Development, Health and the Environment

Factors Influencing Infant and Child Survival in South Africa

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Preface

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Development, Health and the Environment

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Introduction

The late 20th and early 21st centuries have seen much of the world involved in the transition from one set of institutions, processes and procedures governing daily life to wholly different configurations by which societies function. The general thrust of these changes has been towards the political and economic opening up of the countries involved. This has been true whether the move was from colonial status to independence, from state socialism to a market economy or from one set of political institutions to a new pattern of governance. In each case policies and programmes have been developed in response to the specific conditions that sparked the movement for change. The priorities assigned to particular sectors in a given country have reflected not only those special circumstances, but also its unique historical, political, social and cultural environment.

Sustaining this process of change is not simply about extending existing programmes and policies or replicating those that have been undertaken in other settings. Rather it involves a more complex set of considerations. Social and economic

development entails the simultaneous addressing of a broad range of concerns. Endeavours designed to improve levels of educational attainment, enhance employment, expand health facilities and services, increase the availability of safe water supplies and provide a greater supply of decent housing are at the heart of efforts underway in developing countries around the world.

The concurrent mounting of a broad range of development initiatives creates a dynamic interplay among the programmes involved, in which the outcomes of any given activity impact on projects underway in related, and even seemingly non-related, sectors. The effectiveness of any particular development strategy is therefore heavily influenced by both the anticipated and the unanticipated consequences of these inter-relationships.

An additional consideration in the design and execution of appropriate and effective sustainable development activities is the special context in which these endeavours will be carried out. Their effectiveness will frequently turn on the degree to which the specific components of these policies and programmes take into account the historical, cultural, political or social attitudes of the populations served. Sustainable development, in these terms, requires programmes that not only can be supported in the long run economically but also reflect, and are responsive to, the distinctive characteristics of the particular society involved.

Most social and economic development programmes have, as a central objective, improving the health status of the populations concerned. Good health is viewed not only as important in its own right but also as having an essential instrumental purpose. Healthy populations are seen as having a greater potential for engaging in productive economic activity, thereby directly contributing to efforts designed to reduce poverty (Government of Malawi, 2002; Health Systems Trust, 1998). In these terms, infant and child survival takes on a special importance for families, communities and countries.

The most common indicator of infant and child survival is a country's infant mortality rate (IMR)[1]. A society in which this rate is relatively low is considered healthier than one in which the IMR is high. Moreover, the IMR is frequently used as an indicator of socio-economic development, so that a low IMR is associated with a higher level of socio-economic development.

A variety of factors have been identified as influencing infant and child survival. First are the socio-economic characteristics of the household in which a child is born. The argument is made that higher family income, urban residence and greater educational attainment of the mother improve the chance that a child will survive the first year of life and beyond. More access to healthcare services and facilities, including ante-natal care, medical attendance at birth, and participation in immunisation programmes constitute a second set of factors frequently cited as contributing to a lower IMR. A physical environment in which there is access to safe drinking water, clean sanitary facilities and safe housing constitute a third set of conditions that are seen as improving the chances of infant and child survival.

A central thesis of this paper is that improvements in infant and child survival are the product of the interplay among programmes developed to reduce infant mortality and morbidity. Moreover, these programmes will also be affected by the particular historical and cultural settings in which such efforts have been undertaken.

An additional premise is that changes in infant and child survival are impacted not only by policies focused directly on infant and child health, but also by actions for which the central purpose may only be peripherally related to this end. This thesis is explored through an analysis of the factors influencing infant and child survival among the African and coloured populations in South Africa, and the changes that have taken place in these factors since the end of apartheid. Data for the analysis is from the October Household Surveys conducted by Statistics South Africa for the period 1994–1999.

Healthcare, environmental conditions and socio-economic factors

Not only is a low IMR in a given society associated with better health status, but reductions in the IMR are also viewed as one measure of success by societies undergoing the processes of modernisation. Concern with the existence of a high IMR in South Africa was one factor in the decision made by President Mandela, early in South Africa's transition process, to expand access to maternal and child healthcare.

Care must be taken, however, in how one views a reduction in the overall IMR, along with improvements in infant and child survival in a given country. A lowering in the overall IMR and gains in infant and child survival can mask significant differences in the rates that exist among particular population groups in a society. This is illustrated by the cases of South Africa and the United States. The overall reported rate of 51 for South Africa in 1994 bore little relationship to the rates for the major population groups in the country. These were 67 for the African population, 38 for coloureds, eight for Asians and seven for whites (Yach, 1994). A similar pattern existed in the United States where, in 1994, the overall IMR of eight contrasted to an IMR of 16 for the Afro-American population, 14 for all non-whites and seven for whites (US Bureau of the Census, 1997). The presence of these differences in a developing and a developed society reflect both an unevenness in the levels of economic and social development among various segments of a society and the differential impact of programmes and policies on particular groups within those societies. These considerations underscore the need to view the issue of infant and child survival as an aspect of sustainable development from both a macro and a micro perspective.

