

CHAPTER 15

IMPLICATIONS OF FINDINGS

15.1 Major Findings

The Demographic and Health Survey is the first national health survey conducted across the whole of South Africa. As part of the international series of such surveys, it has benefited from the extensive experience from the numerous surveys conducted in developing countries. In addition, the South African survey has an innovative adult health component which was designed to provide information about the provision of health services for adults. Including 12,247 households, this survey is smaller than the annual October Household Survey series but differs in that individual members of the household are interviewed directly for in-depth information concerning their health and measurements have been made on a sample of adults. In total, 11,357 women of reproductive age were interviewed and measurements were taken on 13,827 men and women over the age of 15 years.

The survey has confirmed evidence of the demographic transition occurring in South Africa and has found that the total fertility rate has dropped to a level of 2.9 children per woman, although it is possibly a slight under-estimate. Fertility is clearly higher in the rural areas and is correlated with education levels. There is almost universal knowledge among women about modern contraceptives and a relatively high use of contraceptives with a particularly high use of injectable contraceptives.

Teenage pregnancy remains a problem, although it has also been declining in recent years. The survey found 35 percent of 19 year-old women had been pregnant. Teenage pregnancy is high amongst coloured and African women, and was cited as the most important reason for leaving school before completion of secondary school education among the 15-24 year olds. The second most often-cited reason for dropping out of school was inability to pay school fees.

The survey provides evidence of abuse against women. One in eight women reported that they had at some point been beaten by their partner. Data from other studies suggests that this may be an under-estimate of the true level, due to the sensitivity of the questions on this topic.

Most women interviewed have heard about AIDS and there is good knowledge about the ways in which the disease is transmitted. However, this knowledge does not translate into protective behaviour as only 8 percent of women who had sex in the last 12 months, reported that they used a condom the last time they had sexual intercourse. The prevalence of STD symptoms is very high. Twelve percent of men over the age of 15 years reported that in the three months preceding the survey, they had experienced symptoms such as painful urination, penile discharge or genital sores.

The survey found an infant mortality rate of 45 deaths per 1,000 live births for the period from 1994 to 1998 which is within the WHO's target for the year 2000 of 50 deaths per 1,000 births. However, this still means that 1 in every 22 children born in South Africa dies before reaching the first birthday, and as expected, where socio-economic conditions are poorer, infant mortality is higher. Furthermore, infant mortality has begun to increase having reached a low in about 1992. This increase is likely to be due to HIV/AIDS.

Immunisation coverage is 63 percent among children aged 12-23 months and is similar between urban and non-urban areas. It has not improved since 1994. Exclusive breast feeding is low, even in the first 3 months of life. Only 10 percent of infants under 3 months are fed nothing but breast milk.

In terms of morbidity, diarrhoeal diseases continue to make an important contribution in the first two years of life and 23 percent of children age 6-23 months had an episode of diarrhoea in the two-weeks preceding the survey. Just half of women with young children (49 percent) have heard of oral rehydration therapy for ameliorating diarrhoea, but 57 percent of all the children who were reported to have had diarrhoea were given oral rehydration therapy. Commercial solutions were most commonly used. Acute respiratory infection is also prevalent amongst children and 19 percent were ill with symptoms during the 2-week period prior to the survey. A relatively large proportion of these children (75 percent) were reported to have been taken to a health facility for advice or treatment. The rate of serious and moderate injuries requiring medical attention for the under-5 year olds was 422 per 100,000 children in the preceding month. Although the most common cause of the injuries were unintentional such as burns, falls and traffic accidents, it is cause for concern that a quarter of the injuries were intentional.

Most women do receive antenatal care during their pregnancies (94 percent) and only 15 percent of deliveries take place without medical assistance from either a nurse/midwife or doctor. However, the maternal mortality ratio remains high at 150 deaths per 100,000 live births.

Attempts to measure the extent of maternal morbidity revealed that 10 percent of women who have been pregnant report leakage of urine. Less educated women were more likely to report it, which may be confounded with parity. This survey has been the first attempt to collect data on the prevalence of stress incontinence, a neglected consequence of child birth. The area of foetal incontinence as a consequence of child birth was not adequately addressed by the questionnaire but there is a suggestion that it is not a negligible problem in South Africa.

Adolescence is an important period of transition involving social and biological factors when health behaviours develop. The survey suggests that there is a need to target the youth and develop life skill programmes to empower children in issues regarding sex, tobacco abuse, negotiation and other skills to avoid violence. There is relatively high teenage pregnancy and sexually active teenage women reported low condom use during their last sexual intercourse. Although it may be an under-estimate, 15 percent of male and 7 percent of females aged 15-19years acknowledge consuming alcohol. Very similar proportions report that they currently smoke tobacco, mostly cigarettes, and 6 percent of the 15 year-olds report that they have experimented with tobacco products. Over a third (35 percent) of the adolescents who have ever smoked reported that they live with smokers in the home and are therefore exposed to environmental tobacco smoke.

