

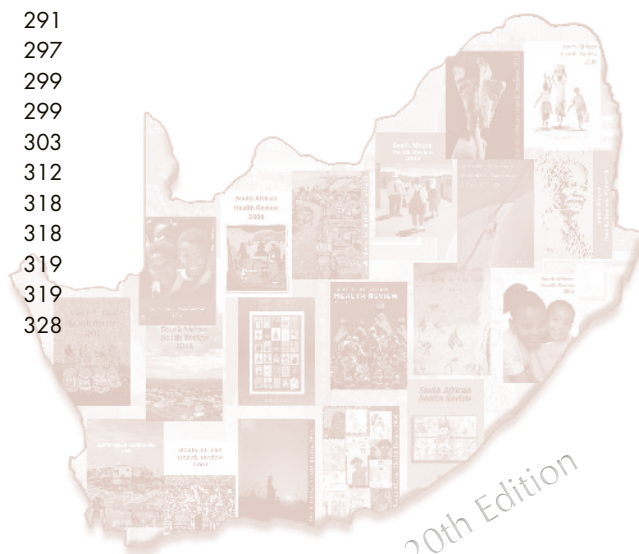
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Introduction

The transition from the Millennium Development Goal (MDG) era to that of the Sustainable Development Goals (SDGs) entails a deliberate broadening of the development focus in the form of the 2030 Agenda. Even in the case of the health-related SDG 3, the formulation has been widened, from a focus that was predominantly on maternal and neonatal health, and the key diseases of AIDS, tuberculosis and malaria, to a far broader remit, to “ensure healthy lives and promote well-being for all at all ages”.^a SDG 3 alone has 13 targets and 26 high-level indicators. For example, target 3.9 reads “By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination”, which will require the tracking of three indicators:

- 3.9.1 – Mortality rate attributed to household and ambient air pollution;
- 3.9.2 – Mortality rate attributed to unsafe water, unsafe sanitation and lack of hygiene (exposure to unsafe Water, Sanitation and Hygiene for All (WASH) services); and
- 3.9.3 – Mortality rate attributed to unintentional poisoning.

The World Health Statistics 2016 has accordingly noted that the 2030 Agenda “has major implications for health monitoring”, requiring “health data collection, analysis and communication in an integrated manner”.¹ The World Health Organization (WHO) has also noted that this will require that “health monitoring will have to look beyond the health sector and consider economic, social and environmental indicators, as well as intersectoral actions”. To some extent, that has always been the approach of the Health and Related Indicators chapter of the Review, informed by the concept of social determinants of health and comprehensive Primary Health Care. However, the chapter remains focused on national and provincial data, and their placement within the context of international data. The SDG’s emphasis on equity demands extensive disaggregation of data, for example by sex, age, income, education, ethnicity, disability and geographic location. The choice of those categories will need to take into account the exigencies of each setting, and its history. In South Africa, continuing to track indicators by the locally-defined ethnic descriptors will remain important as a means to track progress towards equity. However, beyond ethnicity, more nuanced considerations of area-based inequality are needed, such as the application of deprivation indices.² The demands of the Guidelines for Accurate and Transparent Health Estimate Reporting (GATHER) standards also need to be taken into account.³ The focus on those ‘left out’ has also been incorporated in the ‘Innov8’ approach to evaluating health programmes, where steps 3 and 4 of the 8-step process call for identification of those missed by the programme, and of the barriers and facilitators experienced by specific sub-populations.⁴ In 2016, the WHO released an important guidance document, entitled “Strategizing national health in the 21st Century”.⁵ Chapter 9 of the handbook deals with monitoring, evaluation and review of national health policies, strategies and plan, and provides a useful standard against which to judge national systems design and operation. One local example of a deliberate effort to improve data quality and accessibility is the creation of the National Health Laboratory Service’s Corporate Data Warehouse (CDW), and the ways in which the NHLS is building interfaces with

private sector systems, such as Netcare’s Bluebird system.⁶ The sharing of data has also been enabled by the launch of the WHO Global Observatory for Health Research and Development.⁷

The 2016 Review drew attention to the WHO Global Reference List of 100 Core Health Indicators, which predated the finalisation of the SDGs.⁸ A comparison of the 100 Core Health Indicators with the National Indicator Data Set (NIDS) was also provided, identifying the gaps. Globally, the development of an agreed set of data elements continues. In January 2017, the High-level Group for Partnership, Co-ordination and Capacity-building for statistics for the 2030 Agenda for Sustainable Development (HLG-PCCB) issued the “Cape Town Global Action Plan for Sustainable Development Data”.⁹ The Action Plan was expected to be formally adopted by the United Nations Statistical Commission in March 2017. The Plan calls for “enhanced data sharing across the national statistical system”, and greater transparency, but importantly also identifies the need for greater use of data from “alternative and innovative sources”. However, the point has been made that “accessible data are not enough”.¹⁰ Although making data publicly accessible achieves the aim of transparency, more is required to ensure meaningful public health gains. It has been suggested, for example, that “meaningful and equitable collaboration with local researchers and policy makers in low- and middle-income countries is needed to ensure the right research questions get asked and research results are used”, and that this demands “long term investment in infrastructure, networks, and scientific careers”. That, truly, has been the ‘zeitgeist’ of the past 20 issues of the Review, and of the Health Systems Trust.

Domestication of the global decisions is required to enable consistent reporting into the global statistical system. There is also an obligation to ensure that the locally applied measures reflect each country’s development priorities. Locally, the National Department of Health (NDoH) has finalised a revision of the NIDS, which will be applied from April 2017 to March 2019.¹¹ A number of the indicators are new, such as the count of stable clients served by the Central Chronic Medicines Dispensing and Distribution (CCMDD) service, and those aimed at quantifying the non-communicable disease (NCD) case load. Malaria cases and deaths will now be reported as part of DHIS and not as a separate system, which should improve the ability to disaggregate data across all nine provinces. Apart from data on HIV and tuberculosis, the availability and quality of routine morbidity data in South Africa is patchy, and will require urgent attention and investment.¹² In time, as National Health Insurance is implemented, the measures of universal health coverage (UHC) will gain greater prominence.¹³ The distribution of monthly, quarterly and periodic surveillance indicators is shown in Table 1.

An alternative approach to the burgeoning number of health-related indicators has been proposed by the Global Burden of Disease 2015 SDG Collaborators.¹⁴ They have applied statistical methods to 33 health-related SDG indicators, based on data from 188 countries over the period 1990 to 2015. Each indicator was rescaled from the worst (0) to best observed value (100) in that period. An overall health-related SDG index was then computed for each country, with each indicator weighted equally. Based on this measure, the highest SDG index was assigned to Iceland (85) and the lowest to the Central African Republic (20). South Africa was placed at position 134, with a health-related SDG index of 46, the same score

^a <https://sustainabledevelopment.un.org/sdg3>

Table 1: Overview of number of routine indicators defined in the National Indicator Data Set, 2017–2019

Routine Core Health Facility – Monthly	Public Health
Indicator Group	
Adolescent health	1
ART monthly	2
CCMDD	1
Child and nutrition	16
Chronic	6
Communicable diseases	1
EPI	12
Eye care	2
HIV	16
Malaria	2
Management inpatients	8
Management PHC	6
Maternal and neonatal	25
Mental health	5
Oral health	2
Quality	10
Rehabilitation	2
STI	1
TB monthly	8
Women's health	6
Total	132

Routine ART Quarterly Indicators	Public Health
ART baseline	15
ART outcome	8
Total	23

TB Quarterly Indicators	Public Health
TB Quarterly	18
Total	18

Routine Non-Facility Health Services – Monthly	Public Health
Environmental health	14
EMS	12
School health	14
PHC WBOT	14
Total	54

Periodic Campaigns	Public Health
EPI campaign	17
HPV campaign	2
Total	19

Regular Surveillance	Public Health
STI surveillance	1
Total	1

Note: Updated as at 9 March 2017.

ascribed to Vanuatu, Botswana and Myanmar. While indices for HIV, TB and violence were scored low, South Africa scored above 80 for 3 indices: prevalence of wasting in children under 5 years, proportion of women of reproductive age (15–49 years) who have their need for family planning satisfied with modern methods, and age-standardised death rate attributable to household air pollution and ambient air pollution.

A broadly similar approach was used in devising the UHC service coverage index reported in the World Health Statistics 2016.¹ Sixteen tracer indicators across four categories (reproductive, maternal, newborn and child health; infectious diseases; NCDs; and service capacity, access, and health security), from a mix of household surveys and administrative data, were defined so that they ranged from 0% to 100%, with 100% implying full coverage. Based on this index, more than 60% of African countries are in the lowest quintile of coverage.

The Institute for Health Metrics and Evaluation Disease Expenditure (DEX) project^b is attempting to combine burden of disease data (such as from household surveys, facility surveys, management information systems and claims data) and expenditure data (such as from National Health Accounts). The aim is “to identify disconnects between disease burden and spending, and thereby identify potential areas where little is being done to combat major portions of burden”.

Data sources and collection

As before, while this chapter attempts to identify most of the key international and national data sources and literature on a range of health indicators, it cannot claim to be exhaustive. The data provided in this chapter are only a sub-set of those available. More data, particularly those showing trends over time, can be accessed on the redesigned Health Systems Trust (HST) website (www.hst.org.za). In addition, a substantial set of district-level data are presented in the *District Health Barometer* reports, which are also accessible from the HST website.

Although attention is drawn to known data quality or interpretation issues, it is not possible to verify, adjust and correct every data source in detail. Caution is therefore advised with regard to which types of indicators are presented and whether their use is suitable for the intended purpose.¹⁵

In addition to routine sources and annual surveys, several key surveys will either be in the field during 2017, or are expected to release results this year. These data will contribute significantly to monitoring a range of demographic and health indicators. The expected new sources include the:

- South Africa Demographic and Health Survey 2016
- South African National HIV Prevalence, Incidence and Behaviour Survey
- National TB Prevalence Survey
- National Income Dynamics Study Wave 5
- Study on global AGEing and adult health (SAGE) Wave 2.

^b <http://www.healthdata.org/dex/project-overview>

Indicator definitions: The definitions of all indicators appearing in the tables are given at the end of the chapter on page 319.

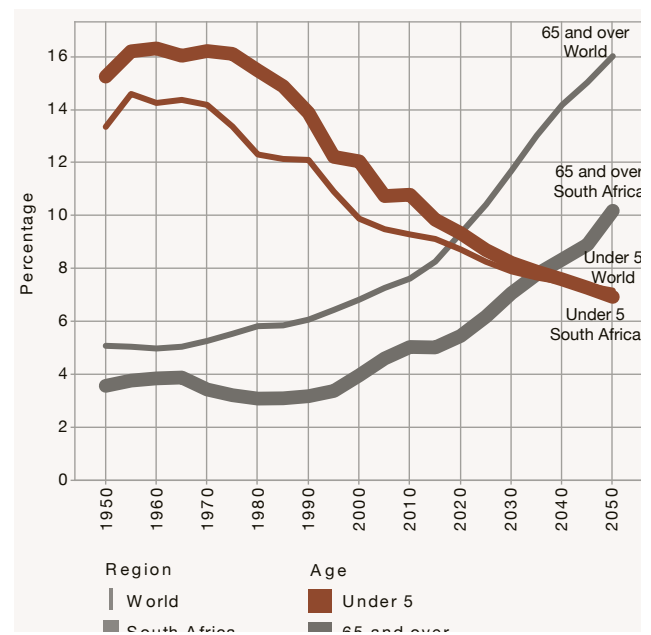
Trends and time-series: For most indicators, data are given for several years, often from multiple different sources. In most cases these data can thus not be used to assess trends and changes over time due to possible differences in methodology and data presentation issues. Even data from regular surveys may not be comparable over time, or revised data for a historical time series may be released, as for example with the General Household Surveys and mid-year population estimates. This may result in different values being published compared to previous editions. Therefore, when using time series data, the most recent revisions should be obtained from the online database and not from previous printed editions of this chapter. In the data tables, the column 'Subgroup' includes variables of disaggregation where these are available, including the time period, sex, age group, data series (recurring data sources) and any other categories.

Demographic indicators

Context	Estimates of population size provide the denominators for many of the indicators reported at national and sub-national levels. Within the country, there is considerable interest in the population shifts created by migration, largely from the more rural to the urbanised provinces of Gauteng and the Western Cape. Increasingly, South Africa will also have to deal with an ageing population, as fertility rates decline and life expectancy increases.
New data sources	Some of the key new sources of national data included in this section are: <ul style="list-style-type: none"> • Stats SA Community Survey 2016 • Stats SA Mid-year population estimates 2016 • Stats SA Recorded live births 2013–2015 • Stats SA Causes of death 2015 • Thembisa model version 2.5 (August 2016)^c Internationally, new reports include: <ul style="list-style-type: none"> • US Census Bureau – An Aging World 2015
Key issues and trends	The intercensal Community Survey 2016 has provided key population data at national, provincial and municipal levels. For the first time, a series of questions about emigration was included. Populations shifts, from predominantly rural to highly urbanised provinces, have the potential to alter age distributions across the country. The speed with which the results of this survey were released was striking, and is a testament to the impact of computer-assisted personal interviewing. This was the first national Stats SA survey to use this technique.

The Stats SA Mid-year population estimates for 2016 projected the population for the provinces based on the 2014 geographic boundaries and not those used subsequent to the local government election held in 2016.¹⁶ The 2017 estimates will, however, use the new boundaries. The 2016 national estimate was of a population of 55.91 million, with Gauteng the most populous province (13.5 million, 24%). It was estimated that about 30.1% of the population was aged younger than 15 years, while about 8.0% was aged 60 years or older. The proportion of those aged 60 and older is increasing over time. The population under 15 is not distributed evenly, with the highest proportion living in KwaZulu-Natal (3.86 million; 23.0%), rather than Gauteng (3.43 million; 20.4%). The proportion of those over 60 is higher in South Africa than the average for the continent. It is estimated, for instance, that by 2050 only 7% of Africans will be elderly (aged 65 or older).¹⁷ However, even that will represent a quadrupling of the number of elderly persons in Africa from 2015. South Africa is one of 11 African countries where the elderly population already exceeds 1 million per country. Globally, an important ‘crossing point’ will be reached in about 2020, when for the first time ever those aged 65 and older will outnumber those aged under 5 years (Figure 1). This ‘crossing point’ will be reached later in around 2035 for SA. The mid-year estimates also provided the provincial total fertility rate estimates for the periods 2001–2006, 2006–2011 and 2011–2016, with all provinces showing declining fertility over time.

Figure 1: Young children (<5 years) and older people (65+ years) as a percentage of population, global and South Africa, 1950 to 2050



Source: Adapted from An Aging World 2015,¹⁷ using data downloaded from United Nations.

Stats SA has pointed out that “migration is an important demographic process in shaping the age structure and distribution of the provincial population”. Such migration does not only change population size and characteristics, but also has major implications for demand for services, and eventually for equitable share allocations. The 2016 mid-year projections estimated that, in the period 2011–2016, Gauteng experienced a net inflow of 1 216 258 internal migrants, and the Western Cape 363 114. In the same period, the net outflows from the Eastern Cape were estimated at 247 437 people, and those from Limpopo 305 030 people, indicative of ongoing urbanisation.

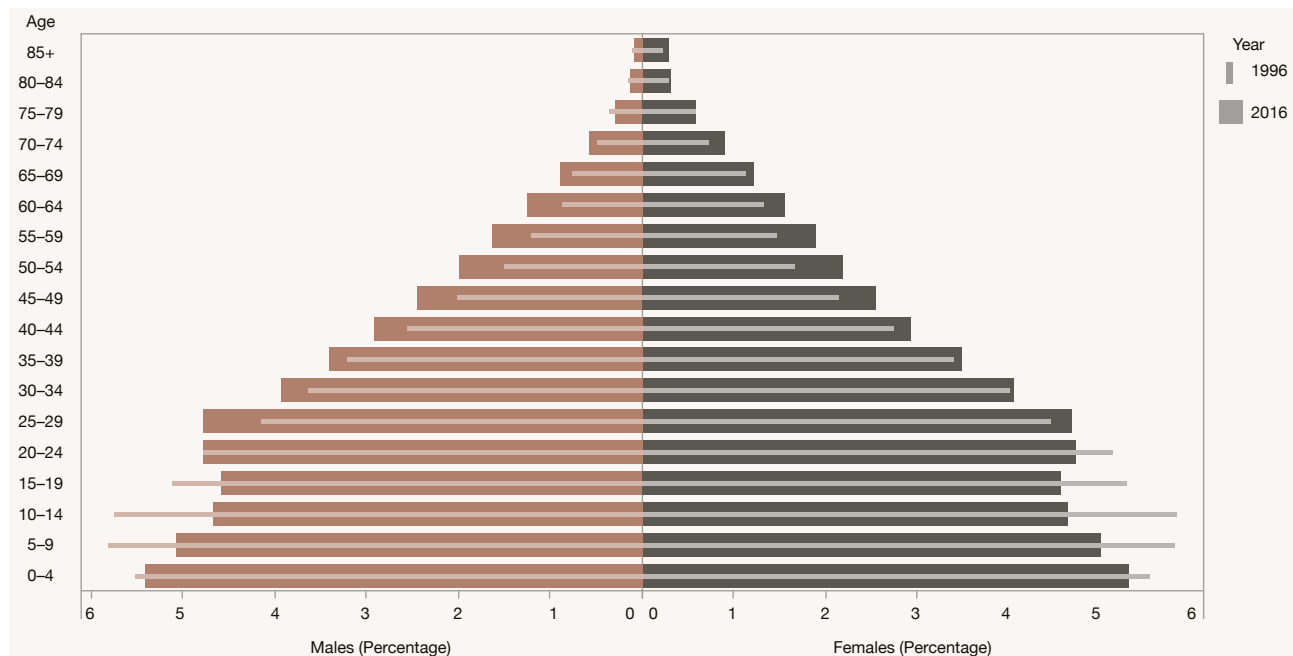
^c <http://www.thembisa.org/about>. This version includes updated demographic assumptions and province-specific calibrations.

In October 2016, Stats SA released its P0305 report on recorded live births, providing the data for 2015 and revising the figures for 2013 and 2014.¹⁸ An improvement in timely registration of births is evident, with 55.5% of births registered during the first 30 completed days of life in 2013, 60.1% in 2014 and 65.1% in 2015. In 2015, 87.7% of births were registered within the year. Stats SA pointed out that “birth registration in South Africa is universal, free for first-time applicants and compulsory”, but identified the potential to improve coverage, as well as the completeness of the data recorded. The age of the mother is often missing, as are the father’s details.

The key new data source in 2016 was provided by the Stats SA Community Survey 2016, the second largest survey undertaken by Statistics South Africa since the previous survey in 2007. This is the second intercensal survey conducted in the post-apartheid era, and is based on a sample of 1 370 809 dwelling units. The Community Survey 2016 also provided municipal data disaggregated by municipal type, with the category B (local) municipalities further subdivided into B1 (secondary cities and local municipalities with the largest budgets), B2 (local municipalities with a large town as the core), B3 (local municipalities with small towns, with relatively small populations and significant proportions of urban population but with no large town as core) and B4 (local municipalities which are mainly rural with communal tenure and with, at most, one or two small towns in their area). District municipalities were subdivided into those which were not water services authorities (C1) and those that were (C2). This demarcation provides a useful tool for considering urban-rural divides. The Community Survey 2016 returned a

population estimate of 55.6 million, with 13.4 million (24.1%) residing in Gauteng. In terms of immigration, the Community Survey 2016 reported 1.6 million (2.8%) people as being foreign-born, compared with 2.2 million (4.2%) in Census 2011. The validity of these data are questionable, given the sensitivity of the question. A 2016 UNICEF report for instance, cited South Africa as having the highest number of immigrants in Africa, with almost 3.5 million estimated to have entered the country, of which 429 000 were under 18 years of age.¹⁹ As in 2011, the top five countries from which immigrants arrived were Zimbabwe, Mozambique, Lesotho, Malawi and the United Kingdom. In terms of internal migration, Gauteng received the most migrants, followed by the Western Cape. The Eastern Cape and Limpopo had the highest number of out-migrants. Uniquely, the Community Survey 2016 included a series of questions about members of the respondent’s household who had left South Africa to reside in another country in the period 2006–2016. Most emigrants were aged between 25 and 29 years old, and left South Africa between 2011 and 2015. The highest proportion were from Gauteng, and moved to Mozambique, Zimbabwe and Australia.

Figure 2: Population structure of South Africa, Census 1996 and Community Survey 2016



Source: Census 1996²⁰ and Community Survey 2016.²¹

Table 2: Demographic indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Adolescent fertility rate (per 1 000 girls aged 15–19 years)	2011	15–19 years Census	80.0	70.0	60.0	80.0	80.0	80.0	80.0	80.0	60.0	70.0	a	
Ageing index	2001	both sexes mid-year	12.8	12.1	12.3	9.9	10.4	8.7	12.7	12.4	14.3	11.4	b	
	2006	both sexes mid-year	16.1	14.5	14.5	11.7	12.5	10.7	16.5	13.6	16.7	13.7	b	
	2011	both sexes Census	20.4	18.9	18.3	15.5	18.4	15.0	18.8	19.0	23.4	18.3	c	
	2016	both sexes CS	15.0	20.0	23.0	14.0	15.0	14.0	24.0	17.0	24.0	18.0	d	
		both sexes mid-year	15.0	20.0	21.0	13.0	15.0	14.0	23.0	16.0	25.0	17.0	e	
		female mid-year	20.0	25.0	24.0	17.0	22.0	18.0	29.0	20.0	29.0	22.0	e	
		male mid-year	10.0	15.0	19.0	9.0	9.0	11.0	19.0	13.0	22.0	13.0	e	
Annual population growth rate	1996	mid-year	2.2	1.4	1.7	1.6	3.0	2.1	1.0	1.5	1.5	1.9	b	
	2001	Census	0.4	0.6	3.6	2.2	1.8	1.5	-0.4	1.8	2.7	2.0	f	
	2011	Census	0.4	0.1	2.7	0.7	0.8	1.8	1.4	1.6	2.5	1.4	g	
	2015	both sexes mid-year											1.7	h
		female mid-year											1.5	h
		male mid-year											1.8	h
	2016	both sexes 0–14 years mid-year											1.3	e
		both sexes 15–34 years mid-year											0.9	e
		both sexes 60+ years mid-year											3.0	e
both sexes all ages mid-year												1.6	e	
Area (square km)	1996	Census	169 580	129 480	17 010	92 100	123 910	79 490	361 830	116 320	129 370	1 219 090	i	
	2011	Census	168 966	129 825	18 178	94 361	125 755	76 495	372 889	104 882	129 462	1 220 813	c	
Area as a % of total area of South Africa	1996	Census	13.9	10.6	1.4	7.6	10.2	6.5	29.7	9.5	10.6	100.0	i	
	2011	Census	13.8	10.6	1.4	7.7	10.3	6.3	30.5	8.7	10.6	100.0	c	
Average household size	1996	Census	4.6	4.1	3.7	5.0	4.9	4.6	4.3	4.6	3.9	4.4	i	
	2001	Census	4.1	3.6	3.2	4.2	4.3	4.0	3.8	3.7	3.6	3.8	j	
	2011	Census	3.7	3.2	3.0	3.9	3.7	3.7	3.7	3.2	3.4	3.4	c	
	2016	CS	3.9	3.0	2.7	3.8	3.6	3.5	3.4	3.0	3.2	3.3	d	
Crude death rate (deaths per 1 000 population)	2006	CS										14.3	l	
		vital registration adjusted											15.4	m
	2011	vital registration unadjusted										10.0	n	
	2015	vital registration unadjusted										8.4	o	
	2016	mid-year										9.7	e	
Live birth occurrences registered	2001		129 804	49 549	163 157	233 664	98 308	75 134	21 124	64 904	86 965	927 389	p	
	2006		154 765	57 655	197 424	248 933	121 974	86 405	24 276	80 566	109 251	1 085 867	p	
	2011		125 697	54 021	201 088	217 585	129 261	87 307	24 442	79 940	104 543	1 024 845	q	
	2015		109 210	47 473	192 439	184 225	121 973	73 686	24 310	66 254	96 626	919 562	q	
Population	1996	both sexes all ages Census	6 147 244	2 633 504	7 834 125	8 572 302	4 576 566	3 123 869	1 011 864	2 727 223	3 956 875	40 583 573	k	
	2001	both sexes all ages Census	6 278 651	2 706 775	9 388 854	9 584 129	4 995 462	3 365 554	991 919	2 984 098	4 524 335	44 819 778	k	
	2011	both sexes all ages Census	6 562 053	2 745 590	12 272 263	10 267 300	5 404 868	4 039 939	1 145 861	3 509 953	5 822 734	51 770 560	c	
	2016	both sexes all ages CS	6 996 976	2 834 714	13 399 724	11 065 240	5 799 090	4 335 964	1 193 780	3 748 435	6 279 730	55 653 654	d	
		both sexes all ages DHIS	6 731 182	2 768 642	13 543 184	10 806 538	5 724 448	4 290 010	1 191 995	3 757 769	6 362 257	55 176 026	q	
		both sexes all ages mid-year	7 061 700	2 861 600	13 498 200	11 079 700	5 803 900	4 328 300	1 191 700	3 790 600	6 293 200	55 908 900	e	
	2017	both sexes all ages DHIS	6 773 280	2 765 819	13 820 215	10 924 776	5 789 938	4 344 144	1 202 801	3 809 367	6 478 871	55 909 212	r	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Population % by province	1996	both sexes all ages Census	15.1	6.5	19.3	21.1	11.3	7.7	2.5	6.7	9.7	100.0	k
	2001	both sexes all ages Census	14.0	6.0	20.9	21.4	11.1	7.5	2.2	6.7	10.1	100.0	k
	2011	both sexes all ages Census	12.7	5.3	23.7	19.8	10.4	7.8	2.2	6.8	11.2	100.0	c
	2016	both sexes all ages CS	12.6	5.1	24.1	19.9	10.4	7.8	2.1	6.7	11.3	100.0	d
		both sexes all ages mid-year	12.6	5.1	24.1	19.8	10.4	7.7	2.1	6.8	11.3		e
Population density	1996	Census	38.4	21.0	448.4	95.1	41.7	36.7	2.3	29.9	31.5	34.4	i
	2001	DHIS	38.5	21.2	505.6	101.3	39.5	43.7	2.9	28.4	35.2	36.8	s
	2006	DHIS	37.9	21.0	603.2	103.0	40.4	49.2	2.9	31.1	40.6	39.5	s
	2011	Census	38.8	21.1	675.1	108.8	43.0	52.8	3.1	33.5	45.0	42.4	c
	2016	DHIS	39.8	21.3	745.0	114.5	45.5	56.1	3.2	35.8	49.1	45.2	s
		mid-year	41.8	22.0	742.5	117.4	46.2	56.6	3.2	36.1	48.6	45.8	e
	2017	DHIS	40.1	21.3	760.3	115.8	46.0	56.8	3.2	36.3	50.0	45.8	s
Public sector dependent population	2001		5 780 213	2 306 172	6 459 977	8 228 913	4 814 835	2 679 525	665 586	3 192 334	3 194 181	37 321 736	t
	2006	GHS	5 899 685	2 416 793	7 783 430	9 125 767	4 778 212	3 136 573	988 720	2 865 778	4 127 412	41 123 556	u
		non med scheme	5 973 067	2 500 165	7 367 197	9 042 592	4 837 448	3 026 159	973 088	2 990 885	3 913 235	40 603 609	v
	2011	GHS	5 849 615	2 438 067	8 033 100	8 954 513	4 809 452	3 127 211	1 000 581	2 983 651	4 198 800	41 422 899	w
		non med scheme	5 839 121	2 347 208	9 113 881	8 927 661	4 951 729	3 439 449	961 571	2 995 366	4 485 643	43 053 190	x
	2016	all ages GHS	6 306 098	2 398 021	9 759 199	9 761 216	5 310 569	3 657 414	981 961	3 222 010	4 770 246	46 124 843	y
all ages non med scheme		6 418 080	2 476 376	10 117 149	9 835 132	5 398 547	3 768 727	1 010 092	3 310 104	4 995 841	47 099 377	z	
Total fertility rate	1996	Census	3.9	3.0	2.6	3.5	3.9	3.5	2.8	3.1	2.6	3.2	aa
		Thembisa	3.5	2.4	2.1	3.1	3.6	3.3	2.9	2.5	2.4	2.9	ab
	2001	Census	3.3	2.5	2.6	3.0	3.6	3.1	2.4	2.8	2.4	2.8	aa
	2006	CS	3.0	2.7	2.2	3.0	3.5	3.0	2.8	3.0	2.1	2.8	ac
	2011	Census	2.9	2.5	2.3	2.7	3.3	2.9	2.8	2.8	2.3	2.7	aa
	2016	mid-year	3.1	2.4	2.3	3.1	2.9	2.5	2.4	2.9	2.2	2.4	e
	2016	Thembisa	2.5	2.5	2.3	2.4	3.0	2.5	2.6	2.7	2.3	2.5	ab

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Census 2011 Fertility.²² National value estimated from graph since not included in report. Values multiplied by 1 000 to convert from rate per individual adolescent.
- b Stats SA MYE.²³
- c Census 2011.²⁴
- d Community Survey 2016.²¹
- e Stats SA MYE 2016.¹⁶
- f Census 2011.²⁵ 1996–2001. Per cent per annum. As recorded in Census 2011 Municipal Fact Sheet.
- g Census 2011.²⁵ 2001–2011. Per cent per annum. As recorded in Census 2011 Municipal Fact Sheet.
- h Stats SA MYE 2015.²⁶
- i Census 1996.²⁰
- j Census 2001.²⁷
- k Census 2011.²⁴ Reporting updated data for previous census based on 2011 boundary changes.
- l Community Survey 2007.²⁸
- m Stats SA Causes of death 2008.²⁹ Calculated from valid causes of death reports adjusted for estimated data completeness per 1 000 estimated population.
- n Stats SA Causes of death 2013.³⁰
- o Stats SA Causes of death 2015.³¹
- p Stats SA Live Births.³² South African total includes foreign births and those with unknown district.
- q Stats SA Live Births 2013–2015.¹⁸
- r DHIS Population Estimates 2002–18.³³
- s DHIS.³⁴
- t Fiscal Review 2001.³⁵ Calculated using provincial medical schemes coverage (quoting October Household Survey 1999) and Stats SA Census 2001 population.
- u Stats SA GHS 2009.³⁶ Calculated using provincial medical schemes coverage (from GHS 2006) and Stats SA population estimates for the relevant year (updated in 2010).
- v Medical Schemes 2006–7.³⁷
- w Stats SA GHS 2010.³⁸ Calculated using provincial medical scheme coverage (GHS 2010) and National DoH/HISP Population Estimates for 2011.
- x Medical Schemes 2011–12.³⁹ Calculated from total number of beneficiaries subtracted from total population (Stats SA mid-year estimates 2013 for the year 2011).
- y Stats SA GHS 2015.⁴⁰ Calculated using provincial medical scheme coverage (GHS 2015) and Stats SA mid-year estimates for 2016.
- z Medical Schemes 2015–16.⁴¹ Calculated from total number of beneficiaries subtracted from total population (Stats SA 2016 mid-year estimates).
- aa Census 2011 Fertility.²²
- ab Thembisa v2.5.⁴²
- ac CS Fertility 2007.⁴³

Table 3: Demographic indicators by population group

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Adolescent fertility rate (per 1 000 girls aged 15–19 years)	2011	15–19 years Census	76.0	71.0	20.0	14.0		a
Ageing index	2001	both sexes mid-year	8.3	11.9	19.1	51.0		b
	2006	both sexes mid-year	10.1	14.6	26.5	63.8		b
	2011	both sexes Census	14.1	16.6	34.4	84.2	23.4	c
	2016	both sexes CS	13.0	20.0	37.0	93.0		d
		both sexes mid-year	13.0	17.0	38.0	93.0		e
		female mid-year	16.0	22.0	45.0	110.0		e
		male mid-year	9.0	13.0	30.0	76.0		e
Annual population growth rate	1996	mid-year	2.8	2.0	1.7	1.1		b
Average household size	1996	Census	4.7	4.7	4.3	2.9		f
	2001	Census	3.9	4.3	4.0	2.8		c
Population	1996	both sexes all ages mid-year	31 127 631	3 600 446	1 045 596	4 434 697	375 204	b
	2001	both sexes all ages Census 2001 boundaries	35 416 166	3 994 505	1 115 467	4 293 640		g
	2011	both sexes all ages Census	41 000 938	4 615 401	1 286 930	4 586 838	280 454	c
	2016	both sexes all ages CS	44 891 603	4 869 526	1 375 834	4 516 691		d
		both sexes all ages mid-year	45 109 900	4 897 200	1 386 000	4 515 800		e
Population % by population group	1996	Census	76.7	8.9	2.6	10.9	0.9	f
	2001	Census	79.0	8.9	2.5	9.6		g
	2011	Census	79.2	8.9	2.5	8.9	0.5	c
	2016	both sexes all ages CS	80.7	8.7	2.5	8.1		d
		both sexes all ages mid-year	80.7	8.8	2.5	8.1		e
Public sector dependent population	2006	GHS	34 948 929	3 597 214	860 874	1 681 326		h
	2015	GHS	39 539 832	3 851 821	698 706	1 047 354		i
	2016	GHS	40 328 251	3 952 040	769 230	1 205 719		j
Total fertility rate	1996	Census	3.5	2.6	2.5	2.0		a
	2001	Census	3.0	2.4	2.0	1.8		a
	2006	CS	2.9	2.5	2.0	1.8		k
	2011	Census	2.8	2.6	1.9	1.7		a

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Census 2011 Fertility.²²
- b Stats SA MYE.²³
- c Census 2011.⁴⁴
- d Community Survey 2016.²¹
- e Stats SA MYE 2016.¹⁶
- f Census 1996.²⁰
- g Census 2001.²⁷
- h Stats SA GHS 2009.³⁶
- i Stats SA GHS 2014.⁴⁵
- j Stats SA GHS 2015.⁴⁰
- k CS Fertility 2007.⁴³

Socio-economic and risk factor indicators

Context	The Sustainable Development Goals have renewed attention on inter-sectoral action to address risk factors for health such as water and sanitation, air quality and nutrition.
New data sources	<p>Nationally, new data have been reported in the:</p> <ul style="list-style-type: none"> • Stats SA Vulnerable Groups Indicator Report 2014 • Stats SA General Household Survey 2015 • Stats SA Community Survey 2016 • Stats SA Quarterly Labour Force Survey Quarter 3 and 4 2016 • Stats SA Living Conditions of Households in South Africa 2014/2015 • Stats SA GHS Series Volume VIII: Water and Sanitation <p>Internationally, data of interest have been reported in the:</p> <ul style="list-style-type: none"> • World Bank. World Development Report 2015 • World Bank/IHME. The cost of air pollution: Strengthening the Economic Case for Action 2016 • WHO/UN-Habitat. Global Report on Urban Health 2016 • UNICEF. Clear the air for children: The impact of air pollution on children 2016
Key issues and trends	An updated Green Drop Report (waste water management) for 2014, which reflected data from 2012–2013, has been released, but an updated Blue Drop Report (water quality management) is still awaited. Overall, there are concerns about the quality of both potable water provision and waste water treatment, particularly in under-resourced local authorities with water provision obligations. Consumer satisfaction with the quality of water services is declining.

The Sustainable Development Goals (SDGs) have broadened the focus of the 2030 Agenda to “ensure healthy lives and promote well-being for all at all ages”.^d For example, target 3.9 reads “By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination”. This places the social determinants of health front and centre, and demands greater access to reliable measures of socio-economic status and other risk factors. The World Health Statistics 2016 point out that “socioeconomic inequalities exist in all countries”, and that even in high-income countries, “higher death rates and poorer self-assessments of health are observed in groups of lower socio-economic status compared with those who are better off”. Aligning the efforts to track implementation of the 2011 Rio Political Declaration on the Social Determinants of Health with the new SDG targets will also reduce the burden on health systems.⁴⁶

The World Bank’s World Development Report 2015 focused on human behaviour, and efforts to change behaviour for the better.⁴⁷ Significantly for this source, a clear statement is made that “because the most obvious barrier to adopting new behaviour is cost, lowering prices should be the best way to improve adoption”.

The joint WHO/UN-Habitat Global Report on Urban Health 2016 noted that the “percentage of the world’s population living in urban areas is projected to increase from 54% in 2015 to 60% in 2030 and to 66% by 2050”.⁴⁸ Already, it is estimated that more than 1 billion additional people were living in urban areas in 2014 than in 2000. Most importantly, it is estimated that “more than 90% of future urban population growth will be in low- and middle-income countries”. From a positive perspective, urban areas offer some advantages, such as greater resources, higher density, and better infrastructure and service availability than rural areas. However, apart from the problems of poor access to water, sanitation, energy and communication, urban settings are also associated with increased NCD risk. UN-Habitat has developed a City Prosperity

Index, based on five dimensions (productivity; quality of life; infrastructure; environmental sustainability; and equity). WHO has also developed an Urban Health Index (UHI), which has the potential to measure inequalities in health in an urban setting. The WHO/UN-Habitat report has also emphasised the need for public participation in urban governance, including in monitoring the outcomes of health interventions.

The World Bank and Institute for Health Metrics and Evaluation (IHME) have published a report on the cost of air pollution, noting that 87% of the global population in 2013 lived in areas which exceeded WHO norms for particulate pollution.⁴⁹ The report estimated that about 20 000 deaths in South Africa were attributable to air pollution, in both 1990 and 2013. Also in 2016, WHO published “Ambient air pollution: a global assessment of exposure and burden of disease”, which estimated about 14 000 deaths (39 per 100 000 population, age-standardised) in South Africa were attributable to diseases such as acute lower respiratory infections, lung cancer, chronic obstructive pulmonary disease, stroke and ischaemic heart disease.⁵⁰ Both household and ambient air pollution are believed to be under-appreciated contributors to poor health, including in children.^{51,52}

The most recent update to the Department of Water and Sanitation’s Green Drop report relates to the Cumulative Risk Rating per wastewater treatment works from July 2012 to June 2013, which entailed assessment of 824 plants in 152 municipalities.⁵³ The assessments showed that 212 plants were at critical risk, 259 plants at high risk, 218 at medium risk, and only 135 plants at low risk. Over a 6-year period (2008–2014), the report concluded that “the municipal industry as a whole has not managed to contain and then turnaround the risk”. An updated Blue Drop report, based on the 2015 data, is expected in April 2017, with the 2016 data expected in October 2017.

^d <https://sustainabledevelopment.un.org/sdg3>

Third quarter data for 2016 showed 27.1% unemployment, based on the official definition.⁵⁴ This represented a 1.6% year-on-year increase. Unemployment was lowest in the Western Cape (20.1%) and highest in the Free State (34.2%). Of a total labour force (aged 15–64 years) of 36 750 000, it was estimated that 15 833 000 were employed, 5 873 000 were unemployed and 15 044 000 were not economically active.

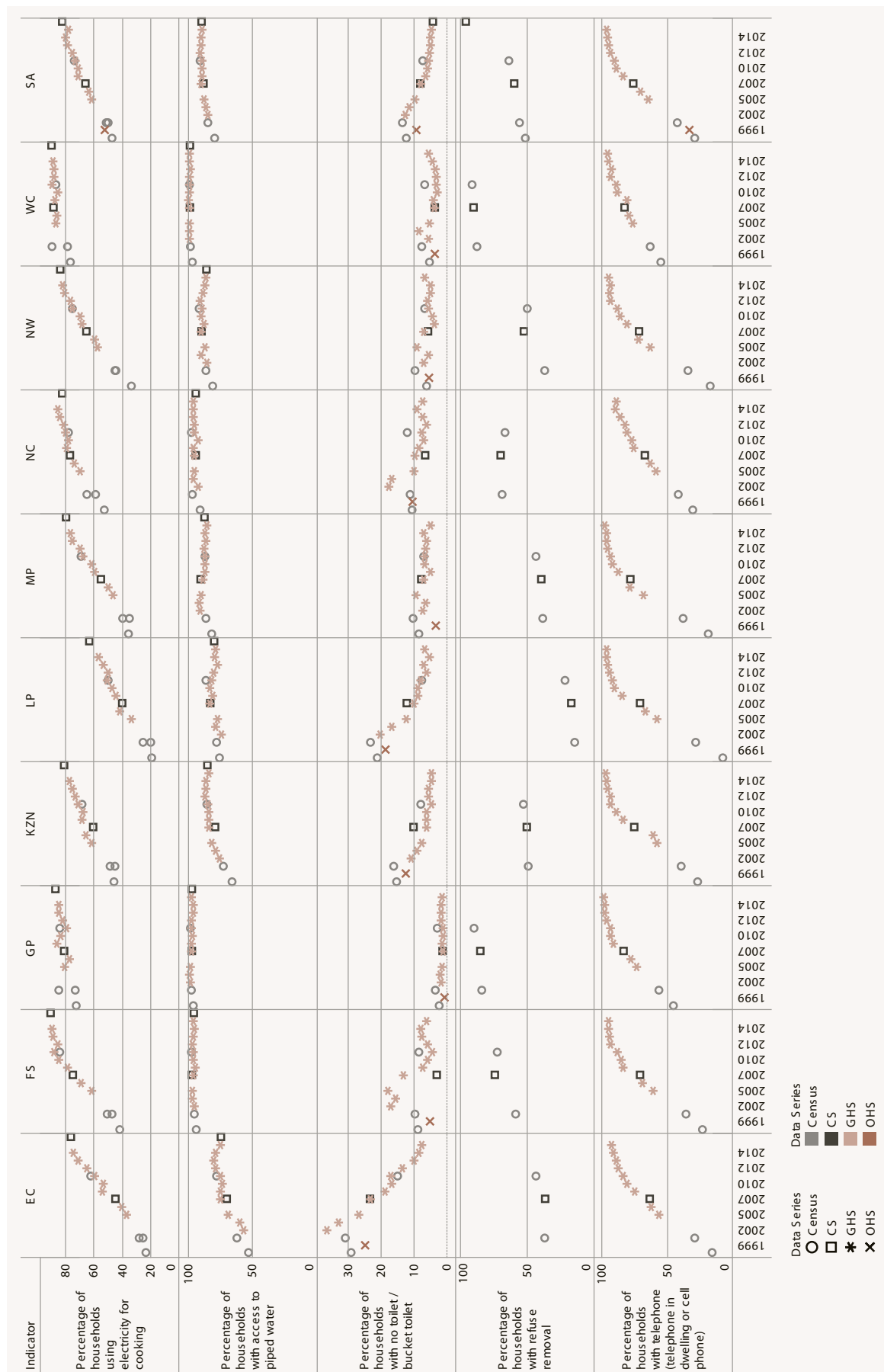
Stats SA reports annually on a number of socio-economic measures based on the General Household Survey.⁴⁰ The 2015 survey was based on a representative sample of private dwellings, as well as worker's hostels. The survey excludes those living in "collective living quarters", such as students' hostels, old-age homes, hospitals, prisons and military barracks. With reference to the water quality reports mentioned above, the 2015 survey showed that 89.4% of South African households had access to piped water in 2015. Even in more rural provinces, the situation had improved: the proportion of Eastern Cape households with access to piped water increased from 56.3% in 2002 to 74.9% in 2015. However, nationally, the proportion of households rating the quality of water-related services as 'good' dropped from 76.4% in 2002 to 62.0% in 2015.

Some data from the Living Conditions of Households in South Africa survey 2014/2015 were released in January 2017.⁵⁵ This survey noted a problem with low response rates, especially in Gauteng, and thus particularly with higher-income households. Under-reporting of household expenditure on certain categories might therefore be predicted. Data on poverty will only be released later in 2017.

Extensive data on socio-economic factors were also reported from the intercensal Community Survey 2016.²¹ For example, the Community Survey showed 10.1% of households without access to piped water, up from 8.8% reported in Census 2011, but markedly better than the 19.7% reported in Census 1996. However, in 2016, only 44.4% of households had access to piped water in the home, 30.0% inside the yard, and 15.5% at a point outside the yard, such as at a community stand, a neighbour's tap or a communal tap. An in-depth analysis of water and sanitation issues was also published by Stats SA, drawing on General Household Surveys between 2002 and 2015 and the Community Survey 2016.⁵⁶

Stats SA has released a series of reports aimed at highlighting the socio-economic conditions of particular vulnerable groups, such as children, the youth, women, older persons, and persons with disabilities.⁵⁷

Figure 3: Trends in household access to selected services, 1996 to 2016



Source: Compiled from multiple editions of the Census, Community Survey (CS), General Household Survey (GHS) and October Household Survey (OHS) from Statistics SA.

Table 4: Environmental health indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Air pollution level in cities (particulate matter [PM])	1990	GBD PM2.5										11.7	a	
	2012	2011–2012 WHO PM10										56.0	b	
	2013	GBD PM2.5										14.3	a	
	2016	WHO PM2.5 urban											31.0	c
		WHO PM2.5 urban and rural											27.0	c
Drinking Water System (Blue Drop) Performance Rating	2009		54.3	40.0	74.4	73.0	40.8	51.0	28.3	40.0	60.3	51.4	d	
	2010		79.4	48.5	85.5	65.9	55.0	65.4	46.9	66.0	92.5	67.2	d	
	2011		77.3	64.1	95.1	80.5	64.0	56.5	62.1	62.3	94.1	72.9	d	
	2012		82.1	73.6	98.1	92.1	79.4	60.9	68.2	78.7	94.2	87.6	e	
	2014		72.0	75.0	92.0	86.0	62.0	69.0	68.0	63.0	89.0	79.6	f	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Cost Air Pollution 2016.⁴⁹
 b Global Health Observatory.⁵⁸
 c Air Pollution 2016.⁵⁰ Annual median concentration, population weighted and modelled.
 d Blue Drop 2011.⁵⁹ Some values revised since original reports.
 e Blue Drop 2012.⁶⁰
 f Blue Drop 2014.⁶¹ No report has been produced for 2013.

Table 5: Socio-economic indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Education level: percentage of population with no schooling	1996	20+ years Census	20.9	16.1	9.5	22.9	36.9	29.4	21.7	22.7	6.7	19.3	a
	2001	20+ years Census	22.8	16.0	8.4	21.9	33.4	27.5	18.2	19.9	5.7	17.9	b
	2011	20+ years Census	10.5	7.1	3.6	10.7	17.3	14.0	11.3	11.8	2.7	8.6	c
		20+ years GHS	7.4	5.7	2.6	7.8	12.9	10.3	11.3	10.0	1.7	6.5	d
	2015	both sexes 20+ years GHS	6.1	3.4	2.3	6.7	9.8	8.3	8.1	7.2	1.5	5.1	e
Human development index (high value = best)	1996	both sexes all ages	0.64	0.67	0.77	0.66	0.63	0.66	0.68	0.61	0.76	0.69	f
	2015	both sexes all ages HDR										0.67	g
Literacy rate	1996	Census	59.0	62.7	80.6	61.2	53.0	57.0	58.9	58.3	78.7	65.8	a
	2014	female 20+ years GHS	90.4	92.3	97.6	89.8	84.8	85.8	89.4	89.6	97.9	93.1	h
		male 20+ years GHS	90.1	94.5	97.9	94.6	93.5	92.8	88.5	89.5	97.3	95.3	h
Percentage of households by type of housing	2001	Census formal	47.3	62.9	65.6	56.6	70.7	67.3	80.2	68.6	78.4	63.8	b
		Census informal	11.0	26.1	23.9	10.8	6.6	16.0	12.5	22.3	16.2	16.4	b
		Census traditional	38.1	7.2	1.3	27.9	19.7	12.9	3.5	5.3	2.2	14.8	b
	2011	Census formal	63.2	81.1	79.8	71.6	89.8	83.8	82.4	76.2	80.4	77.6	c
		Census informal	7.7	15.7	18.9	8.3	5.2	10.9	13.1	21.2	18.2	13.6	c
		Census traditional	28.2	2.4	0.4	19.0	4.5	4.5	3.2	1.7	0.5	7.9	c
	2016	CS formal	65.1	83.6	81.4	72.7	88.9	84.7	83.5	78.3	82.4	79.2	i
		CS informal	7.4	14.0	17.7	8.5	4.8	10.9	12.8	18.4	16.6	13.0	i
		CS traditional	26.6	1.6	0.2	18.1	5.1	3.2	2.3	1.9	4.9	7.0	i
Percentage of households using electricity for cooking	1996	Census	23.2	42.0	72.9	45.8	19.5	35.6	52.4	33.8	76.5	47.1	a
	2001	Census	27.8	47.0	73.2	48.3	25.0	40.0	59.0	44.6	78.8	51.4	b
	2011	Census	62.1	84.5	83.9	68.6	49.9	69.3	78.1	75.3	86.9	73.9	c
	2015	GHS										78.1	e
	2016	CS	76.8	90.8	87.8	81.8	63.8	79.8	82.8	84.0	90.1	82.8	i
Percentage of households with access to piped water	1996	Census	53.5	94.0	96.0	66.3	75.5	82.2	91.2	81.4	96.8	79.8	a
	2001	Census	62.4	95.7	97.5	73.2	78.0	86.7	96.6	86.2	98.3	84.5	b
	2011	Census	77.8	97.8	98.2	85.9	86.0	87.4	97.4	91.6	99.1	91.2	c
	2015	GHS	74.9	96.1	97.7	84.2	78.8	85.5	96.5	86.1	99.2	89.4	e
	2016	CS	75.1	96.2	97.5	85.4	80.0	88.1	94.3	86.1	99.0	89.9	i
Percentage of households with no toilet / bucket toilet	1996	Census	29.1	8.8	2.5	15.2	21.1	8.7	10.7	6.3	5.4	12.4	a
	2001	Census	30.8	9.7	3.6	16.2	23.3	10.3	11.2	9.6	7.7	13.6	b
	2011	Census	15.0	8.6	2.9	8.0	7.8	7.2	12.0	6.8	6.7	7.2	c
	2016	CS										4.6	i
Percentage of households with refuse removal	1996	Census										51.2	a
	2001	Census	36.6	58.6	84.2	49.2	14.2	38.7	68.7	37.0	87.8	55.4	b
	2011	Census	43.5	72.7	89.9	53.1	21.8	43.7	66.3	50.2	91.1	63.6	c
	2016	CS										96.0	i

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Percentage of households with telephone (telephone in dwelling or cell phone)	1996	Census	15.6	22.9	45.3	26.9	7.4	18.2	30.8	16.8	55.2	28.6	a	
	2001	Census	29.0	35.3	56.1	39.0	28.0	37.9	41.8	34.5	63.1	42.4	b	
	2006	GHS	62.3	69.2	77.9	61.0	67.0	79.0	63.0	72.4	79.3	70.2	j	
	2015	GHS	93.0	95.1	98.5	97.0	96.9	98.0	88.9	95.0	95.6	96.5	e	
Population using safely managed sanitation services	2015	GHS	81.7	81.1	91.0	77.3	53.8	65.8	80.7	66.4	93.3	79.9	e	
Poverty prevalence	2011	15–34 years IES	68.7	50.8	30.8	64.8	70.5	63.2	58.8	58.7	34.5	54.4	k	
		Census food poverty line	40.5	31.6	26.8	37.4	41.5	35.3	28.2	33.4	23.2	32.7	l	
		IES LBPL rebased											37.0	m
		IES UBPL rebased											53.8	n
Proportion of people with access to improved sanitation	2015	all ages GHS	81.7	81.1	91.0	77.3	53.8	65.8	80.7	66.4	93.3	79.9	o	
Proportion of population with sustainable access to an improved water source	2015	all ages GHS	75.7	99.3	98.6	86.7	89.8	91.4	99.1	93.0	99.4	92.5	o	
Unemployment rate (official definition)	2006	LFS	32.0	26.5	23.2	26.6	32.0	28.0	28.7	29.7	15.0	25.5	p	
	2011	15–34 years LFS											35.7	k
		35–64 years LFS											14.7	k
		Q1 LFS	26.9	27.9	26.9	20.3	19.3	30.8	31.3	25.0	22.2	25.0	25.0	p
	2014	15–34 years LFS											35.9	k
		35–64 years LFS											15.7	k
		Q3 female 15+ years LFS	27.7	37.6	28.5	26.1	17.9	33.6	30.9	30.7	24.7	27.8	27.8	q
		Q3 LFS	29.1	32.2	24.6	20.8	15.9	26.6	28.7	25.2	22.9	24.3	24.3	p
	2016	Q3 LFS	28.2	34.2	29.1	23.5	21.9	30.4	29.6	30.5	21.7	27.1	27.1	r
		Q4 LFS	28.4	34.7	28.6	23.9	19.3	31.0	32.0	26.5	20.5	26.5	26.5	s

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Census 1996.²⁰
- b Census 2001.²⁷
- c Census 2011.⁴⁴
- d Stats SA GHS 2011.⁶²
- e Stats SA GHS 2015.⁴⁰
- f Stats SA HDI 2001.⁶³
- g Africa Human Development 2016.⁶⁴
- h Gender & Education Vol 2.⁶⁵
- i Community Survey 2016.²¹
- j Stats SA GHS 2006.⁶⁶
- k Social Profile Youth 2009–14.⁶⁷
- l Census 2011 Poverty.⁶⁸ Census results considered less accurate compared to specific income/poverty surveys. Income data from Census 2011 significantly overestimated the proportion of households that claimed to have no income, resulting in higher levels of poverty.
- m Poverty Trends 2006–2011.⁶⁹ Lower-bound poverty line – equates to 18.6 million people in 2011.
- n Poverty Trends 2006–2011.⁶⁹ Upper-bound poverty line – equates to 27.1 million people in 2011.
- o GHS Series VIII.⁵⁶
- p Stats SA Labour Force Survey.⁷⁰
- q Vulnerable Groups 2014.⁵⁷
- r Labour Force Survey Q3 2016.⁵⁴
- s Labour Force Survey Q4 2016.⁷¹

Table 6: Socio-economic indicators by population group

Indicator	Year	Subgroup	African/Black	Coloured	Indian/Asian	White	Ref
Unemployment rate (official definition)	1998	OHS	32.0	15.8	14.7	4.4	a
	2002	LFS	35.2	24.6	18.7		b
	2005	LFS	31.5	22.4	15.8	5.0	b
	2010	Q2 LFS	29.5	22.5	10.1	6.4	b
	2015	Q3 LFS	28.8	22.8	12.5	5.9	b
	2016	Q4 LFS	30.0	22.0	11.1	6.6	c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Stats SA OHS.⁷²
- b Stats SA Labour Force Survey.⁷⁰ Data omitted where sample size too small.
- c Labour Force Survey Q4 2016.⁷¹

Health status indicators

Mortality

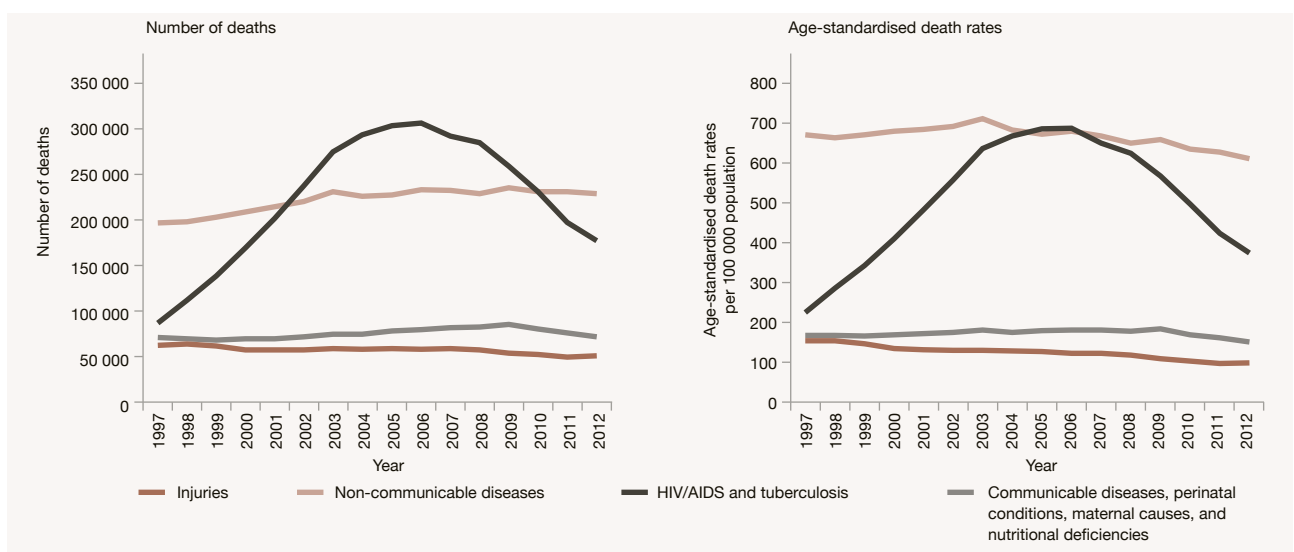
Context	The improvement in life expectancy at birth in South Africa has been maintained, reaching 60.3 years for males and 66.4 years for females in 2015. However, there is increasing concern about the rising toll from NCDs.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Second National Burden of Disease Study 1997–2012 (national and provincial reports) • Medical Research Council Rapid Mortality Surveillance (RMS) Report 2015 • Stats SA Causes of death 2015 Internationally, reports of interest include: <ul style="list-style-type: none"> • Global Burden of Disease Study 2015
Key issues and trends	It is important to recognise the possible reasons behind widely differing estimates emanating from global modelling efforts and those conducted locally, which are able to take local context and policy shifts into account far more easily. Provincial data, such as from the Second National Burden of Disease Study and the Global Burden of Disease Study 2015, can be used to set appropriate priorities at provincial level.

