COUNTRY PROFILE: SOUTH AFRICA

Overview of South Africa's health system

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LIST OF ABBREVIATIONS

AIDS	Acquired immune-deficiency syndrome
ANC	African National Congress
APP	Annual Performance Plan
DST	Department of Science and Technology
HIV	Human immunodeficiency virus
MDG	Millennium Development Goal
MTSF	Medium Term Strategic Framework
NDoH	National Department of Health
NDP	National Development Plan
NP	National Party
NSDA	Negotiated Service Delivery Agreement
OOP	Out-of-pocket
STI	Sexually Transmitted Infection
UHC	Universal Health Coverage
US$	United States dollar
WHO	World Health Organization

EXECUTIVE SUMMARY

South Africa, found on the southernmost tip of the African continent, has a population of 54 001 953 inhabitants, over half of whom live in urban areas. During Apartheid, South Africans were arbitrarily classified at birth into four "racial" categories: black, white, Coloured (mixed race) and Asian. Eleven languages hold official status under the 1996 constitution, with English predominating in official, educational and formal business spheres. The vast majority of South Africans are Christians and many also follow independent African Christian churches. A small percentage practise Hinduism, Islam and Judaism. Life expectancy recovered from 53 years in 2010 to 57 years in 2014 largely due to the expansion of the antiretroviral treatment programmes to fight HIV/AIDS. South Africa's gross domestic product (GDP) grew steadily before the global financial crisis of 2008-2009. In 2014, South Africa's ratings were downgraded and real GDP growth is estimated at 2.0% for 2016 due to a combination of domestic factors. Pro-poor orientation of public spending has contributed to improved social development indicators, with progress in Millennium Development Goals (MDG) in primary education, gender, several health indicators, and environmental sustainability. Still, South Africa has one of the highest rates of inequality in the world and MDGs 4, 5, and 6 have not been fully achieved. Non-communicable diseases, communicable diseases and violence and injuries contribute significantly to the burden of disease. HIV and tuberculosis remain a challenge. On-going implementation of the National Health Insurance is intended to enable equal access to health services. The Department of Science and Technology oversees South Africa's scientific research with the goal of using science and technology for social and economic development. South Africa has ranked number 30 out of 56 countries in terms of its domestic policies supporting global innovation.

1. COUNTRY AT A GLANCE

Component	Details/indicator/year	Data
Population	Total population (2014)	54 001 953[a]
	Percentage of urban vs. rural (2014)	Urban: 64, rural: 36[a]
Geography	A plateau covers the majority of South Africa's landscape and is separated from the narrow lower coastlines by the Great Escarpment. The country's topography greatly varies, with ridges, mountains, and valleys. The climate is largely temperate and dry, due in part to a nearby subtropical high-pressure belt. Inland areas experience high variations in temperature as a result of high elevation and lack of moderating influence from the sea.[b]	
Ethnic composition	Four main racial groups reside in South Africa, namely black, white, Coloured, and Asian. Blacks largely descended from Bantu-speaking Africans, constituting three-fourths of the population. Coloured groups have mixed ancestry, including Khoisan, slaves imported from Madagascar, Malaysia, and Indonesia, Europeans, and Bantu-speaking Africans. South Africans of Indian descent, previously classified as Asian, form a large minority. Whites generally descended from Dutch, British, and German settlers.[b]	
Government	South Africa's latest constitution was implemented in 1996. The legislature has two houses: the National Assembly, whose members are directly elected to five-year terms, and the National Council of Provinces, with 10-member delegations chosen by provincial assemblies. The president serves as head of state and is chosen from among the National Assembly. Common law is based on Roman-Dutch law, and the judicial system is composed of the Constitutional Court, the Supreme Court of Appeal, the High Courts, and Magistrate's Courts.[b]	
Economic and infrastructure data	GDP per capita (purchasing power parity) (2014)	US$ 13 049.3 (current international dollars)[a]
	Economic growth as percentage of GDP (2014)	1.5[a]
	Gini-index (2013)	63.1[c]
	HDI (2014)	0.666 (ranked 116)[d]
	Percentage of people below national poverty line (2010)	53.8[a]
	Percentage of unemployment (2014)	25.1[a]
	Percentage of adult literacy (2012)	94[a]
	Education gender parity index (2013)	1.00[a]
	Percentage of population with access to sanitation (2015)	Access to improved drinking water: 93 (urban: 100, rural: 81)[a] Access to improved sanitation facilities: 66 (urban: 70, rural: 61)[a]
	Percentage of population with access to electricity (2012)	85.4[a]