The SADHS data confirm the high levels of adult mortality. The recent increase in mortality of young adults with the probability of a 15 year-old dying before the age of 50 going from 8 percent to 13 percent for women and from about 17 percent to 25 percent for men are cause for concern. The increase is likely to be a consequence of the AIDS epidemic and confirms that HIV/AIDS is a priority.

Hypertension and lung disease were measured as indicator conditions for monitoring adult health. In terms of lung disease, tuberculosis is the most serious preventable cause of chronic lung disease. It can be expected that the situation with respect to tuberculosis will worsen in the next few years, as a result of the HIV epidemic. Seven percent of men and 9 percent of women age 15 and over reported that they had symptoms of asthma, while 2 percent of men and 3 percent of women reported having had chronic bronchitis. The Eastern Cape is the province with the biggest TB problem. Some of the major risk factors for airway diseases include smoking, wood/coal/paraffin fuels, occupational exposure and air pollution.

Estimates imply that some 3,3 million adults in South Africa are hypertensive (13 percent of men and 16 percent of women) and that less than half of them are aware of it. Moreover, few hypertensives have their blood pressure under control - only 10 percent of men and 18 percent of women.

Hypertensive African men, especially those in rural areas, are seldom diagnosed as hypertensive, which points to a need for increased screening when they visit health facilities. The treatment status of hypertensives in South Africa suggests a general need for improvement in the quality of care provided for adults with chronic conditions in South Africa. It was interesting to find that alcohol use is higher among hypertensives. Of concern is that young people consume more salty food than the older people, suggesting that the prevalence of hypertension may increase as this generation gets older.

The profile of risk factors for chronic diseases suggests that there a need for extensive health promotion. Thirty percent of women are classified as obese and this was highest among African and coloured women. Interestingly, there was a high level of misperception about overweight and many obese women perceive their weight to be normal. Nine percent of men are obese and this is highest among the whites. The prevalence of smoking appears to have dropped in recent years, although it remains very high for men (42 percent). The survey found that a large proportion of smokers had unsuccessfully attempted to stop. Exposure to environmental tobacco smoke is an issue in many homes and workplaces.

The survey found that one in six adults requires medical attention annually for an injury. Most of these injuries are unintentional in nature but nearly one-third are a result of interpersonal violence or are self-inflicted. Injuries are particularly prevalent in young males and in urban areas.

Over 13 percent of adult respondents who had earned money in the past year reported that their health had been affected by their work. The highest proportion was observed in the 45-54 age-group, and was higher among men than women. One in eleven working respondents reported that work-related diseases and injuries (caused or aggravated) resulted in absenteeism from work. Projected to the estimated 8-9 million South African workers, 712,000 to 801,000 workers may be absent from work in a year due to a condition which is likely to be largely preventable.

Investigation of the medication used on a regular basis revealed extensive use of expensive medicines in both the public and private sector. There were cases where this appeared to be inappropriate and where the Essential Drug List (EDL) guidelines did not appear to be followed which would probably have resulted in more cost-effective medication. For example, there appears to be relatively widespread use of Methyldopha for the treatment of hypertension in the public sector. This medication is not on the EDL as it is expensive and has side effects. The first line treatment for asthma appears to be inhaled steroids and adrenergic inhalers in the private sector, while there is inappropriate use of systemic anticholinergics in the public sector. There is a glaringly low use of aspirin as a preventative measure against stroke in both the public and the private sector and little use of cholesterol-lowering agents in the public sector.

Limited information was included in the survey about the oral health of adults. While about a third of the sample reported that they are experiencing problems with their teeth or gums, only 3 percent of them reported that they had visited a dentist in the last month. The survey found very high prevalence of tooth brush ownership (94 percent) amongst adults. Nearly 10 percent of adults aged 25-44 were completely edentulous (toothless), compared to more than a quarter of the people over 65 years, higher than the targets that have been set for 2010. The urban areas have more extensive edentulism than the rural areas. Half of the sample were aware that fluoride strengthens teeth.

15.2 Population Issues

There are large differences between the urban and rural areas of the country, which implies that policies and implementation strategies suitable for urban communities may be less applicable to their rural counterparts. Rural areas have a greater percentage of children in the age range 0-14 years. The reasons

for this are that the fertility rate is higher in rural areas and that urban dwellers send their children to the rural areas for schooling. Resources that target this age group may need to have a greater allocation to rural areas.

The burden carried by rural households is significant. Households in rural areas are more likely to be female-headed than to urban ones. In addition, more rural households have foster children compared to their urban counterparts (34 percent compared to 17 percent). Adults in rural households are less well educated than those in urban areas. Rural households are about two times more likely to go hungry compared to urban households (15 percent and 8 percent respectively). They are less likely to have access to safe water and electricity and more likely to use wood as the primary source of energy (45 percent of rural households do not have easy access to clean water and 62 percent of rural households do not have access to electricity). Finally, 26 percent of rural households (compared to 2 percent of urban households) do not have access to toilets of any type.