There has been a long-standing controversy over the influence that any one factor or set of conditions has on infant and child survival. It has been asserted that the decline in mortality in the 18th and 19th centuries in England and Wales, as well as similar declines in the United States and other countries

during the same period, were mainly related to improvements in overall standards of living and were only affected to a limited extent by healthcare (McKeown, 1976; Wolman, 1986). A principal argument in developing societies, however, has been over the contribution of preventive versus curative medical care, with most credit for declining mortality being attributed to preventive care, such as vaccination programmes. While it has also been contended that access to health services is important, it is not clear that availability of healthcare by itself will affect infant and child survival or whether other factors such as education of the mother will dominate (Frankenberg, 1995; Jain, 1985; Lalou & Legrand, 1995; Mason, 1984).

The contribution of environmental conditions to infant and child survival constitutes a second area about which there has been substantial argument. The early studies – Chadwick in Great Britain and Shattuck in the United States – that sparked the public-health movement in both countries suggested that basic improvements in water, sanitation, refuse disposal and other environmental conditions were a necessary precondition to good health (Chadwick, 1842; Lindheinn & Syme, 1983; Shattuck, 1850). John Snow's work on a specific water pump as the source of a cholera outbreak in London is often cited as the prime example of the value of geographic epidemiology and of the salience of the environment (Snow, 1855).

However, the difficulty of disentangling environmental factors from other factors has led some scholars and other policy advisers to support improvements in water supply, sanitation and related environmental conditions while being frustrated by their inability to attribute mortality declines to such sources (Churchill, 1987; Feacham, 1978). Recent assessments of Snow's work have questioned whether shutting off the water from the Bank Street pump actually led to an ending of the cholera epidemic or whether the epidemic had already abated before that (McLeod, 2000; Sandler, 2000). Other recent research is equally inconclusive. Some scholars report that environmental factors are important influences in infant mortality while others suggest that safe water is a necessary,

but not sufficient, condition for infant and child survival (Burger & Esrey, 1995; Rajna, Misra & Krishnamoorthy, 1998; Timaeus & Lush, 1995). It is argued by still others that the effects both of water supply and of sanitation are greatly diminished or disappear when household socio-economic characteristics are taken into account (UN, 1985).

A third set of factors believed to be important for infant and child survival are the socio-economic characteristics of the household in which the child is born. Prime among these is the education of the mother, with higher levels of maternal educational attainment leading to higher proportions of infants surviving (Hobcraft, 1993; Sufian, 1990). Infant mortality is also associated with the place of residence of the parents, with urban settings having lower IMRs than rural settings. Of further significance are the cultural patterns in the society in which a child is born. Examination of infant and child survival in societies in which there is a high male preference indicates that survival rates of boy babies are significantly higher than those of girl babies (Anderson, Kim & Romani, 1997; Anderson & Romani, 1997).

Thus, the levels of infant and child survival in a specific society are not the product of any single factor or programme. Rather, as suggested earlier, they are the result of interactions among a variety of forces that together produce patterns unique to the society involved. Effective and sustainable development activities designed to improve health status require a recognition of the collective impact of these various factors on the populations concerned.

As has been noted, the variations in the IMR among population groups in South Africa is striking. There is, however, mixed evidence regarding the level and trend in the IMR for South Africa. Estimates from the United Nations (UN) show declines in this rate from the late 1980s through the 1990s (UN, 1999; UN, 2000). Those based on the *South Africa Demographic and Health Survey* (DHS) show a similar decline from the mid-1980s to the early 1990s, but a substantial increase by the mid-1990s (Department of Health, 1999). The estimated

level of the IMR also differs in various sources. The UN estimates are significantly higher for all dates than those of the DHS. For example, the UN estimate of the overall IMR for 1982 was 67 and that for 1997 was 58. DHS estimates for comparable periods of time were 50 in 1986, 40 in 1991 and 45 in 1996. As noted earlier, the overall rate for 1994 estimated by Yach was 51 (Yach, 1994).

While there is disagreement in these estimates about the overall levels and trends in the IMR for South Africa, there is general agreement on the differentials in this rate among the population groups. The 1998 DHS estimated that in 1996 the IMR for Africans was 47, for coloureds 19, and for whites 11[2]. Those by Yach for 1994 show a similar pattern: 51 for Africans, 38 for coloureds, seven for whites and eight for Asians. The UN estimates were not presented separately by race or population group.