Health system	Health expenditure as percentage of GDP (2014)	8.8[a]
	Annual public expenditure on health as percentage of total health expenditure (2014)	48.2[a]
	Health expenditure per person (2014)	US$ 570 (current US$)[a]
	Number of physicians per 1 000 population (2013)	0.8[a]
	Number of nurses and midwives per 1 000 population (2013)	5.1[a]
	Percentage of births with skilled attendants (2003)	91[a]
	Average life expectancy in years (2014)	57[a]
Disease burden	HIV prevalence as percentage among adults aged 15–49 (2014)	18.9[e]
	Deaths due to AIDS (2014)	140 000[e]
	Deaths due to non-communicable diseases (2012)	264 000[f]
	Deaths due to homicide (2012)	18 698[f]
	Maternal mortality rate per 100 000 births (2015)	138[a]
	Infant mortality rate per 1 000 births (2015)	34[a]
	Under-five mortality rate per 1 000 births (2015)	41[a]
Top five causes of mortality as percentage of deaths (2012)[g]	1. HIV/AIDS	33.2
	2. Stroke	6.5
	3. Diabetes mellitus	5.7
	4. Ischaemic heart disease	4.8
	5. Lower respiratory infections	4.2
Top five causes of DALYs (2012)[g]		ND
	1. HIV/TB/malaria	ND
	2. Cardiovascular diseases and diabetes	
	3. Other non-communicable diseases	ND
	4. Neuro-psychiatric conditions	
	5. Maternal/neonatal/nutritional	ND
		ND

GDP: gross domestic product; gini-index: measures the extent to which the distribution of income (or consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution; HDI: human development index; DALYs: disability-adjusted life years.
Sources: [a] World Bank (2015b); [b] Cobbing et al. (2015); [c] UNDP (2013); [d] UNDP (2015); [e] Joint United Nations Programme on HIV and AIDS (2014); [f] WHO (2012); [g] WHO (2015c).

2. COUNTRY CONTEXT

2.1 COUNTRY HISTORY AND POLITICAL SYSTEM

In the 4th century, migrants from the north settled in Southern Africa, joining the indigenous San and Khoikhoi people. By the late 15th century, Portuguese navigator Bartholomeu Dias had travelled around the southern tip of Africa and Vasco da Gama had landed on the Natal coast. Jan van Riebeeck, representing the Dutch East India Company, founded the Cape Colony at Table Bay in 1652. In 1795, British forces seized the Cape Colony from the Netherlands. Between 1816 and 1826, King Shaka Zulu founded and expanded the Zulu empire in present-day KwaZulu Natal, creating a formidable fighting force. The Boers left the Cape Colony in the "Great Trek" from 1835 to 1840, founding the Orange Free State and the Transvaal in the interior; declaring the Transvaal a republic in subsequent years. Between 1860 and 1911, thousands of labourers and traders arrived from India, forebears of the majority of South Africa's current Indian population. In 1879, the British defeated the Zulus in Natal and the first Anglo-Boer war occurred soon thereafter eventually ending in a negotiated peace. In the mid-1880s, the gold rush started after gold was discovered in the Transvaal. The second Anglo-Boer War began in 1899 and ended in 1902, with the Transvaal and Orange Free State turned into self-governing colonies of the British Empire. Former British colonies of the Cape and Natal and the Boer republics of Transvaal and Orange Free State formed the Union of South Africa in 1910. Later, in the Status of the Union Act in 1934, the country was declared "a sovereign independent state". The Native National Congress was founded in 1912, later renamed the African National Congress (ANC). The National Party (NP) came to power in 1948 and the policy of apartheid (separateness) was officially adopted; classifying the population by race. The Group Areas Act was passed soon afterward, segregating blacks and whites. The ANC responded with a civil disobedience campaign led by Nelson Mandela. Seventy black demonstrators were killed at Sharpeville in 1960 and the ANC was subsequently banned. South Africa was declared a republic in 1961, leaving the Commonwealth (BBC, 2015).