Globally, the torrent of data issued by the Global Burden of Disease (GBD) collaboration continues unabated. In October 2016, the GBD 2015 collaborators issued a systematic analysis of available data from 1980–2015 indicating global, regional, and national life expectancy, all-cause mortality, and cause-specific mortality for 249 causes of death.⁷³ At a global level, life expectancy at birth has increased by more than 10 years between 1980 and 2015, from 61.7 years to 71.8 years. The authors also note that several sub-Saharan African countries have shown marked gains in life expectancy between 2005 and 2015, most likely due to the enhanced access to antiretroviral therapy. Importantly for the 2030 Agenda, the authors noted that the number of deaths from most non-communicable causes are increasing in most countries. Reversing that trend will place considerable demands on global health systems.

Data from South Africa’s Second National Burden of Disease Study were also released in late 2016.⁷⁴ The study relied on vital registration data from Stats SA, adjusted for under-reporting. In line with expectations, especially informed by HIV treatment trends, the study showed that all-cause age-standardised death rates increased rapidly from 1997, but declined from a peak in 2006 (Figure 4). In

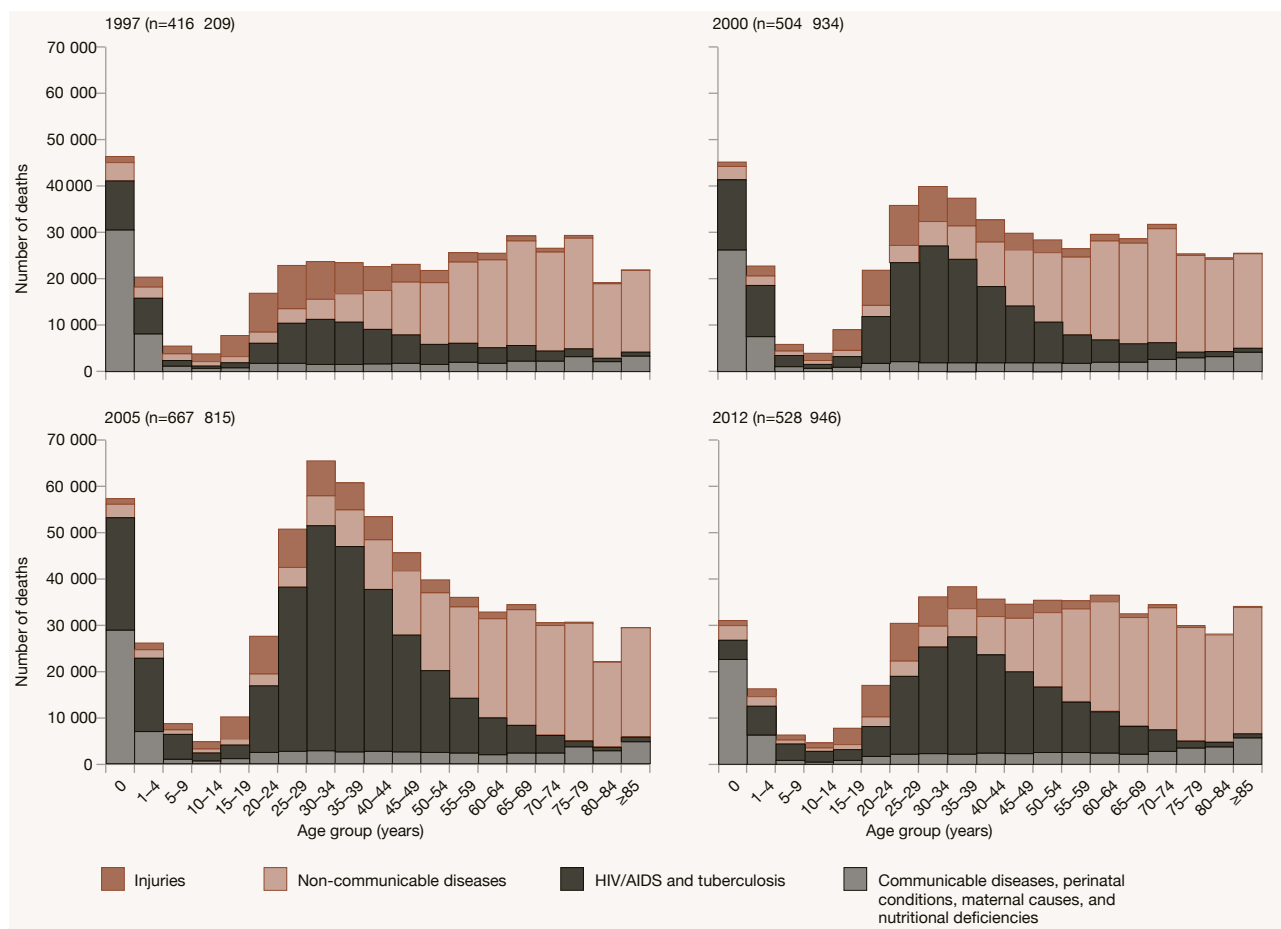
2012, nonetheless, HIV/AIDS was still the single cause estimated to have caused the most deaths (29.1%), followed by cerebrovascular disease (7.5%) and lower respiratory infections (4.9%). Very importantly, the locally-developed estimates were substantially different from those published by the IHME GBD studies. This was particularly true of estimated deaths from HIV/AIDS and interpersonal violence. Possible reasons for such differences were identified. The Second National Burden of Disease Study also highlighted problems with provincial-level estimates, and particularly that the “low age-standardised death rates for Limpopo are unexpected and difficult to explain”. The accompanying editorial in the *Lancet* drew specific attention to the increase in age-standardised death rates from diabetes and renal disease that was recorded between 1997 and 2012, as well as the substantial deaths from non-communicable diseases in those aged 40–44 years.⁷⁵ Figure 5 shows the number of deaths by broad cause group and age group for South Africa for the years 1997, 2000, 2005, and 2012. Provincial reports from the Second National Burden of Disease Study were also released in 2016.^{76–85}

Figure 4: Number of deaths and age-standardised death rates by broad cause group for South Africa, 1997–2012



Source: Pillay-van Wyk et al., 2016.⁷⁴

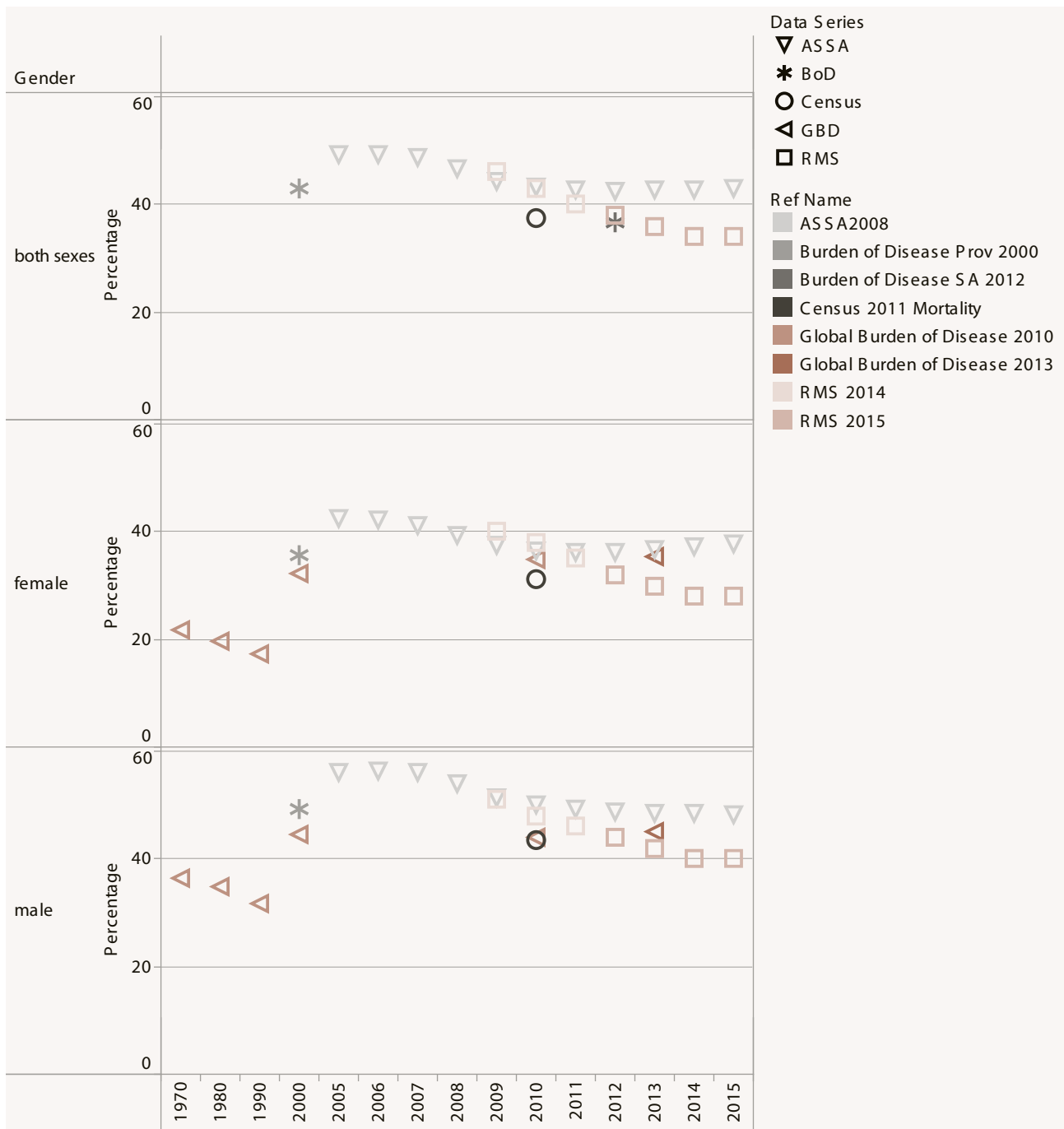
Figure 5: Number of deaths by broad cause group and age group for South Africa, 1997, 2000, 2005 and 2012



Source: Pillay-van Wyk et al., 2016.⁷⁴

In December 2016, the Medical Research Council released their fifth Rapid Mortality Surveillance (RMS) report.⁸² Although this report showed a gratifying increase in average life expectancy in South Africa, which had increased by nine years since 2005, to now exceed 63 years (60.3 years for males and 66.4 years for females) in 2015, it also raised the possibility that the decline in reported deaths reflected a decline in the completeness of death recording in the vital registration system or some other failures in the system. These possibilities will need to be carefully monitored going forward. Extending the RMS analysis to sub-national (provincial) level will be possible, once the MRC team is provided with the vital registration data from 2000 onwards, consistently grouped by the 2011 boundaries. The MRC also released the Western Cape mortality profile for 2009–2013, based on death notification forms submitted to the Department of Home Affairs and the Forensic Pathology Services.⁸⁶ This showed that, among men, interpersonal violence remained the leading cause of premature mortality in 2013, whereas among women, it was HIV/AIDS. Figure 6 shows the adult mortality estimates including the 20-year period in which the Review has been published, showing not only the temporal trends, but also the variability in estimates from different sources. In particular, the difference between the ASSA2008 projections and more recent estimates is striking.

Figure 6: Trends in adult mortality (45q15 – probability of dying between 15–60 years of age) by source, South Africa



Note: Time scale not linear; showing years with available data (projected or measured).

Source: Compiled from multiple sources.

Table 7: Mortality indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Adult mortality (45q15 – probability of dying between 15–60 years of age)	1990	female GBD										17.2	a	
		male GBD										31.8	a	
	2000	both sexes BoD	38.6	42.6	39.3	48.7	39.9	47.5	34.2	42.0	30.8	42.9	b	
		female BoD	32.2	35.9	32.7	42.8	33.1	41.3	27.5	35.2	24.1	35.7	b	
		female GBD										32.3	a	
		male BoD	45.0	49.3	46.0	54.6	46.7	53.8	40.9	48.8	37.5	49.4	b	
		male GBD										44.5	a	
		both sexes BoD										50.3	c	
	2010	both sexes BoD	52.2	53.7	33.9	52.8	37.7	47.4	43.9	44.5	26.6	42.6	c	
		both sexes Census										37.4	d	
		both sexes RMS										43.0	e	
		female Census										31.2	d	
		female GBD										35.0	a	
		female RMS										38.0	e	
		male Census										43.6	d	
		male GBD										44.1	a	
		male RMS										48.0	e	
		2015	both sexes RMS										34.0	f
	female RMS											28.0	f	
	male RMS											40.0	f	
Healthy life expectancy (HALE)	2000	World Health Report										43.0	g	
	2005	female GBD										46.2	h	
		male GBD										45.2	h	
	2015	female GBD										54.6	h	
male GBD											51.1	h		
Life expectancy at birth	1996	both sexes	60.4	52.8	59.6	53.0	60.1	53.5	55.6	53.3	60.8	57.0	i	
		both sexes rural										58.0	i	
		both sexes urban										56.2	i	
	2000	both sexes BoD	56.2	55.1	58.0	51.6	57.1	53.1	60.5	55.9	63.4	55.2	b	
		female BoD	59.0	57.9	61.0	53.8	60.1	55.5	63.9	58.8	67.0	58.5	b	
		male BoD	53.3	52.4	55.1	49.4	54.3	50.7	57.2	53.1	59.8	52.4	b	
	2005	both sexes BoD										53.9	c	
		both sexes mid-year										53.5	j	
		female GBD										53.6	h	
		female mid-year										54.7	j	
		male GBD										51.7	h	
		male mid-year										52.1	j	
	2010	both sexes BoD	53.8	53.4	63.2	52.9	63.6	56.6	59.3	58.0	68.0	58.8	c	
		both sexes Census										57.9	d	
		both sexes mid-year										60.0	j	
		both sexes RMS										58.5	e	
		female Census										60.6	d	
		female mid-year										61.5	j	
		female RMS										61.2	e	
		male Census										55.2	d	
		male mid-year										58.3	j	
		male RMS										56.0	e	
		2015	2011–2016 female mid-year	57.8	54.7	64.3	58.4	60.5	57.2	57.8	56.1	66.0		j
			2011–2016 male mid-year	55.3	53.0	61.7	57.0	57.3	55.8	57.9	53.5	63.7		j
	both sexes mid-year											62.5	j	
	both sexes RMS											63.4	f	
	female GBD											64.0	h	
	female mid-year											64.3	j	
	female RMS											66.4	f	
	male GBD											58.6	h	
	male mid-year											60.6	j	
	male RMS											60.3	f	
	2016		both sexes mid-year										62.4	k
female mid-year												65.1	k	
male mid-year											59.7	k		

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Global Burden of Disease 2010.⁸⁷
- b Burden of Disease Prov 2000.⁸⁸
- c Burden of Disease SA 2010.⁸⁹
- d Census 2011 Mortality.²²
- e RMS 2014.⁹⁰
- f RMS 2015.⁸²
- g World Health Report 2002.⁹¹
- h GBD 2015 DALY HALE.⁹²
- i Stats SA HDI 2001.⁶³
- j Stats SA MYE 2015.²⁶
- k Stats SA MYE 2016.¹⁶

Disability

Context	New data on the prevalence of disability have been provided by the Stats SA Community Survey 2016, the largest intercensal survey conducted in South Africa.
New data sources	Nationally, new data have been reported in: <ul style="list-style-type: none"> • Stats SA General Household Survey 2015 • Stats SA Community Survey 2016 Internationally, reports of interest include: <ul style="list-style-type: none"> • Global Burden of Disease 2015
Key issues and trends	Data from the Global Burden of Disease 2015 study have underlined the relevance of non-communicable diseases as the underlying causes of chronic morbidity and disability, especially in countries with ageing populations. Although HIV still dominates the South African burden in this regard, the burden attributable to diabetes is higher than would be expected given the level of socio-demographic development.

The term 'disability' is used quite differently in epidemiology, in the form of the measure "disability-adjusted life years". Where healthy life expectancy (HALE) is a summary measure of population health, "weighting years lived with a measure of functional health loss experienced before death", the gap between population health and maximum lifespan in full health is provided by disability-adjusted life-years (DALYs), representing the "sum of years of life lost (YLLs) due to premature mortality and years lived with disability (YLDs)".⁹³

In 2016, the Global Burden of Disease 2015 collaboration published global, regional, and national DALY estimates for 315 diseases and injuries, as well as HALE estimates for the period 1990–2015.⁹³ In addition to the trends over time in each geographical area, the GBD 2015 collaborators also assessed whether the observed trends differed from what would have been expected on the basis of changes in Socio-demographic Index (SDI). The SDI is a composite measure, derived from measures of income per capita, average completed years of schooling, and the total fertility rate. Globally, total DALYs remained 'largely unchanged' between 1990 and 2015, but gains in neonatal, maternal, and nutritional diseases were compensated for by increased DALYs due to non-communicable diseases. As South Africa's population ages, it can also expect, and is already seeing, an increased burden from NCDs in relative terms (% of total DALYs) with no reduction in absolute DALYs per 100 000 population.

The GBD 2015 project also produced global, regional, and national estimates of incidence, prevalence, and years lived with disability for 301 diseases and injuries, for the period 1990 to 2015.⁹⁴ The global conclusion was that ageing of the world's population "is increasing the number of people living with sequelae of diseases and injuries". In most countries, in 2015, lower back and neck pain was the leading cause of disability. The leading ten causes of years lived with disability (YLDs) in South Africa in 2015 (with the ratio of observed YLDs to YLDs expected on the basis of SDI in parentheses) were:

- > HIV (165.51)
- > back and neck pain (1.04)
- > sense organ disorders (1.12)
- > depression (1.04)
- > diabetes (1.65)
- > skin conditions (0.95)
- > iron deficiency (1.01)
- > migraine (0.78)

- > asthma (1.27)
- > anxiety (0.81).

Although the causes of YLDs are dominated by HIV, the greater than expected burden attributable to diabetes requires attention.

Data from the WHO Study on global AGEing and adult health (SAGE) conducted in China, Ghana, India, Mexico, the Russian Federation and South Africa in 2007–2010 have been used to explore the trends and determinants of disability-free life expectancies (DFLEs), and in particular, evidence for inequalities between men and women.⁹⁵ The data showed that, although women had a higher life expectancy, they had worse health conditions compared with men. The contribution of NCDs to morbidity and disability (as opposed to mortality) is difficult to measure, without access to a range of data. It has been suggested that these should include local "data on rates of NCD-related disability, statistics on functional status, rehabilitation needs, and the coverage and utilization of relevant health services".⁹⁶ The primary goals of NCD care are to preserve functional status, minimise symptoms, and prolong and enhance the quality of life. Information systems therefore need to track the inputs of NCD care as well as the outcomes that are achieved, including such aspects as engagement in physical activity and social participation.

Two new sources of local data were provided by the Stats SA General Household Survey 2015⁴⁰ and the Community Survey 2016.²¹ The General Household Survey showed that 5.1% of South Africans aged 5 years and older were classified as disabled in 2015, with the highest prevalence encountered in the North West (7.4%), the Northern Cape (7.1%) and the Eastern Cape (6.8%). The national prevalence of disability reported by the intercensal Community Survey 2016 was 7.7%, compared with 7.5% in Census 2011 (Figure 7). The Department of Social Development released a White Paper on the Rights of Persons with Disability.⁹⁷ Pillar 9 of the White Paper deals with monitoring and evaluation. Included in the plan is the use of the Disability Inequality Index (DII), described as "an index for measurement of inequality between persons with disabilities and persons without disabilities with a gender dimension". The DII is to be calculated and reviewed annually. Detail on exactly how this will be done, and who will be responsible for the analysis, is however scanty.

Figure 7: Disability prevalence by age group, sex and province, 2011 and 2016

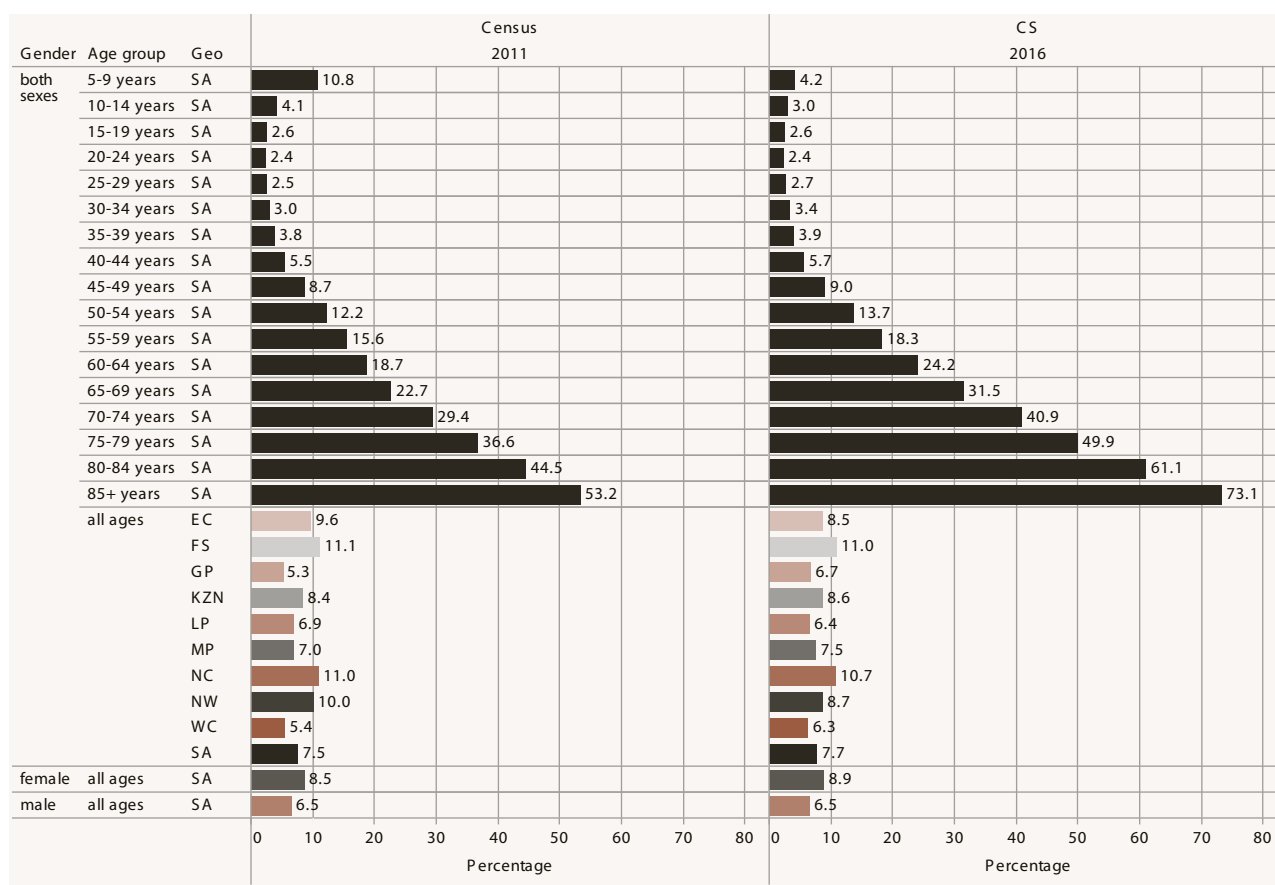

 Source: Census 2011 and CS 2016, as quoted in Community Survey 2016.²¹

Table 8: Disability indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Cataract surgery rate	2010	2010/11 DHIS	784.4	899.5	213.5	319.5	717.5	604.1	259.0	468.8	1 094.0	547.6	a
	2011	2011/12 DHIS	1 002.1	821.3	555.6	633.6	765.3	629.4	416.7	363.9	1 209.7	729.5	a
	2015	2015/16 DHIS	864.0	748.0	891.0	512.0	613.0	625.0	830.0	458.0	1 225.0	764.0	a
Prevalence of disability	1996	Census	7.3	9.8	6.2	6.0	6.0	7.6	5.6	8.3	3.7	6.5	b
	2001	Census	5.8	6.8	3.8	5.0	5.1	5.8	5.7	5.8	4.1	5.0	c
	2012	GHS	6.0	7.6	3.5	5.0	5.0	5.4	7.1	7.2	4.6	5.1	d
		SANHANES WHODAS score	2.6	3.1	2.0	3.1	3.2	3.9	3.0	2.4	1.4	2.5	e
	2015	both sexes 5+ years GHS	6.8	6.3	3.9	5.4	4.4	4.5	7.1	7.4	4.6	5.1	f
		female 5+ years GHS	6.7	7.4	4.2	6.0	4.7	4.9	7.6	7.9	4.5	5.5	f
		male 5+ years GHS	6.9	5.1	3.6	4.7	4.0	4.0	6.7	6.8	4.7	4.7	f
	2016	both sexes all ages CS	8.5	11.0	6.7	8.6	6.4	7.5	10.7	8.7	6.3	7.7	g
female all ages CS											8.9	g	
male all ages CS											6.5	g	
Prevalence of hearing disability	1996	Census	1.1	1.3	0.8	0.9	1.1	1.2	0.8	1.6	0.5	1.0	b
	2001	Census	0.8	1.0	0.4	0.7	0.8	0.9	0.7	0.7	0.6	0.7	c
	2012	15+ years SANHANES	10.8	14.3	7.0	13.6	10.5	10.3	4.0	7.2	9.0	9.5	h
	2016	both sexes all ages CS										3.8	g
Prevalence of physical disability	1996	Census	1.9	1.6	1.0	1.6	1.5	1.1	1.2	1.8	0.9	1.4	b
	2001	Census	1.5	1.3	1.0	1.3	1.0	1.3	1.6	1.4	1.2	1.2	c
	2016	both sexes all ages CS										5.4	g
Prevalence of sight disability	1996	Census	2.6	5.2	2.9	2.2	2.3	3.6	2.3	3.4	3.8	2.7	b
	2001	Census	1.3	2.2	1.0	1.2	1.3	1.6	1.5	1.7	0.8	1.3	c
	2016	both sexes all ages CS										10.3	g

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴
- b Census 1996.²⁰
- c Census 2001.⁴⁴
- d Stats SA GHS 2012.⁹⁸ This analysis only includes the percentage of persons aged 5 years and older with a disability. This is because children under five years are often mistakenly categorised as being unable to walk, remember, communicate or care for themselves when it is due to their level of development rather than any innate disabilities they might have.
- e SANHANES-1.⁹⁹ The WHO-Disability Assessment Scale (DAS) score provides an indication of the overall level of self-reported disability in the 30 days preceding the interview at the time the survey was conducted. It is expected that the level of disability will increase with age. In SANHANES-1, a very low level of disability was reported at all ages, including the middle and older age group although the results show a trend of increasing disability with age.
- f Stats SA GHS 2015.⁴⁰
- g Community Survey 2016.²¹
- h SANHANES-1.⁹⁹ Self-reported prevalence of wearing a hearing aid.

Table 9: Disability indicators by population group

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Prevalence of disability	1996	Census	7.5	3.6	4.1	3.3	4.4	a
	2001	Census	5.2	4.2	3.7	4.5		b
	2016	both sexes all ages CS	7.6	7.5	8.4	9.2		c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Census 1996.²⁰
- b Census 2001.²⁷
- c Community Survey 2016.²¹

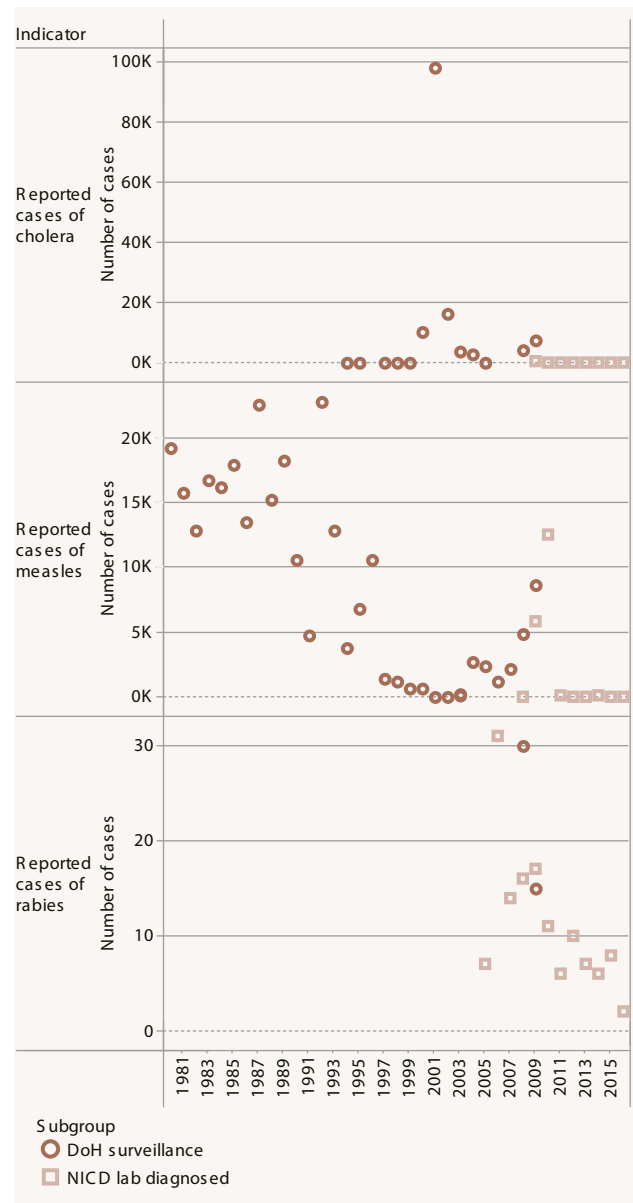
Infectious diseases

Context	The Cape Town Global Action Plan for Sustainable Development Data emphasised how tracking progress towards the achievement of the Sustainable Development Goals demanded access to “quality, accessible, timely and reliable disaggregated data”, but in particular highlighted the need for data that would ensure that “no one is left behind”. This demand has particular relevance for infectious diseases, where obtaining a complete picture of the national situation remains challenging. Work is underway to link the NHLS corporate data warehouse (CDW) and TIER.Net, using the unique identifier relied upon by the Health Patient Registration System (HPRS).
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Surveillance data, surveillance bulletins and other reports issued by NICD
Key issues and trends	A National Surveillance Strategy 2015–2020 is under development by the National Department of Health and the National Institute for Communicable Diseases. However, no details have yet been made public, and no updated notifiable disease data have been released by the NDoH in the past year.

Globally, attention to neglected tropical diseases (NTDs) has been included in the 2030 Agenda, and thus in the targets set for the Sustainable Development Goals (SDGs). It might be anticipated that NTDs would have limited relevance for South Africa. Nonetheless, a recent review of progress in this regard has highlighted a number of conditions which are still locally prevalent, such as rabies, schistosomiasis and soil-transmitted helminthiases.¹⁰⁰ The review also points out that “NTDs are tracers of equity in progress toward other SDGs and targets, including universal health coverage (target 3.8), access to safe water (target 6.1), and sanitation (target 6.2)”. The Global Burden of Disease Study 2010 estimated about 150 000 deaths per year from NTDs, but this excluded deaths from rabies, snakebite, cancers associated with trematode infections and neurological NTD conditions such as neurocysticercosis-related epilepsy. Including these causes would inflate the estimate to about 350 000 deaths per year. Locally, a bilharzia and helminth prevalence survey has been conducted in two provinces, but not yet reported.

Under the strategic area of “innovation and modernization of national statistical systems”, the Cape Town Global Action Plan for Sustainable Development Data listed a number of key actions.⁹ One of these was to “strengthen ... access to data, including enhanced data sharing across the national statistical system”. Another called for the development of “a mechanism for the use of data from alternative and innovative sources within official statistics”. This is of particular relevance to infectious disease monitoring as, once more, the Review has to note that no updated notifiable disease data have been issued by the National Department of Health. Although it appears that the National Health Laboratory Service (NHLS), and in particular the National Institute for Communicable Diseases (NICD), is filling the gap to some extent, exactly how or when this will transition to the proposed National Public Health Institute of South Africa (NAPHISA) is unclear. A pilot disease surveillance system is in development between the Department of Health and the NICD. The linkages being forged between the NHLS Corporate Data Warehouse (CDW) and private sector systems, such as Netcare’s Bluebird system, are also to be welcomed and should be closely followed.⁶ Such linkages will ensure that, in any new national surveillance system, no-one is left behind. Recent reports from the NICD include the GERMS-SA 2015 report of laboratory surveillance of opportunistic infections associated with HIV, epidemic-prone diseases, vaccine-preventable diseases and hospital infections.¹⁰¹ In 2015, these data were contributed by 222 clinical microbiology laboratories, serving an estimated population of 54.9 million. The January 2017 issue of the NICD’s Communicable Diseases Communiqué included data on rabies for January to December 2016.¹⁰² Only two cases of human

Figure 8: Trends in case notifications and laboratory confirmed cases of cholera, measles and rabies, South Africa, 1980 to 2016



Source: Compiled from multiple reports of the National Department of Health (NDoH) and National Institute for Communicable Diseases (NICD).

rabies were laboratory-confirmed in South Africa in 2016, one each from KwaZulu-Natal and the Free State. The Communiqué noted that this is the lowest annual incidence in South Africa in thirty years, and cautioned that under-diagnosis and missed cases could not be ruled out. Improved management of animal bites and improved control of canine rabies might also be responsible for the reduced number of human cases, but canine rabies is still endemic, particularly in KwaZulu-Natal, Mpumalanga, Limpopo and the eastern parts of the Free State. Figure 8 shows the national trends in case notifications and laboratory-confirmed cases of cholera, measles and rabies, between 1980 and 2016, as reported to the National Department of Health and NICD.

As noted in the previous issue of the Review, global attention to the problem of schistosomiasis continues apace, including attention to the possible links between female genital schistosomiasis and HIV acquisition risk.^{103,104} In particular, the need for careful monitoring of the impact of mass drug administration campaigns has been identified.

Table 10: Selected infectious disease indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Reported cases of cholera	1995	DoH surveillance	0	0	1	1	0	0	0	0	0	2	a
	2000	DoH surveillance	0	1	0	10 161	0	0	0	4	0	10 166	a
	2001	DoH surveillance	9	1	65	97 059	793	125	0	6	1	98 059	a
	2002	DoH surveillance	2 352	0	24	13 536	465	4	0	12	1	16 394	a
	2003	DoH surveillance	3 142	2	4	560	0	159	0	0	1	3 866	a
	2004	DoH surveillance										2 780	a
	2005	DoH surveillance										0	a
	2008	DoH surveillance										4 343	a
	2009	DoH surveillance	2	0	47	0	618	6 855	0	28	4	7 554	a
		NICD lab diagnosed			37		449	61		19	4	570	b
	2010	NICD lab diagnosed			1							1	b
2016	NICD lab diagnosed	0	0	0	0	0	0	0	0	0	0	c	
Reported cases of measles	1980	DoH surveillance										19 193	a
	1990	DoH surveillance										10 628	a
	1995	DoH surveillance										6 833	a
	2000	DoH surveillance										646	a
	2005	DoH surveillance										2 334	a
	2009	DoH surveillance	314	198	4 359	2 215	282	218	87	563	447	8 683	a
		NICD lab diagnosed	80	165	4 114	423	220	131	65	453	209	5 860	b
	2010	NICD lab diagnosed	1 309	674	1 617	3 837	290	1 844	374	758	1 796	12 499	b
	2016	NICD lab diagnosed	0	0	8	3	0	2	0	1	3	17	c
Reported cases of rabies	2005	NICD lab diagnosed										7	d
	2009	DoH surveillance	7	0	0	4	2	2	0	0	0	15	a
		NICD lab diagnosed	8	0	0	5	2	2	0	0	0	17	b
	2010	NICD lab diagnosed	2	0	1	3	3	1	1	0	0	11	b
	2016	NICD lab diagnosed	0	1	0	1	0	0	0	0	0	2	c
Syphilis prevalence rate (antenatal)	1997	Antenatal Survey										11.2	e
	2000	Antenatal Survey	3.3	4.8	9.6	2.6	4.2	3.7	5.1	3.6	5.2	4.9	f
	2006	Antenatal Survey	2.6	2.5	2.3	1.0	0.6	1.1	6.9	1.8	1.9	1.8	g
		DHIS	12.9	4.2	4.0	4.9	2.2	3.3	6.7	11.9	8.5	4.6	h
	2011	Antenatal Survey	1.8	1.9	2.0	0.4	0.7	4.1	3.8	1.7	1.6	1.6	i
	2014	2013–2014 female 16+ years SAHMS			16.2	4.6					19.9		j

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DoH Notification System.¹⁰⁵
- b NICD surveillance.¹⁰⁶ Communicable Diseases Surveillance Bulletin Mar 2011.
- c NICD surveillance.¹⁰⁶ Personal communication with NICD, Jan 2017.
- d DoH Notification System.¹⁰⁵ Epi Comments Apr–Jun 2009. Quoting NICD.
- e Antenatal Survey 2008.¹⁰⁷
- f DoH Notification System.¹⁰⁵ Quoting data from annual antenatal surveys but updated by NDoH in 2002 due to errors in previously published figures.
- g Antenatal Survey 2006.¹⁰⁸
- h DHIS.³⁴
- i Antenatal Survey 2011.¹⁰⁹
- j SAHMS 2013–14.¹¹⁰ Prevalence in sex workers (not specifically antenatal clients as per indicator definition).

Malaria

Context	South Africa has set a national target to eliminate malaria by 2018. As the country approaches that target, strengthened surveillance will be critical. It will also be important to ensure that vulnerable groups are assured of equitable access to both preventive and curative interventions.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • National Department of Health malaria surveillance data • National Institute for Infectious Diseases (NICD) reports Internationally, reports of interest include: <ul style="list-style-type: none"> • WHO World Malaria Report 2016
Key issues and trends	Although corroborating data from vital registration systems have not been accessed, the high proportion of malaria deaths reported from Gauteng, a non-endemic province, have again focused attention on the issue of imported malaria, and the risks to migrant workers who return to neighbouring countries over holiday periods.

The Global Technical Strategy for Malaria 2016–2030 aims to reduce malaria incidence and mortality rates globally by at least 90%, to eliminate malaria from at least 35 countries and to prevent re-establishment in all countries that are malaria free. Target 3.3 of the Sustainable Development Goals (SDGs) is interpreted as incorporating these targets. Progress was reported in the World Malaria Report 2016.¹¹¹ A reduction in the number of people infected with malaria parasites in sub-Saharan Africa, from about 131 million in 2010 to about 114 million in 2015, was reported. This is still the majority of the estimated 212 million global cases of malaria in 2015. Nonetheless, the global incidence rate is estimated to have decreased by 41% between 2000 and 2015. The global estimate of mortality due to malaria in 2015 was 429 000 deaths, the majority in sub-Saharan Africa and due to *Plasmodium falciparum*, and the majority (303 000 deaths) in children aged under 5 years. Globally, malaria mortality rates have declined by 62% between 2000 and 2015. In this time period, 17 countries eliminated malaria and six of these were certified as malaria free by WHO. By combining data from the Malaria Atlas Project and the Global Burden of Disease Study, a fine mapping of malaria mortality between 1990 and 2015 has been achieved.¹¹² These data showed a 57% decrease in malaria mortality rate between 2000 and 2015, but also identified settings in which high mortality was associated with low coverage of treatment and prevention programmes.

South Africa is reported to have set a national target to eliminate malaria by 2018.¹¹³ WHO noted, however, that South Africa’s “relatively high number of malaria cases are geographically concentrated along the border with Zimbabwe, Swaziland and Mozambique” and predicted that the country “has the potential to eliminate malaria by 2020”. Strengthened surveillance is critical as countries approach elimination, as is equitable access to preventive and curative interventions. The WHO notes in particular that, as countries approach elimination “a high proportion of cases are found among vulnerable populations living in remote areas” and that specific attention must be given to access for all at-risk groups, regardless of legal status. In South Africa, this should include migrant workers who return to neighbouring countries over holiday periods. A meta-analysis of studies on imported malaria cases in non-endemic countries emphasised the role of historical and language links and travel ties.¹¹⁴ These factors need to be understood if the malaria case load and mortality reported from provinces such as Gauteng are to be addressed. Of 40 reported malaria deaths in 2016, 17 occurred in Gauteng.

A seasonal update on malaria surveillance issued by the NICD in the January 2017 Communicable Diseases Communiqué noted that the majority of cases in the malaria-endemic provinces (Mpumalanga, KwaZulu-Natal and Limpopo) were locally acquired, but also that “incidence ... is likely to increase further during the coming months owing to increased summer rainfall and high numbers of travellers returning from endemic regions”.¹⁰² National trends in malaria indicators between 1971 and 2016 are depicted

Figure 9: Trends in malaria indicators for South Africa, 1971 to 2016



Source: Compiled from NDoH malaria surveillance data, Stats SA Causes of death unit records and the Global Burden of Disease Study as reported by Murray et al. 2014.¹¹⁵

in Figure 9, contrasting the various sources, and in particular the marked difference between notified cases and those captured by vital registration systems.

Table 11: Malaria indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Case fatality rate: malaria	1999	DoH surveillance				0.8	1.1	0.6				0.8	a	
	2010	DoH surveillance	0.0	0.0	1.1	1.3	0.9	1.1	8.3	2.1	0.0	1.1	a	
	2015	DoH surveillance	4.2	2.4	1.7	1.0	1.5	0.5	5.6	1.8	2.4	1.2	a	
	2016	DoH surveillance	0.0	0.0	1.4	1.2	0.7	0.3	0.0	0.0	0.8	0.7	a	
Malaria mortality rate (per 100 000 population)	2013	DoH surveillance	0.0	0.1	0.2	0.1	0.4	0.9	0.0	0.1	0.0	0.2	a	
		vital registration	0.1	0.3	0.5	0.3	1.1	1.1	0.0	0.6	0.1	0.5	b	
	2014	DoH surveillance	0.0	0.0	0.2	0.1	1.6	0.8	0.1	0.0	0.1	0.3	a	
		vital registration	0.2	0.4	0.8	0.3	2.7	1.4	0.1	0.2	0.1	0.7	c	
	2015	DoH surveillance	0.0	0.0	0.2	0.1	1.4	0.4	0.1	0.0	0.0	0.2	a	
	2016	DoH surveillance	0.0	0.0	0.1	0.1	0.2	0.2	0.0	0.0	0.0	0.1	a	
Reported cases of malaria	1995	DoH surveillance										8 750	a	
	2000	DoH surveillance				41 786	9 487	12 390				64 622	a	
	2005	DoH surveillance				1 220	3 458	3 077				7 755	a	
	2010	DoH surveillance	9	34	960	380	4 215	2 195	12	186	75	8 066	a	
	2013	DoH surveillance	30	72	1 761	575	2 408	3 796	20	102	87	8 851	a	
		GBD											5 629	d
		female GBD											2 874	d
		male GBD											2 755	d
	2015	DoH surveillance	24	41	1 524	606	5 352	3 494	18	55	124	11 238	a	
	2016	DoH surveillance	28	25	1 248	488	1 361	2 403	6	92	118	5 769	a	
	Reported cases of malaria (per 100 000)	1998	DoH surveillance	0.1	0.9	2.0	153.0	65.0	200.0	0.9	5.6	0.7	160.0	e
2005		DoH surveillance				12.6	61.4	95.6				16.5	e	
2010		DoH surveillance	0.1	1.2	8.0	3.7	79.1	55.2	1.0	5.3	1.3	15.8	e	
2015		DoH surveillance	0.3	1.5	11.5	5.5	93.5	81.6	1.5	1.5	2.0	20.4	e	
2016		DoH surveillance	0.4	0.9	9.2	4.4	23.4	55.5	0.5	2.4	1.9	10.3	e	
Reported deaths from malaria	1995	DoH surveillance										44	a	
	2000	DoH surveillance				340	68	46				459	a	
		vital registration	75	29	89	319	324	154	4	27	7	1 028	f	
	2005	DoH surveillance				17	31	16				64	a	
		vital registration	28	14	133	54	295	81	2	23	6	644	g	
	2010	DoH surveillance			11	5	40	26	1	4		87	a	
		vital registration	3	5	73	28	96	43	1	12	6	276	h	
	2013	DoH surveillance	3	2	24	13	24	36			3	1	106	a
		GBD											374	d
		vital registration	4	8	67	31	58	46		22	7	247	i	
		WMR											105	j
		female GBD											128	d
		male GBD											245	d
	2014	DoH surveillance			28	8	91	33	1		4	165	a	
		vital registration	11	10	100	30	152	59	1	9	9	387	k	
		WMR										174	j	
	2015	DoH surveillance	1	1	26	6	79	18	1	1	3	136	a	
		WMR										110	j	
	2016	DoH surveillance			17	6	9	7			1	40	a	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DoH Malaria Statistics.¹¹⁶ Totals for South Africa may include cases/deaths where no province was recorded.
- b Stats SA Causes of death 2013.³⁰ Calculated from Stats SA Causes of Death online database using ICD-10 codes B50-B54 as underlying cause of death and population from Stats SA mid-year estimates. Includes deaths not recorded by province.
- c Stats SA Causes of death 2014.¹¹⁷ Calculated from Stats SA Causes of Death online database using ICD-10 codes B50-B54 as underlying cause of death and population from Stats SA mid-year estimates. Includes deaths not recorded by province.
- d Murray et al. 2014.¹¹⁸ Modelled estimate as part of the Global Burden of Disease Study 2013.
- e DoH Malaria Statistics.¹¹⁶ Calculated from reported cases of malaria and Stats SA mid-year population estimates for the relevant year.
- f Stats SA Causes of death. Calculated from Stats SA Causes of Death online database using ICD-10 codes B50-B54 as underlying cause of death. Includes deaths not recorded by province.
- g Stats SA Causes of death 2005.¹¹⁹ Calculated from Stats SA Causes of Death database using ICD-10 codes B50-B54 as underlying cause of death. Includes deaths occurring outside of SA.
- h Stats SA Causes of death 2010.¹²⁰ Calculated from Stats SA Causes of Death online database using ICD-10 codes B50-B54 as underlying cause of death. Includes 9 deaths not recorded by province.

- i Stats SA Causes of death 2013.³⁰ Calculated from Stats SA Causes of Death online database using ICD-10 codes B50–B54 as underlying cause of death. Includes 6 deaths not recorded by province.
- j World Malaria Report 2016.¹¹¹
- k Stats SA Causes of death 2014.¹¹⁷ Calculated from Stats SA Causes of Death online database using ICD-10 codes B50–B54 as underlying cause of death.

Context	Tuberculosis remains a key target for both the Sustainable Development Goals and for the specific WHO End TB Strategy 2016–2020. The emphasis, though, has shifted from prevalent cases to incident cases, in order to reflect the 90-90-90 targets. The draft National Strategic Plan on HIV, TB, STIs (2017–2022) has been aligned with these targets.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • South African Tuberculosis Drug Resistance Survey 2012–2014 • National programme data, as captured in ETR.net (drug-susceptible TB), EDRWeb (drug-resistant TB) and National Health Laboratory Service • Stats SA Causes of death 2015 Internationally, reports of interest include: <ul style="list-style-type: none"> • WHO Global Tuberculosis Report 2016
Key issues and trends	South Africa has been included in all three of the country lists that will be used by WHO to track progress with respect to the End TB Strategy 2016–2020: the 30 high TB burden countries, the 30 high TB/HIV burden countries, and the 30 high MDR-TB burden countries.

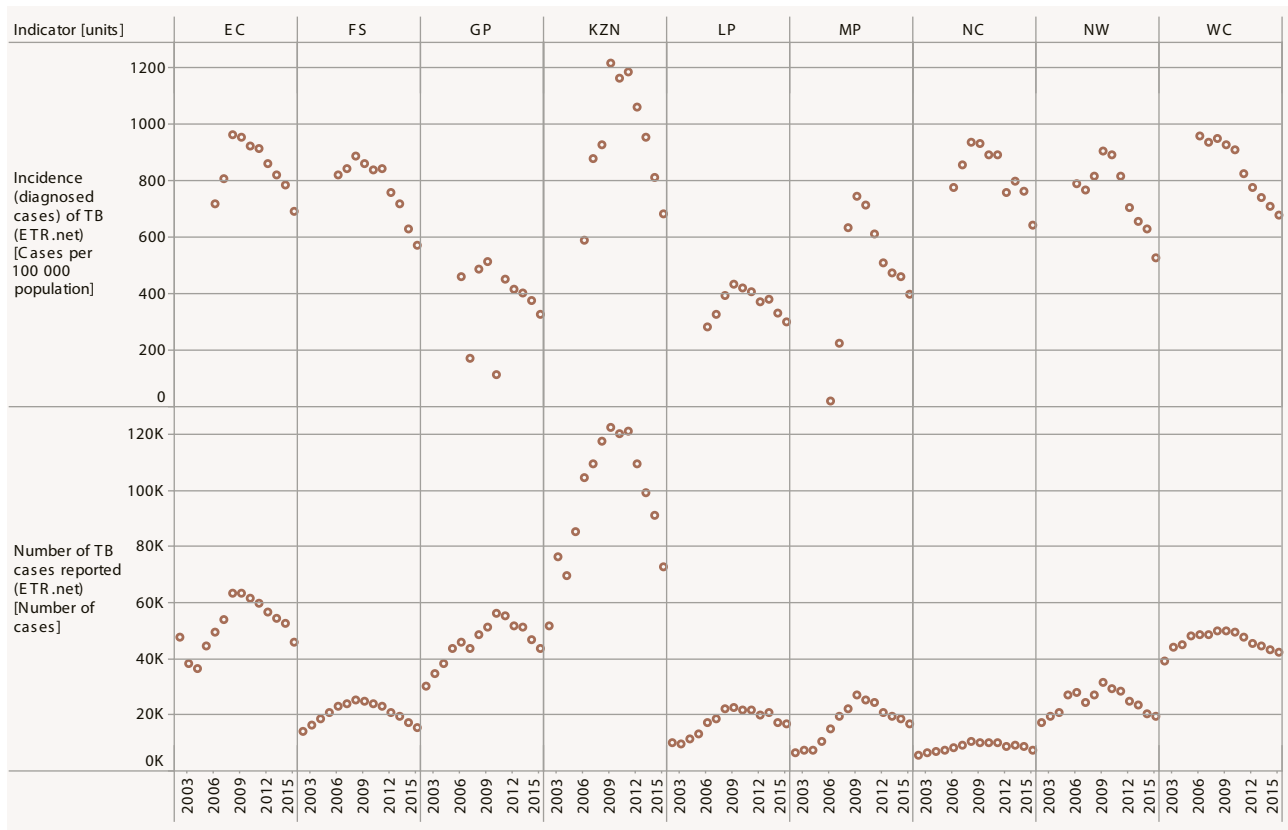
The WHO Global Tuberculosis Report 2016 estimated 10.4 million incident tuberculosis TB cases worldwide, of which 1.0 million were children.⁴⁶ South Africa features in all three of the country lists that will be used by WHO to track progress in 2016–2020: the 30 high TB burden countries, the 30 high TB/HIV burden countries, and the 30 high MDR-TB burden countries. Just six countries (India, Indonesia, China, Nigeria, Pakistan and South Africa) accounted for 60% of all incident cases. Although only 6.1 million incident cases were notified to national authorities in 2015, there was a marked increase in notifications from India. India, China and the Russian Federation accounted for 45% of the combined total of 580 000 incident drug-resistant cases (480 000 of which were multidrug-resistant TB (MDR-TB)). Globally, only 125 000 drug-resistant cases accessed treatment. In 2015, 55% of notified TB patients had an HIV test result recorded, and 78% of HIV-TB co-infected patients accessed antiretroviral therapy (ART). TB was responsible for an estimated 1.4 million deaths in 2015, with an additional 0.4 million deaths resulting from TB disease among people living with HIV. Although there was a 22% decrease in TB deaths between 2000 and 2015, TB remained one of the top 10 global causes of death. The 2016 Global Tuberculosis Report was the first of the SDG era, and was re-arranged accordingly. The Report also reflected the targets set by the End TB Strategy, which has replaced the Stop TB Strategy (2006–2015). The End TB Strategy aims at a 90% reduction in TB incidence and a 95% reduction in TB deaths by 2035, compared with the 2015 baseline. One of the issues highlighted in the End TB Strategy is the need to control latent TB infection (LTBI). A new modelling exercise has estimated the global burden of LTBI in 2014 at approximately 1.7 billion people (23.0% of the global population; 95% uncertainty interval [UI]: 20.4%–26.4%), of which about 80% resided in the WHO South-East Asia, Western Pacific, and Africa regions.¹²¹ The Global Tuberculosis Report 2016 noted that South Africa accounted for 45% of all people living with HIV who received TB preventive treatment for LTBI in 2015.

A 'zero draft' of South Africa's National Strategic Plan on HIV, TB, STIs (2017–2022) was released for comment in September 2016.¹²² Among the strategies outlined is the use of hotspot mapping for HIV, TB and sexually-transmitted infections (STIs) in identified districts, in order to inform high-impact interventions in these priority areas. The End TB Strategy has set the targets of reaching 90% of all people who need TB treatment, including 90% of people in key populations, and achieving at least 90% treatment success. The targets had been

articulated somewhat differently by the South African National Department of Health, as screening 90% of vulnerable groups, diagnosing and starting 90% on treatment, and then achieving at least 90% treatment success. However, alignment with the End TB targets is now evident in the draft National Strategic Plan.

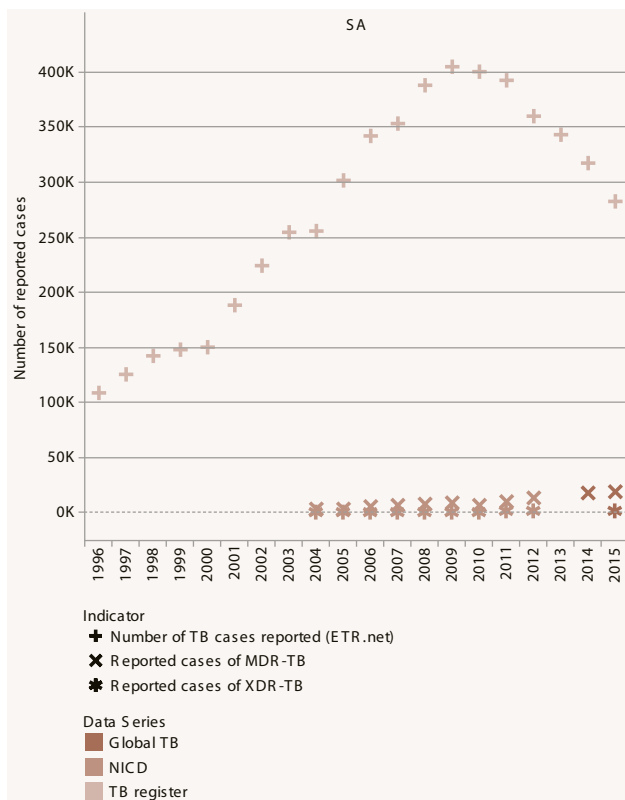
The results of the South African Tuberculosis Drug Resistance Survey 2012–2014 were released in 2016.¹²³ Nationally, the prevalence of MDR-TB was 2.8%; (95% CI: 2.0%–3.6%). Prevalence was lower in new cases (2.1%; 95% CI: 1.5%–2.7%) than in retreatment cases (4.6%; 95% CI: 3.2%–6.0%). The highest overall prevalence was recorded in Mpumalanga (5.1%; 95% CI: 3.7%–7.0%). Overall prevalence was therefore not different from that recorded in the 2001–2002 survey (2.9%; 95% CI: 2.4%–3.5%). However, there was a marked increase in any rifampicin resistance (including mono-resistance) in new cases, from 1.8% (95% CI: 1.3%–2.3%) in 2001–2002 to 3.4% (95% CI: 2.5%–4.3%) in 2012–2014. For the first time, the survey measured resistance to second-line drugs among MDR-TB cases. Resistance to ethionamide (44.7%; 95% CI: 25.9%–63.6%) and pyrazinamide (59.1%; 95% CI: 49.0%–69.1%) was higher than that for fluoroquinolones and injectable agents (both 13%; 95% CI: 5%–21%). Of MDR-TB cases, 4.9% (95% CI: 1.0%–8.8%) were identified as extensively-drug resistant (XDR-TB). The high levels of resistance to second-line agents among MDR-TB cases underlines the risk of transmission of such strains. A prospective cohort study in KwaZulu-Natal showed that the majority of XDR-TB cases were probably due to transmission rather than development of resistance in the particular patient due to inadequate treatment of MDR-TB.¹²⁴ Although focused on drug-susceptible cases, a retrospective cohort study conducted in public sector primary healthcare clinics in Johannesburg underscored the problem with missing laboratory results, including smears, cultures and drug sensitivity tests, which would hamper the ability to identify and manage both non-adherence and resistant cases.¹²⁵ This study also highlighted the challenges of integrating HIV and TB care. Of the 495 patients in the cohort, only 137 (27.7%) were known to be living with HIV and on ART. A further 116 (23.4%) were known to be co-infected, but not on ART, and 101 (20.4%) were known to be co-infected but ART status was unknown. Overall, 394 (79.6%) achieved treatment success. Low uptake of HIV testing (35%) was demonstrated in a cohort of TB contacts approached through household contact tracing.¹²⁶

Figure 10: Trends in incidence and number of cases based diagnosed cases in ETR.net by province, 2002 to 2015



Source: NDoH TB Directorate (ETR.net).

