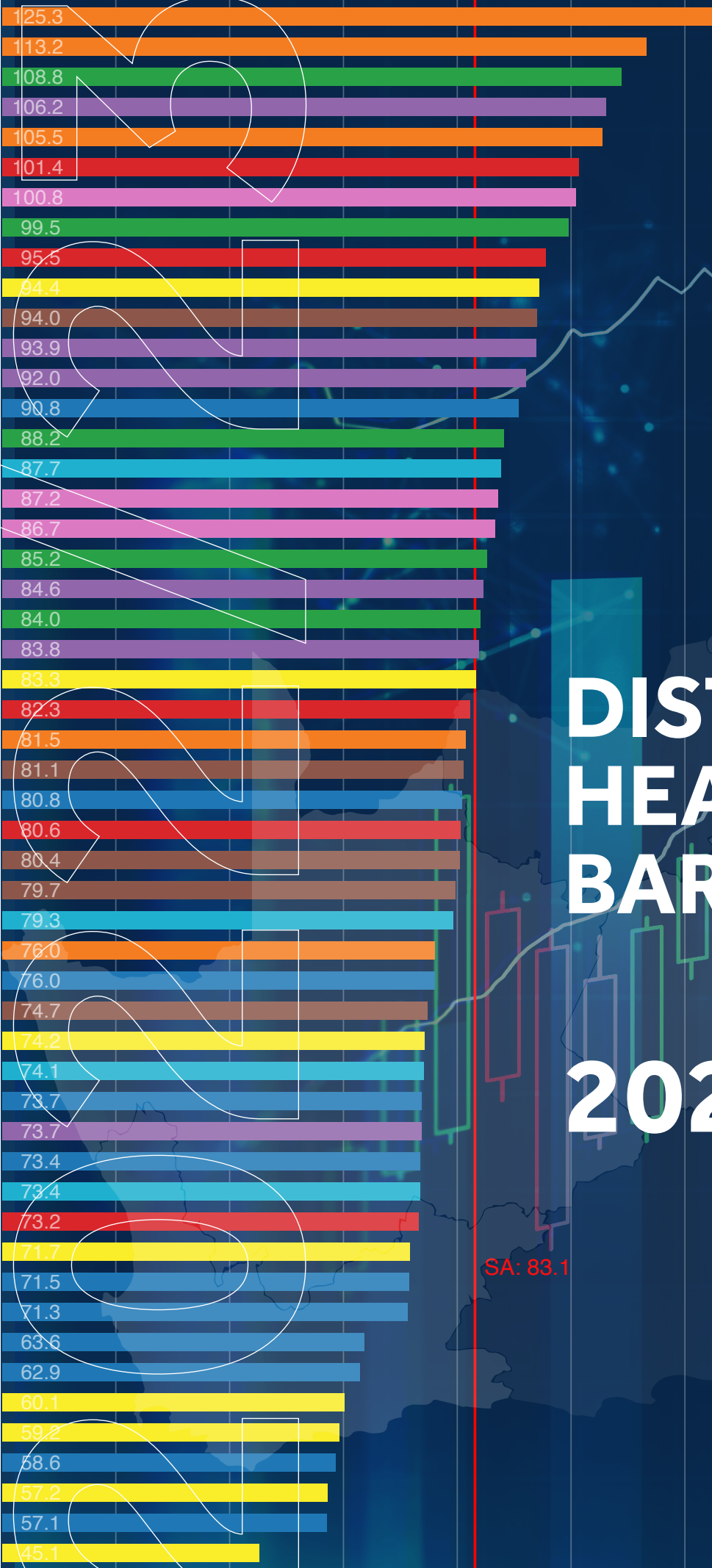
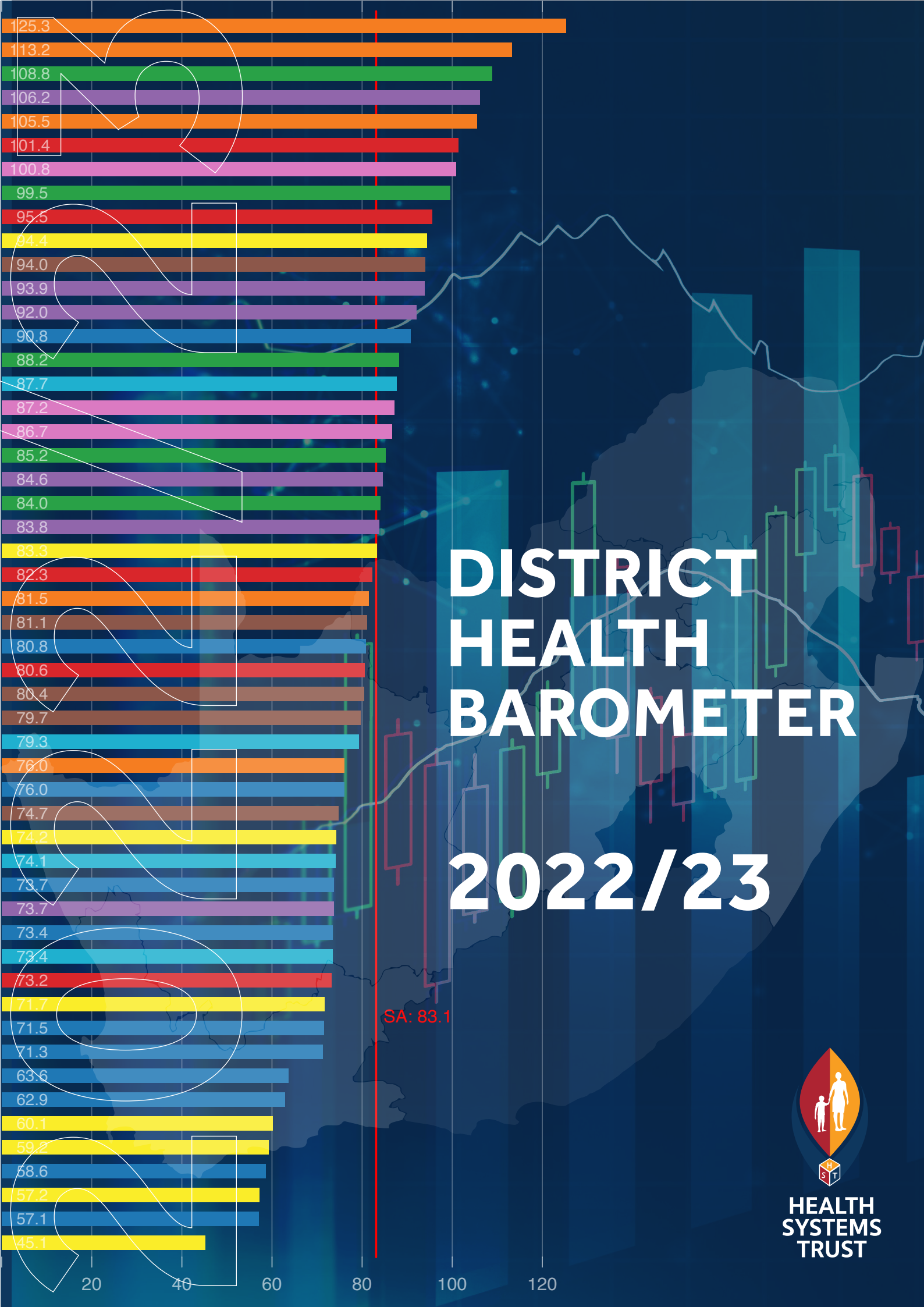




DISTRICT HEALTH BAROMETER

2022/23

SA: 83.1



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District Health Barometer 2022/23

Noluthando Ndlovu and Ashnie Padarath

Published by



**HEALTH
SYSTEMS
TRUST**

1 Maryvale Road
Westville
3630
South Africa

Tel: +27 (0)31 266 9090
Fax: +27 (0)31 266 9199
Email: hst@hst.org.za
Web: <http://www.hst.org.za>

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District Health Barometer Project Team 2022/23

Project Manager:	Noluthando Ndlovu
Editing and proofreading:	Ashnie Padarath
Technical production, data editing, maps:	Noluthando Ndlovu
Technical editing:	Naomi Massyn
Language editing:	Alexis Grewan
Layout and design:	Aspyre

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Authors

Author

Aisha Khoele

Chengetai Dare

Claire Gomes

Evelyn Tshehla

Hannah M Sebitloane

Jodi Wishnia

Jonatan Davén

Joslyn Walker

Juanette John

Mags Beksinska

Mark Blecher

Mfundo Mlambo

Mogesh Naidoo

Neil McKerrow

Nompumelelo Pamela Ntshangase

Noxolo Madela

Nzwakie Mosery

Sarisha Perumal

Shrikant Peters

Suhavna Khalawan

Tinyiko Khosa

Tracey Naledi

Organisation

National Treasury

SAMRC/Wits Centre for Health Economics and Decision Science (PRICELESS SA)

Percept

SAMRC/Wits Centre for Health Economics and Decision Science (PRICELESS SA)

University of KwaZulu-Natal

Tenang Health

National Treasury; Health Economics and Epidemiology Research Office

Health Systems Trust

Council for Scientific and Industrial Research

MatCH Research Unit, Department of Obstetrics and Gynaecology, University of the Witwatersrand, Johannesburg

National Treasury

Council for Scientific and Industrial Research

Council for Scientific and Industrial Research

KwaZulu-Natal Department of Health

Health Systems Trust

National Treasury

MatCH Research Unit, Department of Obstetrics and Gynaecology, University of the Witwatersrand, Johannesburg

Council for Scientific and Industrial Research

Groote Schuur Hospital, Western Cape Government: Health; School of Public Health and Family Medicine, University of Cape Town

Percept

Health Systems Trust

University of Cape Town

Table of Contents

List of acronyms and abbreviations	i
Foreword	iv
Introduction and overview	v
Section A	
1 Reproductive, maternal, newborn and child health	15
1.1 Maternal and neonatal health	16
1.2 Child health and nutrition	57
1.3 Immunisation	79
1.4 Reproductive health	93
2 Infectious disease control	105
2.1 Tuberculosis	105
2.2 HIV and AIDS	142
3 Non-communicable diseases	163
4 Service capacity and access	171
4.1 Inpatient management	171
4.2 Finance	187
4.3 Human resources for health	218
5 Air quality and health	236
Section B: National, Provincial and District Profiles	242
6 South Africa	242
7 Eastern Cape Province	254
8 Free State Province	286
9 Gauteng Province	306
10 KwaZulu-Natal Province	326
11 Limpopo Province	370
12 Mpumalanga Province	390
13 Northern Cape Province	402
14 North West Province	422
15 Western Cape Province	438
Definitions and sources	462

List of abbreviations

AIDS	Acquired immune deficiency syndrome
ALOS	Average length of stay
ANC	Antenatal care
ART	Antiretroviral therapy
ARV	Antiretroviral
BAS	Basic Accounting System
BUR	Bed utilisation rate
CCMDD	Central Chronic Medicines Dispensing and Distribution
CDU	Chronic Dispensary Unit
CHWs	Community health workers
CPAP	Continuous Positive Airway Pressure
CPR	Contraceptive prevalence rate
CYPR	Couple year protection rate
DALYs	Disability-adjusted life years
DHB	District Health Barometer
DHIS	District Health Information System
DHS	District health services
DMPA	Depot medroxyprogesterone acetate
DS-TB	Drug-susceptible TB
DTG	Dolutegravir
EC	Eastern Cape Province
FOE	Frequency of exceedance
FS	Free State
GAPPD	Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea
GP	Gauteng Province
GDP	Gross domestic profit
GHSS	Global Health Sector Strategies
HAP	Household air pollution
HI	Hazard index
HIV	Human immunodeficiency virus
HPV	Human Papilloma Virus
HQ	Hazard quotients
HRA	Health Risk Assessment
HRH	Human Resources for Health
HSRC	Human Sciences Research Council
IMMR	Maternal mortality in facility ratio

IUCD	Intra-uterine contraceptive device
KMC	Kangaroo Mother Care
KZN	KwaZulu-Natal
LARCS	Long-acting reversible contraceptives
LG	Local government
LLETZ	Large loop excision of the transformation zone
LP	Limpopo
LPV/r	Lopinavir
LTFU	Loss to follow-up
MDR-TB	Multidrug-resistant TB
MMR	Maternal mortality ratio
MP	Mpumalanga
MTSF	Medium Term Strategic Framework
NAAQS	National Ambient Air Quality Standards
NC	Northern Cape
NCOP	National Council of Provinces
NCR	National Cancer Registry
NDoH	National Department of Health
NEMAQA	National Environment Management: Air Quality Act
NET-EN	Norethisterone Enanthate
NHI	National Health Insurance
NHLS	National Health Laboratory Service
NICD	National Institute for Communicable Diseases
NIDS	National Indicator Data Set
NSP	National Strategic Plan
NW	North West
O ₃	Ozone
OECD	Organisation for Economic Co-operation and Development
OPD	Outpatient department
OSD	Occupation-specific dispensation
OTs	Occupational therapists
PDE	Patient day equivalent
PDoH	Provincial Department of Health
PERSAL	Personnel Administration System
PHC	Primary Health Care
PLHIV	People living with HIV
PM	Particulate matter
PMCTCI	Prevention of mother to child transmission of communicable infections

PrEP	Pre-exposure prophylaxis
PTs	Physiotherapists
QIP	Quality improvement plan
SA	South Africa
SAAQIS	South African Air Quality Information System
SADHS	South Africa Demographic Health Survey
SDGs	Sustainable Development Goals
SOPs	Standard Operating Procedures
Stats SA	Statistics South Africa
STI	Sexually transmitted infection
STIs	Sexually transmitted infections
STs	Speech therapists
TB	Tuberculosis
TROA	Total clients remaining on ART
TUTT	Targeted Universal Testing for TB
UHC	Universal health coverage
UN	United Nations
UNAIDS	United Nations Programme on HIV/AIDS
USAID	United States Agency for International Development
UNIGME	United Nations Inter-agency Group for Child Mortality Estimation
VL	Viral load
VLS	Viral load suppression
webDHIS	web-based District Health Information System
WBPHCOTs	Ward-based primary health care outreach teams
WC	Western Cape
WHO	World Health Organization
XDR-TB	Extremely drug-resistant TB
ZA	South Africa

After a two-year hiatus, it is with great pleasure that I introduce the eagerly anticipated 2022/23 edition of the District Health Barometer (DHB), a vital statistical and analytical resource that provides an overall view of district health performance on key health systems indicators.

This 16th edition of the DHB provides information across a wide range of district health services, covers over 30 indicators and continues to provide policy-makers, health workers, planners, researchers, academics and stakeholders a unique overview of the performance of public health services in South Africa. By providing a detailed analysis of health indicators, trends, and challenges at the district level, the DHB equips district managers and other stakeholders with the data necessary to identify priorities, plan and implement targeted interventions, and monitor progress. This year's Barometer also includes a chapter on air quality and health as we introduce environmental drivers of health in the publication in response to the effects of climate change on health.

As an innovation for the publication, an online interactive dashboard has been developed. This dashboard will

include all the indicators that have been compiled in the publication along with accompanying narratives on the key findings for the most recent year of data. It provides user-led navigation, with the ability to drill down geographically from provincial to district level. Users will be able to decide what indicators to focus on, over what time window, and at the level of aggregation they choose. There are also time-sliders available to navigate the most recent 5 years of data.

I extend my sincere appreciation to the HST team and the various contributors and collaborators who have dedicated their time, expertise and passion to the development of this invaluable resource.

We trust that the DHB will continue to serve as a catalyst for evidence-informed decision-making and action, propelling us toward a future where every district is able to make a meaningful impact towards a long and healthy life for all South Africans.

As always, we welcome commentary and feedback on the DHB's usefulness and suggestions for improvement of future editions.

Dr Themba L. Moeti
Chief Executive Officer
Health Systems Trust

Background

The 2022/23 District Health Barometer (DHB) provides an overview of the delivery of selected healthcare services in the public health sector across the provinces, districts and local municipalities/sub-districts of South Africa. Data are drawn from the web-based District Health Information System (WebDHIS), Statistics South Africa (Stats SA) surveys, the National Treasury Basic Accounting System (BAS) and the Personnel Administration System (PERSAL).

The publication seeks to highlight inequities in health outcomes and health-resource allocation and delivery, and to track the efficiency of health processes across all provinces and districts.

The DHB publication is available at <http://www.hst.org.za> and the interactive online dashboard is accessible from <https://dhb.hst.org.za/>

Methodology and data sources

Indicators used in the 2022/23 DHB

The indicators¹ in this DHB focus mainly on South Africa's progress towards achievement of the Sustainable Development Goals (SDGs) and universal health coverage (UHC). The indicators in this publication are categorised according to the UHC index² (reproductive, maternal, newborn and child health (RMNCH), infectious diseases,

non-communicable diseases, service capacity and access). Where applicable, the indicator names are also replicated from the National Indicator Data Set. Indicators based on health facility data were updated from webDHIS for the financial years ending March, up to 2022/23, and downloaded in July 2023.

Population data

Indicators requiring population denominators (human resources for health and financial indicators) were assigned mid-year population estimates for the relevant year, as available at the time of calculation. The district population estimates (five-year age groups),

estimates (five-year age groups), developed by Stats SA for 2000–2030, were used. Population-denominated indicators from WebDHIS used the time series loaded in that system at the time of extraction.

Uninsured population estimates

The uninsured population time series was based on district-level modelled estimates of medical scheme coverage developed by Daniel Shapiro of Insight Actuaries and Consultants, together with the population time series estimates. Overall, medical scheme coverage has remained remarkably static at around 16% ± 1%. Therefore, for the purpose of this analysis, it was considered adequate to apply a single-year estimate of medical scheme coverage to the whole population time series, since the variation in coverage between districts is more relevant than the changes in coverage over time.

The number of covered and uncovered lives were estimated using Insight's small area model. The model uses different sets of survey data to estimate the population and the number of medical scheme beneficiaries for small areas contained in the South African Census.

The small area estimates are then aggregated to municipalities according to the current municipal demarcations. Small areas population was estimated by rescaling Census 2011 person data to the total population by local municipalities as per the 2016 Community Survey, and the total population by metros as per the 2018 General Household Survey.

The number of medical scheme beneficiaries was estimated using a predictive model. Household information from the 2018 General Household Survey was used to model the number of medical scheme beneficiaries in a household, based on predictors also available in Census data. Separate models were built for the probability of a household having coverage and for the number of individuals covered, given that a household has coverage.

¹A table with definitions, references and terms for each indicator used in this report is available.

²Hogan DR, Stevens GA, Hosseinpour AR, Boerma T. Monitoring universal health coverage within the Sustainable Development Goals: development and baseline data for an index of essential health services. *The Lancet Global Health*. 2018;6(2):e152–e68.

The predictors included gender of the household head, age of the household head, province, metro, income category and number of household members. The models were then applied to Census data to predict the number of medical scheme members in households for each small area. Household information was taken from Descriptive Community Profile data of the Census and scaled using

the 2016 Community Survey and 2018 General Household Survey total populations. The predicted number of medical scheme beneficiaries was scaled to the number of medical scheme beneficiaries by metro from the 2018 General Household Survey and to the number of medical scheme beneficiaries by province in the Council for Medical Schemes Annual Report.

District health expenditure indicators

Provincial health expenditure up to 2022/23 was extracted from the National Treasury BAS. Expenditure allocated to specific health facilities (under the 'Responsibility level' hierarchy) was coded to the latest DHIS facility information. All other expenditure that could not be clearly allocated to a specific district (such as, for example, provincial-level expenditure) was allocated to each district in proportion to the population share of the areas involved.

Provincial expenditure was coded according to the programmes and sub-programmes published by the National Treasury. Expenditure from sub-programmes 2.2–2.7 (community health clinics, community health centres, community-based services, other community services, and HIV and nutrition) constitutes the non-hospital Primary Health Care (PHC) expenditure under District Health Services. Total District Health Services expenditure includes all sub-programmes under Programme 2: District Health Services, except sub-programme 2.8 (Coroner services).

Additional data sources used include:

- Data on local government expenditure on PHC from the National Treasury. Net expenditure was used, i.e.

expenditure less revenue (which includes transfers from provinces to local government).

- Factors for inflation adjustments based on the Consumer Price Index (CPI) (Stats SA) were used to convert expenditure for all years to real 2022/23 prices. This means that increases in expenditure over time reflect greater availability of resources rather than merely increases to cover the increasing cost of health care due to inflation.
- Uninsured population estimates, derived from modelled estimates of medical scheme coverage and the DHIS population time series.

Per capita expenditure indicators use public sector expenditure divided by the uninsured population. However, the General Household Survey and other sources indicate that the uninsured population makes significant use of private sector services, and the insured population also makes some use of public sector services. As such, it is acknowledged that there is a wide range of uncertainty surrounding the true size of the population that is dependent on public sector services, which affects the accuracy of the per capita expenditure indicators.

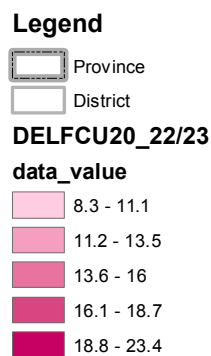
Indicator maps and ranking

ArcMap 10.8 was used to generate the thematic or choropleth maps of indicator values by district and local municipality/ sub-district. Most of the maps were created using 'natural breaks'³, with five categories as the default. In some cases the distribution was heavily skewed at the local municipality level and manual breaks were chosen to better illustrate areas of public health importance.

For all indicators, low indicator values are represented by light shades and high indicator values by darker shades, regardless of whether high values are 'best' or 'worst'. Therefore, dark shades are not always best, and each indicator map should be interpreted in terms of the desired target range for that indicator.

³This is the default classification method in ArcMap, using the Jenks Optimisation algorithm to group values within a class, resulting in classes of similar values separated by breakpoints. This method works well with data that are not evenly distributed and not heavily skewed towards one end of the distribution.

Figure 1: Example of natural breaks



Averages

All averages (provincial and national) are weighted averages, based on the total numerator and denominator for all the sub-areas included, and are, therefore, not averages of the district indicator values. These averages may appear

‘skewed’ for any indicator in any province where there are districts of very different sizes or workloads, and where a bigger district has a very different value from the other smaller districts in a province.

Data display

Financial year and calendar year

Indicators from the DHIS and the BAS financial system cover the 12 months from April to March, which is the financial year of the National Department of Health (NDoH). Indicators for financial years are annotated as 2022/23 or FY 2022. The TB data cover a calendar year. Data from the

Stats SA surveys correspond with the period of the survey. Human resource data are cross-sectional (for a specific month in a year). In the Excel file produced with the DHB, the single year indicated for summary purposes is the one including the majority of the data.

Indicator ranking – is first always best?

The districts are ranked from 1 to 52 (for the various indicators in the league table graphs where number 1 represents the best performance and number 52 the worst performance). However, with some indicators such as the expenditure indicators, an indicator in the number 1 position does not mean best performance; ‘best’ is usually in the middle range close to the South African average. For these indicators, order from top to bottom should therefore not necessarily be considered as best to worst. Individual indicators are therefore ranked as either ascending (low values are best, for example maternal

mortality ratios) or descending (high values are best, for example immunisation coverage).

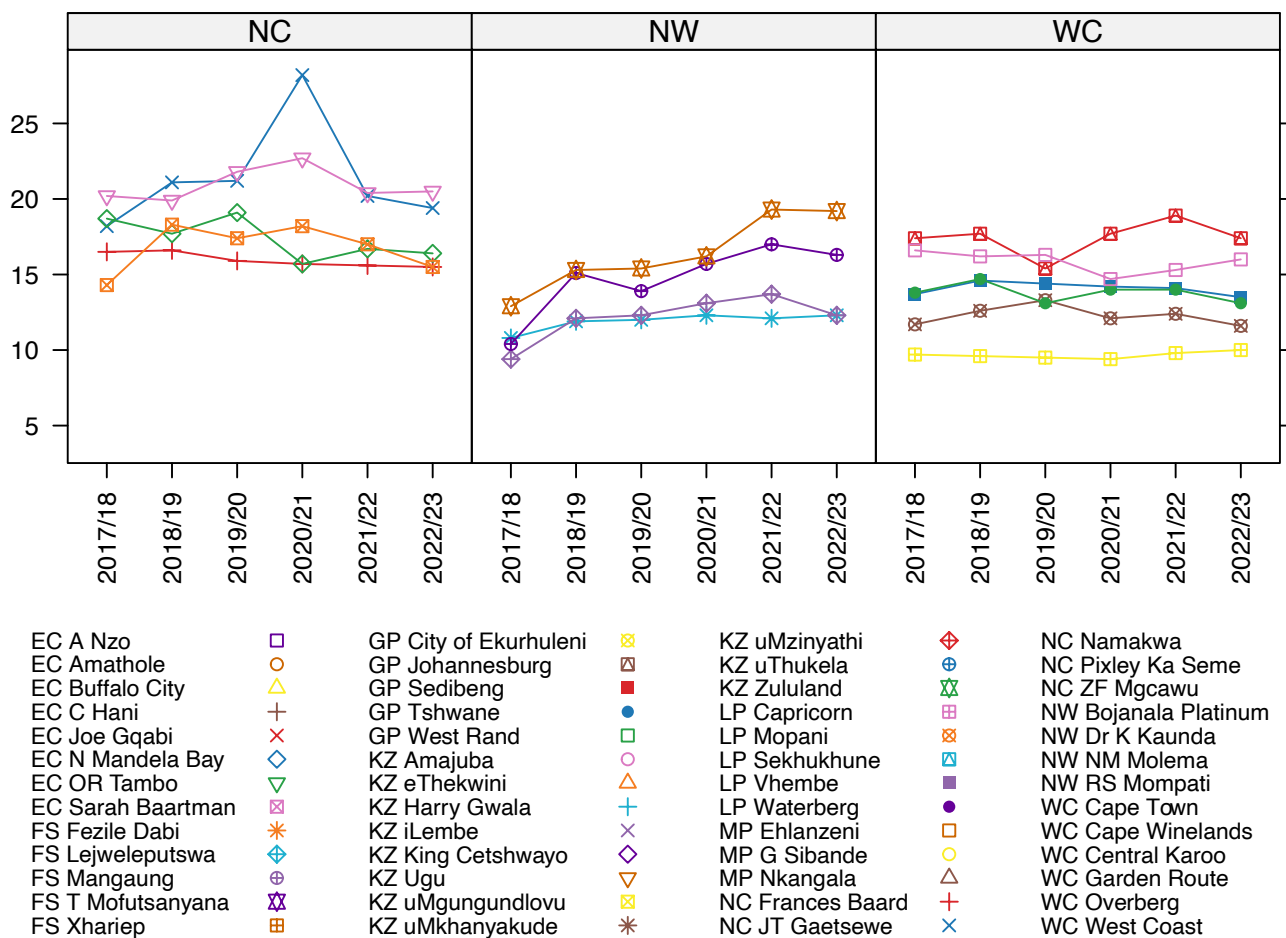
In the DHB data file, the indicator ranks for all districts are coloured from green to red. It must be noted that this is merely a crude indication of performance and is based on the position of a district relative to the other 51 districts and not based on a target or fixed standard. Therefore, it is possible that an indicator may improve in a district, but it could drop in rank (i.e. move from green towards red) if other districts have improved to a greater extent.

Trends

Annual indicator trends (district and provincial) are included in some chapters in Section A: Indicator Comparisons per programme (Figure 2). Indicator comparisons by district help the reader to explore how an indicator varies over a number of years across districts and provinces. As the scale

of the y-axis is the same for all the graphs, one can notice differences easily. Annual trends also reveal variation and change within the districts in a particular province over time.

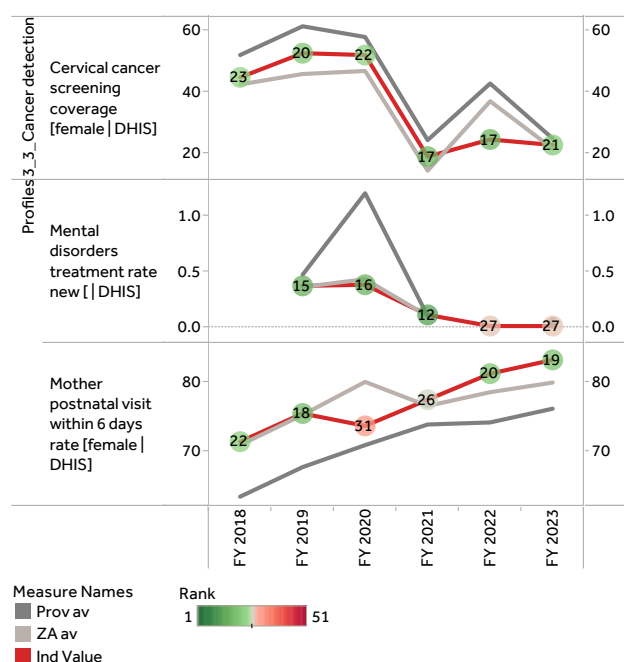
Figure 2: Example of annual indicator trends over a number of years across districts and provinces



In section B of the publication, composite graphs show annual trends for all districts for the majority of indicators included in Section as well as additional indicators. The

district indicator value is shown together with the relevant provincial averages and ZA national averages (Figure 3).

Figure 3: Example of annual indicator trends for districts



1 Reproductive, maternal, newborn and child health

1 Reproductive, maternal, newborn and child health

Delivering vital reproductive, maternal, newborn, and child health (RMNCH) services to every woman and child is critical to the 2030 goal of achieving universal health coverage (UHC).

The RMNCH section covers the following indicators:

Maternal and neonatal health

- Antenatal 1st visit coverage
- Delivery in 10 to 19 years in facility rate
- Maternal mortality in facility ratio
- Early neonatal death in facility rate

Child health and nutrition

- Pneumonia case fatality rate
- Death under 5 years against live birth rate

Immunisation

- Immunisation coverage under 1 year
- Measles 2nd dose coverage

Reproductive health

- Couple year protection rate

1. Maternal and neonatal health

Antenatal 1st visit coverage

Neil Hugh McKerrow

Key findings

- There has been a 5.1% decline in the antenatal 1st visit coverage which continues a downward trend in antenatal attendance since 2021/22.
- Amongst women who received antenatal care, 70.1% accessed this care within the first 20 weeks of gestation.
- There is a 21.6% variation in the antenatal 1st visit coverage between provinces which range from 69.6% to 91.2%.
- Coverage levels decreased in seven provinces over the past year and three provinces (Gauteng, North West and the Western Cape) have recorded an annual decrease in coverage over the past three or four years.
- Although the gap between the best and worst performing districts (105.9% vs 59.2%) has narrowed, there is still a 1.8-fold variation across districts.
- There is a general trend towards declining antenatal 1st visit coverage with 44 districts recording a decline in coverage over the past year.

Introduction

The antenatal 1st visit coverage measures the proportion of pregnant women attending at least one antenatal visit. The numerator is the total number of 1st antenatal visits while the denominator is the estimated number of women reaching the 10th week of gestation. This is calculated from the total number of boys and girls less than one year of age.¹ The antenatal 1st visit coverage is an indication of access to and use of skilled antenatal care which is needed to improve the health of both the mother and baby, and to reduce poor pregnancy outcomes as well as maternal and child mortality.

It is recognised that a significant proportion of maternal deaths in low- and middle-income countries² and an estimated two thirds of stillbirths³ are the consequence

of poor antenatal care. Antenatal care is a public health strategy that provides an opportunity for pregnant women to receive a variety of prescribed interventions. Such interventions include routine antenatal nutritional support, maternal and foetal assessments, various preventive measures and treatment for common symptoms associated with pregnancy.

The National Department of Health's Guidelines for Maternity Care in South Africa recommend starting antenatal care as soon as a woman suspects that she may be pregnant and preferably before 12 weeks gestation,⁴ while the National Department's Basic Antenatal Care Plus Handbook recommends a total of eight antenatal visits for each pregnancy.⁵

¹National Department of Health. National Indicator Data Set 2020. Pretoria: NDoH; 2020.

