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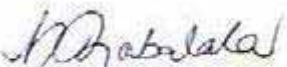
PREFACE

The 2003 South African Demographic and Health Survey (SADHS) is the second survey of its kind in South Africa. The findings of the survey enable us to track the changes in the health status of our population, identify risk factors, access and utilisation of key health services for the five year period since the 1998 survey.

The results of the SADHS provide valuable information for addressing important areas such as antenatal care for mothers during pregnancy and assistance at the time of delivery, child health, infant feeding practices, and the prevalence and treatment of diarrhoeal disease among children. Information on adult health conditions, women's reproductive intentions, fertility levels, knowledge about contraception and use thereof are also included in the findings.

We are pleased to note that this survey has shown that there have been a number of areas where some advances have been made in health development. In the area of adult health the rate of smoking among men has dropped from 42 percent in 1998 to 35 percent in 2003 and for women from 11 percent to 10 percent. The proportion of women who reported that their last live birth occurred in a health facility increased to 89 percent from the 83 percent reported in the 1998 survey. A few other areas, such as the fact that less than 30 percent of children were reported to have received vitamin A supplement in the last 6 months, point us to areas that will require special attention in the current and coming strategic period.

The successful completion of a project of this nature was dependant on the collaboration of a number of dedicated people and organisations. I would like to extend a special word of appreciation to collaborating Departments, Science Councils, the research teams and the communities whom so gracefully participated in the survey.


DR M E TSHABALALA-MSIMANG
MINISTER OF HEALTH

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I am pleased to present the results of South African Demographic and Health Survey (SADHS) that was initiated in 2003.

Firstly I would like to acknowledge the ongoing support of the Members of Executive Councils (MECs) and Provincial Heads of Health Departments and all staff who participated so tirelessly in this DHS.

I would also like to thank staff at the National Department of Health: Dr L Makubalo: Chief Director: Health Information, Evaluation and Research, Ms P Netshidzivani, Project Manager; Ms R du Plessis, Project co-ordinator and Mr P Sekwati. Thank you to Dr Debbie Bradshaw of the Medical Research Council for technical support throughout the project and Mr Johan van Zyl from the Human Sciences Research Council's for the data processing and analysis.

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The Department would like to further acknowledge efforts of all members of the project management committee, in particular representatives from the Departments of Social Development and Statistics South Africa, University of the Witwatersrand (Reproductive Health Research Unit), Medical Research Council, University of Stellenbosch, ORC MACRO International, Maryland, USA for providing technical assistance to the project as part of its international Demographic and Health Surveys programme, and the United States Agency for International Development (USAID)/South Africa for technical assistance to the project.

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MR. THAMSANQA MSELEKU
DIRECTOR-GENERAL: HEALTH

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ACRONYMS AND ABBREVIATIONS

ACT	Artemisinin combination therapy
AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal care
ANHMRC	Australian National Health and Medical Research Council
ARI	Acute respiratory infections
ART	Anti-retroviral therapy
ASRC	Africa Strategic Research Corporation
ASSA	Actuarial Society of South Africa
AsGISA	Accelerated and shared Growth Initiative of South Africa
ATC	Anatomical therapeutic chemical classification
AUDIT	Alcohol Use Disorders Identification Test
BP	Blood pressure
BMI	Body mass index
CAGE	Cut down, Annoy, Guilt, Eye-opener (Alcohol dependence)
CARe	Centre for Actuarial Research
CMR	Child mortality rate
CDAW	Convention for the elimination of All Forms of Discrimination Against Women
COPD	Chronic obstructive pulmonary disease
CSPro	Census and Survey Processing System
DALY	Disability adjusted life year
DDT	Dichlorodiphenyltrichloroethane
DHIS	District Health Information System
DoH	Department of Health
DPT	Diphtheria-pertussis-tetanus
EAs	Enumeration areas
EC	Emergency contraception
EDL	Essential drug list
ETS	Environmental tobacco smoke
FFQ	Food frequency questionnaire
GEAR	Growth, Employment and Redistribution
GOLD	Global Initiative for Chronic Obstructive Lung Disease
GPAQ	Global Physical Activity Questionnaire
GPS	Global positioning system
HBV	Hepatitis B
HGOI	Health Goals, Objective and Indicators
HIV	Human immunodeficiency virus
HSRC	Human Sciences Research Council
HS	Home solution
ICPD	International Conference on Population and Development
IHD	Ischaemic heart disease
IMCI	Integrated Management of Childhood Illnesses
IMR	Infant mortality rate
IPAQ	International Physical Activity Questionnaire
IUD	Intra-uterine device
kg/m ²	Kilogram per metre squared
Kg	Kilogram
m	Metre
METs	Multiples of resting metabolic rate
mmHg	Millimeters of mercury
MOS	Measure of size
MRC	Medical Research Council
MTCT	Mother-to-child transmission
NDoH	National Department of Health
N-Index	Nutrition Index
NHIS/SA	National Health Information System of South Africa
ORS	Oral Rehydration Solution
ORT	Oral Rehydration Therapy
PEFR	Peak expiratory flow rate
PHC	Primary health care

PMTCT	Prevention of mother-to-child transmission programme
RDA	Recommended dietary allowance
RDP	Reconstructive and development programme
PPS	Probability proportional to size
SADC	Southern African Development Community
SADHS	South African Demographic and Health Survey
SD	Standard deviation
SE	Standard error
Stats SA	Statistics South Africa
STI	Sexually transmitted infection
TB	Tuberculosis
TBA	Traditional birth attendant
TFR	Total fertility rate
U-5MR	Under-five mortality rate
UN	United Nations
UNAIDS	Joint United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
VCT	Voluntary counseling and testing
WHO	World Health Organisation
WHR	Waist/hip ratio
YRBS	Youth Risk Behaviour Survey