Figure 11: Trends in number of reported cases of drug-susceptible TB, MDR and XDR-TB, for South Africa 1996 to 2015

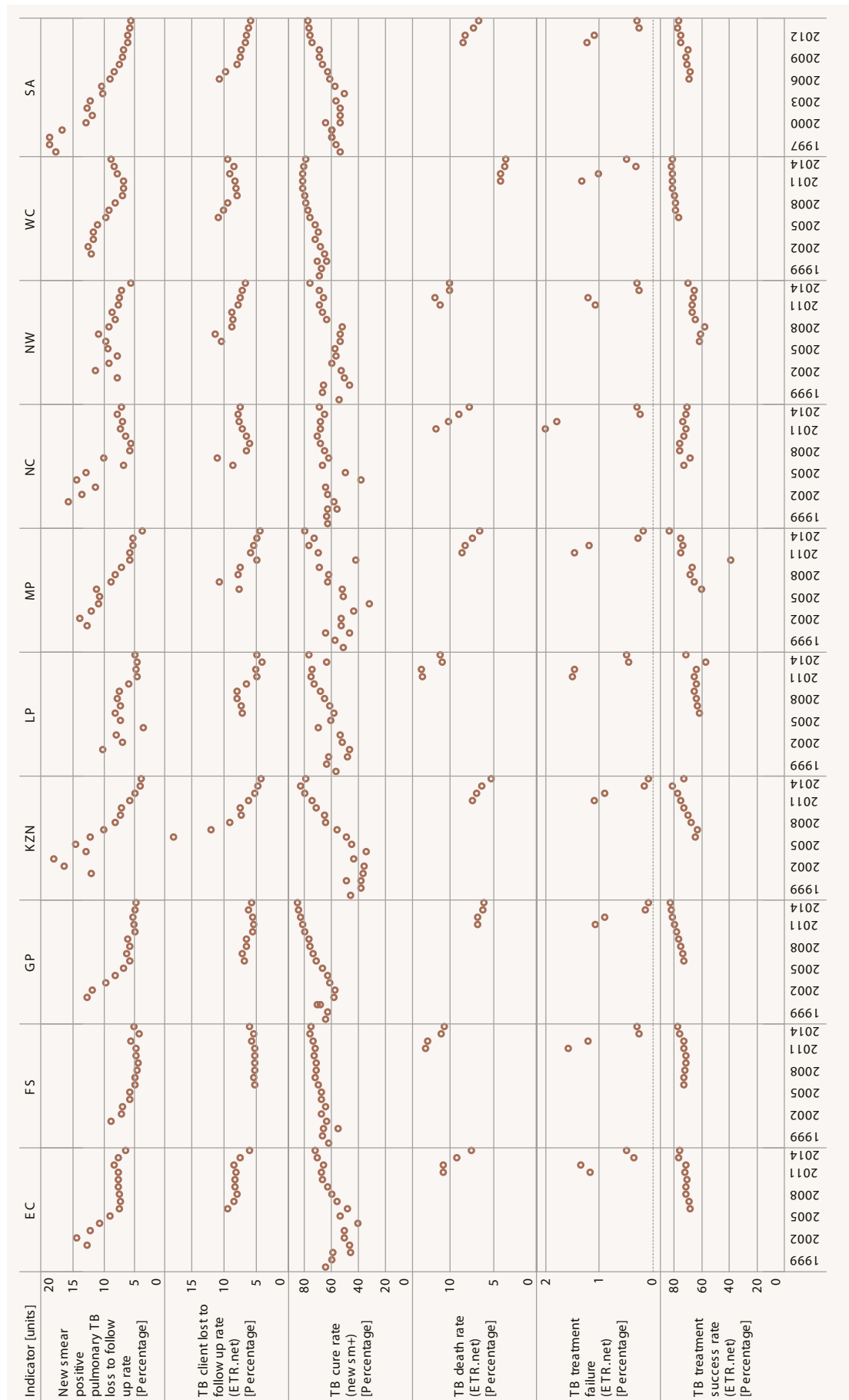


Source: NDoH TB Directorate,¹³² MDR Overview 2014,¹³³ Global TB Report 2015¹²⁹ and Global TB Report 2016.⁴⁶

Trends in incidence and the number of TB cases diagnosed and reported by the National Department of Health’s electronic TB register (ETR.net), for the period 2002 to 2015, are shown in Figure 10. Figure 11 shows the trends in the number of reported cases of drug-susceptible TB, MDR- and XDR-TB, nationally, between 1996 and 2015. Figure 12 shows the trends in TB treatment outcomes in drug-susceptible TB by province, between 1996 and 2014, based on ETR.net data.

In keeping with the SDG requirement for inter-sectoral approaches, which recognise the impact of the social determinants of health, any interventions aimed at ending TB would need to consider social circumstances. Not surprisingly, social protection spending has been shown to be inversely associated with TB prevalence, incidence and mortality.¹²⁷ Policy interventions can also draw on the lessons learned from large-scale household surveys, such as the South African National Health and Nutrition Examination Survey (SANHANES).¹²⁸ Data from SANHANES–1 showed that race, sex, completion of high school, being in employment, having a diagnosis of the disease in ones’ life-time and learning about tuberculosis from television, brochures, health workers, and teachers were significant predictors of respondents’ knowledge about TB.

Figure 12: Trends in selected TB treatment outcomes in drug-susceptible TB by province, 1996 to 2014



Source: NDoH TB Directorate (ETR.net).

Table 12: TB programme management and other indicators

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Case detection rate (all forms)	1990	Global TB										70.0	a
	1995	Global TB										59.0	a
	2000	Global TB										58.0	a
	2005	Global TB										60.0	a
	2010	Global TB										73.0	a
	2015	Global TB										64.0	b
HIV prevalence in TB incident cases	1990	Global TB										4.4	a
	1995	Global TB										40.0	a
	2000	Global TB										57.0	a
	2005	Global TB										60.0	a
	2010	Global TB										60.0	a
	2014	2012–2014 18+ years	55.6	70.3	74.6	69.2	63.6	76.8	51.7	68.0	47.4	63.2	c
	2015	Global TB										61.0	a
Tuberculosis death rate per 100 000 (in HIV-positive people)	1990	Global TB										1.0	a
	1995	Global TB										13.0	a
	2000	Global TB										102.0	a
	2005	Global TB										197.0	a
	2010	Global TB										163.0	a
	2015	Global TB										133.0	b
Tuberculosis mortality rate per 100 000	1990	Global TB										78.0	d
	1995	Global TB										116.0	d
	2000	Global TB										183.0	d
	2005	Global TB										249.0	d
		vital registration	176.4	199.9	118.4	235.6	78.4	183.9	186.0	162.3	84.2	157.6	e
	2010	vital registration	156.5	182.6	77.4	179.7	78.9	140.9	123.1	143.3	62.9	123.4	f
	2012	both sexes all ages BoD age-standardised	134.0	61.0		67.0	48.0	52.0	84.0	40.0	31.0	55.0	g
		female all ages BoD age-standardised	88.0	33.0		35.0	22.0	24.0	58.0			33.0	g
		male all ages BoD age-standardised	200.0	99.0		115.0	88.0	89.0	117.0	62.0	44.0	84.0	g
		vital registration	108.7	120.1	61.7	129.2	77.3	108.2	107.5	105.7	51.7	92.6	h
	2014	vital registration	86.5	98.8	49.4	81.2	61.9	80.4	88.2	84.0	39.9	68.9	i
2015	vital registration	85.0	75.0	41.0	67.0	54.0	63.0	90.0	74.0	43.0	60.0	j	
Tuberculosis mortality rate per 100 000 (excluding HIV)	1990	Global TB										47.0	a
	1995	Global TB										47.0	a
	2000	Global TB										68.0	a
	2005	Global TB										75.0	a
	2010	Global TB										59.0	a
	2015	Global TB										46.0	b

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Global TB Report 2015.¹²⁹
- b Global TB Report 2016.⁴⁶
- c MDR Survey 2012–2014.¹²³
- d Global TB database.¹³⁰ Downloaded 2010–09–15.
- e Stats SA Causes of death 2005.¹¹⁹ Calculated from 73 903 deaths due to TB (ICD10 A15–A19) and Stats SA mid-year population estimates for the relevant year. No adjustment has been made for under-reporting of death notification. The rate for South Africa includes deaths that are not allocated to a specific province and will therefore be higher than the average provincial value. Based on the recorded province of death.
- f Stats SA Causes of death 2010.¹²⁰ Calculated from 61 800 deaths due to TB (ICD10 A15–A19), plus 856 due to ICD10 U51 (MDR) and 171 due to ICD10 U52 (XDR TB) and Stats SA mid-year population estimates for the relevant year. No adjustment has been made for under-reporting or ill-defined causes. The rate for South Africa includes deaths that are not allocated to a specific province and will therefore be higher than the average provincial value. Based on the recorded province of death.
- g Burden of Disease SA 2012.⁸⁵ TB not in top 10 leading causes of death for some provinces.
- h Stats SA Causes of death 2012.¹³¹ Calculated from deaths due to TB (ICD10 A15–A19), plus ICD10 U51 (MDR) and ICD10 U52 (XDR TB) and Stats SA mid-year population estimates for the relevant year. No adjustment has been made for under-reporting or ill-defined causes. The rate for South Africa includes deaths that are not allocated to a specific province and will therefore be higher than the average provincial value. Based on the recorded province of death.
- i Stats SA Causes of death 2014.¹¹⁷ Includes 779 deaths due to MDR TB and 77 deaths due to XDR TB. Calculated from deaths due to TB (ICD10 A15–A19), plus ICD10 U51 (MDR) and ICD10 U52 (XDR TB) and Stats SA mid-year population estimates for the relevant year. No adjustment has been made for under-reporting or ill-defined causes. The rate for South Africa includes deaths that are not allocated to a specific province and will therefore be higher than the average provincial value. Based on the recorded province of death.
- j Stats SA Causes of death 2015.³¹ Includes 1115 deaths due to MDR TB and 162 deaths due to XDR TB. Calculated from deaths due to TB (ICD10 A15–A19), plus ICD10 U51 (MDR) and ICD10 U52 (XDR TB) and Stats SA mid-year population estimates for the relevant year. No adjustment has been made for under-reporting or ill-defined causes. The rate for South Africa includes deaths that are not allocated to a specific province and will therefore be higher than the average provincial value. Based on the recorded province of death.

Table 13: TB case-finding indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Incidence (diagnosed cases) of TB – new PTB sm+	2002	TB register	228.1	274.3	188.9	203.4	91.9	130.0	339.4	260.3	430.1	218.7	a
	2005	TB register	255.5	322.0	233.8	299.8	121.6	172.4	395.4	350.9	399.2	267.5	a
	2010	TB register	341.1	320.0	46.5	276.9	185.0	298.6	293.2	310.5	284.4	232.8	a
	2015	TB register	246.4	139.8	74.2	141.7	76.2	119.7	146.8	127.4	195.1	134.8	a
Incidence (diagnosed cases) of TB (ETR.net)	2006	TB register	720.5	819.6	462.3	591.7	284.1	22.7	778.2	791.6	958.8	577.7	a
	2010	TB register	922.3	837.2	113.6	1 161.8	419.8	715.5	892.2	894.4	909.5	718.4	a
	2015	TB register	691.7	574.8	329.9	685.2	300.7	401.6	644.6	528.4	681.4	519.8	a
Incidence of TB (all types) (per 100 000)	1990	Global TB										313.0	b
	1995	Global TB										302.0	b
	2000	Global TB										585.0	b
	2005	Global TB										932.0	b
	2010	Global TB										948.0	b
	2015	Global TB										834.0	c
MDR-TB started on treatment	2007		932	158	497	788	71	148	145	156	439	3 334	d
	2010		927	167	607	1 788	119	298	230	143	1 034	5 313	d
	2015	Global TB										12 527	c
Number of TB cases reported (ETR.net)	1996	TB register										109 328	a
	2002	TB register	48 130	14 221	30 515	52 016	10 098	6 536	5 642	17 612	39 650	224 420	a
	2005	TB register	44 909	20 915	43 990	85 507	13 366	10 746	7 633	27 208	48 193	302 467	a
	2010	TB register	62 029	24 395	56 501	120 421	22 138	25 683	10 252	29 789	49 840	401 048	a
	2015	TB register	46 294	15 883	43 772	73 240	17 000	17 011	7 621	19 565	42 559	282 945	a
Prevalence of multidrug resistance among new TB cases	2001		1.0	1.8	1.4	1.7	2.4	2.6		2.2	0.9		e
	2014	2012–2014 18+ years new cases	1.7	1.8	2.7	1.8	1.4	4.2	1.3	1.9	2.0	2.1	f
Reported cases of MDR-TB	2004	lab diagnosed	379	116	537	583	59	162	168	130	1 085	3 219	d
	2005	lab diagnosed	545	151	676	1 024	40	134	155	203	1 192	4 120	d
	2010	lab diagnosed	1 782	267	934	2 032	126	312	353	158	1 422	7 386	d
	2014	Global TB lab diagnosed										18 734	b
	2015	Global TB lab diagnosed										19 613	c
Reported cases of XDR-TB	2004	lab diagnosed	3	1	5	59			4	1	12	85	d
	2005	lab diagnosed	18	6	14	227	2		10	5	16	298	d
	2010	lab diagnosed	320	7	37	201	6	5	39	14	112	741	d
	2015	Global TB lab diagnosed										1 024	c
Smear positivity (% of PTB cases which are new Sm+)	1996	TB register										45.0	a
	2002	TB register	39.1	67.4	65.6	43.5	73.9	69.6	61.0	64.0	62.2	54.1	a
	2005	TB register	46.9	54.6	62.3	39.2	61.0	57.2	50.6	56.6	43.6	48.7	a
	2010	TB register	42.3	46.8	48.1	27.8	52.8	41.0	35.6	39.8	35.3	38.3	a
	2015	TB register	40.0	29.0	27.0	25.0	30.0	33.0	28.0	28.0	43.0	32.0	a
TB Rifampicin resistance confirmed client rate	2011	2011/12 NHLS Xpert	7.6	5.8	6.1	7.9	7.5	7.9	6.6	8.0	4.7	7.1	g
	2014	2012–2014 18+ years new cases	2.7	3.5	3.6	3.5	3.4	6.0	2.0	3.1	2.9	3.4	f
		2014/15 NHLS Xpert	6.0	5.6	5.7	8.3	4.9	8.6	5.0	5.2	5.2	6.4	g
	2015	2015 NHLS Xpert	5.7	5.5	5.9	7.8	5.2	7.8	5.3	4.8	5.0	6.1	h
XDR-TB started on treatment	2007		171	7	45	170	2	0	11	4	64	474	d
	2010		224	5	30	235	3	6	37	14	61	615	d
	2015	Global TB										730	c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DoH TB.¹³² Based on analysis of patient-level records in ETR.net as received from NDoH.
b Global TB Report 2015.¹²⁹
c Global TB Report 2016.⁴⁶
d MDR Overview 2014.¹³³
e MDR TB 2004.¹³⁴
f MDR Survey 2012–2014.¹²³
g DHB 2014/15.¹³⁵ Percentage of positive TB tests that are RIF resistant (based only on tests done using GeneXpert technology).
h DHB 2015/16.¹³⁶ Percentage of positive TB tests that are RIF resistant (based only on tests done using GeneXpert technology).

Table 14: TB case-holding indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
TB cure rate (new sm+)	1996	TB register										54.0	a
	2000	TB register	46.3	54.9	68.1	38.1	48.7	46.7	56.2	47.2	63.4	53.8	a
	2005	TB register	53.7	67.5	66.7	45.2	60.8	51.8	50.1	57.6	71.9	57.6	a
	2010	TB register	67.0	72.7	79.9	71.1	72.6	42.1	70.7	66.4	81.3	69.2	a
	2014	TB register	72.2	75.2	85.1	78.7	76.8	79.8	69.4	76.4	78.7	77.4	a
New smear positive pulmonary TB loss to follow up rate	1996	TB register										18.0	a
	2000	TB register										13.0	a
	2005	TB register	9.0	5.9	6.9	14.7	7.4	10.8	13.1	9.5	11.1	10.4	a
	2010	TB register	7.7	4.8	4.9	7.2	5.9	5.9	6.5	8.8	6.8	6.8	a
	2014	TB register	6.5	5.2	4.8	4.0	4.9	3.8	7.3	5.7	8.8	5.6	a
TB client lost to follow up rate (ETR.net)	2006	TB register	9.6	5.4	7.0	18.0	7.3	7.8	8.7	10.5	11.0	10.9	a
	2010	TB register	8.4	5.4	5.7	7.6	6.6	5.1	6.7	8.9	8.2	7.4	a
	2014	TB register	6.1	6.1	5.8	4.4	5.0	4.5	7.6	6.8	9.5	6.0	a
TB death rate (ETR.net)	2011	TB register	10.8	12.8	6.9	7.5	13.2	8.6	11.7	11.2	4.2	8.6	a
	2014	TB register	7.6	10.7	6.2	5.4	11.2	6.6	7.8	10.1	3.6	6.7	a
TB MDR treatment success rate (EDRWeb)	2013		33.9	41.7	41.1	57.3	53.0	45.2	39.0	60.2	43.5	47.2	b
TB treatment failure (ETR.net)	2011	TB register	1.2	1.6	1.1	1.1	1.5	1.5	2.0	1.1	1.3	1.2	a
	2014	TB register	0.5	0.3	0.1	0.1	0.5	0.2	0.3	0.3	0.5	0.3	a
TB treatment success rate (ETR.net)	2006	TB register	69.3	73.6	73.5	65.5	62.2	61.0	73.5	62.5	77.1	70.0	a
	2010	TB register	71.3	72.0	78.6	73.7	64.5	39.2	73.5	67.2	81.6	70.8	a
	2014	TB register	76.2	78.0	83.4	73.8	71.8	84.0	71.2	70.2	81.8	77.2	a

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DoH TB.¹³² Based on analysis of patient-level records in ETR.Net as received from NDoH.
 b DoH TB.¹³² Based on analysis of patient-level records in EDRWeb as received from NDoH, reported in the DHB 2015/16.

Context	The quantity of available data of the HIV epidemic, both globally and nationally, continues to increase. However, no new antenatal prevalence data have been released since the results of the October 2013 survey were published in January 2016.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • National Health Laboratory Service data • National Strategic Plan on HIV, STIs and TB 2017–2022 (zero draft) • SANAC NSP Report 2016 • National Burden of Disease Study 1997–2012 • Electronic TB Register (ETR.net) – HIV/TB indicators Internationally, reports of interest include: <ul style="list-style-type: none"> • UNAIDS Global AIDS Update 2016 • UNAIDS Prevention Gap Report 2016 • UNICEF For Every Child End AIDS Seventh Stocktaking Report 2016 • Global Burden of Disease Study 2015
Key issues and trends	The UNAIDS 90-90-90 targets pose considerable challenges for routine data systems, but have now been incorporated in the draft National Strategic Plan on HIV, TB and STIs 2017–2022. The WHO consolidated strategic information guidelines for HIV in the health sector list 10 key measures that should be tracked in every country. While the data necessary to track some of these are increasingly available from routine sources, others are more difficult, or rely on periodic surveys. Key populations pose particular challenges in the South African context.

The World Health Organization has produced consolidated strategic information guidelines for HIV in the health sector, which list 10 key measures: the number of people living with HIV; domestic funding; coverage of prevention services; number of diagnosed people; HIV care coverage; treatment coverage; treatment retention; viral suppression; AIDS deaths; and new infections.¹³⁷ These measures would enable estimates of progress against the 90-90-90 targets, which have been incorporated in the ‘zero draft’ of the South African National Strategic Plan on HIV, TB and STIs (2017–2022).¹²² The most recent UNAIDS update showed that there was a total of 36.7 million people globally living with HIV in 2015, with 2.1 million new HIV infections in that year.¹³⁸ Of the prevalent cases, 17.0 million were accessing antiretroviral therapy (ART). The number of AIDS deaths in 2015 was estimated at 1.1 million, down from 1.5 million in 2010. UNAIDS pointed out that the reduction in deaths since 2010 has been greater among adult women (33%) than among adult men (15% decrease), most probably reflecting higher treatment coverage (52% versus 41%). There is renewed focus on key populations, such as sex workers, people who inject drugs, transgender people, prisoners and gay men and other men who have sex with men. UNAIDS reported that more than 20% of new infections in sub-Saharan Africa were in key populations. An example of a response to this reality is the South African National Sex Worker HIV Plan 2016 – 2019.¹³⁹ Local data also confirm the high incidence in key populations. For example, the Mpumalanga Men’s Study conducted in Gert Sibande district showed an incidence of 12.5/100 person years (95% CI: 8.1 to 19.2) among men who have sex with men (MSM).¹⁴⁰ Data from four HIV prevention trials in women in Durban showed that 71% of observed incident HIV infections were associated with younger age, being unmarried and not cohabiting with a stable/regular partner, and being diagnosed with at least one STI.¹⁴¹ People who inject drugs (PWID) are at higher risk of HIV-hepatitis C co-infection.¹⁴² It was estimated that, globally, there were 2.2 million HIV–HCV co-infections, of which 1.4 million were in PWID. Even without considering the costs of

treating co-infections, the financial resources required to implement a test-and-treat approach in sub-Saharan African countries will exceed local capacity.¹⁴³

The Global Burden of Disease Study 2015 has published global, regional, and national incidence, prevalence, and mortality estimates for HIV, for the period 1980–2015.¹⁴⁴ As expected, the GBD estimates vary somewhat from those issued by UNAIDS. GBD 2015 estimated HIV incidence at about 2.6 million per year (range 2.5–2.8 million), and prevalence at 38.8 million (95% UI 37.6–40.4 million) in 2015. HIV-related mortality was estimated at 1.2 million deaths (1.1–1.3 million) in 2015. It was pointed out that the differences between UNAIDS and GBD estimates were greatest in middle-income and high-income countries, “where GBD estimates are based on data from vital registration systems and UNAIDS estimates are based on prevalence in high-risk groups and estimates of the fraction of the population in these groups”.

UNAIDS has also pointed out that the number of new HIV infections among adults has remained static since 2010.¹⁴⁵ There are many elements to the ‘prevention gap’, including incomplete access to pre-exposure prophylaxis, male medical circumcision, and harm reduction interventions aimed at people who inject drugs. Globally, it is estimated that 37–39% of men are circumcised.¹⁴⁶ The estimate for South Africa reported by this study was 44.7%. Data from the first two waves of the National Income Dynamics Study showed that the proportion of adults ever tested for HIV increased from 43.7% to 65.2% between 2010/11 and 2012.¹⁴⁷ However, the data identified persistent problems with reaching men and those less educated. The National HIV Testing Services Policy 2016 identified specific strategies to reach key populations such as MSM, female sex workers, long-distance truck drivers, PWID and prisoners.¹⁴⁸ The policy states that “all healthcare providers should support clients who have self-tested and provide them with counselling as needed after confirmation of diagnosis”.

UNICEF's Seventh Stocktaking Report 2016 has emphasised that children under 4 years of age living with HIV are at the highest risk of AIDS-related death of any age group.¹⁴⁹ Only half of the 1.8 million children (aged 0–14 years) living with HIV globally were receiving ART in 2015. As those infected at birth or soon afterwards age, particularly if successfully treated, so the prevalence amongst adolescents is increasing. This is compounded by new infections in the 15–19 year-old group. An estimated 150 000 children (aged 0–14 years) were newly infected with HIV globally in 2015, of which the majority (85%) were in sub-Saharan Africa. UNICEF also emphasised that the majority of new infections in children now occur during breastfeeding. The *District Health Barometer 2015/16* showed that the national HIV polymerase chain reaction (PCR) testing coverage rate at birth was 67.5%, based on NHLS PCR data and the calculated number of HIV-exposed births.¹⁵⁰ Coverage rates were highest in KwaZulu-Natal (82.7%) and lowest in the Eastern Cape (48.9%). Importantly, the results obtained reflect differences in approach. While 0.74% of PCR tests within the first six days were positive in KwaZulu-Natal, the figure in the Western Cape was 2.4%. However, while KwaZulu-Natal implemented routine birth testing, the Western Cape performed targeted birth testing among high-risk cases during 2015/16, and only implemented routine birth testing in April 2016. These data emphasise how important context and detailed background information can be when interpreting what appear, at first glance, to be consistently gathered indicator data.

While data are collected in the private sector, they are poorly integrated into national HIV indicators. The Council for Medical Schemes Annual Report 2015/16 recorded a total of 24 456 unique beneficiaries on ART with suppressed viral loads (<1000 copies/mL) in 2015.⁴¹ Overall, 30.7 per 1 000 beneficiaries were enrolled on an HIV disease management programme, but it was not clear how many of these were accessing ART. While 13 963 beneficiaries accessed ART for occupational post-exposure prophylaxis purposes, 60 accessed ART after sexual assault. A comparison of treatment outcomes achieved in a cohort of treatment-naïve patients showed that by 12 months post-ART initiation, patients treated at a private clinic in Johannesburg were less likely to have a detectable viral load than those treated at a public sector clinic (adjusted relative risk 0.65; 95% CI 0.49–0.88).¹⁵¹ However, private sector patients had initiated treatment at higher CD4 counts and with less extensive disease.

Accurate data from vital registration systems would greatly improve monitoring of the outcomes of HIV across the entire population. Individual cause of death data for South Africa for 1997 to 2010 were re-examined, combining the local burden of disease list and 19 other sources identified as potential cause misattributions.¹⁵² Over the entire period, the total number of AIDS deaths was estimated at 2.8 million, which was lower than the model estimates from either UNAIDS or the Global Burden of Disease Study. Importantly, it was estimated that 93% of AIDS deaths were misattributed. Data from longitudinal surveillance systems, such as that maintained at Hlabisa by the Africa Health Research Institute, continue to provide insights into the local epidemic. Data from Hlabisa, for instance, based on 5 205 individuals with HIV who were followed up for 24 031 person-years, showed that of those living, 82% knew their HIV status, 45% were linked to care, 39% were eligible for ART, 35% initiated ART, and 33% were virally suppressed.¹⁵³ During the period of surveillance, the eligibility criteria for ART changed a number of times. Modelling exercises, using the Thembisa model, have been

used to simulate the impact of different HIV interventions in South Africa.¹⁵⁴ Based on this modelling exercise, adult HIV incidence is expected to decline from 1.4% in 2011–2012 to 0.29% by 2035 (95% CI: 0.10–0.62%). The most important determinants of this decline were the rate of viral suppression after initiating ART, the level of condom use in non-marital relationships, the introduction of intensified risk-reduction counselling for HIV-positive adults, uptake of medical male circumcision, and the introduction of the test-and-treat approach. Details of Thembisa-based provincial models of the HIV epidemic were released by the Centre for Infectious Disease Epidemiology and Research in August 2016.¹⁵⁵ Modelled estimates of progress towards meeting the 90-90-90 targets in each of the provinces have also been reported (Figure 13).

Figure 13: Progress towards the UNAIDS 90-90-90 targets in 2015 by province



Source: Johnson et al. 2016, Modelling the impact of HIV in South Africa's provinces.¹⁵⁵

Table 15: HIV prevalence and incidence indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
HIV incidence	1990	15-49 years THEMBISA										0.3	a	
		female 15-49 years THEMBISA											0.4	a
		male 15-49 years THEMBISA											0.2	a
	2000	15-49 years THEMBISA											2.2	a
		2005	15-49 years SABSSM										2.0	b
	2005	15-49 years THEMBISA											2.0	a
		both sexes all ages SABSSM original	1.7	3.4	3.1	3.8	2.4	4.2	0.5	2.3	0.9	2.7	2.7	c
		2008	15-49 years SABSSM										1.3	d
	2010	15-49 years THEMBISA										1.6	a	
	2012	15-49 years SABSSM											1.7	e
		15-49 years Spectrum											1.5	f
		15-49 years THEMBISA											1.5	a
	2016	all ages ASSA	0.8	0.7	0.5	1.0	0.5	0.9	0.4	0.8	0.3	0.7	0.7	g
		female 15-49 years THEMBISA											1.9	a
		male 15-49 years THEMBISA											1.1	a
		both sexes 15-24 years											1.2	h
both sexes 15-49 years												1.3	h	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
HIV prevalence (age 15–49)	2002	15–49 years SABSSM	10.2	19.4	20.3	15.7	11.5	21.0	9.6	14.4	13.2	15.6	i
	2005	15–49 years SABSSM	15.5	19.2	15.8	21.9	11.0	23.1	9.0	18.0	3.2	16.2	j
	2008	15–49 years SABSSM	15.2	18.5	15.2	25.8	13.7	23.1	9.0	17.7	5.3	16.9	j
	2012	15–49 years ASSA	17.0	18.5	16.8	22.9	11.3	19.5	10.4	18.8	8.0	17.0	g
		15–49 years mid-year										15.8	k
		15–49 years SABSSM	19.9	20.4	17.8	27.9	13.9	21.8	11.9	20.3	7.8	18.8	e
		15–49 years Spectrum										17.9	l
	2015	15–49 years ASSA	17.3	18.4	16.4	22.8	11.5	19.5	10.4	18.6	8.0	17.0	g
		15–49 years mid-year										16.6	m
2016	15–49 years mid-year										18.9	n	
HIV prevalence (antenatal)	1990	Antenatal Survey	0.4	0.6	0.7	1.6	0.3	0.4	0.2	1.1	0.1	0.7	o
	1995	Antenatal Survey	6.0	11.0	12.0	18.2	4.9	16.2	5.3	8.3	1.7	10.4	o
	2000	Antenatal Survey	20.2	27.9	29.4	36.2	13.2	29.7	11.2	22.9	8.7	24.5	p
	2005	Antenatal Survey	29.5	30.3	32.4	39.1	21.5	34.8	18.5	31.8		30.2	q
		Antenatal Survey									15.7		r
	2010	Antenatal Survey	29.9	30.6	30.4	39.5	21.9	35.1	18.4	29.6	18.5	30.2	s
	2013	Antenatal Survey	31.4	29.8	28.6	40.1	20.3	37.5	17.5	28.2	18.7	29.7	t
HIV prevalence (total population)	1995	both sexes	2.4	4.4	4.8	7.3	1.9	6.5	2.1	3.3	0.7	4.5	u
		1999	both sexes	8.6	13.3	11.7	17.8	7.1	15.8	6.0	12.0	4.3	12.9
	2002	both sexes 2–14 years SABSSM	3.4	4.7	5.0	3.9	4.7	3.7	3.8	4.3	7.1	5.6	e
		both sexes 15–24 years SABSSM	9.2	8.7	11.6	7.2	5.6	11.7	11.8	8.3	11.2	9.3	e
		both sexes 25+ years SABSSM	8.1	22.0	18.1	14.9	14.0	21.0	10.6	17.8	11.2	15.5	e
		female SABSSM										12.8	e
		male SABSSM										9.5	e
	2005	both sexes 2–14 years SABSSM	1.2	2.3	2.9	7.9	4.7	5.4	0.6	1.4	0.3	3.3	e
		both sexes 15–24 years SABSSM	11.7	10.3	9.0	16.1	7.4	10.1	6.4	6.6	2.3	10.3	e
		both sexes 25+ years SABSSM	13.8	19.7	14.9	20.5	11.4	24.4	8.0	18.9	2.7	15.6	e
		female SABSSM										13.3	v
		male SABSSM										8.2	v
	2008	both sexes 2–14 years SABSSM	2.1	4.1	2.2	2.8	2.5	3.8	2.3	3.2	1.1	2.5	e
		both sexes 15–24 years SABSSM	6.6	3.8	10.1	15.3	3.9	13.5	3.9	6.3	3.0	8.7	e
		both sexes 25+ years SABSSM	15.6	20.4	14.4	23.5	16.7	24.5	8.6	17.7	5.4	16.8	e
	2012	both sexes 2–14 years SABSSM	1.3	1.7	2.1	4.4	2.8	1.7	1.2	2.2	0.7	2.4	e
		both sexes 15–24 years SABSSM	6.2	4.5	5.8	12.0	3.1	10.0	4.1	8.2	4.4	7.1	e
		both sexes 25+ years SABSSM	22.0	23.7	18.8	30.1	16.3	23.6	12.5	21.1	6.8	19.9	e
		both sexes 50+ years SABSSM	8.5	13.9	6.9	9.8	7.3	10.1	6.1	9.2	1.8	7.6	e
		both sexes all ages SABSSM										12.2	e
		both sexes ASSA	10.8	12.1	11.2	15.1	7.1	12.7	6.8	12.5	5.2	11.1	g
		both sexes mid-year										9.9	k
		female SABSSM										14.4	e
		male SABSSM										9.9	e
		2013	both sexes ASSA	11.0	12.1	11.2	15.2	7.3	12.8	6.9	12.5	5.2	11.2
	both sexes mid-year											10.0	k
	2015	both sexes ASSA	11.4	12.3	11.1	15.4	7.5	13.0	7.0	12.6	5.2	11.3	g
both sexes mid-year											11.2	m	
2016	both sexes mid-year										12.7	n	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a THEMBISA 1.0.¹⁵⁶
 b Rehle et al. 2010.¹⁵⁷ For 2002–2005.
 c HIV Household Survey 2005.¹⁵⁸ Population 2 years and older. Since the publication of the survey adjustment procedures for the HIV incidence calculation have been reviewed and new estimates were published in S Afr Med J. 2007;97(3):194–9.
 d Rehle et al. 2010.¹⁵⁷ For 2005–2008.
 e HIV Household Survey 2012.¹⁵⁹

- f SANAC NSP Report 2014.¹⁶⁰ Mid-2011 to mid-2012.
g ASSA2008.¹⁶¹
h SANAC NSP Report 2016.¹⁶²
i HIV Household Survey 2002.¹⁶³
j HIV Household Survey 2008.¹⁶⁴
k Stats SA MYE 2013.¹⁶⁵
l Antenatal Survey 2012.¹⁶⁶
m Stats SA MYE 2015.²⁶
n Stats SA MYE 2016.¹⁶
o Antenatal Survey 2002.¹⁶⁷
p Antenatal Survey 2000.¹⁶⁸
q Antenatal Survey 2005.¹⁶⁹
r Antenatal Survey 2005 WC.¹⁷⁰
s Antenatal Survey 2010.¹⁷¹
t Antenatal Survey 2013.¹⁷²
u SA Uncertain Demographics.¹⁷³
v HIV Household Survey 2005.¹⁵⁸

Table 16: Other HIV and AIDS indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Antiretroviral coverage	2001	15+ years										1.0	a	
		all ages THEMBISA										0.4	b	
	2005	15+ years											10.0	a
		all ages THEMBISA											4.4	b
	2008	15+ years	32.4	25.8	43.5	39.4	32.2	31.2	61.1	35.4	71.7	40.2	a	
		all ages THEMBISA											18.7	b
	2010	0–14 years Global Report											36.0	c
		all ages Global Report											55.0	c
		all ages THEMBISA											35.7	b
	2015	both sexes 15+ years											48.0	d
		both sexes 15+ years THEMBISA	56.0	59.0	52.0	62.0	56.0	58.0	73.0	51.0	56.0			e
		both sexes all ages GBD											51.0	f
		female 15+ years											53.0	d
		female Pregnant women living with HIV											95.0	d
male 15+ years												40.0	d	
Antiretroviral treatment exposure	2012	all ages SABSSM										31.2	g	
		female all ages SABSSM											34.7	g
		male all ages SABSSM											25.7	g
HIV testing coverage	2010	NiDS										43.7	h	
	2012	NiDS										65.2	h	
HIV testing coverage (including ANC)	2013	2013/14 DHIS	30.5	31.8	15.5	37.5	37.0	27.8	24.1	33.4	9.1	26.1	i	
	2014	2014/15 DHIS	36.0	26.2	23.3	39.0	40.8	30.0	29.5	35.2	31.9	32.1	i	
	2015	2015/16 DHIS	37.3	31.6	32.6	36.0	39.1	32.4	30.3	29.7	35.3	34.5	i	
HIV viral load suppression	2015	both sexes 15+ years THEMBISA	75.0	81.0	81.0	85.0	70.0	70.0	78.0	86.0	86.0		e	
	2016											81.0	j	
Male circumcision (% of men who are circumcised)	2002	15+ years SABSSM										38.2	k	
	2003	SADHS	43.8	70.7	25.2	26.8	47.5	36.3	34.1	32.8	67.5	44.7	l	
	2008	0–2 years SABSSM											4.3	m
		15–18 years SABSSM											21.7	m
		15+ years SABSSM											40.6	k
	2012	15+ years SABSSM	74.0	36.0	48.2	23.2	72.6	49.9	20.3	36.7	41.0	46.4	k	
NCS												48.1	n	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
Number of patients receiving ART	2004	0–14 years										4 200	o		
		female 15+ years											25 600	o	
		male 15+ years											17 700	o	
		NGO programmes											3 900	o	
		private sector											34 100	o	
		public sector											9 600	o	
		total	5 300	2 200	13 800	12 800	2 000	3 300	400	2 700	5 000		47 500	o	
		2005	0–14 years											9 800	o
	female 15+ years												63 600	o	
	male 15+ years												37 500	o	
	NGO programmes												6 400	o	
	private sector												43 800	o	
	public sector												60 600	o	
	total	12 600	4 900	30 800	30 300	4 800	5 800	1 500	8 800	11 400			110 900	o	
	2010	0–14 years												113 000	o
		all ages THEMBSA												1 247 000	p
		female 15+ years												777 000	o
		male 15+ years												396 000	o
		NGO programmes												60 000	o
		private sector												154 000	o
		public sector												1 073 000	o
		total	137 000	66 000	280 000	409 000	101 000	96 000	16 000	96 000	85 000			1 287 000	o
	2015	0–14 years												174 891	d
		15+ years												3 209 270	d
		female Pregnant women												257 456	d
		March 0–14 years DHIS	18 280	9 968	30 219	54 192	12 655	15 118	3 133	11 883	7 913			163 361	i
		March 15+ years DHIS	301 782	158 909	700 357	897 270	219 851	269 866	39 921	179 729	172 856			2 940 541	i
		March all ages DHIS	320 062	168 877	730 576	951 462	232 506	284 984	43 054	191 612	180 769			3 103 902	i
		med schemes												311 534	q
	2016												3 700 000	j	
People living with HIV	2005	ASSA	614 858	338 725	1 073 169	1 411 302	327 816	398 949	45 497	463 453	208 213	4 814 291	r		
	2010	all ages											6 400 000	j	
		ASSA	695 707	348 832	1 207 378	1 550 955	394 221	472 882	74 963	427 023	266 180	5 467 182	r		
		Spectrum											5 500 000	s	
	2015	0–14 years											240 000	j	
		15+ years											6 700 000	j	
		all ages											7 000 000	j	
		all ages GBD											8 409 550	f	
		ASSA	796 634	366 895	1 229 068	1 680 200	461 927	520 480	82 723	451 339	289 915	5 967 061	r		
		female Pregnant women											250 000	j	
Percentage of deaths due to AIDS	2001	mid-year										40.5	t		
	2005	ASSA	33.1	44.7	46.2	48.9	31.3	48.9	20.2	47.2	15.8	40.1	r		
		mid-year											47.7	u	
	2010	ASSA	26.5	35.0	36.8	38.0	22.5	38.8	18.0	38.7	13.7	31.7	r		
		both sexes all ages BoD											35.0	v	
		mid-year											34.6	u	
	2012	ASSA	26.3	32.1	35.6	37.7	24.7	36.5	20.1	36.5	15.9	31.5	r		
		both sexes 0–4 years BoD	21.6	12.0	14.6	25.4	25.1	24.9	20.0	21.4	12.4	20.1	w		
		both sexes 5–14 years BoD	42.4	40.8	42.8	66.6	36.4	46.7	28.8	34.1	22.8	50.7	w		
		both sexes 15–44 years BoD	43.4	51.3	49.0	59.3	50.4	59.6	46.4	61.4	34.1	51.9	w		
		both sexes 45–59 years BoD	26.0	37.2	37.6	35.6	38.1	38.7	30.8	43.0	19.0	34.1	w		
		both sexes 60+ years BoD	6.4	12.2	9.4	6.5	8.6	10.3	8.9	11.4	3.6	7.9	w		
		both sexes all ages BoD	23.5	30.8	29.1	33.7	28.8	34.6	26.3	35.6	14.9	29.1	w		
		female all ages BoD	24.9	31.7	30.0	34.2	31.1	36.6	27.2	37.3	15.1	30.1	w		
		male all ages BoD	22.2	30.0	28.3	33.3	26.4	32.8	25.4	34.0	14.7	28.0	w		
		mid-year											33.5	u	
2016	mid-year										27.9	x			

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Percentage of people living with HIV (PLHIV) who know their status	2015	both sexes 15+ years THEMBISA	85.0	86.0	82.0	88.0	86.0	84.0	85.0	88.0	83.0		e
Percentage of TB cases with known HIV status (ETR.net)	2008	TB register	43.0	38.3	49.1	38.1	37.5	39.8	57.5	0.0	74.1	43.3	y
	2010	TB register	68.8	71.8	72.7	71.9	72.2	73.5	73.4	65.0	89.8	73.5	y
	2015	TB register	95.3	93.0	95.9	94.2	95.4	93.6	93.2	93.7	96.1	94.8	y
TB/HIV co-infected client on ART rate (ETR.Net)	2011	TB register	27.1	49.8	34.1	17.5	31.4	23.1	34.7	29.4	42.6	28.0	y
	2015	TB register	95.7	84.5	84.9	82.2	79.9	90.6	86.6	82.3	75.7	84.5	y

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Adam & Johnson 2009.¹⁷⁴ Estimates of number on ART from public sector programme reports, plus private sector and NGOs = 568 000 (adults + children). Estimated unmet need from Markov model of HIV progression = 760 000 adults. Adults include those 15 years and older.
- b THEMBISA 1.0.¹⁵⁶
- c Universal Access 2011.¹⁷⁵
- d UNAIDS Prevention Gap 2016.¹⁴⁵
- e Johnson et al. 2016.¹⁵⁵
- f GBD 2015 HIV.¹⁴⁴
- g HIV Household Survey 2012.¹⁵⁹
- h Maughan-Brown et al. 2015.¹⁷⁶ Proportion of adults having ever received an HIV test. Analysis of the National Income Dynamics Study (NiDS).
- i DHIS.³⁴
- j SANAC NSP Report 2016.¹⁶²
- k HIV Household Survey 2012.¹⁵⁹ Self-reported circumcision.
- l SADHS 2003.¹⁷⁷
- m HIV Children 2008.¹⁷⁸
- n NCS 2012.¹⁷⁹ Survey sampled men aged 16–55. Among the 5 471 890 men who said they were not circumcised: Almost a million said they definitely intended to get circumcised in the next 12 months. Of those that say they will definitely get circumcised, 80.5% (803 690) intend to have a medical circumcision.
- o Johnson 2012.¹⁸⁰ Totals reflect ART enrolment over the 12 months up to the middle of the year. Includes public and private sector estimates.
- p SANAC NSP Report 2014.¹⁶⁰ Source provides comparison from variety of sources.
- q Medical Schemes 2015–16.⁴¹ Calculated from given number of beneficiaries diagnosed and treated (33.1 per 1 000).
- r ASSA2008.¹⁶¹
- s Antenatal Survey 2011.¹⁸¹ Modelled from antenatal HIV survey using the Epidemic Projection Package.
- t Stats SA MYE 2011.¹⁸²
- u Stats SA MYE 2013.¹⁶⁵
- v Burden of Disease SA 2010.⁸⁹
- w Burden of Disease SA 2012.⁸⁵
- x Stats SA MYE 2016.¹⁶
- y DoH TB.¹³² As presented in the *District Health Barometer*.

Table 17: Indicators related to prevention-of-mother-to-child transmission (PMTCT) by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Antenatal client initiated on ART	2013	Oct 2012 – May 2013 all ages	86.1	93.0	93.2	91.0	83.4	83.4	89.0	88.3	95.9	90.3	a
Antenatal client initiated on ART rate	2013	2013/14 DHIS	79.0	80.8	63.1	85.4	78.6	74.2	80.3	79.2	68.5	76.3	b
	2015	2015/16 DHIS	93.9	86.8	92.4	97.6	92.8	95.9	92.2	86.9	77.5	93.0	b
Antenatal client tested for HIV	2013	Oct 2012 – May 2013 all ages PMTCT survey	91.5	94.6	97.3	95.4	95.1	94.3	95.3	97.3	97.0	95.5	c
	2014	2013–2014 female 16+ years SAHMS			97.8	98.4					97.4		d
HIV PCR birth testing coverage	2015	NHLS	48.9	56.7	71.3	82.7	61.1	60.6	61.6	69.1	51.6	67.5	e
Percentage PCR tests positive within 6 days	2015	NHLS	1.4	1.1	1.1	0.7	1.7	1.1	1.3	1.2	2.4	1.1	e
Targeted birth PCR test positive rate	2015	DHIS	1.2	3.6	1.0	0.7	1.6	2.3	2.3	1.2	4.4	1.2	f

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a PMTCT Survey 2012–13.¹⁸³ Among self-reported HIV-positive mothers 54.8% received maternal ART during or before pregnancy and 35.5% received maternal and infant ARV prophylaxis.
- b DHIS.³⁴
- c PMTCT Survey 2012–13.¹⁸³
- d SAHMS 2013–14.¹¹⁰ Participants was offered HIV test.
- e DHB 2015/16.¹³⁶
- f DHIS.³⁴ Western Cape figures not comparable since they performed targeted birth testing on neonates at high risk of transmission.

Table 18: HIV indicators by population group

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Antiretroviral treatment exposure	2012	all ages SABSSM	30.9					a
HIV incidence	2005	both sexes all ages SABSSM adjusted	1.8				0.2	b
		both sexes all ages SABSSM original	3.4	0.3	0.5	0.3		c
	2012	2+ years SABSSM	1.3					d
HIV prevalence (age 15–49)	2002	15–49 years SABSSM	18.4	6.6	1.8	6.2		e
	2012	15–49 years SABSSM	22.7	4.6	1.0	0.6		d
HIV prevalence (antenatal)	2010	Antenatal Survey	32.5	7.0	7.1	3.0		f
	2011	Antenatal Survey	31.4	7.6	8.8	1.1		f
	2012	Antenatal Survey	31.7	7.5	4.6	2.2		f
	2013	15–49 years Antenatal Survey	32.0	6.8	8.9	2.2		g
HIV prevalence (total population)	2002	both sexes >2 years SABSSM	12.9	6.1	1.6	6.2		a
	2003	both sexes 15–24 years	11.8	3.8	0.9	2.0		h
	2005	both sexes >2 years SABSSM	13.3	1.9	1.6	0.6		c
	2008	both sexes >2 years SABSSM	13.6	1.7	0.3	0.3		i
		both sexes HEAIDS students	5.6	0.8	0.3	0.3		j
	2012	both sexes 15–24 years SABSSM	8.4	1.1	0.8	0.3		d
both sexes 50+ years SABSSM		11.0	2.1	0.6	0.0		d	
both sexes all ages SABSSM		15.0	3.1	0.8	0.3		d	
HIV testing coverage	2010	female NiDS	48.5					k
		male NiDS	34.1					k
	2012	female NiDS	72.2					k
		male NiDS	57.0					k
Male circumcision (% of men who are circumcised)	2003	SADHS	50.4	15.8	18.8	21.7		l
	2008	male HEAIDS	53.0	42.0	48.0	59.0		j
	2012	15+ years SABSSM	52.4	26.4	33.5	23.3		d

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a HIV Household Survey 2012.¹⁵⁹
- b Rehle et al. 2007.¹⁸⁴
- c HIV Household Survey 2005.¹⁵⁸
- d HIV Household Survey 2012.¹⁵⁹
- e HIV Household Survey 2002.¹⁶³
- f Antenatal Survey 2012.¹⁶⁶
- g Antenatal Survey 2013.¹⁷²
- h HIV Youth 2003.¹⁸⁵
- i HIV Household Survey 2008.¹⁶⁴
- j HEAIDS 2008–9.¹⁸⁶
- k Maughan-Brown et al. 2016.¹⁴⁷
- l SADHS 2003.¹⁷⁷

Reproductive health

Contraception, sexual behaviour, sexually transmitted infections and termination of pregnancy

Context	Enhanced access to modern methods of contraception is key to achieving a number of the Sustainable Development Goals (SDGs)
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • District Health Information System (DHIS) • National Income Dynamics Study (NiDS) Wave 4 • Stats SA General Household Survey 2015 • Stats SA Community Survey 2016 • Amnesty International. Barriers to Safe and Legal Abortion in South Africa 2017 Internationally, reports of interest include: <ul style="list-style-type: none"> • United Nations Trends in Contraceptive Use 2015
Key issues and trends	Equitable access to safe termination of pregnancy (abortion) services in South Africa is still constrained, 20 years after the passage of the Choice on Termination of Pregnancy Act, 1996. Like in many countries, the majority of South African women using modern contraceptives have access to only one method, usually an injectable progestogen.

One of the higher-scoring elements included in the Global Burden of Disease health-related SDG index for South Africa was the “proportion of women of reproductive age (15–49 years) who have their need for family planning satisfied with modern methods”.¹⁴ Globally, 64% of married or in-union women of reproductive age were using some form of contraception in 2015.¹⁸⁷ July 2016 represented the mid-point of the FP2020 period, four years after the 2012 London Summit.¹⁸⁸ At this point, 300 million women were using modern methods of contraception across the FP2020 focus countries, but this was still short of the trajectory needed to increase the number of such users by 120 million between 2012 and 2020. It has been estimated that meeting 90% of the unmet need for contraception would reduce global births by almost 28 million.¹⁸⁹ This number of avoided pregnancies would also avert 7 000 maternal deaths, 440 000 neonatal deaths, 473 000 child deaths, and 564 000 stillbirths. The ‘zero draft’ of the National Strategic Plan for HIV, TB and STIs (2017–2022) emphasises access to emergency contraception and termination of pregnancy, but also the need for accessible and comprehensive sexual and reproductive health services.¹²²

Adolescent pregnancy is an emotive subject in South Africa. Globally, an estimated 780 000 births occurred in 2016 to mothers younger than 15 years.¹⁹⁰ A Southern Africa Labour and Development Research Unit report noted that the available data pointed to little change in the age at first birth over many decades, despite falling overall fertility in South Africa.¹⁹¹ As the authors summarised the evidence: teenage mothers only start to use contraception after a first birth. By geo-linking several sets of data (the loveLife Project Monitoring Database, District Health Information System facility data, National Income Dynamics Study (NiDS) data and Census 2001 data), the study showed that, among women who gave birth by 2012, access to a National Adolescent Friendly Clinic Initiative (NAFCI) clinic delayed childbearing by approximately 1.2 years on average. By contrast, routine data from the DHIS have shown a decline in proportion of deliveries that are to women less than 18 years of age.¹⁵⁰

In early 2017, Amnesty International released a report entitled “Barriers to Safe and Legal Abortion in South Africa”.¹⁹² Data provided by the Department of Health showed that only 264 out of 505 designated health facilities were providing first and second trimester termination of pregnancy services. The authors concluded that by “failing to regulate the practice of conscientious objection, and to ensure access to safe abortion information and services”, South Africa had failed to fulfil its obligations. These obligations were recently emphasised by the Africa Leaders’ Declaration on Safe, Legal Abortion as a Human Right.^e The Declaration called for increased budget allocation for national sexual and reproductive health programmes, “while rejecting policies and funding that undermine efforts to combat unsafe abortion”. Globally, abortion rates have declined since 1990 in developed countries but not in the developing countries.¹⁹³ In developed countries, the abortion rate declined from 46 per 1 000 women aged 15–44 years to 19 between 1990–94 and 2010–14, but only from 39 to 37 in developing countries. The total number of abortions was estimated to be 56.3 million per year in the 2010–14 period.