By 1964, ANC leader Nelson Mandela was sentenced to life imprisonment. In the 1970s, over three million people were forcibly resettled in black "homelands" and more than 600 black protestors were killed during the Soweto uprising of 1976. The 1980s saw increased civil society resistance, with township revolts and the declaration of a state of emergency. In 1989, FW de Klerk replaced PW Botha as president and in the same year, public facilities were desegregated and many ANC activists freed. The ANC was unbanned thereafter and Mandela was released after 27 years in prison. Multi-party talks started in the early 1990s, with de Klerk repealing the remaining apartheid laws and international sanctions lifted. Major fighting occurred between the ANC and the Zulu Inkatha movement, with many fearing the start of a civil war. The ANC won the first non-racial elections and Mandela assumed the presidency in April 1994, establishing a Government of National Unity. Archbishop Desmond Tutu chaired the Truth and Reconciliation Commission in 1996 beginning hearings on human rights crimes committed during the apartheid era. In the same year, Parliament adopted a new constitution. This largely peaceful political transition, beginning in the early 1990s, is considered by some as one of the most remarkable political feats of the past century (BBC, 2015).

The ANC won general elections in 1999 and Thabo Mbeki took over as president. In July 2002, the Constitutional court ordered the government to provide key anti-AIDS drugs at all public hospitals. By November 2003, the Government approved a major programme to treat and tackle HIV and AIDS, after the Cabinet had previously refused to provide anti-AIDS medicine via the public health system. Elections in April 2004 saw the ruling ANC win with nearly 70% of votes as Thabo Mbeki began his

second term as president. By 2008 President Mbeki resigned, following allegations that he had interfered in a corruption case against Jacob Zuma, his Deputy. ANC deputy leader Kgalema Motlanthe was then chosen by parliament as president. The ANC won general elections in 2009 and Parliament elected Jacob Zuma as president (BBC, 2015).

That same year, the South African economy entered a recession for first time in 17 years, with violent protests in a number of townships. South Africa hosted the World Cup football tournament in June 2010. In 2012, police opened fire on workers at a platinum mine in Marikana, killing at least 34 people, leaving at least 78 injured and arresting over 200 others. Subsequently, the government set up a judicial commission of inquiry into what is now known as the "Marikana Massacre". President Zuma was re-elected as leader of the ANC in December 2012 and in March 2013, the anti-corruption ombudsman heavily criticised President Zuma for a 20 million dollar upgrade to his private home. In December 2014, Nelson Mandela died at age 95 with outpouring of international tributes to the great statesman and someone known to most South Africans as the father of the nation. In May 2014, the ruling ANC party won the majority vote in general elections. Local government elections are scheduled for 2016 (BBC, 2015).

2.2 POPULATION

South Africa has a population of 54 million, about two-thirds of whom live in urban areas (World Bank, 2015b). During Apartheid, South Africans were classified at birth into four "racial" categories—black, white, Coloured (mixed race) and Asian. These classifications were arbitrarily based on family background, cultural acceptance and appearance. The Coloured population was largely formed by the intermarriage between the Khoikhoi and the San peoples of South Africa; and blacks, whites, and Malagasy and Southeast Asian slaves. Black people constitute about three-fourths of South Africa's population. South Africans of Indian descent form a large minority and small communities of other ethnic Asians live in some of the cities. Most white South Africans are descendants of Dutch, British and German settlers who began to migrate to South Africa in the mid-17th century. Eleven languages—Afrikaans, English, Ndebele, Pedi, Sotho, Swati, Tsonga, Tswana, Venda, Xhosa and Zulu—hold official status under the 1996 constitution, with English predominating in official, educational and formal business spheres. The black population is heterogeneous with four main linguistic categories; the largest being the Nguni, which includes those speaking Swati, Ndebele, Xhosa and Zulu. The second largest is Sotho-Tswana including: Sotho, Pedi and Tswana. The other two primary linguistic groups are the Tsonga or Shangaan and Venda speakers. The vast majority of South Africans are Christians, with Methodist, Roman Catholic, Anglican and Dutch Reformed church members from all ethnic groups. Many people also follow independent African Christian churches. Hinduism is practised among the majority of Indians; Islam is practised among many Indians and Malays; and Judaism is practised in a significant minority of the white population. Life expectancy fell dramatically from 62 years in 1992 to 53 years in 2010, recovering to 57 years in 2014 due largely to the rapid expansion of the antiretroviral treatment programs to fight HIV/AIDS (Nel et al., 2015; World Bank, 2015b). The median age is about 26 years (United Nations, 2015).