²World Health Organization. WHO recommendations on antenatal care for a positive pregnancy experience. Geneva: World Health Organization; 2016.

³Blencowe H, Cousens S, Jassir FB, Say L, Chou D, Mathers C, et al. National, regional, and worldwide estimates of stillbirth rates in 2015, with trends from 2000: a systematic analysis. Lancet; 2016;4(2):e98–108. doi:10.1016/S2214-109X(15)00275-2.

⁴National Department of Health. Guidelines for Maternity Care in South Africa, 4th edition. Pretoria: NDoH; 2016.

⁵National Department of Health. Basic Antenatal Care Plus; Handbook. 2nd edition. Pretoria: NDoH; 2017.

National overview

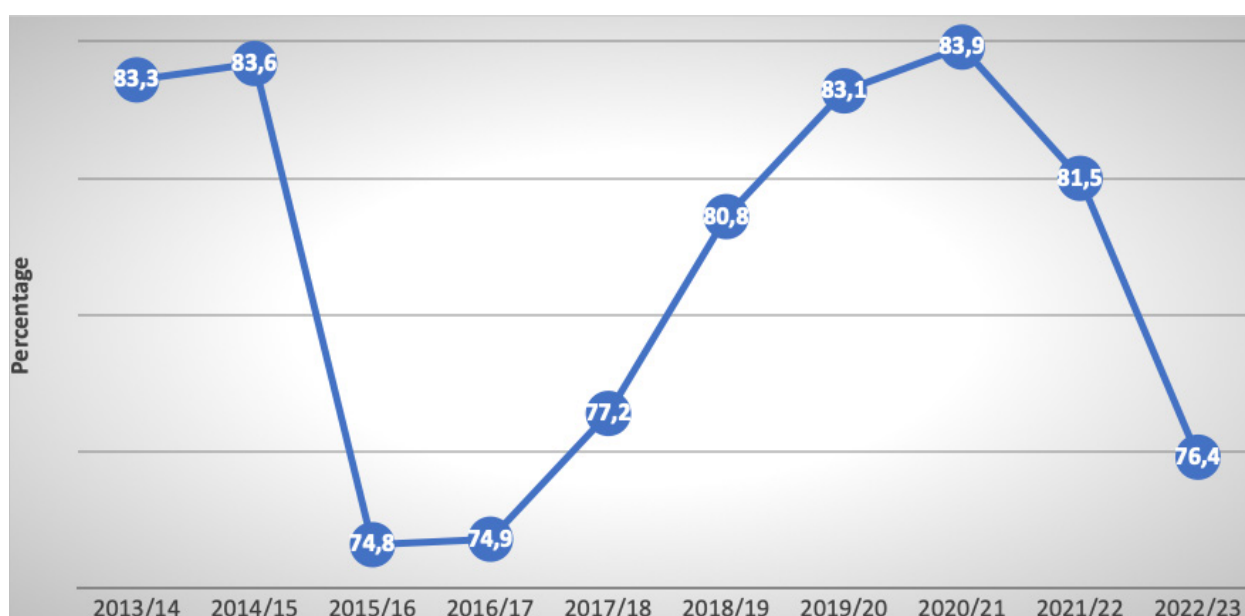
In 2022/23 just under 1 million women booked for antenatal care, giving an antenatal 1st visit coverage of 76.4%. This represents a 5.1% decrease in the previous year's coverage of 81.5% and continues a downward trend in antenatal attendance since 2020/21. This low coverage is approaching the levels of around 74.9% last seen in 2015/16 and 2016/17.

Figure 1 shows the trend in antenatal 1st visit coverage for the past decade with no consistent pattern or trend in coverage. The greatest coverage was achieved in 2020/2021 and 2014/15 and the lowest coverage in 2015/16, 2016/17 and 2022/23. There has been an 8.3% decline in antenatal coverage over the past decade and a 5.5% decline over the past five years.

In 2022/23, 998 043 women booked for antenatal care compared to the 1 067 554 in 2021/22. Of the women who booked for antenatal care in 2022/23, 699 885 (70.1%) booked within the first 20 weeks of gestation compared to 735 063 (68.9%) in 2021/22. This represents an increase in the proportion of women booking in the first 20 weeks of gestation.

A comparison to global data is not possible as different indicators are used to assess the use of antenatal services, namely the percentage of pregnant women with first antenatal contact in the first trimester (before 12 weeks of gestation) and the percentage of pregnant women with at least four antenatal contacts.⁶

Figure 1: National antenatal 1st visit coverage, 2013/14–2022/23



Source: DHIS

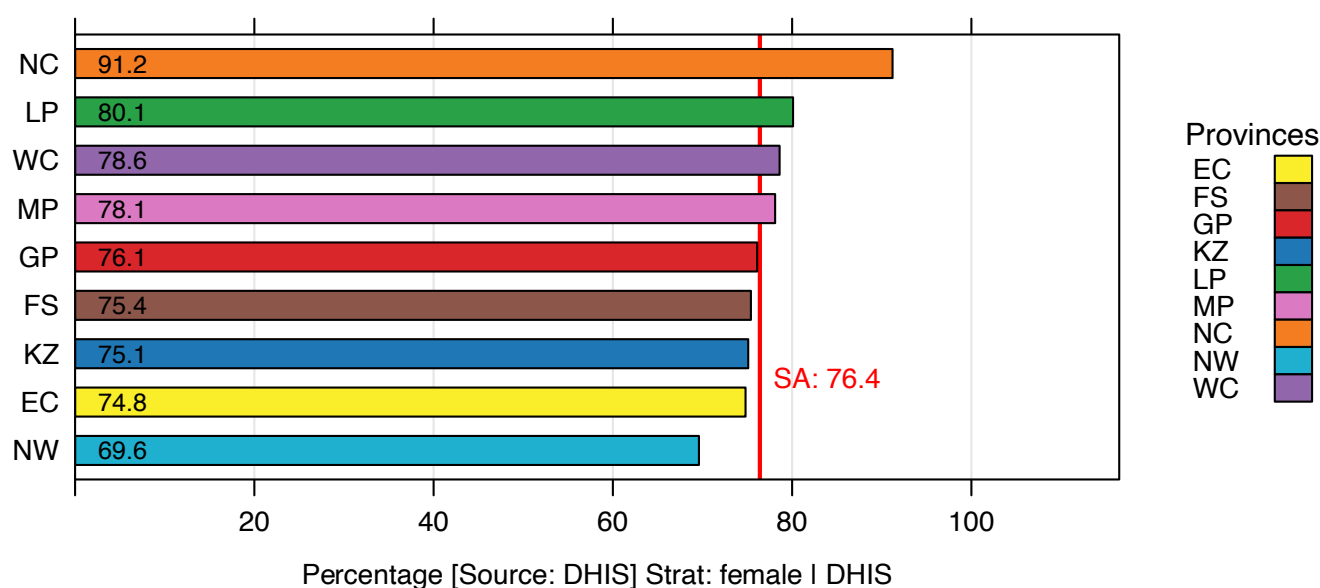
Provincial overview

Figure 2 shows the provincial antenatal 1st visit coverage with an interprovincial variation of 21.6%, ranging from a low of 69.6% coverage in the North West (NW) to a high of 91.2% in the Northern Cape (NC). This difference is broader

than the 16.5% difference seen in 2021/22 between the same two provinces. Only four provinces achieved a coverage level greater than the national average.

⁶Anumba, DO, Jayasooriya, SM. Global Antenatal Care Coverage and Content. In: Anumba, DO, Jayasooriya, SM, editors. Evidence Based Global Health Manual for Preterm Birth Risk Assessment. Springer, Cham; 2022. https://doi.org/10.1007/978-3-031-04462-5_1.

Figure 2: Antenatal 1st visit coverage by province, 2022/23



Over the past year, the antenatal 1st visit coverage increased in the Northern Cape (NC) but declined in all other provinces. In the North West (NW) the rate declined for the fourth consecutive year. The antenatal 1st visit coverage fluctuated year on year in the rest of the provinces.

Over the past five years, antenatal coverage has increased in just two provinces: Eastern Cape (EC) (9.2%) and KwaZulu-Natal (KZN) (0.2%). All other provinces experienced a reduction in coverage ranging from 3.8% in the Free State (FS) to 37.7% in the Northern Cape.

Table 1: Trend in antenatal 1st visit coverage by province, 2018/19 – 2022/23

Province	2018/19	2019/20	2020/21	2021/22	2022/23
Eastern Cape	65.6	68.7	68.2	81.2	74.8
Free State	79.2	79.3	78.5	78.9	75.4
Gauteng	88.9	90.2	88.3	82.5	76.1
KwaZulu-Natal	74.9	75	76.3	77.3	75.1
Limpopo	85.7	90.7	93.9	88	80.1
Mpumalanga	88	92.7	107.4	87.6	78.1
Northern Cape	107.3	77.7	76.4	72.1	69.6
North West	78.1	105.6	109.9	88.6	91.2
Western Cape	84.1	91.1	86.7	82.6	78.6
South Africa	77.2	80.8	83.9	81.5	76.4

District overview

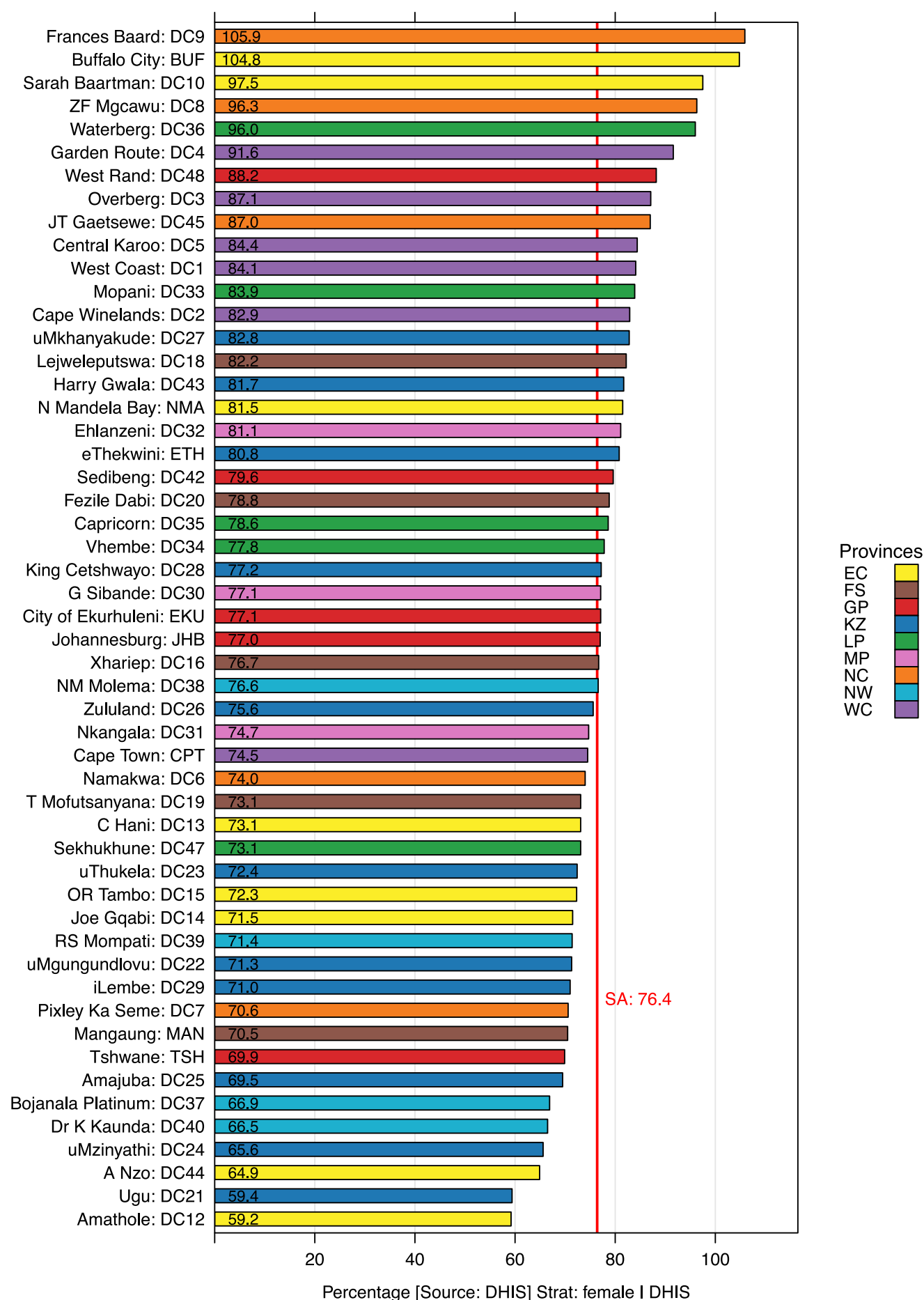
The antenatal 1st visit coverage across the 52 districts in the country is reflected in Map 1 and Figure 3 which show a gap of 46.7% and a 1.8-fold variation between the districts with the highest and lowest coverage levels. Coverage ranged from 59.2% in Amathole (EC) to 105.9% in Frances Baard (NC). However, coverage of more than 100% could denote challenges related to quality of data, or an underestimation of the under-one-year population. Twenty-nine districts achieved an antenatal 1st visit coverage level above the national average, although no province achieved a coverage level above the national average in all districts.

The 10 districts with the highest coverage included three each in the Northern and Western Cape, two in the Eastern

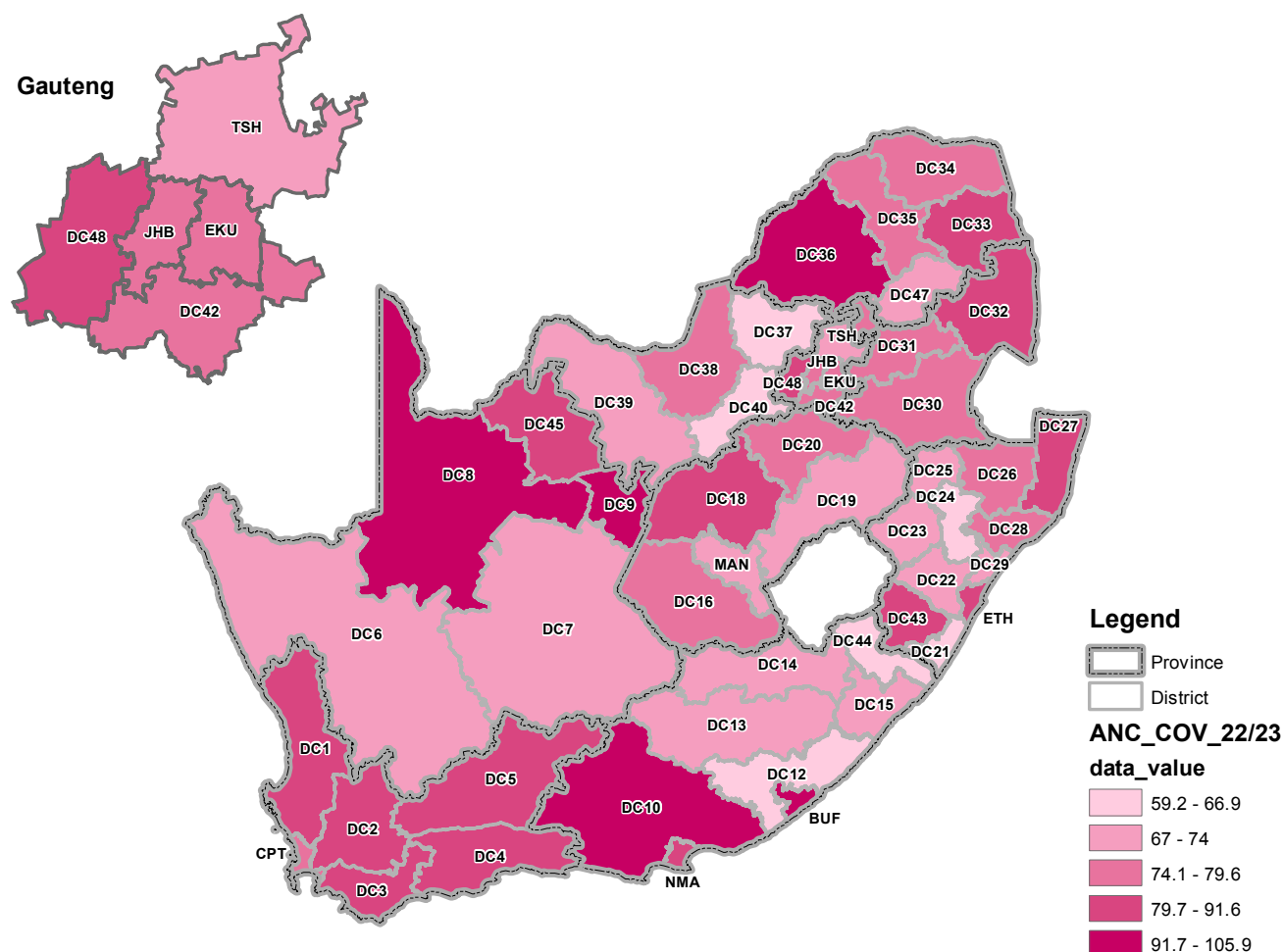
Cape and one each in Gauteng and Limpopo provinces. KwaZulu-Natal had three districts among the 10 with the lowest coverage levels while the Eastern Cape and North West each had two districts and Free State, Gauteng and the Northern Cape one district in the lowest 10 districts.

Between 2021/22 and 2022/23 the antenatal 1st visit coverage improved in just nine districts. The greatest improvement occurred in Zwelentlanga Fatman Mgcawu (NC), which had an increase from 83.0% coverage to 96.3%, and in Buffalo City (EC), with an increase from 94.9% to 104.8% over the past year. There was a reduction in coverage in 44 districts with the greatest decline in Sedibeng (GP) where the coverage levels fell from 97.7% to 79.6% and in Ehlanzeni (MP) from 95.5% to 81.1%.

Figure 3: Antenatal 1st visit coverage by district, 2022/23



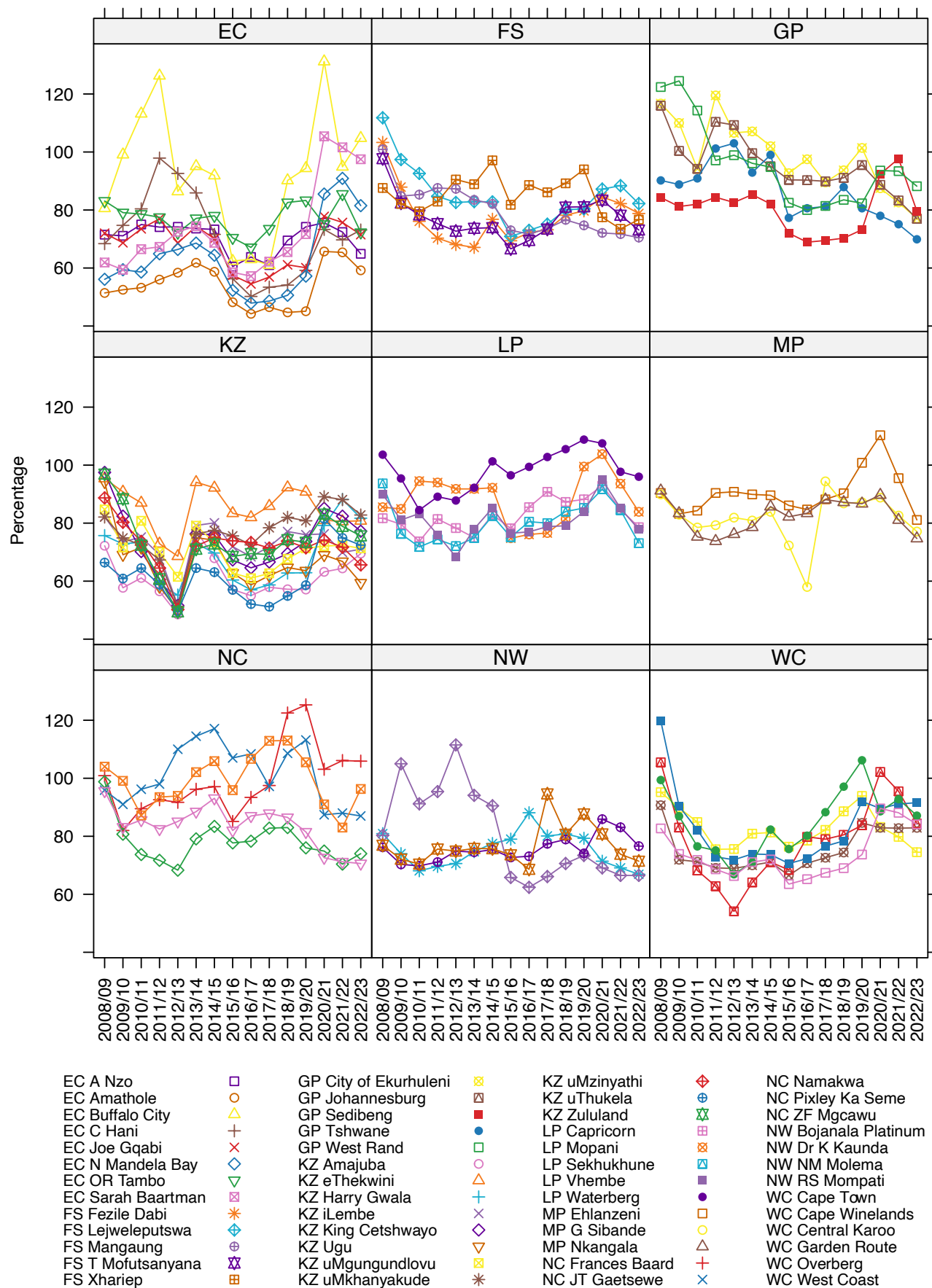
Map 1: Antenatal 1st visit coverage by district, 2022/23



The annual trends in the antenatal 1st visit coverage for districts are presented in Figure 4 which shows marked inter- and intra-provincial variation from one year to another. While eight districts showed an increased antenatal 1st visit coverage over the past year, no province achieved an increase in all of its districts. Only two districts achieved an increased antenatal 1st visit coverage over the past two years and one, Amajuba (KZN), managed to sustain an annual increase over three consecutive years.

Forty-one districts experienced a decline in antenatal 1st visit coverage over the past year, nine of these districts experienced a decline over two consecutive years and, in eight districts, the year-on-year decline in coverage occurred over three consecutive years. Five districts had a drop of more than 10 percentage points from 2021/22 to 2022/23 with the greatest decrease in Sedibeng (GP) (18.1 percentage points) followed by Ehlanzeni (MP) (14.4 percentage points).

Figure 4: Annual trends: antenatal 1st visit coverage by province and district, 2008/09 – 2022/23



Source: DHIS

Recommendations

- Strengthen strategies to facilitate the uptake of antenatal care.
- Expand the role of Community Health Care Workers to include a greater focus on maternal and child health care, especially the identification of pregnant women, and facilitate their access to antenatal care.
- Strengthen the maternal and child health stream of Primary Health Care clinics.
- Establish outreach and support services to support poorly performing facilities and districts and to ensure a positive pregnancy experience.

Maternal mortality in facility ratio

Key findings

- There has been a decline in the national maternal mortality in facility ratio.
- This downward trend suggests that South Africa is unlikely to achieve the Sustainable Development Goal (SDG) target of a maternal mortality ratio below 70 maternal deaths per 100 000 live births by 2030.
- Eight provinces recorded a decline in their maternal mortality in facility ratio, with four of them achieving rates below the national average.
- Only the Western Cape met the SDG target with a rate of 62.0 maternal deaths per 100 000 live births.
- The gap between the worst- and best-performing provinces narrowed to a 2.0-fold difference (124.3 per 100 000 live births in the Eastern Cape versus 62.0 in the Western Cape).
- Four districts had no maternal deaths and Capricorn in Limpopo remains the worst-performing district although it did record a 28.5% reduction in the maternal mortality in facility ratio between 2021/22 (277.4 per 100 000 live births) and 2022/23 (198.3 per 100 000 live births).
- Thirty-three districts achieved a lower maternal mortality in facility ratio in 2022/23 compared to the previous year, and 34 achieved this over five years.
- Only one district, Xhariep in the Free State, achieved a year-on-year reduction over three consecutive years, while nine districts obtained a year-on-year reduction over two consecutive years – two each in the Eastern Cape, Free State, KwaZulu-Natal and the Western Cape and one in Limpopo.

Introduction

The World Health Organization (WHO) has defined maternal mortality 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.¹

The National Department of Health's (NDoH) National Indicator Data Set (NIDS) defines the maternal mortality in facility ratio as the number of women who die in a facility during pregnancy, childbirth and the puerperium, or within 42 days of termination of pregnancy irrespective of the duration and site of the pregnancy and irrespective of the cause of death (obstetric and non-obstetric) per 100 000 live births in the facility.² It is a proxy for the population-based maternal mortality ratio, and provides an indication

of the quality of antenatal, intrapartum and postnatal care provided to pregnant women.

The maternal mortality ratio can be calculated from different sources in South Africa, namely the District Health Information System (DHIS) (maternal mortality in facility ratio) and the National Committee on Confidential Enquiries into Maternal Deaths (NCCEMD). This indicator is also estimated from the South Africa Demographic and Health Survey.³ For this section, the data source is the DHIS.

The maternal mortality rate is a key indicator for Goal 3 of the SDGs with a global target of fewer than 70 maternal deaths for every 100 000 live births by the year 2030.⁴ In South Africa, the NDoH has set a target of <100 maternal deaths per 100 000 live births by 2024/25.⁵

¹World Health Organization. Health Statistics and information systems: Maternal mortality ratio (per 100 000 live births). URL: <http://www.who.int/healthinfo/statistics/indmaternalmortality/en/>.

²National Department of Health. National Indicator Data Set 2020. Pretoria: NDoH; 2020.

³National Department of Health. South Africa Demographic and Health Survey, 2016. Key Indicators Report. Pretoria: NDoH; 2016.

⁴United Nations Development Programme. Sustainable Development Goals. 2019. URL: https://www.undp.org/content/dam/undp/library/corporate/brochure/SDGs_Booklet_Web_En.pdf.

⁵National Department of Health. Strategic Plan 2020/21 – 2024/25. Pretoria: NDoH; 2020.

The latest WHO global report⁶ estimates that there were 287 000 maternal deaths in 2020 with a global maternal mortality ratio of 223 deaths per 100 000 live births. Over two thirds of these deaths (202 000) occurred in sub-Saharan Africa where the maternal mortality ratio is estimated to be 545 deaths per 100 000 live births. Between 2000 and 2020 there was an estimated 34.3% reduction in the global maternal mortality rate, from 339 to 223 maternal deaths per 100 000 live births with an annual rate of reduction of 2.1%. In sub-Saharan Africa the maternal mortality rate declined by 32.5% from 807 to 545 maternal deaths per 100 000 live births over the same

period with an annual rate of reduction of 2.0%.

South Africa has already set priority interventions along the continuum of care for maternal health, and has mandated their implementation at the district health level. An effective continuum of care is expected to have a positive impact on maternal (and child) health outcomes.⁷ Furthermore the NDoH has identified maternal health care as a priority area and is currently revising the national Guidelines for Maternal Care.

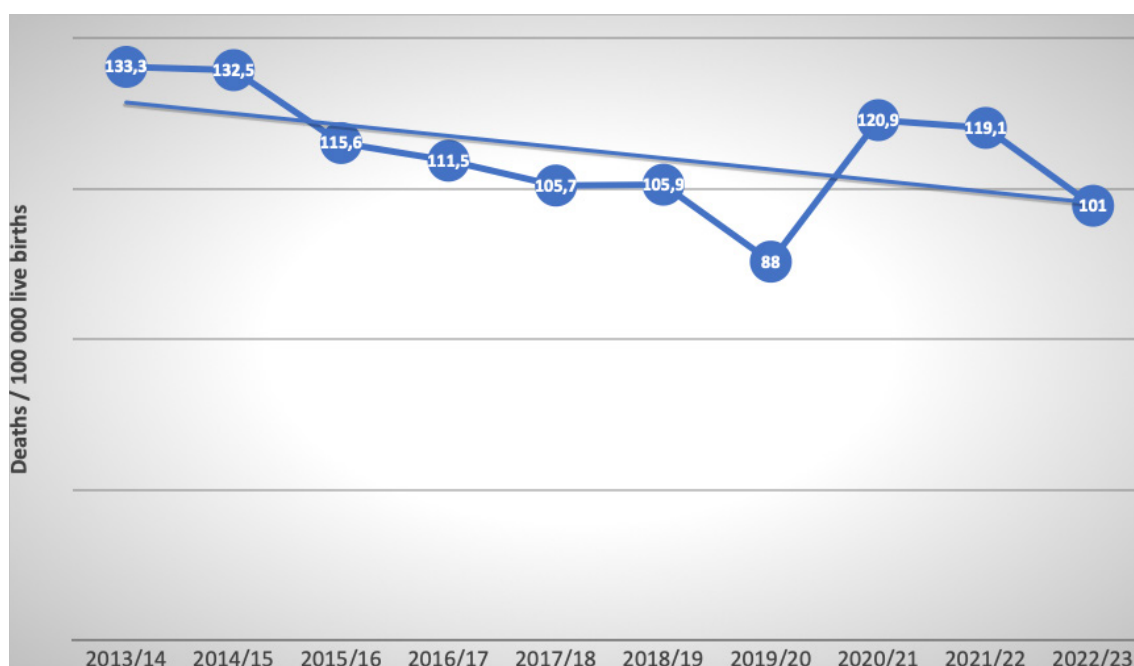
National overview

In 2022/23 there were 1 011 maternal deaths in South Africa, providing a maternal mortality in facility ratio of 101.0 maternal deaths per 100 000 live births. This 2022/23 figure has not only maintained a downward trend since 2020/21 but is also the second-lowest maternal mortality in facility ratio recorded since 2009/10.

represents a 15.2% decline from the 2021/22 rate of 119.1 (Figure 1 below). Although the overall decline over the past five years is just 4.6% or 1.2% per annum, it raises doubt that the country will achieve the SDG target of a maternal mortality ratio of fewer than 70 maternal deaths per 100 000 live births.

This rate is just short of the 2024/25 target of <100 and

Figure 1: Trend in national maternal mortality in facility ratio, 2013/14–2022/23



Source: DHIS

⁶World Health Organization. Trends in maternal mortality 2000 to 2012: estimates by WHO, UNICEF, UNFPA, World Bank Group and UNDESA/ Population Division. Geneva: World Health Organization; 2023.

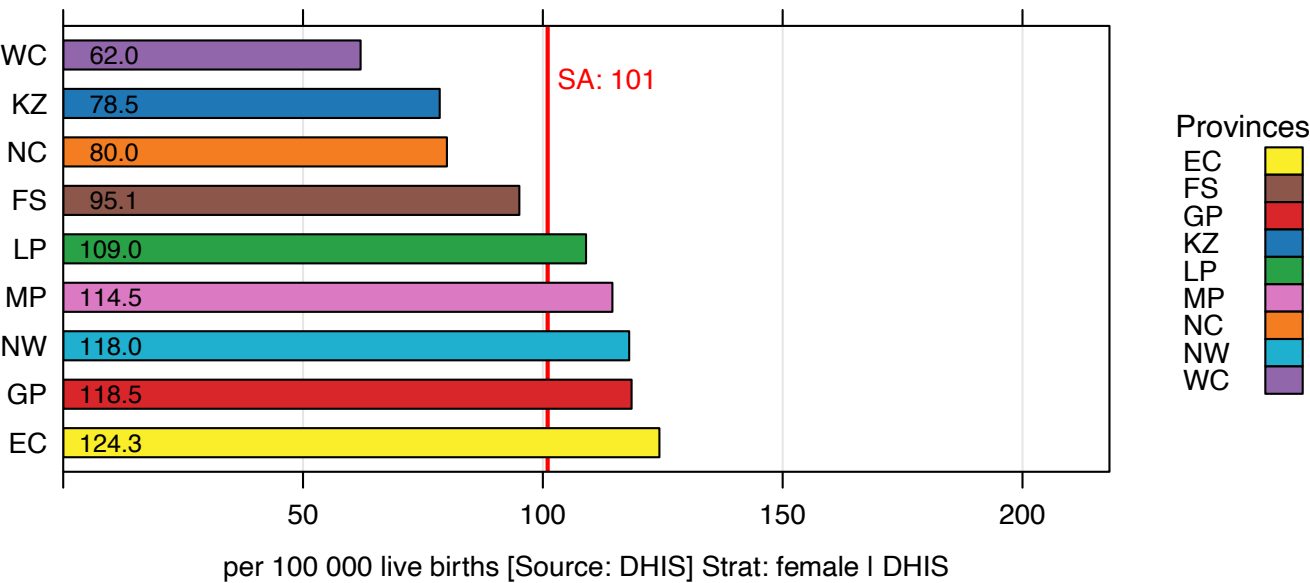
⁷Mothupi MC, Knight L, Tabana H. Measurement approaches in continuum of care for maternal health: a critical interpretive synthesis of evidence from LMICs and its implications for the South African context. BMC Health Serv Res 18, 539 (2018). <https://doi.org/10.1186/s12913-018-3278-4>.