The latest revision to the National Indicator Data Set (NIDS) to be implemented in April 2017 has dropped the indicator ‘STI treated new episode incidence’ and retained only ‘Male urethritis syndrome incidence’ in the category ‘STI surveillance’.

e <https://www.dailymaverick.co.za/opinionista/2017-01-31-sexual-and-reproductive-rights-should-always-be-fought-for/>

Table 19: Contraception and sexual behaviour indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Age of first sex under 15 years (% having first had sex at age 14 or younger)	2002	female 15–24 years SABSSM										5.3	a	
		male 15–24 years SABSSM										13.1	a	
	2003	15–24 years											8.0	b
		15–24 years SABSSM	6.7	7.8	10.2	4.5	10.1	10.1	4.6	12.7	10.4	8.4	a	
	2008	15–24 years SABSSM	7.8	9.6	7.8	4.9	11.2	15.0	7.3	8.5	9.3	8.5	a	
		NYRBS	14.3	11.0	12.5	13.7	11.1	11.9	15.6	10.2	13.2	12.6	c	
	2009	female 16–24 years NCS											5.0	d
		male 16–24 years NCS											14.0	d
	2011	NYRBS	11.7	13.7	16.2	11.4	9.7	11.8	10.9	10.1	10.9	12.0	e	
	2012	15–24 years SABSSM	16.8	10.3	9.5	7.6	11.8	7.7	10.1	9.8	14.2	10.7	f	
		female 15–24 years SABSSM											5.0	f
male 15–24 years SABSSM												16.7	f	
2014	2013–2014 female 16+ years SAHMS			6.0	10.2					16.6			g	
	<16 years HEAIDS MSM											24.4	h	
Cervical cancer screening coverage	2000	DHIS			14.8		0.1	3.2			28.2	6.8	i	
	2005	DHIS	0.8	28.5	29.7	20.9	20.4	13.0	26.9	4.0	37.0	21.0	i	
	2010	DHIS	36.2	38.1	51.4	58.2	55.9	60.2	37.9	48.4	65.8	52.2	i	
	2015	DHIS	57.4	58.1	45.1	72.7	50.1	66.7	34.8	66.1	54.0	56.6	i	
Condom use at last sex	1998	female 15–24 years SADHS										16.6	j	
	2002	15+ years SABSSM	31.5	35.1	31.6	26.7	27.6	24.2	16.9	26.6	21.3	27.3	a	
	2005	15+ years SABSSM	35.8	30.7	37.7	36.3	44.7	36.1	19.1	37.3	22.5	35.4	a	
	2008	15+ years SABSSM	47.9	47.4	42.1	47.4	52.6	51.7	30.3	48.0	34.8	45.1	f	
		NYRBS	27.1	34.9	35.3	27.3	26.4	32.0	31.6	36.8	38.5	30.7	k	
	2011	NYRBS	28.7	35.8	35.0	30.7	30.7	30.9	41.9	42.6	36.2	32.9	l	
		15+ years SABSSM	37.9	40.7	35.7	39.6	39.3	39.4	26.9	40.8	24.3	36.2	f	
	2012	female 15–24 years SABSSM											49.8	f
		male 15–24 years SABSSM											67.5	f
		NCS overall											60.0	m
2014	2013–2014 female 16+ years SAHMS			69.5	81.7					49.8			n	
	HEAIDS MSM											63.4	o	
Couple year protection rate	2000	DHIS	32.1	29.5	18.8	18.7	32.7	24.2	25.5	30.7	30.1	25.3	i	
	2005	DHIS	27.5	31.1	23.7	22.9	35.1	23.1	30.6	28.9	39.7	28.0	i	
	2010	DHIS	30.4	32.4	26.3	24.2	32.7	33.0	36.0	26.3	58.8	31.6	i	
	2015	DHIS	53.5	57.4	42.1	52.1	50.4	38.7	38.3	35.1	58.6	48.2	i	
Ever had sex	2002	NYRBS	43.6	47.0	47.0	37.1	42.4	40.7	45.4	35.2	37.8	41.1	p	
	2005	15–24 years SABSSM										57.9	q	
	2008	NYRBS	41.4	36.9	36.7	37.5	35.6	36.4	32.9	39.4	36.6	37.5	k	
	2011	NYRBS	37.1	42.3	36.2	33.7	31.7	42.5	37.3	36.3	39.8	36.3	r	
		female NYRBS											28.6	r
		male NYRBS											44.4	r
2014	HEAIDS MSM										85.0	o		
HIV knowledge: correct knowledge about prevention and rejection of major misconceptions	2005	15+ years SABSSM	44.3	33.3	38.1	49.0	51.3	27.9	28.9	22.5	37.8	40.2	a	
	2008	15+ years SABSSM	36.0	41.3	32.8	29.5	14.0	18.2	32.1	18.5	34.1	29.0	a	
	2012	15+ years SABSSM	25.6	34.7	31.7	24.4	19.3	21.9	28.0	20.8	29.5	26.8	f	
		female 15+ years SABSSM											27.3	f
		male 15+ years SABSSM											26.2	f
2014	2013–2014 female 16+ years SAHMS			32.8	50.8					30.6		g		
Male condom distribution coverage	2000	DHIS	6.9	5.2	0.1	6.3	8.3	6.2	3.4	5.1	4.9	4.6	i	
	2005	DHIS	10.4	7.0	5.6	7.5	12.4	7.1	5.2	6.2	19.7	9.1	i	
	2010	DHIS	14.5	9.9	8.3	8.2	13.6	20.2	9.5	8.3	45.8	14.8	i	
	2015	DHIS	54.0	54.0	37.9	54.6	51.2	33.0	20.6	23.8	49.9	44.4	i	
Male condoms distributed (thousands)	2002		18 085	35 116	56 645	15 978	18 095	11 802	1 142	18 415	14 294	189 572	s	
	2010		69 186	29 853	87 075	72 020	52 116	51 289	15 002	44 492	71 165	492 198	t	
	2015	DHIS	111 703	52 544	197 852	184 746	90 557	47 628	8 513	32 185	114 146	839 875	i	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Teenage pregnancy	1998	SADHS ever pregnant	18.2	12.6	9.5	16.7	20.0	25.2	18.0	13.4	16.4	16.4	j	
		SADHS mothers	14.8	8.4	8.9	13.8	14.9	18.8	15.2	11.0	13.7	13.2	j	
	2002	NYRBS	12.5	15.9	13.3	21.8	29.8	27.1	9.3	17.1	12.0	19.1	p	
	2008	female 15–19 years NiDS	13.9	18.9	10.4	19.9	11.2	16.7	13.9	10.1	17.1	14.6	u	
		NYRBS ever pregnant	30.9	20.3	19.4	25.8	28.6	24.5	24.2	17.9	15.3	24.4	v	
		NYRBS mothers	24.0	17.8	16.0	26.0	30.1	23.2	22.6	11.8	9.1	21.9	v	
	2010	female 15–19 years NiDS	11.7	7.7	6.5	13.6	10.6	21.2	16.6	15.7	10.4	11.7	w	
	2011	ever pregnant											19.2	x
		NYRBS ever pregnant	18.0	15.7	17.2	32.8	26.4	18.8	24.8	22.4	17.6	22.2	y	
		NYRBS mothers	15.4	13.3	11.9	28.2	23.1	15.4	18.4	16.9	13.5	18.3	y	
	2012	female 15–19 years NiDS	14.5	7.4	12.0	14.1	10.5	15.2	16.2	10.1	6.7	12.4	z	
	2013	14–19 years GHS											5.6	aa
		15–19 years GHS	9.0	8.5	6.5	7.0	9.6	9.1	10.3	10.1	8.1	8.0	8.0	aa
	2014	female 14–19 years GHS											5.3	ab
	2015	female 15–19 years NiDS	15.8	9.4	11.6	21.5	11.7	14.7	17.5	12.4	5.5	14.4	14.4	ac
	2016	female 15–19 years CS	5.3	2.8	1.7	4.2	4.1	3.8	3.7	3.3	2.3	3.3	3.3	ad

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a HIV Household Survey 2008.¹⁶⁴ There is a discrepancy between the graph and table in the source for age group, so this value may be incorrect.
- b Kaiser HIV Awareness.¹⁰⁶ Of those who are sexually active.
- c NYRBS 2008.¹⁹⁴ Learners in grades 8–11. Of those who have ever had sex.
- d NCS 2009.¹⁹⁵ Downloaded 2011–05–26.
- e NYRBS 2011.¹⁹⁶ Defined in survey as ‘Always used condom during sex’ (of those that ever had sex)
- f HIV Household Survey 2012.¹⁵⁹
- g SAHMS 2013–14.¹¹⁰
- h HEAIDS 2014.¹⁹⁷ Among students not identified as MSM – those who report first having had sex at age younger than 13 years.
- i DHIS.³⁴ 2013/14 financial year.
- j SADHS 1998.¹⁹⁸ Note that by age 19, the survey found that 35% of all teenagers have been pregnant or have had a child.
- k NYRBS 2008.¹⁹⁴ Learners in grades 8–11.
- l NYRBS 2011.¹⁹⁶ Of those who ever had sex.
- m NCS 2012.¹⁷⁹
- n SAHMS 2013–14.¹¹⁰ Condom use at last sex with client.
- o HEAIDS 2014.¹⁹⁷ ‘Ever had sex’ was defined in survey as ‘Have you ever had sexual intercourse?’ Students were mostly in the age range of 17 to 26 years, though some were slightly older.
- p NYRBS 2002.¹³⁰ Of those learners who had ever had sex
- q HIV Household Survey 2005.¹⁵⁸
- r NYRBS 2011.¹⁹⁶
- s LMIS.¹⁹⁹ Logistics Management Information System.
- t AHS 2012.²⁰⁰ Target 1 billion. Funding for the procurement of an additional 500 million condoms to meet the demand generated by the HCT campaign was received late in December 2010 (DoH Annual Report 2010/11).
- u NiDS Wave 1 v5.2.²⁰¹
- v NYRBS 2008.¹⁹⁴
- w NiDS Wave 2 v2.2.²⁰² Based on answering ‘Yes’ to the survey question ‘Ever given birth?’
- x McHunu et al. 2013.²⁰³
- y NYRBS 2011.¹⁹⁶ Of those who have ever had sex.
- z NiDS Wave 3 v1.2.²⁰⁴ Based on answering ‘Yes’ to the survey question ‘Ever given birth?’
- aa Stats SA GHS 2014.⁴⁵ Survey asked females whether they were pregnant during the 12 months before the survey (different to the usual definition of ever having been pregnant while aged 15–19).
- ab Stats SA GHS 2015.⁴⁰
- ac NiDS Wave 4 v1.1.²⁰⁵
- ad Community Survey 2016.²¹

Table 20: STI indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
STI treated new episode incidence (per 1 000)	2000	DHIS	69.5	66.7	57.5	101.6	95.6	82.7	41.1	71.2	39.5	72.1	a
	2002	DHIS	49.9	51.3	53.9	82.8	82.7	58.4	37.5	60.3	33.9	59.6	a
		STI baseline	66.0	65.0	29.0	87.0	106.0	79.0	50.0	72.0	46.0	65.0	b
	2005	DHIS	54.1	41.4	36.5	71.5	65.0	59.8	35.6	50.8	28.4	50.4	a
	2010	DHIS	43.7	30.5	33.6	64.6	38.3	36.1	23.1	30.1	17.4	39.4	a
	2015	DHIS	37.5	22.0	20.0	57.4	21.2	25.9	15.3	16.3	19.2	29.2	a

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴
- b STI HIV Baseline Survey.²⁰⁶

Table 21: Termination of pregnancy indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
ToP rate	2005	DHIS	3.7	8.0	0.7	2.9	7.1	1.5	3.3	4.1	2.1	3.4	a
	2008	DHIS	5.6	9.0	6.6	1.8	6.0	3.5	4.4	6.7	12.6	5.7	a
		NYRBS	5.3	4.2	6.7	2.4	7.7	8.1	15.4	5.8	8.1	6.0	b
	2011	DHIS	7.2	7.8	8.3	2.3	6.3	3.3	4.1	8.3	8.8	6.1	a
		NYRBS	6.5	6.1	7.2	5.2	9.1	4.7	2.7	7.8	4.8	6.3	c
2015	DHIS	8.2	10.8	6.4	4.8	6.9	1.8	5.1	8.1	16.4	7.2	a	
ToPs (Terminations of Pregnancy)	1997		2 670	2 527	13 497	1 259	570	1 489	429	218	3 796	26 455	d
	2000		3 264	6 919	15 172	11 592	1 962	3 697	583	2 286	6 697	52 172	d
	2005		10 034	8 890	33 727	12 706	4 357	1 346	1 305	2 336	15 149	89 850	e
	2010	DHIS	8 980	5 595	20 955	5 040	8 342	2 680	1 241	6 444	12 271	71 548	f
	2015	DHIS	12 782	5 621	14 750	12 381	9 864	1 806	1 362	6 666	18 988	84 220	f

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴ ToPs as % of all expected pregnancies in catchment population.
 b NYRBS 2008.¹⁹⁴ Learners in grades 8–11. Of those who have ever had sex.
 c NYRBS 2011.¹⁹⁶ Learners in grades 8–11. Of those who have ever had sex.
 d RRA Barometer Aug 2001.⁵⁸ Total calculated from sum of monthly provincial totals and differs from total given in publication which is for years of implementation running from Feb-Jan. Note that provincial and national figures also differ from figures released by the National Department of Health.
 e NDoH.
 f DHIS.³⁴

Table 22: Reproductive health indicators by population group

Indicator	Year	Subgroup	African/Black	Coloured	Indian/Asian	White	Other/Unspecified	Ref
Age of first sex under 15 years (% having first had sex at age 14 or younger)	2003	15–24 years	9.0	5.0	5.0	4.0		a
	2008	NYRBS	12.8	13.1	5.2	8.4	16.1	b
	2011	NYRBS	12.2	11.0	4.6	9.4	13.2	c
	2012	15–24 years SABSSM	11.1	9.3	4.9	7.5		d
Condom use at last sex	2005	female 15+ years SABSSM	38.1	12.6	10.1	15.2		e
		male 15+ years SABSSM	43.6	22.3	34.5	16.7		e
	2008	NYRBS	30.0	30.7	50.5	43.9	12.9	b
	2011	NYRBS	32.4	40.8	44.5	36.2	37.2	f
	2012	15+ years SABSSM	41.9	18.4	14.4	14.7		d
Ever had sex	2002	NYRBS	43.6	35.7	25.4	25.9		g
	2003	15–24 years	71.0	58.0	43.0	43.0		a
	2005	15–24 years SABSSM	60.6	52.3	32.4	38.3		e
	2008	NYRBS	39.3	32.0	17.1	22.8	39.4	b
	2011	NYRBS	37.3	34.2	23.0	25.9	36.2	h
HIV knowledge: correct knowledge about prevention and rejection of major misconceptions	2012	15+ years SABSSM	23.6	30.3	41.4	43.3		d
Teenage pregnancy	1998	SADHS ever pregnant	17.8	19.3	4.3	2.2		i
	2002	NYRBS	20.8	10.7	27.1	5.8		g
	2008	female 15–19 years NiDS	15.1	19.5	0.0	2.4		j
		NYRBS ever pregnant	24.4	28.7	12.1	8.2	54.8	k
	2010	female 15–19 years NiDS	12.6	10.3	0.0	3.6		l
	2011	NYRBS ever pregnant	22.6	28.2	16.0	8.8	5.5	m
	2012	female 15–19 years NiDS	12.9	10.2	0.0	9.8		n
	2013	15–19 years GHS	8.5	7.9	7.0	3.6		o
ToP rate	2008	NYRBS	5.1	14.6	6.3	8.1	13.6	k
	2011	NYRBS	5.8	12.7	11.8	3.9	0.0	m

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a HIV Youth 2003.¹⁸⁵
 b NYRBS 2008.¹⁹⁴ Learners in grades 8–11.
 c NYRBS 2011.¹⁹⁶ Defined in survey as 'Age of initiation < 14 years'.
 d HIV Household Survey 2012.¹⁵⁹
 e HIV Household Survey 2005.¹⁵⁸
 f NYRBS 2011.¹⁹⁶ Defined in survey as 'Always used condom during sex' (of those that ever had sex).
 g NYRBS 2002.¹³⁰
 h NYRBS 2011.¹⁹⁶
 i SADHS 1998.¹⁹⁸
 j NiDS Wave 1 v5.2.²⁰¹

- k NYRBS 2008.¹⁹⁴ Learners in grades 8–11. Of those who have ever had sex.
- l NiDS Wave 2 v2.2.²⁰² Based on answering 'Yes' to the survey question 'Ever given birth?'
- m NYRBS 2011.¹⁹⁶ Learners in grades 8–11. Of those who have ever had sex.
- n NiDS Wave 3 v1.2.²⁰⁴ Based on answering 'Yes' to the survey question 'Ever given birth?'
- o Stats SA GHS 2014.⁴⁵ Survey asked females whether they were pregnant during the 12 months before the survey (different to the usual definition of ever having been pregnant while aged 15–19).

Maternal and neonatal health

Context	Sustainable Development Goal (SDG) Target 3.1 is to reduce the global maternal mortality ratio to less than 70 per 100 000 live births by 2030.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Rapid Mortality Surveillance Report 2015 • Stats SA Perinatal Deaths 2014 • Council for Medical Schemes Annual Report 2015/16 • Saving Mothers 2014 Report (NCCEMD) • District Health Information System (DHIS) Internationally, reports of interest include: <ul style="list-style-type: none"> • Lancet Series on Maternal Health 2016 • Global Burden of Disease 2015
Key issues and trends	South Africa can be portrayed as providing “too little, too late care among the most vulnerable, and too much, too soon care among the wealthy and those in private care”. This is evident from survey and routine data, but remarkably difficult to address. The National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD) has estimated that 57.3% of maternal deaths are considered to be potentially preventable.

In September 2016, The Lancet Series on Maternal Health was published, with the evocative strapline: “Every woman, every newborn, everywhere has the right to good quality care”.²⁰⁷ The Series authors noted that maternal deaths had fallen by 44% since 1990, at a global level, but that “in sub-Saharan Africa, a woman’s lifetime risk of dying in pregnancy or childbirth remains an appalling 1 in 36 compared with 1 in 4 900 in high-income countries”. The 2030 target, stated in Sustainable Development Goal (SDG) Target 3.1 requires a 68% reduction from the current (2015) global figure of 216 deaths from maternal causes per 100 000 live births. This statement from the Lancet Series pithily summarises the situation in South Africa: “too little, too late care among the most vulnerable, and too much, too soon care among the wealthy and those in private care”. The Series also highlighted the limitations of current metrics, such as skilled birth attendant coverage, which fail to measure the complexities of service provision.²⁰⁸

Also in 2016, the Global Burden of Disease Study 2015 released global, regional, and national estimates of maternal mortality for the period 1990–2015.²⁰⁹ While noting that only 10 countries had achieved MDG 5, the GBD estimates showed that 122 of 195 countries had already met SDG 3.1. The concerning fact was that 24 countries still had a maternal mortality ratio greater than 400 per 100 000 live births in 2015. The GBD estimates of the maternal mortality ratio for South Africa showed little change over the period under review, from 153.8 in 1990, to 151.5 in 2000 and 157.9 in 2015. However, previous estimates released by the Institute for Health Metrics and Evaluation (IHME) and World Health Organization (WHO) have varied widely (Figure 14).

The December 2016 MRC Rapid Mortality Surveillance Report (for 2015) stated, as before, that “estimates of the neonatal mortality rate (NMR) and the maternal mortality ratio (MMR) cannot ... be obtained from this source.”⁸² Based on Stats SA cause of death data, and updated estimates of the number of births the report restated the maternal mortality ratios for 2012 (165 per 100 000 live births), 2013 (158) and 2014 (154). The most recent Saving Mothers report from the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD) is for 2014.²¹⁰ The report noted that the institutional maternal mortality ratio (iMMR) had, compared with the previous time period, decreased in KwaZulu-Natal, Limpopo,

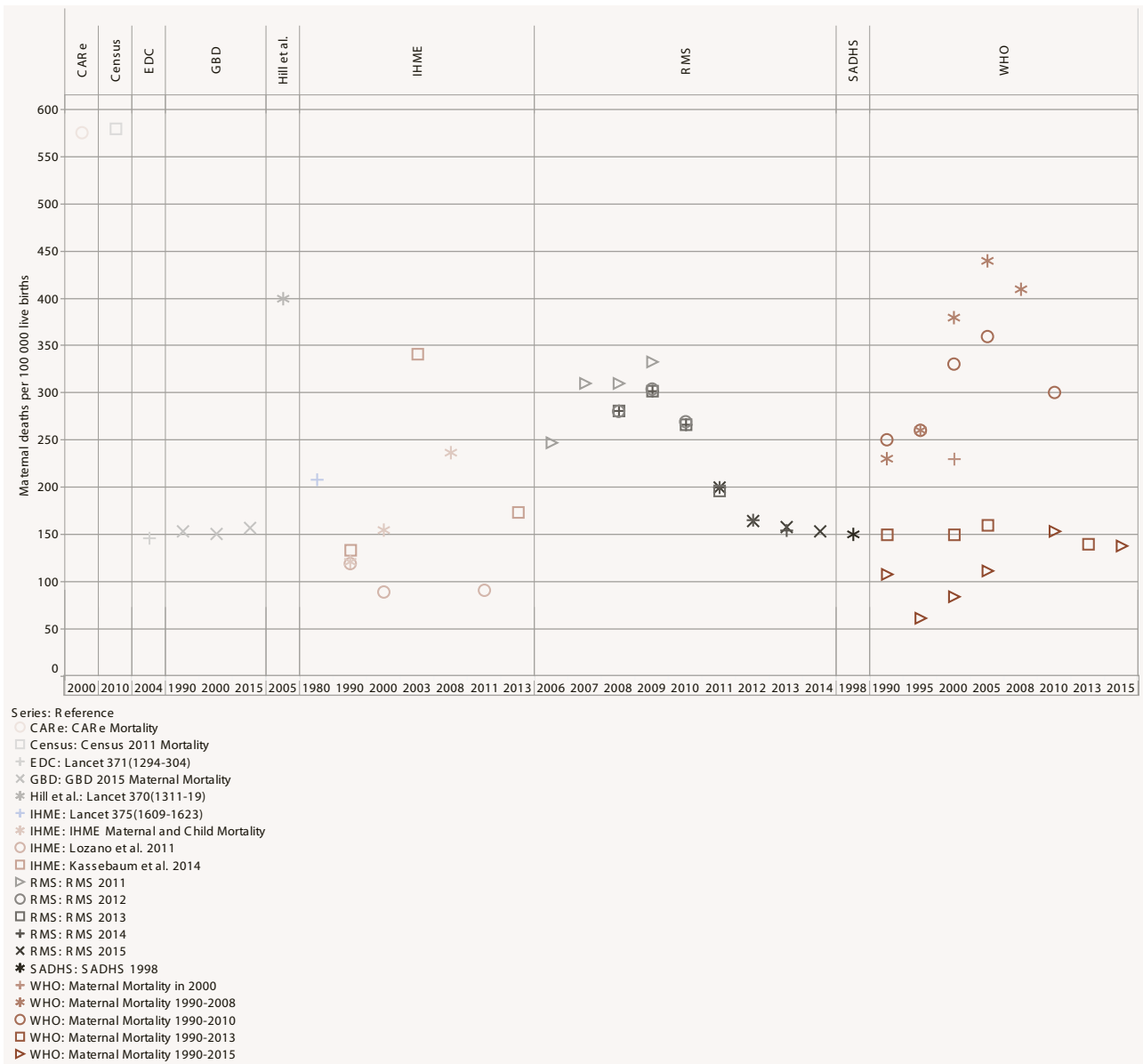
Mpumalanga, the Northern Cape and Western Cape, but had remained constant in the Eastern Cape, and increased in the Free State and North West. No finding would be reported for Gauteng, as the data were incomplete. As before, the report noted that non-pregnancy related infections were the most common cause of maternal deaths, dominated by tuberculosis. Nonetheless, 57.3% of maternal deaths were considered to be potentially preventable.

Practical recommendations to address maternal deaths from bleeding associated with Caesarean delivery, of which 71% are possibly or probably avoidable, have been offered.²¹¹ An accompanying editorial pointed to the need to improve access to effective contraception, and in particular to the copper intrauterine contraceptive device (IUCD).²¹² Fawcus et al. point to the major disparities between the public (where the Caesarean delivery rate is 23%, but “the majority of CSs are performed for medical indications only, and most are done in district hospitals with limited human resources, skills and other essential resources”) and private sectors (where the rate is over 67%, and many are without medical indications, but are “done in well-resourced facilities by skilled surgeons”). The increasing proportion of Caesarean section deliveries in district hospitals is depicted in Figure 16. The Council for Medical Schemes report 2015/16 noted that, in 2015, 667.46 Caesarean deliveries were performed per 1 000 female beneficiaries in 2015.⁴¹

Estimates of neonatal mortality rate provided in the Rapid Mortality Surveillance report have remained static at around 12 per 1 000 live births between 2012 and 2015.⁸² There are considerable challenges in deriving these estimates directly from any of the key sources such as vital registration, the national population register or the DHIS.

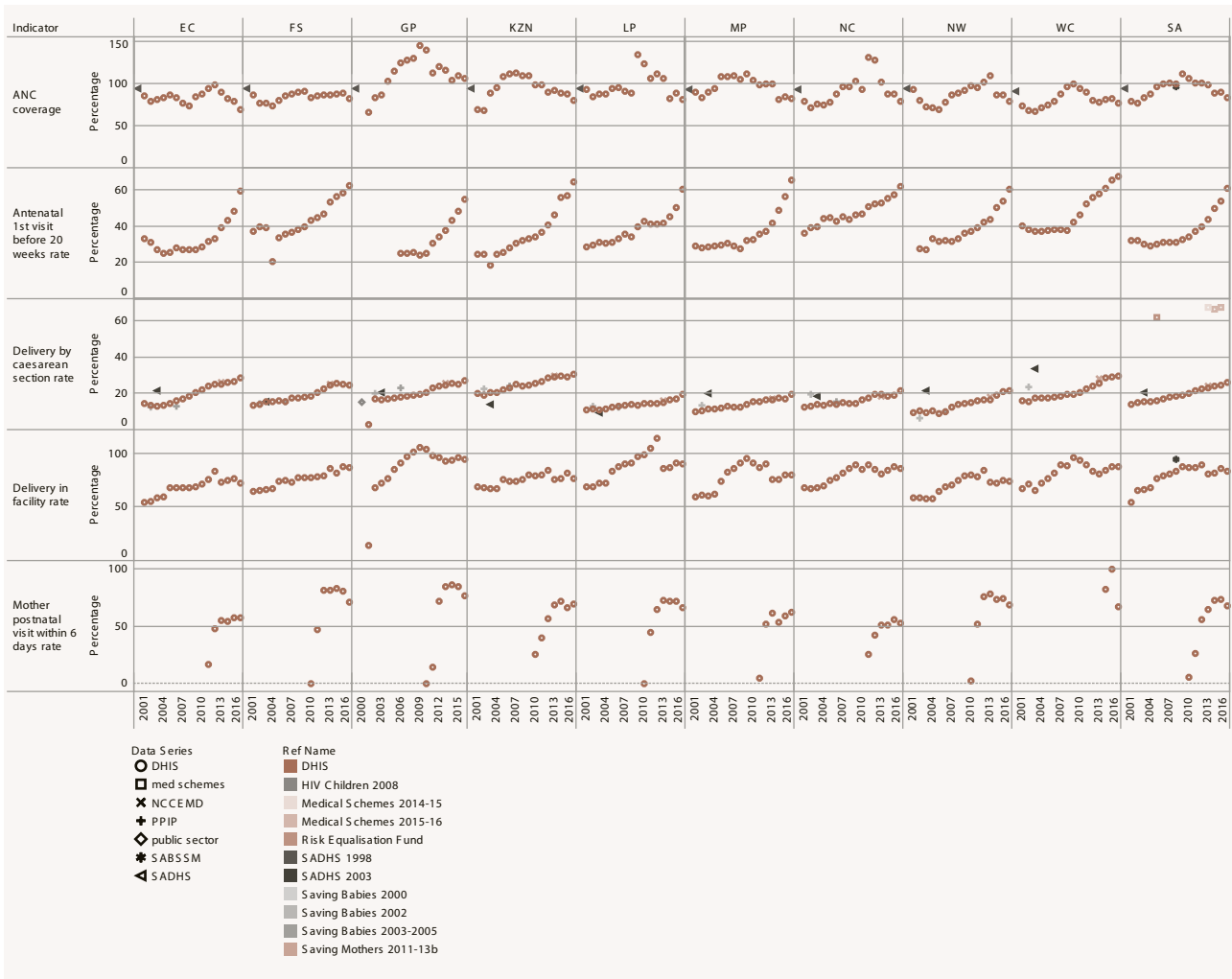
In October 2016, Stats SA released the report on perinatal deaths for 2014, as derived from the civil registration system.²¹³ A total of 21 908 perinatal deaths were reported in 2014, of which 14 413 (11.8 per 1 000 total births) were stillbirths and 7 485 (6.2 per 1 000 live births) were early neonatal deaths.

Figure 14: Trends in estimates of the Maternal Mortality Ratio by source for South Africa



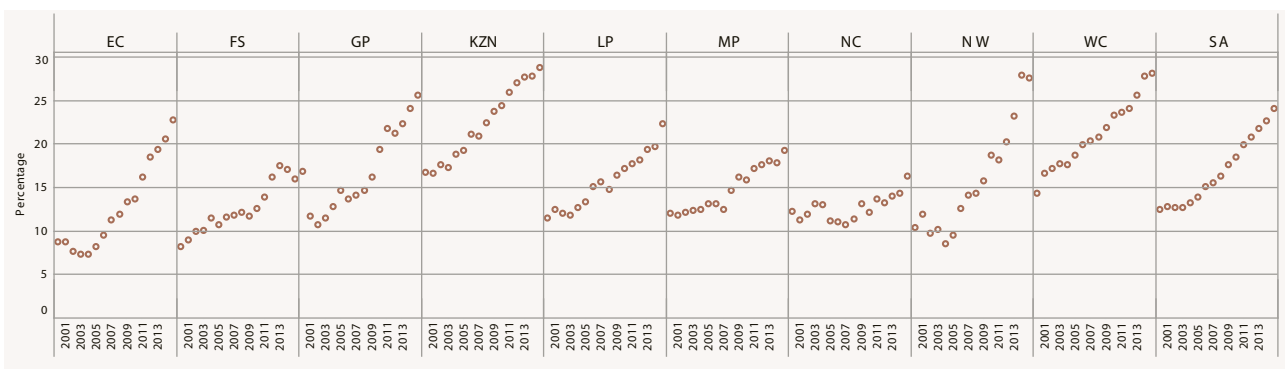
Source: Compiled from multiple sources.

Figure 15: Trends in maternal health service delivery indicators by province, 1998 and 2000/01 to 2015/16



Source: Compiled from multiple sources.

Figure 16: Trends in Caesarean section rate in district hospitals by province, 2000/01 to 2015/16



Source: DHIS.³⁴

Table 23: Maternal and neonatal health indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
ANC coverage	1998	SADHS	94.7	94.8	94.8	94.4	94.1	94.0	93.3	94.1	91.7	94.2	a		
	2000	DHIS	86.2	87.5	66.1	69.2	93.9	89.8	79.2	93.5	74.3	79.3	b		
	2005	DHIS	83.8	86.2	125.1	111.8	96.2	109.2	87.6	78.4	79.1	100.2	b		
	2008	SABSSM										97.1	c		
	2010	DHIS	94.6	85.6	112.9	99.1	106.3	98.9	131.3	95.9	89.9	100.7	b		
	2015	DHIS	69.5	82.6	106.0	80.4	81.8	82.2	79.3	79.0	77.2	84.0	b		
Antenatal 1st visit before 20 weeks rate	2000	DHIS	33.3	37.3		25.0	28.7	29.1	36.3		40.3	32.3	d		
	2005	DHIS	28.1	36.0	25.4	28.4	33.4	31.0	43.0	32.4	38.6	31.5	d		
	2010	DHIS	31.7	45.2	30.6	36.9	41.6	36.0	51.0	39.6	52.7	37.6	d		
	2015	DHIS	59.7	62.9	54.9	64.8	60.7	65.9	62.4	60.7	67.7	61.2	d		
Delivery by caesarean section rate	2000	DHIS	14.4	13.7	3.2	20.1	10.9	10.0	12.5	9.5	16.3	14.1	d		
	2005	DHIS	16.4	15.6	18.3	23.3	12.9	13.0	14.0	10.2	18.4	17.2	d		
		med schemes										61.9	e		
	2010	DHIS	24.3	20.8	23.0	26.9	14.6	15.8	17.6	16.1	22.9	21.6	d		
	2015	DHIS	28.7	25.0	27.5	30.7	19.6	19.6	21.6	21.5	29.7	26.2	d		
		med schemes										67.5	f		
Delivery in facility rate	2000	DHIS	54.7	64.5	14.2	69.0	69.2	59.4	68.1	58.9	67.2	54.7	d		
	2005	DHIS	68.6	75.0	91.6	74.6	87.9	83.1	77.5	69.3	82.0	79.4	d		
	2008	2008/09 DHIS	69.2	78.1	106.1	80.6	97.1	95.5	90.1	79.1	96.9	87.7	d		
		SABSSM										94.9	c		
	2010	DHIS	75.8	78.2	98.5	80.6	104.6	86.8	90.1	78.3	89.9	87.4	d		
	2015	DHIS	72.9	87.3	94.9	77.0	90.8	79.9	86.5	74.4	87.6	83.5	d		
Inpatient early neonatal death rate	2001	DHIS	14.0	7.9	0.3	12.6	12.9	11.6	13.2	12.2	5.9	9.3	d		
	2005	DHIS	15.4	8.8	8.9	8.8	10.9	9.2	8.7	11.9	6.5	9.9	d		
	2010	DHIS	13.2	12.4	9.6	9.0	10.7	9.2	12.0	12.8	4.9	10.0	d		
	2015	DHIS	12.8	10.6	9.5	10.8	12.6	9.3	14.3	9.8	7.3	10.5	d		
Live birth under 2500g in facility rate	2002	PPIP	15.0	18.7	19.2	18.2	13.8	14.1	22.0	14.4	17.6		g		
	2005	DHIS	12.6	11.8	13.0	10.9	9.2	5.6	17.3	13.6	3.0	10.5	d		
	2010	DHIS	12.6	14.5	13.0	12.0	10.0	9.8	20.0	14.5	16.0	12.7	d		
	2015	DHIS	14.0	12.4	13.9	11.9	10.3	12.2	19.4	14.1	14.5	13.0	d		
Maternal mortality in facility ratio	2010	DHIS	147.9	237.2	93.8	196.9	142.1	161.1	90.7	204.6		138.5	d		
	2011	DHIS	114.9	199.1	123.3	192.2	184.6	135.0	147.7	189.7	28.6	144.9	d		
	2015	DHIS	135.2	130.2	107.6	121.1	140.2	125.3	112.5	148.1	69.6	119.1	d		
Maternal mortality ratio institutional	1998	NCCEMD	45.9	230.4	102.0	100.1	25.8	111.9	97.0	101.4	47.3		h		
	2000	NCCEMD	100.7	219.7	117.1	117.3	82.2	200.3	174.4	179.9	62.4		h		
	2005	NCCEMD	140.1	353.8	136.0	152.6	150.5	114.5	291.4	174.2	67.7		h		
	2010	NCCEMD	199.5	254.2	148.6	211.5	162.8	213.9	248.2	239.6	92.0	182.8	i		
	2014	NCCEMD	174.2	194.4	149.8	127.8	153.3	119.5	120.7	180.1	66.5	140.9	j		
Maternal mortality ratio (MMR)	1980	female IHME										208.0	k		
		female IHME										134.0	l		
		female WHO										108.0	m		
		GBD										153.8	n		
	1998	female SADHS											150.0	a	
		2000	female CARe											575.0	o
			female IHME											89.3	p
			female WHO											85.0	m
	GBD												151.5	n	
	2005	female Hill et al.											400.0	q	
		female WHO											112.0	m	
	2006	female RMS											248.0	r	
	2008	female RMS											281.0	s	
	2010	female Census											580.0	t	
		female RMS											267.0	s	
		female WHO											154.0	m	
	2014	female RMS											154.0	u	
	2015	female WHO											138.0	m	
GBD												157.9	n		
Mother postnatal visit within 6 days rate	2009	DHIS		0.1	0.0	25.7	0.3			2.9		5.6	d		
	2010	DHIS	17.1	47.4	14.4	40.6	45.3	4.8	25.6	52.3		26.3	d		
	2015	DHIS	58.2	71.2	76.9	69.8	66.8	62.6	53.0	69.4	67.8	68.5	d		

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
Neonatal mortality in facility rate	2000	DHIS	13.8	3.9	1.1	12.8	12.5	12.9	13.6	17.7	6.9	11.4	d		
	2005	DHIS	16.1	14.2	9.0	11.1	11.6	9.8	9.3	16.1	6.5	11.3	d		
	2010	DHIS	15.1	16.0	11.4	10.4	12.0	10.1	13.5	15.4	5.5	11.6	d		
	2015	DHIS	12.1	12.8	12.7	10.9	13.4	9.0	14.5	9.1	8.0	11.3	d		
Neonatal mortality rate (NNMR) (deaths <28 days old per 1 000 live births)	1990	IHME										18.0	v		
		Inter-agency group											20.0	w	
	1995	Inter-agency group											19.4	x	
	1998	SADHS	24.7	9.9	17.8	23.2	18.3	23.6	20.5	20.0	4.0		19.8	a	
		vital registration adjusted												18.6	y
	2000	both sexes RMS												15.9	r
		IHME												14.0	v
		Inter-agency group												18.7	x
		vital registration adjusted												15.6	y
	2005	both sexes RMS												14.0	r
		Inter-agency group												17.8	x
		vital registration adjusted												13.8	y
	2010	both sexes RMS												13.0	s
		Inter-agency group												16.0	x
		PPIP all levels	17.0			13.5					13.0	8.5			z
2015	both sexes GBD												18.2	aa	
	both sexes RMS												12.0	u	
	Inter-agency group												11.0	w	
Number of maternal deaths	1990	GBD											1 558.0	n	
		IHME												1 403.0	l
		WHO												1 200.0	m
	1995	WHO												670.0	m
	1998	NCCEMD	56.0	94.0	131.0	188.0	27.0	66.0	22.0	58.0	34.0		676.0	ab	
	2000	GBD												1 611.0	n
		IHME												1 718.0	v
														982.0	p
		NCCEMD	120.0	96.0	171.0	238.0	88.0	128.0	29.0	115.0	50.0		1 035.0	ac	
		WHO												930.0	m
	2005	NCCEMD	149.0	150.0	222.0	268.0	181.0	74.0	53.0	105.0	81.0		1 263.0	h	
		WHO												1 300.0	m
	2010	DHIS	172.0	112.0	185.0	365.0	172.0	113.0	19.0	111.0				1 249.0	d
		NCCEMD	232.0	120.0	293.0	385.0	198.0	150.0	52.0	134.0	82.0		1 646.0	ad	
		WHO												1 700.0	m
	2014	DHIS	174.0	100.0	236.0	252.0	211.0	90.0	57.0	97.0	53.0		1 270.0	d	
		NCCEMD	205.0	88.0	311.0	255.0	195.0	93.0	27.0	104.0	65.0		1 343.0	j	
	2015	DHIS	145.0	55.0	218.0	223.0	169.0	91.0	24.0	83.0	66.0		1 074.0	d	
		GBD												1 754.0	n
		WHO												1 500.0	m
Perinatal mortality rate (stillbirths plus deaths <8 days old per 1 000 total births)	1998	Stats SA P0309.4 registered											17.0	ae	
	2000	DHIS	43.9	37.6	10.4	40.2	33.8	41.3	41.9	42.6	30.4		37.3	d	
		Stats SA P0309.4 registered												20.0	ae
	2005	DHIS	43.3	39.4	30.3	35.1	31.1	32.2	31.0	35.3	25.2		33.6	d	
		Stats SA P0309.4 registered												20.9	af
	2010	DHIS	35.3	42.8	29.7	31.6	32.3	33.3	39.0	37.6	25.6		32.4	d	
		PPIP all levels	37.6	72.9		35.5	37.9			40.5	31.1				z
		Stats SA P0309.4 registered												20.4	af
	2014	DHIS	26.9	33.1	29.4	27.0	31.5	24.5	37.1	26.2	20.9		27.7	d	
		Stats SA P0309.4 registered												17.9	af
2015	DHIS	26.6	34.9	28.9	26.6	31.2	26.1	35.0	25.1	23.0		27.7	d		
PM (proportion of deaths among women of reproductive age that are due to maternal causes)	1990	WHO											4.5	m	
	1995	WHO											2.0	m	
	2000	WHO											1.2	m	
	2005	WHO											0.9	m	
	2010	WHO											1.5	m	
	2015	WHO											1.7	m	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Stillbirth in facility rate	2001	2001/02 DHIS	33.0	34.7	28.5	27.4	21.3	25.5	30.4	28.6	21.2	27.3	d	
	2005	2005/06 DHIS	28.4	30.9	21.6	26.6	20.5	23.2	22.4	23.7	18.8	23.9	d	
	2010	2010/11 DHIS	22.4	30.9	20.3	22.8	21.9	24.3	27.3	25.2	20.8	22.7	d	
	2015	2015/16 DHIS	21.6	27.1	19.5	22.3	20.3	21.8	24.3	22.5	17.5	21.1	d	
Stillbirth rate (per 1 000 total births)	1998	Stats SA P0309.4 registered										8.0	ae	
	2000	Stats SA P0309.4 registered										13.0	ae	
	2005	Stats SA P0309.4 registered										12.2	af	
	2010	PPIP all levels	24.2	47.2	20.3		23.3				28.0	22.9		z
		Stats SA P0309.4 registered											12.8	af
	2013	PPIP all levels											23.1	ag
		Stats SA P0309.4 registered											12.4	af
	2014	Stats SA P0309.4 registered											11.8	af
2015	both sexes GBD											12.5	aa	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸
- b DHIS.³⁴ Values over 100% are due to underestimation of the population-based denominator.
- c HIV Children 2008.¹⁶⁴
- d DHIS.³⁴
- e Risk Equalisation Fund.²¹⁴ Data from the REF Study 2005. Based on data obtained from 4 administrators (Discovery Health, Medscheme, Old Mutual Healthcare and Metropolitan Health Group) who provide services for about 4.2 million lives. Related article published: Rothberg AD, McLeod H. Private Sector Caesareans in Perspective. S Afr Med J, 2005; 95: 257–60.”
- f Medical Schemes 2015–16.⁴¹
- g Saving Babies 2002.²¹⁵
- h Saving Mothers 2005–7.²¹⁶
- i Saving Mothers 2012.²¹⁷
- j Saving Mothers 2014.²¹⁰
- k Lancet 375(1609–1623).¹⁹⁹
- l Kassebaum et al. 2014.²¹⁸
- m Maternal Mortality 1990–2015.²¹⁹
- n GBD 2015 Maternal Mortality.²⁰⁹
- o CARe Mortality.²²⁰ The maternal mortality rate appears to be implausibly high at 575 per 100 000 births, however, this is only 6.5% of all deaths in the 15–49 age range which is well within the range of estimates from other sub-Saharan countries. On the other hand the high number could in part be attributable to the fact that a third of these deaths had age imputed, presumably on the basis of the cause of death, which might not have been universally correctly captured.
- p Lozano et al. 2011.²²¹
- q Lancet 370(1311–19).²²²
- r RMS 2011.²²³
- s RMS 2014.⁹⁰
- t Census 2011 Mortality.²²
- u RMS 2015.⁸²
- v IHME Maternal and Child Mortality.²²⁴
- w Child Mortality 2015 IGME.²²⁵
- x Child Mortality 2013 IGME.²²⁶
- y U5MR 2012.²²⁷
- z NaPeMMCo 2010–11.²²⁸
- aa GBD 2015 Child Health.²²⁹
- ab Saving Mothers 2000.²³⁰
- ac Saving Mothers 2001.²³¹
- ad Saving Mothers 2008–10.²³²
- ae Perinatal deaths 2011–13.²³³
- af Perinatal deaths 2014.²¹³
- ag NaPeMMCo 2010–13.²³⁴

Child health

Context	As the 2030 Agenda for Sustainable Development is unpacked and implemented, so the need for a more prominent focus on adolescent health has become apparent. Equally, the issue of early childhood development is receiving increased attention, though sensitive indicators of quality and coverage are difficult to find.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • South African Child Gauge 2016 • Rapid Mortality Surveillance Report 2015 • District Health Information System (DHIS) • Stats SA Community Survey 2016 • Stats SA Causes of death 2014 and 2015 Internationally, reports and data sources of interest include: <ul style="list-style-type: none"> • Lancet Commission on Adolescent Health and Wellbeing • Global Burden of Disease Study 2015
Key issues and trends	As before, the need for a national, WHO-approved EPI coverage survey is clear, both to academics and health service office-bearers.

Any division by age group risks dividing what should be considered to be linked or logically grouped. For example, the Lancet Commission on Adolescent Health and Well-being noted that the WHO definition included those aged 10–19 years as adolescents, but those aged 15–24 years as youth, and those aged 10–24 years as young people.²³⁵ For the Review, neonatal health issues have been covered with maternal health, whereas child and adolescent health, including issues of immunisation, are considered here.

UNICEF's State of the World's Children 2016 is entitled "A fair chance for every child".²³⁶ The report calls for more "equity-focused policy, planning and public spending". An equity focus demands information about who is being 'left behind' and why. Child mortality is falling faster than neonatal mortality, at a global level. Neonatal deaths accounted for 45% of all under-5 deaths in 2000. Of the 5.9 million under-5 deaths in 2015, the most important causes were still communicable diseases, such as pneumonia, diarrhoea, malaria, meningitis, tetanus, measles, sepsis and AIDS. In 2015, almost half of all under-5 deaths occurred in just five countries: the Democratic Republic of the Congo, Ethiopia, India, Nigeria and Pakistan. The key message of the Lancet Commission on Adolescent Health and Well-being is that this age group has been neglected, but is also a key target for the sort of multisectoral and intersectoral action that is needed to advance the 2030 Agenda for Sustainable Development.²³⁷ The Global Burden of Disease 2013 study has provided estimates of the burden of diseases, injuries, and risk factors for young people's health for the period 1990–2013.²³⁸ For those aged 10–14 years, the leading causes of death in 2013 were HIV/AIDS, road injuries, and drowning. In the older age groups, 15–19 years and 20–24 years, the leading cause of death was transport injuries. These age groups are generally neglected in terms of routine data collection, which would allow for finely disaggregated analyses. For example, data on mental health risk in the 10–14-year-old group are lacking.

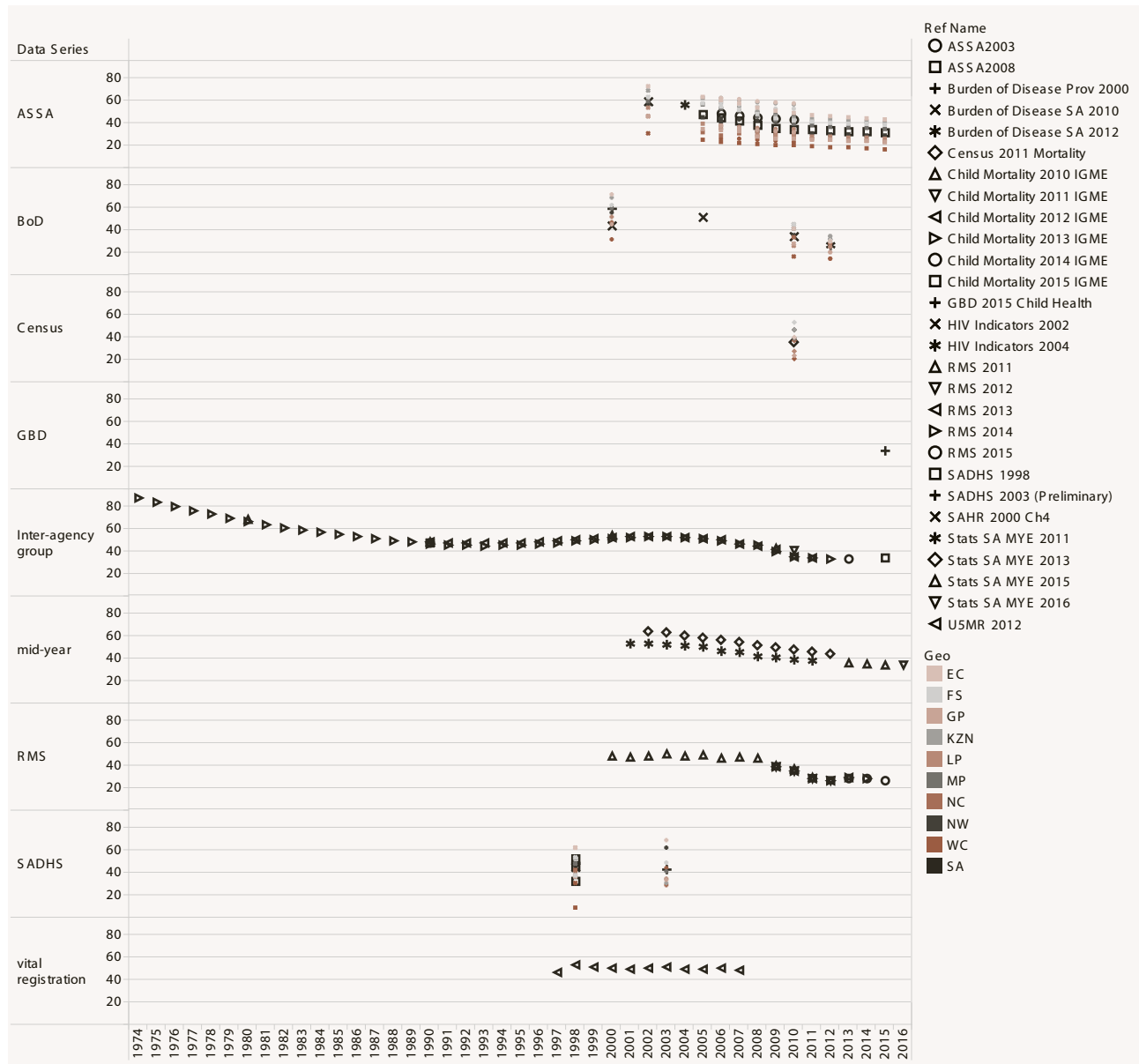
UNICEF has published an analysis of the progress and disparities among children in South Africa over the past two decades, the exact period over which the Review has been published.²³⁹ In 2016, there were 19.7 million children under the age of 18 in South Africa, the majority of whom (55%) were resident in cities and towns. Although noting some progress, the main message of the report is that "stark gaps in opportunity – between rich and poor households, urban and

rural communities, Black African and White children – perpetuate intergenerational cycles of deprivation". A similar look back over a period of 20 years – since the inception of the Lund Committee on Child and Family Support in December 1995 – informed the South African Child Gauge 2016.²⁴⁰ One of the persistent inequalities highlighted in the Child Gauge is in relation to access to Early Childhood Development (ECD). Although a high proportion (91%) of children in the pre-school age group (5–6-year-olds) were recorded as attending some sort of educational institution, representing a 37% increase since 2002, the differences in quality and care are less easily measured. A Department of Social Development audit showed that only 45% of 17 828 ECD sites met the stipulated norms and standards (were fully registered). Of the registered sites, 38% were noted as requiring urgent maintenance.²⁴¹ The global picture has been underscored by the Lancet Early Childhood Development Series, which summarised the challenge concisely: "Children's early development requires nurturing care – defined as health, nutrition, security and safety, responsive caregiving, and early learning – provided by parent and family interactions, and supported by an environment that enables these interactions".²⁴² Data from Africa on the three elements – nutrition, environment, and mother-child interactions – have been reviewed.²⁴³ Not surprisingly, data on the last of these three elements is the most difficult to retrieve. Global, regional, and country level data on two risks for poor development in young children – stunting and poverty – in low- and middle-income countries between 2004 and 2010 have also been reviewed.²⁴⁴ It was shown, for instance, that the prevalence of children at risk of extreme poverty had declined by more than 20% in six African countries, Angola, Botswana, Cape Verde, Congo Brazzaville, Mauritania, and South Africa. Data from South Africa have shown that even large-scale social support, in the form of the child support grant, has failed to impact on the level of stunting.²⁴⁵

Vaccination coverage has long been held up as a sensitive indicator of health systems performance, one that is exquisitely responsive to changes in financing or functioning, as well as indicative of the trust carers and parents have in the health system. Full immunisation coverage (defined by WHO as the percentage of one-year-olds who have received one dose of BCG vaccine, three doses of polio vaccine, three doses of DTP, and one dose of measles vaccine), for instance, is a suggested indicators to track progress on achieving the SDG goal of universal health coverage. WHO's 2016 report is

entitled "State of Inequality: Childhood immunization", and noted that the median level of full immunisation coverage across countries was 68%, with a quarter of countries reporting coverage of less than 50%.²⁴⁶ The local Expanded Programme on Immunization (EPI) faces considerable challenges, not least a lack of reliable data from a WHO-approved national EPI coverage survey.²⁴⁷ An attempt to synthesize the available reliable published data on the prevalence, incidence and severity of diarrhoea in children aged under five years in South Africa has exposed the lack of reliable data.²⁴⁸

Figure 17: Trends in infant mortality rate for South Africa by source, 1974 to 2016



Source: Compiled from multiple sources.

Table 24: Child health indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Child under 5 years diarrhoea with dehydration incidence	2009	DHIS	15.0	9.9	10.9	41.8	14.9	10.7	16.2	13.4	30.3	21.1	a
	2012	DHIS	9.8	10.6	9.4	14.2	11.3	7.5	12.1	6.8	16.3	11.2	a
	2015	DHIS	10.5	15.8	8.1	10.4	11.2	7.9	8.5	6.4	18.8	10.6	a
Child under 5 years pneumonia incidence	2002	DHIS	98.0	154.0	108.0	523.0	268.0	187.0	226.0	495.0	127.0	241.0	a
	2005	DHIS	10.9	139.1	39.0	134.0	58.0	70.2	111.5	73.2	0.0	66.7	a
	2010	DHIS	61.6	96.1	59.3	147.8	54.6	43.7	104.3	82.8	68.7	83.6	a
	2015	DHIS	25.5	63.0	25.5	74.4	23.6	13.7	26.9	13.5	101.8	43.7	a
Child under 5 years severe acute malnutrition incidence	2000	DHIS	16.5	8.7	11.8	24.0	7.4	1.1	12.5	14.2	5.6	13.1	a
	2005	DHIS	6.9	4.1	3.1	9.9	3.9	6.4	9.0	6.9	2.4	5.9	a
	2010	DHIS	4.9	4.9	3.7	7.1	4.1	3.8	5.1	6.7	2.7	4.9	a
	2015	DHIS	4.6	9.0	3.0	5.3	5.6	2.7	4.1	5.6	2.6	4.5	a
Children living far from their usual health facility	2002	both sexes <18 years GHS	52.7	25.2	16.9	48.2	41.5	34.8	27.9	40.5	10.8	36.4	b
	2005	both sexes <18 years GHS	56.0	26.5	16.2	51.2	51.2	41.7	24.4	43.7	6.9	39.7	b
	2010	both sexes <18 years GHS	42.4	28.6	21.3	44.3	49.2	28.1	33.5	38.9	14.3	36.7	b
	2015	both sexes <18 years GHS	34.1	17.9	8.3	30.8	23.5	23.1	21.7	28.2	8.8	22.1	c
School Grade 1 screening coverage	2013	DHIS	17.1	21.0	32.9	9.4	22.0	14.9	13.9	20.2	0.0	17.2	a
	2014	DHIS	13.4	24.4	31.1	20.7	22.2	12.4	11.3	38.2	36.6	23.2	a
	2015	DHIS	19.0	24.8	37.8	22.1	29.5	13.3	12.9	53.0	52.1	28.9	a

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴
- b Children Count web site.²⁴⁹ Based on Stats SA GHS for the relevant year. Children are defined as people aged 0 – 17 years.
- c Stats SA GHS 2015.⁴⁰ Among children under 18 years of age.