REPUBLIC OF SOUTH AFRICA
Provinces



KEY FINDINGS OF THE SURVEY

Maternal and child health indicators	1998	2003
Infant and child mortality (preceding 5 years)		
Infant mortality rate per 1 000 live births	45 (37; 48)	43* (29; 57)
Under-5 mortality rate per 1 000 live births	59 (51; 63)	58* (43; 73)
Child mortality rate per 1 000 live births	15 (12; 19)	16* (10; 22)
Fertility of women 15-49 yrs (preceding 3 years)		
Total fertility rate: children per woman	2.9 (2.7; 3.1)	2.1* (1.9; 2.3)
Ideal number of children	2.9 (2.8; 2.9)	2.5* (2.4; 2.5)
Percent women who want no more children	44 (42; 45)	61 (58; 64)
Modern contraceptive-use prevalence rate: Sexually active women		
Percent currently using a modern method	61 (60; 63)	65 (63; 67)
Attended antenatal care: % of births in last 5 years		
Mothers attended antenatal care during pregnancy	94 (93 – 95)	92 (90 – 93)
Assistance during delivery: % of births in last 5 years		
Mothers received medical care at delivery	84 (82; 86)	91 (89; 93)
Vaccination and supplementation in children 12-23 months old		
Percent of children with vaccination cards, seen	75 (71; 78)	71 (65; 77)
Percent children fully immunized	63 (59; 68)	52 (45; 59)
Percent children received Vitamin A supplementation		29 (24; 34)
Exclusive breastfeeding: % of infants		
< 6 months	6.8 (4.1; 9.5)	8.3 (3.1; 13.4)
6-9 months	0.2 (0.0; 0.4)	0.4 (0.0; 1.2)
Diarrhoea in children		
Child had diarrhoea in last two weeks	13.2 (12.0; 14.4)	7.9 (6.5; 9.4)

* Data quality checks suggest that fertility and childhood mortality estimates are not reliable. See report text for details.

KEY FINDINGS OF THE SURVEY

Sexual behaviour and HIV related indicators	1998	2003
Sexual activity: % of men 15-59 and women 15-49 yrs		
Had two or more sexual partners in last 12 months: Men (not in union)	-	19 (16; 21)
Had two or more sexual partners in last 12 months: Women (not in union)	3.9 (3.3; 4.5)	3.1 (2.4; 3.8)
Had higher-risk sex in last 12 months: Men	-	65 (62; 68)
Had higher-risk sex in last 12 months: Women	-	58 (56; 60)
Had first sex before age 18: Men	-	45 (43; 48)
Had first sex before age 18: Women	46 (45; 48)	42 (40; 44)
Abstinence among youth 15-24 yrs never in union		
Percent never had sex: Men 15-24	-	38 (34; 42)
Percent never had sex: Women 15-24	40 (37; 42)	42 (39; 44)
Condom use: % of sexually active men and women		
Condom use at last higher-risk sex: Men 15-59	-	69 (66; 72)
Condom use at last higher-risk sex: Men 15-24	-	72 (66; 77)
Condom use at last higher-risk sex: Women 15-49	-	46 (44; 49)
Condom use at last higher-risk sex: Women 15-24	-	52 (48; 56)
HIV: % of men 15-59 and women 15-49 yrs		
Had HIV test and received results in last 12 months: Women	-	8.5 (7.5; 9.5)
Ever had HIV test and received results: Men	-	20 (18; 22)
Accepting attitudes towards people with HIV: Women	-	38 (37; 40)
Never had HIV test : % men and women 15-24 yrs		
Never tested: Men 15-19	-	87 (83; 90)
Never tested: Women 15-19	-	81 (79; 84)
Never tested: Men 20-24	-	77 (72; 83)
Never tested: Women 20-24	-	60 (56; 63)
Knowledge and beliefs about HIV: % men and women 15-24 yrs		
Have heard of AIDS: Men 15-19	-	93 (91; 96)
Have heard of AIDS: Women 15-19	95 (94; 96)	93 (91; 95)
Have heard of AIDS: Men 20-24	-	94 (91; 97)
Have heard of AIDS: Women 20-24	98 (97; 98)	93 (92; 95)
Using condoms prevents HIV infection: Men 15-19	-	80 (76; 84)
Using condoms prevents HIV infection: Women 15-19	79 (76; 81)	70 (67; 73)
Using condoms prevents HIV infection: Men 20-24	-	87 (83; 90)
Using condoms prevents HIV infection: Women 20-24	87 (85; 89)	72 (69; 75)
A healthy-looking person can have the HI virus: Women 15-19	28 (26; 31)	76 (73; 79)
A healthy-looking person can have the HI virus: Women 20-24	30 (28; 33)	77 (74; 80)
A person cannot become infected by sharing food with HIV infected person: Women 15-19	67 (64; 69)	74 (71; 77)
A person cannot become infected by sharing food with HIV infected person: Women 20-24	74 (71; 76)	75 (72; 78)
Circumcision: % of men 15-59 yrs		
Percent circumcised	-	45 (42; 48)

KEY FINDINGS OF THE SURVEY

Adult health indicators	1998	2003
Smoking prevalence: % of adults 15+ and of adolescents 15-19 yrs		
Currently smoking: Adult men	42 (41; 44)	35 (33; 38)
Currently smoking: Adolescent men	14 (12; 17)	16 (12; 20)
Currently smoking: Adult women	11 (9; 12)	10 (9; 12)
Currently smoking: Adolescent women	5.8 (3.6; 8.0)	5.4 (2.8; 8.0)
Abstinence of alcohol intake: % of adults 15+ yrs and of adolescents 15-19 yrs		
Never consumed alcohol: Adult men	42 (40; 44)	52 (49; 54)
Never consumed alcohol: Adolescent men	75 (71; 78)	68 (64; 73)
Never consumed alcohol: Adult women	74 (73; 76)	78 (76; 81)
Never consumed alcohol: Adolescent women	85 (82; 88)	83 (79; 87)
Micro-nutrient intake: % of adults 15+ yrs		
Adequate micro nutrient intake: Adult men	-	33 (30; 36)
Adequate micro nutrient intake: Adult women	-	35 (32; 38)
Overweight and obesity: % of adults 15+ yrs		
Overweight: Adult men	20 (19; 22)	21 (19; 23)
Overweight: Adult women	27 (26; 28)	28 (26; 29)
Obesity: Adult men	6.9 (6.1; 7.8)	8.8 (7.2; 10.3)
Obesity: Adult women	29 (28; 31)	27 (26; 29)
Physical inactivity: % of adults 15+ yrs		
Insufficiently active: Adult men	-	76 (75; 79)
Insufficiently active: Adult women	-	86 (85; 87)
Hypertension (blood pressure \geq 140/90 mmHg and/or medication): % of adults 15+ yrs		
Prevalence of hypertension: Adult men	13 (12; 14)	8.7* (7.0; 10.4)
Prevalence of hypertension: Adult women	16 (15; 17)	14* (12; 15)
Respiratory conditions: % of adults 15+ yrs		
Prevalence of symptoms of asthma: Adult men	6.7 (5.7; 7.6)	7.2 (6.1; 8.3)
Prevalence of symptoms of asthma: Adult women	8.6 (7.8; 9.4)	8.1 (7.1; 9.0)
Prevalence of symptoms associated with chronic bronchitis: Adult men	2.3 (1.8; 2.8)	2.3 (1.7; 3.0)
Prevalence of symptoms associated with chronic bronchitis: Adult women	2.8 (2.3; 3.2)	2.0 (1.5; 2.4)
Prevalence of abnormal peak flow: Adult men	4.0 (3.4; 4.7)	7.9 (6.7; 9.2)
Prevalence of abnormal peak flow: Adult women	4.1 (3.5; 4.7)	10.9 (9.5; 12.3)
Violence: % of adults 15+ yrs		
At least one physical attack in past 12 months: Adult men	-	12.8 (10.5; 15.0)
At least one physical attack in past 12 months: Adult women	-	7.2 (5.7; 8.7)