This pattern of large differentials in the IMR among the population groups is a product of the social, economic and political history of South Africa, not only since the establishment of apartheid in the 1950s but throughout its history, especially since the early 20th century. Apartheid created a system with inequitable access to healthcare and large disparities among racial groups in terms of employment opportunities, education and housing.

The effects of this system are still present today with the result that South Africa may be viewed as a nation containing two parallel societies. One, composed of the white and Asian populations, exhibits most of the characteristics of the developed world. The second, made up of the African and coloured populations, presents many of the problems and conditions found in the developing world. The important policy implications lie in the conditions underlying the differences between these groups. This paper concentrates on those factors related to infant and child survival among the African and coloured populations for the purpose of assessing the effectiveness of existing and alternative programme options.

Preliminary analysis of data from the *South Africa Demographic and Health Survey* from 1988–1992 showed that in Gauteng province, which includes the cities of Johannesburg and Pretoria, educational attainment, medical attendance at birth and use of ante-natal care among African and coloured mothers were almost identical, although the infant mortality rate for the African population was much higher than that for the coloured population (34 versus 9). The most notable difference was greater access of the coloured population to safe water (Rossouw & Jordaan, 1997). Following on from this observation, a multivariate analysis of environmental and household conditions among the African and coloured populations was done, using data from the October Household Survey of 1994.

Characteristics of African and coloured households

The variables used in the analysis fell into the three areas of explanations of infant and child mortality discussed earlier. The differences in these factors between the African and coloured populations in 1994 are shown in Table 1 (on page 9). The contrast between the overall conditions of life of African and coloured children was striking. In every area, coloured children lived in a better-off and healthier situation than did African children. Fewer than 20 per cent of coloured children lived in rural areas as against 69 per cent of African children. Of African households, some 43 per cent were more than 5km from a medical service; true for only 14 per cent of coloured households.

Comparable differences also existed in the level of educational attainment of mothers, with 11 per cent of African mothers having no education as compared to five per cent of coloured mothers. Perhaps most striking were the differences between the two groups in access to safe water supplies and sanitary facilities. A substantially larger proportion of coloured households – 93 per cent – had access to running tap water in the dwelling or on site. This was true for only 42 per cent of

Table 1: Socio-economic conditions in households of children born from 1989 to1994

	Per cent African	Per cent coloured
Living in rural areas	69	17
With mother age 40+ at birth	14	8
Born in a hospital or clinic	83	95
Education of mother		
No education	11	5
Standard 5	35	31
Standard 6 through Standard 8	30	39
Standard 9 or higher	23	24
Total	**99**	**99**
Distance to health facility		
Less than 1km	25	51
1km to 5km	33	36
More than 5km	43	14
Total	**101**	**101**
Type of sanitation		
Flush or chemical toilet	26	85
Pit toilet or pit latrine	53	8
Bucket toilet or no toilet	20	7
Total	**99**	**100**
Main source of domestic water		
Running tap in dwelling or on site	42	93
Water carrier/tanker or public tap	21	4
Borehole or rainwater tank	14	1
Stream, non-borehole well or other	23	2
Total	**100**	**100**

Note: Totals may not sum to 100 due to rounding error.
Source: 1994 October Household Survey of South Africa

African households. A similar disparity existed in terms of sanitary facilities, with 85 per cent of coloured households having a flush or chemical toilet as opposed to 26 per cent of African households.

Based simply on the differences in education and other factors in Table 1, one could argue that high infant mortality in the African population is the likely product of low maternal education, rural residence, lack of sanitary facilities and limited access to medical care. A critical question, however, is what type of programme would be most effective in reducing this rate. In a situation of limited resources, it is essential that interventions are focused on those areas that can bring about substantial results. Identification of optimal strategies requires an analysis of the factors involved and the influence that each appears to have on the infant and child mortality of the population group concerned.

An examination of these factors was done separately for African and coloured children. The first question was whether, for each group, the different categories of variables were significantly related to infant and child mortality. Using analysis of variance, each variable examined separately had a significant relation to infant and child death, except for education of mother for the coloured population and sanitation and age of mother for the African population. Even these showed variations across the categories of the given variable in the expected direction, with greater access to facilities, higher educational attainment and better conditions of life related to a lesser chance of infant or child death (Anderson et al., 2000).

The analysis of variance for individual variables, however, does not provide a way to decide about the relative importance of different variables. The critical question is the relative contribution each of these variables makes to the chance of infant and child death and the degree to which one or another is more critical in affecting the chances of infant and child survival. It is also essential to know whether the set of variables related to a particular explanation, such as access to and use of healthcare, is important once the effects of the variables

representing household socio-economic characteristics have been taken into account[3].