Table 25: Orphanhood indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Number of orphans	2005	ASSA maternal/double	193 327	81 210	194 202	343 656	109 202	106 365	14 268	95 359	67 231	1 160 525	a	
		GHS double	116 909	66 722	64 475	199 623	55 274	37 395	7 514	60 723	17 718	626 362	b	
		GHS maternal	118 254	38 867	40 746	137 379	66 404	39 558	9 720	41 373	20 686	512 987	b	
		GHS paternal	561 361	161 261	195 376	527 641	307 974	170 440	26 925	171 914	98 264	2 221 156	b	
	2010	ASSA maternal/double	246 962	112 775	317 132	486 793	139 820	158 836	20 105	134 158	88 492	1 668 901	a	
		GHS maternal/double	286 000	118 000	167 000	507 000	118 000	147 000	31 000	116 000	52 000	1 543 000	c	
	2012	ASSA maternal/double	250 750	115 485	339 861	499 933	144 639	165 717	21 853	138 276	94 271	1 742 924	a	
		GHS double	174 000	61 000	95 000	250 000	65 000	65 000	18 000	60 000	24 000	812 000	d	
		GHS maternal	99 000	33 000	127 000	156 000	61 000	52 000	17 000	42 000	24 000	611 000	d	
		SABSSM maternal/double										1 403 239	e	
	2014	ASSA maternal/double	250 321	114 185	349 785	499 334	150 322	167 418	23 450	137 851	99 821	1 774 794	a	
		GHS double	121 604	54 496	77 435	197 273	55 253	69 928	14 665	49 702	13 348	653 704	f	
		GHS maternal	97 102	28 458	88 314	157 631	56 521	46 364	12 792	41 041	30 459	558 681	f	
		GHS paternal	313 938	102 633	254 479	491 085	205 561	182 531	39 182	138 842	92 036	1 820 287	f	
	Orphanhood	2002	2–18 years SABSSM total										15.6	g
		2005	2–18 years SABSSM total										14.4	g
2008		2–18 years SABSSM total											19.3	g
		GHS maternal/double	10.4	12.2	4.8	10.6	5.6	9.4	6.7	8.7	3.2	7.9	h	
		GHS total	26.6	26.1	14.4	26.7	19.2	22.1	18.9	22.8	10.5	21.0	h	
		SABSSM maternal/double	6.0	9.2	7.4	6.2	3.9	8.1	4.4	5.7	4.6	6.2	g	
		SABSSM total										16.8	g	
2010		GHS maternal/double	10.7	11.0	5.0	11.9	5.2	10.1	7.3	9.1	2.9	8.4	c	
		GHS total	25.8	23.8	14.5	27.3	19.0	21.5	17.4	20.5	9.5	22.6	c	
2012		GHS double	6.4	6.5	2.7	6.2	2.9	4.2	4.4	4.7	1.3	4.4	d	
		GHS maternal	3.7	3.5	3.6	3.8	2.8	3.3	4.0	3.3	1.3	3.3	d	
		SABSSM maternal/double	8.3	8.9	6.6	10.0	4.9	10.7	6.7	7.5	2.6	7.6	e	
2014		GHS double	4.6	6.0	2.2	4.8	2.5	4.6	3.6	3.9	0.7	3.5	f	
		GHS maternal	3.7	3.1	2.5	3.9	2.6	3.0	3.1	3.2	1.6	3.0	f	
		GHS paternal	11.9	11.3	7.2	12.1	9.4	12.0	9.6	11.0	4.9	9.9	f	
2015		GHS double	4.8	3.4	2.3	4.2	3.7	4.1	2.6	3.7	0.9	3.4	i	
		GHS maternal	4.1	3.6	2.9	3.9	2.3	3.5	3.5	2.6	1.7	3.2	i	
		GHS paternal	11.7	12.1	7.8	13.9	10.0	10.0	9.1	9.8	4.0	10.1	i	
2016	both sexes <18 years CS maternal											5.4	j	
	both sexes <18 years CS paternal											8.3	j	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a ASSA2008.¹⁶¹
b SA Child Gauge 2006.²⁵⁰ Based on GHS 2005, Statistics South Africa.
c Children Count web site.²⁴⁹ Based on Stats SA GHS for the applicable year; Stats SA. Children are defined as people aged 0 – 17 years.
d SA Child Gauge 2014.²⁵¹ Based on GHS 2012; Stats SA. Children are defined as people aged 0 – 17 years. Population numbers are rounded off to the nearest thousand.
e HIV Household Survey 2012.¹⁵⁹
f Stats SA GHS 2014.⁴⁵ Among children under 18 years of age.
g HIV Children 2008.¹⁶⁴ Among children 0–18 years of age.
h SA Child Gauge 2009/2010.²⁵²
i Stats SA GHS 2015.⁴⁰ Among children under 18 years of age.
j Community Survey 2016.²¹

Table 26: Child mortality and related indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Child mortality (deaths between 1–4 years per 1 000 live births)	1998	SADHS	20.5	19.0	9.3	23.6	15.7	17.3	14.3	14.0	9.0	15.4	a	
	2003	SADHS	11.6	21.1	9.4	3.0	10.1	12.3	10.6	15.3	13.6	15.8	b	
	2015	both sexes GBD										8.9	c	
Infant mortality rate (deaths under 1 year per 1 000 live births)	1980	both sexes Inter-agency group										66.5	d	
	1990	both sexes Inter-agency group										47.0	e	
	1998	both sexes SADHS revised	61.2	53.0	36.3	52.1	37.2	47.3	41.8	42.0	30.0	45.0	45.0	f
		both sexes vital registration adjusted											52.7	g
	2000	both sexes BoD	70.9	61.8	44.4	68.4	51.6	58.9	46.4	55.2	31.7	59.1	59.1	h
		both sexes BoD											43.8	i
		both sexes Inter-agency group											51.4	d
		both sexes RMS											48.8	j
		both sexes vital registration adjusted											49.9	g
	2005	both sexes ASSA	62.2	57.2	34.2	61.7	38.6	55.8	31.4	44.4	24.5	47.1	47.1	k
		both sexes BoD											51.4	i
		both sexes Inter-agency group											51.0	d
		both sexes mid-year											58.0	l
		both sexes RMS											49.5	j
	2010	both sexes ASSA	47.9	41.9	25.2	44.0	28.2	38.9	26.3	30.7	19.7	34.5	34.5	k
		both sexes BoD	40.7	44.6	27.5	44.3	25.9	40.5	33.0	35.4	16.5	34.2	34.2	i
		both sexes Census	40.3	53.2	23.8	46.8	27.6	39.0	37.0	46.8	20.4	35.0	35.0	m
		both sexes Inter-agency group											35.0	d
		both sexes mid-year											47.1	l
	2015	both sexes ASSA	42.8	37.8	22.9	40.3	25.8	34.3	22.9	28.0	16.5	31.3	31.3	k
		both sexes GBD											33.9	c
		both sexes Inter-agency group											34.0	e
		both sexes mid-year											34.4	o
		both sexes RMS											27.0	p
	2016	both sexes mid-year											33.7	q
	Number of under-5 deaths	1990	IHME										64 200	r
			Inter-agency group										64 000	e
1997		vital registration										32 490	s	
2000		IHME										41 200	r	
		vital registration										39 279	s	
2006		vital registration										64 430	s	
2010		vital registration										48 007	s	
2015		both sexes GBD											42 540	c
	Inter-agency group											42 000	e	
	vital registration											31 938	t	
Post-neonatal mortality rate (deaths 28–365 days age per 1 000 live births)	1990	IHME										26.0	r	
	1998	SADHS	36.5	26.9	18.5	28.9	18.9	23.6	21.3	16.8	4.4	25.6	a	
	2000	IHME										16.0	r	
	2003	SADHS	56.4	15.1	9.3	7.8	14.2	18.9	10.3	35.0	38.1	27.5	b	
	2008	IHME										25.0	r	
	2015	both sexes GBD										15.7	d	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Under 5 mortality rate (deaths under 5 years per 1 000 live births)	1970	female GBD										114.6	u	
		male GBD										114.6	u	
	1980	both sexes Inter-agency group											91.4	d
		female GBD											88.1	u
		male GBD											88.1	u
	1990	both sexes ASSA											66.3	k
		both sexes IHME											58.0	r
		both sexes Inter-agency group											60.0	e
		female GBD											59.6	u
		male GBD											59.6	u
	1995	both sexes ASSA											62.5	k
		both sexes Inter-agency group											59.7	d
	1998	both sexes ASSA											67.5	k
		both sexes Inter-agency group											67.5	d
		both sexes SADHS revised	80.5	72.0	45.3	74.5	52.3	63.7	55.5	56.0	39.0		61.0	f
		both sexes vital registration adjusted											73.4	g
		both sexes BoD											72.0	k
	2000	both sexes ASSA											72.0	k
		both sexes BoD	105.0	99.0	74.6	116.4	80.7	99.8	68.1	88.5	46.3		94.7	h
		both sexes BoD											66.3	i
		both sexes IHME											37.0	r
		both sexes Inter-agency group											75.0	e
		both sexes RMS											70.5	j
		both sexes vital registration adjusted											72.5	g
		female GBD											68.8	u
		male GBD											68.8	u
		both sexes ASSA	89.7	83.9	51.6	91.9	56.7	83.5	44.2	67.8	34.1		69.5	k
	2005	both sexes BoD											77.8	i
		both sexes IHME											55.6	r
		both sexes IHME											69.0	v
		both sexes Inter-agency group											79.1	d
		both sexes mid-year											85.4	l
		both sexes RMS											72.7	j
		both sexes vital registration adjusted											74.6	g
		both sexes ASSA	67.7	60.2	38.0	64.5	40.6	57.7	38.2	45.9	27.4		49.9	k
	2010	both sexes BoD	60.1	65.8	43.2	66.0	41.6	60.0	45.3	54.5	24.9		51.8	i
		both sexes Census											44.0	m
		both sexes IHME											50.9	r
		both sexes Inter-agency group											52.9	d
		both sexes mid-year											65.2	l
		both sexes RMS											52.0	n
		female GBD											50.2	u
		male GBD											50.2	u
		both sexes ASSA	59.6	53.5	33.7	57.8	36.6	49.6	32.2	40.9	23.1		44.8	k
	2015	both sexes GBD											42.2	c
		both sexes Inter-agency group											41.0	e
		both sexes mid-year											45.1	o
both sexes RMS												37.0	p	
both sexes mid-year												44.4	q	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸
- b SADHS 2003 (Preliminary).²⁵³ The estimates of child mortality rates from the SADHS are considered to be implausibly low (Bradshaw D, Dorrington R. Child mortality in South Africa – we have lost touch. S Afr Med J 2007; 97(8): 582–3).
- c GBD 2015 Child Health.²²⁹
- d Child Mortality 2013 IGME.²²⁶ Estimates generated by the UN Inter-agency Group for Child Mortality Estimation (IGME) in 2013.
- e Child Mortality 2015 IGME.²²⁹ Estimates generated by the UN Inter-agency Group for Child Mortality Estimation (IGME) in 2015.
- f SAHR 2000 Ch4.²⁵⁴ Comparison of the provincial estimates from different sources revealed that the SADHS 1998 estimates for three provinces required some adjustment.
- g U5MR 2012.²²⁷ Calculated by applying the completeness adjustment implied by Darikwa to vital registration data.
- h Burden of Disease Prov 2000.⁸⁸
- i Burden of Disease SA 2010.⁸⁹
- j RMS 2011.²²³ The U5MR and IMR in the RMS reports are calculated from VR for the period up to 2009 and from the RMS for the period 2010–2011, once the data have been adjusted for under-registration.

- k ASSA2008.¹⁶¹
- l Stats SA MYE 2013.¹⁶⁵
- m Census 2011 Mortality.²² This value is acknowledged to be low compared with estimates from other sources.
- n RMS 2012.²⁵⁵
- o Stats SA MYE 2015.²⁶
- p RMS 2015.⁹²
- q Stats SA MYE 2016.¹⁶
- r IHME Maternal and Child Mortality.²²⁴
- s Stats SA Causes of death 2013.³⁰ Data have been updated with late registrations processed in 2014. Not adjusted for under-reporting – completeness of death registration for children uncertain.
- t Stats SA Causes of death 2015.³¹ Not adjusted for under-reporting – completeness of death registration for children uncertain.
- u Global Burden of Disease 2010.⁸⁷
- v Murray et al. 2007.²⁵⁶

Table 27: Immunisation indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
BCG coverage	2000	DHIS	97.9	80.6	25.8	61.0	84.1	66.6	78.5	85.8	58.2	65.8	a
	2005	DHIS	89.8	86.2	107.1	74.3	96.4	96.1	88.5	84.2	60.2	87.4	a
	2008	DHIS	67.6	93.4	129.9	86.6	103.5	102.7	98.0	84.9	83.9	94.6	a
		SABSSM											85.5
	2011	DHIS	92.6	96.9	117.3	91.7	122.5	97.4	94.0	91.1	62.4	98.0	a
		UNICEF/WHO											78.0
	2015	2015/16 DHIS	74.7	91.1	113.7	61.5	85.0	77.7	83.8	60.0	83.5	81.8	a
UNICEF/WHO												69.0	d
DTP3 coverage	2007	DHIS	83.8	91.4	123.1	96.3	106.4	117.2	103.4	91.3	110.3	102.3	a
	2008	DHIS	93.0	94.2	139.3	101.4	115.9	116.9	102.9	97.3	115.8	110.0	a
		SABSSM											62.6
	2011	DHIS	85.7	99.6	105.0	105.2	109.0	90.9	100.2	93.5	93.6	99.3	a
		UNICEF/WHO											72.0
	2015	DHIS											40.7
UNICEF/WHO												69.0	d
Immunisation coverage of children 12–23 months	1998	SADHS	52.6	67.8	72.4	49.5	74.9	67.2	80.8	60.6	64.2	63.4	e
	2003	SADHS											54.7
Immunisation coverage under 1 year	2000	DHIS	68.2	70.4	66.2	72.8	77.8	65.4	66.8	71.1	82.2	71.4	a
	2005	DHIS	76.8	102.2	92.3	72.1	89.6	76.1	89.1	71.8	80.6	81.5	a
	2010	DHIS	69.2	94.3	105.3	77.8	76.9	58.3	85.8	66.5	85.0	80.8	a
	2015	DHIS	86.8	86.2	106.4	85.0	79.2	87.2	83.3	83.2	89.3	89.2	a
Measles 1st dose under 1 year coverage	2000	DHIS	75.8	72.2	67.0	71.8	80.1	67.0	69.0	72.8	84.1	73.2	a
	2005	DHIS	81.1	80.1	94.6	79.2	84.1	81.0	82.3	74.1	87.2	83.5	a
	2008	DHIS	85.7	84.9	112.3	86.2	93.0	89.6	93.3	82.0	104.9	93.2	a
		SABSSM											64.8
	2010	DHIS	87.9	87.6	110.9	88.4	100.1	88.6	92.0	86.8	94.2	94.5	a
	2015	DHIS	93.6	105.3	113.0	90.7	102.3	94.3	90.0	86.3	109.5	99.4	a
UNICEF/WHO												76.0	d
Measles 2nd dose coverage	2007	DHIS	58.6	68.4	82.4	69.5	70.0	72.4	79.7	58.9	81.7	70.7	a
	2010	DHIS	78.1	75.4	91.4	76.8	91.2	74.3	82.5	73.7	78.7	81.3	a
	2015	DHIS	81.1	92.3	92.0	82.6	87.9	78.7	76.9	76.0	86.2	84.8	a
OPV 1st dose coverage	2000	DHIS	95.2	81.1	76.4	82.7	88.5	82.0	81.2	92.0	95.3	85.6	a
	2005	DHIS	94.2	96.3	107.0	96.1	107.8	104.7	94.0	99.0	103.0	100.7	a
	2010	DHIS	84.7	95.1	114.9	101.5	115.0	99.8	88.6	92.3	97.1	101.3	a
	2015	DHIS	79.2	96.3	111.7	89.1	93.4	86.6	94.8	84.2	97.8	93.5	a
PCV 3rd dose coverage	2008	DHIS	1.4					0.1		0.1		0.2	a
	2011	DHIS	70.2	95.5	96.8	87.7	81.5	75.2	87.5	71.5	81.7	83.8	a
		UNICEF/WHO											72.0
	2015	DHIS	90.0	95.0	107.3	88.3	89.8	88.2	85.9	84.5	92.9	92.9	a
UNICEF/WHO												69.0	d
RV 2nd dose coverage	2008	DHIS	2.9					0.1		0.0		0.5	a
	2011	DHIS	67.3	102.1	105.2	94.2	84.3	75.4	93.5	72.9	80.9	87.3	a
		UNICEF/WHO											72.0
	2015	DHIS	83.3	99.3	107.9	88.6	92.9	88.2	88.8	85.4	96.2	93.2	a
UNICEF/WHO												72.0	d

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴ The very low value for DTP3 coverage in 2015/16 does not reflect real changes in coverage but is due to changes in the combined antigens and thus the data elements collected.
- b HIV Children 2008.¹⁶⁴ Based on combined analysis of examination of clinic card and recall/history.
- c Immunization 2011.²⁵⁷ Estimates derived by review of available data (including routine service delivery data and surveys), informed and constrained by a set of heuristics.
- d Immunization 2016.²⁵⁸ Estimates derived by review of available data (including routine service delivery data and surveys), informed and constrained by a set of heuristics.
- e SADHS 1998.¹⁹⁸ Percentage with health cards seen by interviewer and percentage who have received each vaccine by the time of the survey.
- f SADHS 2003.¹⁷⁷ Estimates for several provinces are unreliable due to small sample sizes at this level.

Nutrition

Context	Sustainable Development Goal 2 aims to “end hunger, achieve food security and improved nutrition and promote sustainable agriculture”. This demands attention to a range of issues, including poverty, climate action and life on land and below the water. South Africa has to deal with concurrent challenges of stunting and wasting in children, as well as obesity in children, adolescents and adults.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • National Income Dynamics Study (NiDS) Wave 4 • District Health Information System (DHIS) Internationally, reports of interest include: <ul style="list-style-type: none"> • Global Nutrition Report 2016 • Global Report on Diabetes 2016 and Risk Factor Collaboration web site (NCD-RisC) • Global BMI Mortality Collaboration report • WHO estimates of the global burden of foodborne diseases 2007–2015
Key issues and trends	Although the imposition of a new tax on sugar-sweetened beverages has been postponed, intervention of some sort is still likely. As with the policy interventions aimed at limiting salt intake, the intent is to impact positively on obesity and the incidence of non-communicable diseases.

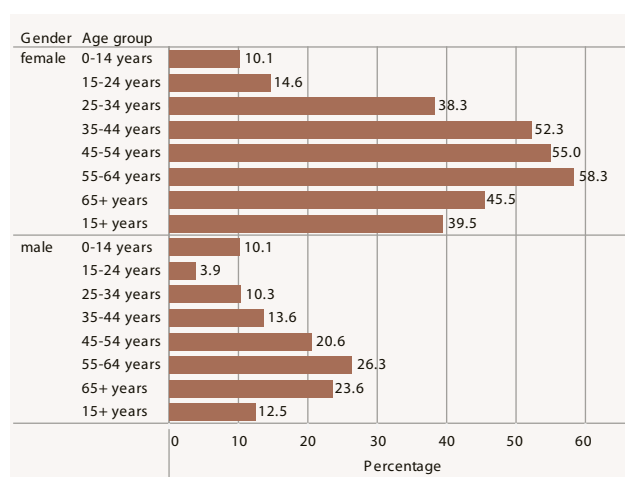
The most recent Global Nutrition Report, issued by the International Food Policy Research Institute in 2016 is entitled “From Promise to Impact: Ending Malnutrition by 2030”.²⁵⁹ The report points out that at least 12 of the 17 Sustainable Development Goals list indicators have relevance for nutrition. The authors are of the opinion that “improved nutrition is the platform for progress in health, education, employment, female empowerment, and poverty and inequality reduction”. The reverse is also true – progress in addressing poverty, access to clean water and sanitation, and education, will, among other interventions, be necessary if desired nutritional outcomes are to be achieved. Progress in this regard has hardly been stellar, with some measures (such as the prevalence of obesity) worsening over time. The report also points out that “data gaps are a significant roadblock to nutrition progress throughout the world”. South Africa was listed as one of the 20 countries which have to deal with concurrent problems of under-5 stunting, anaemia in women of reproductive age, and adult overweight/obesity. The Global BMI Mortality Collaboration has examined the relationship between body-mass index (BMI) and all-cause mortality, using individual-participant data meta-analyses of 189 prospective studies, involving a total of 3 951 455 participants.²⁶⁰ The association between both overweight and obesity with higher all-cause mortality was consistently demonstrated across all settings. The same relationship was demonstrated by a meta-analysis of 230 cohort studies.²⁶¹ BMI on its own is a poor measure of adiposity, but those who are lean throughout life have the lowest mortality.²⁶² The NCD Risk Factor Collaboration (NCD-RisC) has shown that global age-standardised mean BMI has increased from 21.7 kg/m² in 1975 to 24.2 kg/m² in 2014 in men.²⁶³ The corresponding change for women was from a mean of 22.1 kg/m² to 24.4 kg/m² in women. The authors’ conclusion is dire: “If post-2000 trends continue, the probability of meeting the global obesity target is virtually zero”. Secondary analysis of data from the South African National Health and Nutrition Examination Survey showed that overweight and obese participants under-estimated their body size and desired to be thinner, but on the other hand, normal- and under-weight participants over-estimated their body size and desired to be fatter.²⁶⁴

Though somewhat away from the main focus of nutritional indicators, WHO’s Initiative to Estimate the Global Burden of Foodborne Diseases has provided the first global estimates of the incidence,

mortality, and disease burden associated with foodborne diseases between 2007 and 2015.²⁶⁵ On the basis of 31 foodborne hazards (11 diarrhoeal disease agents (1 virus, 7 bacteria, 3 protozoa), 7 invasive infectious disease agents (1 virus, 5 bacteria, 1 protozoan), 10 helminths and 3 chemicals), estimates of 600 million foodborne illnesses and 420 000 deaths were reported in 2010. Of the global burden of 33 million DALYs, 40% were in children under 5.

South Africa has already intervened to reduce salt intake, a policy that has been shown to be cost-effective,^{266,267} and is embarking on consultations regarding a tax on sugar-sweetened beverages (SSBs). Baseline data on salt intake were included in the WHO Study on global AGEing and adult health (WHO-SAGE) wave 2 in 2014/15 and a follow-up measure is planned in wave 3, in 2017.²⁶⁸ Modelling has predicted that a 2.4 % annual growth in SSB sales, together with the effects of population growth and ageing, would result in an additional 1 287 000 obese adults (16% increase) in South Africa by 2017.²⁶⁹ An industry-sponsored counter-argument has been produced, predicting less health benefits.²⁷⁰ Although based on only two Eastern Cape districts, an assessment of the National School Nutrition Programme (NSNP) provided important insights.²⁷¹ The report points out that the NSNP is “the second largest state investment into alleviating the effects of childhood poverty, after the Child Support Grant”. Children from schools that benefitted both from the NSNP and the Tiger Brands Foundation (TBF) nutrition programme showed lower prevalence of stunting than the national average.

Figure 18: Prevalence of obesity in South Africa by sex and age group, 2015



Source: NiDS Wave 4 v1.1.²⁰⁵

Table 28: Exclusive breastfeeding rate for South Africa

Indicator	Year	Subgroup	SA	Ref
Exclusive breastfeeding rate	1998	4–6 months SADHS	1.2	a
		<3 months SADHS	10.4	a
		<6 months SADHS	6.8	b
	2003	4–6 months SADHS	1.5	c
		<4 months SADHS	11.9	c
		<6 months SADHS	8.3	d
	2008	<6 months SABSSM	25.7	e
	2010	both sexes 4–8 weeks PMTCT survey HIV-exposed	20.4	f
		both sexes 4–8 weeks PMTCT survey HIV-unexposed	31.3	f
	2013	both sexes 4–8 weeks PMTCT survey	57.5	g
		both sexes 4–8 weeks PMTCT survey HIV-exposed	54.1	h
		both sexes 4–8 weeks PMTCT survey HIV-unexposed	59.2	f

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸
- b SADHS 2003.¹⁷⁷ Quoting SADHS 1998.
- c SADHS 2003 (Preliminary).²⁵³
- d SADHS 2003.¹⁷⁷
- e HIV Children 2008.¹⁶⁴
- f PMTCT Survey 2012–13.¹⁸³
- g PMTCT Survey 2012–13.¹⁸³ Regardless of HIV exposure status.
- h PMTCT Survey 2012–13.¹⁸³ A significant increase in exclusive breast-feeding was measured in ALL provinces since 2010.

Table 29: Nutrient-related nutrition indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Anaemia prevalence in children	1995		20.6	17.1	16.3	10.4	34.2	27.7	21.5	24.5	28.6	21.4	a
	2005	1–5 years NFCS	30.0	27.6	25.6	21.8	34.4	21.3	5.0	28.2	41.2	28.9	b
	2012	<5 years SANHANES										10.7	c
Anaemia prevalence in women of reproductive age	2012	female 16–35 years SANHANES	19.9	17.6	18.6	35.9		29.5		16.9	16.1	23.1	c
Iodine deficiency	1998	children <100mcg/l urban schools (comprehensive)	9.2	18.9	24.9	6.4	11.7	50.5	10.8	30.2	35.0		d
			19.0	25.0	18.8	4.2	25.0	58.3	0.0	28.6	7.7	16.2	d
	2005	children NFCS <100mcg/l	28.8	10.8	21.3	11.7	15.8	20.3	0.0	25.2	17.7	19.2	b
Iodised salt consumption	1998	<10mg/kg	24.0	29.0	30.0	24.0	31.0	25.0	15.0	46.0	16.0	25.5	d
Iron deficiency anaemia prevalence	1995		2.4	3.9	3.8	3.5	9.1	7.0	6.5	5.0	8.2	5.0	e
	2005	1–5 years NFCS	8.4	16.1	10.4	11.3	13.8	11.6		8.7	12.0	11.3	b
	2012	<5 years SANHANES										1.9	c
Iron deficiency prevalence	1995		5.0	6.8	9.2	13.4	11.0	11.5	10.9	8.1	16.4	9.8	e
	2005	1–5 years NFCS	10.2	40.3	17.8	18.8	21.2	17.0	12.5	18.8	20.3	19.7	b
	2012	<5 years SANHANES										8.1	c
Vitamin A coverage children 12–59 months	2003	SADHS	57.7	45.8	32.3	42.3	44.6	46.6	49.4	30.2	29.6	39.4	f
	2005	NFCS	33.3	32.6	12.0	27.9	18.1	10.1	26.1	20.0	10.7	20.5	g
Vitamin A deficiency	1995		31.1	26.8	23.5	38.0	43.5	33.0	18.5	32.0	21.0	33.3	e
	2005	1–9 years NFCS	64.2	61.7	65.2	89.1	75.7	52.1	23.0	49.6	43.5	63.6	b
	2012	<5 years SANHANES										43.5	c
Vitamin A dose 12–59 months coverage	2003	DHIS	9.9	21.1	3.7	8.6	11.1	16.4	12.8	6.7	0.0	8.8	h
	2005	DHIS	14.7	29.9	20.5	19.9	20.0	19.1	22.2	18.7	11.1	18.9	h
	2010	DHIS	36.5	39.1	43.7	32.8	30.3	29.1	26.2	27.0	32.3	34.6	h
	2015	DHIS	63.7	58.7	58.8	63.8	50.0	51.4	47.0	52.4	47.3	57.0	h

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SAVACG Survey.¹¹⁶
 b Food Consumption Survey 2005.²⁷²
 c SANHANES–1.⁹⁹
 d Iodine Deficiency 2000.²⁷³
 e SAVACG Survey.¹¹⁶
 f SADHS 2003.¹⁷⁷ Percentage of children 6–59 months of age reported to have received vitamin A supplements in the 6 months preceding the survey.
 g Food Consumption Survey 2005.²⁷² A further 10.1% nationally were unsure whether Vitamin A supplements were received or not.
 h DHIS.³⁴

Table 30: Nutrient-related risk factor indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Obesity	1995	female 18+ years NCD-RisC										26.8	a	
		male 18+ years NCD-RisC										6.1	a	
	1998	female 15+ years SADHS	29.7	29.2	35.6	35.4	20.1	25.8	24.8	18.9	31.2	30.1	b	
		male 15+ years SADHS	10.1	8.1	10.2	10.4	6.2	7.5	7.6	5.5	13.1	9.3	b	
	2003	female 15+ years SADHS	31.9	26.2	30.1	24.5	21.8	28.0	24.2	24.4	30.3	27.4	c	
		male 15+ years SADHS	8.8	8.6	9.7	9.0	4.6	6.0	5.4	4.8	14.5	8.8	c	
	2005	female 18+ years NCD-RisC										32.7	a	
		male 18+ years NCD-RisC										9.4	a	
	2008	both sexes 0–14 years NiDS	15.5	11.6	11.8	10.8	4.7	8.6	5.6	8.5	14.5	10.7	d	
		both sexes 15+ years NiDS											25.2	e
		both sexes Grade 8–11 NYRBS	4.0	4.7	9.7	5.4	2.8	6.1	5.0	3.9	5.6	5.3	f	
		female 0–14 years NiDS	15.4	16.2	10.9	10.0	3.3	8.6	6.7	11.7	17.3	10.7	d	
		female 15+ years NiDS											35.0	e
		male 0–14 years NiDS	15.7	7.8	12.6	11.6	6.2	8.6	4.5	4.9	11.6	10.6	d	
		male 15+ years NiDS											12.7	e
		both sexes 0–14 years NiDS	14.4	10.2	10.7	16.1	9.1	10.0	5.2	7.9	15.8	12.5	g	
		both sexes 15+ years NiDS											28.5	e
		female 0–14 years NiDS	14.2	10.2	9.7	16.4	7.5	12.2	6.6	8.9	23.6	13.0	g	
female 15+ years NiDS											38.9	e		
male 0–14 years NiDS	14.5	10.2	11.6	15.9	10.8	8.2	3.6	6.6	8.1	12.0	g			
male 15+ years NiDS											16.2	e		

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
	2011	both sexes Grade 8–11 NYRBS	12.4	7.1	6.1	6.5	4.0	3.4	4.3	3.8	11.3	6.9	h		
		female Grade 8–11 NYRBS										10.0	h		
		male Grade 8–11 NYRBS										3.6	h		
	2012	2011–2012 female 15+ years Dikgale					27.8							i	
		2011–2012 male 15+ years Dikgale					10.6							i	
		both sexes 0–14 years NiDS	14.7	11.0	14.4	14.2	9.9	14.0	6.2	12.4	18.8	13.7	13.7	j	
		both sexes 15+ years NiDS										25.1	25.1	e	
		female 0–14 years NiDS	14.6	14.3	14.8	11.6	9.9	12.7	7.4	16.2	21.6	13.9	13.9	j	
		female 2–14 years SANHANES	6.7	4.7	10.0	8.5	4.3	5.5	3.5	4.3	7.2	7.1	7.1	k	
		female 15+ years NiDS										36.0	36.0	e	
		female 15+ years SANHANES	41.8	43.0	39.9	44.0	32.6	35.8	38.6	31.7	37.9	39.2	39.2	k	
		male 0–14 years NiDS	14.8	7.3	13.9	16.7	9.8	15.1	4.8	8.2	16.1	13.6	13.6	j	
		male 2–14 years SANHANES	3.7	4.1	5.3	6.1	3.3	6.1	3.9	2.7	4.1	4.7	4.7	k	
		male 15+ years NiDS										12.2	12.2	e	
		male 15+ years SANHANES	7.2	5.8	12.9	7.9	11.5	13.0	7.2	7.3	16.1	10.6	10.6	k	
	2015	both sexes 0–14 years NiDS	12.0	9.4	8.8	11.1	5.4	8.9	6.1	5.1	10.2	9.3	9.3	l	
		both sexes 15+ years NiDS	25.8	29.2	26.7	27.8	23.3	22.3	24.8	22.0	34.5	26.9	26.9	l	
		female 0–14 years NiDS	13.1	7.5	11.0	12.6	6.6	9.1	4.6	4.0	9.6	10.1	10.1	l	
		female 15+ years NiDS	38.9	44.1	40.0	41.7	31.9	34.5	37.2	33.9	45.4	39.5	39.5	l	
		male 0–14 years NiDS	13.1	7.5	11.0	12.6	6.6	9.1	4.6	4.0	9.6	10.1	10.1	l	
		male 15+ years NiDS	9.9	12.8	13.2	10.3	11.6	8.9	10.9	10.0	21.8	12.5	12.5	l	
	2016	both sexes 18+ years NCD-RisC											25.6	m	
		female 18+ years NCD-RisC											36.0	m	
		male 18+ years NCD-RisC											14.6	m	
	Stunting	1994	6–71 months	28.8	28.7	11.5	15.6	34.2	20.4	22.8	24.7	11.6	22.9	n	
		1999	1–9 years NFCS	20.5	29.6	20.4	18.5	23.1	26.4	29.6	24.9	14.5	21.6	o	
		2003	<5 years SADHS	28.5	32.9	26.5	13.3	26.6	22.2	37.1	24.0	34.7	27.4	c	
		2005	1–9 years NFCS	18.0	28.2	16.8	15.1	23.8	17.8	27.7	15.1	12.0	18.0	p	
		2008	both sexes 0–14 years NiDS	25.3	18.4	14.5	17.0	19.5	13.6	21.5	12.1	14.6	17.4	17.4	d
			female 0–14 years NiDS	23.7	18.8	12.0	17.5	16.9	12.7	18.9	10.7	13.7	16.2	16.2	d
female Grade 8–11 NYRBS												11.1	11.1	f	
both sexes Grade 8–11 NYRBS			17.5	14.7	13.2	11.7	12.8	11.3	19.4	12.3	9.7	13.1	13.1	f	
male 0–14 years NiDS			26.9	18.0	16.7	16.6	22.2	14.3	24.1	13.6	15.7	18.5	18.5	d	
male Grade 8–11 NYRBS												15.2	15.2	f	
2010		both sexes 0–14 years NiDS	26.0	21.1	17.5	25.0	26.4	17.7	19.6	17.8	19.5	22.2	22.2	g	
		female 0–14 years NiDS	22.6	18.2	17.3	24.2	25.7	16.4	16.4	14.9	20.8	21.1	21.1	g	
		male 0–14 years NiDS	29.4	24.0	17.6	25.7	27.3	18.7	23.0	21.4	18.1	23.3	23.3	g	
2011		female Grade 8–11 NYRBS											11.3	h	
		Grade 8–11 NYRBS	19.6	14.4	7.1	12.7	10.9	12.6	19.4	12.1	14.8	12.9	12.9	h	
		male Grade 8–11 NYRBS										14.7	14.7	h	
2012		0–14 years NiDS	21.8	19.6	19.8	21.6	26.4	23.4	22.0	21.3	14.3	21.2	21.2	j	
		female 0–14 years NiDS	21.2	16.5	17.7	20.5	27.4	18.6	17.9	23.7	14.1	20.1	20.1	j	
		female 0–14 years SANHANES	15.6	22.1	10.0	14.4	9.4	13.0	15.0	17.8	13.9	13.7	13.7	k	
		male 0–14 years NiDS	22.3	23.0	22.0	22.8	25.3	27.1	26.5	18.9	14.5	22.3	22.3	j	
		male 0–14 years SANHANES	21.6	19.4	11.9	13.5	13.7	23.1	22.8	23.7	17.5	16.7	16.7	k	
		both sexes 0–14 years NiDS	16.4	18.2	10.7	14.3	14.6	10.6	18.6	17.4	8.0	13.3	13.3	l	
2015	female 0–14 years NiDS	14.4	14.4	8.5	12.7	12.6	9.9	16.6	15.1	7.4	11.6	11.6	l		
	male 0–14 years NiDS	18.8	21.9	12.7	15.9	16.8	11.1	20.8	19.6	8.7	15.1	15.1	l		
	both sexes 0–14 years NiDS	16.4	18.2	10.7	14.3	14.6	10.6	18.6	17.4	8.0	13.3	13.3	l		
Waist-hip ratio (WHR) above cut-off	1998	female SADHS	32.8	28.5	22.2	36.7	34.2	26.8	34.2	41.3	39.6	32.0	32.0	b	
		male SADHS	5.3	6.5	6.5	10.2	6.8	3.9	5.8	8.9	8.7	7.4	7.4	b	
	2003	female SADHS	27.6	29.5	27.7	48.8	28.0	22.8	20.3	27.2	34.1	32.0	32.0	c	
		male SADHS	4.7	3.6	9.3	7.4	4.3	3.2	3.7	3.5	6.8	6.4	6.4	c	
	2012	female 15+ years SANHANES	46.1	43.1	43.3	50.0	44.7	49.6	46.7	50.9	51.5	47.1	47.1	k	
		male 15+ years SANHANES	3.9	6.3	6.7	9.0	5.2	5.3	2.7	10.1	8.2	6.8	6.8	k	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
Wasting	1994	6–71 months	3.2	4.5	1.2	0.7	3.8	2.5	1.7	4.5	1.3	2.6	n		
	1999	1–9 years NFCS	1.8	3.4	1.2	4.3	7.5	2.8	9.6	5.7	0.9	3.7	o		
	2003	<5 years SADHS	0.8	8.4	4.2	7.5	5.3	6.0	10.0	6.0	6.2	5.2	c		
	2005	1–9 years NFCS	4.1	2.8	3.3	1.3	4.4	7.5	19.1	3.2	11.5	4.5	p		
	2008	both sexes 0–14 years NiDS	both sexes 0–14 years NiDS	3.4	5.0	7.1	3.4	8.2	5.3	8.9	9.5	5.4	5.6	d	
			female 0–14 years NiDS	3.7	2.1	8.6	2.4	7.5	3.0	9.9	10.0	4.8	5.3	d	
			female Grade 8–11 NYRBS											2.3	f
			Grade 8–11 NYRBS	4.4	4.4	4.1	1.9	6.8	3.6	10.6	7.8	3.7	4.4	4.4	f
			male 0–14 years NiDS	3.1	7.5	5.7	4.5	9.0	7.5	7.8	9.0	6.0	6.0	6.0	d
	2010	both sexes 0–14 years NiDS	both sexes 0–14 years NiDS	4.7	4.9	2.7	4.0	6.6	3.4	10.5	5.3	7.0	4.6	g	
			female 0–14 years NiDS	5.7	5.1	2.0	3.3	6.0	1.8	9.1	5.2	4.9	4.1	g	
			male 0–14 years NiDS	3.6	4.6	3.2	4.8	7.3	4.8	12.2	5.4	9.1	5.1	g	
	2011	female Grade 8–11 NYRBS	female Grade 8–11 NYRBS										1.6	h	
			Grade 8–11 NYRBS	1.6	4.6	3.6	2.2	4.9	5.3	10.8	6.0	1.3	3.5	h	
			male Grade 8–11 NYRBS											5.5	h
	2012	0–14 years NiDS	0–14 years NiDS	4.0	3.2	7.1	4.9	3.3	8.1	9.1	5.5	5.1	5.4	j	
			female 0–14 years NiDS	3.7	4.1	6.6	4.3	4.2	9.1	6.9	5.9	4.9	5.3	j	
			female 0–14 years SANHANES	3.2	1.4	0.4	-	2.8	1.8	5.1	5.2	1.3	1.7	k	
			male 0–14 years NiDS	4.2	2.3	7.5	5.6	2.3	7.3	11.5	5.0	5.3	5.5	j	
			male 0–14 years SANHANES	1.6	1.7	3.6	2.4	6.5	2.8	18.5	8.5	2.0	3.8	k	
	2015	both sexes 0–14 years NiDS	both sexes 0–14 years NiDS	0.6	3.1	6.2	1.7	3.8	1.7	6.5	4.8	4.6	3.4	l	
			female 0–14 years NiDS	0.8	1.1	4.2	2.3	3.5	1.0	6.3	4.0	6.0	3.0	l	
			male 0–14 years NiDS	0.4	5.0	7.8	1.1	4.2	2.4	6.7	5.5	2.7	3.9	l	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a NCD-RisC.²⁷⁴
- b SADHS 1998.¹⁹⁸
- c SADHS 2003.¹⁷⁷
- d NiDS Wave 1 v5.2.²⁰¹
- e NCD Trends 2015.²⁷⁵
- f NYRBS 2008.¹⁹⁴
- g NiDS Wave 2 v2.2.²⁰²
- h NYRBS 2011.¹⁹⁶
- i Maimela et al. 2016.²⁷⁶ Data representative only of DSS site, not the entire province.
- j NiDS Wave 3 v1.2.²⁰⁴
- k SANHANES-1.⁹⁹
- l NiDS Wave 4 v1.1.²⁰⁵
- m Global Diabetes 2016.²⁷⁷
- n SAVACG Survey.¹¹⁶
- o Food Consumption Survey 1999.²⁷⁸
- p Food Consumption Survey 2005.²⁷²

Table 31: Nutrition indicators by population group

Indicator	Year	Subgroup	African/Black	Coloured	Indian/Asian	White	Other/Unspecified	Ref
Age-standardised mean population intake of salt (sodium chloride) per day in grams	2005		7.8			9.5		a
Anaemia prevalence in women of reproductive age	2012	female 16–35 years SANHANES	24.8	13.2				b
Obesity	1998	female 15+ years SADHS	31.2	28.5	21.3	25.5		c
		male 15+ years SADHS	7.8	9.2	9.0	20.1		c
	2003	female 15+ years SADHS	28.5	26.5	24.8	13.7		d
		male 15+ years SADHS	7.1	14.9	10.9	23.0		d
	2008	both sexes 0–14 years NiDS	10.4	15.4	3.2	10.4		e
		both sexes Grade 8–11 NYRBS	5.0	4.9	7.2	9.7	6.6	f
		female 15+ years NiDS	34.3	39.0	27.3	40.4		g
		male 15+ years NiDS	10.3	18.9	18.9	27.1		g
	2010	both sexes 0–14 years NiDS	13.2	8.5	6.1	8.9		h
		female 15+ years NiDS	38.8	37.9	27.0	45.1		g
male 15+ years NiDS		13.6	17.6	14.8	41.3		g	
2011	both sexes Grade 8–11 NYRBS	6.7	7.1	7.3	9.0	7.6	i	

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
	2012	both sexes 0–14 years NiDS	13.6	10.3	11.7	21.1		j
		female 2–14 years SANHANES	7.3	5.3				b
		female 15+ years NiDS	35.4	34.1	34.8	42.6		g
		female 15+ years SANHANES	39.9	34.9	32.4			b
		male 2–14 years SANHANES	4.8	3.8				b
		male 15+ years NiDS	9.5	14.0	14.2	34.1		g
		male 15+ years SANHANES	9.4	15.1	7.6			b
Stunting	2003	<5 years SADHS	27.0	37.4	13.1	7.0		d
		0–14 years NiDS	17.9	19.7	10.8	7.3		e
	2008	Grade 8–11 NYRBS	13.8	13.6	10.3	4.6	13.1	f
		0–14 years NiDS	23.3	23.1	12.6	4.8		h
	2011	Grade 8–11 NYRBS	13.4	13.9	8.8	3.3	19.7	i
	2012	0–14 years NiDS	22.6	17.8	13.5	4.8		j
		female 0–14 years SANHANES	13.6	16.1				b
male 0–14 years SANHANES		16.7	18.6				b	
Waist-hip ratio (WHR) above cut-off	1998	female SADHS	33.3	36.2	23.2	20.4		c
		male SADHS	6.5	5.2	11.2	14.7		c
	2003	female SADHS	31.9	36.1	33.5	24.0		d
		male SADHS	5.1	8.2	22.1	6.7		d
	2012	female 15+ years SANHANES	45.7	52.9	64.8			b
		male 15+ years SANHANES	5.1	8.4	24.9			b
Wasting	2003	<5 years SADHS	5.0	7.5	9.1	2.2		d
	2008	0–14 years NiDS	5.6	5.6	11.6	4.5		e
		Grade 8–11 NYRBS	4.3	6.6	7.0	1.1	4.6	f
	2010	0–14 years NiDS	4.5	6.6	15.3	0.0		h
	2011	Grade 8–11 NYRBS	3.3	5.5	8.8	1.5	2.1	i
	2012	0–14 years NiDS	5.0	7.1	8.1	7.2		j
		female 0–14 years SANHANES	1.4	4.2				b
		male 0–14 years SANHANES	3.8	4.5				b

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Wentzel-Viljoen et al. 2013.²⁷⁹
- b SANHANES–1.⁹⁹
- c SADHS 1998.¹⁹⁸
- d SADHS 2003.¹⁷⁷
- e NiDS Wave 1 v5.2.²⁰¹
- f NYRBS 2008.¹⁹⁴
- g NCD Trends 2015.²⁷⁵
- h NiDS Wave 2 v2.2.²⁰²
- i NYRBS 2011.¹⁹⁶
- j NiDS Wave 3 v1.2.²⁰⁴

Non-communicable diseases

Context	A key challenge in describing and tracking non-communicable diseases is that of multi-morbidity. Many patients with hypertension will develop another cardiovascular disease, for example, and some will also be diagnosed with diabetes mellitus. A smaller proportion, perhaps, will also have asthma, another chronic respiratory condition, or even a mental health problem.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • National Cancer Registry summary statistics on histologically diagnosed cancer up to 2011 and 2012 • National Income Dynamics Study Wave 4 (2015) • Council for Medical Schemes Annual Report 2015–16 • Council for Medical Schemes Quality of Care in Medical Schemes (for financial years 2014 and 2015) Internationally, reports of interest include: <ul style="list-style-type: none"> • Global Burden of Disease Study 2015 • Global Report on Diabetes 2016 • NCD Risk Factor Collaboration reports • WHO Depression and Other Common Mental Disorders: Global Health Estimates 2017 • World Alzheimer Report 2016
Key issues and trends	The most important nationally-relevant source of data on NCDs will remain the longitudinal National Income Dynamics Study, wave 4 of which has now been released. The SADHS, currently in process, will validate these results and cover some additional biomarkers, while planning for the next wave of SANHANES is undertaken. While these and other surveys each fill a niche for monitoring NCDs there is an element of duplication, and harmonisation of expensive surveys should be considered. ²⁸⁰

The “25-by-25” target set by the United Nations in 2011 aims to achieve a 25% reduction in the risk of premature non-communicable disease (NCD) death by 2025. As cardiovascular disease is the largest contributor to global NCD mortality, particular attention has been paid to the risk factors of cardiovascular disease, such as high blood pressure, tobacco use, diabetes mellitus, and obesity.²⁸¹ Cardiovascular diseases are responsible for half of all global NCD deaths, with 70% of these occurring in LMICs.²⁸²

The Global Burden of Diseases, Injuries, and Risk Factors Study 2015 (more commonly known as GBD 2015) has produced estimates of the global burden of hypertension and raised systolic blood pressure for the period 1990–2015.²⁸³ The estimate is that the rate of raised systolic blood pressure (above 110 mmHg) has increased from 73 119 per 100 000 population to 81 373 per 100 000. Using a higher threshold of 140 mmHg or higher, the estimate is of an increase from 17 307 per 100 000 to 20 526 per 100 000. The majority of the estimated deaths associated with raised systolic blood pressure were due to ischaemic heart disease, haemorrhagic stroke and ischaemic stroke. Interestingly, this study did not report on elevated diastolic blood pressure, potentially missing younger patients with elevated risk.²⁸⁴ Based on 135 population-based studies from 90 countries, and a total of 968 419 adults, a global prevalence of hypertension (defined as average systolic blood pressure \geq 140 mmHg, average diastolic blood pressure \geq 90 mmHg, or use of antihypertensive medication) of 31.1% of adults has been estimated.²⁸⁵ Global adult prevalence was estimated to be 28.5% in high-income countries (HICs) and 31.5% in low- and middle-income countries (LMICs). The authors also pointed out that, between 2000 to 2010, the age-standardised prevalence of hypertension decreased by 2.6% in HICs, but increased by 7.7% in LMICs. A larger data set, combining data from 1 479 studies and 19.1 million adult study participants, produced global age-standardised prevalence estimates of raised blood pressure of 24.1% in men and 20.1% in women in 2015.²⁸⁶ A systematic review and meta-analysis of 33 surveys (110 414

participants) conducted in Africa produced a pooled prevalence of 30%.²⁸⁷ More importantly, this study showed that only 27% of survey participants were aware of their hypertensive status, only 18% of those with hypertension were receiving treatment, and only 7% had controlled blood pressure. A review of seven population-based cross-sectional studies in nine LMICs in Africa, Asia, and South America, included data for South Africa, reporting an age- and sex-standardised prevalence rate of hypertension among men and women aged 35 to 74 years of 54.9%.²⁸⁸ Other local studies have shown a prevalence of hypertension of 47.5% in Durban Indians²⁸⁹ and 41% in residents of the Dikgale Health and Demographic Surveillance Site, Limpopo.²⁹⁰

The Global Burden of Disease Study 2013 has provided estimates of the global burden of stroke and the risk factors of stroke in 188 countries, for the period 1990–2013, and specifically the population-attributable fraction (PAF) of stroke-related disability-adjusted life-years (DALYs) associated with potentially modifiable environmental, occupational, behavioural, physiological, and metabolic risk factors.²⁹¹ More than 90% of the stroke burden is attributable to modifiable risk factors.

Diabetes prevalence estimates for the WHO Global Report on Diabetes were provided by the NCD Risk Factor Collaboration (NCD-RisC), which has also published a pooled analysis of 751 population-based studies (4.4 million participants) since 1980.²⁹² Global age-standardised diabetes prevalence was estimated to have increased from 4.3% in 1980 to 9.0% in 2014 in men, and from 5.0% to 7.9% in women. This equates to a global total of 108 million adults with diabetes in 1980, but 422 million in 2014. Based on 12 nationally representative population-based surveys, the median prevalence of diabetes in sub-Saharan Africa has been estimated at 5%.²⁹³ An accompanying editorial questioned the reliability of online survey data characterising the public health response in African countries, and called for enhanced surveillance, not only of the prevalence of diabetes and its complications over

time, but also the degree of coverage by care and prevention services.²⁹⁴ Within Africa, the highest prevalence of diabetes, in raw number terms is in South Africa, where about 4 million people are estimated to be living with diabetes.²⁹⁵ Local prevalence studies have reported a crude prevalence of diabetes of 12.5% in KwaZulu-Natal in 2014,²⁹⁶ a treatment initiation rate of 148.7 per 1 000 000 population in KwaZulu-Natal in 2014,²⁹⁷ and a prevalence of 20% in Indian residents of Phoenix, Durban.²⁸⁹

Multi-morbidity is a consistent feature of NCDs, and of particular importance with an ageing population. A survey of 4 393 attendees at 38 PHC clinics in the Eden and Overberg districts of the Western Cape in 2011 showed that, “of participants with hypertension, diabetes, respiratory disease and depression, 80%, 92%, 88% and 80%, respectively, had at least one of the other three conditions”.²⁹⁸ Using data from the National Income Dynamics Study, multi-morbidity prevalence was shown to have increased from 2.73% to 2.84% in adults between 2008 and 2012.²⁹⁹ For example, hypertension was found to frequently coexist with diabetes. Spatial analysis of these data identified ‘hot spots’ of higher multi-morbidity prevalence in KwaZulu-Natal and the Eastern Cape, in areas of socioeconomic disadvantage. Based on population screening in a lower income, informal settlement in Johannesburg, 37.1% of participants could be classified as hypertensive and 8.3% had elevated random capillary glucose levels.³⁰⁰ Nonetheless, it has been emphasised that there is insufficient evidence to justify population screening for diabetes and hypertension in LMIC settings.³⁰¹ WHO AFRO region has published the results of 33 STEPwise approach to non-communicable disease risk factor surveillance (STEPS) country studies and 19 global school-based student health surveys (GSHS).³⁰² The results showed that “most adults have at least one of the five major risk factors for NCDs: current daily smoker; eating less than five servings of fruits and vegetables per day; a low level of physical activity; being overweight; and having raised blood pressure”. Managing multi-morbidity poses serious challenges for health systems that have historically been geared to provide only acute episodic care.³⁰³ The prevalence of risk factors has been described for residents of the Dikgale Health Demographic and Surveillance System (HDSS) Site, Limpopo.²⁷⁶ There is a significant number of beneficiaries with multiple chronic conditions, for instance 36.2% of ischaemic heart disease (IHD) patients are hypertensive, while 13.8% are diabetic. Effective disease management should therefore provide proper coordination of care amongst providers. Likewise, data from the Council for Medical Schemes has shown the extent of multi-morbidity.³⁰⁴ For example, in this environment, 36.2% of IHD patients were also hypertensive, while 13.8% were diabetic. The Council for Medical Schemes’ report on Quality of Care³⁰⁴ has proposed a number of process indicators for the management of conditions on the Chronic Disease List (CDL), such as the percentage of beneficiaries receiving a particular laboratory test (e.g. serum creatinine in the case of hypertension) or examination for sequelae (e.g. fundus examination in the case of diabetes). The data for 2014 and 2015 showed low use of such tests (e.g. in 2015, only 3.4% of patients with type 2 diabetes had a fundus examination, only 3.3% of patients with hypertension had a serum creatinine determination performed).

Data from South Africa’s Second Burden of Disease study were published in 2016, presenting national trends in age-standardised death rates (ASDRs) for NCDs between 1997 and 2010.³⁰⁵ The

study reported that 38.9% of deaths in 2010 were due to NCDs. The estimated ASDRs were 287 per 100 000 population for cardiovascular diseases, 114 for cancers, 58 for chronic respiratory conditions and 52 for diabetes mellitus. An accompanying editorial identified a number of key information needs, such as improving the completeness of death registration and the quality of cause-of-death information, supporting the national cancer register, and routine population-based surveys to monitor risk factors.³⁰⁶ Access to quality, affordable healthcare services is key to NCD care. Based on data from the WHO Study on Global AGEing and Adult Health (SAGE), access to chronic care was assessed in China, Ghana, India, Mexico, the Russian Federation and South Africa. Only in South Africa, where free primary health care is guaranteed by law, did poverty not determine access.³⁰⁷

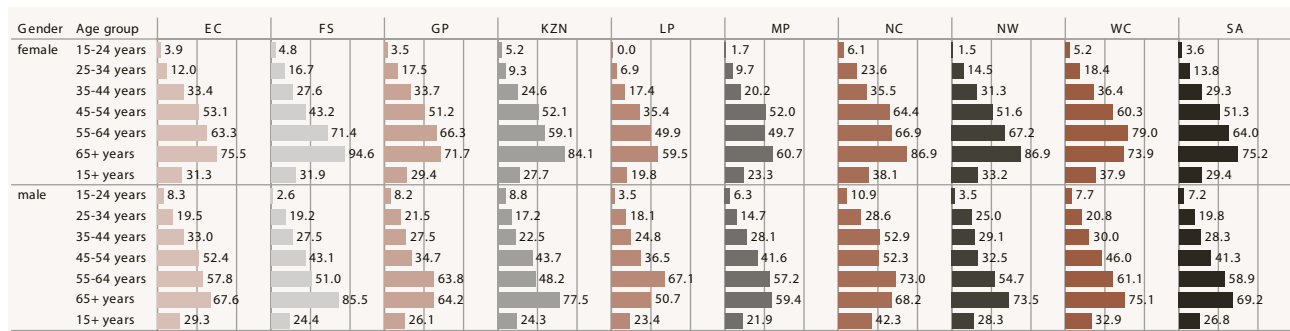
One of the major interventions in cancer prevention has been the introduction of human papillomavirus vaccination for grade 4 girls in public sector schools. Globally, an estimated 118 million women had been vaccinated, but only 1% were from low-income or lower-middle-income countries.³⁰⁸ Childhood cancer incidence by race, sex and age have been reported from the South African National Cancer Registry for the period 2000–2006.³⁰⁹ Globally, the GBD 2015 has reported global, regional, and national cancer incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life-years for 32 cancer groups, for the period 1990 to 2015.³¹⁰ A Lancet Series on women’s cancer was published in February 2017, describing the global and regional burden of breast and cervical cancer, and trends with regard to incidence, mortality, and survival.³¹¹ Breast cancer is the most common cancer in women, being diagnosed in about 1.7 million every year. Breast cancer is responsible for an estimated 522 000 deaths a year (2012 data) and is the leading cause of cancer deaths in women. In 2012, an estimated 530 000 women were diagnosed with cervical cancer. There are persistent inequities in the outcomes achieved by women with cancer, such as overall survival.³¹² Not surprisingly, the authors also highlighted the dearth of data in many settings, noting that “evidence-based policy making for women’s cancers needs good quality cancer registration, as well as improvements in collecting health intelligence on cancer care”.³¹³

Data from the baseline survey of the South African National Health and Nutrition Examination Survey (SANHANES-1) have been used to explore the relationship between the symptoms of mental disorders and diabetes and hypertension.³¹⁴ The Programme for Improving Mental Health Care (PRIME) was conducted in five districts in Ethiopia, India, Nepal, South Africa and Uganda, and explored the prevalence and impact of priority maternal mental disorders (perinatal depression, alcohol use disorders during pregnancy and puerperal psychosis).³¹⁵ Limited data were accessible at district level, but the need for access to maternal mental health care was demonstrated. In February 2017, the WHO issued country and regional estimates of the burden of depressive disorders and anxiety disorders, drawing on the Global Burden of Disease 2015 data.³¹⁶ The estimate was that 4.4% of the global population had depressive disorders, 3.6% had anxiety disorders, and that an unknown proportion had both disorders (multi-morbidity). The estimates for South Africa were 4.6% with depressive disorders and 3.6% with anxiety disorders. Globally, it was estimated that 788 000 people died due to suicide in 2015, accounting for almost 1.5% of all deaths. Suicide was estimated to be the second leading cause

of death among 15–29 year-olds in 2015. The World Alzheimer reports of 2015 and 2016 consider the global impact of dementia and health care coverage.^{317,318}

Summary statistics of cancer cases diagnosed histologically have been released up to 2012 by gender and population group for South Africa (Table 36).^{319,320} These incidence rates differ from the estimates projected by GLOBOCAN that have been reported previously.³²¹

Figure 19: Prevalence of hypertension by province, sex and age group, 2015



Source: NiDS Wave 4 v1.1.²⁰⁵

Table 32: Diabetes indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Diabetes incidence	2013	DHIS	2.0	1.7	2.5	1.8	2.7	1.7	3.9	1.2	1.3	2.0	a	
	2014	DHIS	1.6	1.1	0.9	1.6	2.6	1.4	3.9	1.0	1.1	1.4	a	
	2015	DHIS	1.8	1.1	1.5	2.2	2.5	1.7	1.4	1.6	1.0	1.7	a	
Diabetes prevalence	1995	female 18+ years NCD-RisC age-standardised											9.0	b
		female 18+ years NCD-RisC crude											7.1	b
		male 18+ years NCD-RisC age-standardised											6.3	b
		male 18+ years NCD-RisC crude											4.5	b
	2005	female 18+ years NCD-RisC age-standardised											10.8	b
		female 18+ years NCD-RisC crude											9.5	b
		male 18+ years NCD-RisC age-standardised											8.1	b
		male 18+ years NCD-RisC crude											6.1	b
	2012	15+ years SANHANES	8.5	10.1	7.9	10.0	4.6	5.6	21.7	12.5	11.2	9.5	c	
	2014	20–79 years Diabetes Atlas											8.4	d
		20–79 years Diabetes Atlas age-standardised											9.4	d
		both sexes 18+ years NCD-RisC											9.8	e
		DHIS public sector				14.3								f
		female 18+ years NCD-RisC age-standardised											12.6	b
		female 18+ years NCD-RisC crude											11.8	b
		male 18+ years NCD-RisC age-standardised											9.7	b
male 18+ years NCD-RisC crude												7.7	b	
2015	both sexes 20–79 years Diabetes Atlas											7.0	g	
	both sexes 20–79 years Diabetes Atlas age-standardised											7.6	g	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Diabetes prevalence (per 1 000)	2000	30–44 years										14.0	h	
		30+ years										55.0	h	
		45–59 years										87.0	h	
		60–69 years										126.0	h	
		70–79 years										131.0	h	
		80+ years										138.0	h	
	2003	female 15+ years SADHS											39.0	i
		male 15+ years SADHS											26.0	i
	2008	med schemes all beneficiaries											16.0	j
	2013	med schemes all beneficiaries											26.9	j
	2015	all ages med schemes all beneficiaries											48.3	k

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴
- b NCD-RisC.²⁷⁴
- c SANHANES–1.⁹⁹
- d Diabetes Atlas 2014.³²² Modelled estimates based on best published studies. Estimated number of cases of diabetes = 2 713 380 of which 1 248 160 estimated to be undiagnosed.
- e Global Diabetes 2016.²⁷⁷ Estimated by the NCD Risk Factor Collaboration (NCD-RisC) – a worldwide network/consortium of public health and medical researchers and practitioners who together work with the World Health Organization to document NCD risk factors and their health effects around the world.
- f Sahadew et al. 2016.²⁹⁶
- g Diabetes Atlas 2015.³²³ Estimated number of cases of diabetes = 2 286 000 of which 1 396 800 estimated to be undiagnosed.
- h Comparative Risk Assessment.³²⁴ The prevalence of diabetes was estimated as a weighted average of the results from selected studies to represent subpopulations.
- i SADHS 2003 (Preliminary).²⁵³
- j Medical Schemes 2014–15.³²⁵ Diagnosed and treated.
- k Medical Schemes 2015–16.⁴¹ Diagnosed and treated – Diabetes mellitus type 2.

