REPUBLIC OF SOUTH AFRICA

MILLENNIUM DEVELOPMENT GOALS

Goal 4
Reduce child mortality

UNDP

The South Africa I know, the home I understand

Contents

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4.2 Facts and figures

REDUCE CHILD MORTALITY						
Goal 4 Indicators	**1994 baseline (or closest year)**		**Current status 2010 (or nearest year)**		**2015 target**	**Target achievability**	**Indicator type**
Under-five mortality rate	59 *(1998)*		104 *(2007)*		20	**Unlikely**	**MDG**
Infant mortality rate	54 *(2001)*		53 *(2007)*		18	**Unlikely**	**MDG**
Proportion of 1 year-old children immunised against measles	68,5 *(2001)*		98,3 *(2009)*		100	**Likely**	**MDG**
Immunisation coverage under 1 year of age	66,4 *(2001)*		95,3 *(2009)*		100	**Likely**	**Domestic**
Life expectancy at birth for males and females	57,6 *(2001)*	64,8 *(2001)*	55,3 *(2007)*	60,4 *(2007)*	70	**Unlikely**	**Domestic**
Diarrhoea incidence under 5 years of age (per 1 000)	138,0 *(2001)*		132,6 *(2009)*				**Domestic**
Pneumonia incidence under 5 years of age (per 1 000)	21 *(2003)*		102,1 *(2009)*				**Domestic**

4.3 Overview of child mortality: Global and Regional context

The MDG 4 focuses on reducing mortality of under-fives years aged children. Reliable and timely estimates of childhood mortality are therefore needed to help countries monitor progress towards achieving the targets. In 2008; 8,8 million children who had been born alive across the world died before their fifth birthday. Most of these children lived in developing countries and died from a disease or a combination of diseases that could easily have been prevented or treated. Under-nutrition contributes to over a third of these deaths (UNICEF 2008).

Worldwide, substantial progress has been made towards the achievement of MDG 4. In 2008, 10 000 fewer children aged under five died every day than in 1990, the baseline year for the MDGs. Moreover, the rate of decline in under-five mortality increased for the period 2000 – 2008 compared with the 1990s (the average annual rate of decline for 2000 – 2008 is 2,3 % compared with 1,4 % for 1990 – 2000) (UNICEF 2008). It would appear that meaningful progress has been made in reducing the under-five mortality rate globally.

However, the rate of decline in under-five mortality is still grossly insufficient to reach the MDG goal by 2015, particularly in sub-Saharan Africa and South Asia. It is alarming that among the 67 countries with high mortality rates (40 per 1 000 or more), only 10 are on track to meet MDG 4.

Four diseases – pneumonia, diarrhoea, malaria and AIDS – accounted for 43 per cent of all deaths in children aged under-five years worldwide in 2008. Pneumonia and diarrhoea together account for a third of all under-five deaths. Most of these lives could have been saved through low-cost prevention and treatment measures, including antibiotics for acute respiratory infections, oral rehydration for diarrhoea, immunisation, and the use of insecticide-treated mosquito nets and appropriate drugs for malaria. The need to refocus attention on pneumonia and diarrhoea – two of the three leading killers of children – is urgent. The use of new tools, such as vaccines against pneumococcal pneumonia and rotaviral diarrhoea, could add momentum to the fight against these common diseases and provide an entry point for the revitalization of comprehensive programming. Ensuring proper nutrition is a critical aspect of prevention, since malnutrition increases the risk of death.

4.4 Reducing child mortality in South Africa

The internationally agreed quantitative target with regard to child mortality is to reduce by two thirds, between 1990 and 2015, the under-five mortality rate. The indicators for monitoring progress include under-five mortality rate, infant mortality rate, and proportion of one-year-old children immunised against measles. As a further means of monitoring progress in reducing mortality among children – a national population concern as expressed in South Africa's population policy (Department of Welfare 1998) – additional indicators used in South Africa include prevalence of severe malnutrition amongst under-five year olds, prevalence of malnutrition amongst under –five year olds, immunisation coverage, life expectancy at birth, proportion of one-year old children fully immunised against pneumonia, pneumonia incidence in under-five year old children, diarrhoea incidence in the under-five year olds.

Progress in the reduction of child mortality in South Africa using the above indicators will be presented.

Indicator: Under-five mortality rate

Under-five mortality rate is defined as the probability (expressed as a rate per 1 000 live births) of a child born in a specified year dying before reaching the age of five years subject to current age-specific mortality rates (United Nations 2003). The United Nations (2003) has noted that under-five mortality reflects the social, economic and environmental conditions, including healthcare, in which children (and others in society) live.