Using logistic regressions, these relationships were explored by looking first at the effects of household socio-economic characteristics on whether a child or infant dies. While the signs were all in the expected direction, only rural residence and age of the mother were individually significant and only for the coloured population. The next step was to add the two healthcare variables – distance to health facility and medical attendance at birth – to the model. For each group, distance to a health facility was not significant, but being born in a hospital or clinic was. The environmental variables were then added and while the changes from the earlier findings were significant for each group, there were some critical differences. Source of drinking water was important for the African population, while type of sanitation was important for the coloured population.

It is likely that the source of drinking water was not significant for the coloured population because there was very little variation in it. Some 97 per cent of households of coloured children had a running tap in the dwelling, obtained water from a tap on site or obtained water from a public tap or water carrier. The lack of variability in type of sanitation, however, is not the explanation for the lack of significance of sanitation for the African population. As Table 1 shows, there was a large variability in the type of sanitation available to the African population. Nor is it likely that the lack of significance of the type of sanitation comes from a high degree of association between source of drinking water and type of sanitation. A substantial proportion of African households with safe water had poor sanitation facilities. While 20 per cent of the African households had a bucket toilet or no toilet, this was the case for 42 per cent of African households with running water in the dwelling or on site and for 23 per cent of the African households who obtained their domestic water from a water carrier or public tap.

A final step in the analysis was to examine all of the variables together. This allowed an opportunity to look at the effect that environmental factors have in explaining the death of an infant or child after the healthcare variables and the socio-economic characteristics of the household had been taken into consideration. For both groups, inclusion of the healthcare variables significantly improved the extent to which infant and child death was explained by the model because of the importance of being born in a medical facility. The source of water, however, remained very important for the African population, while the sanitation variable remained statistically significant for the coloured population. However, the environmental variables considered together were not significant for the coloured population group after the healthcare variables had been included.

This finding suggests that the environmental variables are related to the healthcare and socio-economic variables sufficiently that they do not make an independent contribution to the chance of infant and child survival for coloured children. For African children, however, environmental variables do make a significant independent contribution to the chance of survival. For both groups of children, healthcare, especially being born in a medical facility, is important for survival, even after other factors are taken into account.

Comparison was also made between the model with the healthcare and environmental variables and the model including all of the variables. This comparison tested whether the household socio-economic variables significantly improved the fit after other factors had been included. It was found that the socio-economic variables as a set were significant for the coloured population (p=0,026), but not for the African population (p=0,437).

Problems of data quality and the large sample size required to obtain stable results make analysis of factors related to infant and child mortality difficult throughout the developing world. This is especially problematic for South Africa because,

during the apartheid era, little data was collected for the African population. Despite the limitations of the data used in this analysis, the results yield some intriguing and potentially useful results.

Support is provided, firstly, for the influence of all three kinds of factors on infant and child survival in moderate to high mortality situations. Overall socio-economic characteristics play a significant role when analysed by themselves. However, contrary to the expectations of some researchers, their importance is substantially diminished when healthcare and environmental factors are taken into account. Most striking is the importance of the source of domestic water for the African population. The significance of the source of water for infant and child mortality has been thought to operate through duration of breast-feeding and treatment for diarrhoea. Some studies have found a relation between safe water and post-neonatal mortality but not with neonatal mortality. As long as the child is fed only breast milk, contaminated drinking water has little effect on the child (Ahiadeke, 2000; Woldemichael, 1998).

These results for the African and coloured populations of South Africa suggest a hierarchy of needs whereby, without clean water, sanitation may matter little. Once clean water is more generally available, however, sanitation becomes more important in determining the chances that infants and children survive. An important policy consideration arising from this observation is whether this pattern will hold for the African population when that population group has greater access to safe domestic water supplies.

Factors affecting infant and child survival: 1994–1999

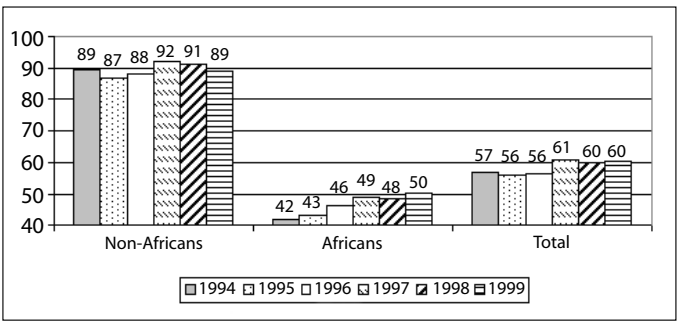
Since 1994, South Africa has been in transition from a set of governmental arrangements in which participation was highly restricted to one in which participation has been greatly expanded. There has also been a shift from a heavily subsidised and regulated economy to one that is more open and market-orientated. Further, the government has embarked on

substantial efforts to expand access to healthcare, improve water supplies and upgrade sanitation, especially in the rural areas. A principal objective of these endeavours has been to raise the standards of living for all the people of South Africa, especially those population groups that were severely disadvantaged during the apartheid era. To this end, programmes have been undertaken in a number of sectors, all of which have the potential for affecting infant and child survival in South Africa. The pace at which these activities have been initiated, along with the degree to which there have been visible results of these efforts, are crucial elements in determining the degree to which there have been any substantial changes among the factors identified as having a strong influence on infant and child survival.