Table 33: Hypertension indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Hypertension prevalence	1998	female SADHS mod-sev	14.2	15.5	13.1	14.7	6.6	8.5	17.0	16.2	14.2	13.2	a	
		male SADHS mod-sev	12.5	14.5	11.7	11.1	6.4	6.2	14.2	11.8	10.9	11.0	a	
	2003	female 15+ years SADHS	19.2	23.9	20.7	12.9	11.0	14.8	27.9	18.7	21.4	17.9	b	
		male 15+ years SADHS	10.9	11.6	17.3	9.7	5.4	6.2	17.7	11.2	18.3	12.5	b	
	2007	both sexes 50+ years SAGE											77.9	c
		female 50+ years SAGE											80.3	c
		male 50+ years SAGE											74.7	c
	2008	both sexes 15+ years NiDS											31.0	d
		female 15+ years NiDS											33.5	d
		male 15+ years NiDS											27.6	d
	2009	2008–2009 both sexes 35–74 years age-standardised											54.9	e
		2008–2009 both sexes 35–74 years crude											55.3	e
		2008–2009 female 35–74 years											56.3	e
		2008–2009 male 35–74 years											53.4	e
	2010	both sexes 15+ years NiDS											30.6	d
		female 15+ years NiDS											33.0	d
		male 15+ years NiDS											27.8	d
	2012	2011–2012 both sexes 15+ years Dikgale					38.9							f
		both sexes 15+ years NiDS	36.3	33.0	31.3	31.1	22.8	23.9	38.6	35.6	38.6	31.8	d	
		female 15+ years NiDS											33.5	d
		male 15+ years NiDS											29.8	d
	2015	both sexes 15+ years NiDS	30.3	28.4	27.7	26.2	21.4	22.6	40.1	30.8	35.6	28.2	g	
		both sexes 25+ years NiDS	41.2	37.7	34.6	34.6	30.4	30.0	49.2	40.2	43.3	36.6	g	
		both sexes 65+ years NiDS	72.6	90.7	68.9	81.8	56.6	60.2	79.5	82.4	74.3	73.0	g	
		female 15+ years NiDS	31.3	31.9	29.4	27.7	19.8	23.3	38.1	33.2	37.9	29.4	g	
		female 25+ years NiDS	42.3	40.7	37.5	36.4	27.3	31.3	48.2	44.7	46.3	38.3	g	
		female 65+ years NiDS	75.5	94.6	71.7	84.1	59.5	60.7	86.9	86.9	73.9	75.2	g	
		male 15+ years NiDS	29.3	24.4	26.1	24.3	23.4	21.9	42.3	28.3	32.9	26.8	g	
		male 25+ years NiDS	39.7	34.0	31.8	32.2	35.2	28.5	50.3	35.9	39.7	34.6	g	
	male 65+ years NiDS	67.6	85.5	64.2	77.5	50.7	59.4	68.2	73.5	75.1	69.2	g		
Hypertension prevalence rate (age-standardised)	2015	2015 both sexes 15+ years NiDS	29.2	28.7	27.8	26.7	20.9	24.0	36.6	27.7	31.4	27.7	g	
Hypertension prevalence (per 1 000)	2008	both sexes med schemes all beneficiaries										65.5	h	
	2013	both sexes all ages med schemes all beneficiaries										87.2	h	
	2014	both sexes all ages med schemes all beneficiaries										148.3	i	
	2015	both sexes all ages med schemes all beneficiaries										153.6	i	
Hypertension treatment coverage	2008	both sexes 15+ years NiDS	27.0	44.0	37.8	40.5	28.1	27.9	42.3	37.0	37.8	35.8	j	
		female 15+ years NiDS											44.3	d
		male 15+ years NiDS											22.9	d
	2010	both sexes 15+ years NiDS	38.2	37.0	34.5	31.7	18.6	25.9	44.6	40.1	43.0	34.7	k	
		female 15+ years NiDS											43.0	d
		male 15+ years NiDS											21.6	d
	2012	both sexes 15+ years NiDS	36.7	44.8	37.8	38.3	28.0	37.8	45.8	39.5	41.0	38.3	l	
		female 15+ years NiDS											48.1	d
		male 15+ years NiDS											25.5	d
2015	both sexes 15+ years NiDS	46.6	49.6	48.2	46.7	37.7	39.5	45.8	55.2	53.6	47.6	g		
Hypertensives controlled on treatment	2008	both sexes 15+ years NiDS	48.5	33.5	48.9	38.1	43.5	41.5	37.5	31.2	38.4	41.8	j	
	2010	both sexes 15+ years NiDS	39.0	34.5	36.6	32.9	35.8	49.4	28.9	44.9	43.9	37.9	k	
	2012	both sexes 15+ years NiDS	43.5	44.3	49.3	46.6	43.4	56.1	34.2	30.9	35.8	44.4	l	
	2015	both sexes 15+ years NiDS	46.3	57.7	60.0	49.6	63.2	56.8	51.0	42.0	43.2	51.8	g	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Prevalence of raised blood pressure	1995	female 18+ years NCD-RisC age-standardised										32.4	m	
		female 18+ years NCD-RisC crude										26.3	m	
		male 18+ years NCD-RisC age-standardised										33.5	m	
		male 18+ years NCD-RisC crude										27.7	m	
	2005	female 18+ years NCD-RisC age-standardised											29.0	m
		female 18+ years NCD-RisC crude											25.7	m
		male 18+ years NCD-RisC age-standardised											29.8	m
		male 18+ years NCD-RisC crude											25.0	m
	2008	both sexes 15+ years NiDS	28.9	25.9	23.8	27.0	18.4	26.0	34.5	30.8	32.4	26.3	j	
	2010	both sexes 15+ years NiDS	27.5	30.9	25.8	25.8	20.7	17.2	34.2	21.9	33.8	25.7	k	
	2012	both sexes 15+ years NiDS	30.2	25.9	25.3	25.9	20.6	19.9	31.5	31.1	33.5	26.5	l	
		SANHANES raised SYS and DIA	10.4	17.3	11.4	8.4	6.6	9.1	10.8	13.0	9.4	10.2	n	
		SANHANES raised SYS or DIA or both sexes	27.1	30.5	27.3	26.4	20.7	20.9	23.5	29.9	30.7	26.6	o	
	2015	female 18+ years NCD-RisC age-standardised											26.1	m
		female 18+ years NCD-RisC crude											24.4	m
		male 18+ years NCD-RisC age-standardised											27.4	m
		male 18+ years NCD-RisC crude											23.5	m
	2015	both sexes 15+ years NiDS	23.8	20.2	19.6	20.1	16.3	17.5	30.4	23.6	27.2	21.1	g	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸ Moderate and severe hypertension.
- b SADHS 2003.¹⁷⁷ The measured prevalence of hypertension was defined as those with BP equal or above 140/90 mmHg and/or taking anti-hypertensive medication. The recorded BP levels of participants in the 2003 survey, particularly the diastolic BP, were much lower than was recorded in 1998. The consequence of this is that the apparent prevalence rate of hypertension in 2003 was reduced by almost half. This unrealistic finding prompted a series of exploratory analyses to attempt an explanation for this phenomenon. Caution should be exercised in interpretation as it is likely that the BP data do not reflect the true situation regarding hypertension in South Africa.
- c Lloyd-Sherlock et al. 2014.³²⁶ Study of Global Ageing and Adult Health (SAGE). Data collection over 2007–8.
- d NCD Trends 2015.²⁷⁵ National Income Dynamics Study (NiDS). The measured prevalence of hypertension was defined as those with BP equal or above 140/90 mmHg and/or taking anti-hypertensive medication.
- e Irazola et al. 2016.²⁸⁸
- f Maimela et al. 2016.²⁷⁶ Data representative only of DSS site, not the entire province.
- g NiDS Wave 4 v1.1.²⁰⁵
- h Medical Schemes 2014–15.³²⁵ Diagnosed and treated.
- i Medical Schemes 2015–16.⁴¹ Diagnosed and treated.
- j NiDS Wave 1 v5.2.²⁰¹
- k NiDS Wave 2 v2.2.²⁰²
- l NiDS Wave 3 v1.2.²⁰⁴
- m NCD-RisC.²⁷⁴
- n SANHANES–1.⁹⁹ Restrictive definition of both parameters raised – SYS = systolic blood pressure, DIA = diastolic blood pressure. Of participants 15 years and older (Age 15+).
- o SANHANES–1.⁹⁹ Calculated from (raised SYS = systolic blood pressure) + (raised DIA = diastolic blood pressure) – (both SYS and DIA raised). Age 15+.

Table 34: Mental health indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Prevalence of mental disorders	2004	12-month prevalence										16.5	a	
		lifetime prevalence	25.7	37.5	29.8	28.0	30.8	29.2	28.7	34.0	39.4	30.8	b	
	2012	both sexes current (depression)	15.2											c
		both sexes lifetime (depression)	31.4											c
	2015	both sexes anxiety disorders											3.4	d
		both sexes depressive disorders											4.6	d

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Suicide rate (per 100 000 population)	2012	both sexes WHO age-standardised										3.0	e	
		female WHO age-standardised											1.1	e
		male WHO age-standardised											5.5	e

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SASH 2002–4.³²⁷
- b SAMJ 99(339–44).³²⁸
- c Andersson et al. 2013.³²⁹ Cross-sectional population-based survey of persons aged 18–40 living in the EC.
- d Mental disorders 2017.³¹⁶
- e Global Health Observatory.³³⁰

Table 35: Other chronic disease indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Asthma prevalence (per 1 000)	2003	female 15+ years SADHS										44.0	a
		male 15+ years SADHS										30.0	a
	2007	female all ages private sector										16.3	b
		male all ages private sector										15.8	b
Hyperlipidaemia prevalence (per 1 000)	2000	both sexes 30+ years										476.0	c
		both sexes 60+ years										707.0	c
	2003	female 15+ years SADHS										21.0	a
		male 15+ years SADHS										20.0	a
	2007	female all ages private sector										19.0	b
		male all ages private sector										29.6	b
	2008	both sexes all ages med schemes all beneficiaries										27.7	d
	2013	both sexes all ages med schemes all beneficiaries										34.8	d
	2014	both sexes all ages med schemes all beneficiaries										66.5	e
	2015	both sexes all ages med schemes all beneficiaries										70.6	e
Mortality between 30–70 years from cardiovascular, cancer, diabetes or chronic respiratory disease	2000	both sexes 30–70 years WHO										30.0	f
	2004	BoD										29.0	g
	2010	BoD										26.0	g
		both sexes 30–70 years WHO										27.7	h
2012	both sexes 30–70 years WHO										26.8	h	
Prevalence of abnormal lipid profiles	2012	female SANHANES serum chol >5 mmol/L	30.8	29.0	27.1	22.9	15.9	22.9	32.4	38.2	39.3	28.1	i
		male SANHANES serum chol >5 mmol/L	20.8	20.3	14.7	18.7	10.9	14.6	15.4	17.5	34.8	18.9	i

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 2003 (Preliminary).²⁵³
- b Risk Equalisation Fund.²¹⁴ Data from the REF study 2005– prevalence estimates for 2007.
- c Comparative Risk Assessment.³²⁴ This article used data from nine community studies to derive estimates of national prevalence of exposure to high total cholesterol in adults aged 30 years and older. Prevalence was calculated for the proportion with serum cholesterol values above 5mmol/l.
- d Medical Schemes 2014–15.³²⁵ Diagnosed and treated.
- e Medical Schemes 2015–16.⁴¹ Diagnosed and treated.
- f Global Health Observatory.³³⁰
- g Nojilana et al. 2016.³³¹ Based on second national burden of disease study.
- h Global NCD 2014.³³²
- i SANHANES–1.⁹⁹ 'Chol' = total cholesterol.

Table 36: Cancer incidence for leading types of cancer (per 100 000 population) for South Africa, 2011 and 2012

Female		Male		Ref
2011				a
Breast	31.4	Prostate	41.9	
Cervix	21.7	Colorectal	10.2	
Primary Unknown	6.6	Lung	9.9	
Colorectal	6.1	Primary unknown	9.3	
Uterus	4.9	Kaposi sarcoma	4.6	
2012				b
Breast	30.5	Prostate	26.6	
Cervix	21.5	Colorectal	7.2	
Primary Unknown	6.9	Lung	6.8	
Colorectal	5.8	Primary unknown	6.7	
Uterus	4.5	Kaposi sarcoma	4.8	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Cancer incidence 2011.³²⁰ Age-standardised incidence (World Standard Population). Rates are also given by gender and population group in the source tables.
- b Cancer incidence 2012.³¹⁹ Age-standardised incidence (World Standard Population). Rates are also given by gender and population group in the source tables.

Risk behaviour and determinants of health

Context	There is strong evidence that behavioural, environmental, occupational, and metabolic risks are responsible for a high proportion of global deaths. Many of these risks act as clusters. The top 10 risks in South Africa have been identified as unsafe sex, high body-mass index, elevated fasting plasma glucose, elevated blood pressure, unsafe alcohol use, smoking, ambient particulate matter pollution, childhood under-nutrition, inadequate fruit intake and intimate partner violence.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • South African Community Epidemiology Network on Drug Use updates • National Income Dynamics Study Wave 4 (2015) Internationally, reports of interest include the: <ul style="list-style-type: none"> • Global Burden of Disease Study 2015
Key issues and trends	Illicit drug use remains a challenge in all regions, though the primary substance of abuse varies somewhat. However, both crystal methamphetamine ('tik') and low-grade heroin/cannabis mixtures ('nyaope'/'whoonga') require urgent attention. As injectable drug use becomes more prevalent, harm reduction interventions such as needle exchanges will need to be made far more accessible.

The Global Burden of Disease Study 2015 has published estimates of the number of attributable deaths, disability-adjusted life-years (DALYs), and trends in exposure by age group, sex, year, and geography for 79 behavioural, environmental and occupational, and metabolic risks or clusters of risks, for the period 1990 to 2015.³³³ In total, 388 risk-outcome pairs were considered. The risks were broadly characterised as environmental and occupational risks (such as unsafe sanitation or air pollution), behavioural risks (such as childhood stunting or smoking), and metabolic risks (such as high body-mass index). Jointly assessed, all of the risks were estimated to be responsible for 57.8% of global deaths. The top 10 risks in South Africa were listed as unsafe sex, high body-mass index, elevated fasting plasma glucose, elevated blood pressure, unsafe alcohol use, smoking, ambient particulate matter pollution, childhood under-nutrition, inadequate fruit intake and intimate partner violence. Based on data from the WHO Study on Global AGEing and Adult Health (SAGE) from China, Ghana, India, Mexico, Russia, and South Africa, from 2007 to 2010, it has been shown that those who achieve physical activity levels several times higher than the current recommended minimum have a significant reduction in the risk of breast cancer, colon cancer, diabetes, ischaemic heart disease, and ischaemic stroke.³³⁴ Urban design has a major impact on the extent to which physical activity can be safely and conveniently enjoyed.³³⁵ A WHO assessment has shown that 23% of global deaths and 26% of deaths among children under five are due to modifiable environmental factors.³³⁶

Two WHO reports in 2016 that were relevant to risk factor monitoring were those on air pollution⁵⁰ and chemicals.³³⁷ The relevant SDG indicators are SDG Indicator 11.6.2 (annual mean levels of fine particulate matter (PM_{2.5}) in cities (population-weighted) and SDG Indicator 3.9.1 (mortality rate attributed to household and ambient air pollution). WHO estimated that 7 429 deaths were attributable to ambient air pollution in South Africa in 2012. The worst pollution levels have been recorded in low- and middle-income countries in the eastern Mediterranean and South East Asia, but the most polluted city in the world is Onitsha in Nigeria.³³⁸

The International Union against Tuberculosis and Lung Disease Union has created an index – the Index of Tobacco Control Sustainability – to assess national tobacco control programmes, based on 31 indicators.³³⁹ Although no score for South Africa has been reported, the elements are worth considering. Using data from the National Income Dynamics Study, a positive effect of increased

tobacco taxes on smoking initiation has been shown in South Africa, at least among men.³⁴⁰ South Africa has an entirely unregulated market for electronic nicotine delivery systems (ENDS), which include e-cigarettes. The public health debate around the place of these devices in tobacco control continues to rage.³⁴¹

In September 2016, the South African Community Epidemiology Network on Drug Use (SACENDU) reported on the dominant substances of abuse reported by patients of specialist substance abuse treatment centres in the Western Cape, KwaZulu-Natal (mostly Durban and Pietermaritzburg), Eastern Cape (Port Elizabeth, East London), Gauteng province, Mpumalanga and Limpopo (referred to as the Northern Region), and the Free State, Northern Cape and North West (Central Region).³⁴² Alcohol remains the dominant substance of abuse, with cannabis as the most common illicit drug. Methamphetamine is the most common primary substance of abuse in the Western Cape, but an increasing number of patients in Port Elizabeth are using this substance. Heroin use, either smoked or injected, is a problem across most centres. In Gauteng, the combination of cannabis and heroin (called either 'nyaope' or 'whoonga') is an increasingly important problem. A retrospective audit of autopsy data from the Pretoria Medico-Legal Laboratory showed that screening for illicit substances was requested in only 385 out of 22 566 medico-legal autopsies over 10 years.³⁴³ Of these, 90.3% were male and 85.1% were White, indicating a profoundly biased sample.

Table 37: Behaviour and awareness indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Currently drink alcohol	1998	female SADHS	16.2	24.4	20.6	11.4	8.6	14.1	23.2	17.0	24.1	16.9	a	
		male SADHS	47.4	56.0	49.5	39.7	28.3	45.8	48.4	46.6	43.5	44.6	a	
	2003	female SADHS	10.5	21.0	21.0	3.6	11.3	8.3	29.3	18.2	28.8	15.5	b	
		male SADHS	42.5	45.9	48.4	14.1	33.6	41.0	51.8	52.5	55.1	39.1	b	
	2008	female NYRBS											29.5	c
		male NYRBS											40.5	c
		NYRBS	25.8	39.6	48.1	30.6	26.0	31.1	45.6	38.8	53.0	34.9	c	
	2011	female NYRBS											28.2	d
		male NYRBS											36.6	d
		NYRBS	25.7	46.2	43.7	25.8	21.1	31.9	49.2	38.5	44.4	32.3	d	
	2012	2011–2012 both sexes 15+ years Dikgale					84.4							e
Ever drank alcohol	1998	female SADHS	22.3	31.6	32.4	17.9	15.7	21.0	34.4	23.7	40.1	25.7	a	
		male SADHS	60.1	66.5	59.1	54.4	45.1	62.1	63.4	57.5	61.4	58.1	a	
	2003	female SADHS	18.1	27.5	27.8	6.6	17.2	12.3	39.1	21.5	39.2	21.6	b	
		male SADHS	58.8	52.5	56.6	22.2	45.7	43.2	61.4	57.9	70.3	48.5	b	
	2008	female NYRBS											45.1	c
		male NYRBS											54.4	c
		NYRBS	36.2	58.7	65.1	46.4	38.6	41.6	57.2	58.7	71.0	49.6	c	
	2011	female NYRBS											44.9	f
		male NYRBS											53.8	f
		NYRBS	42.6	60.5	66.7	42.8	30.2	46.1	67.1	58.9	66.2	49.2	f	
	2015	both sexes 15+ years NiDS	36.7	57.2	51.0	30.5	38.4	42.1	61.1	48.5	68.3	45.9	g	
		female 15+ years NiDS	20.3	48.0	38.2	15.0	21.4	25.2	50.6	31.3	58.6	31.5	g	
		male 15+ years NiDS	56.6	67.4	63.8	50.0	60.9	60.5	72.4	65.9	79.8	62.3	g	
Ever smoked cigarettes	1999	GYTS											46.7	h
	2003	female 15+ years SADHS	18.1	36.2	26.2	10.5	21.9	18.9	50.2	31.2	39.6	24.5	i	
		male 15+ years SADHS	54.4	49.7	49.2	25.4	41.8	44.0	63.4	48.1	62.2	44.9	i	
	2008	both sexes 15+ years NiDS											25.6	j
		female 15+ years NiDS											12.2	j
		male 15+ years NiDS											42.6	j
		female GYTS											25.4	k
		male GYTS											43.2	k
		GYTS											34.0	k
		female NYRBS											22.4	c
		male NYRBS											36.8	c
	NYRBS	22.2	33.0	40.5	24.5	21.7	23.1	33.8	30.8	54.8	29.5	c		
	2011	female GYTS											28.5	l
		female NYRBS											19.6	m
		Grade 8–11 GYTS											31.3	l
		male GYTS											34.9	l
		male NYRBS											35.9	m
		NYRBS	21.4	35.0	41.8	22.6	18.5	20.8	38.7	27.6	42.9	27.6	m	
	2012	15+ years SANHANES	22.5	32.2	16.0	20.8	14.4	17.6	33.2	14.9	38.5	20.8	n	
		2008–2012 female NiDS											10.2	o
		2008–2012 male NiDS											39.1	o
		both sexes 15+ years NiDS											22.5	j
		female 15+ years NiDS											9.8	j
		female 15+ years SANHANES	9.3	14.6	7.3	7.0	2.9	3.9	26.4	6.5	31.7	10.1	n	
		male 15+ years NiDS											37.6	j
		male 15+ years SANHANES	36.8	50.4	24.6	38.1	29.4	33.6	40.2	25.2	46.0	32.8	n	
		NYRBS	22.2	31.4	26.0	16.9	15.6	19.8	38.8	24.7	49.3	25.6	g	
	2015	both sexes 15+ years NiDS	7.2	12.6	10.9	4.0	3.0	4.7	29.0	3.8	38.4	11.3	g	
		female 15+ years NiDS	40.6	52.6	41.0	33.3	32.1	36.3	49.3	45.7	62.2	41.9	g	
male 15+ years NiDS														

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Frequent smokers	1999	GYTS										10.1	h	
	2002	GYTS										5.8	h	
	2008	female GYTS											2.4	h
		female NYRBS											3.1	c
		GYTS											5.0	k
		male GYTS											7.7	k
		male NYRBS											8.6	c
		NYRBS	5.5	5.5	8.3	4.1	3.3	3.0	7.9	6.4	14.6		5.8	c
	2011	female NYRBS											2.0	f
		male NYRBS											7.9	f
		NYRBS	3.4	8.8	7.9	3.6	3.5	3.1	8.7	3.7	7.6		4.9	f
	2012	2011–2012 both sexes 15+ years Dikgale						81.3						e
		both sexes 18+ years SANHANES	15.9	23.6	11.8	15.6	11.0	14.6	28.8	12.1	31.4		15.9	p
		female 18+ years SANHANES	5.6	8.4	3.0	3.6	2.0	3.4	23.1	4.9	25.6		6.5	p
		male 18+ years SANHANES	27.1	39.3	20.6	31.5	23.0	27.3	34.7	21.2	38.0		26.6	p
Number of admissions for alcohol and other drug abuse	2006	Jul-Dec SACENDU	645.0		3 295.0	921.0		539.0			2 798.0	8 771.0	q	
	2010	Jul-Dec SACENDU	707.0		2 884.0	669.0					2 933.0	8 407.0	r	
	2015	Jul-Dec both sexes all ages SACENDU	471.0		3 570.0	1 171.0					2 674.0	9 679.0	s	
Percentage participating in insufficient physical activity	2002	both sexes NYRBS	41.5	31.9	31.2	42.3	35.5	32.6	46.2	33.2	41.7	37.5	t	
		female NYRBS	45.9	38.4	37.9	46.5	40.7	35.5	58.3	37.9	49.1	43.0	t	
		male NYRBS	35.3	24.4	23.8	37.0	28.6	29.0	26.2	28.0	30.8	30.5	t	
	2003	female 15+ years SADHS	76.3	92.0	85.9	94.0	69.9	79.5	95.0	94.2	92.5		86.0	u
		male 15+ years SADHS	58.7	83.3	82.0	85.4	59.2	66.2	84.3	75.1	78.1		76.4	u
	2008	both sexes 50+ years SAGE											60.5	v
		both sexes Grade 8–11 NYRBS	45.4	30.2	39.0	43.6	36.8	44.4	48.6	35.2	51.6		41.5	c
		female 50+ years SAGE											63.1	v
		female Grade 8–11 NYRBS											46.2	c
		male 50+ years SAGE											57.2	v
		male Grade 8–11 NYRBS											36.7	c
		male Grade 8–11 NYRBS											36.7	c
	2011	both sexes Grade 8–11 NYRBS	43.8	37.6	38.1	49.7	42.4	35.4	35.9	38.0	49.9		42.8	f
		female Grade 8–11 NYRBS											47.5	f
		male Grade 8–11 NYRBS											37.7	f
	2012	2011–2012 both sexes 15+ years Dikgale					66.5							e
	2014	both sexes 18+ years											47.1	w
		female 18+ years											53.1	w
male 18+ years												40.5	w	
Prevalence of smoking	1980	female IHME										10.4	x	
		IHME											25.0	x
		male IHME											40.4	x
	1996	female IHME											9.6	x
		IHME											23.4	x
		male IHME											38.5	x
	1998	female SADHS	10.8	10.9	12.2	4.8	1.8	6.3	31.0	7.6	29.4		10.7	y
		male SADHS	45.9	44.0	42.4	38.1	29.2	40.0	57.7	45.3	48.9		42.3	y
		SADHS											24.0	y
	1999	female GYTS											17.5	z
		GYTS											23.0	z
		male GYTS											28.8	z
	2000	AMPS											27.1	aa
		female AMPS											11.7	aa
		male AMPS											44.0	aa
	2003	female 15+ years SADHS	8.9	11.7	9.4	4.2	3.8	4.0	35.0	7.3	28.7		10.2	ab
		male 15+ years SADHS	43.9	40.6	38.5	21.0	24.9	33.4	51.4	37.6	49.8		35.1	ab
	2006	female IHME											8.5	x
		IHME											15.5	x
		male IHME											23.1	x

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref		
Primary drug of abuse as % of all drugs of abuse	2008	50+ years SAGE										19.4	ac		
		both sexes 15+ years NiDS										21.2	j		
		female 15+ years NiDS										9.1	j		
		female Grade 8–11 NYRBS										15.8	c		
		female GYTS										10.5	z		
		Grade 8–11 NYRBS	16.8	22.1	26.7	18.2	17.3	17.4	27.0	19.9	36.7	21.0	c		
		GYTS										16.5	z		
		male 15+ years NiDS										36.5	j		
		male Grade 8–11 NYRBS										26.4	c		
		male GYTS										22.8	z		
	2011	female GYTS											12.1	z	
		female NYRBS											12.1	ad	
		GYTS											16.9	z	
		GYTS factsheet											12.7	l	
		male GYTS											21.7	z	
		male NYRBS											23.2	ad	
		NYRBS	13.7	24.9	25.0	15.6	12.5	13.2	23.2	16.3	25.1	17.6	ad		
	2012	2011–2012 both sexes 15+ years Dikgale					13.7							e	
		both sexes 15+ years NiDS											19.6	j	
		both sexes 18+ years SANHANES	18.4	27.4	13.0	17.8	12.8	15.3	31.2	12.7	32.9	17.6	ae		
		female 15+ years NiDS											7.8	j	
		female 18+ years SANHANES	6.7	8.5	4.4	4.1	2.1	3.6	24.5	5.2	26.8	7.3	ae		
		female IHME											9.1	x	
		IHME											15.3	x	
		male 15+ years NiDS											33.6	j	
		male 18+ years SANHANES	31.4	46.9	21.8	35.7	26.9	28.7	38.3	22.3	39.6	29.2	ae		
	male IHME											22.0	x		
	2013	both sexes 18+ years WHO age-standardised											16.0	af	
	2015	both sexes 15+ years NiDS	19.1	23.1	20.2	14.6	12.2	16.2	32.8	20.5	36.5	20.3	g		
		female 15+ years NiDS	6.2	6.7	7.2	2.4	2.1	3.5	24.2	2.9	27.3	7.9	g		
		male 15+ years NiDS	34.9	41.5	33.3	30.0	25.5	30.1	42.1	38.1	47.3	34.5	g		
	2006	Jul-Dec alcohol	45.0		48.0	54.0			47.0			26.0		ag	
		Jul-Dec cannabis	19.0		22.0	19.0			34.0			11.0		ag	
		Jul-Dec cocaine	19.0		11.0	11.0			5.0			5.0		ag	
		Jul-Dec heroin	2.0		10.0	9.0			10.0			10.0		ag	
		Jul-Dec mandrax	8.0		1.0	1.0			0.4			3.0		ag	
		Jul-Dec methamphetamine	3.0		0.2	0.0			0.0			42.0		ag	
		2010	Jul-Dec alcohol	44.0		41.0	55.0						28.0		ag
			Jul-Dec cannabis	18.0		28.0	26.0						18.0		ag
			Jul-Dec cocaine	7.0		6.0	6.0						2.0		ag
			Jul-Dec heroin	5.0		12.0	9.0						12.0		ag
			Jul-Dec mandrax	6.0		2.0	2.0						3.0		ag
Jul-Dec methamphetamine			9.0		1.0	1.0						35.0		ag	
2015		Jul-Dec alcohol	24.0		20.0	37.0						20.0		s	
	Jul-Dec cannabis	31.0		39.0	34.0						25.0		s		
	Jul-Dec cocaine	3.0		4.0	5.0						1.0		s		
	Jul-Dec heroin	2.0		12.0	7.0						11.0		s		
	Jul-Dec mandrax	10.0		3.0	6.0						5.0		s		
Jul-Dec methamphetamine	25.0		4.0	1.0						37.0		s			

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸
- b SADHS 2003.¹⁷⁷ Currently drink alcohol defined as those who drank alcohol in the past 12 months.
- c NYRBS 2008.¹⁹⁴
- d NYRBS 2011.¹⁹⁶ Defined in survey as 'Used alcohol in the past month'.
- e Maimela et al. 2016.²⁷⁶ Data representative only of DSS site, not the entire province. Defined in survey as "consumed alcoholic drinks in past 30 days".
- f NYRBS 2011.¹⁹⁶
- g NiDS Wave 4 v1.1.²⁰⁵
- h GYTS 2002.³⁴⁴
- i SADHS 2003.¹⁷⁷ Any tobacco products.
- j NCD Trends 2015.²⁷⁵

- k GYTS 2008.³⁴⁵
- l GYTS 2011.³⁴⁶ Results quite different to those published by Reddy et al. from same survey.
- m NYRBS 2011.¹⁹⁶ Defined as 'Ever smokers' in survey.
- n SANHANES-1.⁹⁹ Indicated as 'have ever smoked tobacco' in SANHANES survey.
- o Vellios et al. 2016.³⁴⁰
- p Reddy et al. 2015.³⁴⁷ Data reported as 'Current daily smoking'
- q SACENDU.³³ The total figure includes patients from FS, NW and NC combined.
- r SACENDU.³³ The total figure includes patients from MP and LP (Northern Region) and from FS, NW and NC combined (Central Region).
- s SACENDU Phase 39.³⁴²
- t NYRBS 2002.¹³⁰ Note: Data updated from errata received from MRC, May 2004, therefore doesn't correspond completely with source.
- u SADHS 2003.¹⁷⁷ Inactive or minimally active.
- v Phaswana-Mafuya et al. 2013.³⁴⁸
- w Global Diabetes 2016.²⁷⁷ Underlying data source or year of data not clear.
- x Smoking 1980–2012.³⁴⁹ Age-standardised prevalence.
- y SADHS 1998.¹⁹⁸ Percentage who smoke daily or occasionally.
- z Reddy et al. 2013.³⁵⁰ Smoked cigarettes on 1 or more days in the past 30 days.
- aa SAMJ 92(468–72).³⁵¹
- ab SADHS 2003.¹⁷⁷ Percentage who currently smoke daily or occasionally.
- ac Wu et al. 2015.³⁵²
- ad NYRBS 2011.¹⁹⁶ Defined in survey as 'Current smokers'.
- ae Reddy et al. 2015.³⁴⁷
- af Global Tobacco 2015.³⁵³
- ag SACENDU.³³

Table 38: Behaviour and awareness indicators by population group

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Currently drink alcohol	1998	female SADHS	12.3	23.7	9.0	50.5		a
		male SADHS	41.4	44.7	37.3	71.0		a
	2003	female SADHS	11.4	27.7	24.4	50.9		b
		male SADHS	35.2	52.3	50.3	69.9		b
	2008	NYRBS	31.8	48.7	34.8	56.4	39.1	c
	2011	NYRBS	29.6	51.7	36.7	50.7	33.7	d
Ever drank alcohol	1998	female SADHS	18.8	40.6	69.8	14.9		a
		male SADHS	53.4	63.6	64.7	84.9		a
	2003	female SADHS	16.4	40.2	37.7	58.6		e
		male SADHS	44.2	68.0	66.3	74.5		e
	2008	NYRBS	45.5	67.0	62.6	75.9	47.3	c
	2011	NYRBS	45.7	73.3	68.9	77.6	45.4	f
	2015	both sexes 15+ years NiDS	41.3	65.6	32.7	70.3		g
		female 15+ years NiDS	25.0	58.9	12.9	63.2		g
		male 15+ years NiDS	59.6	73.3	52.7	79.2		g
Ever smoked cigarettes	2002	NYRBS	23.9	56.6	47.4	66.7		h
	2003	female 15+ years SADHS	20.2	52.5	24.1	37.5		e
		male 15+ years SADHS	41.8	60.7	56.0	67.4		e
	2008	NYRBS	24.4	54.4	50.6	53.4	27.1	c
	2011	NYRBS	23.9	54.8	40.5	49.2	30.0	f
	2012	15+ years SANHANES	17.4	44.9	25.2	24.5		h
		female 15+ years SANHANES	4.8	39.7	9.4	23.7		h
		male 15+ years SANHANES	31.4	50.8	41.4	25.5		h
	2015	both sexes 15+ years NiDS	20.6	56.3	21.4	40.3		g
		female 15+ years NiDS	3.8	50.7	4.9	36.9		g
male 15+ years NiDS		39.4	62.8	38.1	44.8		g	
Frequent smokers	2008	NYRBS	4.2	13.1	13.0	16.0	6.0	c
	2011	NYRBS	3.9	12.6	5.5	12.7	4.7	f
	2012	both sexes 18+ years SANHANES	13.3	38.0	20.1	14.9		i
		female 18+ years SANHANES	2.6	32.1	4.8	12.8		i
		male 18+ years SANHANES	25.5	45.1	35.6	17.3		i
Percentage participating in insufficient physical activity	2002	both sexes NYRBS	37.5	45.6	33.0	29.4		h
		female NYRBS	42.4	56.8	36.0	37.0		h
		male NYRBS	31.1	32.5	30.1	19.9		h
	2003	female 15+ years SADHS	85.3	91.6	83.0	89.2		e
		male 15+ years SADHS	75.4	81.1	76.6	83.5		e
	2008	both sexes 50+ years SAGE	57.7	76.9	52.3	55.7		j
		both sexes Grade 8–11 NYRBS	46.5	50.9	55.1	27.2	51.2	c
	2011	both sexes Grade 8–11 NYRBS	42.9	47.2	38.7	29.2	45.5	f

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Prevalence of smoking	1999	GYTS	18.4	37.4	23.4	29.0		k
	2000	AMPS	22.7	48.7	28.2	36.6		l
	2002	GYTS	15.7	38.7	21.4	21.7		k
	2003	female 15+ years SADHS	5.2	41.8	13.1	27.3		m
		male 15+ years SADHS	32.8	52.1	55.5	35.7		m
	2008	Grade 8–11 NYRBS	17.9	35.9	26.5	34.4	25.9	c
		GYTS	13.0	38.0	28.3	25.6		k
	2011	GYTS	15.4	31.4	26.5	12.4		k
		NYRBS	15.9	31.9	25.3	24.2	14.9	f
	2012	both sexes 18+ years SANHANES	15.1	40.1	22.1	15.3		n
		female 18+ years SANHANES	3.3	34.4	7.5	12.9		n
		male 18+ years SANHANES	28.5	47.0	36.8	18.0		n
	2015	both sexes 15+ years NiDS	17.0	45.4	20.0	24.6		g
		female 15+ years NiDS	2.6	39.8	4.8	22.0		g
male 15+ years NiDS		33.2	51.7	35.4	28.1		g	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SADHS 1998.¹⁹⁸
- b SADHS 2003.¹⁷⁷ Those who drank alcohol in the past 12 months.
- c NYRBS 2008.¹⁹⁴
- d NYRBS 2011.¹⁹⁶ Defined in survey as 'Used alcohol in the past month'.
- e SADHS 2003.¹⁷⁷
- f NYRBS 2011.¹⁹⁶
- g NiDS Wave 4 v1.1.²⁰⁵
- h NYRBS 2002.¹³⁰
- i Reddy et al. 2015.³⁴⁷ Data reported as 'Current daily smoking'
- j Phaswana-Mafuya et al. 2013.³⁴⁸
- k Reddy et al. 2013.³⁵⁰ Smoked cigarettes on 1 or more days in the past 30 days.
- l SAMJ 92(468–72).³⁵¹
- m SADHS 2003.¹⁷⁷ Percentage who currently smoke daily or occasionally.
- n Reddy et al. 2015.³⁴⁷

Injuries

Context	Injuries disproportionately affect younger adults, and are thus of increased economic importance. Although the feasibility of collecting routine trauma-specific data has been demonstrated, the new National Indicator Dataset (NIDS) does not include a trauma module.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Second National Burden of Disease Study 1997–2012 • Stats SA Causes of death 2015
Key issues and trends	As was noted in previous editions of the Review, no new data have been issued by the Road Traffic Management Corporation since 2011. Alternative estimates, based on various sources, have been issued in the Medical Research Council’s Second National Burden of Disease Study 1997–2012, but these are also somewhat dated. High rates of child homicide, and in particular neonaticide, need to be interpreted in the light of poor access to sexual and reproductive health services, including contraception and termination of pregnancy services.

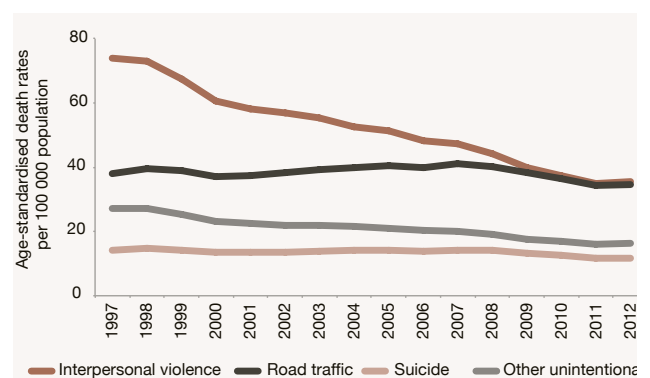
As can be seen from Table 39, updated data on road traffic accident-associated fatalities were last issued by the Road Traffic Management Corporation (RTMC) in 2011. A systematic review and meta-analysis of 39 studies from 15 African countries produced an estimated pooled road traffic injury rate of 65.2 per 100 000 population and a fatality rate of 16.6 per 100 000 population.³⁵⁴ Across Africa the highest road traffic death rate was among occupants of motorised four-wheeler vehicles (5.9 per 100 000 population), but that was closely followed by the fatality rate for pedestrians (3.4 per 100 000 population). This study underscored the problem of missing data and inadequate recording of deaths and their causes. Of the seven South African studies included, none was more recent than 2008. At a provincial level, an audit in KwaZulu-Natal recorded 197 219 emergency room visits for trauma (45% intentional) in the 2013/2014 financial year, resulting in 18 716 admissions and 1 045 inpatient deaths.³⁵⁵ This study thus estimated an overall provincial rate of trauma at 17 per 1 000 population. These data were produced by a pilot study of the inclusion of trauma indicators in the routine District Health Information System (DHIS). The data collected were a count of all patients seen in the emergency room with a diagnosis of trauma, the mechanism of the trauma (blunt assault, motor vehicle collision, pedestrian vehicle collision, stab, gunshot wound, other), whether the patient was admitted to a health facility for longer than twelve hours, whether the patient required transfer to a higher level of care, and all trauma deaths in hospital. However, trauma-specific data elements and indicators have not been included in the new National Indicator Dataset (NIDS), to be implemented from 1 April 2017. Nonetheless, without accurate mortuary surveillance data, the DHIS will always return an underestimate of the true burden of trauma. The Second National Burden of Disease Study 1997–2012 noted a decline in deaths due to road injuries, from an age-standardised rate of 38 per 100 000 in 1997 to 35 in 2012 (8.9% decrease), but this remained the 9th leading cause of death (Figure 20).⁷⁴ In 2012, injuries from all causes were responsible for 9.6% of all deaths, mainly affecting young adults. Nationally, interpersonal violence was responsible for as large a proportion of life years lost (4.2%) as road traffic injuries (4.5%), but in four provinces (Western Cape, Northern Cape, Eastern Cape, KwaZulu-Natal), interpersonal violence was responsible for a greater proportion of life years lost than road traffic injuries.

The issue of intimate partner violence was brought to the fore by Médecins Sans Frontières’ account of sexual violence in the Rustenburg area.³⁵⁶ The survey reported that “one in four women living in Rustenburg has been raped in her lifetime, and approximately half have been subject to some form of sexual violence or intimate

partner violence”. A survey of 3 515 children aged 10–17 years (56.6% female) in Mpumalanga and the Western Cape reported a 56.3% prevalence for lifetime physical abuse, 35.5% for lifetime emotional abuse, and 9% for lifetime sexual abuse.³⁵⁷

Based on a random sample of 38 medico-legal laboratories, a retrospective national cross-sectional study of child homicide was conducted, extracting data from mortuary files and autopsy reports for 2009.³⁵⁸ The study estimated that 454 children under the age of 5 years were killed in South Africa in 2009, of which 53.2% were neonates. The calculated neonaticide rate was therefore 19.6 per 100 000 live births and the infanticide rate 28.4 per 100 000 live births. An accompanying editorial pointed out that neonaticide accounted for almost 1.5% of all neonatal deaths in South Africa in 2009.³⁵⁹

Figure 20: Injury mortality trends in South Africa, 1997–2012



Source: Pillay-van Wyk et al. 2016⁷⁴ as presented at the National Health Information System of South Africa (NHISSA) meeting in February 2017.

Table 39: Injury indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Always wear a seat belt when driven by someone else	2008	NYRBS	12.8	16.2	18.4	13.6	18.5	17.5	13.6	16.2	11.6	15.5	a	
	2011	NYRBS	14.6	25.2	29.1	16.6	24.6	22.4	25.4	24.9	19.2	21.5	b	
Drove after drinking alcohol	2008	female NYRBS										18.0	a	
		male NYRBS										29.2	a	
		NYRBS	19.3	22.0	27.1	26.7	31.8	31.3	26.2	23.6	21.4	25.9	a	
	2011	female NYRBS											8.4	b
		male NYRBS											14.5	b
		NYRBS	10.9	19.4	19.2	10.6	8.1	10.8	12.0	13.6	11.7	12.8	b	
Intimate partner violence prevalence (%)	2014	2013–2014 female 16+ years SAHMS physically assaulted			50.9	14.1					47.3		c	
		2013–2014 female 16+ years SAHMS sexually assaulted			21.9	16.6					16.2		c	
Percentage adults experienced work-related illness/injuries	1998	SADHS	6.3	5.1	8.0	9.0	8.2	7.1	7.4	2.8	8.2	7.3	d	
	2003	SADHS	7.5	7.2	6.4	2.7	7.4	5.5	4.7	6.5	8.6	6.2	e	
Road accident fatalities per 100 000 population	1990	RTMC										36.5	f	
	1995	RTMC										25.2	f	
	2000	RTMC										19.6	f	
	2005	RTMC	20.7	36.3	28.9	28.8	25.5	42.3	32.4	37.8	33.3	29.9	f	
	2009	both sexes postmortem											36.1	g
		female postmortem											16.8	g
		male postmortem											57.2	g
	2010	RTMC	26.5	41.4	19.5	26.2	28.1	44.0	40.1	36.2	25.3	27.9	h	
	2011	RTMC										27.6	f	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a NYRBS 2008.¹⁹⁴ Learners in grades 8–11.
b NYRBS 2011.¹⁹⁶
c SAHMS 2013–14.¹¹⁰ Among female sex workers.
d SADHS 1998.¹⁹⁸
e SADHS 2003 (Preliminary).²⁵³
f Arrive Alive.³⁶⁰
g Matzopoulos et al. 2015.³⁶¹
h Road Accidents 2010.³⁶² Total of 13 966 road accident facilities in 2010. Calculated using Stats SA mid-year population estimates for the relevant year.

Table 40: Injury indicators by population group

Indicator	Year	Subgroup	African/Black	Coloured	Indian/Asian	White	Other/Unspecified	Ref
Always wear a seat belt when driven by someone else	2008	NYRBS	14.0	12.2	18.6	38.0	20.0	a
	2011	NYRBS	19.7	22.3	28.4	48.0	27.4	b
Drove after drinking alcohol	2008	NYRBS	26.0	27.7	23.1	20.0	37.9	a
	2011	NYRBS	11.7	23.4	21.1	15.6	1.2	b
Percentage adults experienced work-related illness/injuries	1998	SADHS	6.6	8.6	6.3	8.9		c
	2003	SADHS	6.7	5.8	5.6	4.6		d
Road accident fatalities per 100 000 population	2009	both sexes postmortem	37.2	28.4	37.0	37.2		e

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a NYRBS 2008.¹⁹⁴ Learners in grades 8–11.
b NYRBS 2011.¹⁹⁶
c SADHS 1998.¹⁹⁸
d SADHS 2003 (Preliminary).²⁵³
e Matzopoulos et al. 2015.³⁶¹

Health services indicators

Health facilities

Context	Although the implementation of National Health Insurance will demand consideration of the entire health services infrastructure, as a national resource, data sources are still fragmented and incomplete, and to a great extent only cover the public health sector. Some data on private sector health service delivery are being presented in the technical reports developed by the Competition Commission Health Market Inquiry. ^f
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Stats SA General Household Survey 2015 • Auditor-General of South Africa Performance audit of the management of pharmaceuticals at departments of health 2016 • Stop Stock Outs Project report 2015 • Helen Suzman Foundation Pharmaceuticals in South Africa – an enquiry 2016
Key issues and trends	The Auditor-General of South Africa's report on the management of pharmaceuticals at departments of health has focused attention on the chronic under-investment in this important health systems building block.

Each year the Statistics South Africa General Household Survey includes questions about users' satisfaction with health services. The most recent survey, for 2015, again reported that the majority of households that attended public health-care facilities (81.1%) or private health-care facilities (97.7%) were either very satisfied or satisfied with the service they received.⁴⁰ In the vast majority of households (92.8%), the nearest health facility of its type was consulted first. The proportion of households that would first consult a public sector clinic or hospital (70.5%) has remained relatively constant since 2004, but with a marked shift towards clinics and away from hospitals, reflecting not only improved access but also the effect of bypass fees. As before, very few households indicated that they would first consult a pharmacy (0.4%) or a traditional healer (0.5%). Implementing National Health Insurance, as a means to achieving the SDG goal of universal health coverage, will require that the entire health sector infrastructure is mobilised. To date, the experience of general practitioners who have been contracted to deliver services in public sector clinics has revealed significant challenges, many related to the quality of infrastructure and equipment.³⁶³ Specifically in relation to child health, an argument has been made for greater use of community health workers (CHW), and for this cadre to be enabled to provide more than just basic preventive services and adherence support counselling.³⁶⁴

Particular attention still needs to be paid to rational and responsible medicines use, and to the problem of stock outs at public sector facilities. In 2016, the Auditor-General delivered a hard-hitting assessment of the management of pharmaceuticals at national and provincial levels of the public sector.^{365,366} The Auditor-General noted that necessary policies were in place, but not implemented, that pharmaceutical budgets did not align with health needs, but most critically, that a shortage of pharmacists and pharmacist's assistants meant that nurses' workloads were increased, negatively affecting quality of care. Inadequate standards of performance at the provincial depots were also identified. At health facility level, pharmaceutical infrastructure was inadequate to meet patient needs. Although some interventions (such as the stock visibility system and the Central Chronic Medicines Dispensing and Distribution (CCMDD) programme) are expected to make a difference, much will need to be done to overcome decades of under-investment in pharmaceutical systems, infrastructure and human resources. An assessment of the pharmaceutical infrastructure of the country as a

whole, by the Helen Suzman Foundation concluded that the "existing network of retail pharmacies and hospitals is not adequate for the provision of pharmaceuticals to the public".³⁶⁷ The third annual report from the civil society-conducted Stop Stock Outs Project (SSP) was published in 2016.³⁶⁸ Based on telephonic surveys in 2015, 589 out of 2 414 health facilities (25%) reported that at least one antiretroviral or TB medicines had been out of stock in the preceding 3 months. The new National Indicator Data Set (NIDS) for 2017–2019 will include a count of stable patients served by the CCMDD programme, but this will be inadequate to track medicines availability, both in hospitals and for ambulatory care. Putting the stock visibility programme data into the public domain would make a difference. The Lancet Commission on Essential Medicines Policies has recommended that it is "desirable to have multiple independent institutions, including academic centres, studying essential medicines availability, prices, and consumption" and has also emphasised the positive consequences of increased transparency in this field.³⁶⁹ Access to medicines was one of the MDG goals that was inadequately measured.³⁷⁰ As before, only one medical scheme administrator has placed private sector medicines-related data in the public domain.³⁷¹ Of all items claimed in 2015, 56.2% were for generic medicines, up slightly from 55.6% in 2014. Put another way, "in 76.5% of instances where a generic equivalent was available, the generic medicine was used".