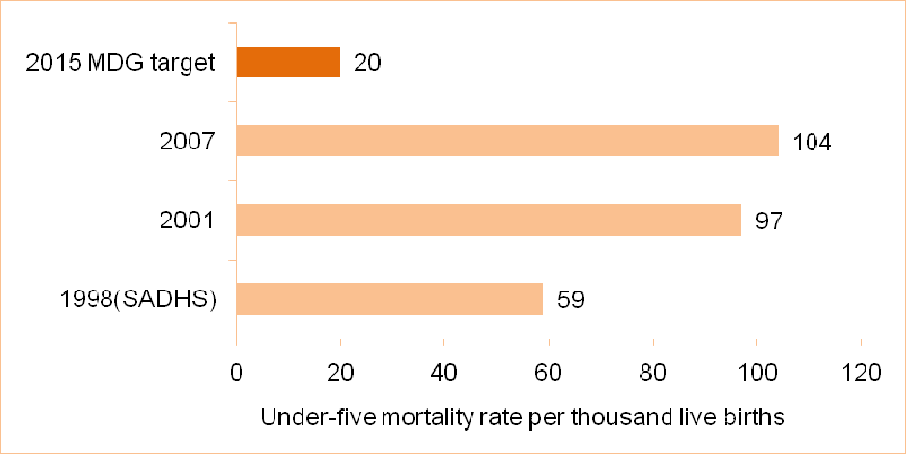
Values of under-five mortality (and infant mortality) rates are not available from Statistics South Africa although the organization has provided under-five and infant mortality ratios, which were computed from registered births and deaths without adjusting for under-registration. In view of this, other sources of under-five and infant mortality rates were used to assess progress in South Africa in reducing child mortality. Available evidence in this regard suggests that mortality in childhood has been rising in South Africa. In this regard, Udjo (2005), on the basis of his analysis of the survivorship reports in the 1996 census noted that 'it appears that childhood mortality levels have increased in recent years across all population groups' in South Africa. Reporting on the child mortality estimates for the period 1978 to 1996 derived from the pregnancy histories (1998 South Africa Demographic and Health Survey), the Department of Health (1999) noted 'improvements in the level of child mortality until 1991'. The report on the 2003 South Africa Demographic and Health Survey also observed that 'infant, child and under-five mortality have all increased over the 15-year period preceding the survey' (Department of Health, Medical Research Council & ORC Macro, 2007). Furthermore, the results for the analysis of the 2001 Census and 2007 Community Survey 'suggest moderate levels and rising (child) mortality…' (Udjo 2008). Despite the rising trend in the mortality of children in recent years, current levels in absolute terms are lower compared to what they were in the 1980s and early 1990s.

Although, as already indicated, official figures are not available, other sources provide some indication of the magnitude of under-five mortality rates in South Africa as follows. The under-five mortality rate for females in 1996 was 84 deaths per 1 000 live births. It should be noted that the mortality data in the 1996 Census was problematic; hence under-five mortality was only estimated for the female population. According to the report on the 1998 South Africa Demographic and Health Survey, observed under-five mortality rates (not corrected for omission of deaths) were 59 per thousand live births during the period 1993 to mid-1998. However, note that since the estimate in the report was computed by direct methods it is probably an underestimate since omission of deaths is a common phenomenon in surveys (estimates based on indirect methods are higher). This notwithstanding, using the under-five mortality estimate from the 1998 South Africa Demographic and Health Survey as a benchmark, a reduction by two-thirds implies that South Africa's under-five mortality is

expected to be about 20 per thousand live births or less by 2015 if South Africa were to meet the internationally set target for South Africa.

Current levels of under-five mortality rates based on the 2001 Census and 2007 Community Survey, however, indicate under-five mortality rates of 97 per thousand live births in 2001 and 104 per thousand live births in 2007 (Figure 4.1). Thus the current level of under-five mortality is far higher than the international set target for South Africa (which is 20 per thousand live births).

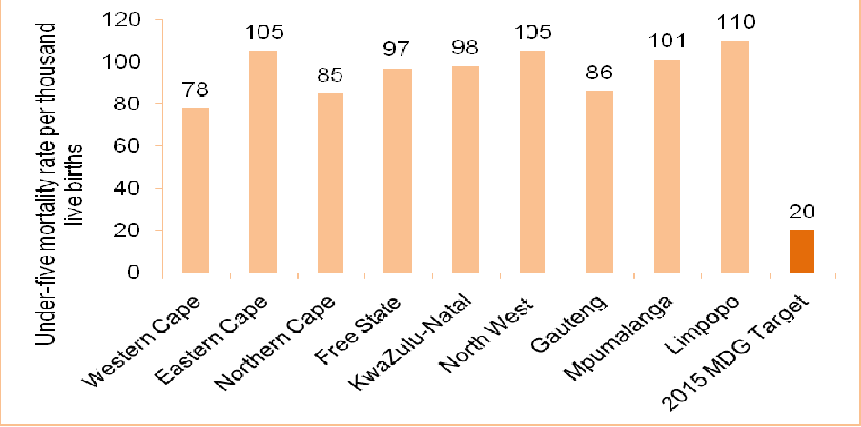
Figure 4.1: Under-five mortality rates since 1998 and the 2015 MDG target



Source: *1998 South Africa Demographic and Health Survey*, Department of Health; *2001 Census and 2007 Community Survey*, Statistics South Africa

There are provincial disparities in under-five mortality rates in South Africa. Figure 4.2 shows the current levels of under-five mortality rates as estimated from the 2007 Community Survey. As seen in the graph, the current level of under-five mortality in each province is way above the international set target for South Africa with Limpopo having the highest level of under-five mortality rate and Western Cape the lowest. For South Africa to achieve its MDG target in this goal by 2015, each province would have to reduce its under-five mortality to at least 20 per thousand live births by 2015.