Given these differences it should not be surprising that the burden of disease in rural areas is different to that found in urban communities. This difference implies that resource allocation must be revised to take this reality into account. In addition, intervention strategies for rural communities may need to be different than those for urban communities given the differences illustrated above. A “one size fits all” policy that aims to address the health status of rural communities and urban communities is not likely to work given the material differences found by the SADHS.

15.3 Child Health

Infant and child mortality

The provinces with the highest infant mortality rates are Eastern Cape (61 per 1000 livebirths), Free State (53 per 1000 live births), KwaZulu-Natal (52 per 1000 live births) and Mpumalanga (47 per 1000 livebirths). These provinces need to review both their health and non-health policies that impact on infant mortality to ensure that the IMR is reduced.

The findings on infant mortality demonstrate that where socio-economic conditions are poorer, infant mortality is higher. As expected, infant mortality has begun to increase with the impact of the HIV/AIDS epidemic. Government initiatives on poverty alleviation and the focus on the HIV/AIDS are timely interventions to improve the health status of all South Africans.

Birth order and the length of intervals between births affect mortality, with first births, more than three births and birth intervals of less than 2 years being risk factors. Policies and health interventions need to address these issues.

Childhood illnesses

The age pattern of early childhood diarrhoeal disease observed in this survey is likely to be associated with increased exposure to the illness as a result of weaning, greater mobility of the child, as well as the immature immune system of children age 6-23 months. African rural communities appear to experience more diarrhoea than urban communities with KwaZulu-Natal and Mpumalanga reporting higher rates than the national average. Although strategies are in place to encourage women to give oral rehydration solutions to children with diarrhoea, the survey suggests a clear need to intensify health promotion campaigns in these areas. There is a need for more education and training of caregivers in the use of oral rehydration solutions in rural communities in particular.

In most developing countries, diarrhoeal disease and acute respiratory infections make sizeable contributions to morbidity and mortality in children under the age of 5 years and particularly in the first two years of life. These two conditions combine with malaria and the vaccine-preventable diseases, particularly measles, to account for the main disease burden and the refractory infant and child mortality rates in large tracts of sub-Saharan Africa. Based on these trends, the prevailing approach in countries with high infant mortality rates, has been to implement programmes that specifically target these diseases and protein energy and other forms of malnutrition that contribute to mortality. Large global child health programmes, such as the Integrated Management of Childhood Illness (IMCI) are predicated on the belief that this small group of preventable conditions, together with underlying deficiencies in key macro- and micro-nutrients, continue to be major contributors to infant and child mortality in less developed countries.

In South Africa, where malaria makes a minor and very patchy contribution to child morbidity and mortality and vaccination coverage is fairly high, diarrhoeal disease and acute respiratory infections remain important preventable and treatable causes of morbidity in children. As South Africa moves further into the demographic and epidemiologic transition, confirmed by the infant mortality rate of 45 per 1000 live births measured in this survey, the proportion of infant deaths attributable to diarrhoeal disease is expected to decrease. These patterns have been clearly shown in developed countries, where the contribution of early and late neonatal deaths to infant mortality has rapidly increased and that of infectious diseases has decreased as the infant mortality rate fell below 40 per thousand.

These trends will be confounded by the HIV epidemic. Large numbers of children are already infected with the virus by vertical transmission and, with antenatal HIV seroprevalence levels of more than 30 percent in the worst affected parts of the country, these numbers will probably continue to rise in the absence of effective interventions. Since the majority of this new morbidity will be reflected as a rising prevalence of diarrhoeal disease and respiratory infections, an unknown but significant proportion of the recorded prevalence of diarrhoeal disease and acute respiratory infections in this survey and future population-based surveys can and will be attributable to HIV/AIDS. These changing trends in all-cause and cause-specific mortality and morbidity should redirect child health priorities and influence the content of child health programmes in South Africa.

Childhood injuries

The survey found that three-quarters of injuries in children were due to burns, falls and traffic accidents. A small but disconcerting number were attributed to interpersonal injuries (19 percent). Health promotion programmes should be reviewed to focus on these priorities. In addition, other government departments and agencies and other relevant stakeholders need to work together to decrease the number of childhood injuries.

Infant feeding

Breastfeeding among South African women is alarmingly low. Of all children aged 0-3 months, only 10 percent receive breast milk exclusively, and of those aged 4-6 months, less than 2 percent are exclusively breastfed. Breast milk is recommended during the first 4 - 6 months of a baby's life because it limits exposure to disease agents and provides all the nutrients that a baby requires. The major reasons provided by respondents for stopping breastfeeding earlier than expected included: weaning age; infant refused the breast; insufficient milk; mother had to go back to work. While the policy on breastfeeding remains complex in view of the potential transmission of HIV/AIDS, this survey has highlighted the importance of providing mothers with information about the benefits and risks of breastfeeding and the need to create

an enabling environment in support of breastfeeding.

Use of health services

The findings on immunisation coverage show that 63 percent of children by age 23 months were fully vaccinated against the major childhood diseases, with 55 percent of children vaccinated by their first birthday. The coverage in African rural communities is still low at 58 percent but appears to be increasing. KwaZulu-Natal (50 percent) and Eastern Cape (53 percent) are the two provinces that fall below the national average and clearly these provinces need a greater focus on immunisation.