The October Household Surveys from 1994 to 1999 provide limited data from which a preliminary examination can be made of the results of these efforts by the South African government. Urban residence is one important socio-economic factor that is felt to have a positive effect on infant and child survival. Under apartheid the African population was heavily restricted to rural or semi-urban settings by a policy of pass laws that limited members of this population group from entering urban areas except under specified conditions. The elimination of these restrictions meant that, after 1994, Africans were able to move more freely from rural to urban communities.

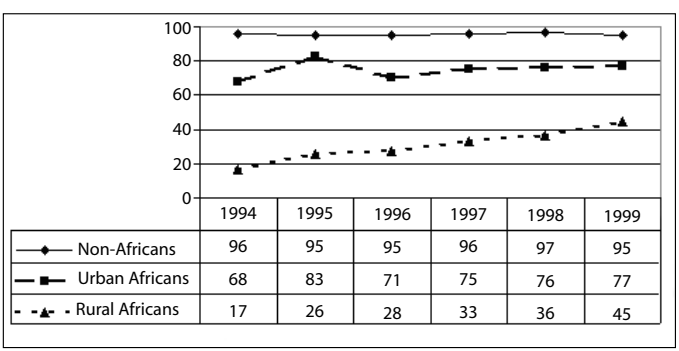
A starting point is to see the degree to which the African population has become more urbanised. The assumption is that urban populations are more likely than rural populations to have access to safer water supplies, better sanitation and other resources that affect the survival of children. It can be seen from Figure 1 (on page 15) that, between 1994 and 1999, there was essentially no change in the proportion of non-Africans resident in urban areas. Almost all non-Africans lived in urban areas throughout the period. There was, however, an eight per cent increase – a rise from 42 to 50 per cent – among Africans living in urban areas.

Figure 1: Percentage of population in urban areas



Another measure of improvement in standard of living is the source of household lighting, with electricity being the preferred source. During this period there was for both non-Africans and urban Africans no change in the proportion of households with electricity as the main source of lighting. There was, however, a major change for rural Africans. Between 1994 and 1999, the proportion of rural Africans with access to electricity as the main lighting source rose from 17 to 45 per cent.

Figure 2: Percentage with electricity as main light source



	1994	1995	1996	1997	1998	1999
Non-Africans	96	95	95	96	97	95
Urban Africans	68	83	71	75	76	77
Rural Africans	17	26	28	33	36	45

A similar picture is present for access to clean water. Again, for both urban Africans and urban non-Africans there was no change in the proportion with access to clean water. Given that there was an average of only two per cent of these groups without access to clean water, the room for improvement was minimal. The case of rural Africans, however, was substantially different. In 1994 slightly over half the members of this population was able to draw on safe water for domestic use. By 1999, this percentage had increased to 61 per cent. Figures 4a and 4b show this change more clearly. As can be seen in Figure 4a, one-fifth of rural Africans in 1994 depended on borehole or rainwater for their domestic water supply. By 1999, however, this percentage had declined to nine per cent. The number of people dependent on other sources such as streams or dams remained essentially the same.