Figure 4.2: Under-five mortality rates by province, 2007

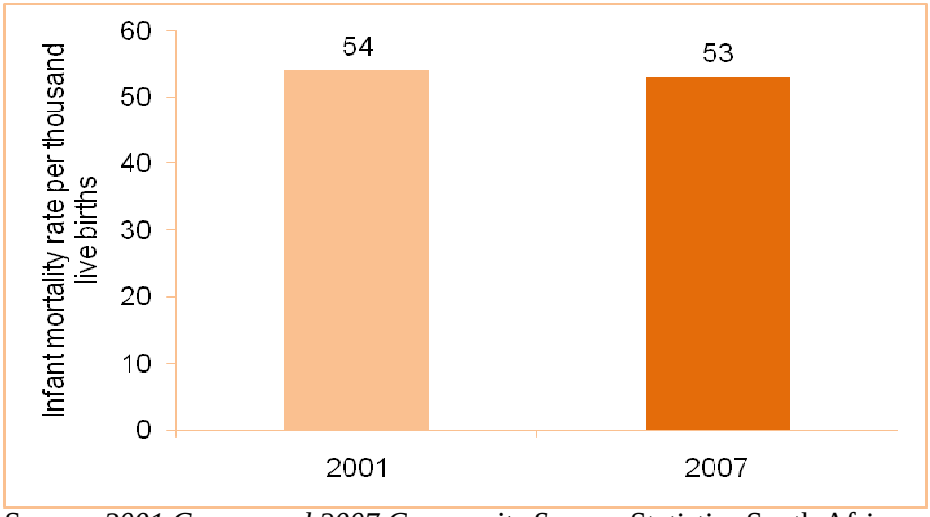


Source: *2007 Community Survey*, Statistics South Africa

Indicator: Infant mortality rate

Infant mortality rate is more correctly defined as the probability of a child born in a particular year dying before reaching the age of one year expresses per thousand live births if subject to current age-specific mortality rates. Although there is no target set for infant mortality rate in the MDGs, it is useful to examine the level of infant mortality as it is a component of under-five mortality. In some developing countries, infant mortality contributes a large proportion of mortality to overall under-five mortality relative to mortality between the age of one year and four years. Infant mortality is influenced by endogenous factors (congenital conditions in the first month of life) and exogenous factors that include social factors relation to child rearing practices as well as environmental factors. As seen in Figure 4.3, the infant mortality rate appears to have remained more or less the same despite the upward trend in the under-five mortality rate.

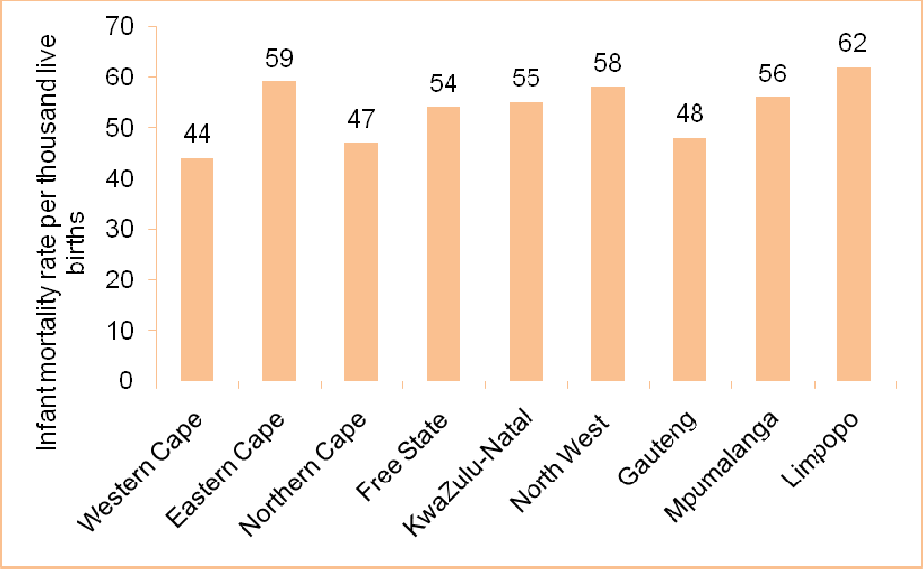
Figure 4.3: Levels of infant mortality rates 2001 and 2007



Source: *2001 Census and 2007 Community Survey*, Statistics South Africa

As in under-five mortality, the levels of infant mortality rates vary in the provinces with Limpopo having the highest infant mortality rate (62 per thousand live births) and Western Cape having the lowest (44 per thousand live births) in 2007 (Figure 4.4). When the values of infant mortality rates (Figure 4.4) are compared with the values of under-five year old mortality rates (Figure 4.2), we see that infant mortality contributed at least 55 % of the under-five years' mortality rate in each province in 2007. Thus, to achieve the millennium development goal in reducing under-five year old mortality, there also has to be substantial reduction of infant mortality in each province in South Africa.