A gratifying finding is the extent of early polio coverage. Even though this policy was recently adopted, the survey found that 91 percent of children have already received polio at birth. In addition, almost three-quarters of children have received hepatitis B vaccination.

The 'road to health' card appears to be widely used. Three-quarters of mothers of children under five could produce a 'road to health' card on request. If completed correctly, the card is an important indicator of use of health services in general, and immunisation coverage in particular. Health workers should be encouraged to ensure that the road to health card is correctly filled in and used for monitoring.

The narrowing of the gap in coverage between the urban and non-urban areas is an important indicator of the success of the government's primary health care policy. However, the study shows a relatively high dropout rate between the first and third doses of DPT and polio vaccines, indicating a need to increase campaigns to encourage mothers to complete the full course of basic immunisations for their children.

The survey also found that 92 percent of children between 6-15 years of age are in school. This implies that schools could be an important site for health promotion. The adoption of the health promotion schools initiative is a clear recognition of the importance of schools. There is therefore a need for health policies to ensure that they consider schools as an important ally in the drive to improve child health.

15.4 Youth and Adolescent Health

Teenage pregnancy appears to be a greater problem in some parts of the country and segments of the population with greater concentrations of the problem are: Mpumalanga (25 percent), Northern Province (20 percent), Eastern Cape (18 percent) Northern Cape (18 percent); rural African teenagers (21 percent), coloured teenagers (19 percent) and those teenagers with 5 years of schooling and less. These findings suggest that a more focused and targeted approach may be necessary.

The age of first use of contraception has decreased from 24 to 19 years. The most common sources of information about contraception are mothers and friends. Younger respondents appear to rely on their mothers for information whilst the older respondents sought information from nurses and doctors. The findings suggest that health promotion and education targeted at the youth must also include their caregivers and friends.

Smoking habits were found to start early. The survey also found that three-quarters of the respondents aged 15-24 years have tried to stop with a success rate of 14 percent among males and 39 percent among women. These findings suggest that it is difficult to give up smoking once started and that men have greater difficulty to stop smoking than women in this age range. "No-smoking" and "stop-smoking" policies that target youth and adolescents should take these findings into consideration.

Roughly 25 percent of adolescents aged 15-19 who are current drinkers admit to drinking at risky levels at weekends. It is important that special attention be given to designing health promotion and education and other initiatives to prevent alcohol misuse by young persons.

15.5 Maternal and Reproductive Health

Maternal health is one of the priority programmes identified by the South African government in the past five years. Pregnant and lactating women and children under 6 years of age were the first to receive health care, free at the point of delivery, as from 1995. This was intended to promote safe motherhood, reduce maternal morbidity and mortality and infant and child mortality. The SADHS results provide an opportunity to assess maternal health programmes and identify characteristics of non-users of MCH services and hence identify women at risk.

The survey suggests that fertility rates have been declining and even those provinces that previously had high fertility rates have experienced reductions. This finding is consistent with increasing access to education (only 7 percent of women of reproductive age have no education) and an increase in contraceptive use. The key policy issues that remain are the promotion of timing of childbearing and the need to encourage teenagers to time their first and subsequent births (preferably reducing teenage pregnancies).

Access to family planning services is an issue despite the high use of contraception. Ten percent of all women and 15 percent of married women reported unmet family planning needs. The greatest need for family planning services were reported by those under 25 and those between 45-49 years of age. The unmet need is highest in rural areas (2 times that of urban areas), 6 times higher amongst those with no formal education compared to those with post basic education and highest in the Northern Province and Eastern Cape. Clearly, strategies need to focus on increasing access of segments of the population of family planning services.

Fifty-three percent of women reported knowledge about the key provisions of the Choice on Termination of Pregnancy Act. The least knowledgeable were teenagers, those aged between 45-49, those living in rural areas and those living in the Eastern Cape, Northern Province and the Northern Cape. Given that access to terminations increases the choices available to women, it is important that the availability of these services is more widely known.

A major problem reported by respondents was the poor quality of care provided by health facilities rendering reproductive health care. Quality of care was worst at family planning clinics, followed by public hospitals and clinics. Staff rendering mobile services were found to be the least unfriendly. In the private health sector, respondents reported that staff at pharmacies were the most unfriendly followed by private doctors. The major policy challenge is for government to introduce policies that would improve the quality of services received in both the public and private health sectors.

The survey revealed generally high levels of use of primary health care for women and children. For example, women received antenatal care from a nurse or doctor for 94 percent of births. Most of the visits (66 percent) were to a nurse. Only 14 percent of births in the five years preceding the survey were delivered without medical assistance from either a nurse/midwife or doctor. Seventy-three percent had 4 or more antenatal care visits and 63 percent of the visits occurred in the first 6 months of pregnancy. Eighty-three percent of deliveries were in a health facility with home deliveries being more frequent in rural African communities, when the mother had less than 5 years of education and in the Eastern Cape, Mpumalanga and the Northern Province.