Figure 3: Percentage with clean water

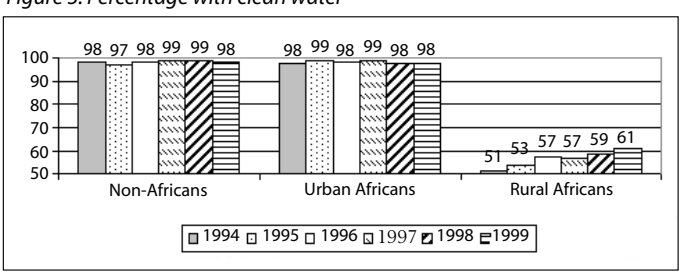


Figure 4a: Source of domestic water for rural Africans in 1994

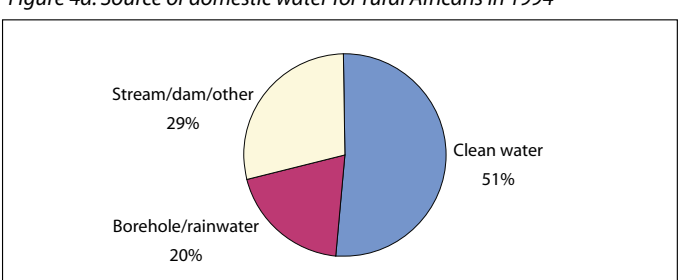
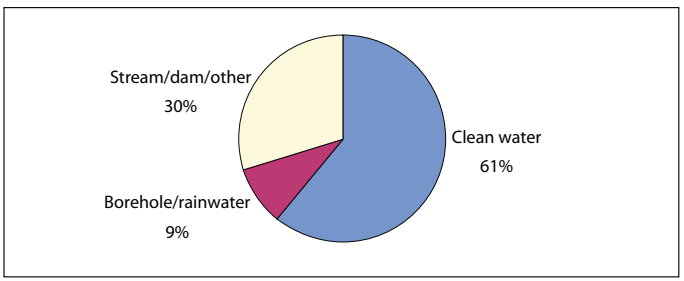
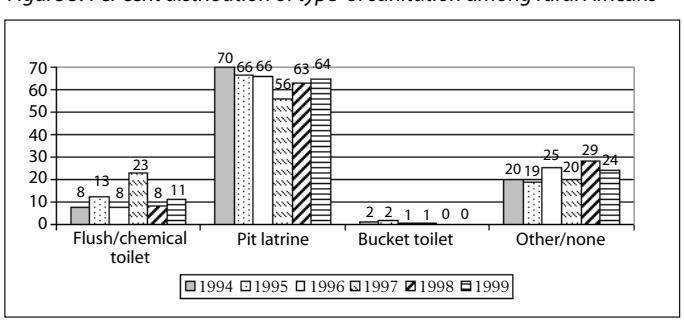


Figure 4b: Source of domestic water for rural Africans in 1999



The type of sanitation used by rural Africans, however, is a much more mixed picture. For all practical purposes there has been little, if any, change in sanitary facilities for this population group. While between 1994 and 1999 the percentage of rural Africans dependent on pit latrines declined from 70 per cent to 64 per cent, the proportion of those with access to flush or chemical toilets increased by only three per cent.

Figure 5: Per cent distribution of type of sanitation among rural Africans



A major undertaking by the South African government since the end of apartheid has been to expand access to primary healthcare, particularly for mothers and children. One of the first steps taken by President Mandela was to abolish fees for pre-natal care in public clinics. This was soon followed by the decision to make primary healthcare for mothers and

children below the age of six free of charge. Concurrent with these actions, efforts were initiated to increase the number of primary healthcare clinics and to upgrade these facilities. These steps reflected the belief that strengthening the healthcare system – along with making it easier for people to use the system – was a necessary element in bringing about an improvement in infant and child survival.

The earlier analysis of differences in the survival experiences of African and coloured infants and children indicated that birth in a hospital or clinic was one healthcare factor that contributed to higher survival rates for children of both groups. Distance to a healthcare facility, however, was not of significance to either population group. Data from the October Household Surveys for the period 1994–1999 show that there was no change in the proportion of rural Africans for whom the nearest healthcare facility was less than 5km. Nor in this period was there any marked change in the percentage of rural African children born in a hospital or clinic – 80,7 per cent in 1994 and 81,4 per cent in 1998. A survey of the facilities in 2000 noted that, while progress had been made in meeting the objectives of improved accessibility, availability and quality of care provided by the primary healthcare system, there were still significant shortcomings in staffing and equipment and continuing differences among the provinces in terms of the availability and accessibility of basic services (Health Systems Trust, 2001a).

Observations

There are three observations concerning changes that have taken place in South Africa in factors affecting infant and child survival and the implications these may have for policy. First is that the programmes of the South African government to provide greater access to safe water supplies have been at least partially successful. A ten per cent increase in the number of rural Africans who have clean water for domestic use is significant. There remains, however, a substantial component of the

rural African population without access to this critical resource. What the government has been able to achieve thus far offers the promise for additional improvements in infant and child survival as safe water supplies become more available.

An unknown consideration, however, is the counter-effect of the lack of any discernible improvement in the area of sanitation for this population group. That there have not been any substantial changes in the types of sanitary facilities is somewhat understandable. It is easier to install water taps on site or in a dwelling than to build or provide safe sanitation facilities. The latter involves not only the construction of the means to remove waste from sites, but also its treatment and disposal. Both of these require greater investment of time and materials than does the installation of safe water supplies, even when this requires treatment of the water. If, as has been suggested, there is a hierarchy of needs in this area, then the expansion of efforts directed at improving sanitation in rural areas, coupled with a continuation of the emphasis on extending access to safe domestic water supplies to these same areas, would be the strategy of choice. It appears that the government is following this approach.