Figure 4.4: Levels of infant mortality rate in 2007 by province



Source: *2007 Community Survey*, Statistics South Africa

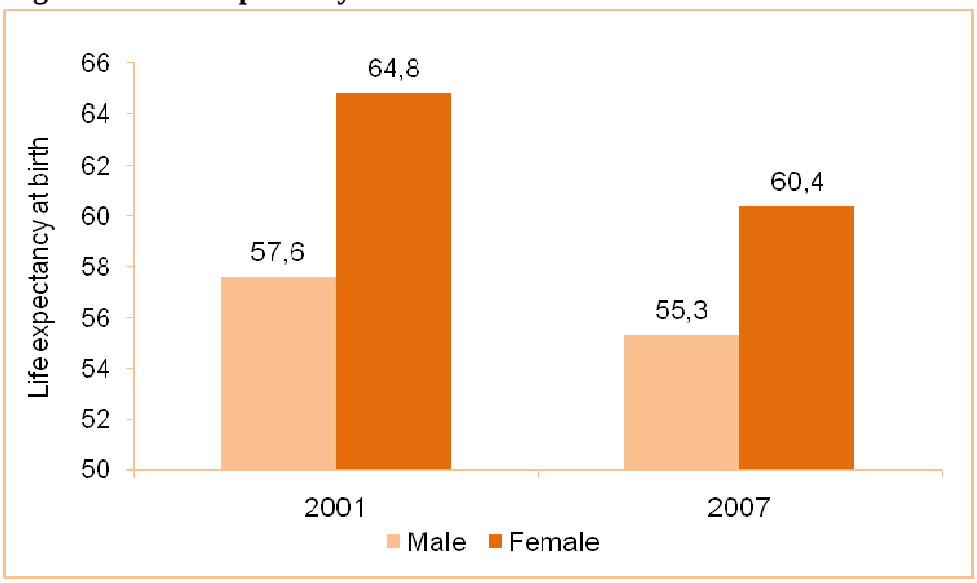
4.5 Life expectancy in South Africa

Indicator: Life expectancy at birth

Any given age in any population has an associated life expectancy. Thus, life expectancy at birth is the number of years a person expects to live after birth in a population. Infant mortality rate is a driver of life expectancy at birth. While not undermining the magnitude of HIV/AIDS in South Africa, a study examining recent statistics on mortality in the context of HIV/AIDS using Statistics South Africa's census and survey data, showed that estimates of life expectancy at birth provided by several organisations (both international and local) exaggerate the impact of AIDS on mortality in South Africa and thus underestimate life expectancy at birth in South Africa (Udjo 2008). Since life expectancy at birth is one of the components used in estimating the Human Development Index by the United Nations, the ranking of South Africa in the Human Development Index is probably lower than it should be as a result of the exaggeration of the impact of AIDS on mortality in South Africa.

Thus notwithstanding, life expectancy no doubt has declined in South Africa. As seen I Figure 4.5, female life expectancy appears to have declined from about 65 years in 2001 to about 60 years in 2007. The estimated level of female life expectancy at birth in 1996 was about 65 years, which suggest that there was little or no improvement in life expectancy at birth during the period 1996 – 2001 and it has declined since 2001. Combining both sexes, it would appear that life expectancy at birth declined from about 61 years in 2001 to about 58 years in 2007.

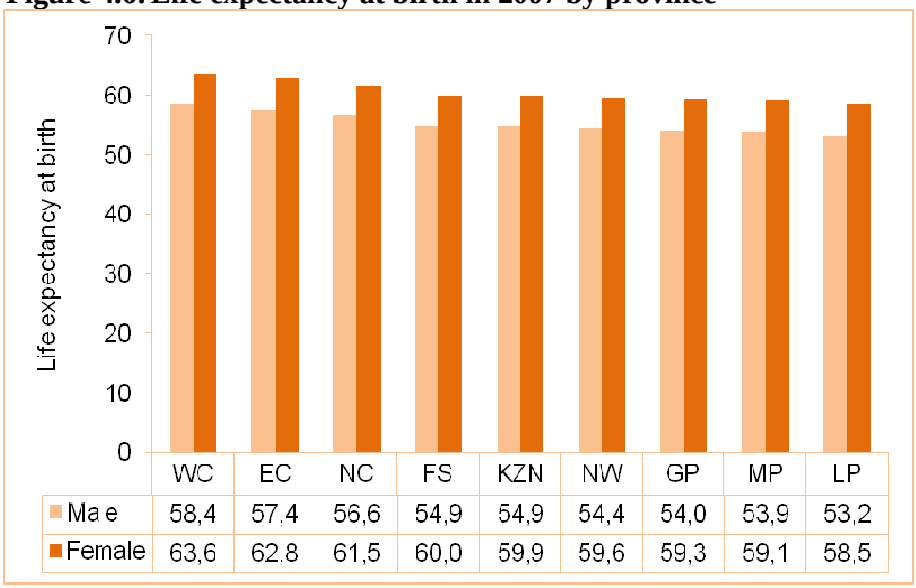
Figure 4.5: Life expectancy at birth 2001 and 2007



Source: *Census 2001 and Community Survey 2007*, Statistics South Africa

Consistent with the provincial pattern of infant mortality rates, Figure 4.6 shows that Limpopo has the lowest life expectancy at birth and Western Cape, the highest.

