of women 15-49, since the respondents include those over age 50. Although adult men in general have reached higher levels of education than adult women, the differentials are not large. For example, 22 percent of adult men have reached the level of matric or higher, compared to 20 percent of adult women.

Just over three-quarters of the SADHS respondents are African, while 10 percent are coloured, 8-9 percent are white and about four percent Asian.

II. CHILD HEALTH

The 1998 SADHS obtained information on a number of key child health indicators, including childhood mortality rates, immunisation of young children, infant feeding practices, and treatment practices when a child has diarrhoea.

A. Infant and Child Mortality

One important objective of the 1998 SADHS was to measure the level and characteristics of mortality among children, since infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life especially as the civil registration system in the country has not yet reached complete coverage. Estimates of childhood mortality are based on information from the pregnancy history section of the questionnaire administered to individual women. The section began with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the mother, the number who live elsewhere and the number who have died). For each of these births, information was then collected on sex, month and year of birth, survivorship status and current age, or, if the child had died, age at death.

This information is used to directly estimate the following five mortality rates:

Neonatal mortality: the probability of dying within the first month of life;

Postneonatal mortality: the difference between infant and neonatal mortality;

Infant mortality: the probability of dying before the first birthday;

Child mortality: the probability of dying between the first and fifth birthday;

Under-five mortality: the probability of dying between birth and the fifth birthday.

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age. It is hoped that estimates of peri-natal mortality may be presented in the more detailed final report on the SADHS results.

These rates are shown in Table 3 according to demographic and socio-economic characteristics in the ten-year period preceding the survey. The infant mortality rate was found to be 45 deaths per 1000 live births.[1] This means that about one in every 22 children born in South Africa dies before reaching the first birthday. Table 3 shows that the infant mortality rate is a reflection of the social, demographic and economic conditions in which people live. Where socio-economic conditions are poorer, infant mortality is higher. Thus, rural areas, poorer provinces such as Eastern Cape and Northern Cape, or provinces with large rural populations such as KwaZulu-Natal, experience higher infant mortality rates than others. Similarly, women with none or a low level of education experience higher infant mortality rates. African women, particularly those who live in rural areas also experience higher infant mortality rates than others.

[1] Rates for the country as a whole are based on the five-year period before the survey, while the differentials by demographic and socio-economic characteristics are based on a 10-year period to reduce sampling errors.

Table 3 Infant and child mortality by socioeconomic characteristics

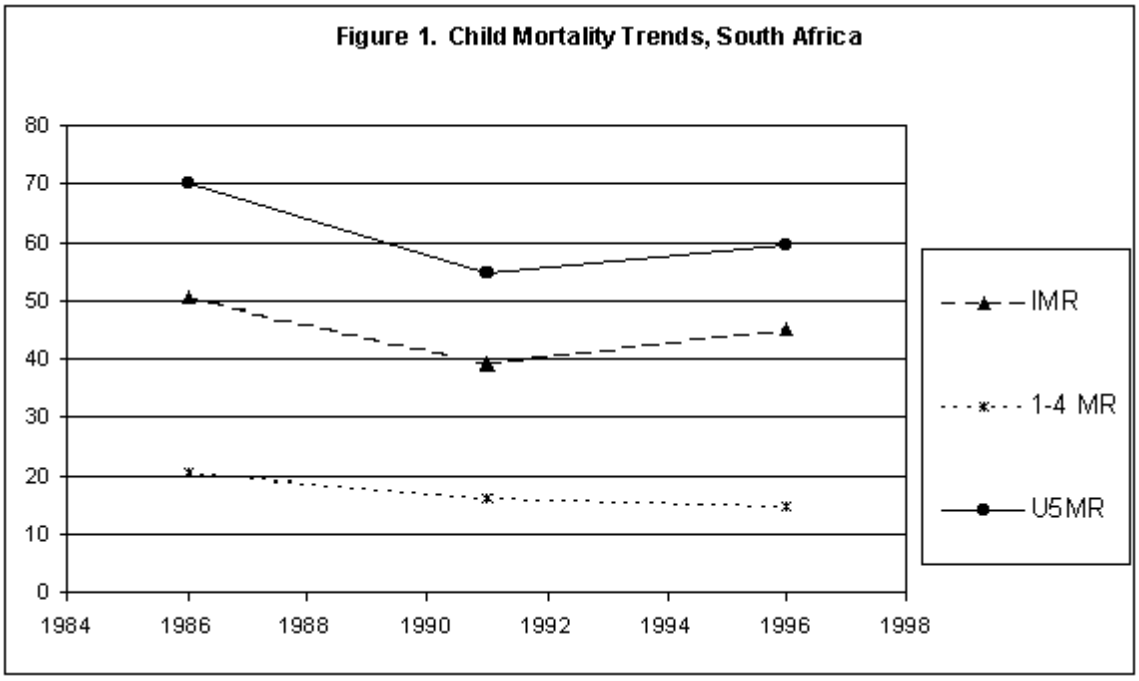
Infant and child mortality rates by selected socioeconomic background characteristics for the ten-year period preceding the survey, South Africa 1998