Table 45 shows key coverage statistics for birth and death registration over time. Both of these are included in the WHO 100 Core Health Indicators, and were previously identified as being data elements for which South African data are not readily available or routinely reported.^{8,372}

^f <http://www.compcom.co.za/healthcare-inquiry/>

Table 41: Health services indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Percentage of users of private health services very satisfied with the service received	2009	GHS	95.1	92.4	91.2	94.7	92.2	87.8	95.6	94.2	92.5	92.5	a	
	2012	GHS	96.0	93.5	94.7	81.0	94.1	93.0	87.0	91.8	94.1	92.2	b	
		SANHANES inpatient care											69.5	c
		SANHANES outpatient care											57.1	c
	2015	GHS	93.5	89.2	91.3	87.8	97.3	95.3	91.3	89.8	94.6	91.9	d	
Percentage of users of public health services very satisfied with the service received	2009	GHS	56.0	41.8	52.9	53.7	67.4	46.8	65.8	44.8	58.1	54.5	a	
	2012	GHS	64.6	61.4	52.3	51.6	67.5	59.2	61.7	50.7	57.8	57.3	b	
		SANHANES inpatient care											32.7	c
		SANHANES outpatient care											24.5	c
	2015	GHS	60.5	53.3	57.0	56.2	73.1	59.2	60.2	50.9	45.5	57.6	d	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Stats SA GHS 2011.⁶²
- b Stats SA GHS 2012.⁹⁸
- c SANHANES-1.⁹⁹
- d Stats SA GHS 2015.⁴⁰

Table 42: Health facilities indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Number of health facilities	1998	private sector total	14	7	66	27	2	5	4	10	27	162	a	
		provincial-aided hosp											43	b
		public clinics											2 604	b
		public hospitals											343	b
		public sector CHCs											101	b
	2009	DHIS central hospitals		2	4	1						3	10	c
		DHIS district hospitals	62	24	11	39	30	23	17	14	31	251	c	
		DHIS provincial hospitals	7			3	2	2					14	c
		DHIS public hospitals	90	32	31	75	41	33	21	20	58	401	c	
		DHIS regional hospitals	2	5	11	12	5	3	1	4	9	52	c	
		DHIS specialised hospitals	19	1	5	20	4	5	3	2	15	74	c	
	2010	private hospitals	15	16	84	33	8	9	3	14	34	216	d	
	2015	DHIS all main types	1 132	446	675	1 060	718	514	262	462	716	5 985	c	
		DHIS central hospitals	1	1	4	1					2	9	c	
		DHIS CHC/CDC	41	12	38	21	28	57	33	47	89	366	c	
		DHIS district hospitals	65	25	12	40	32	23	11	13	34	255	c	
		DHIS mobile services	187	129		241	166	110	63	79	165	1 140	c	
		DHIS private clinics	18	6	113	24		5	5	17	81	269	c	
		DHIS private hospitals	23	26	107	45	12	23	7	18	52	313	c	
		DHIS provincial hospitals	3	1	3	3	2	2	1	2	1	18	c	
DHIS public clinics		771	238	375	650	469	286	137	281	268	3 475	c		
DHIS regional hospitals		5	4	9	12	5	3	1	3	8	50	c		
DHIS specialised hospitals	18	4	14	23	4	5	4	2	16	90	c			

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a SAHR 1998 Ch13.³⁷³ Based on membership of the Hospital Association of South Africa. Virtually all private hospitals with inpatient treatment facilities are members of HASA.
- b SAHR 1999 Ch9.³⁷⁴
- c DHIS.³⁴
- d Hospitals Direct Database.³⁷⁵

Table 43: Inpatient health facility indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Average length of stay – total	2000	DHIS	8.8	5.9	6.0	5.1	6.8	4.7	3.9	6.8	6.5	6.1	a	
	2005	DHIS	7.1	5.1	5.2	6.4	5.8	4.6	3.4	5.9	6.1	5.8	a	
	2010	DHIS	6.7	4.9	5.1	6.9	5.5	4.7	3.3	5.7	5.3	5.7	a	
	2015	DHIS	7.2	5.7	5.8	7.0	5.7	5.0	4.6	7.2	5.7	6.2	a	
Hospital bed density (beds per 1 000 target population)	2003	DHIS central hospitals	0.0	0.4	1.0	0.3	0.0	0.0	0.0	0.0	0.0	1.0	0.3	b
		DHIS district hospitals	1.3	1.0	0.2	1.2	1.3	0.7	1.3	1.0	0.5	1.0	1.0	b
		DHIS public sector	2.8	2.9	2.7	3.5	2.4	1.4	2.3	2.3	3.4	2.8	2.8	b
		DHIS regional hospitals	0.7	0.8	1.0	1.0	0.7	0.5	0.6	0.7	0.5	0.5	0.8	b
		DHIS specialised hospitals	0.8	0.6	0.4	0.9	0.4	0.2	0.4	0.5	1.4	0.7	0.7	b
	2004	Hospital Yearbook private sector	5.2	6.4	6.5	4.1	1.0	3.4	6.8	4.3	3.9	5.1	5.1	c
	2009	DHIS district hospitals	1.0	0.6	0.3	0.9	0.8	0.9	0.8	0.8	0.4	0.5	0.7	b
		DHIS public sector	2.5	2.1	2.2	2.5	1.6	1.7	2.0	1.5	2.5	2.2	2.2	b
		DHIS regional hospitals	0.1	0.7	0.8	0.8	0.3	0.3	0.7	0.6	0.6	0.6	0.6	b
		Econex public and private											2.5	d
	2010	Hospitals Direct private sector	2.1	4.9	4.8	2.7	1.3	2.4	2.0	3.6	3.4	3.5	3.5	e
	2014	DHIS central hospitals	0.1	0.3	0.7	0.1						0.5	0.2	b
		DHIS district hospitals	1.0	0.7	0.3	0.9	0.8	0.8	0.6	0.5	0.6	0.7	0.7	b
		DHIS provincial hospitals	0.3	0.3	0.2	0.1	0.2	0.2	0.7	0.2	0.1	0.2	0.2	b
		DHIS public sector	2.2	2.1	1.8	2.4	1.5	1.3	1.6	1.6	2.1	1.9	1.9	b
		DHIS regional hospitals	0.4	0.5	0.5	0.8	0.3	0.2	0.2	0.6	0.3	0.5	0.5	b
DHIS specialised psychiatric		0.2	0.3	0.2	0.3	0.2		0.1	0.4	0.4	0.2	0.2	b	
DHIS specialised TB	0.3			0.2	0.0	0.1	0.0			0.2	0.1	b		
Inpatient bed utilisation rate – total	2000	DHIS	63.0	70.2	66.1	62.9	61.1	57.0	68.8	68.9	78.4	65.4	a	
	2005	DHIS	60.2	71.3	75.8	65.2	69.8	65.2	62.2	68.3	83.0	69.1	a	
	2010	DHIS	70.8	69.4	73.1	64.8	68.3	66.0	59.3	69.9	79.8	70.0	a	
	2015	DHIS	66.7	69.0	76.5	65.4	74.0	71.4	65.7	74.6	85.1	72.0	a	
Inpatient crude death rate	2009	DHIS	6.9	6.4	5.4	6.6	5.9	6.8	4.8	5.6	2.6	5.6	a	
	2010	DHIS	6.5	6.1	5.2	6.6	5.6	6.5	4.6	6.0	2.9	5.5	a	
	2015	DHIS	6.3	5.8	4.7	5.2	5.4	5.5	5.1	6.5	2.9	5.0	a	
Number of beds	1998	private sector	1 207	827	10 049	3 371	273	627	288	928	3 338	20 908	20 908	f
		public sector											107 634	g
	2010	DHIS central hospitals		613	6 151	820						1 473	9 057	h
		DHIS district hospitals	6 177	1 535	2 236	8 606	4 050	2 732	798	1 483	2 308	29 925	29 925	h
		DHIS provincial hospitals	3 757			471	952	644				5 824	5 824	h
		DHIS public sector	13 477	4 848	16 684	23 928	7 744	4 744	1 468	4 615	9 266	86 774	86 774	h
		DHIS regional hospitals	556	1 823	6 222	8 768	1 555	906	635	1 868	2 329	24 662	24 662	h
		DHIS specialised hospitals	2 987	877	2 075	5 263	1 187	462	35	1 264	3 156	17 306	17 306	h
		private sector	1 723	2 337	14 278	4 514	600	1 252	293	1 685	4 385	31 067	31 067	i
		2014	DHIS central hospitals	527	636	6 053	846					2 359	10 421	10 421
	DHIS district hospitals	6 120	1 598	2 538	8 637	4 153	2 796	583	1 494	2 784	30 703	30 703	h	
	DHIS provincial hospitals	1 615	609	2 172	995	1 003	725	657	471	272	8 518	8 518	h	
	DHIS public sector	13 200	4 798	16 656	22 048	7 745	4 745	1 523	5 132	12 421	85 362	85 362	h	
	DHIS regional hospitals	2 122	1 195	4 425	7 091	1 533	840	141	1 953	1 384	20 682	20 682	h	
	DHIS specialised psychiatric	1 316	760	1 468	2 456	994			106	1 214	1 692	10 007	10 007	h
	DHIS specialised TB	1 500			2 023	62	384	36			1 026	5 031	5 031	h
2015	DHIS public sector	14 039	4 765	18 026	22 701	7 687	4 764	1 890	4 661	11 086	89 619	89 619	h	
Usable beds per 1 000 total population	2009	DHIS	2.2	1.7	1.5	2.1	1.5	1.4	1.8	1.4	2.0	1.8	a	
	2010	DHIS	2.2	1.7	1.5	2.1	1.5	1.3	1.5	1.4	2.0	1.8	a	
	2015	DHIS	2.0	1.7	1.3	2.1	1.3	1.1	1.6	1.2	1.8	1.6	a	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DHIS.³⁴ All facility types.
- b DHIS.³⁴ Calculated from DHIS usable beds per 1 000 uninsured population.
- c Hospital Yearbook 2004.³⁷⁶ Calculated from Hospital Yearbook data on beds, per 1 000 population with medical scheme cover from Stats SA GHS.
- d Econex Health Reform Note 4.³⁷⁷
- e Hospitals Direct Database.³⁷⁵ Calculated from Wilbury & Claymore data on beds, per 1 000 population with medical scheme cover from Stats SA GHS.
- f SAHR 1998 Ch13.³⁷³ Based on membership of the Hospital Association of South Africa. Virtually all private hospitals with inpatient treatment facilities are members of HASA. Table 5 pg 148.
- g SAHR 1999 Ch9.³⁷⁴ Figure 1 pg 104.
- h DHIS.³⁴ Usable beds for all main public sector facility types.
- i Hospitals Direct Database.³⁷⁵

Table 44: PHC health facilities indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Any ARV and/or TB drug stock out rate	2013	Stock outs survey	19.9	53.9	20.4	13.6	40.8	25.9	17.7	4.4	4.9	21.5	a
	2014	Stock outs survey	28.0	28.0	25.0	19.0	29.0	40.0	21.0	39.0	4.0	25.0	a
	2015	Stock outs survey	19.0	36.0	39.0	20.0	12.0	58.0	14.0	31.0	9.0	25.0	b
Tracer items stock-out rate (fixed clinic/CHC/CDC)	2011	DHIS	8.9	12.3	20.4	3.1	14.1	14.9	17.7	14.4		10.5	c
	2012	DHIS	15.5	13.5	22.6	4.9	33.3	17.7	10.4	30.3		16.4	c
	2013	DHIS	18.9	31.9	14.8	6.5	34.6	18.3	17.3	26.3	2.4	18.2	c
	2014	DHIS	24.8	30.5	16.4	9.0	45.4	27.2	16.3	42.2	4.5	23.6	c
	2015	DHIS	21.3	51.6	11.2	14.2	41.0	15.3	8.7	38.3	5.0	22.6	c
PHC doctor clinical work load	2006	DHIS	24.9	19.6	17.0	23.6	18.3	30.1	18.8	11.8	56.3	24.5	c
	2012	DHIS	24.5	34.6	36.6	24.3	22.7	22.7	16.0	14.5		27.2	c
	2015	DHIS	21.5	25.5	27.7	26.2	23.1	17.1	15.3	12.5	26.7	24.4	c
PHC professional nurse clinical work load	2000	DHIS	24.3	23.2						22.1		23.5	c
	2005	DHIS	27.8	29.2	21.7	32.1	17.7	29.7	50.3	46.3		26.4	c
	2012	DHIS	32.1	35.6	32.9	33.8	25.0	41.7	30.2	25.1		31.6	c
	2015	DHIS	32.6	36.4	28.4	32.4	22.0	32.2	26.6	17.5	22.1	27.7	c
PHC utilisation rate	2000	DHIS	2.3	2.0	1.3	1.6	2.1	1.7	2.4	2.3	2.6	1.9	c
	2005	DHIS	2.4	2.1	1.5	1.9	2.7	2.1	2.7	2.6	2.7	2.2	c
	2010	DHIS	2.7	2.3	1.8	2.5	2.7	2.2	3.0	2.4	2.9	2.4	c
	2015	DHIS	2.7	2.4	1.7	2.9	2.5	2.2	2.5	2.2	2.3	2.3	c
PHC utilisation rate under 5 years	2000	DHIS	3.5	2.6	2.4	3.2	3.9	2.8	3.6	4.2	5.1	3.4	c
	2005	DHIS	3.7	3.1	2.9	3.5	5.3	4.0	3.8	4.1	4.5	3.8	c
	2010	DHIS	4.3	3.5	3.9	4.4	5.9	4.8	4.7	4.5	4.7	4.5	c
	2015	DHIS	4.1	4.1	4.0	4.5	5.0	4.1	4.3	4.1	4.0	4.3	c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Stock outs survey 2014.³⁷⁸
- b Stock outs survey 2015.³⁶⁸
- c DHIS.³⁴

Table 45: Health information system indicators by province

Indicator	Year	Subgroup	SA	Ref
Birth registration coverage	2013	both sexes live births	55.5	a
	2014	both sexes live births	60.1	a
	2015	both sexes live births	65.1	a
Death registration coverage	2014	15+ years vital registration	94.0	b
	2015	15+ years vital registration	96.0	c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Stats SA Live Births 2013–2015.¹⁸ Registered within 30 days.
- b Stats SA Causes of death 2014.¹¹⁷
- c Stats SA Causes of death 2015.³¹

Health personnel

Context	Sufficient and appropriately trained health professionals, equitably distributed, remains one of the targets of the Department of Health. It is also a target for the global effort to achieve the Sustainable Development Goals.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Health Professions Council of South Africa • South African Nursing Council • South African Pharmacy Council • Government personnel administration system (PERSAL)
Key issues and trends	Community service (CS), involving a year of remunerated service in the public sector, has been entrenched in various pieces of health legislation. Although nationally managed, the CS programme remains entirely dependent on young graduates being able to secure appropriate appointments in time to make the transition (usually) from interns to fully-competent practising professionals.

Combining the data from the Government personnel administration system (PERSAL) with the figures reported by the statutory health councils, in order to contrast the total number of registered health professionals with those employed in the public sector, should be simple, but has some challenges. The PERSAL data presented here are from March 2016. The data on the South African Pharmacy Council web site are undated, but appear to update continually. One of the highly contested issues in 2016/17 has been the appointment of community service personnel in various categories. As a result, detailed data on the placement of community service officers is generally missing. The universities have increased their outputs in response to a clear signal from the Department of Health, but new graduates are struggling to find internship positions and community service positions in a public service that is cash-strapped and freezing any vacant post that is not immediately filled. Community service pharmacists have been accommodated in private sector pharmacies in 2017, supposedly those that are pick-up points for the CCMDD programme. The ability to accommodate all of the 2017 interns in

2018 is highly questionable, even if corporate and independent pharmacy positions are included. A Community Health Service Summit was held in 2015, but focused predominantly on the medical practitioner and, to a lesser extent, on the dentist categories.³⁷⁹ The Summit recommended that “qualitative information about community service should also be collected and analysed on an ongoing basis”. The net effect of the occupation-specific dispensation (OSD) should not be assumed to be positive.³⁸⁰ Models for dual practice, in both the private and public sectors will need to be refined.³⁸¹ Lessons learned from the process of contracting private general practitioners also need to be carefully considered.^{363,382}

Currently, community health workers (CHW's, or community caregivers) are not registered with a statutory health council, nor are they considered to be “health providers” in terms of the National Health Act. It has been identified that there are too few CHWs to support ward-based outreach teams, and that their scope of practice is unduly restricted.³⁶⁴

Table 46: Number of health personnel practising by sector, and registered with applicable professional council, by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Number of clinical associates	2012	public sector	29	5	19	7	4	5	3	5	0	77	a
	2015	public sector	58	20	39	40	7	54	4	48	0	270	a
	2016	public sector	68	18	40	62	7	66	2	40		303	a
Number of clinical associates registered	2009	HPCSA			4			1				5	b
	2010	HPCSA			5			1				10	b
	2015	HPCSA	75	20	146	64	25	72	16	59	7	484	b
	2016	HPCSA	90	24	156	91	26	101	18	62	9	577	b
		female HPCSA	51	10	89	49	11	59	10	28	6	313	b
	male HPCSA	39	14	67	42	15	42	8	34	3	264	b	
Number of dental practitioners	2000	public sector	47	25	225	61	30	45	11	41	112	597	a
	2005	public sector	55	48	186	62	62	49	16	48	125	651	a
	2010	public sector	96	62	215	84	95	74	25	40	79	770	a
	2015	public sector	134	74	244	154	180	114	43	58	135	1 137	a
	2016	public sector	132	55	247	141	191	120	59	44	129	1 118	a
Number of dental practitioners registered	2007	HPCSA	251	172	2 025	651	163	209	70	157	1 087	4 937	b
	2010	HPCSA	249	154	1 910	629	128	356	68	84	1 076	5 320	b
	2015	HPCSA	323	195	2 349	839	247	294	97	196	1 371	6 035	b
	2016	HPCSA	331	199	2 375	851	261	297	98	203	1 417	6 155	b
		female HPCSA	102	55	947	305	129	105	32	76	504	2 292	b
	male HPCSA	229	144	1 428	546	132	192	66	127	913	3 863	b	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Number of dental specialists	2000	public sector	0	1	34	4	0	2	0	0	12	53	a	
	2005	public sector	0	0	16	3	1	2	2	1	18	43	a	
	2010	public sector	0		54	8	0	36		1	22	121	a	
	2015	public sector		1	118		3	1	1		30	154	a	
	2016	public sector		1	120	1	2	1	1		33	160	a	
Number of dental therapists	2000	public sector	3	1	28	31	22	8	2	15	2	112	a	
	2005	public sector	4	4	26	29	43	14	2	19	2	143	a	
	2010	public sector	8	2	39	25	63	19	10	16	3	185	a	
	2015	public sector	10	1	38	116	101	16	9	16	2	309	a	
	2016	public sector	9	1	41	120	102	14	8	20	2	318	a	
Number of dental therapists registered	2007	HPCSA	11	23	144	147	54	28	6	34	3	450	b	
	2010	HPCSA	7	15	132	159	38	66	7	17	3	492	b	
	2015	HPCSA	15	20	186	249	67	48	10	38	4	638	b	
	2016	HPCSA	15	20	180	261	73	49	10	47	5	661	b	
		female HPCSA	7	5	93	161	33	16	5	20	2	343	b	
		male HPCSA	8	14	87	100	40	33	5	27	3	317	b	
Number of enrolled nurses	2000	public sector	3 586	815	2 159	6 521	3 077	1 087	302	1 397	1 782	20 726	a	
	2005	public sector	2 326	418	2 927	8 119	2 591	1 182	242	1 077	1 699	20 582	a	
	2010	public sector	2 377	435	4 975	9 232	2 732	1 414	188	774	2 188	24 316	a	
	2015	public sector	3 293	882	6 485	10 603	4 240	1 739	232	927	2 468	30 870	a	
	2016	public sector	3 222	861	6 886	10 708	4 292	1 724	204	876	2 551	31 325	a	
Number of enrolled nurses registered	1998	SANC										32 744	c	
	2000	SANC										32 399	c	
	2005	SANC	2 837	1 256	9 023	12 404	2 861	1 730	498	2 134	4 342	37 085	c	
	2010	SANC	3 566	1 846	13 006	18 895	4 170	2 276	461	2 549	5 601	52 370	c	
	2015	SANC	5 733	2 382	17 469	24 962	6 158	3 262	453	3 265	6 616	70 300	c	
	2016	SANC	6 117	2 482	18 734	25 292	6 617	3 489	452	3 424	6 951	73 558	c	
Number of environmental health practitioners	2002	public sector	81	39	18	131	156	51	6	41	13	537	a	
	2005	public sector	149	54	34	199	210	130	15	88	10	890	a	
	2010	public sector	128	51	111	171	156	126	11	30	9	795	a	
	2015	public sector	39	73	92	93	91	89	23	37	0	799	a	
	2016	public sector	27	54	101	94	62	85	21	36		711	a	
Number of environmental health practitioners registered	2007	HPCSA	238	168	660	615	268	173	98	86	442	2 751	b	
	2010	HPCSA	223	138	612	501	180	258	75	56	421	2 842	b	
	2015	HPCSA	388	261	887	726	305	225	111	164	464	3 535	b	
	2016	HPCSA	394	266	899	737	306	239	108	169	462	3 585	b	
		female HPCSA	247	139	505	441	176	147	49	102	210	2 018	b	
		male HPCSA	147	127	394	296	130	92	59	67	251	1 566	b	
Number of medical practitioners	2000	public sector	745	548	1 693	1 842	604	419	198	361	1 181	7 591	a	
	2005	public sector	964	496	1 841	2 116	750	622	246	461	1 244	8 747	a	
	2010	private sector											6 775	d
		public sector	1 323	577	2 480	3 058	962	709	321	480	1 392	11 309	a	
	2011	public sector	1 490	588	2 709	3 101	997	704	361	595	1 463	12 014	a	
	2015	public sector	1 616	539	3 280	3 418	1 279	836	433	674	1 563	13 656	a	
	2016	public sector	1 631	572	3 394	3 517	1 288	937	458	721	1 500	14 036	a	
Number of medical practitioners (including specialists) registered	2007	HPCSA	2 183	1 722	12 246	5 707	1 196	1 149	432	962	7 288	34 324	b	
	2010	HPCSA	2 149	1 559	11 524	5 670	937	1 819	403	631	7 086	36 912	b	
	2015	HPCSA	2 881	1 878	14 564	7 395	1 484	1 516	598	1 356	9 224	42 323	b	
	2016	both sexes HPCSA General MPs	2 261	1 293	9 522	5 267	1 328	1 288	502	1 136	5 870	29 311	b	
		both sexes HPCSA General MPs + Specialists	2 952	1 915	14 961	7 625	1 548	1 555	622	1 423	9 485	43 503	b	
		both sexes HPCSA Specialist MPs	691	622	5 439	2 358	220	267	120	287	3 615	14 192	b	
		female HPCSA General MPs	923	505	4 425	2 188	450	442	170	386	2 732	12 506	b	
		female HPCSA General MPs + Specialists	1 052	670	6 167	2 867	512	485	192	439	3 793	16 575	b	
		female HPCSA Specialist MPs	129	165	1 742	679	62	43	22	53	1 061	4 069	b	
		male HPCSA General MPs	1 338	788	5 097	3 079	878	846	332	750	3 138	16 805	b	
		male HPCSA General MPs + Specialists	1 900	1 245	8 794	4 758	1 036	1 070	430	984	5 692	26 928	b	
		male HPCSA Specialist MPs	562	457	3 697	1 679	158	224	98	234	2 554	10 123	b	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Number of medical researchers	2002	public sector		17	56	5	2			1	60	189	a
	2005	public sector	0	6	14	3	6	0	0	0	51	103	a
	2010	public sector		9	18	12	4	1	1		28	107	a
	2015	public sector		6	21	6	3		1		40	100	a
	2016	public sector		4	17	62	8		1		38	130	a
Number of medical specialists	2000	public sector	160	247	1 500	566	48	31	14	46	1 269	3 881	a
	2005	public sector	142	330	1 297	544	79	15	17	64	1 003	3 499	a
	2010	private sector										5 410	d
		public sector	240	370	1 721	588	107	62	20	49	1 279	4 442	a
	2015	public sector	161	300	1 964	736	80	81	26	115	1 512	4 986	a
2016	public sector	161	280	1 998	719	68	73	26	106	1 299	4 737	a	
Number of nursing assistants	2000	public sector	4 381	2 131	5 010	5 508	2 786	1 519	564	2 395	3 900	28 194	a
	2005	public sector	4 558	2 495	5 159	5 871	3 834	1 747	656	2 897	3 789	31 006	a
	2010	public sector	5 369	2 230	6 877	6 123	4 524	2 103	759	2 730	4 143	34 858	a
	2015	public sector	5 577	2 114	6 454	6 353	5 049	1 602	887	2 750	4 091	34 877	a
	2016	public sector	5 433	2 162	6 535	6 223	5 113	1 602	878	2 525	4 112	34 583	a
Number of nursing assistants registered	2005	SANC	5 341	3 049	15 625	9 689	5 834	2 241	926	4 096	7 849	54 650	c
	2010	SANC	6 124	2 951	16 667	11 489	8 331	3 732	1 311	4 732	8 135	63 472	c
	2015	SANC	7 535	3 331	19 178	13 208	9 852	3 892	1 083	4 862	8 522	71 463	c
	2016	SANC	7 779	3 187	19 767	14 061	10 062	3 824	1 075	5 009	8 538	73 302	c
Number of occupational therapists	2000	public sector	14	32	115	69	54	21	5	18	86	414	a
	2005	public sector	33	62	130	96	88	60	15	38	83	605	a
	2010	public sector	80	71	171	119	113	55	40	38	151	838	a
	2015	public sector	139	67	306	229	205	95	68	59	144	1 313	a
	2016	public sector	131	71	290	219	216	103	54	53	142	1 280	a
Number of occupational therapists registered	2007	HPCSA	121	241	1 100	337	111	133	55	80	800	3 015	b
	2010	HPCSA	141	232	1 085	347	86	221	49	49	829	3 508	b
	2015	HPCSA	220	310	1 618	537	197	223	92	133	1 208	4 575	b
	2016	HPCSA	226	313	1 679	569	220	239	95	142	1 278	4 792	b
		female HPCSA	217	308	1 603	543	168	214	93	125	1 256	4 547	b
	male HPCSA	9	5	76	26	52	25	2	17	32	245	b	
Number of pharmacists	2000	public sector	141	52	238	253	97	58	16	48	182	1 085	a
	2005	public sector	206	99	269	365	145	123	35	108	257	1 617	a
	2010	public sector	252	112	751	401	297	266	89	130	660	2 966	a
	2015	public sector	547	343	1 102	788	511	276	151	238	915	4 970	a
	2016	public sector	618	351	1 209	822	566	300	150	245	932	5 223	a
Number of pharmacists registered	2003	SAPC	834	436	4 336	1 561	280	393	135	478	1 783	10 629	e
	2005	SAPC	870	421	4 320	1 593	310	397	117	512	1 832	10 824	e
	2010	SAPC	775	381	2 917	1 502	344	455	137	443	1 479	12 218	e
	2015	both sexes SAPC	1 570	431	4 655	1 888	516	568	181	639	2 166	13 479	e
		female SAPC										8 134	e
		male SAPC										5 345	e
	2017	both sexes SAPC	1 771	486	5 027	2 063	630	625	197	651	2 378	14 412	e
		female SAPC										8 846	e
	male SAPC										5 566	e	
Number of physiotherapists	2000	public sector	37	27	120	115	42	13	4	11	85	454	a
	2005	public sector	50	58	144	191	64	58	15	46	98	724	a
	2010	public sector	110	75	199	231	115	60	56	34	129	1 009	a
	2015	public sector	160	67	205	326	188	75	63	75	155	1 315	a
	2016	public sector	140	58	268	325	188	91	58	66	145	1 339	a
Number of physiotherapists registered	2007	HPCSA	216	281	1 945	691	154	174	70	143	1 294	5 059	b
	2010	HPCSA	240	267	1 831	732	137	311	72	85	1 355	5 777	b
	2011	HPCSA	217	245	1 698	665	122	290	65	75	1 249	5 937	b
	2015	HPCSA	355	375	2 436	987	276	275	114	197	1 824	6 942	b
	2016	HPCSA	381	385	2 512	1 018	285	293	119	204	1 879	7 183	b
		female HPCSA	318	321	2 151	823	182	227	102	144	1 604	5 972	b
	male HPCSA	63	64	361	195	103	66	17	60	275	1 211	b	

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Number of professional nurses	2000	public sector	6 429	2 909	7 984	9 195	5 058	2 306	839	2 855	4 159	41 734	a
	2005	public sector	6 642	3 580	7 587	9 531	5 763	2 696	975	3 053	3 830	43 660	a
	2010	public sector	8 287	1 868	9 393	12 463	7 243	3 732	1 258	3 321	4 399	51 966	a
	2015	public sector	10 273	2 353	12 672	16 431	9 356	5 194	1 365	4 337	5 268	68 105	a
	2016	public sector	10 292	2 274	12 906	16 628	9 602	5 213	1 438	4 242	5 156	67 766	a
Number of professional nurses registered	1998	SANC										91 011	c
	2000	SANC										93 303	c
	2005	SANC	12 176	7 175	26 754	19 445	7 540	4 774	1 936	6 495	13 239	99 534	c
	2010	SANC	13 985	7 550	30 063	24 360	9 025	5 714	2 146	7 775	14 626	115 244	c
	2015	SANC	15 392	8 075	35 770	30 475	11 464	7 106	2 250	9 621	16 701	136 854	c
	2016	SANC	15 563	8 205	36 603	31 608	11 853	7 502	2 284	9 845	17 135	140 598	c
Number of psychologists	2000	public sector	23	11	97	35	5	2	1	10	54	238	a
	2005	public sector	37	29	122	67	35	17	7	27	58	399	a
	2010	public sector	56	32	176	68	50	18	9	15	74	498	a
	2015	public sector	72	33	231	109	119	36	19	52	88	1 238	a
Number of psychologists registered	2007	HPCSA	333	244	3 094	697	96	131	40	198	1 344	6 310	b
	2010	HPCSA	362	238	3 136	709	102	234	40	152	1 388	7 037	b
	2015	HPCSA	482	275	3 944	905	158	186	61	266	1 838	8 255	b
	2016	HPCSA	486	277	4 014	916	162	194	61	272	1 890	8 415	b
		female HPCSA	355	178	3 005	680	115	142	38	202	1 315	6 117	b
		male HPCSA	131	99	1 009	236	47	52	23	70	575	2 298	b
Number of pupil auxiliary nurses registered	2005	SANC	157	165	3 269	1 331	395	144	231	146	451	6 289	c
	2010	SANC	590	224	3 190	1 336	281	247	113	194	536	6 711	c
	2015	SANC	1 132	199	3 817	1 864	375	428	149	572	776	9 312	c
	2016	SANC	487	79	1 146	606	96	100	117	84	275	2 990	c
Number of pupil nurses registered	2005	SANC	39	201	2 373	4 715	209	155	0	2	402	8 096	c
	2010	SANC	1 336	332	6 548	6 354	672	401	0	28	1 165	16 836	c
	2015	SANC	2 074	461	6 765	6 501	434	527	0	614	1 470	18 846	c
	2016	SANC	1 200	176	3 933	4 005	146	139	0	366	808	10 773	c
Number of radiographers	2000	public sector	237	192	634	361	81	44	21	63	483	2 116	a
	2005	public sector	258	159	553	393	113	82	46	83	358	2 048	a
	2010	public sector	359	167	560	455	144	91	57	66	401	2 301	a
	2015	public sector	352	163	694	595	175	95	106	115	468	2 765	a
	2016	public sector	356	170	706	615	183	123	101	119	452	2 827	a
	Number of radiographers registered	2007	HPCSA	405	414	1 940	980	168	173	87	177	1 109	5 509
2010		HPCSA	447	380	1 866	1 013	110	324	87	107	1 076	6 215	b
2015		HPCSA	635	528	2 610	1 384	267	321	167	287	1 524	7 787	b
2016		HPCSA	666	527	2 694	1 434	304	341	175	304	1 563	8 072	b
		female HPCSA	573	391	2 340	1 196	196	270	141	239	1 410	6 810	b
male HPCSA	93	136	354	238	108	71	34	65	153	1 262	b		
Number of student nurses	2000	public sector	1 282	501	2 005	1 420	715	377	89	326	794	7 509	a
	2005	public sector	2 226	33	2 177	2 051	490	670	110	575	219	8 551	a
	2010	public sector	1 273	2	4 916	2 272	789	689	4	961		10 906	a
	2015	public sector	73		3 734	1 694	461	865		70		6 897	a
	2016	public sector	11		4 059	1 544	445	789		42		6 890	a
	Number of student nurses registered	2005	SANC	2 863	681	3 056	2 704	1 193	299	124	1 172	1 004	13 096
2010		SANC	3 761	1 079	4 839	3 318	1 778	704	168	1 577	2 554	19 778	c
2015		SANC	3 611	1 294	4 498	3 387	1 922	958	243	2 003	2 633	20 549	c
2016		SANC	3 756	1 213	4 737	3 631	1 895	991	264	2 071	2 781	21 339	c
Total number of health professional posts	2005	public sector filled posts	17 650	7 871	22 482	29 640	14 274	7 467	2 399	8 585	12 844	123 268	a
	2010	public sector filled posts	19 958	6 063	32 656	35 310	17 394	9 455	2 848	8 685	14 957	147 387	a
	2015	public sector filled posts	22 504	7 036	37 679	41 691	22 048	11 168	3 431	9 571	16 879	173 761	a
	2016	public sector filled posts	22 163	6 914	38 777	41 738	22 326	11 175	3 442	9 110	16 491	172 443	f

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a PERSAL.³⁸³ These figures include only the posts that are filled at time of data extraction. The South African total includes the sum of the provinces plus posts within the National Department of Health. Data for Environmental Health Practitioners only include those employed by provincial government. Note that for provinces such as GP and WC a substantial number of EHPs may be employed by local government.
- b HPCSA.³⁸⁴ Total for South Africa includes those with REGION indicated as Foreign or Unknown. The number on the register includes those professionals who are retired, overseas, working part-time, working in other sectors or not working at all (a substantial proportion of the total for some professions).
- c SANC.³⁸⁵ The number on the register includes those professionals who are retired, overseas, working part-time, working in other sectors or not working at all.

d Econex Health Reform Note 7.³⁸⁶

e SAPC.³⁸⁷ Includes those with province unknown or foreign. Total for South Africa by province and by population group does not correspond based on data extracted from web site on 1 Feb 2017.

f PERSAL.³⁸³ Data for psychologists were not included in the dataset for 2016. Figure for South Africa includes the sum of the provinces plus staff at NDoH.

Table 47: Number of health personnel by population group

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Number of clinical associates	2012	public sector	74	1	2			a
	2015	public sector	258	5	2	5		a
	2016	public sector	291	5	2	5		a
Number of clinical associates registered	2009	HPCSA	3			1	1	b
	2010	HPCSA	7			2	1	b
	2015	HPCSA	438	13	9	22	2	b
	2016	HPCSA	521	14	10	25	7	b
Number of dental practitioners	2001	public sector	172	45	125	292		a
	2005	public sector	237	60	135	219		a
	2010	public sector	380	74	144	172		a
	2015	public sector	567	113	217	236	4	a
	2016	public sector	560	112	214	228	4	a
Number of dental practitioners registered	2007	HPCSA	453	90	582	1 690	2 122	b
	2010	HPCSA	631	166	797	1 910	1 816	b
	2015	HPCSA	923	266	1 077	2 221	1 548	b
	2016	HPCSA	989	290	1 114	2 247	1 515	b
Number of dental specialists	2001	public sector	4	0	9	32		a
	2005	public sector	7	5	9	22		a
	2010	public sector	36	9	28	48		a
	2015	public sector	48	9	34	63		a
	2016	public sector	47	7	39	67		a
Number of dental therapists	2001	public sector	102	0	14	4		a
	2005	public sector	126	1	12	4		a
	2010	public sector	164	5	14	2		a
	2015	public sector	269	6	33	1		a
	2016	public sector	276	6	32	4		a
Number of dental therapists registered	2007	HPCSA	186	2	72	27	163	b
	2010	HPCSA	242	1	98	30	121	b
	2015	HPCSA	394	4	126	29	85	b
	2016	HPCSA	418	3	127	30	83	b
Number of enrolled nurses	2001	public sector	17 227	2 375	278	811		a
	2005	public sector	17 358	2 214	378	632		a
	2010	public sector	21 071	2 339	393	513		a
	2015	public sector	28 106	2 069	299	360	36	a
	2016	public sector	28 682	1 986	272	334	51	a
Number of environmental health practitioners	2002	public sector	445	16	14	62		a
	2005	public sector	786	23	27	54		a
	2010	public sector	735	14	17	29		a
	2015	public sector	741	16	17	22	3	a
	2016	public sector	654	16	16	18	7	a
Number of environmental health practitioners registered	2008	HPCSA	1 075	101	57	442	1 056	b
	2010	HPCSA	1 355	139	75	408	865	b
	2015	HPCSA	2 227	214	77	366	651	b
	2016	HPCSA	2 317	213	78	355	622	b
Number of medical practitioners	2001	public sector	2 042	267	1 365	3 678		a
	2005	public sector	3 295	386	1 651	3 415		a
	2010	public sector	5 410	573	1 900	3 426		a
	2015	public sector	7 164	805	1 969	3 663	55	a
	2016	public sector	7 461	804	1 984	3 689	98	a
Number of medical practitioners (including specialists) registered	2007	HPCSA	5 143	481	4 269	15 367	9 064	b
	2010	HPCSA	7 140	727	5 014	16 560	7 471	b
	2015	HPCSA General MPs + Specialists	10 541	1 324	5 949	18 345	6 164	b
	2016	HPCSA General MPs	9 294	1 238	4 036	11 297	3 446	b
		HPCSA General MPs + Specialists	11 114	1 496	6 114	18 767	6 012	b
	HPCSA Specialist MPs	1 820	258	2 078	7 470	2 566	b	

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Number of medical researchers	2002	public sector	33	10	13	133		a
	2005	public sector	33	2	11	57		a
	2010	public sector	40	6	15	46		a
	2015	public sector	47	22	7	24		a
	2016	public sector	83	20	3	24		a
Number of medical specialists	2001	public sector	474	131	509	2 698		a
	2005	public sector	617	110	618	2 154		a
	2010	public sector	1 066	221	858	2 297		a
	2015	public sector	1 505	267	958	2 243	13	a
	2016	public sector	1 525	254	938	1 999	21	a
Number of nursing assistants	2001	public sector	21 711	4 920	409	1 606		a
	2005	public sector	24 957	4 458	346	1 245		a
	2010	public sector	29 818	3 912	244	884		a
	2015	public sector	30 701	3 306	189	621	60	a
	2016	public sector	30 647	3 156	174	566	40	a
Number of occupational therapists	2001	public sector	136	49	50	167		a
	2005	public sector	218	55	50	282		a
	2010	public sector	300	122	72	344		a
	2015	public sector	562	152	115	482	2	a
	2016	public sector	572	140	110	453	5	a
Number of occupational therapists registered	2007	HPCSA	285	103	177	1 806	644	b
	2010	HPCSA	410	172	242	2 178	506	b
	2015	HPCSA	674	304	326	2 870	401	b
	2016	HPCSA	733	335	344	2 988	392	b
Number of pharmacists	2001	public sector	290	74	290	606		a
	2005	public sector	540	115	339	623		a
	2010	public sector	1 552	407	360	647		a
	2015	public sector	2 787	598	691	879	15	a
	2016	public sector	3 005	621	686	883	28	a
Number of pharmacists registered	2008	SAPC	1 302	347	1 895	7 864		c
	2010	SAPC	1 567	381	2 035	7 850	385	c
	2015	SAPC	2 595	487	2 736	7 608	53	c
	2017	SAPC	3 083	534	2 991	7 760	44	c
Number of physiotherapists	2001	public sector	191	62	74	132		a
	2005	public sector	265	96	111	252		a
	2010	public sector	397	168	144	300		a
	2015	public sector	596	204	183	329	3	a
	2016	public sector	614	192	193	332	8	a
Number of physiotherapists registered	2007	HPCSA	472	179	374	2 581	1 453	b
	2010	HPCSA	699	343	487	3 023	1 225	b
	2015	HPCSA	1 059	598	638	3 717	930	b
	2016	HPCSA	1 133	633	665	3 846	906	b
Number of professional nurses	2001	public sector	32 747	4 360	892	3 461		a
	2005	public sector	35 356	4 341	1 027	2 936		a
	2010	public sector	43 304	4 987	1 247	2 428		a
	2015	public sector	58 311	5 890	1 528	2 216	160	a
	2016	public sector	58 372	5 587	1 526	2 022	259	a
Number of psychologists	2001	public sector	69	17	27	146		a
	2005	public sector	121	23	32	223		a
	2010	public sector	174	30	37	257		a
	2015	public sector	723	86	69	353	7	a
Number of psychologists registered	2007	HPCSA	390	125	279	3 224	2 292	b
	2010	HPCSA	605	211	380	3 924	1 917	b
	2015	HPCSA	1 004	349	515	4 930	1 457	b
	2016	HPCSA	1 057	369	526	5 048	1 415	b
Number of radiographers	2001	public sector	884	427	160	590		a
	2005	public sector	927	378	230	513		a
	2010	public sector	1 218	395	247	441		a
	2015	public sector	1 554	497	305	402	7	a
	2016	public sector	1 633	489	303	391	11	a

Indicator	Year	Subgroup	African/ Black	Coloured	Indian/ Asian	White	Other/ Unspecified	Ref
Number of radiographers registered	2007	HPCSA	737	230	351	1 545	2 646	b
	2010	HPCSA	1 192	418	514	1 968	2 123	b
	2015	HPCSA	2 243	764	756	2 477	1 547	b
	2016	HPCSA	2 430	803	803	2 551	1 485	b
Number of student nurses	2001	public sector	5 063	775	300	869		a
	2005	public sector	7 334	534	249	434		a
	2010	public sector	10 028	297	312	269		a
	2015	public sector	6 394	155	205	140	3	a
	2016	public sector	6 416	128	200	137	9	a
Total number of health professional posts	2002	public sector	81 478	13 273	4 575	14 367		a
	2005	public sector filled posts	92 177	12 801	5 225	13 065		a
	2010	public sector filled posts	115 693	13 559	6 032	12 103		a
	2015	public sector filled posts	140 333	14 200	6 821	12 039	368	a
	2016	public sector filled posts	111 865	11 532	6 418	10 813	490	d

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a PERSAL.³⁸³ These figures include only the posts that are filled at time of data extraction.
- b HPCSA.³⁸⁴ The number on the register includes those professionals who are retired, overseas, working part-time, working in other sectors or not working at all (a substantial proportion of the total for some professions).
- c SAPC.³⁸⁷
- d PERSAL.³⁸³ Data for psychologists were not included in the dataset for 2016.

Table 48: Public and private sector health personnel per 100 000 target population by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Dental practitioners per 100 000 population	2000	public sector	0.8	1.1	4.9	0.8	0.6	1.8	1.6	1.4	3.8	1.7	a	
	2005	public sector	0.9	2.0	2.5	0.7	1.3	1.6	1.7	1.6	3.2	1.6	a	
	2010	public sector	1.6	2.6	2.7	0.9	2.0	2.3	2.6	1.3	1.9	1.9	a	
	2015	public sector	2.2	3.2	2.6	1.6	3.4	3.1	4.5	1.8	3.0	2.5	a	
	2016	both sexes public sector	2.1	2.3	2.5	1.4	3.6	3.3	6.0	1.4	2.7	2.4	a	
Dental specialists per 100 000 population	2000	public sector	0.0	0.0	0.7	0.1	0.0	0.1	0.0	0.0	0.4	0.2	a	
	2005	public sector	0.0	0.0	0.2	0.0	0.0	0.1	0.2	0.0	0.5	0.1	a	
	2010	public sector	0.0		0.7	0.1	0.0	1.1		0.0	0.5	0.3	a	
	2015	public sector		0.0	1.2		0.1	0.0	0.1		0.7	0.3	a	
	2016	both sexes public sector		0.0	1.2	0.0	0.0	0.0	0.1		0.7	0.4	a	
Dental therapists per 100 000 population	2000	public sector	0.0	0.0	0.6	0.4	0.5	0.3	0.3	0.5	0.1	0.3	a	
	2005	public sector	0.1	0.2	0.3	0.3	0.9	0.4	0.2	0.7	0.1	0.4	a	
	2010	public sector	0.1	0.1	0.5	0.3	1.3	0.6	1.0	0.5	0.1	0.4	a	
	2015	public sector	0.2	0.0	0.4	1.2	1.9	0.4	0.9	0.5	0.0	0.7	a	
	2016	both sexes public sector	0.1	0.0	0.4	1.2	1.9	0.4	0.8	0.6	0.0	0.7	a	
Enrolled nurses per 100 000 population	2000	public sector	59.2	36.1	46.6	85.0	63.6	42.7	44.0	46.1	60.0	59.7	a	
	2005	public sector	39.3	17.1	38.6	90.1	54.7	37.6	25.0	37.0	44.0	50.7	a	
	2010	public sector	40.3	18.2	63.2	100.1	57.0	44.9	19.3	25.8	53.8	58.8	a	
	2015	public sector	53.2	38.1	68.4	111.4	81.0	47.7	24.4	29.4	54.0	68.6	a	
	2016	both sexes public sector	51.1	35.9	70.6	109.7	80.8	47.1	20.8	27.2	53.5	67.9	a	
Environmental health practitioners per 100 000 population	2002	public sector	1.4	1.6	0.3	1.5	3.4	1.7	0.7	1.5	0.4	1.4	a	
	2005	public sector	2.5	2.2	0.4	2.2	4.4	4.1	1.6	3.0	0.3	2.2	a	
	2010	public sector	2.2	2.1	1.4	1.9	3.3	4.0	1.1	1.0	0.2	1.9	a	
	2015	public sector	0.6	3.2	1.0	1.0	1.7	2.4	2.4	1.2		1.8	a	
	2016	both sexes public sector	0.4	2.3	1.0	1.0	1.2	2.3	2.1	1.1		1.5	a	
Medical practitioners per 100 000 population	2000	public sector	12.3	24.3	36.6	24.0	12.5	16.4	28.9	11.9	39.7	21.9	a	
	2005	public sector	16.3	20.3	24.3	23.5	15.8	19.8	25.5	15.8	32.2	21.6	a	
	2010	private sector											37.0	b
		public sector	22.4	24.1	31.5	33.2	20.1	22.5	32.9	16.0	34.2	27.3	27.3	a
		public sector adjusted											35.0	b
	2015	public sector	26.1	23.3	34.6	35.9	24.4	22.9	45.5	21.3	34.2	30.3	a	
2016	both sexes public sector	25.9	23.9	34.8	36.0	24.3	25.6	46.6	22.4	31.4	30.4	a		

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Medical researchers per 100 000 population	2002	public sector	0.0	0.7	0.8	0.1	0.0	0.0	0.0	0.0	1.7	0.5	a	
	2005	public sector	0.0	0.2	0.2	0.0	0.1	0.0	0.0	0.0	1.3	0.3	a	
	2010	public sector		0.4	0.2	0.1	0.1	0.0	0.1		0.7	0.3	a	
	2015	public sector		0.3	0.2	0.1	0.1		0.1		0.9	0.2	a	
	2016	both sexes public sector		0.2	0.2	0.6	0.2		0.1		0.8	0.3	a	
Medical specialists per 100 000 population	2000	public sector	2.6	10.9	32.4	7.4	1.0	1.2	2.0	1.5	42.7	11.2	a	
	2005	public sector	2.4	13.5	17.1	6.0	1.7	0.5	1.8	2.2	26.0	8.6	a	
	2010	private sector											57.0	c
		public sector	4.1	15.5	21.9	6.4	2.2	2.0	2.1	1.6	31.5	10.7	a	
		public sector adjusted											10.0	c
	2015	public sector	2.6	13.0	20.7	7.7	1.5	2.2	2.7	3.6	33.1	11.1	a	
2016	both sexes public sector	2.6	11.7	20.5	7.4	1.3	2.0	2.7	3.3	27.2	10.3	a		
Nursing assistants per 100 000 population	2000	public sector	72.3	94.4	108.2	71.8	57.6	59.6	82.2	79.1	131.2	81.3	a	
	2005	public sector	77.1	102.3	68.0	65.1	80.9	55.6	67.9	99.5	98.1	76.4	a	
	2010	public sector	91.0	93.2	87.3	66.4	94.4	66.8	77.8	91.1	101.9	84.2	a	
	2015	public sector	90.1	91.4	68.1	66.7	96.5	43.9	93.3	87.1	89.5	77.5	a	
	2016	both sexes public sector	86.2	90.2	67.0	63.8	96.3	43.8	89.4	78.4	86.2	75.0	a	
Occupational therapists per 100 000 population	2000	public sector	0.2	1.4	2.5	0.9	1.1	0.8	0.7	0.6	2.9	1.2	a	
	2005	public sector	0.6	2.5	1.7	1.1	1.9	1.9	1.6	1.3	2.1	1.5	a	
	2010	public sector	1.4	3.0	2.2	1.3	2.4	1.7	4.1	1.3	3.7	2.0	a	
	2015	public sector	2.2	2.9	3.2	2.4	3.9	2.6	7.2	1.9	3.2	2.9	a	
	2016	both sexes public sector	2.1	3.0	3.0	2.2	4.1	2.8	5.5	1.6	3.0	2.8	a	
Pharmacists per 100 000 population	2000	public sector	2.3	2.3	5.1	3.3	2.0	2.3	2.3	1.6	6.1	3.1	a	
	2005	public sector	3.5	4.1	3.5	4.1	3.1	3.9	3.6	3.7	6.7	4.0	a	
	2010	public sector	4.3	4.7	9.5	4.3	6.2	8.4	9.1	4.3	16.2	7.2	a	
	2015	public sector	8.8	14.8	11.6	8.3	9.8	7.6	15.9	7.5	20.0	11.0	a	
	2016	both sexes public sector	9.8	14.6	12.4	8.4	10.7	8.2	15.3	7.6	19.5	11.3	a	
Physiotherapists per 100 000 population	2000	public sector	0.6	1.2	2.6	1.5	0.9	0.5	0.6	0.4	2.9	1.3	a	
	2005	public sector	0.8	2.4	1.9	2.1	1.4	1.8	1.6	1.6	2.5	1.8	a	
	2010	public sector	1.9	3.1	2.5	2.5	2.4	1.9	5.7	1.1	3.2	2.4	a	
	2015	public sector	2.6	2.9	2.2	3.4	3.6	2.1	6.6	2.4	3.4	2.9	a	
	2016	both sexes public sector	2.2	2.4	2.8	3.3	3.5	2.5	5.9	2.1	3.0	2.9	a	
Professional nurses per 100 000 population	2000	public sector	106.1	128.9	172.5	119.8	104.6	90.5	122.3	94.3	139.9	120.3	a	
	2005	public sector	112.3	146.7	100.0	105.8	121.6	85.8	100.9	104.8	99.2	107.6	a	
	2010	public sector	140.5	78.1	119.3	135.1	151.1	118.5	129.0	110.8	108.2	125.6	a	
	2015	public sector	166.0	101.7	133.7	172.6	178.7	142.5	143.6	137.3	115.3	151.3	a	
	2016	both sexes public sector	163.2	94.8	132.2	170.4	180.8	142.5	146.4	131.7	108.1	146.9	a	
Psychologists per 100 000 population	2000	public sector	0.4	0.5	2.1	0.5	0.1	0.1	0.1	0.3	1.8	0.7	a	
	2005	public sector	0.6	1.2	1.6	0.7	0.7	0.5	0.7	0.9	1.5	1.0	a	
	2010	public sector	0.9	1.3	2.2	0.7	1.0	0.6	0.9	0.5	1.8	1.2	a	
	2015	public sector	1.2	1.4	2.4	1.1	2.3	1.0	2.0	1.6	1.9	2.8	a	
Radiographers per 100 000 population	2000	public sector	3.9	8.5	13.7	4.7	1.7	1.7	3.1	2.1	16.3	6.1	a	
	2005	public sector	4.4	6.5	7.3	4.4	2.4	2.6	4.8	2.8	9.3	5.0	a	
	2010	public sector	6.1	7.0	7.1	4.9	3.0	2.9	5.8	2.2	9.9	5.6	a	
	2015	public sector	5.7	7.0	7.3	6.2	3.3	2.6	11.1	3.6	10.2	6.1	a	
	2016	both sexes public sector	5.7	7.1	7.2	6.3	3.5	3.4	10.3	3.7	9.5	6.1	a	
Student nurses per 100 000 population	2000	public sector	21.2	22.2	43.3	18.5	14.8	14.8	13.0	10.8	26.7	21.6	a	
	2005	public sector	37.7	1.4	28.7	22.8	10.3	21.3	11.4	19.7	5.7	21.1	a	
	2010	public sector	21.6	0.1	62.4	24.6	16.5	21.9	0.4	32.1		26.4	a	
	2015	public sector	1.2		39.4	17.8	8.8	23.7		2.2		15.3	a	
	2016	both sexes public sector	0.2		41.6	15.8	8.4	21.6		1.3		14.9	a	

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- PERSAL.³⁸³ These values were calculated using only the posts that are filled at time of data extraction. Population estimates for the applicable year and medical scheme coverage from Stats SA GHS were used to estimate the public sector dependent population denominator.
- Econex Health Reform Note 7.³⁸⁶ Based on evidence that at least 36.9% of population utilise private medical services for PHC, and thus the population served by the private sector doctors is greater than the number of medical scheme beneficiaries.
- Econex Health Reform Note 7.³⁸⁶ Based on evidence that about 15% of patients seeing private specialists are not medical scheme beneficiaries.

Table 49: Community service health professionals by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref
Number of CS pharmacists	2001		33	39	68	82	33	39	5	31	48	406	a
	2005		34	35	56	49	36	40	16	37	40	345	b
	2010		28	23	45	43	52	29	18	30	45	344	b
	2013		38	25	66	63	71	51	27	31	35	415	b
	2017	SAPC	115	44	162	138	52	44	39	55	55	706	c

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a DoH Annual Report 2000/01.³⁸⁸ Note: Community Service Professional Posts are allocated against existing (vacant) posts, therefore these health professionals form part of the figure reported by PERSAL for the relevant profession. The national figure also includes CSPs allocated to SA Military Health Services – SAMHS (14) and Department of Correctional Services – DCS (14) and is therefore greater than the sum of provincial figures.
- b DoH Community Service.³⁸⁹ The national figure also includes CSPs for whom province could not be determined and those allocated to SA Military Health Services – SAMHS and Department of Correctional Services – DCS.
- c SAPC.³⁸⁷ Includes CSPs with province unknown.

Health financing

Context	In his Budget Speech in February 2016, the Minister of Finance indicated that clarity on the initial financing of the NHI Fund would be issued by October 2017, together with final details on the White Paper on NHI. The ongoing Competition Commission Health Market Inquiry has yet to complete its work, but has focused attention on the medical scheme industry, its financing and performance, as well as on concentration in the private hospital sector.
New data sources	Nationally, new data have been reported in the: <ul style="list-style-type: none"> • Council for Medical Schemes Report 2015/16 • National Income Dynamics Study Wave 4 • Treasury Budget Review 2017 Internationally, reports of interest include: <ul style="list-style-type: none"> • IHME Financing Global Health 2015
Key issues and trends	South Africa's health financing remains highly fragmented, with marked differences in per capita expenditure in the public and private sectors. Overall, the percentage of expenditure on health as a proportion of Gross Domestic Product is not expected to increase, but movement towards equity in financing will be key to ensuring sustainable universal health coverage.

The Council for Medical Schemes Annual Report 2015/16 provided updated figures on the industry and private sector health expenditure reimbursed by medical schemes.⁴¹ At the end of March 2016, there were the same number of registered medical schemes (83) as at the same point in 2015, with 23 of these being open schemes. A total of 323 benefits options were registered (184 by open schemes and 139 by restricted schemes). Of the 184 open scheme benefits options, 42 were registered as one option but had differing contributions based on differing levels of provider choice (so-called options with efficiency discounts). In addition, the Council for Medical Schemes registered 16 third-party administrators, while only 10 schemes were self-administered. Detailed utilisation data, apart from those reported by the Council, are thus fragmented among these 26 potential sources. The Council also accredited 41 managed care organisations, 8 688 individual brokers and 2 214 broker organisations as at the end of March 2016. As at the end of 2015, there were 4 938 453 beneficiaries of open schemes and 3 871 030 beneficiaries of restricted schemes. The Council report noted a sustained increase in claims for the conditions on the Chronic Disease List (CDL), but whether this was due to an actual increase in prevalence of these conditions, changes in health-seeking behaviour, or merely changes in claims behaviour and data completeness, could not be determined. In 2015, the proportion of expenditure recorded as out-of-pocket was 18.6%, but this would have excluded expenditure for which no claims were submitted. It would also exclude all out-of-pocket expenditure by non-beneficiaries of medical schemes. The Intergovernmental Fiscal Review 2015 projected total out-of-pocket expenditure to be R24.198 billion for fiscal year 2016/17, or 6.5% of total (public and private sector) expenditure.³⁹⁰ Total medical scheme expenditure increased (in nominal terms) from R127.2 billion in 2014 to R138.6 billion in 2015, or R15 822.76 per average beneficiary per year. Of total medical schemes expenditure in 2015, 37.1% was on hospital care, 16.1% on medicines dispensed by pharmacists and providers other than hospitals, 7.2% on supplementary and allied health professionals, 6.6% on medical specialists and 6.2% on general practitioners.

Although the Council for Medical Schemes reports of the numbers of members and beneficiaries are perhaps the most complete, these can be compared with the data from the Stats SA General Household Survey,⁴⁰ and also from the National Income Dynamics

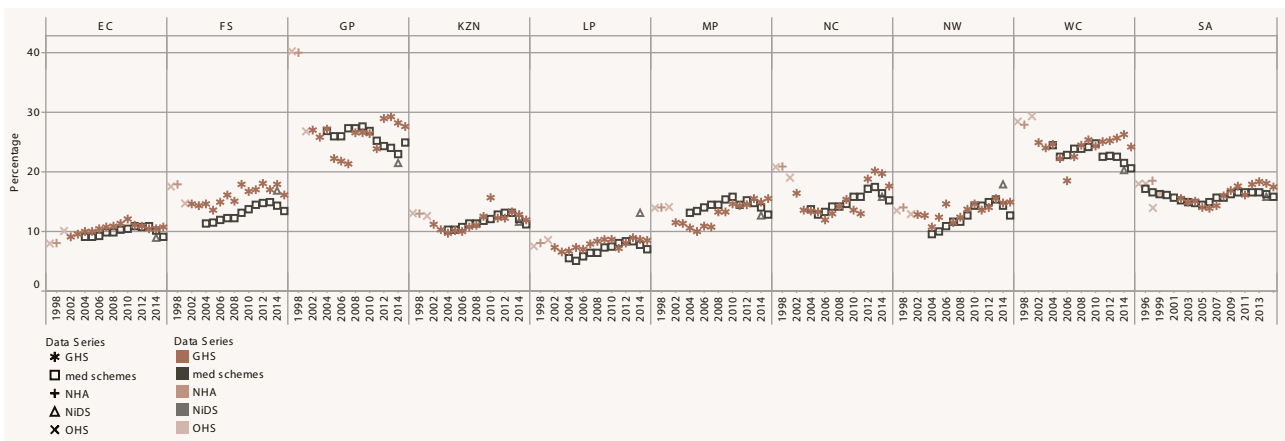
Study (NiDS) 2015. The 2015 General Household Survey estimated that 9 458 000 South Africans were covered by medical schemes (17.5% of the population), and that 23.5% of households had at least one member that was covered. Based on General Household Survey data, the Stats SA Vulnerable Groups Indicator Report 2014 estimated that 5.5% of rural inhabitants were covered by medical schemes, compared with 25.3% of urban residents.⁵⁷ The NiDS wave 4 (2015) estimate of national population coverage was 15.8%, matching the CMS reported national coverage, but with some differences in provincial estimates, as shown in Table 50.

The Intergovernmental Fiscal Review (IGFR) 2015 projection of public sector health expenditure for fiscal year 2016/17 was R178.825 billion, of which R154.117 billion would be expended from provincial budgets.³⁹⁰ The Treasury's Budget Review 2017 revised the 2016/17 estimate to be R170.888 billion, and projected expenditure to reach R217.131 billion in 2019/20. Table 52 shows actual expenditure to 2015/16, as extracted from the Basic Accounting System (BAS). The IGFR 2015 estimated that 2014/15 provincial expenditure on medicines was about R10.8 billion, and projected expenditure of R13.2 billion in 2016/17. Growth in medicines expenditure has largely been driven by the antiretroviral treatment programme. In this regard, the Auditor-General's comment that "pharmaceutical budgets were not always aligned with the health care needs of the uninsured population" needs to be understood.³⁶⁵ Strictly-speaking, there is no ring-fenced pharmaceutical budget, apart from the conditional grant for the antiretroviral treatment programme. The demand on the provincial budgets has been under pressure not only from the introduction of new, costly vaccines, but also from the increasing burden of non-communicable diseases requiring lifelong treatment. By 2020, the comprehensive HIV, AIDS and TB conditional grant is expected to total R22.039 billion, of which R1 billion has been ear-marked to enable application of a universal test-and-treat approach. Nonetheless, it must be recognised that the greatest pressure on provincial health budgets remains that of staff costs.