* Data quality checks suggest that prevalence of hypertension estimate is not reliable. See report text for details.

SUMMARY

S.1 Characteristics of the survey

The 2003 South African Demographic and Health Survey is the second national health survey to be conducted by the Department of Health, following the first in 1998. Compared with the first survey, the new survey has more extensive questions around sexual behaviour and for the first time included such questions to a sample of men. Anthropometric measurements were taken on children under five years, and the adult health module has been enhanced with questions relating to physical activity and micro-nutrient intake, important risk factors associated with chronic diseases. The 2003 SADHS has introduced a chapter reporting on the health, health service utilisation and living conditions of South Africa's older population (60 years or older) and how they have changed since 1998. This has been introduced because this component of the population is growing at a much higher rate than the other age groups. The chapter on adolescent health in 1998 focussed on health risk-taking behaviours of people aged 15-19 years. The chapter has been extended in the 2003 SADHS to include indicators of sexual behaviour of youth aged 15-24 years.

A total of 10 214 households were targeted for inclusion in the survey and 7 756 were interviewed, reflecting an 85 percent response rate. The survey comprised a household schedule to capture basic information about all the members of the household, comprehensive questionnaires to all women aged 15-49, as well as anthropometry of all children five years and younger. In every second household, interviews of all men 15-59 were conducted and in the alternate households, interviews and measurements of all adults 15 years and older were done including heights, weights, waist circumference, blood pressure and peak pulmonary flow. The overall response rate was 75 percent for women, 67 percent for men, 71 percent for adults, and 84 percent for children. This is slightly lower than the overall response rate for the 1998 SADHS, but varied substantially between provinces with a particularly low response rate in the Western Cape.

Over the past decade, South Africa has initiated several activities to extend and improve the population-based health and demographic data in the country. The SADHS makes an important contribution towards these endeavours. The SADHS is a central element of monitoring coverage of government programmes and evaluating their outcomes on population health and forms a part of the national statistical system.

S.2 Mortality and fertility

Comparison with other data sources shows that both the estimates of the fertility rates and the child mortality rates are implausibly low, and there is no obvious way in which these estimates could be reliably adjusted to allow for the data inadequacies in a consistent manner. The data from KwaZulu-Natal consistently show up as being problematic which then leads to a distortion of the national estimates of many indicators. However, these inadequacies in the data are not confined to this province alone.

Child mortality rates are a key health indicator, measuring not only mortality in children, but also the level of development and well-being of a community or country. While the overall level does not appear correct, the historical trend in this survey points to an increasing trend to an under-five mortality rate of 58 per 1 000 live births in 5 years preceding the survey. This highlights the importance and urgency to identify the determinants contributing to the increase in child mortality

so that efforts can be directed towards reaching the Millennium Development Goal of reducing child mortality.

S.3 Reproductive and sexual health

Teenage pregnancy rates, sexual behaviour and contraception use are also key indicators in Demographic and Health Surveys. Careful interpretation of these results is needed as some of these indicators are affected by the low number of births reported, and by poor data from KwaZulu-Natal. In addition, the results are also influenced to some extent by the over-representation of urban areas and Africans.

Teenage pregnancy

Compared to the 1998 SADHS, teenage pregnancy and motherhood rates decreased. By the age of 19 years, 27 percent of women had begun childbearing in 2003 compared with 35 percent in the 1998 SADHS. Rates dropped particularly in non-urban areas: currently 14 percent compared with 21 percent in 1998. The figure in KwaZulu-Natal of 2 percent--compared with 17 percent in 1998—is implausible.

Contraceptive use

Modern contraceptive use is still high, and appears to have increased since the last survey. Sexually active women report a noticeable increase in the use of the male condom as a contraceptive. The proportion of women using this method has increased from 2 percent in the 1998 SADHS to 8 percent in 2003. A more than four-fold increase from 4 percent to 18 percent in the 15-19 age group indicates a particular improvement in acceptance, accessibility or availability of the method in younger people, pointing additionally to possible promising behaviour change regarding the risk of HIV-transmission. The female condom has gained some usage with 53 percent of all women 15-49 years knowing about the method and 3 percent reporting ever using it. Oral contraceptive use has decreased slightly while injectable contraceptive use has increased slightly from 30 percent to 33 percent, with young women preferring the 2-monthly, and older women the 3-monthly injectables. The shift to the two-monthly method has some cost implications in the public health sector in terms of product cost and increase in the number of client visits per year of use.

There is an increase in the use of dual protection, but emergency contraceptive use is very low. It is also of concern that despite the relatively high levels of contraceptive prevalence, the proportion of women who have knowledge about the fertile period in their cycle is very low (12 percent) and has not improved since the last survey. Family planning visit programmes should use the opportunity to educate women about conception, fertility, pregnancy and the risks of HIV and other STIs.

HIV and AIDS

Knowledge of HIV and AIDS is almost universal in South Africa. However, it is disconcerting that the proportion of young women who have ever heard of AIDS has declined since 1998. Among women aged 20-24 years, an extremely high risk age category, the proportion of women who respond that they had heard of AIDS declined from 97 percent in 1998 to 93 percent in 2003.

The survey included questions on beliefs about transmission of HIV and attitudes towards those infected with HIV as these can affect behaviour. The survey shows that there are reasonably good levels of awareness, but identifies some gaps in knowledge that need to be addressed in future awareness campaigns. Knowledge of condom use and having sex with an uninfected partner as HIV prevention methods are known by approximately three-quarters of men (76 percent) and slightly

less women. Around three-quarters of women (77 percent) believe a healthy looking person can be infected with the HIV virus, a considerable increase compared to the 1998 survey where only 55 percent agreed that a healthy looking person could be infected. Although there has been an increase in understanding that infection is not possible through mosquito bites, it was only rejected by 57 percent of women. Knowledge that HIV can be transmitted from mother to child was known by less than half of men (48 percent) and slightly more women (57 percent).