Figure 4.6: Life expectancy at birth in 2007 by province



Western Cape	WC
Eastern Cape	EC
Northern Cape	NC
Free State	FS
KwaZulu-Natal	KZN
North West	NW
Gauteng	GP
Mpumalanga	MP
Limpopo	LP

Source*: Community Survey 2007*, Statistics South Africa

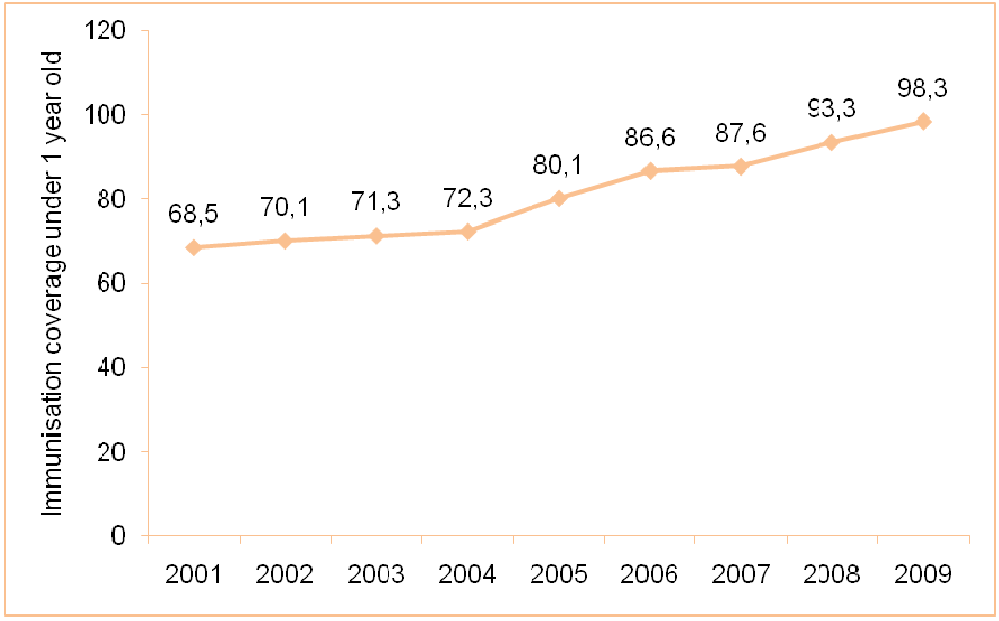
4.6 Immunisation coverage

Indicator: Life expectancy at birth

Immunisation is associated with child survival and hence infant and under-five mortality rates. The two MDG indicators that are evaluated in this section are: the proportion of under one-year-old children immunised against measles and the proportion of under one-year-old children who received all their primary vaccines for tuberculosis (TB), diphtheria, whooping cough, tetanus, polio, measles, hepatitis B and haemophilis influenza. It should be noted that the observed proportions of above 100 % in the Western Cape (2007-2009) and in Gauteng (2006-2009) are caused by an underestimation of the target population aged under one-year as well as across boundary immunisation.

Immunisation coverage against measles is almost universal in South Africa. Figure 4.7 indicates that immunisation against measles has increased over the years from 2001 to 2009 in South Africa as 68,5 % of children aged under one year in 2001 received their measles vaccines compared to 98,3 % of children of the same age in 2009. The provincial data in Table 4.1 also shows a similar incremental pattern (District Health information System, Department of Health).

Figure 4.7: Proportion of one-year-old children immunised against measles, 2001-2009



Source: *District Health Information System (DHIS)*, Department of Health

Table 4.1: Proportion of one-year-old children immunised against measles, by province