Of concern however, is the finding that the maternal mortality ratio remains high, at 150 per 100,000 live births. It is hoped that the 'Confidential Enquiry into the Causes of Maternal Deaths in South Africa' process instituted by the Minister of Health in 1997 will provide more information on the factors which are contributing to this high ratio and that the mechanisms to improve quality of care built into the confidential enquiry process will contribute to a reduction in maternal mortality.

15.6 HIV/AIDS and STDs

There is extensive awareness about HIV/AIDS, yet this awareness does not seem to translate into knowledge which enables safer sexual behaviour. Condom use is low among teenagers and adults, and only 8 percent of women reported that their partner had used a condom during their last sexual intercourse. Condom usage is, however, slightly higher for sexual encounters with non-marital partners (16 percent) but nowhere near acceptable levels. Another indication that awareness of HIV/AIDS is not being translated to safer sex behaviour is the high rates of STD symptoms reported. Twelve percent of men interviewed reported having symptoms of an STD in the three months prior to the survey. The data suggest that STD infections are a bigger problem in certain communities. Levels are higher among non-urban men, men in KwaZulu-Natal and Mpumalanga, and African men. These findings support the need the greater partnerships and a strengthening of the government's drive to prevent the further spread of HIV/AIDS.

15.7 Adult Health

The level of mortality is a key indicator of adult health. Different data sources have yielded conflicting information on the exact level of adult mortality and the SADHS data is an important source of new information that can be used to determine adult mortality. The survey suggests that there has been an increase in premature adult mortality and recent increase for young adults is cause for concern. It is important for all the mortality data to be evaluated together to be able to monitor the trends in mortality.

If the burden of chronic diseases in South Africa is to be determined in any accurate way, self-reporting by people of the conditions they suffer from cannot be relied on. Chronic conditions need to be diagnosed by objective means, such as measuring blood pressure for hypertension or doing a glucose tolerance test for diabetes. As the actual diagnosis of many chronic conditions is a costly process, a cost-effective approach would be to identify one or more measures that can be done cheaply and accurately to diagnose one or more common chronic conditions. Such a condition could then be used as an indicator condition to address the care provided for adult conditions. An example would be the measurement of blood pressure to identify hypertension.

The survey data suggest that many of these common chronic conditions are under-diagnosed and poorly treated. The condition that seems to be most under-reported is hyperlipidaemia. This condition is a major risk factor for atherosclerosis-related conditions that precede heart attacks and strokes.

Lung disease

Tuberculosis is the most serious preventable cause of chronic lung disease in South Africa. Not only is tuberculosis a serious cause of death, it is also a serious cause of disability, particularly in people who have required repeat courses of treatment. Much of what must be done to prevent tuberculosis lies outside of the sphere of health care. Improving the lives of all South Africans, but especially the poorest groups in society through employment creation, provision of houses and engendering caring communities will, given time, have a positive impact on the tuberculosis situation. The HIV pandemic requires all

possible efforts to reduce its impact partly to prevent tuberculosis. Once a person develops tuberculosis the only available effective route is medical therapy. It can be expected that the situation with respect to tuberculosis in South Africa will worsen in the next few years. Therefore, in anticipation of this and in order to limit consequent death, disability and the perpetuation of tuberculosis, serious consideration must be given to ways to strengthen South Africa's tuberculosis control programme at local, provincial and national levels of government. The poor reporting rate of tuberculosis cases is noted. This must be improved so that reliable statistics are obtained through notification data. Measures to control tuberculosis will also have a population benefit in reducing the burden of chronic obstructive lung disease.

The survey revealed a high burden due to other respiratory diseases and data suggest that control of tobacco smoking remains a priority. While the means of primary prevention of asthma at the population level are still poorly understood, protection of the unborn child and young children from passive smoking can prevent a significant number of cases of childhood asthma and aggravation of established cases.

There is much scope to improve the provision of care. All health care providers need to be made aware of the latest consensus approach to the management of COPD (Working Group of the South African Pulmonary Society, 1998), in particular the need to give advice on smoking cessation and rational prescribing. To achieve such awareness, more active professional development approaches are needed than the publication of guidelines alone. Primary care practitioners need to be trained in clinical evaluation of COPD. At the very least, primary care facilities need to be equipped with peak flow meters, although practitioners need to be aware of the limitations of peak flow meters in the diagnosis of COPD. Efforts to extend the benefits of optimal asthma care to the population at large need to be intensified (Potter *et al.*, 1994, South African Pulmonary Society Asthma Working Group, 2000). The skills of primary care practitioners in diagnosing and caring for asthma need to be improved and their practices brought into line with currently recommended guidelines. Attention needs to be given to ensuring that the appropriate and most cost-effective medication for asthma are available.

The key to prevention of occupational respiratory disease is the control of occupational air pollution. This requires the enforcement of engineering and other workplace control solutions as required by the Occupational Health and Safety Act (No. 85 of 1996) and the Mine Health and Safety Act (No. 29 of 1997). There is, however, an urgent need for the co-ordination of preventive and enforcement efforts in South Africa, currently fragmented across different departments. There is also the need for greater use of the mechanisms for worker participation provided by the above acts, for example, through health and safety committees.