There is a willingness to care for family members with HIV and AIDS (85 percent among women), however at the same time only 60 percent of female respondents reported that they would not necessarily want the HIV positive status of a family member to remain a secret. This indicates that families are facing up to HIV, but have reservations about disclosing. Reasons for this need to be investigated.

Voluntary counseling and testing (VCT) has been identified as an important strategy to reduce the spread of HIV. In 2003, 19 percent of women and 20 percent of men reported they had been tested for HIV and had received the results. Testing rates were in fact higher, but a proportion of men and women who had been tested had never received the test results. In 2003, HIV testing in the voluntary counseling and testing (VCT) and Prevention of Mother-to-Child Transmission (PMTCT) programmes was not yet universally available. While this may partly explain why the overall rates for testing observed in the survey were low, the results do indicate that there is a need to ensure that counseling and follow-up systems are adequate to ensure that those tested go on to receive their results. Fear of being found HIV positive may mean that people do not come back for results or deny that they received their results. This raises the need to address fear and stigmatisation as key components of the HIV related programmes. Discussion of HIV and AIDS prevention was reported by 80 percent of women during antenatal visits for the births in the 3 years preceding the survey. In the context of the extensive epidemic in South Africa and the risks of infecting the baby, this opportunity should always be utilized.

Circumcision as a strategy to reduce transmission of STIs and HIV has received a great deal of interest internationally with increasing evidence that circumcision reduces the risk of STIs and HIV among men, including a trial conducted in South Africa (Auvert *et al.*, 2006). In 2003 almost half of men (45 percent) reported being circumcised. The scope for introducing a programme to promote safe circumcision needs to be considered urgently. Such a programme must be accompanied by a strong awareness campaign to ensure that people understand that circumcision confers partial protection and must be used only in conjunction with other proven prevention measures such as abstinence, mutual monogamy, reduced number of sexual partners, and correct and consistent condom use.

Sexual behaviour

The median age of first intercourse appears to have remained fairly consistent across the age groups in women aged 20 to 44 ranging from 18.4 to 18.6 years. In the 25-29 age group the median age is 18.3 years; for the same age group in the 1998 survey the figure was 18.1. In 2003, 42 percent of women reported that they had sex before the age of 18 years compared with 46 percent in 1998, and indicating a slight increase in women delaying age of first intercourse which is important for prevention of STIs or HIV and teenage pregnancy.

Reducing the number of sexual partners is an important HIV prevention strategy. In 2003, few women in a union (2 percent) and slightly more women not in a union (3 percent) report more than one partner in the last year. There has been little change since the 1998 survey, with a slight reduction in two or more partners among sexually active women not in a union. In 2003, men were also asked about how many partners they had had in the past year. In total, 7 percent of married and

cohabiting men report two or more partners in the last year. Among men who are not in a union, this figure rises to 19 percent and men aged 20-34 years who are not in a union report rates of around 25 percent. The proportion of men with two or more partners follows a U-shape with education, being highest among the unmarried men with no education and those with an education beyond matric. Educated men probably have greater employment opportunities and disposable incomes which may affect their behaviour. In contrast, this pattern is not seen among educated women. Prevention strategies need to ensure that men of all educational backgrounds are targeted.

S.4 Maternal and child health

Maternal health

The survey reflects good coverage of antenatal care with women reporting such care for 92 percent of births in the preceding 5 years. Delivery in a health facility has increased to 89 percent compared to the 84 percent observed in the previous survey. Much of this increase has occurred in the non-urban areas with an increase from 74 percent in 1998 to 89 percent in 2003. In addition, efforts are needed to provide a post-natal check-up to women who did not deliver in a health facility. Amongst women who delivered their last baby outside of a health facility, 80 percent report receiving no post-natal check-up, and only 13 percent received a check-up within 2 days.

Maternal mortality rates are very difficult to measure as extremely large surveys are required to obtain sufficient numbers of events through a household survey; even using the sibling methodology. This survey failed to measure the level of maternal mortality due to data quality concerns as more than half of the sibling death data had missing details. This is unfortunate as routine cause of death statistics also fail to measure this important indicator because maternal causes are often unrecorded on the death notification. The confidential enquiry of maternal deaths that occur in health facilities provides valuable information and ideally such data should be linked to vital statistics. However, this system fails to provide a reliable estimate of the maternal mortality ratio as deaths that occur outside of the facilities are under-represented. Given the lack of reliable data on the maternal mortality rate, it is important that the elements of the maternal health programme be monitored closely and suitable programme indicators such as access to health services be used.

Child health

Exclusive breastfeeding for the first six months of life and regular supplementation with Vitamin A are two effective interventions to improve child survival but the survey shows that the coverage of these two interventions is still sub-optimal. While the Prevention of Mother to Child Transmission form the backbone of the child health programmes, the Expanded Programme for Immunisation, the Integrated Management of Childhood Illnesses, the Integrated Nutrition Programme and, the results of the 2003 SADHS suggest that there is much scope, to improve the health programmes for child health. Only 8 percent of infants under six months are exclusively breastfed, and only 19 percent are fully breastfed (i.e., supplemented with water only)—indicating no change since 1998. Furthermore, a significant minority of babies (29 percent) is still being given pre-lacteal feeds and 39 percent are not initiating breastfeeding immediately after birth. Both of these behaviors have important negative impacts on child survival.

Breastfeeding in the context of HIV infection is not straight-forward. The National Department of Health guidelines, adapted from WHO/UNICEF guidelines, indicate that women known to be HIV positive should avoid all breastfeeding if replacement feeding is acceptable, feasible, affordable, sustainable and safe. Otherwise exclusive breastfeeding for the first months of life is recommended, followed by early breastfeeding cessation as soon as feasible and conditions for safe

replacement feeding can be met. Breastfeeding should be actively promoted among women who are known to be HIV negative. The low rates of exclusive breastfeeding observed in both the 1998 and the 2003 SADHS show that there is an urgent need to strengthen programmes to promote and support breastfeeding.