Provincial overview

In 2022/23, the Western Cape (WC) and the Eastern Cape (EC) were the provinces with, respectively, the lowest and highest maternal mortality in facility ratios at 62.0 and 124.3 maternal deaths per 100 000 live births (Figure 2). At 62.3 maternal deaths per 100 000 live births, the gap between these provinces represents a 2.0-fold interprovincial

variation. This is the smallest in the past five years. Four provinces achieved ratios below the national average and have met the NDoH 2024/25 target of fewer than 100 maternal deaths per 100 000 live births, although just the Western Cape has achieved the SDG target of less than 70.

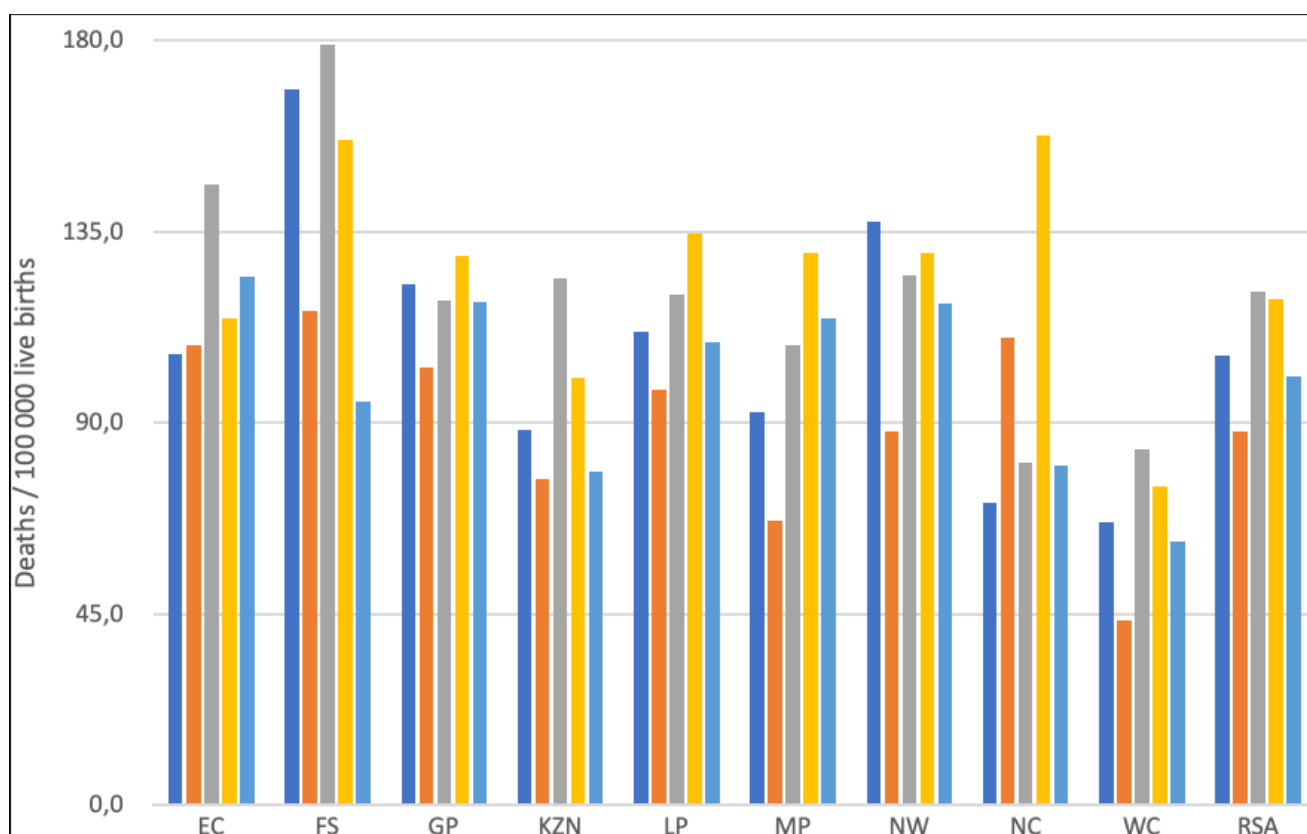
Figure 2: Maternal mortality in facility ratio by province, 2022/23



Over the past year, the maternal mortality in facility ratio decreased in eight provinces and only the Eastern Cape experienced an increase. These year-on-year changes are not consistent and only the Free State (FS), KwaZulu-Natal (KZN) and the Western Cape (WC) have experienced

a reduced maternal mortality in facility ratio over two consecutive years. No province has recently sustained a year-on-year reduction over a longer period (see Figure 3 below). The Free State (FS) and the Northern Cape (NC) both achieved their lowest rates in the past five years.

Figure 3: Maternal mortality in facility ratio by province, 2018/19–2022/23

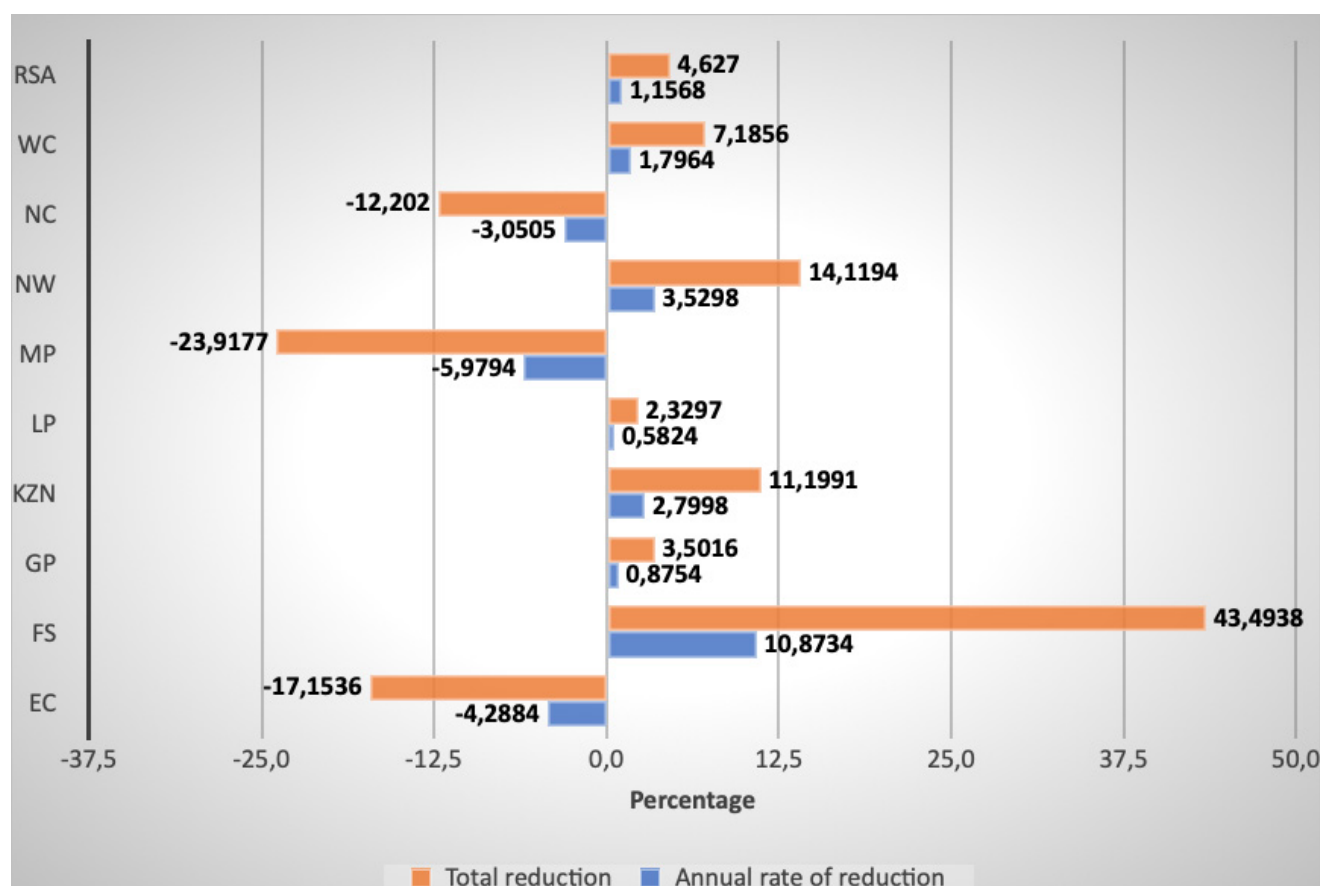


Source: DHIS

Over the past five years, from 2018/19 to 2022/23, three provinces – the Eastern Cape (EC), Mpumalanga (MP) and the Northern Cape (NC) – each experienced an increase in the maternal mortality in facility rate ranging from 12.2% in the Northern Cape to 23.9% in Mpumalanga with annual rates of increase of 4.3%, 6.0% and 3.1% respectively.

All other provinces experienced a decline in the maternal mortality in facility ratio between 2018/19 and 2022/23 ranging from 2.3% in Limpopo (LP) to 43.5% in the Free State (FS). The annual rate of reduction varied from 0.6% in Limpopo to 10.9% in the Free State (Figure 4 below).

Figure 4: Proportion and rate of reduction in maternal mortality in facility ratio by province, 2018/19–2022/23



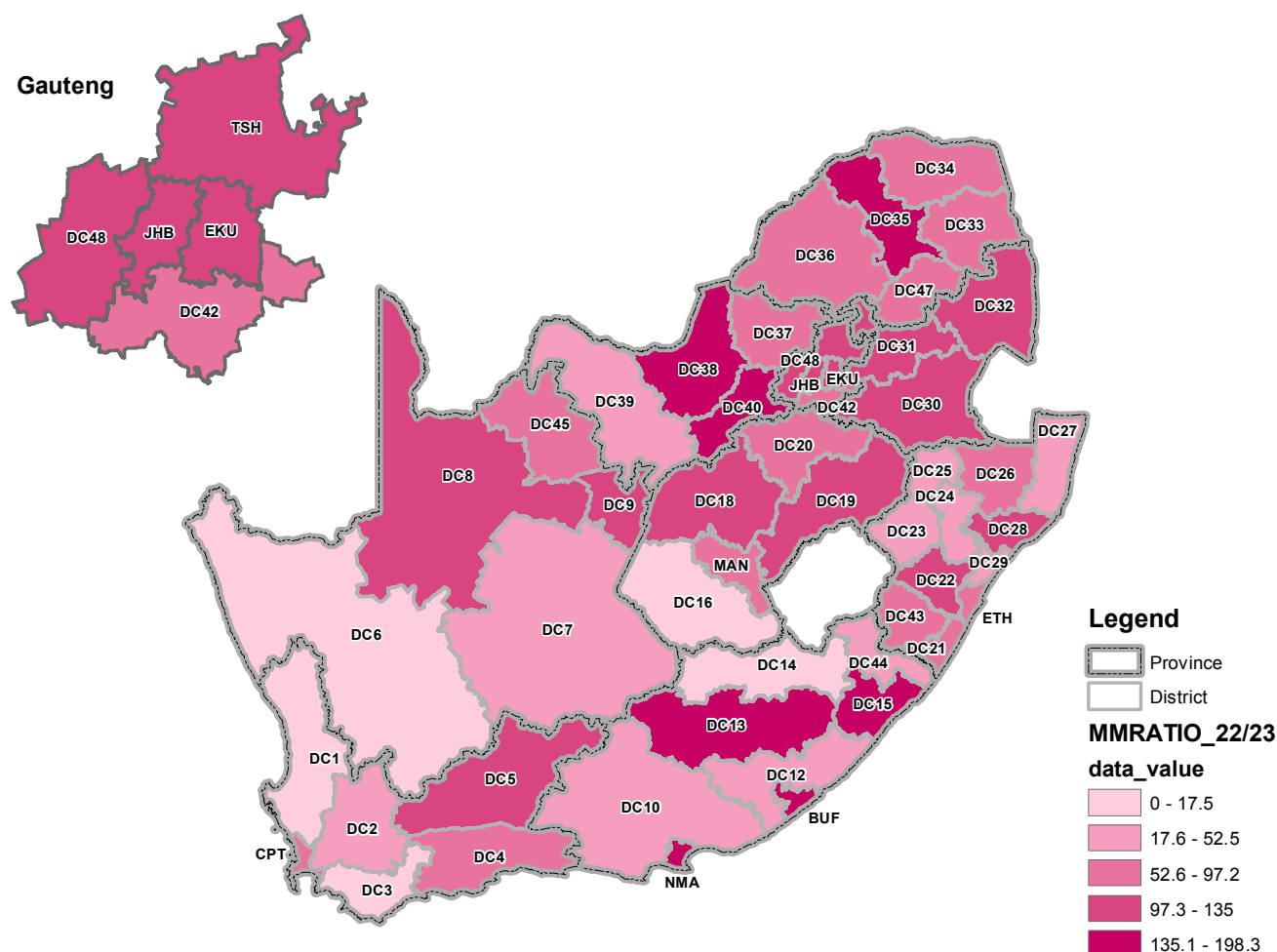
Source: DHIS

District overview

The maternal mortality in facility ratio across the 52 districts in the country is reflected in Map 1 and Figure 5. Four districts (Overberg (WC), Namakwa (NC), Xhariep (FS) and Joe Gqabi (EC)) had no maternal deaths at all. In both Xhariep and the Overberg, this was the second consecutive year without any maternal deaths. The greatest maternal mortality in facility ratio, 198.3 per 100 000 live births, occurred in Capricorn (LP). However, it is worth noting that this was 28.5% lower than the highest ratio seen in any district in 2021/22, that is, 277.4 maternal deaths per

100 000 live births also in Capricorn. Thirty-two districts had a maternal mortality in facility ratio below the national average of 101 and the NDoH 2024/25 target of 100, while 20 surpassed the SDG target of fewer than 70 deaths per 100 000 live births, up from just 14 districts in 2021/22. No province managed to achieve a maternal mortality in facility ratio below the national average in every district. Furthermore, not a single district in Mpumalanga managed to achieve a rate below the national average.

Map 1: Maternal mortality in facility rate by district, 2022/23



The 10 districts with the lowest maternal mortality in facility rate included one in the Free State, two each in KwaZulu-Natal, the Northern Cape and the Western Cape and three in the Eastern Cape. The Eastern Cape had four districts among the 10 with the highest maternal mortality in facility ratio together with two districts in the North West and one each in the Free State, KwaZulu-Natal, Limpopo and Mpumalanga.

Between 2021/22 and 2022/23, the maternal mortality in facility ratio improved in 33 districts, which is an improvement from the 27 districts in 2021/22. Of note, Mpumalanga was the only province that experienced an improvement in every district in the province. Apart from the four districts with no maternal deaths, the greatest improvement occurred in Amajuba (KZN) which saw a 76.7% reduction in maternal deaths per 100 000 live births from 159.3 (17 deaths) to 37.1 (4 deaths). A further 10 districts also achieved a reduction rate of more than 50%. The maternal mortality in facility ratio increased in 17 districts. Although Capricorn (LP) had the highest maternal mortality in facility ratio, Amathole (EC) experienced the greatest increase in maternal deaths per 100 000 live births, at 125.5% from 19.6 (2 deaths) to 44.2 (4 deaths).

The annual trends in the maternal mortality in facility ratio

by province and district is presented in Figure 6. Over the five-year period from 2018/19 to 2022/23, the maternal mortality in facility ratio improved in 34 districts across the country – at least three districts in each province except Mpumalanga where no district showed a reduction in the maternal mortality in facility rate over the five-year period. Besides the four districts with no maternal deaths, the greatest improvement occurred in West Coast (WC) where maternal deaths per 100 000 live births declined by 74% from 67.2 (3 deaths) to 17.5 (1 death). The worst performance occurred in Frances Baard (NC), where the ratio of maternal deaths per 100 000 live births rose 134.4% from 44.8 (4 deaths) to 105.0 (10 deaths).

Only Xhariep (FS) managed to achieve a year-on-year reduction in the maternal mortality in facility ratio over three consecutive years and a further nine districts sustained this over two consecutive periods (Alfred Nzo and Joe Gqabi (EC); Lejweleputswa and Mangaung (FS); eThekweni and uMgungundlovu (KZN); Capricorn (LP) and Cape Town and Overberg (WC)). Two districts experienced a year-on-year increase in the maternal mortality in facility ratio over more than a single period. These were Ngaka Modiri Molema (NW), where there was an increase in the rate over two consecutive periods, and Chris Hani (EC), where the rate increased over three consecutive periods.

Figure 5: Maternal mortality in facility ratio by district, 2022/23

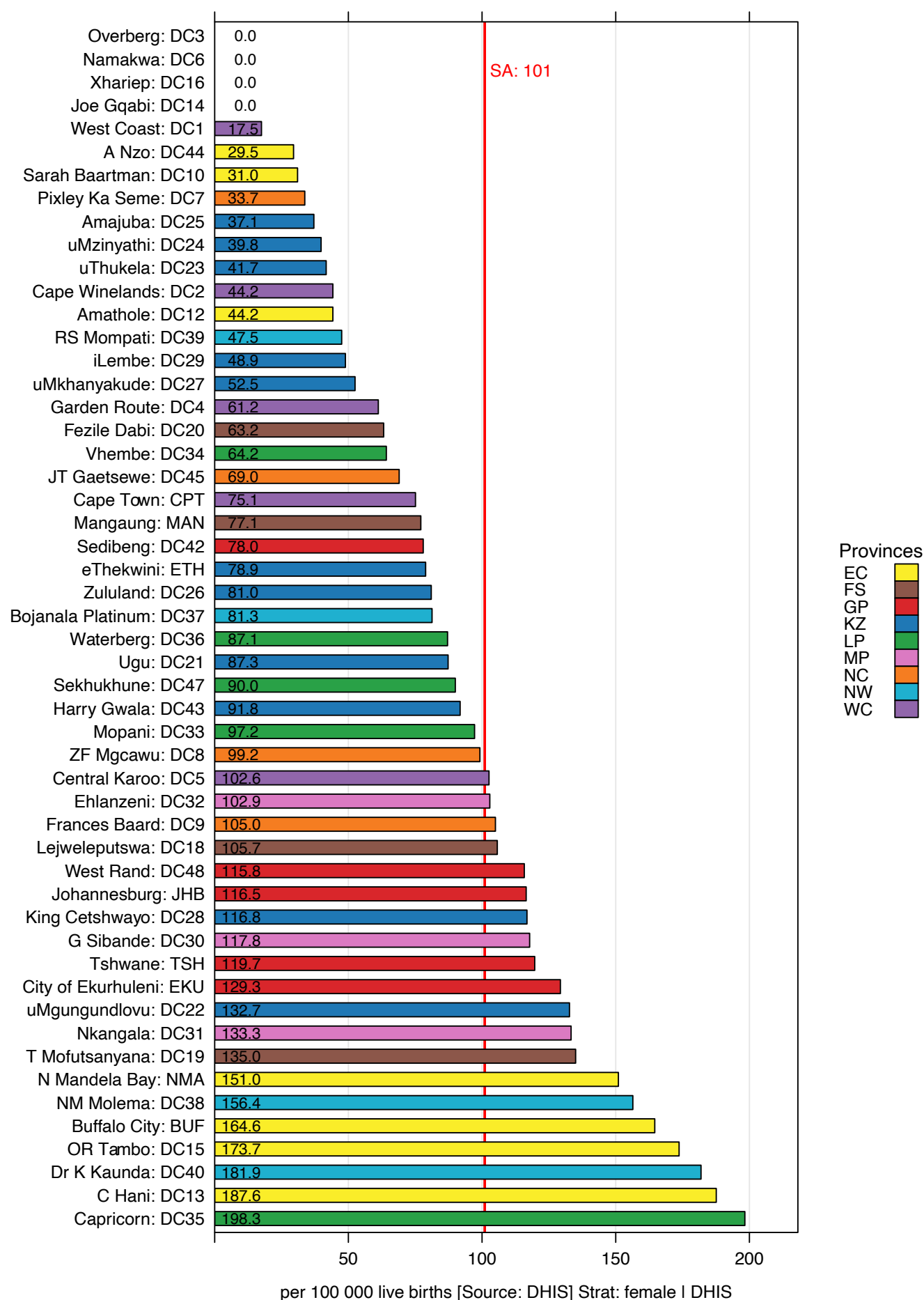
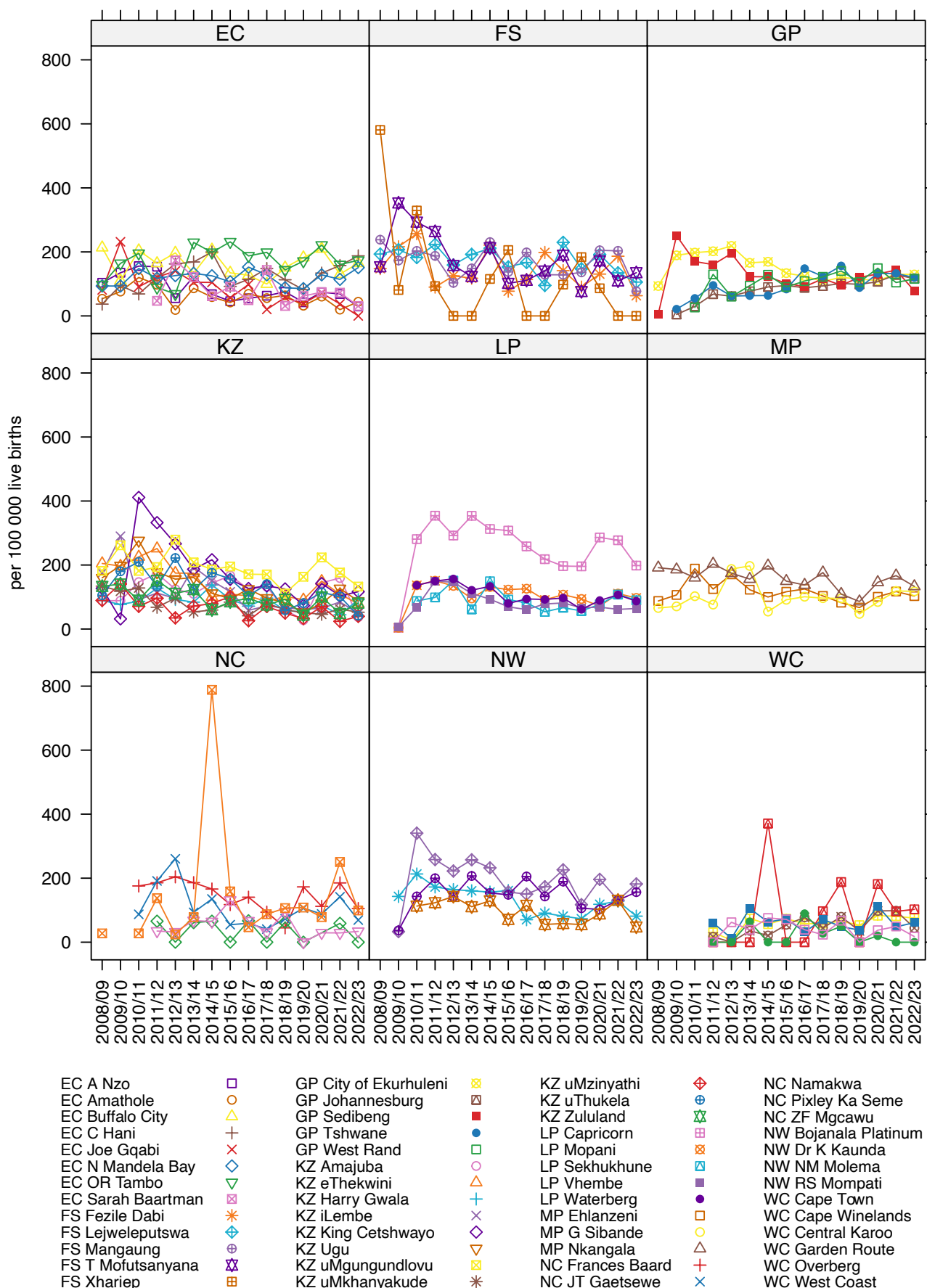


Figure 6: Annual trends – maternal mortality in facility ratio by province and district, 2008/09–2022/23



Source: DHIS

Recommendations

The cause of maternal deaths is well understood and interventions to reduce these have been repeatedly expressed by the National Committee for the Confidential Enquiry into Maternal Deaths, namely:

- Implement standard procedures for recording and auditing all maternal deaths.
- Establish and apply norms and standards for labour wards and ensure the availability of essential medication.
- Implement regular emergency obstetric drills performed at primary level of care to ensure that all staff members are familiar with their roles in an emergency.
- Identify and share good practices between provinces.
- The influence of socio-demographic factors on maternal deaths should be further explored by both the NCCEMD and the Rapid Mortality Surveillance.⁸
- Re-prioritise maternal and neonatal health services demonstrated by financial and human resource investment.⁹
- Maintain a focus on the top five leading causes of maternal deaths – the 5 H's (HIV, haemorrhage, hypertension, health worker training in maternal care and health systems strengthening).

⁸Bomela NJ. Maternal mortality by socio-demographic characteristics and cause of death in South Africa: 2007–2015. BMC Public Health. 2020; 20:157. URL: <https://doi.org/10.1186/s12889-020-8179-x>.

⁹Cebekhulu SN. Saving Mothers 2020–2022: Triennial Report on Confidential Enquiries into Maternal Deaths in South Africa. Presentation to the National Health Council. eThekweni; 22 June 2023.

Early neonatal death in facility rate

Key findings

- The early neonatal death in facility rate has declined by 5% over the past decade.
- There were 9 137 early neonatal deaths in South Africa in 2022/23 comprising 75.7% of all neonatal deaths and producing an early neonatal death in facility rate of 9.6 deaths per 1 000 live births.
- The early neonatal death in facility rate in the worst-performing province is 1.6 times that of the best-performing province (11.6 versus 7.1 per 1 000 live births).
- Over the past five years, the early neonatal death in facility rate has increased in four provinces (KwaZulu-Natal, Mpumalanga, the North West and the Northern Cape) and has decreased in four provinces (the Free State, Gauteng, Limpopo and the Western Cape). There was no change observed in the Eastern Cape province.
- There is a 2.2-fold difference between the best- and worst-performing districts in 2022/23. Although five districts in the Western Cape had an early neonatal death in facility rate below the national average, every district experienced an increase in their early neonatal death in facility rate. Three districts (OR Tambo (EC), Thabo Mofutsanyane (FS) and Mopani (LP)) have managed to reduce the early neonatal death in facility rate over three consecutive years.
- Only two districts in the country – Chris Hani (EC) and Amajuba (KZN) – have seen an increase in the neonatal death in facility rate every year since 2015/16.

Introduction

The early neonatal death in facility rate measures the number of neonates, aged 0–6 days, who died during their stay in the facility as a proportion of all babies born in the facility, expressed per 1 000 live births.¹ It serves as an indication of the quality of antenatal and intrapartum care of the mother. Early neonatal deaths are defined in the National Indicator Data Set (NIDS) as deaths at 0–7 days and late neonatal deaths as deaths at 8–28 days.

The neonatal mortality rate is a key indicator for Goal 3 of the Sustainable Development Goals (SDGs), with a target of fewer than 12 deaths in the neonatal period for every 1 000 live births by the year 2030.² It is important to note that this target includes both early and late neonatal deaths.

Estimates (UNIGME)³ estimates that in 2021 there were five million deaths in children under five years of age, with 47% of these deaths occurring during the neonatal period, the first four weeks of life, and 70% in sub-Saharan Africa. Despite the high figures, these represent a significant improvement in child survival with a drop in the global under-5 mortality rate from 93 under-5 deaths per 1 000 live births in 1990 to 38 in 2021. The under-5 mortality rate in sub-Saharan Africa dropped from 181 in 1990 to 74 in 2021. There was a similar improvement in neonatal survival with the global neonatal mortality rate dropping from 37 deaths per 1 000 live births in 1990 to 18 in 2021. The annual rate of reduction in the neonatal mortality rate between 2010 and 2021 was 2.2% globally and 1.7% in sub-Saharan Africa.

The United Nations Inter-Agency Group on Mortality

¹National Department of Health. National Indicator Data Set 2020. Pretoria: NDoH; 2020.

²United Nations Development Programme. Sustainable Development Goals – 2019. URL: https://www.undp.org/content/dam/undp/library/corporate/brochure/SDGs_Booklet_Web_En.pdf.

³United Nations Inter-agency Group for Child Mortality Estimation (UNIGME). Levels and Trends in Child Mortality: Report 2022, Estimates developed by the United Nations Inter-agency Group for Child Mortality Estimation. New York: UNICEF; 2023. URL: www.childinfo.org/files/Child_Mortality_Report_2022.pdf.

The latest report of the National Perinatal Morbidity and Mortality Committee⁴ identified the most common causes of neonatal deaths among babies with a birth weight ≥ 500 grams during the 2020–2022 period. These causes included complications of prematurity (47%); intrauterine hypoxia (24%); infections (16%); congenital disorders (10%) and other conditions (3%). Most deaths were reported to be preventable with medical personnel and administrator-related factors listed as part of the top 10 avoidable health-system-related factors for neonatal deaths.