Access to electricity is one indicator of an improvement in the overall levels of living. For rural Africans the substantial improvement in the access to electricity for household lighting must be placed against the fact that there have been only limited advances in other standard-of-living indicators for this group. Between 1994 and 1999, the percentage of rural Africans living in formal dwellings increased by less than five per cent. Although there was some growth – 11 per cent to 18 per cent – in the proportion of rural African households in which electricity was the principal energy source for cooking, wood continued to be the main cooking fuel for nearly half (48 per cent) of these households. Regular collection of refuse is essentially non-existent for this population group, and most rural Africans must travel 1km, or for 16 minutes or more, to reach a telephone. This suggests that despite some improvements in the standard of living for rural Africans, there is still a

long way to go in bringing these levels up to those of Africans in urban areas and of other population groups.

Among the more puzzling considerations emerging from this examination of factors contributing to infant and child survival in South Africa are those related to the healthcare system. Findings from the analysis presented above suggest that while delivery of a child in a hospital or clinic is important, the matter of access as measured by distance or time to that facility has little significance. One might assume that, given the high proportion of children now born in hospitals or clinics, continued emphasis on expansion of primary care facilities takes on less urgency than would appear at first glance. It is not clear however whether this conclusion automatically follows. The analysis of the primary healthcare facilities cited earlier indicates that there remain critical gaps in service availability, particularly in the more remote areas served by mobile clinics. That report (Health Systems Trust, 2001a) noted that the interval of six to seven weeks between visits in the Northern Cape suggests that the largely rural population of that sparsely populated province has relatively little access to basic health services.

What also cannot be overlooked is that the high proportion of births that take place in a hospital or clinic do, when combined with other factors, contribute to better infant and child survival. These considerations would argue for continued attention to the development and strengthening of the primary healthcare system, not simply in terms of the issue of infant and child survival, but also to deal more effectively with other health concerns.

Conclusions

The task of reducing the disparities in infant and child survival between the African and non-African populations is neither simple nor easy. To the degree that lower standards of living, less access to safe water supplies, poor sanitary facilities and wide variations in ready availability of primary healthcare

services contribute to greater numbers of infants and children dying, then increasing the chances for African infants and children to survive calls for broad and co-ordinated sets of activities. Improvements in infant and child survival are not simply a product of policy interventions directed specifically at the particular needs of mothers and children. Positive changes in infant mortality rates and overall infant and child survival will result only from a combination of efforts that range over the full spectrum of socio-economic development activities.

A compounding consideration for South Africa as it faces the continuing need for additional investment in sustainable economic and social development programmes is the presence of the HIV/Aids epidemic. Much has been made of the rapidity with which the epidemic has spread and the implications of this for the future of South African society. Projections of the potential impact of the epidemic have a doomsday quality (Dorrington et al., 2001). The issue, however, is not simply the validity of these estimates, some of which suggest a complete decimation of the prime working-age population. Rather it is the way in which these assertions have shaped the debate concerning social and economic development priorities.

At the heart of the issue is resource availability and the allocation of resources among competing economic and social development initiatives. There is an advantage for those interested in improving infant and child health to assert that all of the concerns involved in this area have a direct relationship to the HIV/Aids epidemic. Defining the needs in this fashion puts those concerned in a more favourable position in relation to internal and external donors – both governmental and non-governmental – with specialised interests in HIV/Aids. This strategy further strengthens the argument that, given the seriousness of the HIV/Aids epidemic, priority in internal public budgeting should be given to such programmes because of their centrality in dealing with the HIV/Aids situation.

This is neither an unusual nor perhaps an inappropriate strategy. However, it tends to beg the question when dealing

with the issue of infant and child survival. As noted earlier, the task of improving infant and child survival requires a broad array of efforts ranging from those focused on providing clean water supplies; to those increasing access to intensive neonatal care; to those providing adequate shelter and safe sanitary facilities. Reduction in resources for programmes in these and related areas could well mean that the effectiveness of other activities is affected since it is the overall synergistic effect of the programmes concerned that is important.

Perhaps illustrative of this dilemma is the argument over how the Department of Health should allocate its limited resources among its competing programmes. There are two elements in this dispute. First, there is the proportion of the Department of Health budget allocated to HIV/Aids as opposed to endeavours focused on other health needs. Malaria continues to be a major problem, and there have recently been outbreaks of cholera. While levels of immunisation against many of the traditional childhood diseases have risen, over one-third of children in the country were not fully immunised in 1998 (Health Systems Trust, 2001a). It is arguable that a further shift in resources from these and related areas to HIV/Aids activities could create greater problems for the public's health in the future. Second is the proportion of the overall budget that is devoted to health programmes. Increasing expenditure for health could lead to reductions in investments in related areas that affect infant and child survival. This raises questions as to the appropriateness of this strategy.