2.3 ECONOMY

Table 1. Economic measures of South Africa

Indicator/year	Data
GDP per capita (purchasing power parity) (2014)	US$ 13 049.3 (current international dollars)[a]
Economic growth as percentage of GDP (2014)	1.5[a]

Debt as percentage of GDP (2014)	47.1[b]
Gini-index (2013)	63.1[c]
HDI (2014)	0.666 (ranked 116)[d]
Percentage of people below national poverty line (2010)	53.8[a]
Percentage of unemployment (2013)	25.1[a]

GDP: gross domestic product; gini-index: measures the extent to which the distribution of income (or consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution; HDI: human development index.
Sources: [a] World Bank (2015b); [b] IMF (2015); [c] UNDP (2013); [d] UNDP (2015).

The ANC has been driving the policy agenda since 1994. A sustained record of macroeconomic prudence and a supportive global environment enabled South Africa's GDP to grow at a steady pace for the decade before the global financial crisis of 2008-2009. In 2014, however, South Africa's ratings were downgraded by some rating agencies citing poor growth prospects. Pro-poor orientation of public spending has contributed to improved social development indicators, with progress in Millennium Development Goal (MDGs) in primary education, gender, several health indicators and environmental sustainability. Social insurance programmes currently cover around 16 million people and more than twice the median spending among developing economies at 3.5% of GDP. Still, South Africa has one of the highest rates of inequality in the world with an income Gini coefficient of around 0.70 in 2008 and consumption Gini of 0.63 in 2009. South Africa's real GDP growth is estimated at 2.0% for 2016 due to a combination of domestic constraints, the fall in commodity prices and the slowdown of the Chinese economy, which has exacerbated already high unemployment and inequality. The current administration's plan to address these challenges are outlined in the 2030 National Development Plan (NDP) which outlines two main strategic goals: to double the GDP by 2030 and reduce the income Gini coefficient from 0.70 to 0.60. The NDP lists critical factors for its successful implementation: focused leadership that provides policy consistency, ownership of the plan by all formations of society, strong institutional capacity, efficiency in all areas of government spending and prioritisation and clarity on levels of responsibility and accountability at every sphere of government (World Bank, 2015a).

2.4 ENVIRONMENT

South Africa is bordered by Namibia to the northwest, by Botswana and Zimbabwe to the north and by Mozambique and Swaziland to the northeast and east. Lesotho exists as an enclave in eastern South Africa. The Indian Ocean is found on the southeast of the South African coastlines and the Atlantic Ocean to the southwest. A plateau covers the largest part of the country, dropping from elevations of more than 2 400 metres in the Lesotho region to about 600 metres in the sandy Kalahari in the west. The central part of the plateau comprises the Highveld, between 1 200 and 1 800 metres in elevation. South of the Orange River lies the Great Karoo region. The Great Escarpment separates the plateau from areas of lower elevation. The Great Escarpment and the Natal Drakensberg is part of uKhahlamba/Drakensberg Park, which was designated a United Nations Educational, Scientific and Cultural Organization World Heritage site in 2000. Most of the 2 955-km coastline consists of steep slopes and long stretches of beach. South Africa is generally temperate, semi-arid, and has a mostly dry climate with variable precipitation, and farmers often face water shortages. Summers are warm to hot, with daytime temperatures from 21 to 32 °C. Winters are cool to cold, with higher areas often having temperatures below freezing at night but 10 to 21 °C in the daytime (Nel et al., 2015).