As an adjunct to workplace prevention of occupational lung disease, education of health care providers to recognise and report occupational diseases is needed. An overhaul of the administration system for occupational diseases, whose inefficiencies currently represent a major obstacle to the reporting and management of occupational diseases, is needed (Ehrlich *et al.*, 1995). The separation of compensation and preventions systems further adds to inefficiency.

The problem of indoor air pollution due to fuels can best be addressed by the use of alternative fuels. Paraffin (kerosene) is less polluting than coal (Bailie *et al.*, 1999), although it is associated with increased risk of accidental child poisoning. The current programme to extend electrification to households in all areas of the country is thus likely to produce a substantial health benefit. However, South Africa's heavy reliance on coal for electricity generation confers substantial external costs (Van Hoorn, 1996), which need to be taken into account.

Population research is needed to describe the relative contribution of tobacco and other risk factors to the prevalence of COPD and asthma in South Africa. In particular, research is needed into the contribution of

mining and other occupations with significant workplace air pollution to lung function loss and COPD. There is a pressing need to investigate why women with low smoking prevalence report relatively high levels of COPD and asthma symptoms. Careful measurement of risk factors such as indoor and localised outdoor pollution, tuberculosis and lung function will be needed.

Large scale epidemiological studies are needed to determine the health effects in areas of high or increasing air pollution. In addition to traditional industrial pollution, the impacts of photochemical smog and small particulate pollution need to be monitored. With the relatively rapid social and economic change in South Africa, it is possible to investigate emerging hypotheses on the contribution to the population incidence of asthma of changing infection rates, immunisation rates, diet, family size, and other correlates of development.

Operations research is required to identify barriers to the implementation of recommended COPD and asthma care at primary level. Research into the cost of asthma and COPD care and the burden on health facility budgets of asthma medication is needed to enable managers and practitioners to plan appropriately. A study of the country's human resources in pulmonary care, including pulmonologists and pulmonary technologists should be undertaken to estimate future needs and to propose a training and placement strategy to meet these needs. Operational research is required in those provinces where there appear to be very low notification rates for tuberculosis to determine why this is the case and to make suggestions on the best ways of remedying this.

Hypertension

While national guidelines for the management of hypertension in the primary health care setting have been developed and launched, the findings of the survey suggest that these are not being implemented comprehensively. It is likely that staff at primary care centres need to be trained to apply the proposed guidelines. In addition, patient education modules, in line with these guidelines, need to be developed and evaluated as well as tools to assist the clinic staff with the heavy patient loads that they currently face. The most cost-effective combination of therapies to manage hypertension should be identified and implemented, at least in the public sector facilities. This might require the development of low-cost combination forms of medication.

The level of blood pressure that identifies hypertensive patients (either 160/95 mmHg or 140/90 mmHg) needs to be agreed upon, taking the resources within the public sector into account. The Hypertension Society of South Africa, in line with WHO recommendations, have revised the cut-off to 140/90 mmHg. This will clearly lead to many more individuals being diagnosed as hypertensive. The cost-effectiveness of attempting to manage hypertension based on this cut-off needs careful consideration.

The salt content of South African staple food, such as bread, needs to be investigated and controlled if necessary. The policy of alcohol use should consider the impact that this agent has on hypertension and should be included in an education package regarding safe alcohol use. The impact of obesity on the prevalence of hypertension should motivate a concerted effort to address obesity in the South African population by the health care services.

A system to monitor hypertension needs to be developed. Indicators and tools to monitor the treatment of hypertensive patients should be developed and the questionnaire and measurements used in this survey should be enhanced and validated for forthcoming surveys.

Although hypertension has been used in this survey as an indicator condition for the health care provided for adults, it is essential to adopt a total risk assessment for cardiovascular diseases (CVD) in order to develop a more cost-effective approach. The blood pressure status should be considered alongside

tobacco usage, diabetes and hyperlipidaemia status to assess their overall risk for developing cardiovascular diseases.

Many issues to improve the management of hypertension need further research. It would be useful to study the determinants in patients, the health care team and the service structure that influence the poor hypertension control that has been observed. Epidemiological research is needed to develop and evaluate modules to identify the overall cardiovascular disease risk profile of patients to determine which patients can be treated cost-effectively. Intervention material needs to be developed and evaluated for hypertension patients that would empower them to become active in improving their own control and methods need to be developed to ensure that more men, particularly young and rural men, are diagnosed and enter treatment. Epidemiological studies should be undertaken to determine if the blood pressure of the African community is salt-sensitive. Lastly, while the disease burden of hypertension is clearly extensive, it would be useful to study the cost effectiveness of possible interventions that could be introduced to reduce it.

Lifestyle factors

The lifestyle indicators that have been identified suggest that, for men, the high rate of smoking needs intervention and for women, the high rates of overweight and obesity as well as high rates of smoking among coloured women.