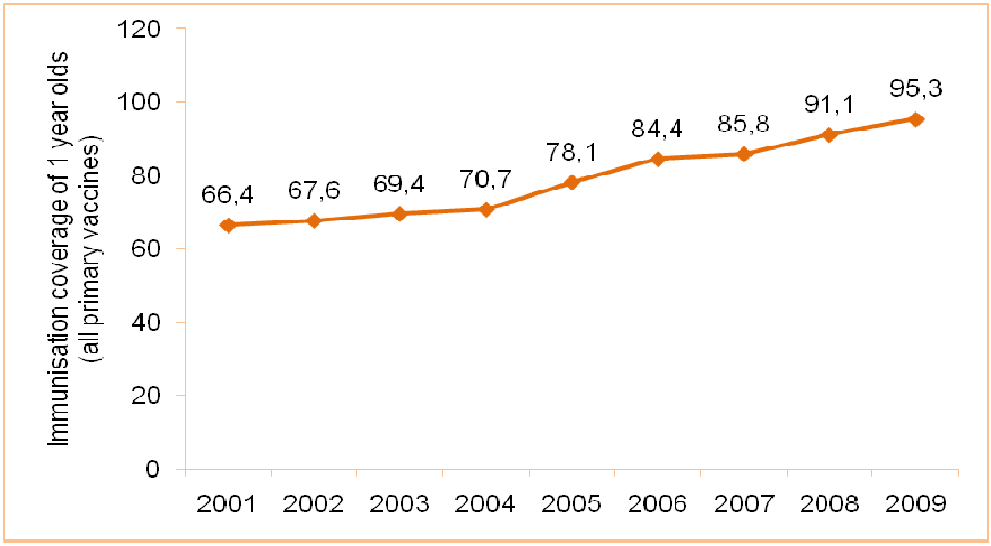
Province	Year								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
Western Cape	73,6	75,6	77,2	79,5	85,7	96,1	102,1	104,5	106,7
Eastern Cape	73,0	75,2	76,4	73,4	80,1	79,0	75,7	82,6	92,1
Northern Cape	71,7	72,1	74,8	77,2	82,3	89,4	92,7	93,2	97,0
Free State	69,5	69,9	69,5	71,9	79,3	80,3	78,9	84,0	87,9
KwaZulu-Natal	63,0	64,4	64,4	64,4	69,0	81,2	83,4	85,9	87,4
North West	76,0	69,9	69,1	68,1	75,1	71,6	73,4	91,7	88,1
Gauteng	64,9	67,3	71,2	75,9	92,6	103,1	107,1	114,0	119,1
Mpumalanga	63,3	64,1	66,5	70,3	79,1	83,6	90,1	90,3	96,6
Limpopo	73,8	79,6	78,5	77,4	82,2	90,0	83,8	92,1	102,4

Source: District Health Information Health System (DHIS), Department of Health

Indicator: Immunisation coverage of infants aged under one year

Figure 4.8 and Table 4.2 furthermore suggest that there has been a marked increase in the proportion of children aged under one year who received all their primary vaccines for tuberculosis, diphtheria, whooping cough, tetanus, polio, measles, hepatitis B and haemophilis influenza in South Africa from 2001 to 2009. The immunisation rates for primary vaccines increased from 66,4 % in 2001 to 95,3 % in 2009 (District Health Information System, Department of Health).

Figure 4.8: Proportion of under one-year-old children who received all primary vaccines[1]



Source: *District Health Information System (DHIS),* Department of Health

[1] Tuberculosis, diphtheria, whooping cough, tetanus, polio, measles, hepatitis and haemophilis influenza

Table 4.2: Proportion of one-year-old children who received all primary vaccines, by province

Province	Year								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
Western Cape	71,1	73,3	75,9	78,4	84,4	95,3	99,8	100,9	104,2
Eastern Cape	65,0	66,3	71,7	70,9	75,8	76,5	78,2	80,3	88,3
Northern Cape	70,0	69,7	72,9	76,1	81,3	87,8	91,1	91,6	97,6
Free State	68,3	68,8	68,1	70,7	78,2	79,5	78,1	83,1	86,7
KwaZulu-Natal	62,6	62,6	62,8	61,9	66,5	77,3	77,9	82,1	85,7
North West	73,7	66,0	65,1	66,5	72,4	69,6	74,0	93,0	85,8
Gauteng	64,3	66,5	70,4	75,2	91,8	101,1	105,5	112,6	115,7
Mpumalanga	62,2	62,5	65,5	68,8	77,2	81,3	87,7	86,2	90,8
Limpopo	72,2	78,9	77,4	76,4	81,2	88,6	82,1	90,7	98,3

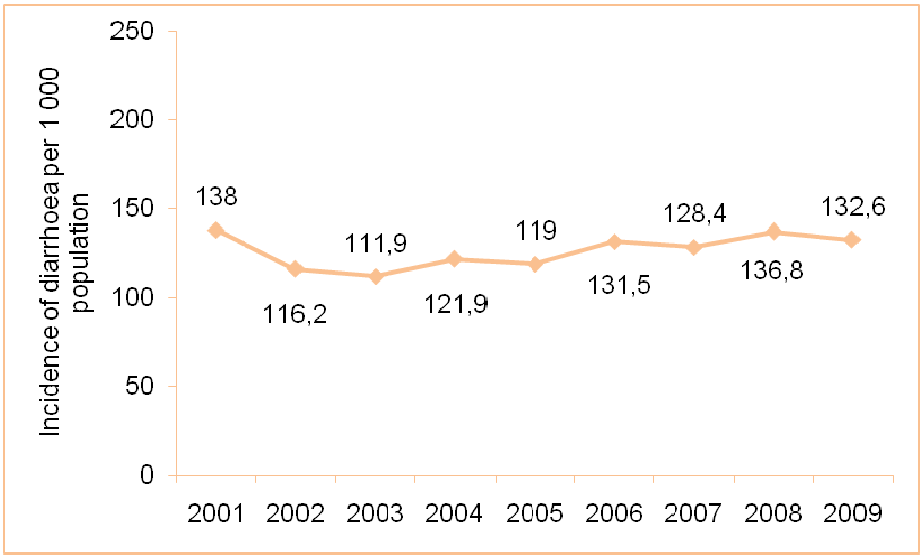
Source: District Health Information System (DHIS), Department of Health

4.7 Diarrhoea and pneumonia incidence

Indicator: Diarrhoea incidence for under-5 years of age children (per 1 000)

According to Black (1984), diarrhoeal diseases remain one of the most important public health problems in the world and have been found to be major contributors to illness and death, particularly in children in developing countries. Black (1984) further notes that among children in developing countries exposure and response to diseases, including diarrhoea, are conditioned by their social, economic and environmental milieu.