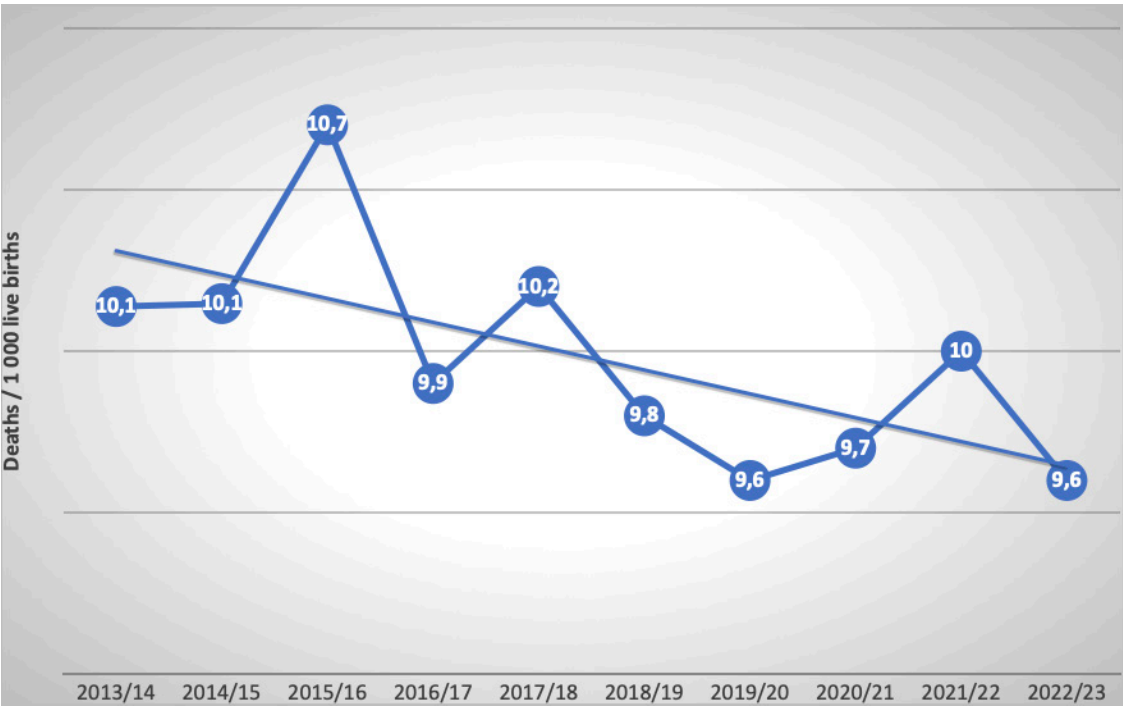
National overview

In 2022/23, there were 12 073 neonatal deaths in public sector hospitals and clinics with 75.7% (9 137) of these having occurred within seven days of birth. This provided a neonatal in facility death rate of 12.7 deaths per 1 000 live births and an early neonatal death in facility rate of 9.6. This

The District Health Information System (DHIS) in South Africa reports primarily on neonatal deaths in facilities in the public health system. Since 2012, for a variety of reasons, the number of deaths reported via the DHIS has exceeded the number captured in the Vital Registration system and, since 2016, official estimates of the neonatal mortality rate have been based on DHIS data. This section is based on DHIS data.

is a 4% reduction from the previous year and maintains an overall trend of a declining early neonatal death in facility rate over the past decade (see Figure 1 below). The annual rate of reduction in the early neonatal death in facility rate over the past decade was just 0.5% per year.

Figure 1: National early neonatal death in facility rate, 2013/14–2022/23



Source: DHIS

Provincial overview

The interprovincial variation, shown in Figure 2 below, reveals a 1.6-fold variation between the best-performing province (Western Cape (WC), 7.1 deaths per 1 000 live births) and the worst-performing province (Free State (FS),

11.6 deaths per 1 000 live births). Just three provinces attained an early neonatal death in facility rate below the national average.

⁴Mpembe T. Saving Babies 2020–2022: Interim Report of the National Perinatal Morbidity and Mortality Committee. Presentation to the National Health Council. eThekweni, 22 June 2023.

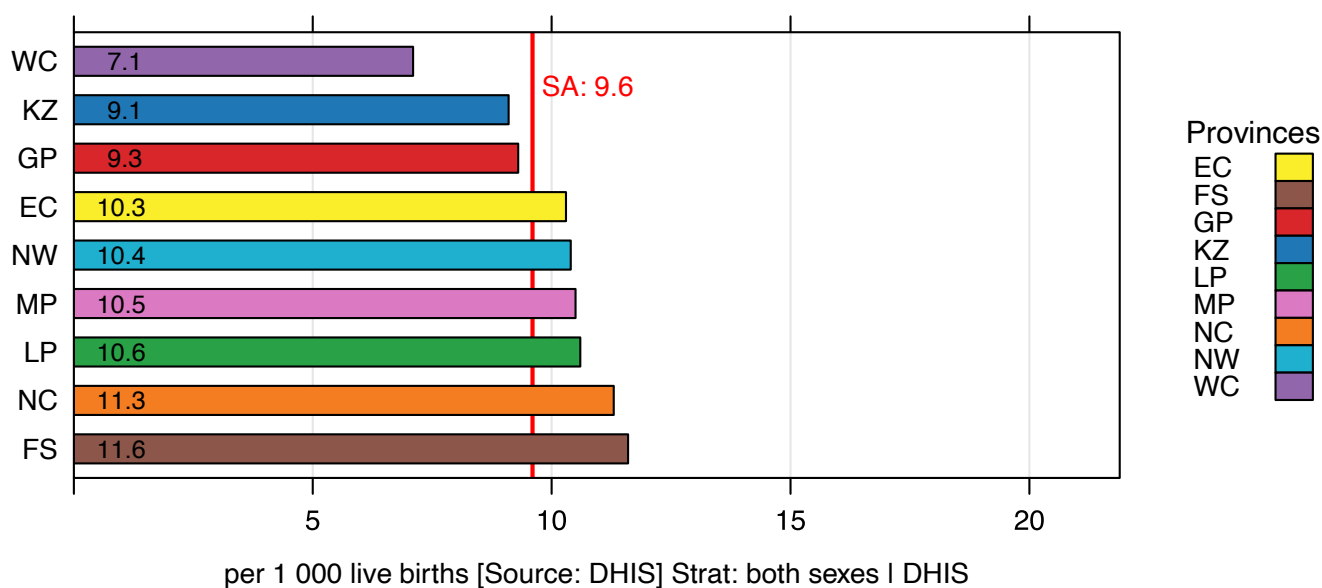
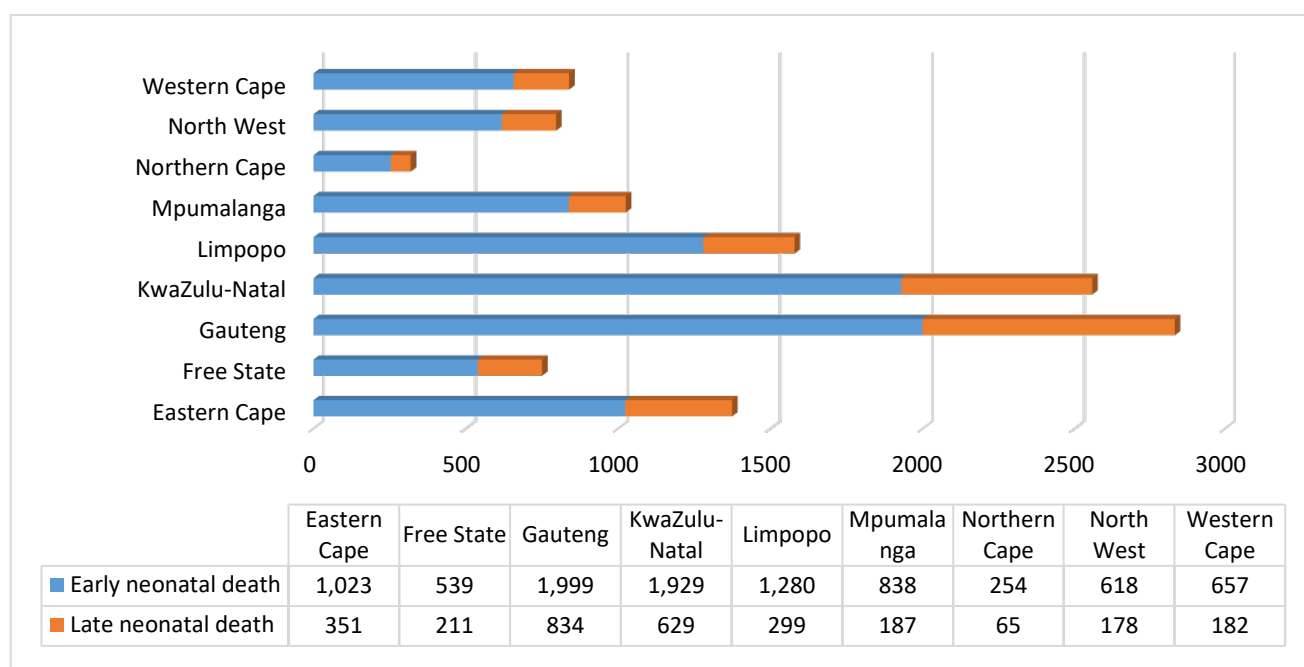
Figure 2: Early neonatal death in facility rate by province, 2022/23

Figure 3 below shows the proportion of neonatal deaths occurring early (0-7 days) or late (8-28 days) with a national average of 75.7% of neonatal deaths occurring in the early neonatal period. An interprovincial range is demonstrated

with early neonatal deaths accounting for 70.6% of neonatal deaths in Gauteng (GP) and 81.8% in Mpumalanga (MP).

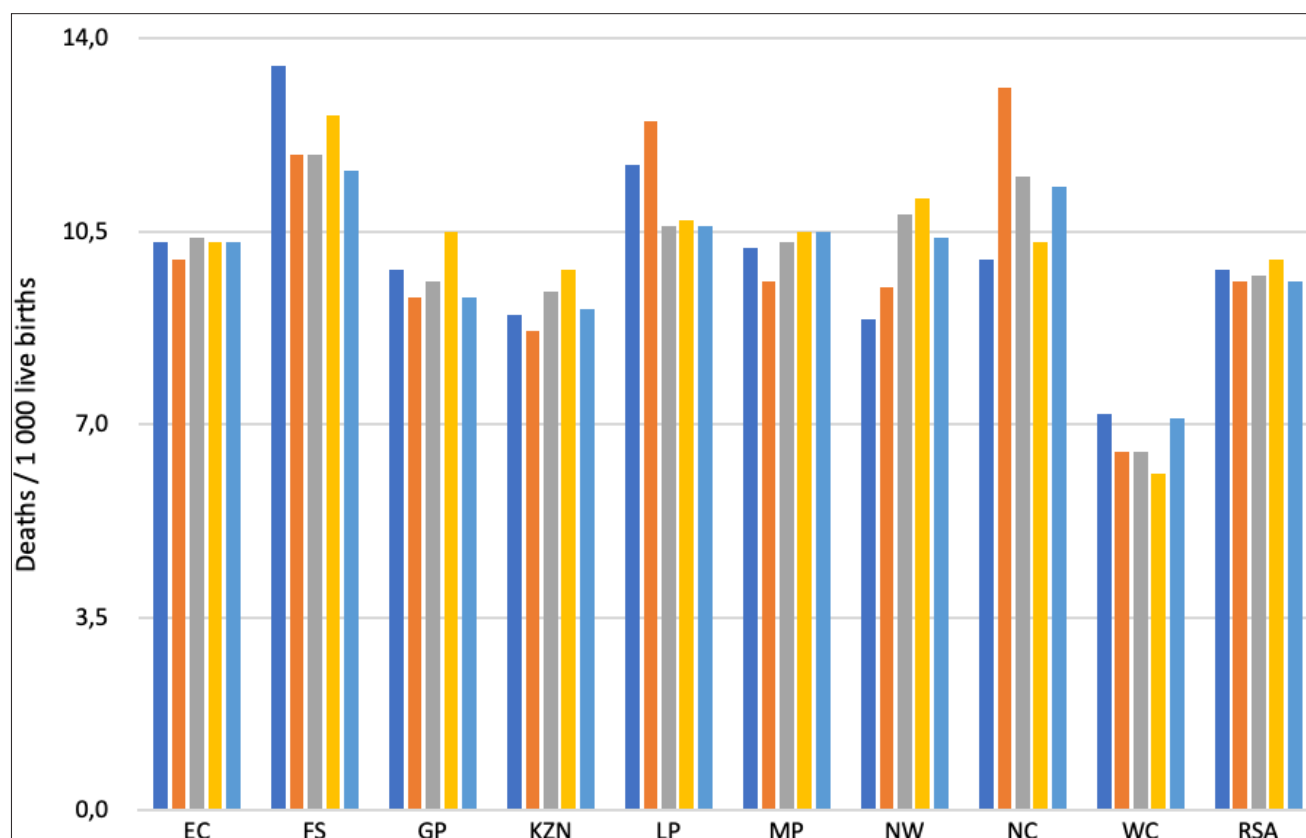
Figure 3: Proportion of early and late neonatal deaths by province, 2022/23

Source: DHIS

The provincial trends in the early neonatal death in facility rate over the past five years are shown in Figure 4 and the rate of reduction in Figure 5 below. In the past year, the rate remained static in two provinces, declined in five and increased in the Northern Cape and the Western Cape, which were also the only provinces that experienced an

increase in the actual number of early neonatal deaths. Although the number of early neonatal deaths declined year-on-year for three consecutive years in Limpopo and two consecutive years in Mpumalanga, no other province experienced a reduction in the early neonatal death in facility rate over more than a single year.

Figure 4: Early neonatal deaths in facility rate by province, 2018/19–2022/23

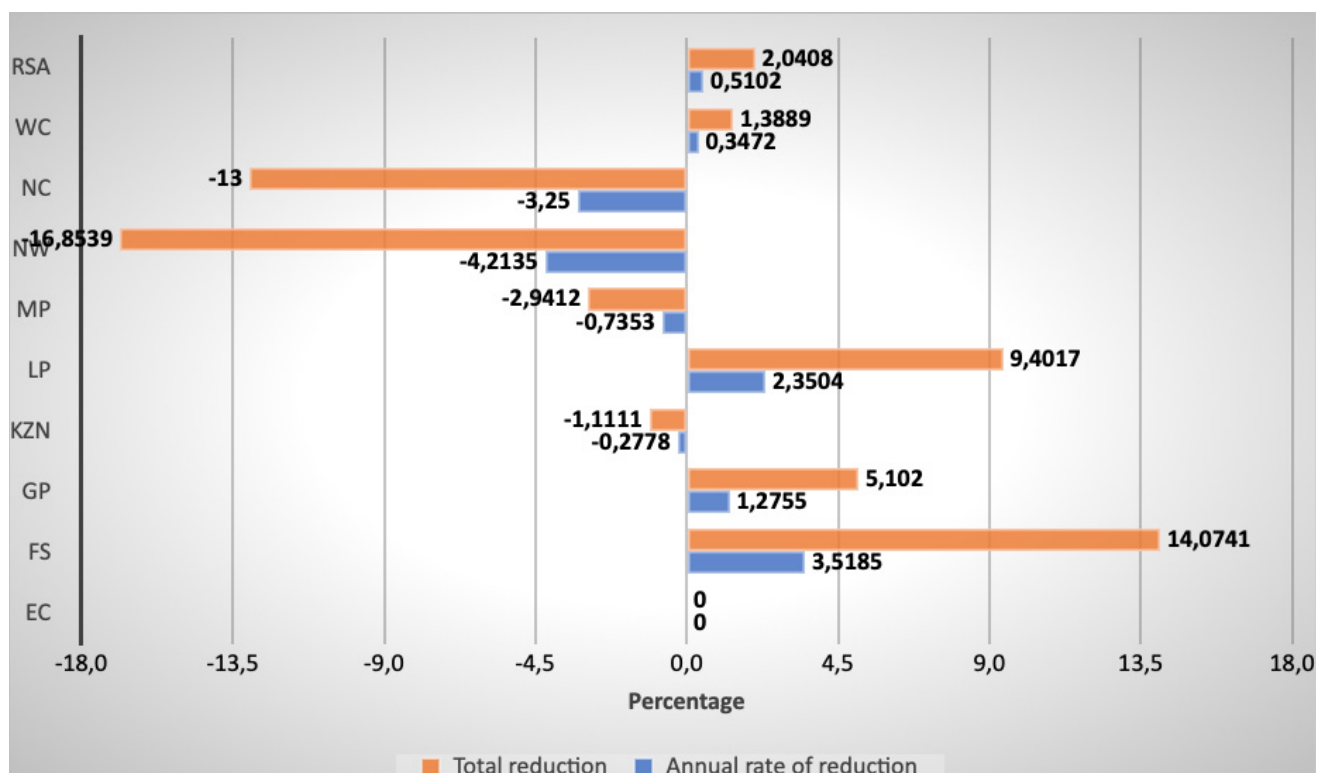


Source: DHIS

Over the past five years, there was no change in the early neonatal death in facility rate in the Eastern Cape. There was an increase in the rate in four provinces (KwaZulu-Natal, Mpumalanga, North West and the Northern Cape) and a decline in the rate in four provinces (Free State, Gauteng, Limpopo and the Western Cape). The greatest

reductions in the neonatal death in facility rate occurred in the Free State with an overall reduction of 14.1% and an annual rate of reduction of 3.5%. The largest increase in the early neonatal death in facility rate occurred in the North West province with a 16.9% increase over the past five years and an annual rate of increase of 4.2%.

Figure 5: Proportional and rate of reduction in neonatal deaths in facility rate by province, 2018/19–2022/23



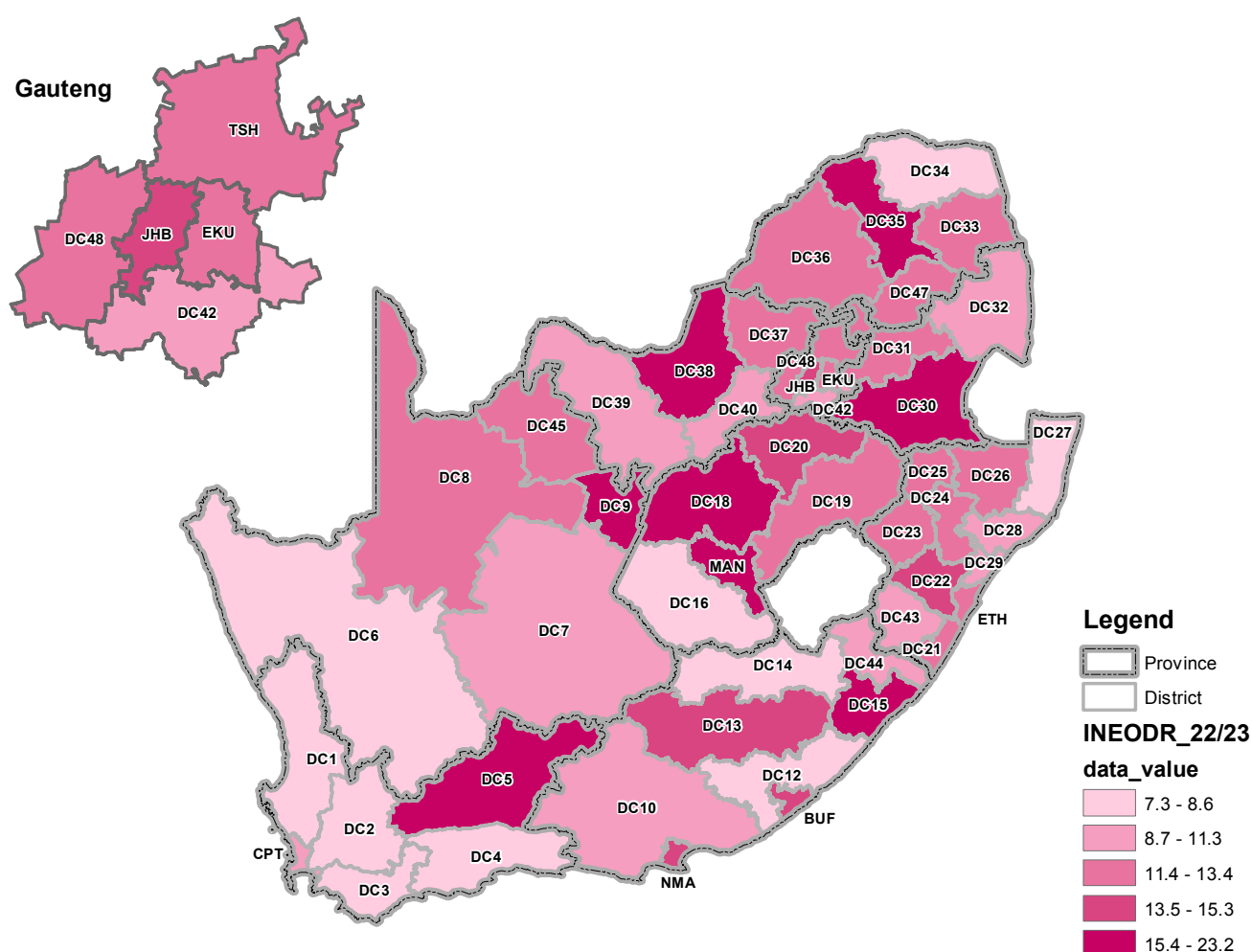
Source: DHIS

District overview

The early neonatal death in facility rate across the 52 districts in the country is reflected in Map 1 and Figure 6 below. These show a 2.2-fold variation between the lowest rate of nine deaths per 1 000 live births (nine deaths and 1 510 live births) in Namakwa (NC) and the highest rate of 19.9 deaths per 1 000 births (18 deaths and 905 live births) in the Central Karoo (WC). Thirty-one districts had an early neonatal death in facility rate below the national average.

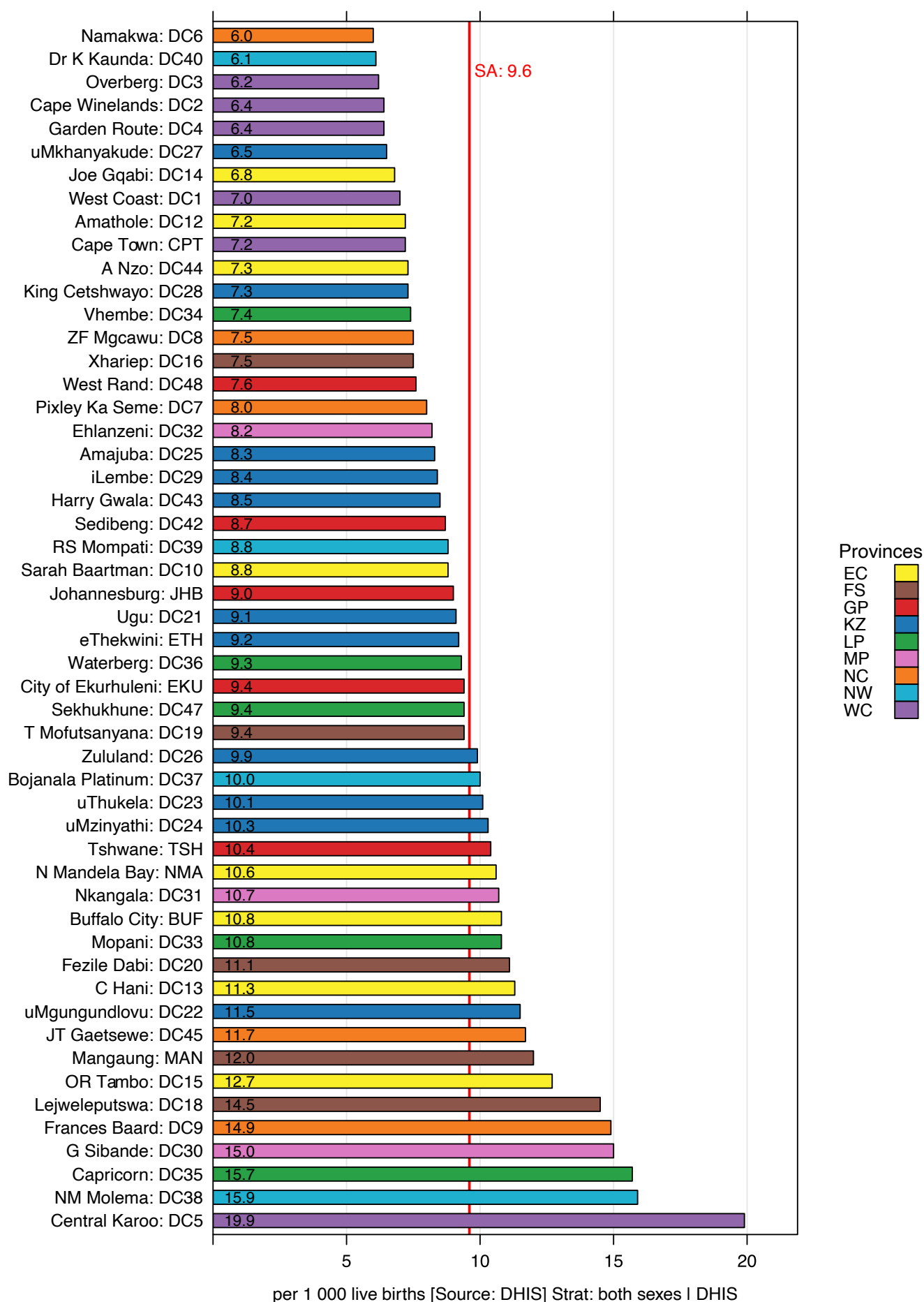
No province managed to achieve an early neonatal death in facility rate equal to or below the national average in every district, although five out of six districts in the Western Cape and four of five districts in Gauteng achieved a rate below the national average. Only one district in Mpumalanga and two each in the Free State and the North West had just one district with an early neonatal death in facility rate below the national average.

Map 1: Early neonatal death in facility rate by district, 2022/23



Source: DHIS

Figure 6: Early neonatal death in facility rate by district, 2022/23



Five districts in the Western Cape were among the 10 districts with the lowest early neonatal death in facility rate, together with two districts in the Eastern Cape and one each in KwaZulu-Natal, the North West and the Northern Cape. The Free State and the Northern Cape each had two districts among the 10 with the highest early neonatal death in facility rate, together with one district each in the Eastern Cape, KwaZulu-Natal, Mpumalanga, Limpopo, the North West and the Western Cape.

From 2021/22 to 2022/23, the early neonatal death in facility rate improved in 24 districts, worsened in 27 and remained the same in one. The greatest improvement occurred in Zwelentlanga Fatman Mgcawu (NC) where the rate declined by 47.6% from 14.3 (62 deaths) to 7.5 (34 deaths) per 1 000 live births. The worst-performing district was the Central Karoo (WC) where the rate increased by 210.9% from 6.4 (6 deaths) to 19.9 (18 deaths) early neonatal deaths per 1 000 live births. Over the five-year period from 2018/19 to 2022/23, the early neonatal death in facility rate improved in 25 districts across the country and worsened in 27. The greatest improvement occurred in Namakwa (NC) where it declined by 43.4% from 10.6 (16 deaths) to 6.0 (9 deaths). The worst performance

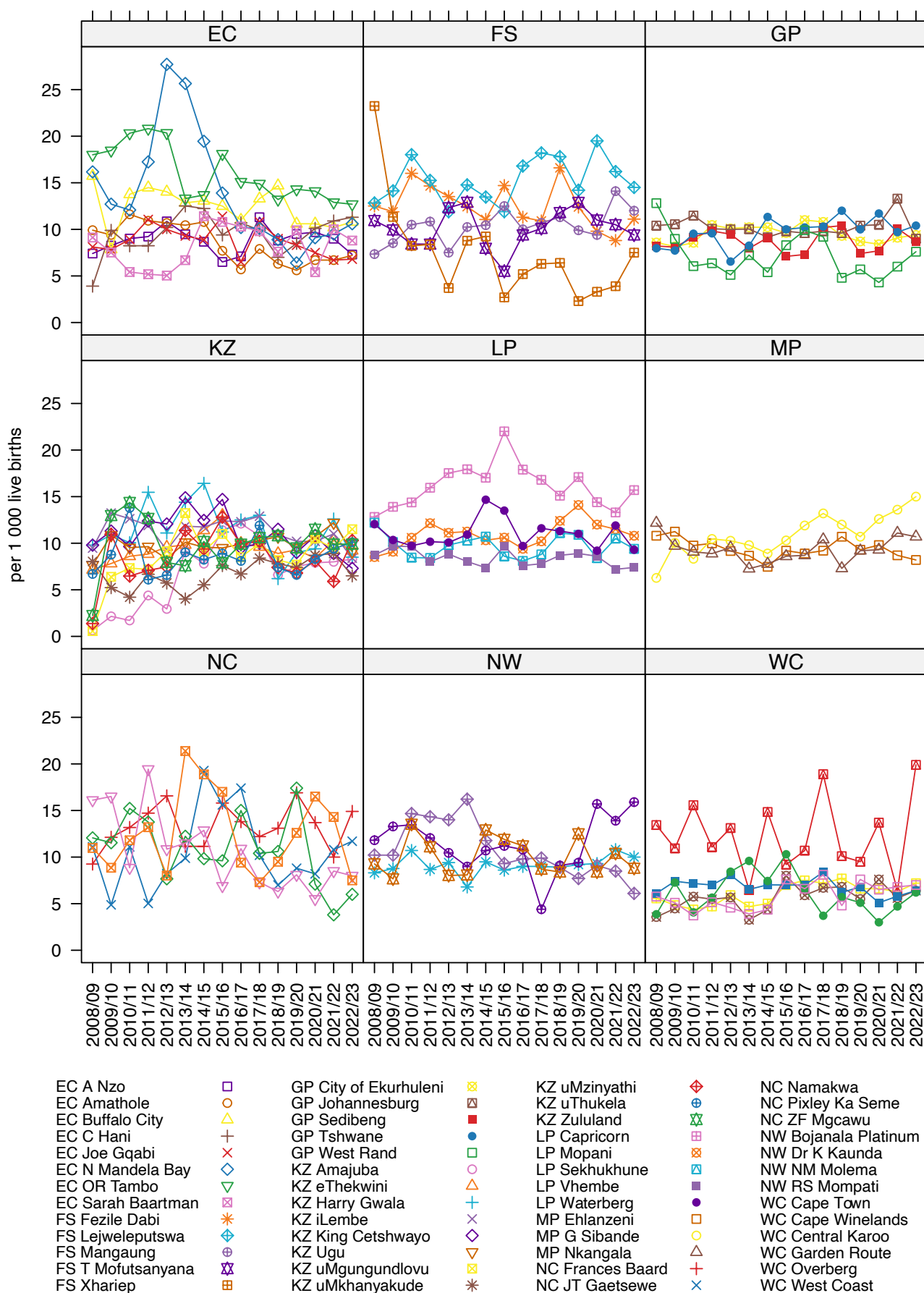
occurred in the Central Karoo (WC) which experienced a 97.0% increase in early neonatal deaths per 1 000 live births from 10.1 (10 deaths) to 19.9 (18 deaths).

The annual trends in the neonatal death in facility rate for all districts are presented in Figure 7 below, which shows marked variation within and between all provinces from one year to the next. While 24 districts showed a reduced early neonatal death in facility rate over the past year, only six achieved this over the past two years and three sustained this over three consecutive years – OR Tambo (EC), Thabo Mofutsanyane (FS) and Mopani (LP).

No district in the Western Cape managed to reduce the early neonatal death in facility rate between 2021/22 and 2022/23, and no district in five provinces (KwaZulu-Natal, Mpumalanga, North West, the Northern and the Western Cape) managed to sustain a reduction in the early neonatal death in facility rate for three consecutive years.

Only two districts in the country – Chris Hani (EC) and Amajuba (KZN) – have seen an increase in the early neonatal death in facility rate every year since 2018/19.

Figure 7: Annual trends: early neonatal death in facility rate by district, 2008/09–2022/23



Source: DHIS

Table 1 below shows the number of early, late and total neonatal deaths in each district, as well as the early neonatal death in facility rate. The total number of neonatal deaths in facility in 2022/23 was 12 073 with 9 137 (75.7%) early (0–7 days) and 2 936 (24.3%) late neonatal deaths (8–28 days). As expected, the metropolitan districts with provincial tertiary and national/central hospitals had the highest number of early neonatal deaths in 2022/23. Johannesburg in Gauteng reported the most at 656.

Among the non-metro districts, Capricorn (418) (LP) had the most early neonatal deaths, followed by OR Tambo (343) (EC), Ehlanzeni (322) (MP), Gert Sibande (298) (MP) and Mopani (280) (LP). The proportion of deaths at 0–7 days of the total number of neonatal deaths nationally was 75.7%. The proportion was lowest in Zwelentlanga Fatman Mgcawu (57.6%) (NC) and highest in Xhariep (FS) where there were no late neonatal deaths.