Twenty-nine percent of men and 56 percent of women were found to be overweight or obese, with white, educated men being the most obese of all men, and African urban women of low education level being the most obese of all women. In Gauteng and KwaZulu-Natal, more than one-third of women are obese. Overall, these data suggest that the predominant pattern of malnutrition in adult South Africans, particularly in African and coloured women, is one of over nutrition, with remarkably high rates of obesity. Obesity is a predisposing factor for developing hypertension, diabetes and a range of other pathologies. While some scientists have suggested that obesity may be less harmful in African people (Stevens J, *et al.*, 1992), a number of South African studies have shown that obesity is an independent predictor of the emergence of hypertension and diabetes in Africans. Besides, obesity tends to cluster with other cardiovascular disease risk factors, such as high blood lipids.

The policy proposals for obesity must predominantly lie with prevention, as it is an extremely difficult condition to treat effectively. Cultural issues will have to be addressed as some traditions convey positive connotations about being obese. This has been illustrated with the survey data showing the discrepancies between perceived body weight and the actual high rates of obesity. In addition, educating young women on healthy eating patterns must be prioritised, which will benefit them and their families.

The health promoting schools initiative should also focus on issues of over-nutrition and obesity. Healthy eating patterns must be established at a young age. Basic nutrition education is needed and there should be an equal focus on a well-balanced diet, while preventing obesity.

Another issue regarding healthy eating is related to the labeling of food products. This has not received sufficient attention to support people who buy food to make healthy choices. Labeling should also consider people who cannot read English or have low literacy levels.

The Tobacco Products Control Amendment Act of 1999 provides the country with one of the most comprehensive pieces of tobacco legislation in the world. The Act is a necessary and timely response to a growing public health problem. It is designed to shield children from expensive advertising and promotional campaigns designed to get teenagers to think that smoking is 'cool' and 'smart' and not a deadly addiction. The Act also protects the right of non-smokers to a clean environment unpolluted by tobacco smoke.

The accelerating trend in tobacco consumption in South Africa that began in the 1960s appears to have peaked early in this decade and is now on the decline, although the country still has about 7 million smokers aged 15 years or older. In 1992 Martin *et al.* reported that 32 percent of South Africans over the age of 18 years smoked and in 1996 Reddy *et al.* reported a figure of 34 percent. A lower rate of 28 percent amongst adults aged 16 years and older was found by the South African Advertising Research Foundation in 1998. In the SADHS, the overall smoking rate for all South Africans 18 years and older was found to be 26 percent.

While the lower smoking rates in the SADHS could reflect a true reduction in tobacco use in South Africa, it is necessary to consider methodological and other contributing factors to explain the results. The sampling procedures used in the previous surveys selected one person per household, while the SADHS studied all adults in selected households. An additional possibility for explaining the lower smoking level observed could be that the sampling frame of the SADHS included a truly representative rural component to a greater extent than the sampling frame used in other studies.

It is nonetheless possible that the tobacco control campaigns conducted in South Africa during the last few years have resulted in a reduction in smoking. There is very high awareness in the population that smoking is harmful to health. The health warning messages on tobacco products and advertisements seem to have been effective in raising public knowledge and awareness of the risks of smoking. In 1992, for instance, 67 percent of men and 78 percent of women thought that tobacco use was bad for one's health (Martin *et al.*, 1992). This figure increased to 89 percent for men and 94 percent for women in the SADHS in 1998.

In order to strengthen the anti-smoking policy the following proposals are made: greater emphasis on the monitoring of the impact of the policy; providing smokers with viable strategies to stop smoking; including anti-smoking as part of the curricula of health worker training, especially nurse/midwives and school health personnel; and monitoring tobacco-related disability and deaths.

Regarding alcohol use, just under half of males and one-fifth of females 15 years and older acknowledge being current consumers of alcohol. This is lower than would be expected based on the findings of other research and less than would be expected based on estimates of the amount of alcohol consumed in South Africa. The data, however, indicate very high levels of risky drinking (especially over weekends) and high levels of alcohol dependence among those persons who do consume alcohol. Intervention is especially needed to reduce high levels of drinking over weekends, particularly by African and coloured populations, non-urban populations, and persons having lower education. Ongoing surveillance of alcohol use, risky drinking and associated problems is required to inform the targeting of appropriate interventions and to assess the impact of such interventions.

Injuries

Injury prevention and control should be a national priority since it is one of the leading causes of mortality and morbidity among South Africans. In addition, injuries result in significant costs not only to the individual, but to their families, the community, the health services and ultimately the society as a whole. Although long-term injury reduction lies with primary prevention it is essential that the other two

components, viz., secondary and tertiary prevention, also be foci of attention. South Africa should look to the industrialised nations that have had good success in reducing unintentional injury rates. If we adapt some of these public health techniques in order to accommodate local needs there is every reason to believe that our overall injury rate, and even that of violence, can be reduced.