Figure 4.9: Incidence of diarrhoea among children aged under-5 years, 2001-2009



Source: *District Health Information System (DHIS)*, Department of Health

Table 4.3: Incidence of diarrhoea among children aged under-5 years, by province, 2001-2009

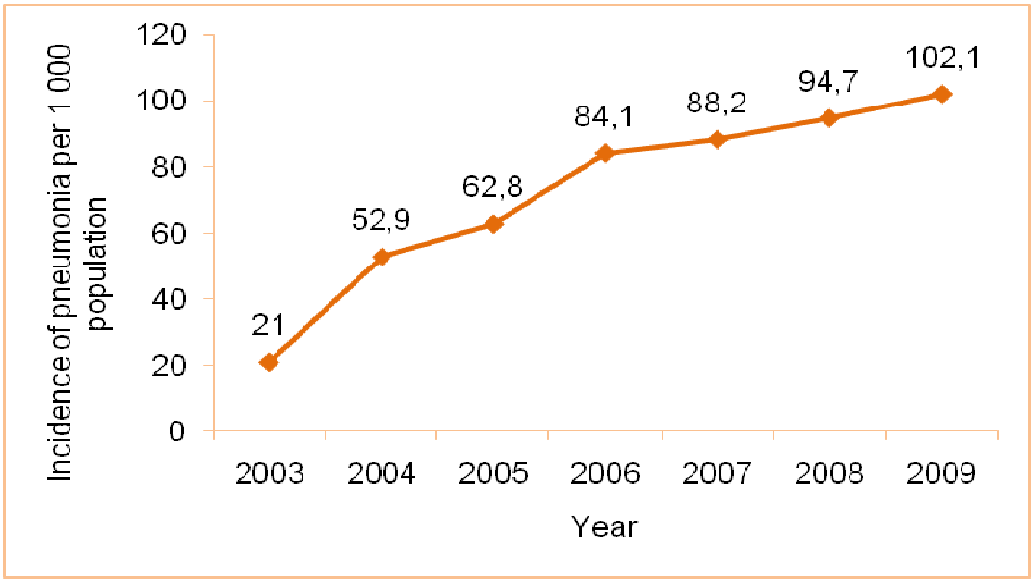
	Year								
Province	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Western Cape	83,2	89,0	76,4	89,9	90,4	104,7	117,0	141,2	140,0
Eastern Cape	142,3	104,3	106,6	86,9	92,2	87,5	84,8	116,3	108,8
Northern Cape	229,2	151,2	156,3	161,1	166,9	191,7	171,7	168,0	160,7
Free State	78,1	72,3	82,0	78,7	79,4	76,3	71,5	83,0	69,6
KwaZulu-Natal	206,2	191,5	197,3	212,7	191,1	210,7	206,8	203,6	204,4
North West	213,6	156,2	129,5	119,0	115,6	118,2	114,2	116,3	110,8
Gauteng	0,9	0,9	10,7	38,0	41,7	63,1	58,9	62,5	61,1
Mpumalanga	129,8	123,5	83,0	114,0	119,3	108,7	99,0	97,1	81,9
Limpopo	210,0	163,8	152,0	164,5	166,7	196,5	193,1	203,7	203,7

Source: *District Health Information System (DHIS)*, Department of Health

Figure 4.9 and Table 4.3 depict the national and provincial data, respectively, on the incidence of diarrhoea among children aged under-5 years for the period 2001 to 2009 in South Africa. It is observed that the incidence of diarrhoea in South Africa as a whole has been fluctuating since 2001. Evidently, KwaZulu-Natal appears to have had the highest incidence of diarrhoea in South Africa as of 2002 up until 2009. Thereafter, the incidences were highest in Limpopo province. The incidence of diarrhoea was lowest in Gauteng province. However, the incidence rates appeared to have either stagnated or adopted a declining trend from 2008 to 2009.

Indicator: Pneumonia incidence in under-5 years of age children (per 1 000)

Figure 4.10: Incidence of pneumonia among children aged under-5 years, 2003-2009



Source: *District Health Information System (DHIS)*, Department of Health

Data on the incidence of pneumonia among under-five years old children in South Africa for the period 2001 to 2009 is shown in Figure 4.10 and Table 4.4. As evidenced from the data illustrated in Figure 4.10, the incidence of pneumonia among under-five years old children in South Africa increased from 21,0 to 102,1 per 1 000 children aged under five years. Notably the wide provincial variations in the incidence of pneumonia that existed between 2004 and 2007 started to disappear between 2007 and 2009. While both the Eastern and Northern Cape have shown a slight decrease in the incidence of pneumonia among children aged under-five years between 2008 and 2009, the rest of the provinces have continued to show an increase in the number of incidences.