With respect to vitamin A supplementation, less than 40 percent of children are reported to have received such supplementation in the last six months. This intervention has been shown to reduce mortality by about 25 percent in children. The fortification of key cereals and foods will go a long way towards addressing the challenge of micronutrient deficiency in South Africa, but significant numbers of children remain vulnerable to micronutrient deficiencies and the vitamin A supplementation programme needs to be strengthened.

Immunisation rates show a marked drop since 1998. This survey found that only 55 percent of 1-year old children were fully immunised compared to 63 percent in 1998. These results, however, do not tally with other data sources and need further investigation. Nonetheless, they do point to concerns about the child health programmes.

The reported prevalence of diarrhoea and respiratory infections among children are generally unexpectedly lower than in 1998. The particularly low rates observed in KwaZulu-Natal raise questions about data quality.

Nutritional status of children has been included for the first time into the SADHS. The results show that the proportion of children who are underweight is 12 percent, and the proportion stunted is 27 percent. The prevalence of undernutrition is slightly higher than the levels observed in earlier surveys such as the Vitamin A survey.

S.5 Adult health

A recent Lancet series acknowledges that developing countries with stressed health systems may be faced with a difficult task to address the escalating demands of chronic disease and their risk factors, but also argues that every country, regardless of the level of its resources, has the potential to make improvements in preventing and controlling chronic disease (Epping-Jordon *et al.*, 2005). South Africa, like several other developing countries, has been highlighted as experiencing a unique demographic moment to focus on introducing policies that will reduce the future impact of chronic disease, and to minimise the rise in cardiovascular disease in particular (Leeder *et al.*, 2004). Steps towards this have been initiated in South Africa, including the incorporation of an adult health module in the SADHS.

The SADHS includes information on risk factors for chronic diseases, utilisation of health services, use of medication and selected adult health outcomes. The survey was designed to use hypertension and chronic respiratory disease as indicator conditions to monitor the programmes for managing and preventing chronic diseases.

Risk factors for chronic diseases

The data show that smoking has declined in men age 15 and above (42 percent in 1998 compared to 35 percent in 2003) but not in women (11 percent in 1998 compared to 10 percent in 2003). The overall decline in prevalence of smoking is supported by other data and may reflect government's strong tobacco control initiatives. Disturbingly, the prevalence has not changed among young people.

The survey also collected data on consumption of alcohol. Alcohol consumption is difficult to measure accurately in household surveys and these results should probably be considered a minimum level. Although large proportions of the population report no drinking, as in 1998, the drinking pattern shows high proportion of drinkers who drink excessively, particularly over weekends. Rates of alcohol use in the seven days before the survey are slightly lower than reported in 1998; in the case of men it was 30 percent in 2003 compared to 45 percent in 1998 and in the case of women it was 10 percent in 2003 compared to 17 percent in 1998. The proportion with signs of alcohol problems has gone down (28 percent to 21 percent for men, and 10 percent to 7 percent for women). However no change is evident in the younger adults. There is a clear need to encourage people who do drink alcohol, to consume moderate amounts in a regular pattern and not a risky pattern.

Overweight and obesity has not changed since 1998 and remains particularly high for women. Fifty-five percent of women and 30 percent of men age 15 and above are overweight or obese. The prevalence of obesity among white women has declined slightly, and the extent of underweight among Indian women has declined slightly. There is considerable evidence of health problems associated with excess bodyweight. There is a need to promote healthier environments and lifestyles among all ages.

Physical activity has been measured for the first time in the SADHS, and, compared to other countries, shows very high levels of inactivity. The survey found that 48 percent of men and 63 percent of women are inactive. The prevalence of inactivity is higher in the urban setting than in the non-urban. Urgent attention is needed to understand and change these behaviours and avoid the consequential burden of disease.

Questions concerning the micro-nutrient intake of adults were introduced into this survey for the first time. The results show that there are marked variations according to particular nutrients. There is a generally low calcium intake which is reflected across all groups of adults. Vitamin A intake in adults is generally good, whereas intakes of Vitamin E, Folic acid, Magnesium, Thiamine and Zinc tend to be low. In terms of micro-nutrients, whites and urban Africans have the best quality diet. Food fortification can be expected to influence the micro-nutrient intake in the future and the questionnaire for the next SADHS will have to be adapted to capture the improved intake.

The survey had limited information about dietary intake. However, it found that fat intake varied by population group, being lowest among whites and Indians. African women and coloured people eat salty foods the most often.

Respiratory conditions and hypertension

The data on respiratory conditions are difficult to interpret, and will require additional data to confirm morbidity trends:

- The proportion of adults who reported that they have ever had TB has gone down. While TB registration data suggest that TB has increased, in keeping with the HIV and AIDS epidemic, it is not clear whether the prevalence has decreased due to increased mortality from TB.
- Chronic bronchitis has declined markedly among older women, but there has been little change in the prevalence of smoking; yet abnormal peak flow has gone up significantly. A difference in the measurement procedures for peak flow may have reduced some errors in the previous survey and contributed to this apparent increase.
- The lower prevalence of chronic respiratory disease with improved education is also striking. Detailed analysis of the 1998 data has shown that the protective effect of education was independent of other risk factors such as smoking, occupational exposure and past

tuberculosis. If it is assumed that education level reflects the cumulative effect of one's social position throughout life, the implication is that public health action to produce optimal lung health in adulthood is needed across the whole life course.

Hypertension results in the 2003 SADHS are puzzling. Prevalence of hypertension based on medication remains the same as in 1998 for all ages and sex groups. The diastolic blood pressure is systematically too low for men and older women in this survey, resulting in much lower proportions of people with hypertension, yet investigation into changes in risk factors can offer no explanation.

The survey does show that the lifestyle risk factors for hypertension (obesity, high salt and alcohol intake) are still very common in those persons with hypertension, and emphasizes the urgency to implement the planned national policy to promote a healthy lifestyle and the national guidelines for managing hypertension in primary health care facilities. In addition, consideration needs to be given to recent research that has shown benefit of lowering salt in commonly used foods in reducing blood pressure levels.

Health service utilisation and satisfaction

The proportion of adults who attended health services in the previous 30 days increased slightly between 1998 and 2003, but was higher for women than men. The most frequently attended health care facility type was public health services (20 percent) followed by the private health care services (15 percent).