The survey found evidence of abuse against women, with one in 8 women (13 percent) reporting they had, at some time been beaten by a partner. Four percent of women who had ever been pregnant reported they had been physically abused during the pregnancy. Only 4 percent of all women reported ever having been raped. One in five currently married women reported economic abuse, where their partners did not provide money for food, rent or bills, but used it for other things. The extent of abuse may well represent under-reporting but is still of major significance and requires the implementation of health policies that will address this issue. Clearly, the need for intersectoral action, with such other role-players as the Departments of Safety and Security, Justice, Social Development, NGOs and the private sector is critical for any successful intervention strategy.

Occupational health

Of those employed in the past 12 months, 14 percent reported work-related injury or disease. Although bias introduced by the household survey methodology may have contributed to this high rate, the survey has provided the most broadly based indication of the prevalence of work-related health concerns available to date for South Africa. Whatever the limitations, it is clear that health services at all levels can expect a substantial proportion of their adult working patients to present with work-related complaints. This emphasises the importance of effective occupational health services.

15.8 Oral Health

A higher priority needs to be given to oral health issues. Many oral health researchers argue that the prevention and control of oral diseases deserves greater attention because the adverse impact of poor oral health on the individuals is underestimated. This is clearly demonstrated in the present study by the number of people who had experienced oral health problems.

Although it is important to expand access by increasing primary health care facilities through delivering oral health care services, it should be noted that much of what oral health care professionals do in many systems continues to be of a curative nature, thus even individuals who have a usual source of oral health care are more likely to make a visit for treatment instead of prevention.

The high prevalence of hepatitis and HIV/AIDS infection poses a higher risk to oral health personnel and the public. This highlights the need for promotion and prevention of oral diseases and the consequent reduction of invasive dental procedures. The low dose and frequent exposure of teeth to fluoride has been shown to be one of the most equitable and cost-effective preventive measure for dental caries. The successful implementation of water fluoridation depends upon public knowledge and support.

The findings of the survey support a number of the current national oral health policies for South Africa, highlighted in Table 15.1 (Department of Health, 1999).

Table 15.1 Draft National Oral Health Policy for South Africa

Selected National Goals for 2005

1	To increase primary health care facilities delivering oral health care services by ensuring that these services are being made available in the following order of priority: district hospitals, community health centres, clinics. Oral health should be integrated into general health programmes.
2	To ensure that 40% of the population with piped water systems requiring fluoridation receive optimally fluoridated water
3	To reduce the average national restoration: extraction ratio of 1:12 to 1:8
4	To decrease the shortfall in facilities and personnel in rural areas from 70% to 60%
National Goals for 2010	
Age 15:	at least 5 healthy sextants
Age 18:	to ensure that 60% or more will retain all their teeth
Age 35-44:	no more than 5% edentulous; 80% with a minimum of 20 functional teeth
Age 65-74:	no more than 15% edentulous; 60% with a minimum of 20 functional teeth
Other	
5	To promote the reduction of risk factors, like sugar intake, tobacco and alcohol abuse.
6	To reduce the Age Standardised Incidence Rate (ASIR) of the combined figures for mouth, tongue, lip and gingival cancer to 6 per 100,000.

There is a need for research in oral health. Socio-dental indicators need to be developed for measuring and demonstrating the comprehensive impact of oral disease on the individual. The development of effective modern oral health care systems and self care products such as toothpastes and improved nutrition are needed and health services research of utilisation, satisfaction and barrier to service uptake are needed.

15.9 Use of Chronic Medication

The most commonly used drugs are for the treatment of hypertension, followed by drugs for diabetes, asthma and chronic obstructive pulmonary diseases. The effectiveness of these chronic diseases drugs can be estimated by assessing the degree of hypertension control achieved by the health services in the country. Data gathered suggest that neither the public nor private health care sectors have achieved an acceptable level of hypertension control. This implies that both doctors and their patients need to work on ways of improving prescription, use and compliance with treatment guidelines which go beyond the dispensing of drugs.

The drug utilisation pattern furthermore highlights some glaring lack of the use of cost-effective medication that can save lives and decrease morbidity. This is highlighted by the very low level of aspirin being used for atherosclerosis- and stroke-related conditions as well as very little hypolipidaemic drugs use. There are about 4 million people in South Africa with hyperlipidaemia who are currently untreated. This figure will increase as development and upward social morbidity increase the risk for developing hyperlipidaemia and atherosclerosis related conditions.

Despite the publication and distribution of essential drug lists and rational prescription guidelines for use in the primary as well as the secondary and tertiary health care services, the use of pharmacologic

treatments are not optimal. More attention, in the form of monitoring and support in this regard are necessary.

15.10 Conclusions

The results of the SADHS suggest that health policies in a number of areas need to be strengthened. In addition, the inter-provincial and rural-urban variation suggests that a one-size fits all approach to policy making will not facilitate easy implementation. Instead policies and implementation strategies that fit the reality of communities need to be considered.

Beyond the general points made above, the chapter has attempted to tease out the major policy implications of the results of the survey. It is clear that the implementation of the Strategic Framework, 1999-2004 be guided by the findings of this survey.