3. HEALTH SYSTEM

3.1 OVERVIEW

South Africa has not been able to fully achieve MDGs 4, 5, and 6, but has made some improvements with respect to child and maternal health (Government of South Africa, 2013). South Africa's current health transition is characterised by a quadruple burden of communicable, non-communicable, perinatal and maternal and injury-related disorders (Mayosi et al., 2009).

Of note, HIV persists with relatively high prevalence and other communicable diseases such as tuberculosis remain a challenge. Non-communicable diseases such as cardiovascular diseases are increasing in prevalence, partly owing to lifestyle factors such as diet and low levels of physical activity (WHO, 2013a). Historically, the poor have had limited access to health services (Harris et al., 2011). The recent implementation of National Health Insurance (NHI), begun in 2014 and to take place over a 14-year period, is intended to pool funds towards equal access to health services (Tibane and Honwane, 2014; WHO, 2013a).

3.2 ORGANIZATION

The National Department of Health (NDoH) oversees the health sector and is responsible for setting strategy and direction for South Africa's health system. The NDoH is also responsible for providing support for other national actors within the health system, creating health policy and any requisite legislative and regulatory frameworks and raising funds to be allocated to provinces. Provincial departments of health are responsible for policy adherence and service delivery within their respective provinces (Government of South Africa, 2011b).

South Africa's health care delivery system can be broadly categorised into two tiers (Government of South Africa, 2011b):

1. **Primary care**: The public sector includes primary health care centres/clinics, primary health care teams, community health workers and home-based care workers. The private sector includes general practices, hospices, non-profit organisations and home nursing.
2. **Tertiary care**: The public sector includes quaternary/central hospitals, regional tertiary hospitals, secondary district hospitals and national health lab services. The private sector includes private hospitals, special clinics, nursing homes and specialist practices.

3.3 CAPACITY

Table 2. Number of facilities and health workers per population, South Africa

Indicator/year	Data
Number of clinics (2009)	3595[a]
Number of community health centres (2009)	332[a]
Number of district hospitals (2009)	264[a]
Number of national central hospitals (2009)	9[a]
Number of provincial tertiary hospitals (2009)	14[a]
Number of regional hospitals (2009)	53[a]
Number of specialised psychiatric hospitals (2009)	25[a]
Number of specialised TB hospitals (2009)	41[a]

Number of beds per 1 000 population (2005)	2.8[b]
Physicians per 1 000 population (2013)	0.8[b]
Nurses and midwives per 1 000 population (2013)	5.1[b]
Community health workers per 1 000 population (2004)	0.2[b]

Sources: [a] Government of South Africa (2010); [b] World Bank (2015b).

As last reported, population growth seems to have exceeded health facility and service capacity. The population per clinic as of 2010, for instance, was 13 718; this does not meet the norm of 10 000 per clinic set by the World Health Organization (WHO) (Government of South Africa, 2010). Non-governmental organisations (NGOs) play a crucial role, particularly with respect to HIV/AIDS, tuberculosis, mental health, cancer, disability and primary care. NGOs are involved at all levels, ranging from the national level to individual communities. The NDoH has sought to strengthen collaboration with NGOs through the Partnership for the Delivery of Primary Health care Programme (Tibane and Honwane, 2014). 22 higher education institutes exist as well as provincial training colleges and nursing and ambulance colleges. 1 309 graduated with Bachelor of Medicine and Bachelor of Surgery degrees in 2008, while 5 621 total registered professional nurses received official qualification in 2010. Education and training for the health sector are not sufficient to meet health system demands, due in part to lack of integrated planning between the health and education sectors and inadequate financing mechanisms (Government of South Africa, 2011a).