Background characteristic	Neonatal mortality (NN)	Post-neonatal mortality (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
Residence					
Urban	16.4	16.2	32.6	11.0	43.2
Non-urban	22.0	30.1	52.2	20.1	71.2
Province					
Western Cape	4.0	4.4	8.4	4.8	13.2
Eastern Cape	24.7	36.5	61.2	20.5	80.5
Northern Cape	20.5	21.3	41.8	14.3	55.5
Free State	9.9	26.9	36.8	13.7	50.0
KwaZulu Natal	23.2	28.9	52.1	23.6	74.5
North West	20.0	16.8	36.8	8.8	45.3
Gauteng	17.8	18.5	36.3	9.3	45.3
Mpumalanga	23.6	23.6	47.3	17.3	63.7
Northern	18.3	18.9	37.2	15.7	52.3
Education					
No education	19.7	39.1	58.8	26.5	83.8
Sub A - Std 3	25.1	28.6	53.7	26.4	78.7
Std 4 - Std 5	19.3	22.3	41.5	14.5	55.4
Std 6 - Std 9	16.5	22.9	39.3	13.8	52.6
Std 10	18.2	12.0	30.2	3.2	33.3
Higher	21.9	7.3	29.3	0.0	29.3
Population Group					
African	20.6	26.5	47.0	17.4	63.6
Afr. urban	18.3	20.4	38.7	12.7	50.9
Afr. non-urban	22.3	31.3	53.6	21.2	73.7
Coloured	9.6	9.2	18.8	9.6	28.2
White	(11.4)	(0.0)	(11.4)	(3.9)	(15.3)
Asian	*	*	*	*	*
Sex of child					
Male	23.7	25.4	49.0	17.7	65.9
Female	14.6	20.7	35.3	13.0	47.9
Mother's age at birth					
Less than 20	20.3	22.3	42.5	19.2	60.9
20-29	19.3	20.9	40.2	14.9	54.5
30-39	18.4	24.1	42.5	13.3	55.2
40-49	(18.2)	(56.3)	(74.5)	(30.2)	(102.5)
Birth order					
1	19.2	21.4	40.6	15.0	55.0
2-3	15.3	17.7	32.9	14.1	46.6
4-6	23.3	26.8	50.1	19.6	68.7
7+	31.2	59.6	90.8	7.4	97.5
Previous birth interval					
< 2 years	35.0	42.0	76.9	25.9	100.8
2-3 years	18.1	20.4	38.5	13.9	51.8
4 years or more	13.7	20.2	33.9	13.1	46.5
Total[1]	19.8	25.6	45.4	14.7	59.4

[1] Rates are for the five years before the survey.
Note: Figures in parentheses are based on 250-500 cases, while an asterisk denotes a figure based on fewer than 250 cases that has been suppressed.

The infant mortality rate is higher among male infants (49) than female infants (35). Infants born to mothers aged between 40 and 49 years have higher chances of dying before their first birthday than those born to younger women aged between 20 and 39 years. Similarly, one in eleven infants born to women with seven or more children dies before age one as compared to one in thirty infants born to women with two or three children. In the same vein, infants born less than two years after a previous birth are more likely to die before their first birthday than those with longer birth intervals. The other measures of childhood mortality follow a similar pattern to the infant mortality rate.

The trend in childhood mortality, based on 5 year averages, are shown in Figure 1. It can be seen that under-five mortality declined until the early 1990's. Since then, the infant mortality rate has shown an upward trend. It is likely that this upward trend is associated with the HIV/AIDS epidemic that is currently underway in South Africa.



B. Childhood Immunisations

In the 1998 SADHS, information on childhood immunisations was collected for all children born during the five-year period before the survey. In South Africa, immunisations are recorded on a child's health card. For each child, mothers were asked whether they had the health card for the child and, if so, to show the card to the interviewer. When the mother was able to show the health card, the dates of vaccinations were copied from the card to the questionnaire. If the health card was not available (or a vaccination was not recorded), mothers were asked questions to determine whether the child had received each vaccine.