Somewhat overlooked in all this are two or three realities in which the debate and actions concerning the HIV/Aids epidemic and the broader issues of economic and social development are taking place. Perhaps most critical, as pointed out earlier, is that South Africa contains both a first- and a third-world society. Nowhere is this more evident than in the health sector. For the 20 per cent of the population who can afford to receive care from the private sector, the services and facilities available rival those found in the best institutions in the

United States and Europe. For the 80 per cent who are dependent on public clinics it is a more dismal picture. Up until l994, there were four distinct health systems in place – one for each population group. The least-supported system was that in the formerly black homelands, where the majority of rural Africans still live.

A major task since 1994 has been to integrate these systems and simultaneously expand and upgrade the capacity of the facilities nationwide. While a number of new clinics have been created, along with an improvement in existing facilities, many have no running water, electricity or telephones (Health Systems Trust, 2001b). Since many of these are in remote rural areas, staffing them continues to be a problem comparable to difficulties faced in other developing societies and in comparable areas in the developed world (Ricketts, 2000). This lack of a complete infrastructure for the delivery of basic health services raises a variety of questions concerning the most appropriate use of resources, not only in terms of dealing with the HIV/Aids epidemic, but also with reference to the provision of services directly focused on maternal and child health. This picture of the health service delivery infrastructure is not unique. There are comparable shortfalls in other service areas. Thus, the capacity of South Africa to continue to mount a broad programme of social and economic development poses a special challenge.

A key consideration in this challenge is the context in which the transition of South African society has taken, and is taking, place. At the start of this process in 1994, priority was given to altering the institutions and processes of governance on the grounds that this was a necessary first step in dealing with the underlying conditions of economic and social inequality. A concurrent decision was to shift from a heavily subsidised and regulated economy to one that was more market-oriented. This was seen as an essential aspect of efforts designed to end the isolation of the South African economy from world markets and to attract external assistance for the support of socio-economic development programmes. An integral element of this strategy

was to privatise the para-statal institutions that had dominated the South African economy. The combined effect of these early actions in the transition was to create a more complex environment in which to undertake, simultaneously, the planning and implementation of development programmes, organising changes in the basic structure of the economy and creating a reformed infrastructure for the delivery of public services.

It meant, further, that the reordering of economic conditions would occur within a democratic framework. Decisions concerning public investment priorities would not be taken as part of a central unified plan, but rather as the product of extensive negotiations involving stakeholders representing both internal and external interests. As groups representing these various parties engaged in attempts to influence proposed actions, the time required to reach closure concerning specific socio-economic programmes became elongated.

The opening of the economy to world markets and the influence of international agencies increased the exposure of the South African economy to external influences, some of which have been benign and others of which have had negative consequences. One result was the greater volatility in prices, interest rates and currency values that has complicated further the processes of development programme planning and implementation. The rising expectations of populations that had been disadvantaged in the earlier period have not been met as rapidly had been hoped. The privatisation of the para-statal industries has led to increased worker displacement in a setting in which there is a high rate of unemployment. These circumstances have contributed to an increase in the politicisation of the social and economic development processes. While this is neither an unexpected nor an undesirable result, it has made the task of dealing with the fundamental issues of sustainable social and economic development more complicated.

A parallel to the situation in South Africa is that which occurred in the former Soviet Union. There, as in South Africa, reformers sought first to modify the political institutions in the

hope that economic reform would more easily proceed after the establishment of a democratic structure. The ensuing economic difficulties experienced, especially in Russia, have some similarity to the difficulties now being encountered in South Africa. A contrasting situation is that which took place in China where the decision was made to open up the economy as the first stage of transition. The assumption in that society was that political reform would best succeed once the basis for a market economy was in place. Moreover, it was felt that the shift from state socialism and the opening of the economy to world markets could be better managed in a less open political system. While this has led to a more rapid development of a market economy, it has resulted in much more tension over issues of political participation.

The point is not that either of these strategies was inappropriate for Russia or China. Nor is it to argue that the approaches employed in South Africa were in error. For all three countries, the decisions made reflected what the leadership viewed as most in keeping with the particular circumstances of the society concerned. What it does suggest is that choices will lead to consequences that, in turn, become part of a new context in which the processes of social and economic development will take place. For South Africa this has meant increasing impatience on the part of many with what is viewed as a lack of sufficient progress towards a more equitable society. This growing unease with what has been accomplished constitutes a new element in the environment of social and economic development in South Africa. It is one that those in governance must face as they move towards the next stage in this process.

Notes

1 This is the number of children dying within the first year of life out of 1000 births.
2 No rate was reported for Asians because of an insufficient number of cases.
3 For the relevant tables and a full discussion of the analysis of variance and logistical regression analyses of these factors, see Anderson *et al.*, (2002).

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