Table 1: Proportion of deaths 0–7 days of total neonatal deaths by district, 2022/23

Province / District		Death in facility 0–6 days (N°)	Death in facility 7–28 days (N°)	Total neonatal deaths (N°)	Proportion of total neonatal deaths occurring within 0–6 days (%)
Eastern Cape	Alfred Nzo	91	30	121	75.2
	Amathole	59	7	66	89.4
	Buffalo City	143	61	204	70.1
	Chris Hani	116	34	150	77.3
	Joe Gqabi	30	4	34	88.2
	Nelson Mandela Bay	189	77	266	71.1
	OR Tambo	343	132	475	72.2
	Sarah Baartman	52	6	58	89.7
Free State	Fezile Dabi	80	26	106	75.5
	Lejweleputswa	148	50	198	74.7
	Mangaung	190	91	281	67.6
	Thabo Mofutsanyana	115	44	159	72.3
	Xhariep	6	0	6	100.0
Gauteng	Ekurhuleni	582	221	803	72.5
	Johannesburg	656	362	1018	64.4
	Sedibeng	116	35	151	76.8
	Tshwane	527	150	677	77.8
	West Rand	118	66	184	64.1
KwaZulu-Natal	Amajuba	86	32	118	72.9
	eThekweni	640	231	871	73.5
	Harry Gwala	67	17	84	79.8
	iLembe	98	27	125	78.4
	King Cetshwayo	155	65	220	70.5
	Ugu	128	53	181	70.7
	uMgungundlovu	226	64	290	77.9
	uMkhanyakude	105	27	132	79.5
	uMzinyathi	120	30	150	80.0
	uThukela	135	38	173	78.0
	Zululand	169	45	214	79.0
Limpopo	Capricorn	418	99	517	80.9
	Mopani	280	57	337	83.1
	Sekhukhune	239	72	311	76.8
	Vhembe	211	36	247	85.4
	Waterberg	132	35	167	79.0
Mpumalanga	Ehlanzeni	322	62	384	83.9
	Gert Sibande	298	73	371	80.3
	Nkangala	218	52	270	80.7
Northern Cape	Frances Baard	132	30	162	81.5
	John Taolo Gaetsewe	58	3	61	95.1
	Namakwa	9	2	11	81.8
	Pixley Ka Seme	21	5	26	80.8
	Zwelentlanga Fatman Mgcawu	34	25	59	57.6
North West	Bojanala Platinum	207	64	271	76.4
	Dr Kenneth Kaunda	83	39	122	68.0
	Ngaka Modiri Molema	242	61	303	79.9
	Ruth Segomotsi Mompati	86	14	100	86.0
Western Cape	Cape Town	419	141	560	74.8
	Cape Winelands	96	14	110	87.3
	Central Karoo	18	3	21	85.7
	Garden Route	60	14	74	81.1
	Overberg	27	8	35	77.1
	West Coast	37	2	39	94.9

Source: DHIS

Recommendations

The cause of neonatal deaths is well understood. Interventions which have the potential to reduce neonatal deaths due to these causes have already been adopted in this country. These include antenatal steroids for preterm labour, neonatal resuscitation, chlorhexidine cord cleansing, Continuous Positive Airways Pressure (CPAP), Kangaroo Mother Care (KMC) and the case management of sick and small newborn infants.

Ongoing improvement in the early neonatal death in facility rate requires the following:

- Effective family planning services and planned pregnancies;
- Improved antenatal clinic attendance, including earlier booking;
- Stronger implementation of existing interventions and the identification and sharing of best practices between districts and provinces with low and high neonatal death in facility rates;
- Addressing health systems modifiable factors and the implementation of systems to hold managers at each level of the health system accountable for the outcomes in their neonatal services.

Delivery in 10 to 19 years in facility rate

Key findings

- There were 132 280 deliveries to teenagers below 20 years of age, which comprised 13.9% of all facility-based deliveries in the country.
- 2.6% of these deliveries (3 497) were to teenagers aged 10 to 14 years, which contributed 0.4% of all facility-based deliveries in the country.
- The rate of deliveries in 10-to-19 year olds in facilities in the worst-performing province is 1.8 times that of the best-performing province (9.6% versus 17.6%).
- Over the past five years, the rate of deliveries in 10-to-19-year-olds in facilities has increased in six provinces but decreased in three provinces (KwaZulu-Natal, the Northern Cape and the Western Cape).
- There was a 2.8-fold difference between the best- and worst-performing districts in 2022/23.
- Only 19 districts recorded a rate of delivery in 10-to-19-year-olds in facilities below the national average.
- Two districts in the country (Ekurhuleni (GP) and Nelson Mandela Bay (EC)) recorded an increase in the rate of deliveries in 10-to-19-year-olds in facilities every year since 2018/19, while just two districts (Frances Baard (NC) and the Garden Route (WC)) recorded a decrease in the rate every year over the same period.
- Five local municipalities had a rate of delivery in 10-to-19-year-olds in facilities of more than 23%, of which four are in Eastern Cape and one in the Northern Cape.

Introduction

The delivery in 10 to 19 years in facility rate measures the deliveries to women under the age of 20 years as a proportion of total deliveries in the health facility presented as a percentage.¹ The numerator is the number of deliveries to women aged 10 to 19 years in the facility, while the denominator is the total number of deliveries in the facility. The data element for the numerator includes two elements: delivery 10 to 14 years in facility and delivery 15 to 19 years in facility. The indicator is a proxy for the adolescent birth rate.

The adolescent birth rate – the annual number of live births to adolescent girls per 1 000 adolescent girls – is one of two indicators used for monitoring progress towards achievement of Sustainable Development Goal 3.7.² This goal aims to ensure universal access to sexual and reproductive health care services by 2030, including family planning, information and education, and the integration of reproductive health into national strategies and programmes. A rise in this rate suggests problems in accessing sexual and reproductive health services

by adolescents, which has serious implications for their general wellbeing.

Teenage pregnancy is associated with an increased risk of pregnancy complications and maternal death. It is further associated with unfinished education and reduced opportunities for socio-economic advancement with increased vulnerability in offspring, including a higher infant mortality rate.³

The 2022 General Household Survey conducted by Statistics South Africa⁴ reported that 3.8% of teenagers aged 14 to 19 years experienced a pregnancy during the 12 months before the survey. The prevalence of pregnancy increased with age, rising from 0.3% for teenagers aged 14 years to 10.4% for those of 19 years of age.

In contrast to the above self-reported pregnancy rate, the DHIS data provides a contemporary record of facility-based deliveries and is the source for the following discussion.

¹National Department of Health. National Indicator Data Set 2020. Pretoria: NDoH; 2020.

²United Nations, Department of Economic and Social Affairs. Global indicator framework for the Sustainable Development Goals and targets of the 2030 Agenda for Sustainable Development. URL: https://unstats.un.org/sdgs/indicators/Global%20Indicator%20Framework%20after%202023%20refinement_Eng.pdf [Accessed 24 September 2023].

³United Nations Population Fund. Adolescent Pregnancy. URL: <https://www.unfpa.org/adolescent-pregnancy#readmore-expand>. [Accessed 24 September 2023].

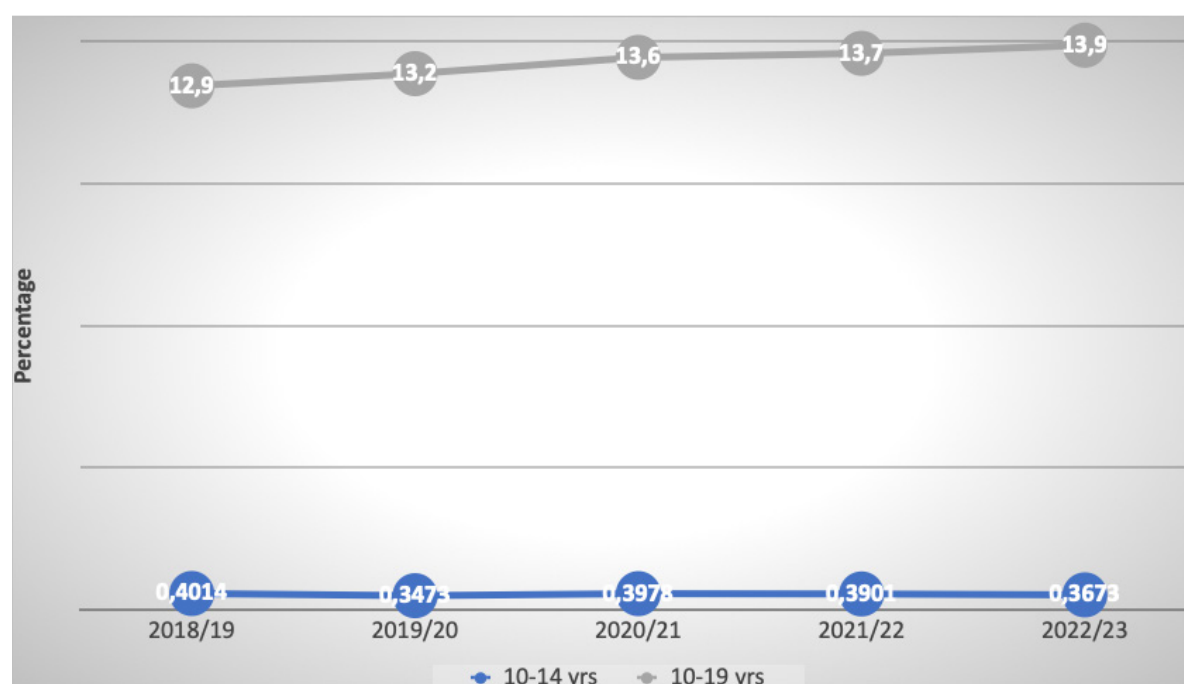
⁴Statistics South Africa. Statistical publication P0318: General Household Survey, 2022. Statistics South Africa, Pretoria; August 2023.

National overview

In 2022/23, there were 132 280 deliveries to adolescents below 20 years of age in public sector hospitals and clinics in South Africa (Figure 1). This represented 13.9% of all deliveries in these health facilities during the year. While the delivery in 10 to 19 years in facility rate has increased year-on-year over the past five years, the actual number of deliveries in 2022/23 was 5.1% less than the previous year. This reversed the trend of an increasing number each year over the preceding four years. Despite this, there has been a 6.1% increase in the number of deliveries over the past five years with an average 1.5% annual increase.

Teenagers aged 10 to 14 years accounted for 3 497 or 2.6% of these deliveries with the balance occurring among teenagers aged 15 to 19 years (Table 1). This figure represents the second consecutive year in which there was a decrease in the number of deliveries to teenagers in this age group. Over the past five years, teenagers aged 10 to 14 years have experienced a 9.6% decrease in deliveries with a 2.4% annual rate of reduction in the number of deliveries.

Figure 1: National delivery in 10 to 19 years in facility rate, 2018/19–2022/23



Source: DHIS

Table 1: Delivery in facility, 2018/19–2022/23

	2018/19	2019/20	2020/21	2021/22	2022/23
Delivery in facility – total	964 209	1 015 550	1 018 876	1 015 821	952 141
Delivery 10-19 years in facility	124 628	130 898	138 320	139 361	132 280
Delivery 10-14 years in facility	3 527	3 870	4 053	3 963	3 497

Source: DHIS

Provincial overview

The interprovincial variation, shown in Figure 2, reveals a 1.8-fold variation between Gauteng (GP), with the lowest delivery in 10 to 19 years in facility rate of 9.6%, and the Eastern Cape (EC), with the highest rate of 17.6%. Just

three provinces attained a delivery in 10 to 19 years in facility rate below the national average – Gauteng, the Western Cape (WC) and the Free State (FS).

Figure 2: Delivery in 10 to 19 years in facility rate by province, 2022/23

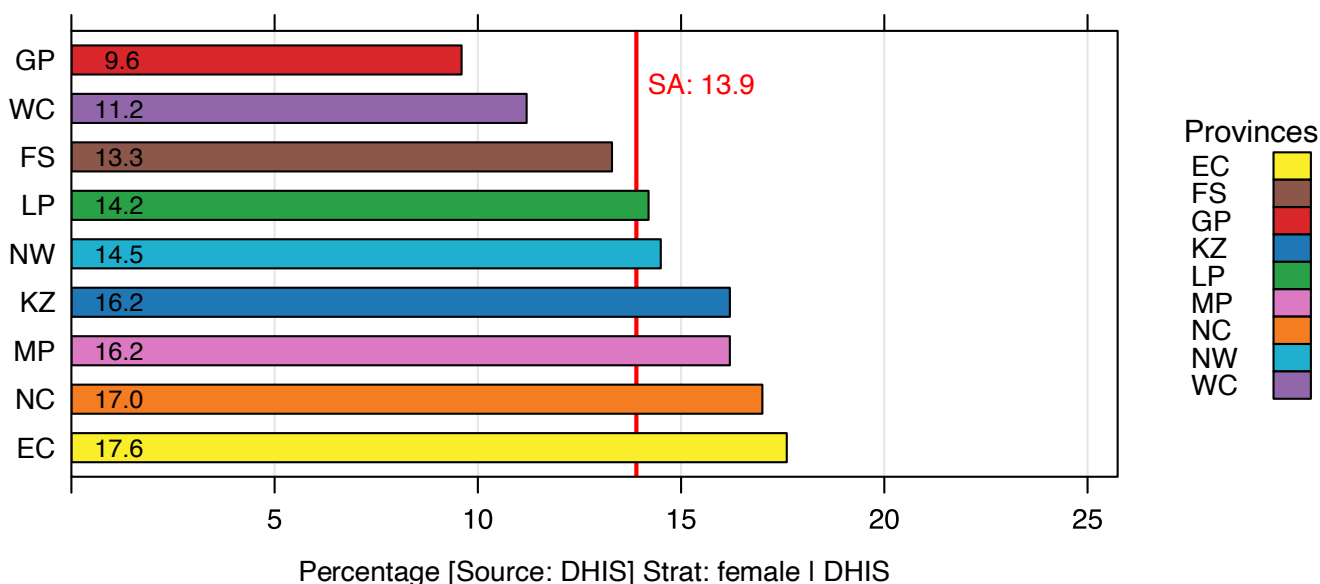


Table 2 below shows by province the proportion of deliveries by age group within the 10-to-19-year-old group. The table includes the number of deliveries and the proportion that this represents of both teenage and total deliveries in each age group.

Although the greatest number of deliveries to teenagers aged 10 to 14 years occurred in KwaZulu-Natal, the Eastern Cape had the highest delivery in 10 to 14 years in facility rate with this age group accounting for 0.55% of

all facility-based deliveries in the province. The Western Cape experienced the highest proportion of teenage pregnancies occurring in this age group (3.48%).

KwaZulu-Natal and Gauteng had the greatest number of deliveries in the 15-to-19-year-old age group but, once again, the Eastern Cape had the highest delivery in 15 to 19 years in facility rate at 17.1% while at 9.4% Gauteng had the lowest rate in this age group.

Table 2. Deliveries 10 to 14 and 15 to 19 by province, 2022/23

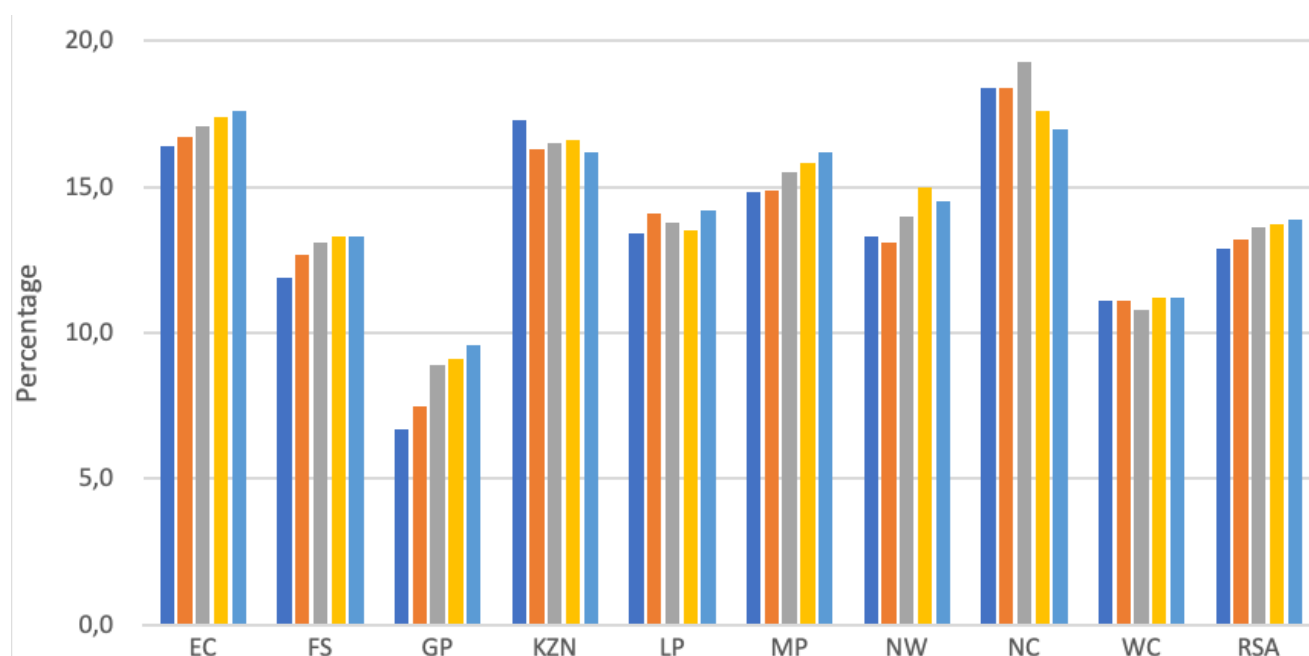
Province	10 to 14 years			15 to 19 years			10 to 19 years	
	N° deliveries	% 10-19 years deliveries	% total deliveries	N° deliveries	% 10-19 years deliveries	% total deliveries	N° deliveries	% total deliveries
Eastern Cape	553	3.1	0.6	17 064	96.9	17.1	17 617	17.6
Free State	139	2.3	0.3	5 974	97.7	13.0	6 113	13.3
Gauteng	494	2.4	0.2	20 261	97.6	9.4	20 755	9.7
KwaZulu-Natal	794	2.3	0.4	34 029	97.7	15.9	34 823	16.2
Limpopo	467	2.7	0.5	16 726	97.3	13.8	17 193	14.2
Mpumalanga	403	3.1	0.5	12 469	96.9	15.7	12 872	16.2
North West	201	2.3	0.3	8 463	97.7	14.1	8 664	14.5
Northern Cape	81	2.2	0.4	3 674	97.8	16.7	3 755	17.0
Western Cape	365	3.5	0.4	10 123	96.5	10.8	10 488	11.2
South Africa	3 497	2.6	0.4	128	97.4	13.5	132	13.9

Source: DHIS

The provincial trends in the deliveries in 10 to 19 years in facility rate over the past five years are shown in Figure 3 and the rate of increase in Figure 4. In the past year, the

rate remained static in two provinces, declined in three and increased in the Eastern Cape, Gauteng, Limpopo (LP) and Mpumalanga (MP).

Figure 3: Deliveries 10 to 19 years in facility rate by province, 2018/19–2022/23



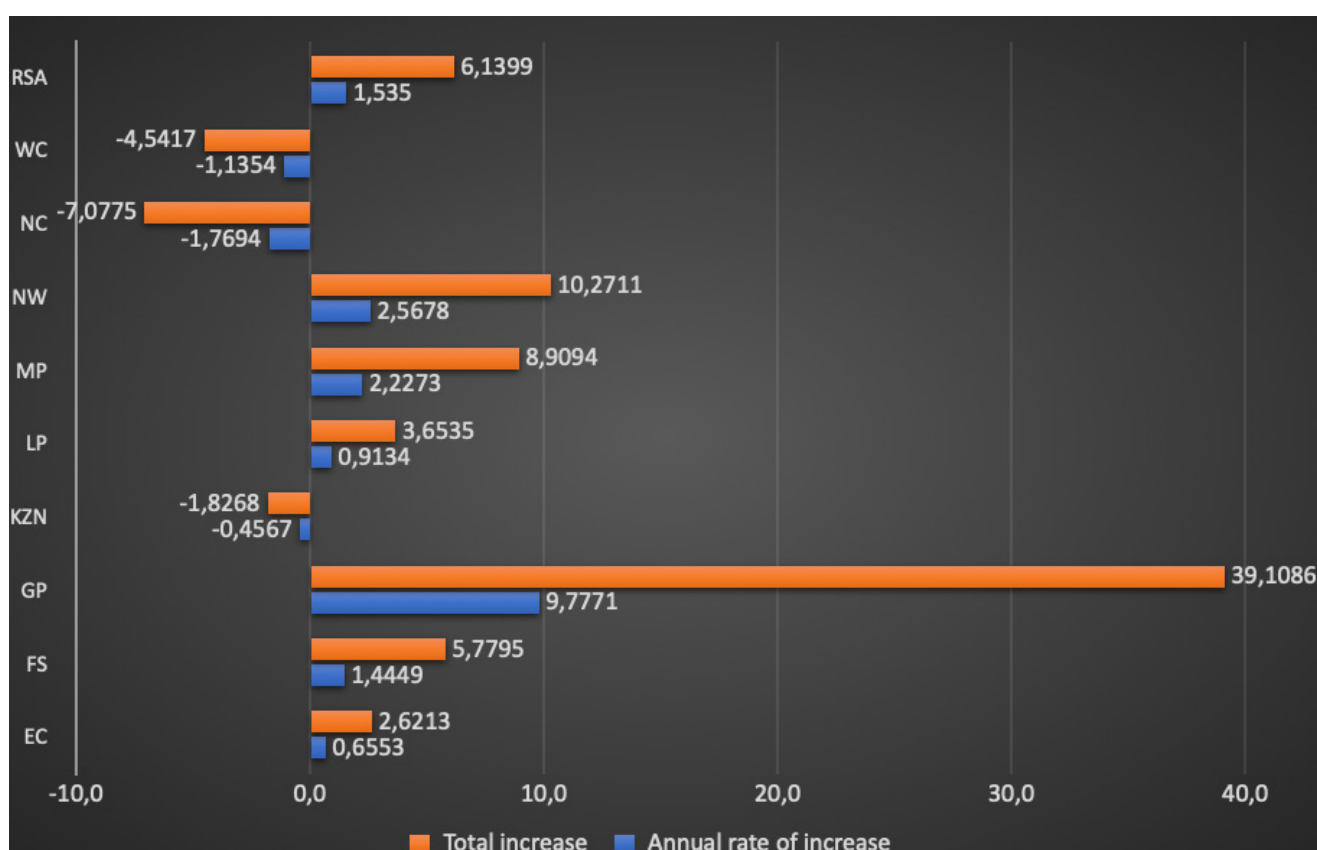
Source: DHIS

Over the past five years, the delivery in 10 to 19 years in facility rate increased in six provinces, remained fairly static in the Western Cape and declined in KwaZulu-Natal and the Northern Cape. Although Gauteng has the lowest delivery in 10 to 19 in facility rate, it has experienced the greatest increase in this rate over the past five years, with an overall 39.1% increase and an annual rate of increase of 9.8%.

There is a disconnect in the trend seen in the actual number of deliveries and that seen in the deliveries in 10 to 19 years in facility rate over the past five years. Five provinces (Eastern Cape, Free State, Gauteng, Mpumalanga and the North West) experienced a reduction in the actual number

of deliveries in the past years after a year-on-year increase over the preceding four years. Limpopo experienced a reduction in the number of deliveries for the second consecutive year while the Western Cape had a decrease in the number of deliveries for the third consecutive year and the Northern Cape for the fourth consecutive year. At the same time, five provinces experienced a year-on-year increase in the delivery 10 to 19 years in facility rate for the fourth consecutive year (Eastern Cape, Free State, Gauteng, Mpumalanga and the Western Cape) and the Northern Cape experienced an annual year-on-year reduction in the rate for the third consecutive year.

Figure 4: Proportional and rate of reduction in deliveries 10 to 19 years in facility rate by province, 2018/19–2022/23



Source: DHIS

District overview

The delivery in 10 to 19 years in facility rate across the 52 districts in the country is reflected in Map 1 and Figure 5, showing a 2.8-fold variation between the lowest rate of 8.3% (146 deliveries) in Johannesburg (GP) and the highest rate of 23.4% (70 deliveries) in Alfred Nzo (EC). Only 19 districts had a delivery in 10 to 19 years in facility rate below the national average, while Waterberg (LP) had a similar rate.

the lowest delivery in 10 to 19 years in facility rate, together with two districts in the Western Cape and one each in the Eastern Cape, Free State and Limpopo. The Eastern Cape and KwaZulu-Natal each had four districts among the 10 with the highest delivery in 10 to 19 years in facility rate, together with two districts in the Northern Cape. All eight metropolitan districts had a rate below the national average.

Five districts in Gauteng were among the 10 districts with

Map 1: Delivery 10 to 19 years in facility rate by district, 2022/23

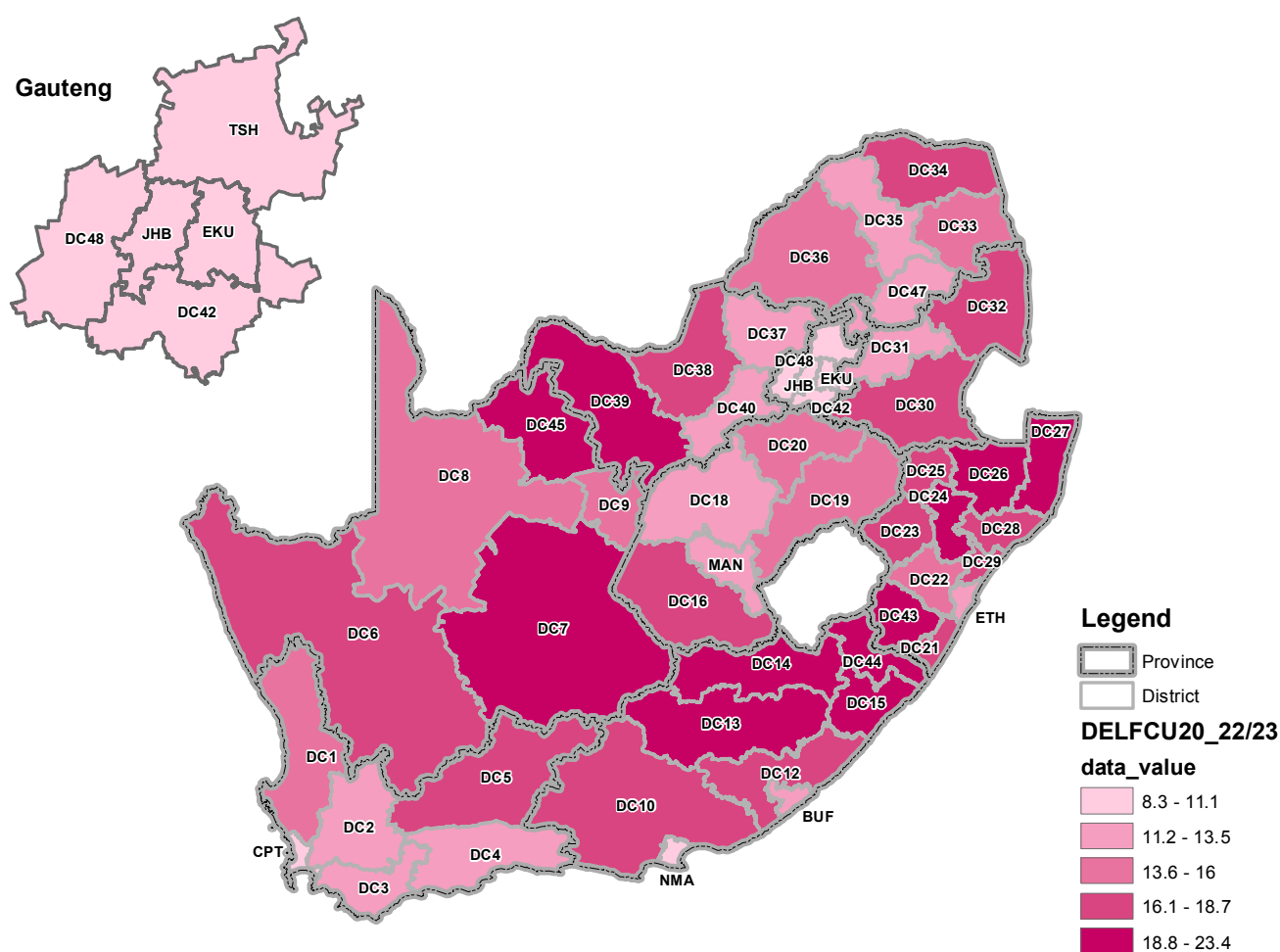
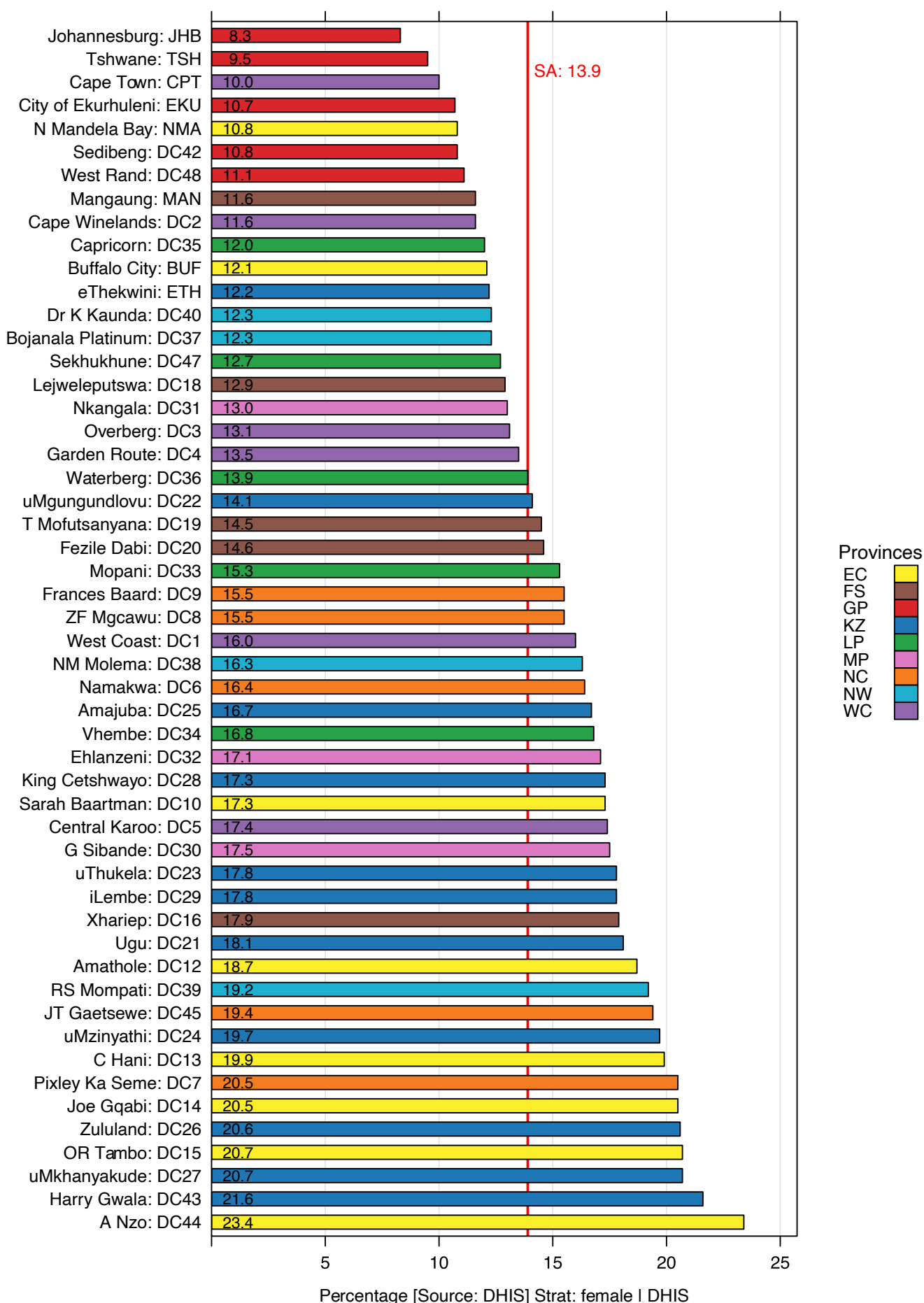


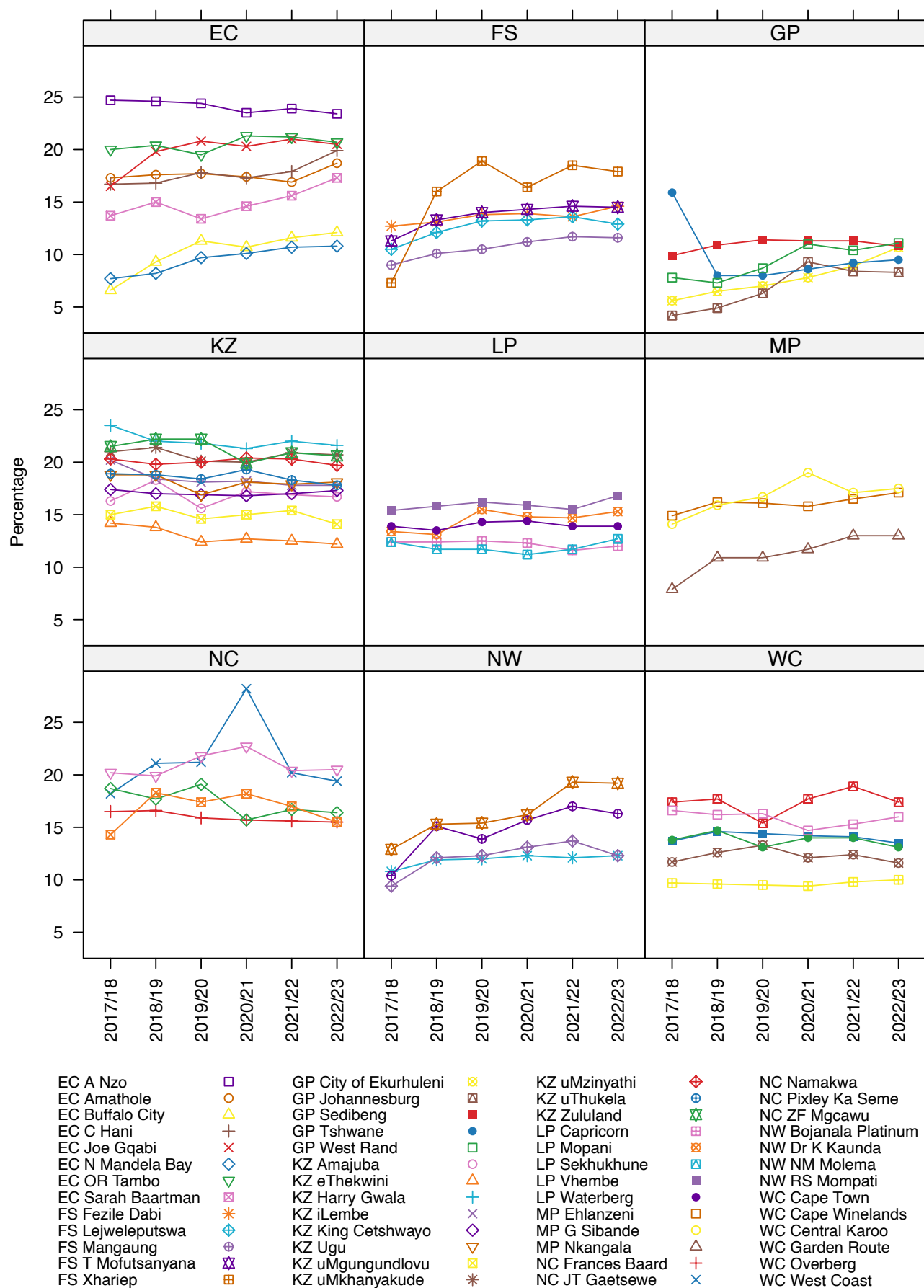
Figure 5: Delivery in 10 to 19 years in facility rate by district, 2022/23



From 2021/22 to 2022/23, the delivery in 10 to 19 years in facility rate improved in 28 districts, worsened in 21 and remained the same in three. The greatest improvement occurred in Dr K Kaunda (NW) where the rate declined by 10.2% from 13.7% (1 849 deliveries) to 12.3% (1 679 deliveries). The worst-performing district was Ekurhuleni (GP), where the rate increased by 20.29% from 8.9% (5 928 deliveries) to 10.7% (6 670 deliveries). Over the five-year period from 2018/19 to 2022/23, the delivery in 10 to 19 years in facility rate improved in 22 districts across the country and worsened in 30. The greatest improvement occurred in Zwelentlanga Fatman Magcawu (NC), where it declined by 15.3% from 18.3% (803 deliveries) to 15.5% (733 deliveries), and the worst performance occurred in Johannesburg (GP) which recorded a 69.4% increase from 4.9% (3 475 deliveries) to 8.3% (6 069 deliveries).