The estimates of immunisation coverage among children aged 12-23 months in Table 4 are based on the information taken from the health card and, for those for whom a card was not seen (or a vaccination not recorded), from the information provided by the mother. Mothers were able to provide health cards for 75 percent of the children aged 12-23 months.

The World Health Organisation guidelines for childhood immunisations call for all children to receive: a BCG vaccination against tuberculosis, three doses of the DPT vaccine to prevent diphtheria, pertussis and tetanus; three doses of polio vaccine; and a measles vaccination.

Table 4 shows that a high proportion of South African children between the ages of 12 and 23 months receive immunisation for all these childhood vaccines. However, coverage rates are not consistent and tend to decrease as the dosage increases. Thus, for vaccines that require more than one dose such as polio and DPT, immunisation rates are higher for the first and second doses than for subsequent ones. This reduces full immunisation to 63 percent for all South African children in this age group. Only 2 percent of children 12-23 months of age received no vaccinations.

Looking at differentials in vaccination coverage, the data indicate that although the gap in coverage between urban and non-urban areas has narrowed considerably, children in urban areas are still more likely to receive all the basic immunisations than those in the non-urban areas. Those in Northern Cape and Northern Provinces are somewhat more likely than other children to receive all the basic immunisations. Coverage is higher among children with more educated mothers and also those whose mothers are coloured. Due to the small number of children in some groups, interpretation of data on immunisation coverage should be made cautiously.

C. Childhood Diarrhoea

Dehydration as a result of diarrhoea is a frequent cause of death in young children. The administration of oral rehydration therapy (ORT) is a simple means of countering the effects of dehydration. During ORT, the child is given a solution either prepared by mixing water with the salts in a commercially prepared oral rehydration packet (such as ORS, also called orsaline or paedealite in South Africa) or by making a homemade solution using sugar, salt and water.

In the SADHS, mothers of children under age five were asked if their children had had diarrhoea in the two-week period before the survey. If the child had suffered from diarrhoea, the mother was asked about what she had done to treat the diarrhoea. Since the prevalence of diarrhoea varies seasonally, the results pertain only to the pattern during the period February-September when the SADHS interviews took place.

Table 5 presents information on recent episodes of diarrhoea among young children and the actions that were taken to treat the illness. Overall, 13 percent of children under age five were reported to have had diarrhoea in the two-week period before the survey. As expected, diarrhoea is more prevalent among children age 6-23 months. This pattern is believed to be associated with increased exposure to the illness as a result of both weaning and the greater mobility of the child as well as to the immature immune system of children in this age group.

Half of the children with diarrhoea were given fluid made from an ORS packet and less than one-fifth were given a homemade sugar, salt, and water solution. Altogether, 58 percent of children with diarrhoea were treated with some type of oral rehydration therapy, mostly with ORS packet solution. Differentials in ORT treatment are not large and some may be due to the small numbers of children who had diarrhoea in the two weeks prior to the survey.

Table 4 Vaccinations by background characteristics

Among children age 12-23 months, percentage with health cards seen by interviewer and percentage who have received each vaccine by the time of the survey (according to the vaccination card or mother), by background characteristics, South Africa 1998