Generally the survey showed that adult patients are not happy with the services rendered, both in the private and public sector. Dissatisfaction with public hospitals and community health centres is highest in the provinces of Gauteng and Eastern Cape. It is more frequently expressed by people living in urban areas than those in non-urban areas. The major reason for dissatisfaction in the public sector hospitals and community health centres are long waiting times, staff attitudes, prescription medication not available and staff shortages. Long waiting times, staff attitude, and doctors and pharmacists being too expensive were the main reasons for dissatisfaction with private sector facilities and short consultations and cost were the most common reasons cited in the case of private doctors. Women aged 15-49 years living in non-urban areas experienced more problems with costs, distance and transport in reaching health services than those in urban settings. This was reported most frequently in Limpopo.

Medical aid was available only to 14 percent of adults. Non-urban Africans and people with low levels of education had the least access to medical aid. Medical aid schemes expenditure on men's chronic drugs (23 percent) was higher than for women's drugs (12 percent). However, fewer men (7 percent) than women (12 percent) had regularly prescribed drugs for one of the following conditions: tuberculosis, asthma or chronic bronchitis, diabetes, hypertension, hyperlipidaemia, arthritis, osteoporosis, epilepsy or other atherosclerosis or stroke related conditions. Of the respondents who were taking drugs at the time of the survey, about two-thirds were taking two or more different drugs for their chronic conditions. Approximately a third of men and almost half of the women using chronic disease drugs received their drugs from the public sector facilities, and only about a quarter paid for their drugs by themselves. Patients who received their drugs from the public sector were more likely to report using two or more drugs than private sector patients, suggesting either that fewer drugs are used if the patient or their medical aid scheme has to pay for the drugs or that patients are forced to get public assistance if they require many drugs.

Of the people taking chronic disease drugs, the most frequent condition being treated was hypertension (6.6 percent), followed by arthritis (2.3 percent), diabetes (1.7 percent) and asthma and

chronic bronchitis (1.5 percent). The rate of reported drug use for tuberculosis was low. Although patients would only take such medication for a 6-month period, the low rates are of concern as routine facility data sources show marked increase in tuberculosis cases, caseloads and mortality in the country. Estimated treatment of diabetes based on drugs identified during the survey, has remained the same between 1998 and 2003 despite the fact that increased prevalence of diabetes is predicted for the South African population. The rate of treatment of hyperlipidaemia remains extremely worrying as it is estimated that there are 5.7 million people in this country with an abnormal lipid profile. A marked reduction in the use of inhaled steroids, which is the first line treatment recommended for asthma and chronic bronchitis was reported in the survey.

Utilization of drugs to treat hypertension was slightly higher in 2003 (7 percent) compared to 1998 (6 percent). The data collected on the levels of hypertension control in the 2003 data base were inadequate to establish if this emerging trend was indicative of better disease control mechanisms or not. Further analysis shows that in 2003 ACE inhibitors had replaced diuretics among men as the most frequently used anti hypertensive drug compared to 1998 and that use of methyldopa and reserpine had decreased dramatically among women. The increased use of ACE inhibitors, especially among men may be due to the increased availability of generic and cheaper ACE inhibitors. However, diuretics are still the recommended first line treatment. Finally, prescription of aspirin for patients after suffering a heart attack or stroke or for those having angina is known to reduce the chances of further attacks, however, the 2003 SADHS shows that prevalence of this prescription practice is still very low.

The additional three conditions for which data were collected in 2003 are arthritis, osteoporosis and epilepsy. Arthritis drugs were taken more frequently by women (3 percent) than men (1 percent) and consisted almost exclusively of non-steroidal anti-inflammatory agents. For osteoporosis mostly calcium supplements were recorded. For epilepsy, hydantoin and carboxamide derivatives were mostly used.

The findings about prescribed medications in the 2003 SADHS are similar to those in the 1998 SADHS. The public sector continues to be the main provider of chronic medicine, especially for the disadvantaged. Strengthening the public health system remains a critical prerequisite to achieve health for all in South Africa and in the management of chronic conditions.

Violence and injuries

Self-reported injury rates for adult men were similar in 2003 to those observed in 1998, but injury rates for women increased from about 800 per 100 000 population to about 1 100 per 100 000 population based on reported injuries in the preceding 30 days. The increase has occurred particularly among women living in the non-urban areas. Injury rates among men were generally higher than those among women especially in the 35-44 year age group for whom the rate reached nearly 3 000 injuries per 100 000 men. In this age group, the unintentional injury rate was four times higher among men than women.

Questions about physical violence were included in the SADHS because the prevention of violence has become a national priority. The survey shows that 13 percent of men and 7 percent of women experienced a physical attack in the preceding 12 months. While the majority of men were attacked in a public road (53 percent), for women, the most attacks occurred at home (48 percent).

Questions about rape and other forms of intimate partner violence were not repeated in the 2003 SADHS as they are not suitable for multi-faceted household questionnaire.

Oral health

The adult health questionnaire included questions on perceptions of oral health problems, utilisation of oral health services, satisfaction of services, loss of natural teeth and oral health practices. As the questions have been reviewed it is difficult to compare the results between the 1998 and 2003 surveys. However, this survey finds 16 percent of adults reporting oral problems (10 percent are related to teeth, and 4 percent to the gums). Twenty five percent and 28 percent of the respondents reported brushing and rinsing respectively, this was low, particularly in Free State. Overall, 65 percent reported visiting a dentist/dental therapist or oral hygienist at least once a year. The proportion of adults reporting satisfaction with the overall quality of a dentist visit was relatively high.

The findings suggest that there is a need to strengthen the Department of Health's programme that promotes healthy lifestyles and aims to reduce the common risk factors (such as sugar, alcohol and tobacco) that arise from environmental, economic, social and behavioural causes. This must be accompanied by the development of oral health systems that equitably improve oral health outcomes.

S.6 Adolescent (15-19 years) and Youth (15-24 years) Health

Monitoring the health related behaviours of young people and the extent to which they have adopted unhealthy lifestyles is extremely important in relation to the spread of HIV and other STIs on the one hand and the emergence of chronic diseases such as cardiovascular and respiratory conditions on the other.

The 2003 SADHS shows that 12 percent of men and 6 percent of women aged 15-24 years had experienced their sexual debut by age 15. Although low proportions of young people are married, more than half of the unmarried young men and 49 percent of unmarried young women had sex in the last 12 months. There has been a significant shift towards the acceptance of condom use in relationships with 75 percent of men and 53 percent of women reporting that they used a condom at last sex. This represents a huge increase compared to the 1998 SADHS, which observed that 20 percent of unmarried women aged 15-24 years used a condom at last sex. In six of the nine provinces, the proportions of teenage women who have ever been pregnant are lower in the 2003

survey than in the 1998 survey. Overall, 27 percent of 19 year old women had begun childbearing compared to 35 percent found in the 1998 SADHS.