The annual trends in the neonatal death in facility rate for all districts are presented in Figure 6, which shows marked variation within and between all provinces from one year to another. While 28 districts showed reduced rates of delivery in 10-to-19-year-olds in facilities over the past year, only eight achieved this over the past two years, none over three consecutive years and two sustained this over four consecutive years (Frances Baard (NC) and the Garden Route (WC)). Twenty-one districts experienced an increase in the rate over the past year with seven of these experiencing a year-on-year increase over two consecutive years, two over three consecutive years and two (Ekurhuleni (GP) and Nelson Mandela Bay (EC)) over four consecutive years.

Figure 6: Annual trends: delivery 10 to 19 years in facility rate by district, 2017/18–2022/23



Source: DHIS

Table 3 below shows the number of deliveries in each district by age group as well as the age-specific delivery in facility rate. As expected, the metropolitan districts tended to have a higher number of teenage deliveries than other districts – eThekweni (8 503), Ekurhuleni (6 670), Johannesburg (6 069), Cape Town (5 933) and Tshwane (4 858). However, the five districts with the lowest deliveries in 10 to 19 years rate were also metropolitan districts – Johannesburg (8.4%), Tshwane (9.5%), Cape Town (10.1%), Ekurhuleni (10.7%) and Nelson Mandela Bay

Metro (10.8%).

Among the non-metro districts, Ehlanzeni (6 749) (MP) and OR Tambo (EC) (5 679) had the largest number of deliveries among teenagers aged 10 to 19 years. The five districts with the highest deliveries in 10 to 19 years rate were all rural districts – Alfred Nzo (23.4%) and OR Tambo (20.7%) in the Eastern Cape, and Harry Gwala (21.6%), uMkhanyakude (20.7%) and Zululand (20.6%) in KwaZulu-Natal.

Table 3: Number and proportion of deliveries by age and district, 2022/23

Province / District		10 to 14 years			15 to 19 years			10 to 19 years	
		N°	% 10-19 years	% total	N°	% 10-19 years	% total	N°	% total
Eastern Cape	Alfred Nzo	70	2.4	0.6	2 845	97.6	22.8	2 915	23.4
	Amathole	57	3.7	0.7	1 476	96.3	18.0	1 533	18.7
	Buffalo City	59	3.6	0.4	1 575	96.4	11.7	1 634	12.1
	Chris Hani	55	2.8	0.6	1 921	97.2	19.3	1 976	19.9
	Joe Gqabi	69	7.7	1.6	832	92.3	19.0	901	20.5
	Nelson Mandela Bay	55	2.8	0.3	1 889	97.2	10.5	1 944	10.8
	OR Tambo	160	2.8	0.6	5 519	97.2	20.1	5 679	20.7
	Sarah Baartman	28	2.7	0.5	1 007	97.3	16.9	1 035	17.3
Free State	Fezile Dabi	25	2.3	0.3	1 055	97.7	14.3	1 080	14.6
	Lejweleputswa	30	2.3	0.3	1 296	97.7	12.6	1 326	12.9
	Mangaung	39	2.2	0.3	1 723	97.8	11.3	1 762	11.6
	Thabo Mofutsanyana	45	2.5	0.4	1 756	97.5	14.2	1 801	14.5
	Xhariep	0	0.0	0.0	144	100.0	17.9	144	17.9
Gauteng	Ekurhuleni	170	2.6	0.3	6 500	97.5	10.4	6 670	10.7
	Johannesburg	146	2.4	0.2	5 923	97.6	8.2	6 069	8.4
	Sedibeng	33	2.3	0.3	1 396	97.7	10.5	1 429	10.8
	Tshwane	102	2.1	0.2	4 756	97.9	9.3	4 858	9.5
	West Rand	43	2.5	0.3	1 686	97.5	10.9	1 729	11.2
KwaZulu-Natal	Amajuba	52	2.9	0.5	1 719	97.1	16.2	1 771	16.7
	eThekweni	194	2.3	0.3	8 309	97.7	11.9	8 503	12.2
	Harry Gwala	34	2.0	0.4	1 707	98.1	21.2	1 741	21.6
	iLembe	47	2.3	0.4	2 044	97.8	17.5	2 091	17.9
	King Cetshwayo	72	1.9	0.3	3 667	98.1	17.0	3 739	17.3
	Ugu	57	2.3	0.4	2 456	97.7	17.7	2 513	18.1
	uMgungundlovu	83	3.0	0.4	2 725	97.0	13.7	2 808	14.1
	uMkhanyakude	83	2.4	0.5	3 343	97.6	20.2	3 426	20.7
	uMzinyathi	33	1.4	0.3	2 285	98.6	19.4	2 318	19.7
	uThukela	56	2.4	0.4	2 307	97.6	17.4	2 363	17.8
	Zululand	83	2.3	0.5	3 467	97.7	20.1	3 550	20.6
Limpopo	Capricorn	67	2.1	0.3	3 149	97.9	11.7	3 216	12.0
	Mopani	146	3.7	0.6	3 809	96.3	14.7	3 955	15.3
	Sekhukhune	71	2.2	0.3	3 146	97.8	12.4	3 217	12.7
	Vhembe	134	2.8	0.5	4 702	97.2	16.4	4 836	16.9
	Waterberg	49	2.5	0.3	1 920	97.5	13.5	1 969	13.9

		10 to 14 years			15 to 19 years			10 to 19 years	
Province / District		N°	% 10-19 years	% total	N°	% 10-19 years	% total	N°	% total
Mpumalanga	Ehlanzeni	218	3.2	0.6	6 531	96.8	16.5	6 749	17.1
	Gert Sibande	105	3.0	0.5	3 353	97.0	17.0	3 458	17.5
	Nkangala	80	3.0	0.4	2 585	97.0	12.7	2 665	13.1
Northern Cape	Frances Baard	26	2.1	0.3	1 240	98.0	15.2	1 266	15.5
	John Taolo Gaetsewe	26	2.7	0.5	935	97.3	18.9	961	19.4
	Namakwa	4	1.6	0.3	246	98.4	16.1	250	16.4
	Pixley Ka Seme	9	1.7	0.3	536	98.4	20.1	545	20.5
	Zwelentlanga Fatman Mgcawu	16	2.2	0.3	717	97.8	15.2	733	15.5
North West	Bojanala Platinum	62	2.4	0.3	2 505	97.6	12.0	2 567	12.3
	Dr Kenneth Kaunda	44	2.6	0.3	1 635	97.4	12.0	1 679	12.4
	Ngaka Modiri Molema	60	2.4	0.4	2 448	97.6	15.9	2 508	16.3
	Ruth Segomotsi Mompoti	35	1.8	0.4	1 875	98.2	18.8	1 910	19.2
Western Cape	Cape Town	223	3.8	0.4	5 710	96.2	9.7	5 933	10.1
	Cape Winelands	52	3.0	0.3	1 702	97.0	11.2	1 754	11.6
	Central Karoo	9	5.6	1.0	151	94.4	16.4	160	17.4
	Garden Route	45	3.6	0.5	1 223	96.5	13.0	1 268	13.5
	Overberg	22	4.0	0.5	532	96.0	12.6	554	13.1
	West Coast	14	1.7	0.3	805	98.3	15.7	819	16.0

Source: DHIS

Recommendations

Ongoing improvement in the delivery in 10 to 19 years in facility rate requires:

- Addressing social determinants of teenage pregnancy and the socio-economic environment of children and adolescents in the country.
- Empowering young girls and adolescents through effective life skills and sexual and reproductive health education.
- Strengthening access to appropriate sexual and reproductive health services through better implementation of adolescent- and youth-friendly health services at the primary health care level and its inclusion in the integrated school health programme.

2. Child health and nutrition

Pneumonia case fatality under five years rate

Evelyn Thsehla and Chengetai Dare

Key findings

- In 2020/21, the pneumonia case fatality rate was 2.1%, showing an increase from previous years. A decline in fatality rate was reported in 2021/22 and 2022/23. The rate of 1.5% in 2022/23 is the lowest since 2017/18.
- The Western Cape recorded a case fatality rate of 0.2% in 2022/23 followed by the North West with 1.4% and Gauteng at 1.5%, while the rest of the provinces reported a case fatality rate above the national rate of 1.5%.
- The Eastern Cape and Northern Cape reported the least number of new pneumonia cases and admissions while the Western Cape had the highest number of new cases per 1 000 population under five years and the highest number of pneumonia admissions per 1 000 population under five years.
- The highest pneumonia case fatality rates were registered in the following districts: John Taolo Gaetsewe (6.5%) (Northern Cape), Capricorn (4.7%) (Limpopo) and Ehlanzeni (3.7%) (Mpumalanga).
- The lowest mortality rates were recorded in Overberg (0.1%), Cape Town (0.2%), West Coast (0.2%) and Cape Winelands (0.2%) (all Western Cape).

Introduction

Pneumonia is a leading cause of infectious mortality in children under five years, globally. The World Health Organization estimates that 14% of deaths in children under five years is due to pneumonia.¹ Between 2000 and 2015, global mortality due to pneumonia decreased by 54%. In 2019, approximately 740 180 children died of pneumonia with over 50% of these deaths reported in sub-Saharan Africa. While the number of deaths due to pneumonia has decreased since 2000, progress has been slower than that of other infectious diseases. Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea (GAPPD) aims to reduce incidences of severe pneumonia by 75% by 2025.²

In South Africa, pneumonia and influenza contribute to 8% of the deaths among children below five years, making

them the second-leading underlying cause of mortality among the under-five-year age group, after respiratory and cardiovascular disorders.³ The risk of pneumonia has been shown to be high in children who are not vaccinated or exclusively breastfed, malnourished, exposed to indoor air pollution and smoke and live in crowded homes. The risk of hospitalisation with lower respiratory tract infections is also higher in immune-compromised HIV-infected children than in HIV-uninfected children.

The pneumonia case fatality under 5 years rate is defined as the number of pneumonia deaths in children under five years as a proportion of children under five years who are admitted as inpatients with pneumonia (measured as pneumonia separations) in health facilities.

National overview

Figure 1 shows the case fatality rate for children under five years due to pneumonia for the period 2017/18–2022/23. The national pneumonia case fatality rate increased to 2.1% in 2020/21 from 1.6% in 2019/20. This coincided with the COVID-19 pandemic. The case fatality rate, however,

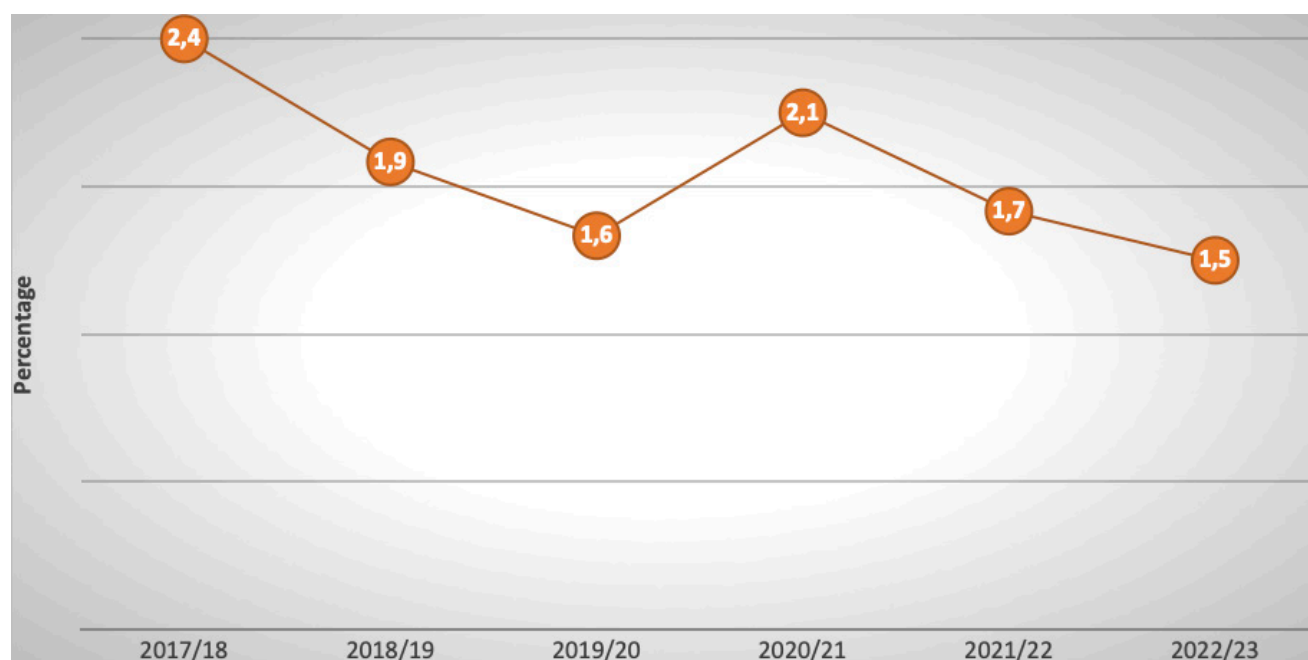
declined from 1.7% in 2020/21 to 1.5% in 2022/23 and is the lowest since 2017/18. Table 1 shows that the number of new cases and admissions declined in 2020/21 and 2021/22. The number of new cases and admissions, however, increased in 2022/23.

¹World Health Organization. Pneumonia in children: Key facts 2022 [06 November 2023]. URL: <https://www.who.int/news-room/fact-sheets/detail/pneumonia>.

²Qazi S, Aboubaker S, MacLean R, Fontaine O, Mantel C, Goodman T, et al. Ending preventable child deaths from pneumonia and diarrhoea by 2025. Development of the integrated Global Action Plan for the Prevention and Control of Pneumonia and Diarrhoea. Archives of disease in childhood. 100(Suppl 1):S23-S8; 2015.

³Massyn N, Day C, Ndlovu N, Padayachee T, editors. District Health Barometer 2019/20. Durban: Health Systems Trust; December 2020. URL: <https://www.hst.org.za/publications/Pages/HSTDistrictHealthBarometer.aspx>

Figure 1: National pneumonia case fatality under 5 years rate, 2023



Source: DHIS

Table 1: Pneumonia cases, admissions, deaths and case fatality rates, 2017/18–2022/23

	New Cases			Admissions		Deaths		
	Population under 5 years	Number	Pneumonia cases per 1 000 population under 5 years	Number	Admissions per 1 000 population under 5 years	Number	Pneumonia deaths per 1 000 population under 5 years	Pneumonia case fatality rate under 5 years rate (%)
2017/18	5 728 863	168 504	29,4	35 354	6,2	858	0,1	2,4
2018/19	5 731 899	159 281	27,8	50 212	8,8	962	0,2	1,9
2019/20	5 732 910	138 308	24,1	49 006	8,5	806	0,1	1,6
2020/21	5 727 116	70 625	12,3	29 042	5,1	621	0,1	2,1
2021/22	5 715 082	108 966	19,1	40 332	7,1	690	0,1	1,7
2022/23	5 698 869	142 954	25,1	60 623	10,6	939	0,2	1,5

Source: DHIS

Provincial overview

Figure 2 shows the pneumonia case fatality rates by province for 2022/23. The Western Cape (WC) recorded a case fatality rate of 0.2% followed by North West (NW) with 1.4% and Gauteng (GP) at 1.5%, while the rest of the provinces reported a case fatality rate above the national rate of 1.5%.

Table 2 shows that the Western Cape (WC) had the highest number of new cases of pneumonia per 1 000 population under five and the highest number of admissions per 1 000 population under five. The Eastern Cape (EC) and Northern Cape (NC) reported the least number of new cases and admissions per 1 000 population under five.

Figure 2: Pneumonia case fatality under 5 years rate by province, 2022/23

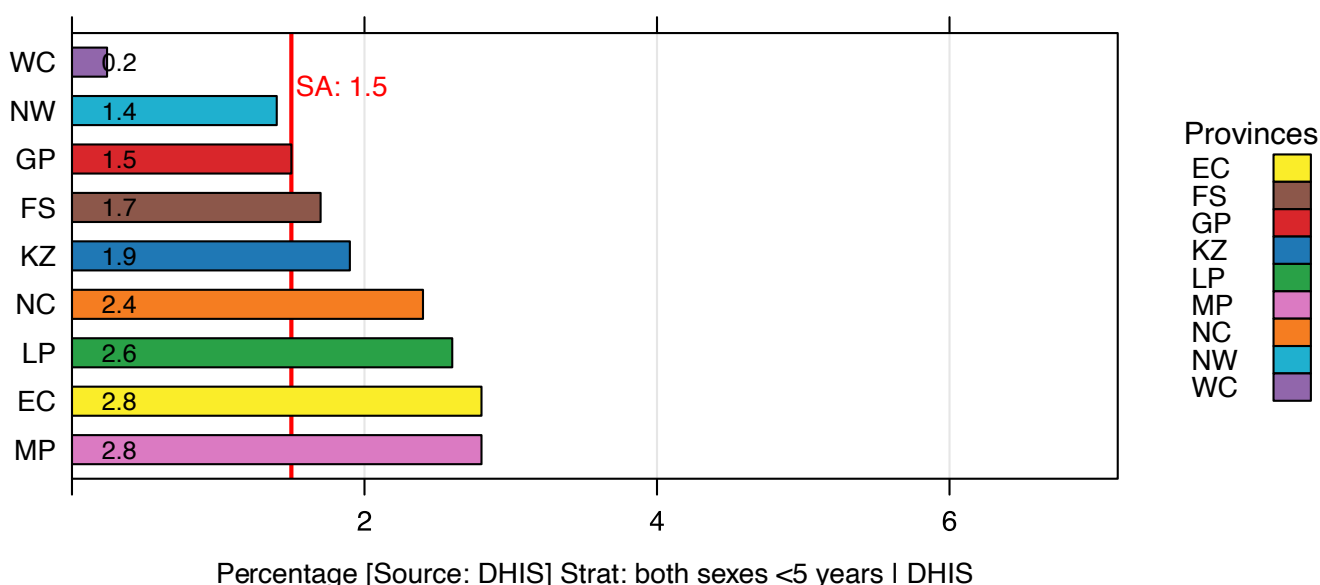


Figure 2: Pneumonia case fatality under 5 years rate by province, 2022/23

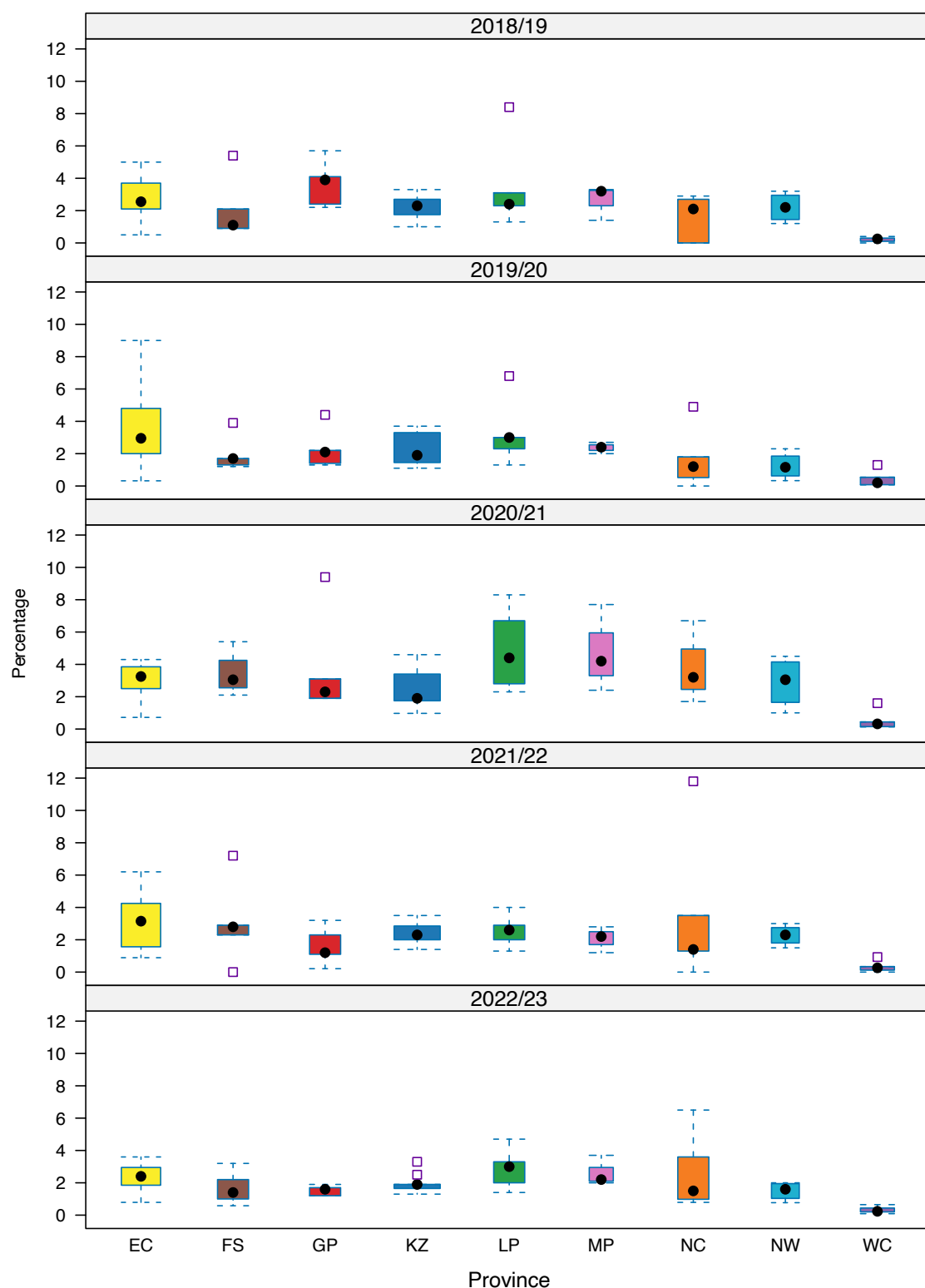
	New Cases			Admissions		Deaths		
	Population under 5 years	Number	Pneumonia cases per 1 000 population under 5 years	Number	Admissions per 1 000 population under 5 years	Number	Pneumonia deaths per 1 000 population under 5 years	Pneumonia case fatality rate under 5 years rate (%)
Eastern Cape	672 320	8 739	13.0	5 049	7.5	139	0.2	2.8
Free State	255 735	6 729	26.3	2 670	10.4	46	0.2	1.7
Gauteng	1 312 439	25 524	19.4	11 006	8.4	168	0.1	1.5
KwaZulu-Natal	1 254 649	24 732	19.7	11 443	9.1	220	0.2	1.9
Limpopo	640 844	8 299	13.0	6 175	9.6	161	0.3	2.6
Mpumalanga	474 865	3 032	6.4	3 524	7.4	99	0.2	2.8
Northern Cape	126 612	1 801	14.2	1 083	8.6	26	0.2	2.4
North West	401 942	2 078	5.2	2 793	6.9	40	0.1	1.4
Western Cape	559 463	62 020	110.9	16 880	30.2	40	0.1	0.2

Source: DHIS

Figure 3 shows the case fatality rates by province between 2018/19 and 2022/23. The plots show that Western Cape recorded the lowest pneumonia case fatality rate in

children below five years while the Eastern Cape, Limpopo and Mpumalanga registered the highest over the same period.