Table 4.4: Incidence of pneumonia among children aged under-five years, by province, 2001-2009

	Year						
Province	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**
Western Cape	0,0	0,0	0,0	65,1	95,1	86,5	89,4
Eastern Cape	0,2	6,5	11,4	13,4	38,7	69,4	68,2
Northern Cape	0,0	4,3	91,8	153,7	126,7	118,3	116,6
Free State	102,4	130,7	142,0	122,2	112,1	107,7	110,9
KwaZulu-Natal	17,2	99,9	117,6	159,4	159,1	163,1	184,7
North West	7,2	33,8	67,3	79,0	90,4	98,9	115,3
Gauteng	9,5	34,5	36,2	57,7	52,2	57,3	61,8
Mpumalanga	68,7	74,8	74,3	62,8	53,6	58,0	60,6
Limpopo	26,3	57,2	55,3	63,1	61,9	62,3	67,0

Source: District Health Information Health System (DHIS), Department of Health

4.8 Prevention of Mother to Child Transmission (PMTCT)

The Polymerase Chain Reaction (PCR) is a major scientific advance for the diagnosis of HIV and AIDS. The data in Table 4.5 depicts the estimated number of HIV-exposed children, the proportion tested for PCR and the proportion found to be HIV positive. The proportion of HIV positive babies in the first quarter of 2008/2009 was 15,2 % compared to 9,4 % in the fourth quarter of 2009/2010. The proportion of HIV-infected babies in South Africa could be declining most likely due to the success of the prevention of mother-to-child transmission of HIV (PMTCT) programme.

Table 4.6 presents data on the proportion of HIV positive women, at public primary health care facilities, receiving antiretroviral medicines to reduce the risk of mother to child transmission of HIV in 2008 and 2009 in South Africa. The data indicates that the prevention of mother to child transmission of HIV in South Africa is high in the public primary health facilities. Furthermore, South Africa achieved the National Strategic Plan for HIV and AIDS and Sexually Transmitted Infections (STIs) 2007-2011 (NSP) target of >95 % coverage in the public sector antenatal service sites in 2008. A dual therapy regimen of Nevirapine and AZT was further adopted in 2008, with additional improvements in the programme to be implemented during 2010. The dual therapy regimen has also led to the reduction of mother to child HIV transmission rates (Department of Health, 2010)

Table 4.5: Polymerase chain reaction (PCR) tests for diagnosis of HIV among children under 18 moths of age

	2008/2009				2009/2010			
	1ST quarter	2nd quarter	3rd quarter	4th quarter	1ST quarter	2nd quarter	3rd quarter	4th quarter
Estimated number of HIV-exposed infants	66872	66872	66872	66872	66872	66872	66872	66872
Percentage of PCR tests conducted	78,4	87,0	77,8	91,4	91,6	96,0	93,9	103,4
Percentage of HIV positive babies	15,2	13,7	13,5	11,9	9,8	9,7	10,0	9,4

Source: *District Health Information System (DHIS) & National Health Laboratory Services*, Department of Health

Table 4.6: Proportion of HIV positive pregnant women receiving antiretroviral medicines to reduce the risk of mother to child transmission of HIV at public primary healthcare facilities

	2008	2009
Percentage	86	83

Source: *District Health Information System (DHIS)*, Department of Health, South Africa

4.9 Key challenges to the achievement of the MDGs

The key challenges in the achievement of the MDGs (including the under-five mortality rate) are the improvement of the environment that children are brought up in; such as water quality, nutrition, sanitation and household food security. The key challenges in reducing under-5 years olds' morbidity and mortality lie in combating the main causes of deaths among children; which are: diarrhoea, lower respiratory tract infections, perinatal deaths associated with TB, HIV and AIDS, and malnutrition (Department of Health, 2009). South Africa will have to strengthen primary healthcare, as many children die at home but after having had some contact with the healthcare system.

Strenghtening the healthcare system to prevent mother to child transmission of HIV as well as the provision of life-long nutrition and antiretroviral therapy are key to reducing many deaths among children. Primary Health Care (PHC) must be strengthened to address the implementation of the Integrated Management of Childhood Illness amongst others. The use of the Road to Health Chart and improved primary health care providers (private practitioners) must be improved. The improvement of immunisation coverage will prevent many unnecessary deaths (Department of Health, 2009).

The District Health Information System (DHIS) must be supported to continue collecting data in healthcare facilities that are conducting births, as well as in its endeavours to improve the quality of data collected (Department of Health, 2008).

4.10 Conclusion

Using the under-five mortality estimates from the 1998 South Africa Demographic and Health Survey as a benchmark, the internationally set target for South Africa in the reduction of under-five mortality implies a value of 20 per thousand live births or less by 2015. Although South Africa has the necessary policies in place to reduce under-five mortality, available evidence suggests a rising trend in child mortality in recent years in South Africa. This report shows substantial progress has been made in South Africa in the prevention of malnutrition, mother to child transmission of HIV and immunisation coverage and access to free healthcare facilities. However, current levels of under-five mortality in the country are still far higher than the set target for South Africa of 20 deaths per thousand live births or lower by 2015.

4.11 References

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