Among sexually active women, 18 percent in the 15-19 age group and 15 percent in the 20-24 age group were currently using male condoms as their contraceptive method. In the 1998 SADHS only 4 percent of sexually active women (15-19) used condoms as a form of contraception. Use of oral contraceptives among sexually active women (15-19) has dropped from 9 percent in 1998 to 5 percent in 2003.

Although the majority of young men and women (93 percent) have heard of AIDS, less know about HIV prevention methods. Just under 70 percent of young women and just over 70 percent of young men know that using condoms and limiting sex to one uninfected partner can reduce the chances of HIV infection. When questioned about the beliefs about AIDS, there was some uncertainty about mosquito bites with only around 60 percent agreeing with the statement that HIV cannot be transmitted by mosquito bites and around 75 percent agreeing that a person with HIV can look healthy. Only 50 percent of young women rejected both misconceptions about the transmission of HIV. Approximately half of young women and men are aware that HIV can be transmitted through breast-feeding.

Few young people in the 15-19 age groups have had an HIV test and received the results, probably due to the high proportion that had not had sex in this age group. Although the testing rates increased in the 20-24 age group to 16 percent for women and 13 percent for men, there is clearly a need to find ways to encourage young people who are sexually active to be tested.

The report includes the prevalence of risk factors for chronic diseases among adolescents aged 15-19 years. It is essential to monitor this age group as it is during this period that life-long habits are initiated. Trends in these indicators serve as an early warning of future health impacts and can assist in directing the efforts to intervene with health promotion activities.

Tobacco smoking in adolescents has increased slightly. Twenty percent of boys and 10 percent of girls have ever used tobacco products in the 2003 survey, compared to 17 and 9 percent respectively for boys and girls in the 1998 survey. The increase in this age group contrasts sharply with the general decrease observed across the other age groups of men, and highlights the public health importance of countering the consumer promotion efforts that target young people. As in the case of adult smokers, the proportion of smokers who use manufactured cigarettes in 2003 is lower than in 1998 and may indicate that the increase in prices and taxing of manufactured cigarettes has partially resulted in a move towards young smokers buying loose tobacco and rolling their own cigarettes.

Twenty-eight percent of male adolescents and 14 percent of female adolescents (15-19 years old) acknowledge that they have consumed alcohol in the past 12 months, a finding which is comparable with the prevalence observed in 1998. This is substantially less than for adult men but only two percent less than for adult females, and may be indicative of a trend towards higher alcohol use by the younger generation. Despite these relatively low reported drinking rates, the data indicate high levels of risky drinking (especially over weekends) by both males and females who are current drinkers of alcohol, and interventions are especially needed to reduce high levels of drinking over weekends.

The anthropometry of young people does not appear to have changed between 1998 and 2003. The mean weight, height and BMI of men and women in the two surveys are very similar. Both surveys show marked gender differences in anthropometric status. Underweight is a concern among young men with 29 percent having a BMI below 18.5 compared to 12 percent of young women. In

contrast, young women have much higher levels of overweight and obesity than young men. In 2003, 24 percent of adolescent women are overweight or obese compared to 9 percent of adolescent men. Urban women are more prone to being overweight or obese than non-urban women and African urban women have the highest average BMI (24 kg/m²) while African non-urban women have the lowest average BMI (22 kg/m²). Young urban women have larger waist circumferences than their non-urban counterparts.

Overall, 32 percent of adolescent men and 47 percent of women reported they were physically inactive. The gender difference in inactivity appears to increase with age and is higher for women older than 15 years old. The high levels of physical inactivity could in part explain patterns of overweight and obesity among adolescent men and women. The data highlight the need for interventions to increase opportunities for physical activity for adolescents and school leavers, with a view to increasing lifetime participation in physical activity, and with special recognition for vulnerable groups such as girls and young women.

Micro-nutrient intake has been measured for the first time in the 2003 SADHS. There are no major differences in nutrient intake between age groups for young men and women, but there are large variations within the country. For all nutrients, African young people show a higher prevalence of deficiency than white youth. Calcium intake, however, is deficient in all population groups. Urban respondents have significantly better micronutrient scores, 21 in men and 20 in women compared with non-urban respondents (25 in men and 25 in women). The mean micronutrient scores are significantly better in Gauteng and in KwaZulu-Natal and poorest in Mpumalanga, the Northern Cape, and Limpopo. The introduction of food fortification in 2003 can be expected to improve the micro-nutrient intake in all areas.

The indicators related to respiratory conditions and hypertension need to be interpreted carefully as a result of the small sample size and concerns about the quality of field work. However, the results do suggest that between 1998 and 2003 there may have been an increase in the prevalence of asthma related conditions among youth in urban areas. Chronic bronchitis is not a common condition in this age group. However, both surveys suggest that African women, particularly those living in non-urban areas experience a higher prevalence of this condition than other sub-groups, suggesting that this group of young women may have higher exposures to indoor air smoke.

S.7 Health of Older Persons

A new chapter on the health of older persons (defined as those age 60 years or older) has been introduced into the SADHS report. An ageing population is usually associated with growing health care needs, contributing to a rise in health care costs, making it very important to monitor the health and service utilization patterns of this age group.

Living conditions of older persons have generally improved between 1998 and 2003. However, several findings highlight remaining barriers that prevent optimal health status, living conditions and health service delivery, particularly in the non-urban areas. About 40 percent of older persons have no education, with non-urban levels being double the urban levels, and extremely high levels of approximately 70 percent in older women in Limpopo and Mpumalanga. The low levels of education among older persons have several implications, including scope to fully participate in community life. Older persons' level of education may also present particular challenges to effective health promotion and disease management. Health education materials developed for these purposes need to take the low levels of formal education into account when targeting the older population.

Access to piped water for drinking continues to be limited for non-urban (11 percent) and urban (64 percent) older persons. There has been limited improvement in terms of all types of sanitation facilities but no change in access to a flush toilet. Similar to 1998, 15 percent of urban and 95 percent of non-urban older persons had no access to a flush toilet in 2003. The limitations in access to piped water and sanitation facilities pose a number of challenges to older persons whose mobility and physical strength generally decline with increasing age. The urban/non-urban gap in access to electricity has been reduced since 1998, but nearly half of the non-urban older persons still have no access to electricity.