Figure 3: Box-and-whisker plot by province: Pneumonia case fatality under 5 years rate, 2018/19 -2022/23



Source: DHIS

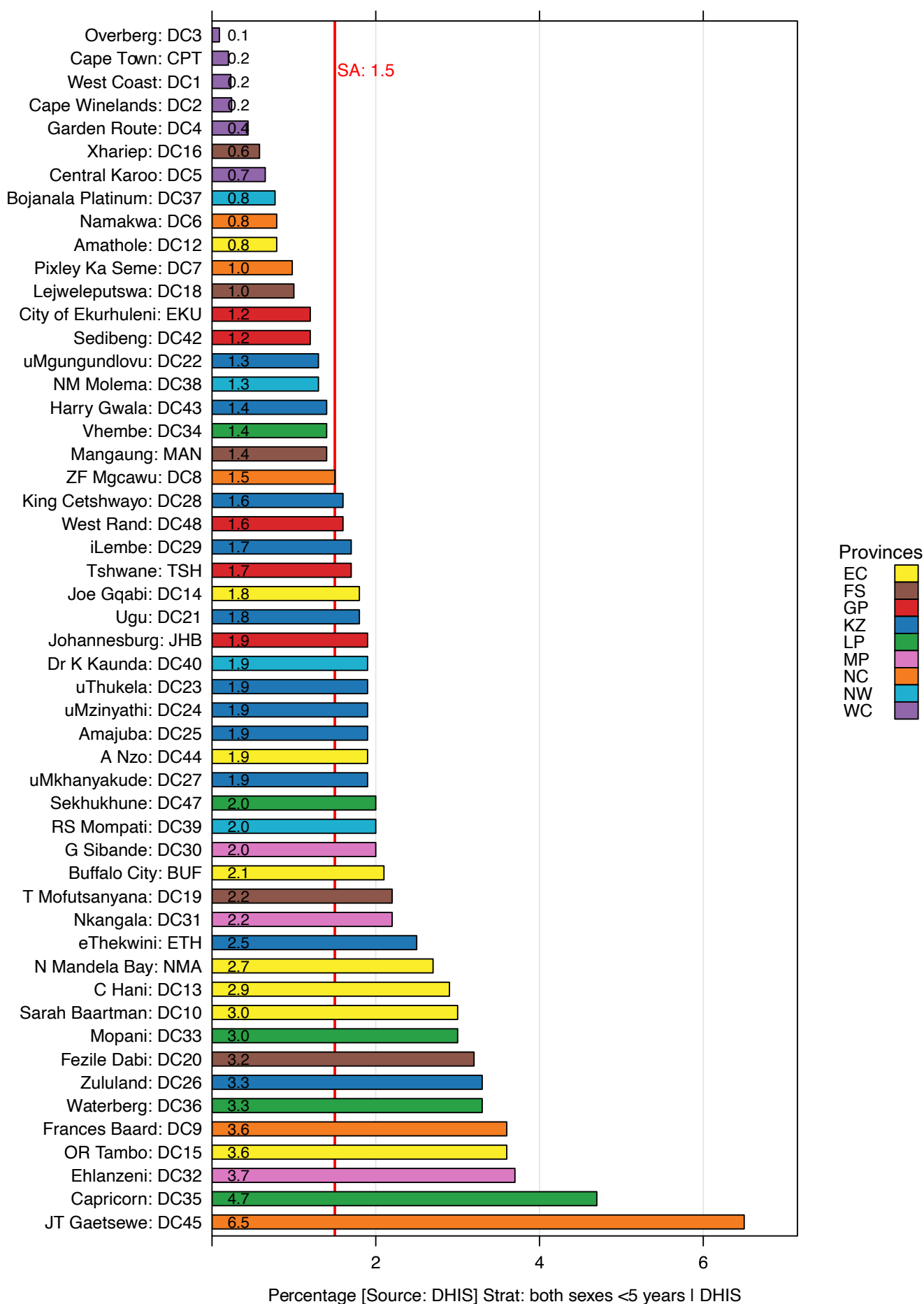
District overview

As is the case at provincial level, the pneumonia mortality rates for children vary across districts (Figure 3 and Map 1). In 2022/23, the highest pneumonia mortality rates were registered in the following districts: John Taolo Gaetsewe (6.5%) (NC), Capricorn (4.7%) (LP) and Ehlanzeni (3.7%) (MP). The lowest mortality rates were recorded in Overberg (0.1%), Cape Town (0.2%), West Coast (0.2%) and Cape Winelands (0.2%) (all WC). Although there was a drastic decrease in the pneumonia mortality rate across districts over the period 2018/19–2022/23, the following districts recorded relatively high levels of mortality rate: OR Tambo (EC), Fezile Dabi (FS), Sedibeng (GP), Capricorn (LP), Zululand (KZN), John Taolo Gaetsewe (NC), Dr Ruth Segomotsi Mompati (NW), Ehlanzeni (MP) and Central

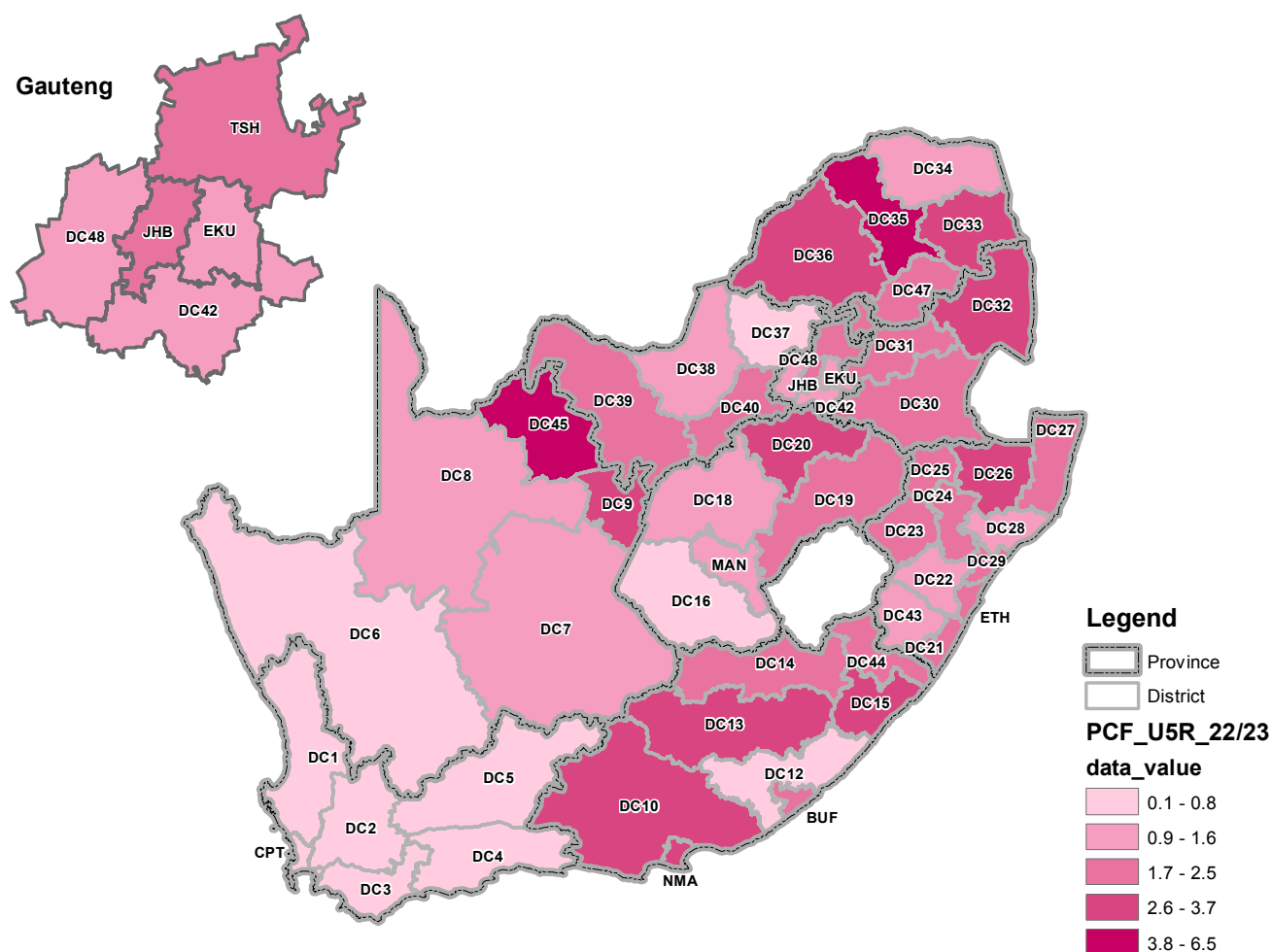
Karoo (WC) (Figure 4). The lowest under five pneumonia mortality rates per district were recorded in Sarah Baartman (EC), Xhariep (FS), West Rand (GP), Vhembe (LP), Gert Sibande (MP), Zwelentlanga Fatman Mgcawu (NC), Dr Kenneth Kaunda (NW) and the West Coast (WC).

The pneumonia case fatality rates for districts and metropolitan municipalities were generally similar (Figure 5). For instance, in 2018/19 district and metropolitan municipalities recorded mean mortality rates of 2.8% (0%–6%) and 2.7% (0.2%–2.8%), respectively. In 2022/23, district and metropolitan municipalities recorded mortality rates of 2.0% (0.1%–5%) and 2.0% (0.2%–3.1%), respectively.

Figure 3: Pneumonia case fatality under 5 years rate by district, 2022/23

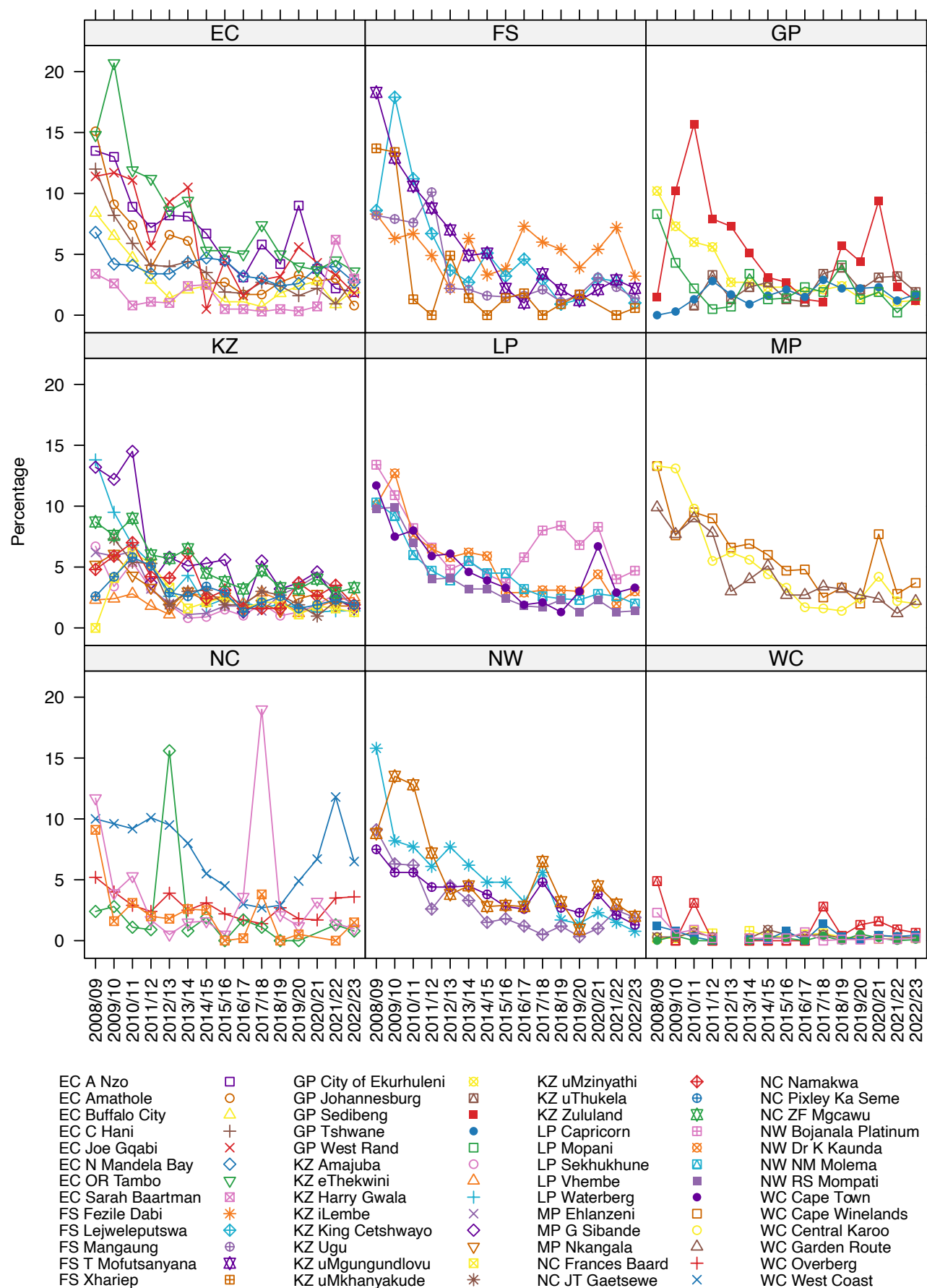


Map 1: Pneumonia case fatality rate under 5 years by district, 2022/23



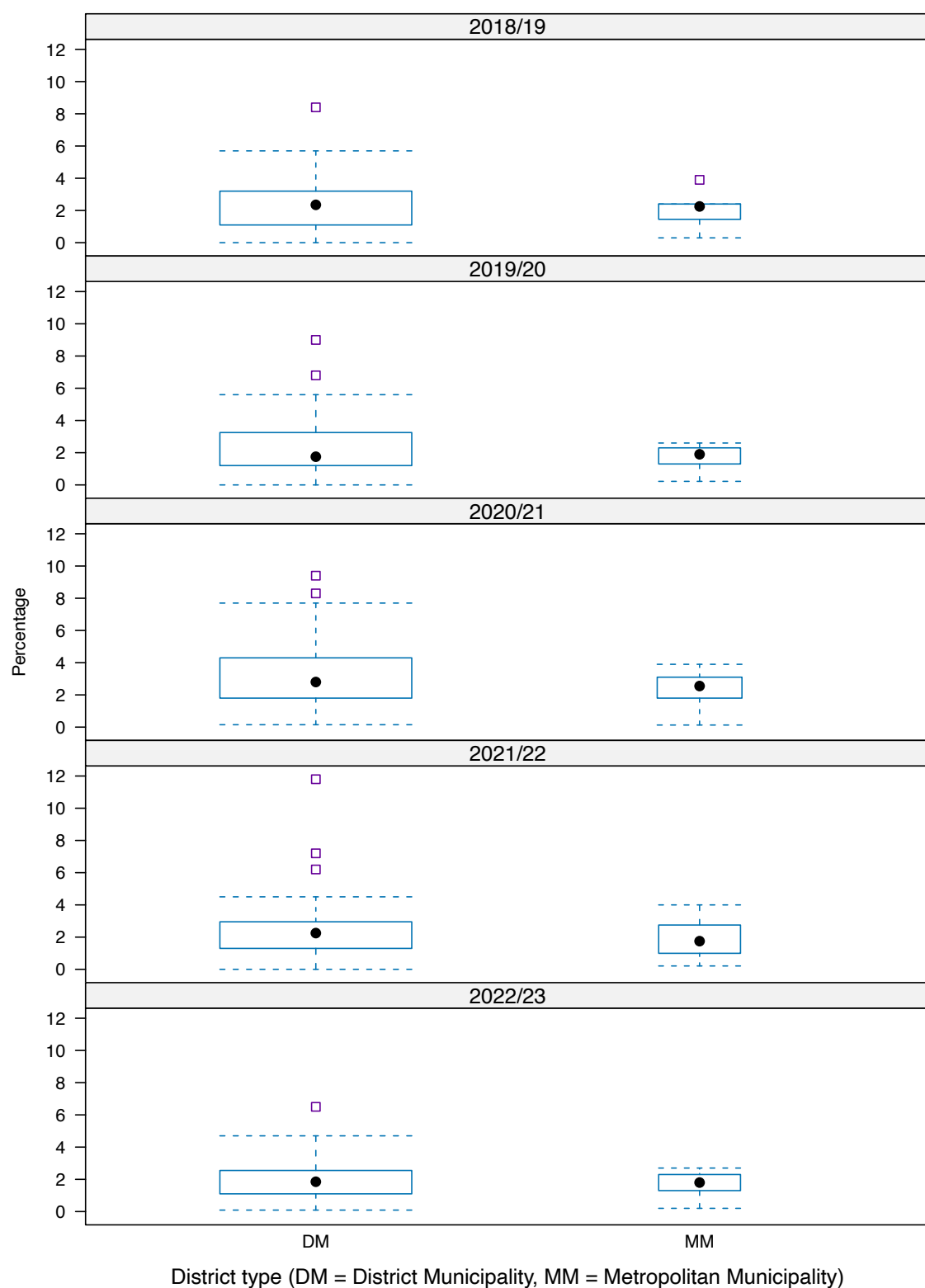
Source: DHIS

Figure 4: Annual trends: Pneumonia case fatality under 5 years rate by district, 2008/09 - 2022/23



Source: DHIS

Figure 5: Box-and-whisker plot by district type: Pneumonia case fatality under 5 years rate, 2018/19 -2022/23



Source: DHIS

Recommendations

- Pneumonia remains a leading cause of mortality in children under 5 years of age in South Africa. The disease, however, disproportionately affects children in poor settings than those in wealthier settings. Interventions for reducing pneumonia as recommended by the GAPPD include:
 - full vaccination by 12 months;
 - encouraging exclusive breastfeeding;
 - timely pneumonia case management; and
 - reducing exposure to poor indoor air quality.
- Ongoing campaigns to educate mothers about the benefits of vaccination, exclusive breastfeeding and reducing exposure to poor indoor air quality should be implemented.
- Given the disproportionate impact of pneumonia on children in poor settings, interventions should be prioritised for children living in those communities in the fight against death due to pneumonia.

Death under 5 years against live birth rate

Key findings

- The death under 5 years against live birth rate declined between 2019/20 and 2020/21 to 1.6%. The death rate increased to 1.8% in 2021/22 and 2022/23, on par with the rate in 2017/18 and 2018/19.
- In 2022/23, the highest number of deaths was reported in the age group 0–6 days followed by the age group 29 days–11 months.
- The Western Cape (1.3%) recorded the lowest death rate for children below five years while the Free State (2.4%) registered the highest.
- The death rate at district level ranged from 0.9% on the West Coast in the Western Cape to 3.0% in Frances Baard in the Northern Cape.

Introduction

Global estimates show that the under-5 mortality rate declined by 60% between 1990 and 2020.¹ In 2020, one in 27 children died before reaching the age of five years compared to one in 11 children in 1990. Five million under-five-year-old deaths were reported in 2020 globally with more than 80% of these deaths reported in sub-Saharan Africa. The most common leading causes of death include preterm birth complications, birth asphyxia/trauma and communicable diseases, such as pneumonia, diarrhoea and malaria.¹

In South Africa in 2018, respiratory and cardiovascular disorders specific to the perinatal period were the leading underlying cause of death responsible for 11.0% of deaths among children under five years. This reflected a decrease from 12.4% in 2017. Influenza and pneumonia (8.0%) were the second leading underlying cause of death, while intestinal infectious diseases were ranked third, accounting for 7.6% of the deaths, up from 7.2% in 2017. Deaths due to disorders related to length of gestation and foetal growth were ranked fourth and accounted for 4.1% of all deaths. Other disorders originating in the perinatal period ranked fifth among leading underlying causes of death for those under five years, and were responsible for 4.0% deaths.

The under-5 mortality rate, measured as the probability of dying before the age of five years (per 1 000 live births) is

an important indicator of child health globally. The United Nations (UN) Sustainable Development Goal (SDG) 3 calls for countries to end preventable deaths of new-born babies and children under five years of age by 2030.² The SDG target is set at reducing neonatal mortality to at least 12 per 1 000 live births and under-5 mortality to at least as low as 25 per 1 000 live births.

Under-5 mortality forms part of the quadruple burden of diseases in South Africa. Even though the under-mortality rate declined over the past decade, the mortality rate remains high when compared to countries such as Thailand, which spent far less on health care as a percentage of gross domestic product (GDP). Studies have shown the link between a mother's age, education level, employment status, incomplete immunisation, race and under-5 mortality.^{3,4} The National Department of Health aims to reduce the under-5 mortality rate to less than 25 per 1 000 live births by 2024/25 from a baseline of 32 per 1 000 live births in 2018/19.

Death under 5 years against live birth rate measures children under the age of five years who died during their stay in a facility as a proportion of all live births. The indicator is disaggregated into four age categories: 0–6 days, 7–28 days, 29 days–11 months, and 12–59 months.

¹World Health Organization. Child mortality (under 5 years) 2022. URL: <https://www.who.int/news-room/fact-sheets/detail/levels-and-trends-in-child-under-5-mortality-in-2020>.

²United Nations Development Programme. Sustainable Development Goals. 2019. URL: https://www.undp.org/content/dam/undp/library/corporate/brochure/SDGs_Booklet_Web_En.pdf.

³Hlongwa M, de Wet N. Demographic and socioeconomic factors associated with under-5 mortality in KwaZulu-Natal, South Africa. *South African J Child Heal*. 2019;13(4):174–9.

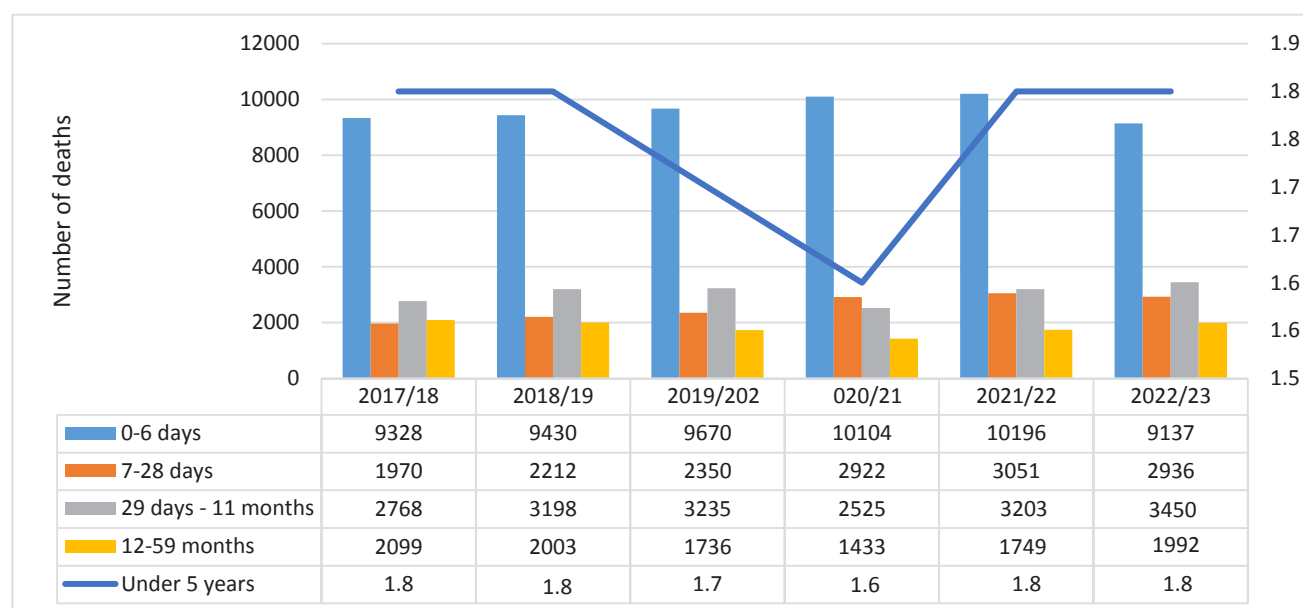
⁴Kayembe AM. (2022) Factors associated with under-five mortality at Tembisa Hospital (Master's Dissertation). Johannesburg. University of Johannesburg. Available from: <https://ujcontent.uj.ac.za/esploro/outputs/graduate/Factors-associated-with-under-five-mortality-at/9915507107691>.

National overview

Figure 1 shows the number of deaths under five years and the deaths against live birth rate for the period 2018/19–2022/23. In 2019/20, the death rate declined to 1.7% from 1.8% in the previous two years. The rate further declined to 1.6% in 2020/21 and increased to 1.8% in 2021/22 and

2022/23. In 2022/23, most of the deaths under five years of age occurred in the early neonatal period (0–6 days) (52.1%) followed by the age group 29 days–11 months with 19.7%.

Table 1: Number of deaths under 5 years by age category and death under 5 years against live birth rate, 2017/18–2022/23



Source: DHIS

Provincial overview

Figure 2 shows the death under five years against live birth rate by province for the year 2022/23. The Western Cape (WC) recorded a 1.3% death rate and the Free State (FS) a rate of 2.4%. With the exception of the Western Cape, KwaZulu-Natal (KZN) and Mpumalanga (MP), all other

provinces had a rate above the national average of 1.8% in 2022/23. Figure 3 shows that between 2018/19 and 2022/23, the Western Cape recorded the lowest death under 5 years against live birth rate while the Free State registered the highest rate.

Figure 2: Death under 5 years against live birth rate by province, 2022/23

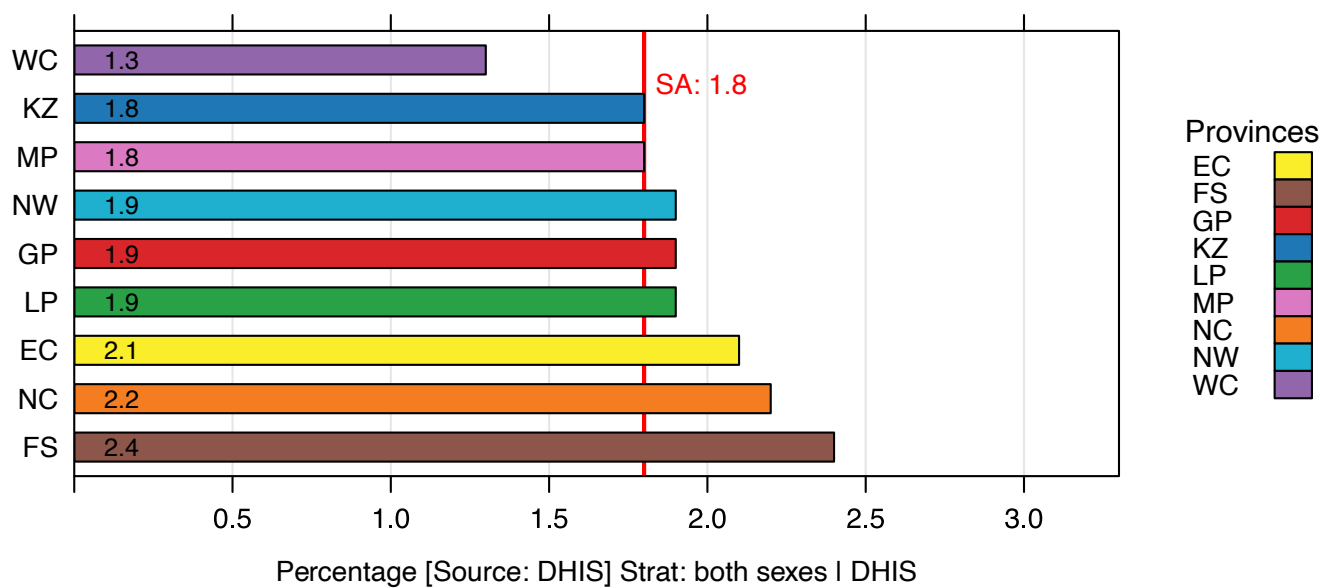
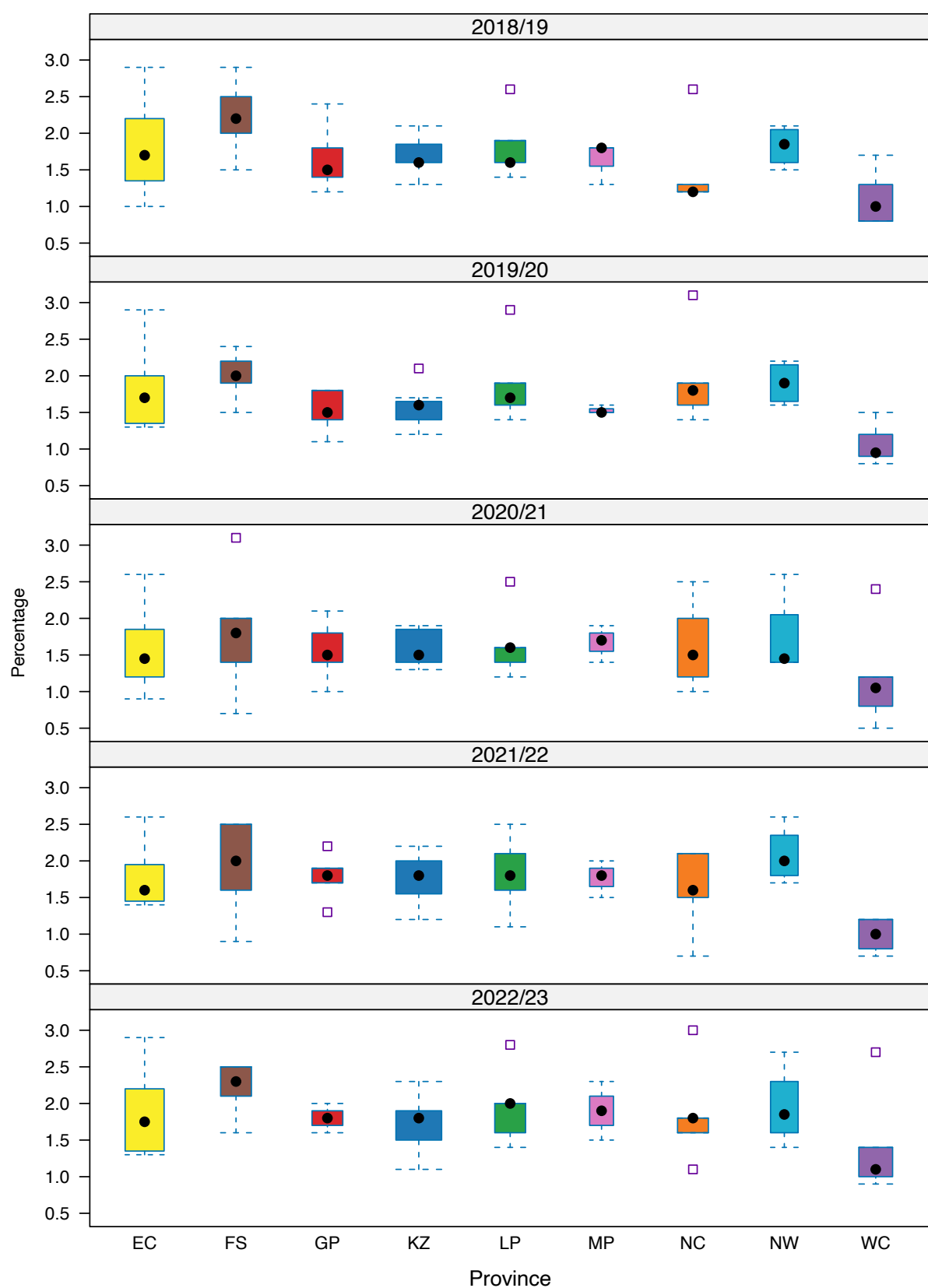


Figure 3: Box-and-whisker plot by province: Death under 5 years against live birth rate, 2018/19–2022/23



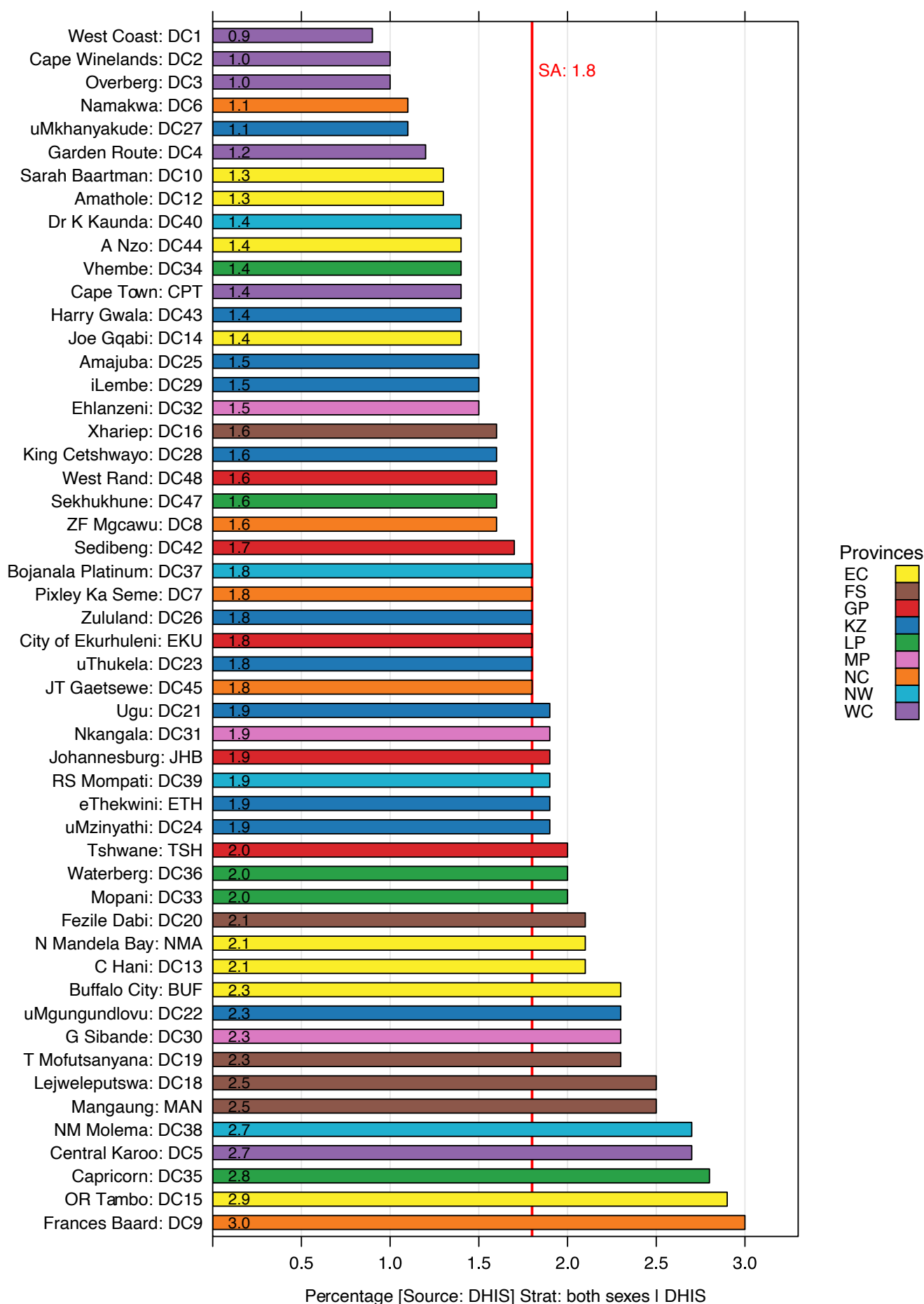
Source: DHIS

District overview

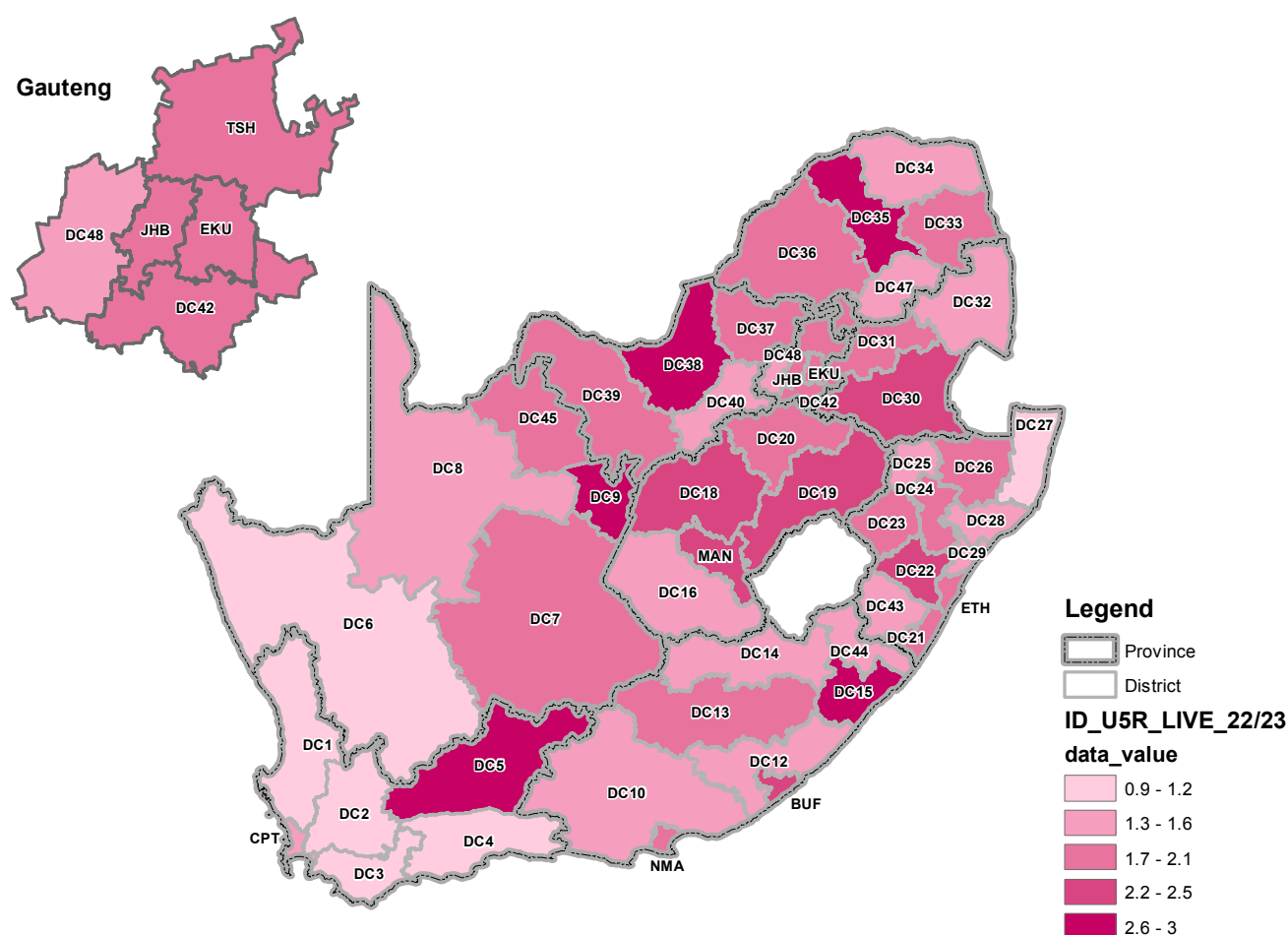
As is the case at provincial level, the death under 5 years against live birth rate varies across districts (see Figure 4 and Map 1). In 2022/23, the highest death rate was registered in the following districts: Frances Baard (3.0%) (Northern Cape (NC), OR Tambo (2.9%) (Eastern Cape (EC)), and Capricorn (2.8%) (Limpopo (LP)). The lowest

death rate was recorded in the West Coast (0.9%) (WC). The Western Cape had four districts among the 10 with the lowest under-5 deaths while the Free State had three districts among the 10 with the highest under-5 deaths, together with three districts in the Northern Cape, two in Limpopo and one in the Eastern Cape.