The Sustainable Development Goals have reinvigorated interest in the financing of universal health coverage, and the extent to which financial protection against catastrophic health expenditure can be extended to all citizens. The Institute for Health Metrics and Evaluation issued its seventh update report on the subject, "Financing Global

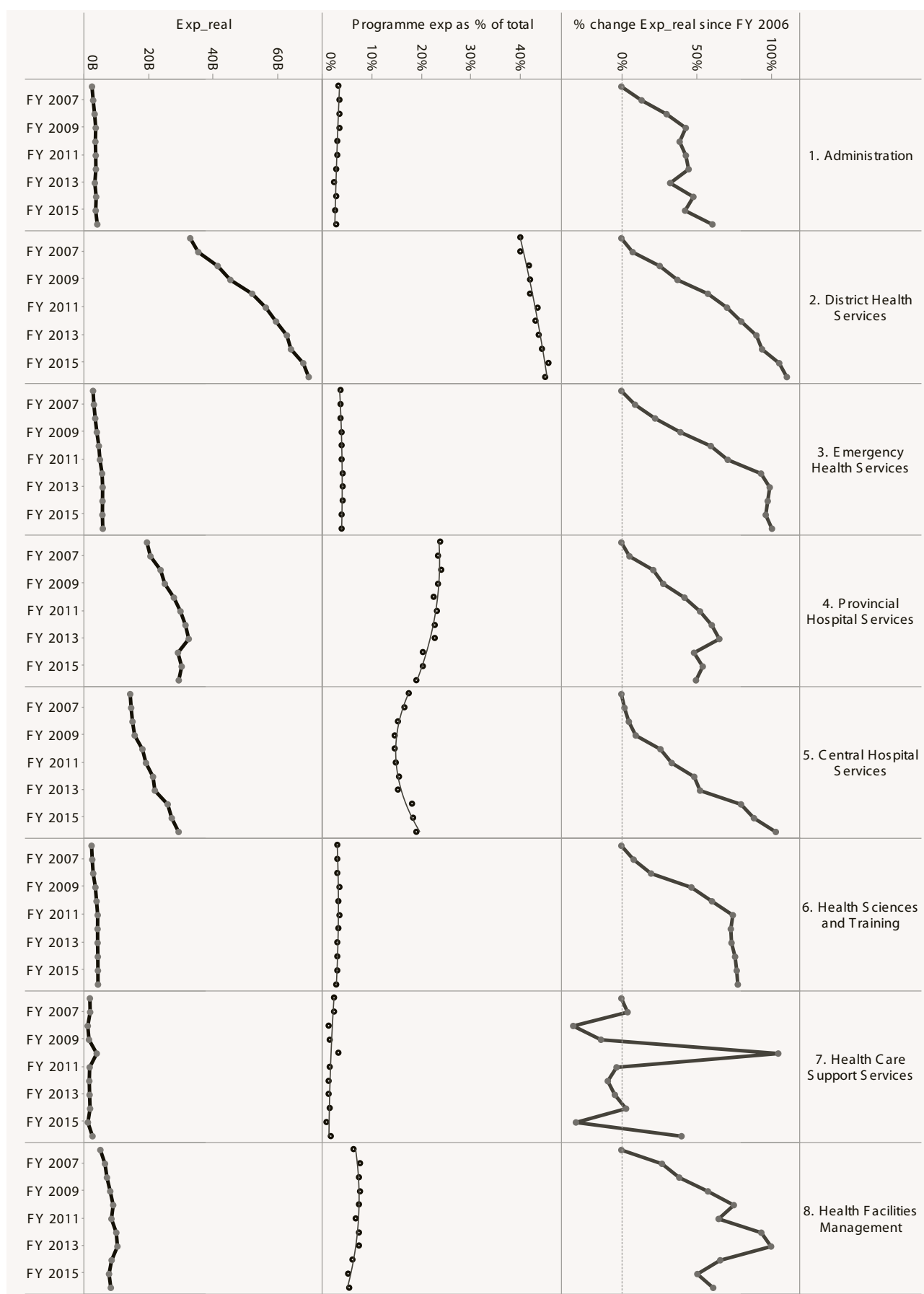
Health 2015”, noting a plateau in development aid for health.³⁹¹ In 2015, 64.5% of all such aid was contributed by the governments of 10 high-income countries, and amounted to between \$7 and \$144 per person in recipient countries. However, the major focus areas for such development aid are shifting away from HIV/AIDS, malaria, and tuberculosis, and towards non-communicable diseases and other infectious diseases.³⁹² As an upper middle-income country, South Africa is not a major recipient of development aid for health. In 2016/17, donor funds were expected to total R6.794 billion (1.8% of total health expenditure, or 3.8% of public sector expenditure).³⁹⁰ Drawing on lessons from Thailand, it has been argued that “the progressive alignment and ultimate integration of funding pools into a single fund ...will remain a key agenda” in South Africa.³⁹³ One of the key building blocks that is still missing in South Africa is a robust health technology assessment institution, akin to the Health Intervention and Technology Assessment Program (HITAP) in Thailand.

Figure 21: Medical scheme coverage trends per province by source, 1995–2015



Source: Compiled from multiple sources.

Figure 22: Trends in provincial health expenditure by programme (Rand billion, real 2015/16 prices), programme expenditure as % of total and percentage change since 2005/06, 2005/06–2015/16



Source: National Treasury databases.

Table 50: Health financing indicators by province

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Claims ratio	1998	all ages med schemes										91.0	a	
	2000	all ages med schemes										89.2	a	
	2005	all ages med schemes										84.4	b	
	2010	all ages med schemes										87.3	c	
	2015	all ages med schemes										90.8	d	
Expenditure per patient day equivalent (district hospitals)	2005	2005/06	1 385.6	1 508.8	1 878.9	1 253.8	1 545.9	1 736.9	1 373.9		818.6	1 375.3	e	
	2010	2010/11	1 942.0	2 131.5	2 490.6	1 692.1	2 286.5	2 276.9	1 933.6	2 166.9	2 052.7	2 023.1	e	
	2015	2015/16	2 217.4	2 310.6	2 656.1	2 240.9	2 790.6	2 180.0	2 208.8	2 604.4	2 059.6	2 342.2	e	
Headcount ratio of catastrophic health expenditure	2006	2005/06 IES	49.3	37.6	35.7	59.0	32.6	48.2	57.7	36.1	30.6	42.0	f	
	2007	50+ years SAGE										23.5	g	
Headcount ratio of impoverishing health expenditure	2006	2005/06 IES	78.3	98.8	53.4	96.5	109.9	51.1	29.4	60.4	19.3	72.0	f	
Health as percentage of total expenditure	1997	actual	18.8	24.2	34.0	25.0	17.0	17.4	15.9	17.8	27.7	23.4	h	
	2000	estimated	20.9	24.2	32.7	26.7	17.8	15.9	16.7	17.0	30.0	24.0	h	
	2005											12.3	i	
	2015	medium-term estimate										15.0	j	
Medical scheme beneficiaries	1992	all ages med schemes										6 053 967	a	
	1995	all ages med schemes										6 780 145	a	
	2000	all ages med schemes										7 004 636	a	
	2005	all ages med schemes	601 154	326 151	2 535 991	1 038 174	261 955	468 066	143 971	334 919	1 119 247	6 835 621	b	
	2010	all ages med schemes	708 097	388 514	3 010 299	1 287 219	407 410	576 026	175 318	461 521	1 294 088	8 315 718	c	
	2015	all ages med schemes	643 620	385 224	3 381 051	1 244 568	405 353	559 573	181 608	480 496	1 297 359	8 809 523	d	
Medical scheme coverage	1995	both sexes all ages OHS	8.1	17.7	40.3	13.1	7.6	14.0	20.9	13.6	28.5	18.1	h	
	2005	both sexes all ages GHS	10.1	13.7	22.3	10.1	7.3	10.1	13.3	12.4	22.2	14.0	k	
		both sexes all ages med schemes	9.1	11.5	26.0	10.4	5.1	13.4	12.9	10.1	22.5	14.5	b	
	2010	both sexes all ages GHS	12.1	16.8	26.5	15.7	8.6	14.6	13.6	14.7	24.4	17.6	l	
		both sexes all ages med schemes	10.5	13.8	26.9	12.1	7.5	15.9	15.9	14.4	24.8	16.6	c	
	2014	both sexes <18 years GHS rural											4.6	m
		both sexes <18 years GHS total											15.1	m
		both sexes <18 years GHS urban											23.5	m
		both sexes all ages GHS	10.5	17.9	28.2	12.8	8.6	14.9	19.8	14.8	26.3	18.1	n	
	2015	both sexes all ages med schemes	10.2	14.4	23.0	12.1	7.8	14.0	16.4	14.4	21.5	16.3	o	
		both sexes 65+ years NiDS											19.4	p
		both sexes all ages GHS	10.7	16.2	27.7	11.9	8.5	15.5	17.6	15.0	24.2	17.5	q	
		both sexes all ages med schemes	9.1	13.5	25.0	11.2	7.0	12.9	15.2	12.7	20.6	15.8	d	
both sexes all ages NiDS		8.9	16.9	21.5	11.6	13.1	12.7	15.9	17.9	20.3	15.8	p		
female all ages NiDS												15.2	p	
male all ages NiDS											16.5	p		
Pensioner ratio	2001	both sexes 65+ years med schemes										5.9	a	
	2005	both sexes 65+ years med schemes										6.4	b	
	2010	both sexes 65+ years med schemes										6.5	c	
	2015	both sexes 65+ years med schemes											7.7	d
		female 65+ years med schemes											8.5	d
		male 65+ years med schemes											6.7	d

Indicator	Year	Subgroup	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA	Ref	
Per capita health expenditure	1998	private sector total										3 099.0	q	
		public sector total	506.0	762.0	1 234.0	598.0	420.0	298.0	453.0	659.0	1 024.0	670.0	r	
	2000	private sector total											3 868.0	s
		public sector	670.0	792.0	1 107.0	786.0	570.0	465.0	644.0	535.0	1 235.0	779.0	h	
	2005	2005/06 public	955.0	1 238.0	1 496.0	1 211.0	915.0	944.0	1 415.0	878.0	1 670.0	1 191.0	t	
		private sector total											6 766.8	b
	2010	med schemes											10 279.2	c
		public sector provincial expenditure	2 241.2	2 565.2	2 490.3	2 304.2	2 114.3	2 113.2	2 690.7	2 094.2	3 138.1	2 383.8	u	
		public sector total											2 650.0	v
	2015	med schemes											15 823.0	w
public sector provincial expenditure		3304.4	3762.2	3903.2	3623.1	2957.7	2763.3	4418.8	2884.7	4242.5	3530.4	v		
Provincial and LG PHC expenditure per capita (uninsured)	2005	2005/06 real 2015/16 prices	446.9	474.0	505.0	526.7	367.4	317.4	473.9	468.3	602.5	474.1	e	
	2010	2010/11 real 2015/16 prices	828.0	827.2	865.7	777.6	680.5	617.1	965.1	861.2	925.8	805.6	e	
	2015	2015/16 real 2015/16 prices	848.0	1 020.8	1 107.4	1 085.9	827.1	826.1	1 071.5	983.0	1 051.2	992.6	e	
Ratio of private to public sector per capita health expenditure	1997	1997/98										4.5	x	
	2000	2000/01										6.1	x	
	2005	2005/06										5.9	i	
	2009	2009/10										5.4	i	
	2015											4.5	y	
Total current expenditure on health as percentage of gross domestic product	1998	Treasury public sector										4.1	z	
		Treasury private sector											5.2	i
		Treasury total											8.7	i
	2010	Treasury private sector											4.6	j
		Treasury public sector											4.1	j
		Treasury total											8.7	j
	2015	Treasury private sector											4.3	j
		Treasury public sector											4.2	j
		Treasury total											8.5	j

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Medical Schemes 2002–3.³⁹⁴
b Medical Schemes 2005–6.³⁹⁵
c Medical Schemes 2010–11.³⁹⁶
d Medical Schemes 2015–16.⁴¹
e DHB 2015/16.¹³⁶
f Ataguba et al. 2014.³⁹⁷ Based on analysis of the Stats SA Income and Expenditure Survey.
g Goepfel et al. 2016.³⁰⁷
h Fiscal Review 2001.³⁵
i Fiscal Review 2009.³⁹⁸
j Fiscal Review 2015.³⁹⁰
k Stats SA GHS 2009.³⁶
l Stats SA GHS 2010.³⁸
m Vulnerable Groups 2014.⁵⁷
n Stats SA GHS 2014.⁴⁵
o Medical Schemes 2014–15.³²⁵ Calculated from Medical Schemes beneficiaries per population from Stats SA mid-year estimates for 2014.
p NiDS Wave 4 v1.1.²⁰⁵
q Medical Schemes 1999.³⁹⁹ Calculated from all benefits paid divided by total beneficiaries (all types of medical schemes).
r National Health Accounts Public 2000.⁴⁰⁰ Calculated from Line Item expenditures and public sector dependent population. Figures in 99/00 Rands. Figures are for total recurrent expenditure (excludes capital expenditure) and includes expenditure on personnel, medicine, transport, laboratory services, maintenance and other recurrent costs.
s Medical Schemes 2000.⁴⁰¹ Calculated from all benefits paid divided by total beneficiaries (all types of medical schemes).
t Fiscal Review 2007.⁴⁰²
u SAHR 2011 Ch11.⁴⁰³ Calculated from provincial expenditure (National Treasury, NW) per uninsured population. For 2010/11 financial year.
v National Treasury.¹³² Calculated from provincial expenditure (National Treasury) per uninsured population.
w Medical Schemes 2015–16.⁴¹ Average benefits paid per beneficiary per annum.
x SAHR 2003/04 Ch20.⁴⁰⁴
y Calculated from Medical Schemes Council and National Treasury data.
z National Health Accounts Public 2000.⁴⁰⁰

Table 51: Medical scheme coverage by population group

Indicator	Year	Subgroup	African/Black	Coloured	Indian/Asian	White	Ref
Medical scheme coverage	1996	both sexes all ages OHS	10.0	21.7	29.5	68.8	a
	1999	both sexes all ages OHS	8.4	21.3	28.9	67.8	b
	2005	both sexes all ages GHS	7.1	18.1	32.4	64.2	c
	2010	both sexes all ages GHS	10.3	21.8	46.8	70.9	d
	2015	both sexes all ages GHS	10.6	19.3	44.5	73.3	e
			both sexes all ages NIDS	9.7	15.3	40.3	61.6

Reference notes (indicator definitions from page 319 and bibliography of reference sources from page 328):

- a Stats SA OHS 1995–9.⁴⁰⁵
- b Fiscal Review 2001.³⁵
- c Stats SA GHS 2009.³⁶
- d Stats SA GHS 2010.³⁸
- e Stats SA GHS 2015.⁴⁰
- f NiDS Wave 4 v1.1.²⁰⁵

Table 52: Trends in overall provincial and local government health expenditure by programme (Rand million, real 2015/16 prices), 2005/06 – 2015/16

Rand million	Financial Year										
	2005/06	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
1. Administration	2 679	3 042	3 491	3 834	3 724	3 836	3 885	3 555	3 971	3 822	4 313
2. District Health Services	33 126	35 630	41 643	45 572	52 336	56 574	59 735	63 096	64 358	68 160	69 854
3. Emergency Health Services	2 999	3 273	3 677	4 186	4 796	5 137	5 806	5 980	5 940	5 900	6 025
4. Provincial Hospital Services	19 721	20 790	23 938	25 253	28 062	30 116	31 665	32 665	29 321	30 473	29 576
5. Central Hospital Services	14 512	14 813	15 235	15 907	18 310	19 409	21 596	22 163	26 145	27 404	29 529
6. Health Sciences and Training	2 544	2 753	3 050	3 738	4 088	4 444	4 410	4 422	4 483	4 511	4 529
7. Health Care Support Services	2 020	2 104	1 368	1 744	4 143	1 954	1 835	1 932	2 083	1 404	2 834
8. Health Facilities Management	5 271	6 706	7 316	8 328	9 243	8 706	10 214	10 559	8 762	7 955	8 514
Local government expenditure	2 167	2 537	2 089	2 034	2 112	3 148	2 989	3 366	3 184	3 599	3 730
Other	-67	-67	-61	-27	-50	-18	3	5	0	0	0
Total	84 971	91 580	101 745	110 569	126 764	133 306	142 139	147 743	148 247	153 229	158 903

Source: National Treasury databases.

Note: 'Other' includes any other expenditure not indicated as being allocated to any of the above budget programmes.

Table 53: Provincial and local government health expenditure per province by programme (Rand million, real 2015/16 prices), 2015/16

Rand million	Financial Year 2015/16									
	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
1. Administration	668	303	807	847	265	297	211	297	616	4 313
2. District Health Services	9 516	3 720	10 841	16 008	9 850	6 175	1 697	4 693	7 354	69 854
3. Emergency Health Services	946	534	940	1 174	645	310	271	273	931	6 025
4. Provincial Hospital Services	4 928	1 199	6 406	9 214	2 011	1 174	340	1 349	2 955	29 576
5. Central Hospital Services	823	2 053	12 582	4 125	1 467	992	879	1 247	5 360	29 529
6. Health Sciences and Training	783	164	939	1 059	485	369	91	320	320	4 529
7. Health Care Support Services	1 399	113	223	203	107	123	120	122	423	2 834
8. Health Facilities Management	1 200	610	1 865	1 518	602	639	559	742	780	8 514
Local government expenditure	191	9	2 391	350	49	-7	33	68	646	3 730
Grand Total	20 454	8 704	36 994	34 497	15 481	10 074	4 202	9 111	19 386	158 903

Source: National Treasury databases.

Table 54: Provincial health expenditure on district health services per province by sub-programme (Rand million, real 2015/16 prices), 2015/16

Rand million	Financial Year 2015/16									
	2. District Health Services									
	EC	FS	GP	KZN	LP	MP	NC	NW	WC	SA
2.1 District Management	730	105	451	249	700	350	173	427	318	3 502
2.2 Community Health Clinics	1 874	910	1 925	3 501	2 333	1 246	383	855	1 079	14 107
2.3 Community Health Centres	905	80	1 429	1 366	446	754	236	982	1 680	7 878
2.4 Community-based Services	409	346	1 459	16	270	90	0	13	197	2 800
2.5 Other Community Services	40	0	0	1 104	101	0	56	225	0	1 526
2.6 HIV/AIDS	1 583	969	3 003	3 814	1 066	936	361	1 014	1 209	13 955
2.7 Nutrition	28	11	49	44	4	13	3	5	41	199
2.8 Coroner Services	81	36	184	172	0	0	0	42	0	515
2.9 District Hospitals	3 867	1 263	2 341	5 742	4 930	2 787	484	1 130	2 736	25 280
2. Other*	0	0	0	0	0	0	0	0	93	93
Grand Total	9 516	3 720	10 841	16 008	9 850	6 175	1 697	4 693	7 354	69 854

Source: National Treasury databases.

Conclusion

This chapter has focused on contrasting the situation with regard to health and related indicators over the entire period during which the Review has been published, coinciding with a period of intense health systems reform. Where possible, baseline, mid-point and most recent figures have been provided. As always, caution must be exercised when comparing figures over time, as the definitions and sources may have changed. The next phase of health systems reform will be dominated by the implementation of National Health Insurance, as the provision of universal health coverage is termed in South Africa. This is a key goal of the Sustainable Development Goals (SDGs), to which South Africa is committed. As has been noted before, the range of data sources continues to expand, allowing greater opportunities for triangulation of data and attention to issues of data quality, reliability and timeliness, but systematic inclusion of data from the private sector remains patchy and incomplete.

Acknowledgements

As in previous years, this chapter is very much the product of collective efforts at all levels of the health system over many years. In particular we acknowledge the national and provincial Departments of Health for the use of data from the District Health Information System and various other databases and publications. Other people and institutions have also contributed significantly. Thanks are due to Muchiri Wandai for data analysis and capture, and to Noluthando Ndlovu for extensive assistance with data capture, analysis, layout, editing and referencing. Naomi Massyn provided input on the National Indicator Data Set. We also appreciate the perceptive review comments and strategic inputs of the team of reviewers.

Appendices

Indicator definitions for data tables presented in this chapter

Demographic	Population	Adolescent fertility rate (per 1 000 girls aged 15–19 years)	Annual number of births to women aged 15–19 years per 1000 women in that age group. It is also referred to as the age-specific fertility rate for women aged 15–19 years.
		Ageing index	Ratio of the number of people 65+ to the number under 15 years. i.e. a value of 16 means there are 16 people aged 65 and over for every 100 under 15 years of age. Calculated as $((65+/0-14)*100)$
		Annual population growth rate	The rate at which the population is increasing or decreasing in a given year expressed as a percentage of the base population size. It takes into consideration all the components of population growth, namely births, deaths and migration.
		Area (square km)	Land area covered by geographic entity.
		Area as a % of total area of South Africa	Area of province divided by total area of country (South Africa).
		Average household size	Average number of people living in each household where household is defined as a person, or a group of persons, who occupy a common dwelling (or part of it) for at least four days a week and who provide themselves jointly with food and other essentials for living. In other words, they live together as a unit. People who occupy the same dwelling, but who do not share food or other essentials, are enumerated as separate households.
		Crude death rate (deaths per 1 000 population)	Number of deaths in a year per 1 000 population.
		Live birth occurrences registered	The number of live birth occurrences registered.
		Population	Total number of people.
		Population % by population group	Proportion of South African population in each population (ethnic) group (calculated from number of people per population group and population for whole of South Africa).
		Population % by province	Proportion of South African population in each province (calculated from population per province and population for whole of South Africa).
		Population density	The number of people per square kilometre.
		Public sector dependent population	This is an adjustment of the total population to the number assumed to be dependent on services in the public health sector based on medical scheme coverage. It is calculated by subtracting the number of people with medical scheme cover (determined from medical scheme membership reports, or surveys indicating percentage of population on medical schemes) from the total population.
Total fertility rate	The average number of children that a woman gives birth to in her lifetime, assuming that the prevailing rates remain unchanged.		
Socio-economic and risk factors	Development	Human development index	The HDI is a summary measure of human development. It measures the average achievements in a country in three basic dimensions of human development. A high value for the HDI represents better human development.
		Poverty prevalence	Proportion of people/households living in poverty. Depending on the poverty line and the methodology used there are various estimates of the extent of poverty, therefore caution should be observed in comparing estimates from different sources, and comparative reliability can be assessed from the rank order correlation between different sets of estimates.
	Education	Education level: percentage of population with no schooling	Data are presented for the percentage of population aged 20 years and above with no schooling.
		Literacy rate	People aged 20 years and more with no schooling or with some primary schooling are assumed to be illiterate. People with more schooling are therefore assumed to be literate.
	Employment Environmental risks	Unemployment rate (official definition)	The official definition of the unemployed is that they are those people within the economically active population (aged 15–65) who (a) did not have a job or business during the 7 days prior to the interview, (b) want to work and are available to work within two weeks of the interview, and (c) have taken active steps to look for work or to start some form of self-employment in the 4 weeks prior to the interview. Note that the census produces lower estimates of labour force participation because there are less prompts to identify employed people, and the Labour Force Survey provides the official labour market statistics.
		Air pollution level in cities (particulate matter [PM])	Annual mean concentration of particulate matter of less than 2.5 microns of diameter (PM2.5) [ug/m3] (or of less than 10 microns [PM10] if PM2.5 is not available) in cities.
		Drinking Water System (Blue Drop) Performance Rating	Composite score measuring compliance of water suppliers with water quality management requirements. Includes microbiological, chemical and physical compliance criteria.
	Household Facilities	Percentage of households by type of housing	Percentage of households that are categorised as formal, informal, traditional or other.
		Percentage of households using electricity for cooking	Percentage of households using electricity as their main energy source for cooking.
		Percentage of households with access to piped water	Includes households with piped water in dwelling, piped water inside yard or piped water on a community stand (< 200m away or further).
Percentage of households with no toilet / bucket toilet		Percentage of households that have no toilet, or were using a bucket toilet.	
Percentage of households with refuse removal		Percentage of households that have refuse removal by the local authority at least once a week.	
Percentage of households with telephone (telephone in dwelling or cell phone)		Percentage of households with a telephone in the dwelling or a cellular telephone.	

	Household Facilities (continued)	Population using safely managed sanitation services	Population using a basic sanitation facility (flush or pour-flush toilets to sewer systems, septic tanks or pit latrines, ventilated improved pit latrines, pit latrines with a slab, and composting toilets) which is not shared with other households and where excreta are safely disposed in situ (e.g. in a sealed latrine pit until they are safe to handle and re-use, such as an agricultural input) or transported to a designated place for safe disposal or treatment (e.g. treatment facility or hygienically collected from septic tanks or pit latrines by a suction truck or similar equipment that limits human contact and thereafter transported to a designated location such as a treatment facility or solid waste collection site).
		Proportion of population with sustainable access to an improved water source	<p>'Improved' water supply technologies are: household connection, public standpipe, borehole, protected dug well, protected spring, rainwater collection.</p> <p>'Not improved' are: unprotected well, unprotected spring, vendor-provided water, bottled water (based on concerns about the quantity of supplied water, not concerns over the water quality), tanker truck provided water.</p> <p>It is assumed that if the user has access to an 'improved source' then such source would be likely to provide 20 litres per capita per day at a distance no longer than 1 000 metres.</p>
Mortality	Mortality	Adult mortality (45q15 – probability of dying between 15–60 years of age)	The probability of dying between the ages of 15 and 60 years of age (percentage of 15-year-olds who die before their 60th birthday).
		Healthy life expectancy (HALE)	Healthy life expectancy or health-adjusted life expectancy is based on life expectancy at birth but includes an adjustment for time spent in poor health. It is most easily understood as the equivalent number of years in full health that a newborn can expect to live based on current rates of ill-health and mortality.
		Life expectancy at birth	The average number of additional years a person could expect to live if current mortality trends were to continue for the rest of that person's life.
Disability	Disability	Cataract surgery rate	Cataract operation per million of the population.
		Prevalence of disability	<p>Percentage of people reporting moderate to severe disability in a survey where disability is defined as a limitation in one or more activities of daily living (seeing, hearing, communication, moving, getting around, daily life activities, learning, intellectual and emotional).</p> <p>In the Community Survey 2007 and Census 2001, disability is defined as a physical or mental handicap which has lasted for six months or more, or is expected to last at least six months, which prevents the person from carrying out daily activities independently, or from participating fully in educational, economic or social activities.</p> <p>The definition of disability used in Census 2001 is not comparable with that used in Census 1996.</p> <p>More recent surveys use the International Classification of Functioning, Disability and Health (ICF) approach where respondents are asked about 'difficulty' with various activities rather than disability, with a continuum from 'no difficulty' to 'not able'.</p> <p>Since the 2009 GHS (revised in 2011), Stats SA have also excluded data on children under 5 years old, since it was thought that these are often categorised as being unable to do the various activities, when this is in fact due to their level of development rather than any innate disabilities.</p>
		Prevalence of hearing disability	In the census questionnaire, respondents were asked to indicate whether or not there were any people with serious visual, hearing, physical or mental disabilities in the household. The seriousness of the disability was not clearly defined. Rather, the respondent's perceptions of seriousness were relied on.
		Prevalence of physical disability	In the census questionnaire, respondents were asked to indicate whether or not there were any people with serious visual, hearing, physical or mental disabilities in the household. The seriousness of the disability was not clearly defined. Rather, the respondent's perceptions of seriousness were relied on.
		Prevalence of sight disability	In the census questionnaire, respondents were asked to indicate whether or not there were any people with serious visual, hearing, physical or mental disabilities in the household. The seriousness of the disability was not clearly defined. Rather, the respondent's perceptions of seriousness were relied on.
Infectious Disease	Infectious Disease Malaria	Reported cases of cholera	<p>The number of cases of cholera reported to the Department of Health.</p> <p>Since case reporting of notifiable diseases has been incomplete and delayed for several years, the number of laboratory-confirmed cases from NHLS has been included where available, although these would be expected to include only a subset of the total number of notified cases.</p>
		Reported cases of measles	<p>Number of cases of measles reported to the National Department of Health per year.</p> <p>Since case reporting of notifiable diseases has been so incomplete and delayed for several years, the number of laboratory confirmed cases from NHLS has been included where available, although these would be expected to include only a subset of the total number of notified cases.</p>
		Reported cases of rabies	<p>Number of cases of rabies reported per year.</p> <p>Since case reporting of notifiable diseases has been incomplete and delayed for several years, the number of laboratory-confirmed cases from NHLS has been included where available, although these would be expected to include only a subset of the total number of notified cases.</p>
		Syphilis prevalence rate (antenatal)	Percentage of women surveyed testing positive for syphilis.
		Case fatality rate: malaria	Number of deaths divided by number of cases expressed as a percentage.
		Malaria mortality rate (per 100 000 population)	Number of adults and children who have died due to malaria in a specific year, expressed as a rate per 100 000 population.
		Reported cases of malaria	The number of cases of malaria reported to the Department of Health.
		Reported cases of malaria (per 100 000)	The number of cases of malaria reported to the Department of Health per 100 000 population (for the relevant year). Also known as incidence of malaria.
		Reported deaths from malaria	The number of deaths from malaria reported to the Department of Health or recorded in vital registration (ICD-10 codes B50-B54).

Tuberculosis (TB)	Case finding	Incidence (diagnosed cases) of TB – new PTB sm+	New TB cases diagnosed (pulmonary sm+) per 100 000 people in the catchment population.
		Incidence (diagnosed cases) of TB (ETR.net)	TB cases diagnosed (all TB in ETR.net) per 100 000 people in the catchment population.
Incidence of TB (all types) (per 100 000)	Estimated number of cases of tuberculosis (all types) per 100 000 population (for the year). Adjusted for estimated under-reporting of TB cases and other factors.		
MDR-TB started on treatment	Number of MDR-TB patients who started treatment.		
Number of TB cases reported (ETR.net)	Number of TB cases reported (all TB) in ETR.net.		
Prevalence of multidrug resistance among new TB cases	Estimated percentage of new cases of TB which are multidrug resistant.		
Reported cases of MDR-TB	Number of laboratory-diagnosed cases of MDR-TB. MDR-TB is defined as resistance to rifampicin and isoniazid, with or without resistance to other first-line anti-TB drugs.		
Reported cases of XDR-TB	Number of laboratory-diagnosed cases of XDR-TB. XDR-TB is defined as resistance to rifampicin, isoniazid, any fluoroquinolone and resistance to one or more of the following injectable anti-TB drugs: kanamycin, amikacin, and capreomycin.		
Smear positivity (% of PTB cases which are new Sm+)	Number of new smear positive PTB cases divided by number of PTB cases.		
TB Rifampicin resistance confirmed client rate	Percentage of positive TB tests that are RIF resistant (based only on tests done using GeneXpert technology).		
XDR-TB started on treatment	Number of XDR-TB patients who started treatment.		
Programme Management	Case detection rate (all forms)	Proportion of incident cases of TB (all types) that were notified. For a given country, it is calculated as the number of notified cases of TB in one year divided by the number of estimated incident cases of TB in the same year, and expressed as a percentage.	
	HIV prevalence in TB incident cases	Percentage of new TB cases that are HIV positive.	
	Tuberculosis death rate per 100 000 (in HIV-positive people)	Number of deaths due to TB in HIV-positive people per 100 000 population. Note that these deaths are officially classified as being caused by HIV/AIDS according to the International Classification of Diseases.	
	Tuberculosis mortality rate per 100 000	Number of deaths due to tuberculosis (all types) reported per 100 000 population (for the year). Note that the estimates calculated from the Stats SA cause of death data are not corrected for under-reporting or ill-defined coding, and are thus not an accurate of mortality due to TB. In addition many deaths in HIV-positive TB cases are misattributed to TB rather than HIV (according to the ICD-10 rules).	
	Tuberculosis mortality rate per 100 000 (excluding HIV)	Number of deaths due to tuberculosis (all types) reported per 100 000 population (for the year). The reported TB mortality excludes deaths occurring in HIV-positive TB cases, in accordance with the definition used in ICD-10.	
Treatment outcomes	New smear positive pulmonary TB loss to follow up rate	New smear positive pulmonary TB clients lost to follow up as a proportion of new smear positive pulmonary TB clients started on treatment. Previously called TB defaulter rate (new sm+).	
	TB client lost to follow up rate (ETR.net)	The percentage of TB clients (all types of TB) who defaulted treatment.	
	TB cure rate (new sm+)	The proportion of new smear-positive PTB patients who completed treatment and were proven to be cured (which means that they had two negative smears on separate occasions at least 30 days apart).	
	TB death rate (ETR.net)	The percentage of TB clients (all types of TB registered in ETR.net) who died.	
	TB MDR treatment success rate (EDRWeb)	The percentage of TB clients (MDR TB) cured plus those who completed treatment.	
	TB treatment failure (ETR.net)	The percentage of TB clients (all types of TB) who failed treatment.	
	TB treatment success rate (ETR.net)	The percentage of TB clients (all types registered in ETR.net) cured plus those who completed treatment.	
HIV and AIDS	Antiretroviral coverage	The number of patients receiving ART, divided by the number needing treatment. The denominator has changed over time, due to changes in treatment guidelines affecting the criteria for treatment eligibility. The latest definition is that all HIV-infected patients should be on ART.	
	Antiretroviral treatment exposure	Percentage of people living with HIV on ART. Measured by laboratory testing for antiretroviral drugs in HIV-positive samples.	
	HIV testing coverage	Percentage of target population who have been tested for HIV.	
	HIV testing coverage (including ANC)	Clients HIV tested (ANC and other) as proportion of population 15–49 years.	
	HIV viral load suppression	Percentage of people on ART who are virologically suppressed (VL level <= 1000 copies/mL).	
	Male circumcision (% of men who are circumcised)	The percentage of men (15–59 years, unless otherwise specified) who have been circumcised.	
	Number of patients receiving ART	Number of patients receiving ART.	
	People living with HIV	The number of people who are HIV-positive.	
	Percentage of deaths due to AIDS	Percentage of total deaths attributed to AIDS related causes.	
	Percentage of people living with HIV (PLHIV) who know their status	Percentage of people living with HIV who know their HIV status.	
	Percentage of TB cases with known HIV status (ETR.net)	Percentage of TB cases (all TB) with known HIV status (positive or negative).	
	TB/HIV co-infected client on ART rate (ETR.net)	Percentage of HIV-positive TB cases (all TB) who are recorded as being on ART.	
	Incidence and prevalence	HIV incidence	The HIV incidence rate is the percentage of people who are uninfected at the beginning of the period who will become infected over the twelve months.
HIV prevalence (age 15–49)		Percentage of population (age 15–49) estimated to be HIV-positive.	
HIV prevalence (antenatal)		Percentage of women surveyed testing positive for HIV.	
HIV prevalence (total population)		Percentage of population estimated to be HIV-positive.	

Maternal and reproductive health	PMTCT	Antenatal client initiated on ART rate	Antenatal clients on ART as a proportion of the total number of antenatal clients who are HIV-positive and not previously on ART.
		Antenatal client tested for HIV	Proportion of women coming for their first antenatal visit who are tested for HIV.
		HIV PCR birth testing coverage	The percentage of infants born to HIV-positive mothers who receive a PCR test within 7 days of birth.
Maternal Health	Percentage PCR tests positive within 6 days	The percentage of PCR tests that are positive for HIV (in infants within 7 days of birth).	
	Targeted birth PCR test positive rate	High risk birth PCR test positive as a proportion of high risk birth PCR tests.	
	ANC coverage	Proportion of pregnant women receiving some antenatal care. DHIS data source: Estimated from the number of first ANC visits divided by the population under 1 year x 1.15 (as a proxy for the number of pregnant women).	
	Antenatal 1st visit before 20 weeks rate	Women who have a booking visit (first visit) before they are 20 weeks (about half way) into their pregnancy as a proportion of all antenatal 1st visits.	
	Delivery by Caesarean section rate	Percentage of births that are by Caesarean section.	
	Delivery in facility under 18 years rate	The proportion of pregnant women under 18 years at delivery.	
	Maternal mortality in facility ratio	Women who die as a result of childbearing, during pregnancy or within 42 days of delivery or termination of pregnancy, per 100 000 live births, and where the death occurs in a health facility.	
	Maternal mortality ratio (MMR)	The number of women who die as a result of childbearing, during the pregnancy or within 42 days of delivery or termination of pregnancy in one year, per 100 000 live births during that year.	
	Maternal mortality ratio institutional	Women who die as a result of childbearing, during pregnancy or within 42 days of delivery or termination of pregnancy, per 100 000 live births, and where the death occurs in a health facility.	
	Mother postnatal visit within 6 days rate	Mothers who receive postnatal care within 6 days of delivery after discharge from place of delivery as proportion of all deliveries in facility.	
	Number of maternal deaths	The number of women who die as a result of childbearing, during the pregnancy or within 42 days of delivery or termination of pregnancy in one year. In the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, 1992 (ICD-10), WHO defines maternal death as: The death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. For countries using ICD-10 coding for registered deaths, all deaths coded to the maternal chapter (O codes) and A34 (maternal tetanus) were counted as maternal deaths. Note that the system of Confidential Enquiries into Maternal Deaths (NCCEMD) only captures institutional deaths, and thus is known to miss deaths occurring at home. The confidential enquiry system is ideally suited to identifying the most common causes of death and being able to rank the causes of death according to priority.	
	PM (proportion of deaths among women of reproductive age that are due to maternal causes)	An alternative measure of maternal mortality, the proportion of deaths among females of reproductive age (PMDF) that are due to maternal causes, is calculated as the number of maternal deaths divided by the total deaths among females aged 15–49 years.	
	Neonatal	Inpatient early neonatal death rate	Inpatient deaths within the first 7 days of life per 1 000 live births.
		Live birth under 2500g in facility rate	Percentage of live births under 2 500g. Was previously called 'Low birth weight rate' in DHIS.
Neonatal mortality in facility rate		Inpatient deaths within the first 28 days of life per 1 000 estimated live births. Estimated live births in population is calculated by multiplying estimated population under 1 year by 1.03 to compensate for infant mortality.	
Neonatal mortality rate (NNMR) (deaths <28 days old per 1 000 live births)		Number of deaths within the first 28 days of life, in a year, per 1 000 live births during that year.	
Perinatal mortality rate (stillbirths plus deaths <8 days old per 1 000 total births)		The number of perinatal deaths per 1 000 births. The perinatal period starts as the beginning of foetal viability (28 weeks gestation or 1 000g) and ends at the end of the 7th day after delivery. Perinatal deaths are the sum of stillbirths plus early neonatal deaths. These are divided by total births (live births plus stillbirths).	
Stillbirth in facility rate		Stillbirths in facility per 1 000 total births in a facility.	
Stillbirth rate (per 1 000 total births)		Number of stillbirths per 1 000 total births.	
Reproductive Health		Age of first sex under 15 years (% having first had sex at age 14 or younger)	Percentage of people surveyed (of various age groups) who report having first had sexual intercourse at age 14 years or younger. The age cut-off varies slightly between surveys with the HSRC HIV Household survey including 'under 15 years' compared to the NYRBS which includes 'under 14 years'.
	Cervical cancer screening coverage	Women 30 years and older with a cervical (pap) smear done for screening purposes according to the national policy of screening all women in this age category every 10 years, as the proportion of all women 30 years and older in the target population.	
	Condom use at last sex	Percentage of those, who reported ever having had sex, who used a condom the last time they had sex. Note that the precise definition of this indicator varies between surveys.	
	Condom use at the last high-risk sex	Percentage who say they used a condom the last time they had sex with a non-marital/non-cohabiting partner, of those who were sexually active in the last 12 months.	
	Couple year protection rate	Women protected against pregnancy by using modern contraceptive methods, including sterilisations, as proportion of female population 15–49 years. Contraceptive years are the total of (Oral pill cycles / 13) + (Medroxyprogesterone injection / 4) + (Norethisterone enanthate injection / 6) + (IUCD x 4) + (Male condoms distributed / 200) + (Male sterilisation x 20) + (Female sterilisation x 10). Although only officially included in the definition from 2017, in practice subdermal implants were also included in the calculation since they were available in the public sector.	
	Ever had sex	Percentage of people who report that they have ever had sexual intercourse.	
	HIV knowledge: correct knowledge about prevention and rejection of major misconceptions	The percentage of people who correctly answer a composite measure of accurate knowledge of two questions related to HIV prevention in combination with rejecting four myths and misconceptions about the disease. The two questions on prevention of HIV transmission were 'To prevent HIV infection, a condom must be used for every round of sex' and 'One can reduce the risk of HIV by having fewer sexual partners' while the four questions about myths and misconceptions were 'There is a cure for AIDS', 'AIDS is caused by witchcraft', 'HIV causes AIDS', and 'AIDS is cured by having sex with a virgin'.	

Child Health	Reproductive Health (continued)	Male condom distribution coverage	Number of male condoms distributed to clients via the facility or via factories, offices, restaurants, NGOs or other outlets – per male 15 years and older.
		Male condoms distributed (thousands)	Number of male condoms distributed. Data should be interpreted with caution depending on what distribution channel it is for – i.e. condoms distributed by national to provinces, or number distributed through PHC facilities (since some condoms are distributed to provinces, that are then distributed through several channels including PHC facilities).
		Teenage pregnancy	Percentage of women aged 15–19 who are mothers or who have ever been pregnant. The percentage of women who are mothers at the time of the survey is a more restrictive definition. Note that some of the surveys report this indicator as the percentage who have ever been pregnant of those WHO HAVE EVER HAD SEX. This is a different denominator to that used by the Demographic and Health Surveys, and the data can therefore not be directly compared.
	STI	STI treated new episode incidence (per 1 000)	The number of people per 1 000 population 15 years and older who have been treated for a new STI episode. (previously reported as %)
		ToP rate	Percentage of pregnant women who have had an abortion. DHIS definition: Termination of pregnancies performed in a health facility as the proportion of all expected pregnancies in the catchment population.
	Termination of Pregnancy	ToPs (Terminations of Pregnancy)	The number of terminations of pregnancy.
		Child Health	Child under 5 years diarrhoea with dehydration incidence
	Child Health	Child under 5 years pneumonia incidence	Children under 5 years newly diagnosed with pneumonia per 1 000 children under 5 years in the population.
		Child under 5 years severe acute malnutrition incidence	Children under 5 years newly diagnosed with severe acute malnutrition per 1 000 children under 5 years in the population.
	Child Health	Children living far from their usual health facility	This indicator reflects the distance from a child's household to the health facility they normally attend. Distance is measured through a proxy indicator: length of time travelled to reach the nearest health facility, by whatever form of transport is usually used. The health facility is regarded as 'far' if a child would have to travel more than 30 minutes to reach it, irrespective of mode of transport.
		School Grade 1 screening coverage	Proportion of Grade 1 learners screened by a nurse in line with the ISHP service package.
	Child mortality and related	Child mortality (deaths between 1–4 years per 1 000 live births)	The number of children aged 12 months to 5 years (i.e. to the end of the 4th year) who die in a year, per 1 000 live births.
		Infant mortality rate (deaths under 1 year per 1 000 live births)	The number of children less than one year old who die in a year, per 1 000 live births during that year.
		Number of under-5 deaths	The estimated number of deaths in children younger than 5 years.
		Post-neonatal mortality rate (deaths 28–365 days age per 1 000 live births)	Number of deaths occurring between 28 and 365 days after birth per 1 000 live births in the same period.
		Under 5 mortality rate (deaths under 5 years per 1 000 live births)	The number of children under 5 years who die in a year, per 1 000 live births during the year. It is a combination of the infant mortality rate, plus the age 1–4 mortality rate.
	Immunisation	BCG coverage	The proportion of expected live born babies that received BCG under 1 year of age. (note: usually given immediately after birth)
		DTP3 coverage	Currently called 'DTaP-IPV/Hib 3rd dose coverage (annualised)' in DHIS. The proportion of children who received their third DTP-Hib doses (normally at 14 weeks). From approximately 2009 when the immunisation schedule changed, this is defined as: The proportion of children under 1 year who received their DTaP-IPV/Hib (Pentaxim) 3rd dose, normally at 14 weeks – annualised.
		Immunisation coverage of children 12–23 months	Proportion of children aged 12 to 23 months who had received BCG, 3 doses of DTP and polio, and Measles vaccine, but not necessarily Hepatitis B.
		Immunisation coverage under 1 year	The proportion of all children in the target area under one year who complete their primary course of immunisation. A Primary Course includes BCG, OPV 1,2 & 3, DTP-Hib 1,2 & 3, HepB 1,2 & 3, and 1st measles (usually at 9 months).
		Measles 1st dose under 1 year coverage	The proportion of children who received their 1st measles dose (normally at 9 months) – annualised.
		Measles 2nd dose coverage	The proportion of children who received their 2nd measles dose (around 18 months) – annualised.
		OPV 1st dose coverage	The proportion of children under 1 immunised with OPV dose 1.
PCV 3rd dose coverage		The proportion of children who received their third PCV dose (around 9 months) – annualised.	
RV 2nd dose coverage	The proportion of children who received their second RV dose (around 14 weeks) – annualised.		
Orphans	Number of orphans	Number of children under 18 years whose biological mother, biological father or both parents have died. Different kinds of orphans are defined as: maternal orphans – a child whose mother has died, or whose living status is not known, but whose father is alive. paternal orphans – a child whose father has died, or whose living status is not known, but whose mother is alive. double/dual orphan – a child whose mother and father have both died, or whereabouts are unknown.	
	Orphanhood	Proportion of children under 18 years whose biological mother, biological father or both parents have died.	

Nutrition	Breast-feeding	Exclusive breastfeeding rate	Proportion of living children receiving only breast milk from birth to various ages.
		Nutrients	Age-standardised mean population intake of salt (sodium chloride) per day in grams
Anaemia prevalence in children	Proportion of children with Hb <11g/dl.		
Anaemia prevalence in women of reproductive age	Percentage of women aged 15–49 years with a haemoglobin level less than 120 g/L for non-pregnant women and lactating women, and less than 110 g/L for pregnant women, adjusted for altitude and smoking.		
Iodine deficiency	Indicator may be reported using a number of definitions: Iodine deficient school (comprehensive definition) = median urinary iodine concentration < 100mcg/litre or \geq 20% of children with urinary iodine < 50mcg/litre Iodine deficient child = urinary iodine concentration < 100mcg/litre Indicator reported as proportion of schools or proportion of children as appropriate.		
Iodised salt consumption	Proportion of households' salt samples with specified iodine concentrations. The legal concentration at packaging is 40–60mg/kg. A concentration <10mg/kg is probably insufficient to prevent iodine deficiency disorder.		
Iron deficiency anaemia prevalence	Proportion of children with Hb <11g/dl and ferritin <12mcg/l.		
Iron deficiency prevalence	Proportion of children with ferritin <12mcg/l.		
Vitamin A coverage children 12–59 months	Proportion of children 12–60 months receiving vitamin A 200 000 units twice a year. The denominator is thus the target population 1–4 years multiplied by 2. For surveys this indicator is usually given as the percentage of children who received Vitamin A supplements in the preceding 6 months.		
Vitamin A deficiency	Proportion of children with serum retinol <20mcg/dl.		
Vitamin A dose 12–59 months coverage	Proportion of children 12–59 months who received vitamin A 200 000 units, preferably every six months. The denominator is therefore the target population 1–4 years multiplied by 2.		
Risk factors	Obesity	Percentage of people with a body mass index (BMI) (body mass in kg divided by the square of the height in m) equal to or more than 30kg/m ² .	
	Stunting	Proportion of children with height for age under 2 standard deviations from the norm (reference population median).	
	Waist-hip ratio (WHR) above cut-off	Proportion of people with the ratio of waist / hip circumference \geq 1.0 (for men) or \geq 0.85 (for women).	
	Wasting	Proportion of children with weight for height under 2 standard deviations from the norm (reference population median).	
Non-communicable disease	Cancer	Cancer incidence rate, by type of cancer (per 100 000 population)	Number of new cancers of a specific site/type occurring per 100 000 population. Numerator: Number of new cancer cases diagnosed in a specific year. This may include multiple primary cancers occurring in one patient. The primary site reported is the site of origin and not the metastatic site. In general, the incidence rate would not include recurrences. Denominator: The at-risk population for the given category of cancer. The population used depends on the rate to be calculated. For cancer sites that occur only in one sex, the sex-specific population (e.g. females for cervical cancer) is used.
	Diabetes	Diabetes high risk cases incidence rate (annualised)	High risk diabetes cases expressed per 1000 population 40 years and older.
		Diabetes incidence	Newly diagnosed diabetes clients initiated on treatment per 1 000 population.
		Diabetes prevalence	Percentage of people with diabetes. Defined in SANHANES as those with HbA1c > 6.5% WHO Core indicator is: Age-standardised prevalence of raised blood glucose/diabetes among persons aged 18+ years or on medication for raised blood glucose Defined as: fasting plasma glucose value \geq 7.0 mmol/L (126 mg/dL) or on medication for raised blood glucose among adults aged 18+ years.
		Diabetes prevalence (per 1 000)	Number of people with diabetes per 1 000 people in the target population.
	Hypertension	Hypertension prevalence	Percentage of people with hypertension, where hypertension is usually defined as individuals with systolic blood pressure \geq 140 mmHg and/or diastolic blood pressure \geq 90 mmHg and/or who reported the current use of antihypertensive medication.
		Hypertension prevalence (per 1 000)	Number of people with hypertension per 1 000 people in the target population. Data for the private sector are based on the number of people being TREATED for this condition.
		Hypertension prevalence rate (age-standardised)	Percentage of population 15 years and older with hypertension, age-standardised (Census 2011 population).
	Hypertension (continued)	Hypertension treatment coverage	Percentage of people with hypertension who report being on treatment.
		Hypertensives controlled on treatment	Percentage of hypertensives on treatment who are controlled. (BP measurements below threshold)
		Prevalence of raised blood pressure	Percentage of people with systolic blood pressure \geq 140 mmHg or diastolic blood pressure \geq 90 mmHg. WHO Core indicator definitions is: Age-standardised prevalence of raised blood pressure among persons aged 18+ years (defined as systolic blood pressure \geq 140 mmHg and/or diastolic blood pressure \geq 90 mmHg), and mean systolic blood pressure.
	Mental Health	Prevalence of mental disorders	Percentage of the population suffering from any common mental disorders.
		Suicide rate (per 100 000 population)	Suicide rate per 100 000 population in a specified period (age-standardised).

	Other NCDs	Asthma prevalence (per 1 000)	Number of people with asthma per 1 000 people in the target population. Data for the private sector are based on the number of people being TREATED for this condition. Data for the total population from SADHS are based on the number of adults 15 years and older who were told by a doctor, nurse or health worker that they have this chronic health condition.	
		Hyperlipidaemia prevalence (per 1 000)	Number of people with hyperlipidaemia per 1 000 people in the target population. Data for the private sector are based on the number of people being TREATED for this condition. Data for the total population from SADHS are based on the number of adults 15 years and older who were told by a doctor, nurse or health worker that they have this chronic health condition.	
		Mortality between 30–70 years from cardiovascular, cancer, diabetes or chronic respiratory disease	Unconditional probability of dying between exact ages 30 and 70 from any of cardiovascular disease, cancer, diabetes, or chronic respiratory disease. Deaths from these four causes will be based on the following ICD codes: I00–I99, C00–C97, E10–E14 and J30–J98. According to WHO Core indicators: Modelling, using multiple inputs, is often used if no complete and accurate data are available. Age standardisation is done for comparability over time and between populations.	
		Prevalence of abnormal lipid profiles	Percentage of people with raised cholesterol or other abnormal lipid profiles.	
Risk behaviour	Alcohol Drug use	Currently drink alcohol	Proportion of people who currently drink alcohol.	
		Ever drank alcohol	Proportion of people who ever drank alcohol.	
		Number of admissions for alcohol and other drug abuse	Number of patients admitted for treatment by treatment centres who are part of the SACENDU Project Sentinel Surveillance System.	
		Primary drug of abuse as % of all drugs of abuse	Percentage breakdown of the primary drug of abuse reported by patients admitted to treatment centres that are part of the SACENDU sentinel surveillance system.	
	Inactivity	Percentage participating in insufficient physical activity	Proportion of those surveyed who did not participate in either vigorous or moderate physical activity that would have been sufficient to gain any health benefit, in the 7 days preceding the survey. Vigorous activity is defined as activities for 20 or more minutes on 3 or more of the 7 days preceding the survey such as soccer, netball, rugby or basketball. Moderate activity is defined as 30 or more minutes on 5 or more of the 7 days preceding the survey such as fast walking, slow bicycling, skating, mopping or sweeping floors.	
	Smoking	Ever smoked cigarettes	Proportion of people who have ever smoked a cigarette, even one or two puffs.	
		Frequent smokers	Proportion of people who smoked (cigarettes) on 20 or more days of the past 30 days.	
		Prevalence of smoking	Proportion of population who currently smoke. This indicator is also known as 'Current smokers (%)' Note that the indicator may be given just for cigarettes or for other tobacco products.	
	Injuries	Injuries	Always wear a seat belt when driven by someone else	Proportion of people who always wear a seat belt when driven in a car by someone else.
			Drove after drinking alcohol	Proportion of people who drove after drinking alcohol (in the month preceding the survey, of those who indicated they drive a vehicle).
Intimate partner violence prevalence (%)			Percentage of currently partnered girls and women aged 15–49 years who have experienced physical and/or sexual violence by their current intimate partner in the last 12 months.	
Percentage adults experienced work related illness/injuries			Proportion of working adults (adults = 15+ years) who reported suffering from a work-related illness or injury.	
Road accident fatalities per 100 000 population			Number of fatalities due to road accidents per 100 000 population.	
Health Services	Health Facilities	Number of health facilities	Number of health facilities	
	Health Services	Percentage of users of private health services very satisfied with the service received	Percentage of users of private health services highly satisfied with the service received.	
		Percentage of users of public health services very satisfied with the service received	Percentage of users of public health services highly satisfied with the service received.	
	Information Systems	Birth registration coverage	Percentage of births that are registered within one month of age in a civil registration system.	
Death registration coverage		Percentage of deaths that are registered (with age and sex).		

Human Resources	Management Inpatients	Average length of stay – total	The average number of patients days that an admitted patients spends in hospital before separation.
		Hospital bed density (beds per 1 000 target population)	The number of usable beds divided by the population x 1 000. Where this is calculated for public health sector beds, the population used is the public sector dependent (uninsured) population.
		Inpatient bed utilisation rate – total	A measure of the average number of beds that are occupied – expressed as the proportion of all available bed days, which is calculated as the number of actual beds multiplied by the average number of days in a month (30.42).
		Inpatient crude death rate	Proportion of admitted clients/separations who died during hospital stay. Inpatient separations is the total of day clients, inpatient discharges, inpatient deaths and inpatient transfer outs.
		Number of beds	Total number of hospital beds.
		Usable beds per 1 000 total population	Number of usable beds in hospitals per 1 000 total population.
	Management PHC	Any ARV and/or TB drug stock out rate	The proportion of all fixed facilities that had stock-out of any ARV or TB drug.
		PHC doctor clinical work load	Average number of clients seen per doctor per clinical work day. This includes doctors employed in the public and private sector.
		PHC professional nurse clinical work load	Average number of clients seen per professional nurse per professional nurse clinical work day
		PHC utilisation rate	Average number of PHC visits per person per year in the population.
		PHC utilisation rate under 5 years	Average number of PHC visits per year per person under 5 years of age in the population.
		Tracer items stock-out rate (fixed clinic/ CHC/CDC)	The proportion of all fixed clinics, CHCs and CDCs that had stock out of ANY tracer item for any period.
	Community Service	Number of CS pharmacists	Number of community service pharmacists.
Health Personnel		Number of (health professionals)	Number of this category of health professional working in the specified sector.
		Number of (health professionals) registered	Number of this category of health professional registered with the relevant professional council. This number includes those working in the public or private sector as well as those registered but not working or overseas.
Personnel per population	(Health professionals) per 100 000 population	Ratio of the number of personnel to the population (per 100 000). Note that the measure of the number of personnel may differ for the public and private sectors and also that the population may be adjusted to be the population assumed to be dependent on that sector.	
Finance	Finance	Claims ratio	Proportion of member contributions that has been utilised for the payment of benefits claimed by members of medical schemes, as opposed to allocation of contributions for non-health benefits and the building of reserves.
		Expenditure per patient day equivalent (district hospitals)	Average cost per patient per day seen in a hospital. (expressed as Rand per patient day equivalent)
		Headcount ratio of catastrophic health expenditure	Proportion of the population (or sub-population) facing catastrophic health expenditures. Headcount ratios are the estimated total number of households facing catastrophic health expenditures over the total number of households. A household is identified as facing catastrophic health expenditures when its out-of-pocket health expenditures represent 40% or more of its capacity-to-pay. Capacity-to-pay is estimated as total expenditure net of a subsistence level of food expenditure. The latter is calculated as the average food expenditure per equivalent adults of households in the 45th–55th food budget share distribution. When actual food spending falls below this amount, capacity-to-pay is defined as total expenditures net of actual food spending.
		Headcount ratio of impoverishing health expenditure	Proportion of the population (or sub-population) facing impoverishing health expenditures. Headcount ratios are the estimated total number of households facing impoverishing health expenditures over the total number of households. A household is identified as facing impoverishing health expenditures when its out-of-pocket health expenditures push it below a poverty line (i.e. a household is above the poverty line when taking its total expenditure gross of out-of-pocket payments but below the poverty line when taking total expenditure net of out-of-pocket payments). The poverty line is defined as subsistence level food expenditure estimated as the average food expenditure per equivalent adults of households in the 45th–55th food budget share distribution. When actual food spending falls below this amount, then capacity-to-pay is defined as total expenditures net of actual food spending.
		Health as percentage of total expenditure	Proportion of total (government) expenditure on health. Provinces with central hospitals have a higher share.
		Medical scheme beneficiaries	Number of medical scheme beneficiaries, as reported by the Medical Schemes Council.
		Medical scheme coverage	Proportion of population covered by medical schemes.
Pensioner ratio	Proportion of members of medical schemes who are 65 years or older, in registered medical schemes.		

Finance (continued)	Per capita health expenditure	<p>Amount spent on health per person. (in Rand)</p> <p>For the public sector, this is often calculated for the population without medical aid coverage (public sector dependent population). For the private sector this is usually calculated for the number of medical schemes beneficiaries.</p> <p>Note that attention should be given to the notes for each data item, since financial indicators are affected by inflation, and expenditure may be reported according to currency value for a particular year to facilitate comparison of real differences.</p>
	Provincial and LG PHC expenditure per capita (uninsured)	Provincial expenditure on sub-programmes of DHS (2.2 – 2.7) plus net local government expenditure on PHC per uninsured population.
	Ratio of private to public sector per capita health expenditure	<p>Total private per capita expenditure divided by total public sector per capita expenditure.</p> <p>Public health sector expenditure is divided by the population covered. (public sector dependent population)</p> <p>Private sector is total medical scheme expenditure divided by number of beneficiaries.</p>
	Total current expenditure on health as percentage of Gross Domestic Product	Proportion of national Gross Domestic Product that is spent on healthcare.

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