3.4 POLICY ENVIRONMENT

The WHO (2013) states:

> Universal health coverage (UHC) is a right enshrined in the South African Constitution. In recognition of the need to support people in overcoming inequalities and achieving the right to health and social services, the President's Office set forth its medium-term priorities and commitment to 12 National Development Outcomes for 2010-2014. Negotiated Service Delivery Agreements (NSDAs) have been developed between the Presidency and the related ministries to detail interventions for each of the 12 Outcomes. The National Department of Health (NDOH) leads the NSDA to achieve Outcome 2, "A long and health life for all South Africans," and its four specific outputs: increasing life expectancy, reducing maternal and child mortality rates, combatting HIV/AIDS and tuberculosis, and strengthening the effectiveness of the health system.
>
> In 2012, the government published the National Development Plan (NDP) 2030: "Our future – make it work," which presents the long-term vision for the country. It aims to address nine major challenges, among which include a high burden of disease and weak public health system. The plan sets forward 15 objectives for 2030 accompanied by concrete actions. Among these objectives includes "Health Care For All," with the specific aims of increased life expectancy at birth to 70 years; improved TB prevention and cure; reduced maternal, infant and child mortality; reduced prevalence of non-communicable chronic diseases; reduced injury, accidents and violence by 50 percent from 2010 levels; the deployment of primary health care teams; access to equal standard of care, regardless of their income; and filling posts with skilled, committed and competent individuals.
>
> Within the health sector, the Medium Term Strategic Framework (MTSF) 2009-2014 sets forward a 10-point plan. The plan includes an emphasis on strategic leadership and a social

compact for health, the National Health Insurance system, the quality of health services, financial and district management, human resources planning and management, and revitalization of physical infrastructure. In addition, the plan promotes the acceleration of the HIV and AIDS and Sexually Transmitted Infections (STI) National Strategic Plan; health promotion for non-communicable diseases, risk factors, maternal and child health, and immunization; review of the medicines policy to achieve zero stock-outs; and strengthening research. The Annual Performance Plans (APPs) of the DOH are the operationalization of the NSDA and the MTSF. The APPs are linked to the budget cycles and the Medium Term Expenditure Framework.

WHO (2013) lists the following as strategic priorities for South Africa:

1. Promote Universal Health Coverage and financial risk protection for all South Africans, through support to strengthening health systems.
2. Accelerate gains in life expectancy through focused programs to reduce the burden of HIV/AIDS and tuberculosis, and to expand access to immunization.
3. Advance cost-effective measures that enable people to live in a healthy environment and make behavioural choices that promote longer healthier lives.
4. Support South Africa's contribution and leadership to achieve global and regional health goals.

3.5 HEALTH FINANCING

Table 3. Health financing data for South Africa, 2014

Indicator	Data
Total health expenditure (current US$)	US$ 30 773 482 000
Public expenditure on health as percentage of total expenditure	48.2
Public expenditure on health as percentage of general government expenditure	14.2
OOP expenditure on health as percentage of total private expenditure	12.5
Private insurance expenditure on health as percentage of total private expenditure	82.8
Expenditure of non-profit institutions serving households as percentage of total private expenditure	3.6
External funding (current US$)	US$ 566 221 000
Health expenditure as percentage of GDP	8.8

OOP: out of pocket; GDP: gross domestic product.
Source: WHO (2015a).

Medical care in South Africa is inequitably distributed, as tertiary hospitals and other higher-level public facilities are historically more concentrated in wealthier, urban areas such as Gauteng and the Western Cape, with higher use by those with health insurance. The poor have disproportionate cost burdens, more often utilising public services, while wealthier populations generally use private services (Harris et al., 2011). Government expenditure accounts for nearly half of total expenditures in the health sector and the national government is responsible for distribution of funds to government departments at the central, provincial and local levels. Much of the government's financial resources have gone towards the implementation of the NHI, with expanded increase in spending funded by

income tax, value-added tax and increased excises on tobacco and alcohol. The NHI is designed to pool funds to provide access to quality health services for all citizens regardless of socioeconomic status, ensuring universal health coverage. An NHI card is meant to allow South Africans the ability to access accredited clinics, hospitals and private health practitioners, free of charge at the point of use. Implementation began in phases in 2012 in 11 pilot districts (out of 52) with a focus on primary care, public health service delivery, and referral systems, to determine how best to scale up the system. Expected time to completion of implementation is 14 years. In addition to the NHI, 88 medical schemes exist in South Africa, with 8 469 784 beneficiaries (Tibane and Honwane, 2014; WHO, 2013a).