Urban access to an own phone (51 percent) is considerably higher than non-urban access (6 percent). Between the two surveys, no improvement in access to a phone is shown in either urban or non-urban areas. Access to a phone can be useful in participating in various domains of societal life and so contribute to the maintenance of personal well-being. It can also be critical in sickness, emergency or loneliness. Having a radio or television facilitates access to information and some form of leisure or recreation. Given the large proportion of older persons without formal education, these media have an important purpose in disseminating visual and audio health information. Increased access to a phone, radio and television, and the promotion of reduced costs and rates for older persons may therefore indirectly promote health and well-being in the older population.

The 2003 results indicate that, similar to 1998, high blood pressure is by far the most commonly reported chronic condition among older persons, with a large differential between men (24 percent) and women (44 percent). Arthritis presents in both men (14 percent) and women (18 percent) as the second-most commonly reported chronic condition. Chronic illness prevalence in the older population is generally considerably higher than in the total adult population, and co-morbidities are more prevalent in older persons than younger members of the adult population. This illustrates the need to ensure that health care services explicitly address and manage chronic conditions in older persons, and the need for chronic care services to plan and prioritize for increased numbers of older clients. It also points to the need for geriatric services to be strengthened.

The data suggest that medical aid coverage over age 45 declines with increasing age, dropping from 18 percent among persons 35-44 years, to 13 percent among those ≥ 60 years, to 8 percent of those ≥ 80 years. This means that, at a time when a person is likely to have increasing medical expenses, access to medical aid is declining, and on the other hand, this implies that the state will have to bear increasing costs.

Of people 60 years and older, about 5 percent report being physically attacked in the past 12 months. The protection of older persons is prominent in the recently-passed Older Persons Act, but the safety of older persons needs insistent attention and a strong political will at all levels of governance, spread over different sectors, as well as a community sensitive to the particular needs and vulnerabilities of the older population.

S.8 Population policy

Sustainable human development is now the central theme and organizing principle of South Africa's population policy. This policy is implemented by integrating population factors into all policies, plans, programmes and strategies aimed at enhancing the quality of life of people, and promoting multi-sectoral interventions to address major national population concerns. The seven national strategies in the area of population and human development include: poverty reduction; environmental sustainability; health, mortality and fertility; gender, women, youth and children; education; employment; migration and urbanisation. The SADHS provides useful data to monitor trends in aspects of population policy, most noticeably around the intersection of health, mortality

and fertility with gender, women, youth and children. It also provides information regarding South Africa's progress towards meeting the Millennium Development Goals.

The current lack of reliable national estimates of key demographic indicators such as total fertility and child mortality requires urgent attention as these are crucial to monitor the progress of national population policies. Although the 2003 SADHS has not provided reliable estimates for some key indicators, some interesting trends can be discerned that indicate progress in the implementation of the population policy.

There are indications of improvements in living conditions with higher proportions of people having access to electricity. Currently, three-quarters of South African households have access to electricity compared to less than two-thirds in the previous survey. Three-quarters of households use electricity as their main source of energy for cooking compared to just over half in 1998. However, the survey indicates that there are still high proportions of people without access to piped water and sanitation in the residence. This is particularly marked in non-urban areas where households are about five times less likely than urban households to have piped water in the dwelling, and about a quarter of non-urban households still rely on an open, outside water source for drinking water.

A key indicator of poverty is the nutritional status of children, particularly child stunting. Historical data on child anthropometry are sparse, making it difficult to assess trends. However, the effects of undernutrition displayed by underweight and stunting of children do not show signs of improvement over the last decade. Recent research conducted in KwaZulu-Natal has demonstrated that access to the child grant reduced the extent of stunting among young children who receive it. In addition, the data from SADHS show that mother's education is strongly associated with children's nutritional status. These emphasise the importance of government programmes in reducing undernutrition.

Orphans are known to be a particularly vulnerable group of any population. The survey shows that the proportion of orphans has grown. The proportion of children under 15 years who had lost both their parents increased from 0.8 to 2.4 percent while the proportion of children who had lost a father only, increased from 8 to 11 percent.

Social security plays a vital role in the alleviation of poverty for children, women, older persons and people with disabilities and their families. The survey shows that social support grants are widely received. Government has committed itself to ensuring that this vital source of income for the most vulnerable sector of the community continues to contribute to development and a more equitable distribution of resources. The Government's continued social grant support is reflected by the high proportion of older persons who receive a grant. This is commendable, but also reflects the magnitude of monetary poverty among the older population, and points to the enormous challenge to eradicate poverty in older age as envisaged in both the International Plan of Action on Ageing and the African Union Policy Framework and Plan of Action on Ageing.

Decision making, an indicator of empowerment, shows interesting trends. Compared with 1998, there has been a polarisation in women's decision making around use of earnings. While the proportion of women who make their own decision has remained fairly high (71 percent), the proportion who make these decision jointly with their partner has declined from 21 to 2 percent. The proportion whose partner makes these decisions increased from 3 to 13 percent. In a decision making index spanning health care, purchases, cooking and visiting, it was found that 43 percent of women have a say in all four domains while 18 percent have no say in any domain. In contrast only 2 percent of men reported that they were excluded from decision making in (finances, purchases, visiting, number of children). Gender relations are a fundamental issue to population policy. There

is a need for further analysis of the trends in decision making and the influence that this has on population dynamics.

S9. Study Limitations and Recommendations

Comparison of the socio-demographic characteristics of the sample with the 2001 Population Census shows an over-representation of urban areas and the African population group, and an under-representation of whites and Indian females. It also highlights many anomalies in the ages of the sample respondents, indicating problems in the quality of the data of the 2003 survey. Careful analysis has therefore been required to distinguish the findings that can be considered more robust and can be used for decision making. This has involved considering the internal consistency in the data, and the extent to which the results are consistent with other studies.

Some of the key demographic and adult health indicators show signs of data quality problems. In particular, the prevalence of hypertension, and the related indicators of quality of care are clearly problematic and difficult to interpret. In addition, the fertility levels and the child mortality estimates are not consistent with other data sources. The data problems appear to arise from poor fieldwork, suggesting that there was inadequate training, supervision and quality control during the implementation of the survey. It is imperative that the next SADHS is implemented with stronger quality control mechanisms in place. Moreover, consideration should be given to the frequency of future surveys. It is possible that the SADHS has become overloaded – with a complex implementation required in the field. Thus it may be appropriate to consider a more frequent survey with a rotation of modules as has been suggested by the WHO.