Background characteristic	BCG	DPT 1	DPT 2	DPT 3	Polio 0	Polio 1	Polio 2	Polio 3	Hep B1	Hep B2	Hep B3	Mea-sles	All[1]	None	Percent with card	No. of children
Sex of child																
Male	96.9	91.3	84.1	74.3	90.2	90.8	81.6	71.5	88.2	80.9	72.5	83.7	64.7	2.3	75.9	468
Female	96.7	95.1	88.1	78.3	92.1	91.3	83.7	72.7	88.2	83.2	75.2	80.8	62.2	2.0	73.3	505
Birth order																
1	96.7	94.4	86.6	78.5	92.7	91.0	83.0	73.8	87.7	82.8	76.9	84.9	66.7	2.3	74.6	336
2-3	97.5	93.8	89.0	79.0	92.9	90.8	83.1	73.0	89.6	85.0	74.5	81.5	64.3	1.5	77.3	370
4-5	97.9	94.2	85.2	74.1	86.3	93.6	85.3	73.5	88.7	79.8	73.9	85.3	66.2	0.4	73.5	165
6+	92.7	86.4	76.3	63.8	88.2	88.2	76.0	60.8	84.0	72.6	62.0	71.0	44.6	7.1	66.5	103
Residence																
Urban	98.0	95.8	89.5	81.7	94.4	92.0	85.3	75.5	90.1	84.5	78.3	85.1	67.1	1.6	75.3	491
Non-urban	95.6	90.8	82.8	71.0	87.9	90.0	80.0	68.6	86.2	79.6	69.5	79.3	59.6	2.7	73.8	483
Province																
Western Cape	98.3	95.3	85.8	74.2	95.7	91.7	77.3	72.5	84.1	75.8	72.5	83.7	64.2	0.0	75.8	80
Eastern Cape	95.6	90.8	81.1	68.1	89.3	86.9	76.5	61.3	80.4	70.9	61.7	75.4	52.6	3.1	68.1	127
Northern Cape	97.5	93.9	90.2	89.0	97.5	92.7	89.0	85.5	94.0	89.0	86.6	90.5	80.8	1.3	87.8	20
Free State	95.1	96.9	93.8	82.1	95.2	96.9	85.6	72.6	87.0	83.8	73.9	80.8	67.8	1.6	75.6	51
KwaZulu-Natal	97.0	90.6	80.9	62.3	87.3	87.7	77.5	59.6	85.4	78.2	62.0	82.5	49.5	2.0	62.2	208
North West	95.7	89.8	82.2	82.2	83.8	91.2	80.7	70.8	89.8	80.7	79.3	87.0	60.6	4.3	66.5	67
Gauteng	97.6	96.4	91.6	85.6	95.2	92.8	88.0	80.8	94.0	90.4	83.2	84.4	72.4	2.4	79.6	199
Mpumalanga	96.4	92.7	88.5	77.7	91.8	90.3	86.7	75.9	87.6	83.7	75.9	83.7	67.2	2.7	79.5	72
Northern	96.9	94.5	88.3	85.1	91.4	94.5	88.3	83.6	92.2	87.5	84.3	80.4	74.9	1.6	89.0	149
Education																
None	92.5	89.9	80.9	65.8	85.0	87.2	75.8	65.8	87.1	79.6	64.4	64.0	54.0	7.5	78.2	78
Sub A - Std	94.5	92.5	83.6	66.6	86.0	92.1	82.8	62.4	85.6	79.1	66.7	82.2	50.6	2.2	67.2	124
Std 4 - Std	96.4	92.8	86.8	75.3	88.7	92.1	84.5	73.4	90.6	81.4	72.6	78.0	61.6	1.7	78.2	153
Std 6 - Std	97.6	92.9	84.7	76.6	94.4	88.7	79.4	71.4	86.7	81.4	75.0	85.0	65.6	1.7	73.1	407
Std 10	98.1	96.2	90.6	86.3	92.4	94.0	87.2	80.0	90.6	85.1	79.9	88.4	72.5	1.9	76.4	156
Higher	100.0	96.0	96.0	87.4	91.8	100.0	99.1	82.0	93.0	90.2	82.8	82.0	68.3	0.0	81.6	55
Population Group																
African	96.2	92.7	85.7	75.5	90.4	90.6	81.9	71.2	87.1	81.3	72.7	81.4	61.8	2.5	73.7	815
Afr. urban	97.2	95.4	89.5	81.9	93.4	92.0	84.5	75.2	88.2	83.5	77.7	85.3	66.0	2.2	73.8	362
Afr. non-urban	95.5	90.6	82.7	70.3	88.0	89.5	79.7	68.0	86.2	79.5	68.7	78.2	58.4	2.8	73.6	453
Coloured	99.4	93.7	85.1	80.7	94.9	89.4	86.3	79.0	91.9	84.1	80.4	85.8	74.6	0.3	82.4	91
White	(100.0)	100.0)	(92.0)	(78.6)	(98.4)	100.0)	(86.6)	(70.2)	(94.3)	(89.8)	(76.1)	(85.2)	(62.7)	(0.0)	(72.0)	42
Asian	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	21
Total	96.8	93.3	86.2	76.4	91.2	91.0	82.7	72.1	88.2	82.1	73.9	82.2	63.4	2.2	74.6	973

Note: Total includes 4 children with population group not stated. Figures in parentheses are based on 25-49 unweighted cases; an asterisk indicates a figure based on fewer than 25 cases that has been suppressed.

[1] "All" means a child has received BCG, 3 doses of DPT and polio, and measles, but not necessarily hepatitis B.