3.6 COUNTRY DISEASE PROFILE

Table 4. Disease profile for South Africa

Indicator/year	Data
Age-standardized DALYs per 100 000 for communicable diseases (2012)	34 994[a]
Age-standardized DALYs per 100 000 for non-communicable diseases (2012)	26 934[a]
Age-standardized DALYs per 100 000 for injuries (2012)	5 586[a]
Under-five mortality rate per 1 000 live births (2015)	41[b]
Infant mortality rate per 1 000 live births (2015)	34[b]
Maternal mortality rate per 100 000 live births (2015)	138[b]
Estimated cases of malaria (2013)	19 000[a]
Estimated deaths due to malaria (2013)	120[a]
Prevalence of TB per 100 000 (2014)	696[a]
Incidence of TB per 100 000 (2014)	834[a]
Deaths due to TB among HIV-negative people per 100 000 (2013)	44[a]
Prevalence of HIV as percentage among adults aged 15–49 (2014)	18.9[c]
Deaths due to AIDS (2014)	140 000[c]
Deaths due to non-communicable diseases (2012)	265 000[a]
Deaths due to homicide (2012)	18 698[a]
Percentage of top five causes of mortality (2012)[d]	
1. HIV/AIDS	33.2
2. Stroke	6.5
3. Diabetes mellitus	5.7
4. Ischaemic heart disease	4.8
5. Lower respiratory infections	4.2
Top five causes of DALYs (2012)[d]	
1. HIV/TB/malaria	ND
2. Cardiovascular diseases and diabetes	ND
3. Other noncommunicable diseases	ND
4. Neuro-psychiatric condiitons	ND
5. Maternal/neonatal/nutritional	ND

DALYs: disability-affected life years; TB: tuberculosis; ND: not determined.
Sources: [a] WHO (2015b); [b] World Bank (2015b); [c] Joint United Nations Programme on HIV and AIDS (2014); [d] WHO (2015c).

South Africa has made some progress towards improving the health status of its citizens. Infant and under-five mortality has significantly decreased from 54 and 59 per 1 000 live births (Government of South Africa, 2013), respectively, to 34 and 41 in 2015 (World Bank, 2015b). Maternal mortality has decreased from 150 per 100 000 live births in 1998 (Government of South Africa, 2013) to 138 in 2015 (World Bank, 2015b). However, these improvements fall short of MDGs 4 and 5. Furthermore, diseases such as HIV/AIDS remain a significant health burden as prevalence remains relatively high at 18.9% amongst adults in the age range of 15 to 49 (Joint United Nations Programme on HIV and AIDS, 2014). Other communicable diseases, such as tuberculosis, also persist (WHO, 2013b).

Non-communicable diseases are also increasing, accounting for approximately 40% of deaths in 2008 and an increasing amount of disability-adjusted life years. Common non-communicable conditions include cardiovascular diseases, cancer, chronic respiratory conditions and diabetes. Hypertension affects 42.2% of the adult population as of 2013. Violence and injuries are another the leading cause of mortality and morbidity. Alcohol consumption, poor diet (high in fat, sugar and salt) and low levels of physical activity are noted as contributors to the country's current health status. South Africa has significantly improved access to potable water and improved sanitation (WHO, 2013a).

4. INNOVATION ECO-SYSTEM

The Department of Science and Technology (DST) oversees South Africa's scientific research with the goal of using science and technology for social and economic development. The DST focuses on implementing the National Research and Development Strategy, which outlines an approach for integrating development of human resources, investment in infrastructure, management of the public science and technology system and knowledge generation. The DST also funds research and development at public research institutes and universities and establishes mechanisms to enhance societal impact. The DST has proposed a Ten-Year Innovation program, outlining several "grand challenges", including: being one of the top three emerging economies in the global pharmaceutical industry using the nation's indigenous knowledge and rich biodiversity; developing a diversified, supply secured sustainable energy sector; achieving a 25% share of the global hydrogen and fuel cell catalysts market with novel platinum group metal catalysts; and being a world leader in climate science and the response to climate change (SAccess, 2007). South Africa has growing innovation capacity in several different sectors including health care. Additionally, South Africa has ranked number 30 out of 56 countries in terms of its domestic policies supporting global innovation (SouthAfrica.info, 2016).

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