Figure 4: Death under 5 years against live birth rate by district, 2022/23



Map 1: Deaths under 5 years against live birth rate by district, 2022/23

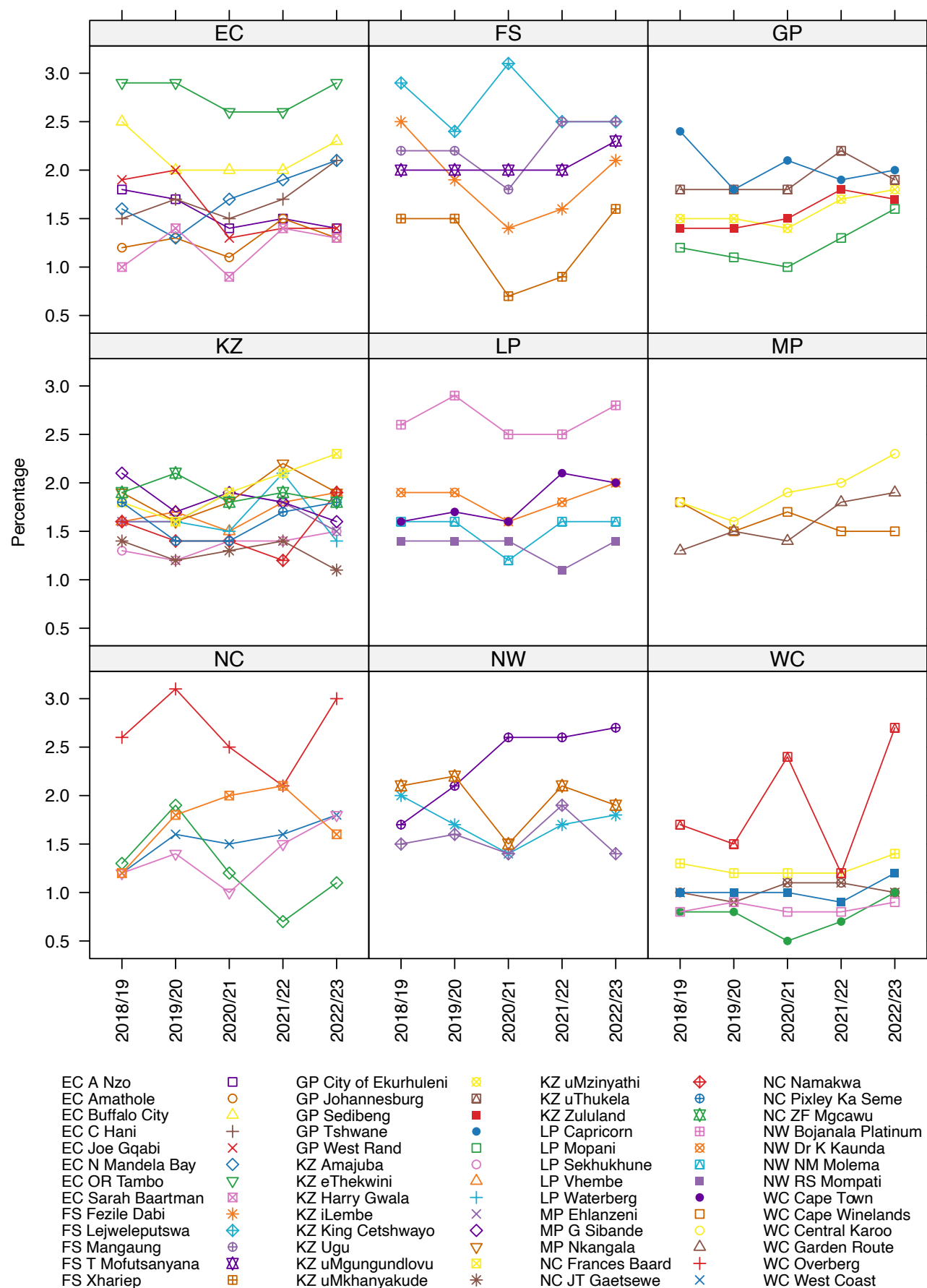


Source: DHIS

For the period 2018/19–2022/23, OR Tambo (EC), Lejweleputswa (FS), Capricorn (LP), Frances Baard (NC), Ngaka Modiri Molema (North West (NW)), Gert Sibande, (MP) and Central Karoo (WC) registered the highest deaths

rates in their respective provinces. In most of the districts, the death under 5 years against live birth rate fluctuated year-on-year, probably due to the small number of deaths recorded.

Figure 5: Annual trends: Death under 5 years against live birth rate by district, 2018/19–2022/23



Source: DHIS

More detailed information on the number of deaths as well as mortality rates (per 1 000 children under five years of age) is shown in Table 1. Across all districts, most of the

under-5 deaths occurred in the neonatal period followed by the age group 29 days–11 months (see Table 1).

Table 1: Death under 5 years by age categories by district, 2022/23

		Deaths 0 - 28 days			Deaths 29 days - under 5 years		Total deaths under 5 years		
		Population under 5 years	Deaths (number)	Number of deaths per 1000	Deaths (number)	Number of deaths per 1000	Deaths (number)	Number of deaths per 1000	Death in facility against live birth rate (%)
Eastern Cape	Alfred Nzo	111 157	121	1.1	55	0.5	176	1.6	1.4
	Amathole District	77 059	66	0.9	41	0.5	107	1.4	1.3
	Buffalo City	57 387	204	3.6	100	1.7	304	5.3	2.3
	Chris Hani	70 492	150	2.1	67	1.0	217	3.1	2.1
	Joe Gqabi	33 337	34	1.0	26	0.8	60	1.8	1.4
	Nelson Mandela Bay	84 870	266	3.1	102	1.2	368	4.3	2.1
	OR Tambo	200 923	475	2.4	311	1.5	786	3.9	2.9
	Sarah Baartman	37 095	58	1.6	19	0.5	77	2.1	1.3
Free State	Fezile Dabi	41 345	106	2.6	45	1.1	151	3.7	2.1
	Lejweleputswa	53 664	198	3.7	59	1.1	257	4.8	2.5
	Mangaung	74 278	281	3.8	116	1.6	397	5.3	2.5
	Thabo Mofutsanyana	73 672	159	2.2	119	1.6	278	3.8	2.3
	Xhariep	12 776	6	0.5	7	0.5	13	1.0	1.6
Gauteng	Johannesburg	495 342	1 018	2.1	330	0.7	1 348	2.7	1.9
	Tshwane	322 400	677	2.1	346	1.1	1 023	3.2	2.0
	Ekurhuleni	343 482	803	2.3	317	0.9	1 120	3.3	1.8
	Sedibeng	74 600	151	2.0	80	1.1	231	3.1	1.7
	West Rand	76 615	184	2.4	66	0.9	250	3.3	1.6
KwaZulu-Natal	Amajuba	66 242	118	1.8	41	0.6	159	2.4	1.5
	eThekweni	368 415	871	2.4	426	1.2	1 297	3.5	1.9
	Harry Gwala	62 404	84	1.3	25	0.4	109	1.7	1.4
	iLembe	77 500	125	1.6	52	0.7	177	2.3	1.5
	King Cetshwayo	112 250	220	2.0	132	1.2	352	3.1	1.6
	Ugu	93 943	181	1.9	83	0.9	264	2.8	1.9
	uMgungundlovu	114 154	290	2.5	153	1.3	443	3.9	2.3
	Umkhanyakude	88 531	132	1.5	45	0.5	177	2.0	1.1
	Umzinyathi	77 610	150	1.9	66	0.9	216	2.8	1.9
	Uthukela	84 153	173	2.1	67	0.8	240	2.9	1.8
	Zululand	109 447	214	2.0	90	0.8	304	2.8	1.8

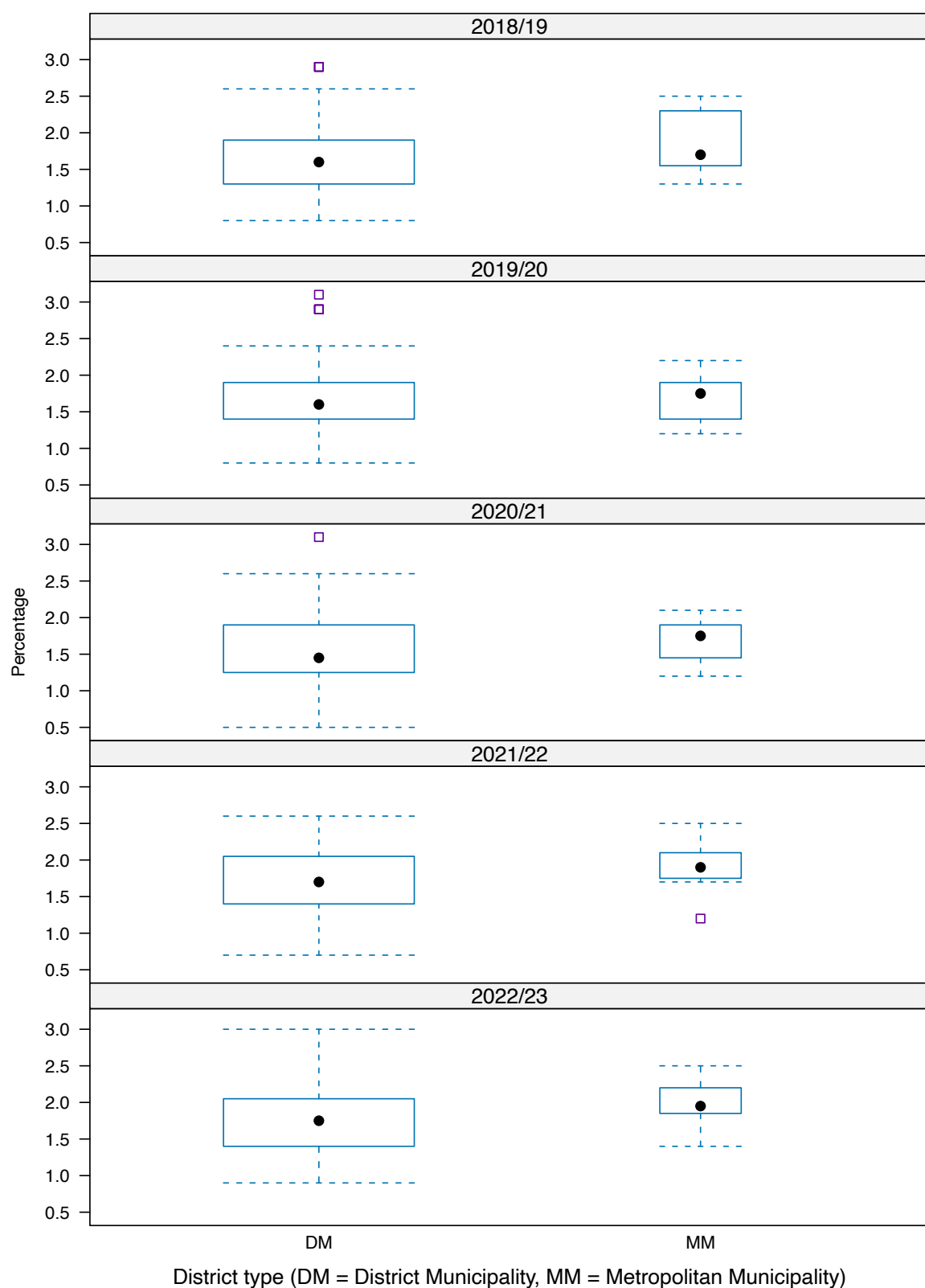
		Deaths 0 - 28 days			Deaths 29 days - under 5 years		Total deaths under 5 years		
		Population under 5 years	Deaths (number)	Number of deaths per 1000	Deaths (number)	Number of deaths per 1000	Deaths (number)	Number of deaths per 1000	Death in facility against live birth rate (%)
Limpopo	Capricorn	140 166	517	3.7	232	1.7	749	5.3	2.8
	Mopani	128 180	337	2.6	172	1.3	509	4.0	2.0
	Sekhukhune	144 630	311	2.2	92	0.6	403	2.8	1.6
	Vhembe District	156 338	247	1.6	162	1.0	409	2.6	1.4
	Waterberg	71 530	167	2.3	115	1.6	282	3.9	2.0
Mpumalanga	Ehlanzeni District	204 457	384	1.9	203	1.0	587	2.9	1.5
	Gert Sibande	124 010	371	3.0	89	0.7	460	3.7	2.3
	Nkangala	146 398	270	1.8	121	0.8	391	2.7	1.9
Northern Cape	Frances Baard	40 373	162	4.0	104	2.6	266	6.6	3.0
	John Taolo Gaetsewe	30 333	61	2.0	26	0.9	87	2.9	1.8
	Namakwa	91 58	11	1.2	6	0.7	17	1.9	1.1
	Pixley ka Seme	21 070	26	1.2	21	1.0	47	2.2	1.8
	Zwelentlanga Fatman Mgcawu	25 678	59	2.3	16	0.6	75	2.9	1.6
North West	Bojanala Platinum	179 897	271	1.5	96	0.5	367	2.0	1.8
	Dr Kenneth Kaunda	78 116	122	1.6	72	0.9	194	2.5	1.4
	Dr Ruth Segomotsi	57 468	100	1.7	82	1.4	182	3.2	1.9
	Ngaka Modiri Molema	86 461	303	3.5	102	1.2	405	4.7	2.7
Western Cape	Cape Winelands	80 460	110	1.4	38	0.5	148	1.8	1.0
	Central Karoo	6 079	21	3.5	3	0.5	24	3.9	2.7
	Cape Town	355 381	560	1.6	250	0.7	810	2.3	1.4
	Garden Route	51 342	74	1.4	38	0.7	112	2.2	1.2
	Overberg District	26 513	35	1.3	7	0.3	42	1.6	1.0
	West Coast District	39 688	39	1.0	9	0.2	48	1.2	0.9

Source: DHIS

When comparing district types, Figure 6 shows that district municipalities had lower mean mortality rates than metropolitan municipalities. For instance, in 2018/19, district and metropolitan municipalities recorded mean

mortality rates of 1.6% (0.7%–2.6%) and 1.7% (1.4%–2.5%), respectively. In 2022/23, district and metropolitan municipalities recorded mortality rates of 1.8% (0.9%–3%) and 2.0% (1.5%–2.6%), respectively.

Figure 6: Box-and-whisker plot by district type: Death under 5 years against live birth rate, 2018/19–2022/23



Source: DHIS

Recommendations

- Targeted interventions are needed to address the most common causes of death in children under five years. Specific interventions should target the different age groups and children in poorly resourced areas.
- Modelling studies have shown that the following interventions can prevent death in children under 5:⁵
 - Community interventions include things such as handwashing with soap, therapeutic feeding—for severe wasting, oral rehydration solution, oral antibiotics for case management of pneumonia, appropriate complementary feeding, hygienic disposal of children’s stools, vitamin supplementation and promotion of breastfeeding.
 - Other interventions: Improved antenatal and obstetric care; timely caesarean delivery, management of pre-eclampsia.
 - Clinical management: Advanced respiratory support, improvements in medical records, properly trained staff for parturition and health care.
 - Improved health-seeking behaviour: Regular antenatal check-ups, early recognition of illness, and early referral for treatment at a health care facility.
 - Improved health education: Immunisations, preventing malnutrition, bed nets to prevent malaria.
 - Infection prevention: Personal hygiene, environmental sanitation, appropriate use of antibiotics.
 - Nutritional support: Management of malnutrition.
- In addition to the disease-specific interventions, effective socioeconomic interventions, such as improving education, reducing poverty and strengthening health care systems, should be prioritised.⁶

⁵Nkonki LLL, Chola LL, Tugendhaft AA, Hofman KK. Modelling the cost of community interventions to reduce child mortality in South Africa using the Lives Saved Tool (LiST). *BMJ Open*. 2017;7(8).

⁶Madewell ZJ, Whitney CG, Velaphi S, Mutevedzi P, Mahtab S, Madhi SA, et al. Prioritizing Health Care Strategies to Reduce Childhood Mortality. *JAMA Netw Open*. 2022; 5(10):E2237689.

3. Immunisation

Immunisation coverage under 1 year

Tracey Naledi

Key findings

- The national average for immunisation of children under one year for South Africa was 82.2% in 2022/23.
- Provincial- and district-level inequity in coverage of immunisation under one year remains significant.
- KwaZulu-Natal reported the highest immunisation under one year coverage in 2022/23 which was 24.7 percentage points more than the lowest performing province of Limpopo which reported 67.5% immunisation under one year coverage.
- Free State, Limpopo, Northern Cape, North West and the Western Cape provinces all reported statistically significant lower levels of immunisation for children under one year than the Eastern Cape, Gauteng, Kwa-Zulu Natal and Mpumalanga, who all performed above the national average.
- Sedibeng (GP) was the best-performing district for the immunisation under 1 year coverage at 105.4% compared to Sekhukhune (LP) which reported the lowest coverage of 52.7% where only one in two children under one year were immunised. This coverage of more than 100% in Sedibeng could be due to data quality issues or an under-estimation of the under-one-year-old population.
- All districts in KwaZulu-Natal reported immunisation under one year coverage rates above the national average in contrast to all districts in Limpopo reporting performance well below the national average.

Introduction

Childhood immunisation has been shown to be the safest and most cost-effective public health intervention to prevent disease and promote child survival.¹ It is now possible for immunisations to prevent more than 20 life-threatening diseases. Globally, 23 million lives have been saved due to the measles vaccine alone between 2000 and 2018.² It has been estimated that between 2021 and 2030 there would be a return of \$54 for every \$1 invested in immunisation programmes.³ This is a result of preventing illness and saving lives, reducing healthcare costs, preventing outbreaks and increasing productivity. In spite of these benefits, the World Health Organization (WHO) estimates that every year there are still over 20 million

infants who do not receive a full course of basic vaccines, with over 13 million children receiving “zero doses” of vaccines.⁴ The Immunisation Agenda of 2030 (IA2030) and the Sustainable Development Goal (SDG)3,⁵ articulate as a global priority the need to ensure equitable access to immunisation for all children to reduce mortality and morbidity from vaccine-preventable diseases throughout the life course. In fact, vaccine coverage is used as tracer intervention to monitor access to essential health services, essential medicines and vaccine immunisations. Vaccine coverage is expected to contribute to the achievement of 14 of 17 SDGs.⁵

¹World Health Organization. State of inequality: childhood immunization. State of Inequality; 2016. URL: https://cdn.who.int/media/docs/default-source/gho-documents/16-dec-final-for-web-16147-state-of-inequality-in-childhood-immunization.pdf?sfvrsn=ac6c954c_2.

²Patel MK, Dumolard L, Nedelec Y, Sodha SV, Steulet C, Gacic-Dobo M, Kretsinger K, McFarland J, Rota PA GJ. Progress toward regional measles elimination—worldwide, 2000–2018. *Morb Mortal Wkly Report*. 2019;68(48):1105. URL: https://cdn.who.int/media/docs/default-source/gho-documents/16-dec-final-for-web-16147-state-of-inequality-in-childhood-immunization.pdf?sfvrsn=ac6c954c_2.

³John Hopkins University - International Vaccine Access Center (IVAC). Methodology Report: Decade of Vaccines Economics (DOVE) Return on Investment Analysis. 2019;(August):10–2. URL: <https://static1.squarespace.com/static/556deb8ee4b08a534b8360e7/t/5d56d54c6dae8d00014ef72d/1565971791774/DOVE-ROI+Methodology+Report+16AUG19.pdf>.

⁴World Health Organization. Immunization agenda 2030. WHO; 2022;1–58. URL: https://www.who.int/immunization/ia2030_Draft_One_English.pdf?ua=1.

⁵United Nations Environment Programme. Annex iv. final list of proposed sustainable development goal indicators. [Internet]. 2016. Available from: <https://wedocs.unep.org/20.500.11822/11097>

Immunisation under 1 year coverage

Immunisation under 1 year coverage measures the number of children under one year of age who completed their primary course of immunisation as a proportion of the population under one year of age. The indicator is expressed as a percentage with the numerator being the total number of children younger than 12 months who have received BCG; OPV 0, OPV 1; DTaP-IPV Hib-HBV 1, 2 and 3; PCV 1, 2 and 3; RV 1 and 2; and measles 1 vaccines (Table

1). The denominator is the target population of children under one year old. The child is counted as fully immunised once they have received the PCV third dose administered at nine months of age, and there is documented proof of all the required vaccines having been administered in the Road-to-Health booklet. The measles second dose is not included when analysing immunisation coverage under one year.

Table 1: The expanded Programme on Immunisation Schedule^a

Age	Antigens ^a
Birth	OPV (0), BCG
6 weeks	DTaP-IPV-Hib-HBV (1), OPV (1), PCV (1), RV (1)
10 weeks	DTaP-IPV-Hib-HBV (2)
14 weeks	DTaP-IPV-Hib-HBV (3); RV (2); PCV (2)
6 months	Measles (1)
9 months	PCV (3)
12 months	Measles (2)
18 months	DTaP-IPV-Hib-HBV (4)
6 years	Td
12 years	Td
Grade 5 girl, aged 9 years and older in public and special schools	HPV

^aBCG = Bacillus Calmette-Guerin; DTaP-IPV-Hib-HBV = diphtheria, tetanus and pertussis, inactivated polio vaccine, Haemophilus influenzae type B, hepatitis B Combined vaccine; HPV = human papillomavirus; OPV = oral polio vaccine; PCV = pneumococcal conjugate vaccine; RV = rotavirus vaccine; Td = tetanus and reduced strength of diphtheria vaccine.

Source: National Department of Health

National overview

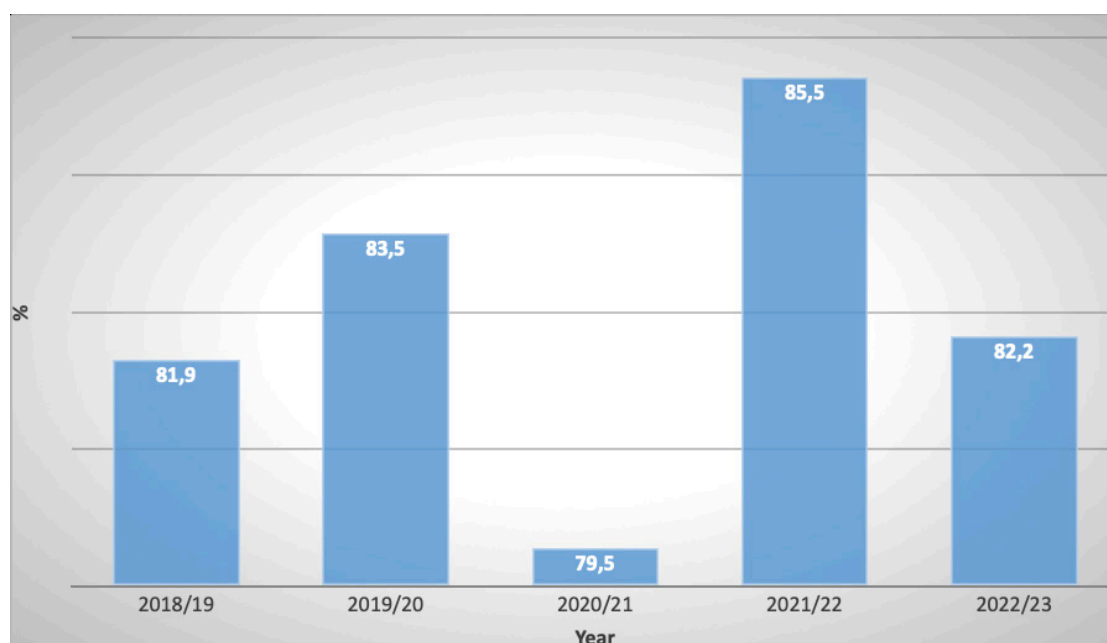
In Figure 1 below, the national average immunisation under 1 year coverage for South Africa was 82.2% in 2022/23. This is an improvement from five years earlier in 2017/18 when the coverage was 76.9%. The 2019/20 edition of the District Health Barometer (DHB) reported a national average immunisation under 1 year coverage for South Africa of 83.5% in 2019/20.⁶ Jensen and McKerrow reported on the impact of the COVID-19 pandemic on child

health services and showed that, even though there was a sharp decline in immunisation coverage during the hard lockdown in KwaZulu-Natal (KZN), immunisation coverage recovered rapidly.⁷ It is therefore feasible that the national trend in immunisation under 1 year coverage is showing the trend described by Jensen and McKerrow of a decline during the COVID-19 pandemic in 2020/21 with a rapid recovery subsequently. This is illustrated in Figure 1.

⁶Massyn N, Day C, Ndlovu N, Padayachee T, editors. District Health Barometer 2019/20. Durban: Health Systems Trust; December 2020.

⁷Jensen C, McKerrow NH. Child health services during a COVID-19 outbreak in KwaZulu-Natal Province, South Africa. South African Med J. 2021;111(2):114–9.

Figure 1: National immunisation under 1 year coverage, 2017/18–2022/23



Source: DHIS

Provincial overview

Provincial- and district-level inequity in immunisation under 1 year coverage remains significant as in previous DHB reports. Figure 2 shows that KwaZulu-Natal reported the highest immunisation under 1 year coverage in 2022/23 of 92,2% which was 24.7 percentage points more than the lowest performing province of Limpopo (LP) which reported 67.5% immunisation under 1 year coverage. Figure 3 below shows the provincial inequity in immunisation

under 1 year coverage since 2018/19. This shows that Free State (FS), Limpopo (L), Northern Cape (NC), North West (NW) and the Western Cape (WC) provinces all reported statistically significant lower immunisation under 1 year coverage than the Eastern Cape (EC), Gauteng (GP), KwaZulu-Natal (KZN) and Mpumalanga (MP), who all performed above the national average as shown in Figure 1.

Figure 2: Immunisation under 1 year coverage by province, 2022/23

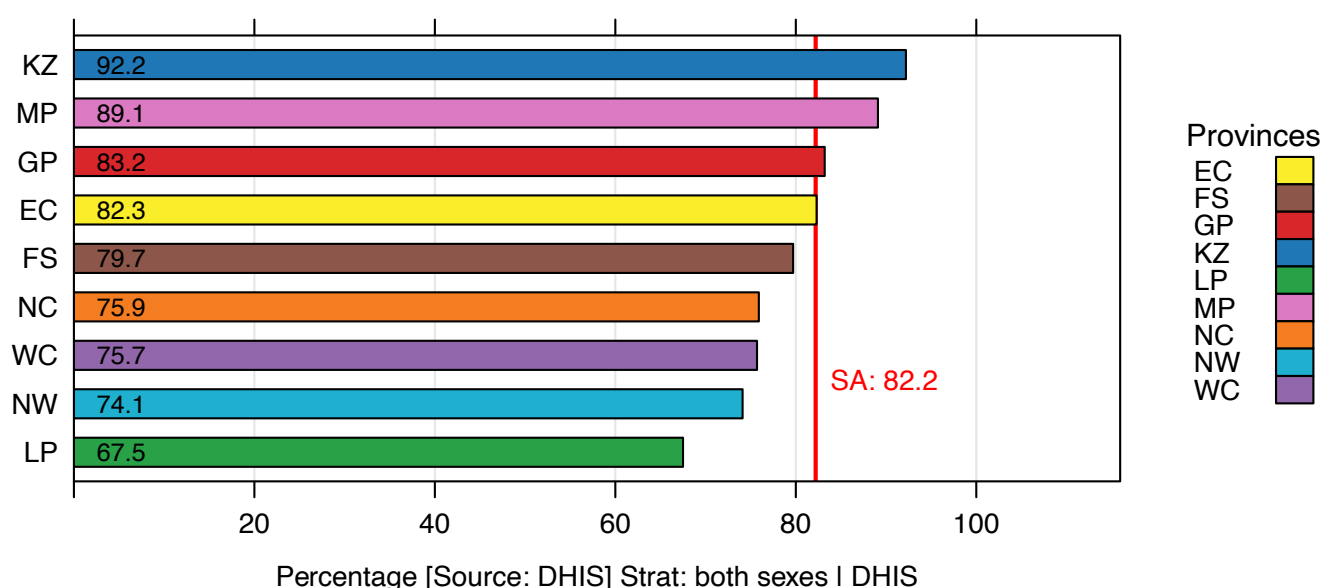
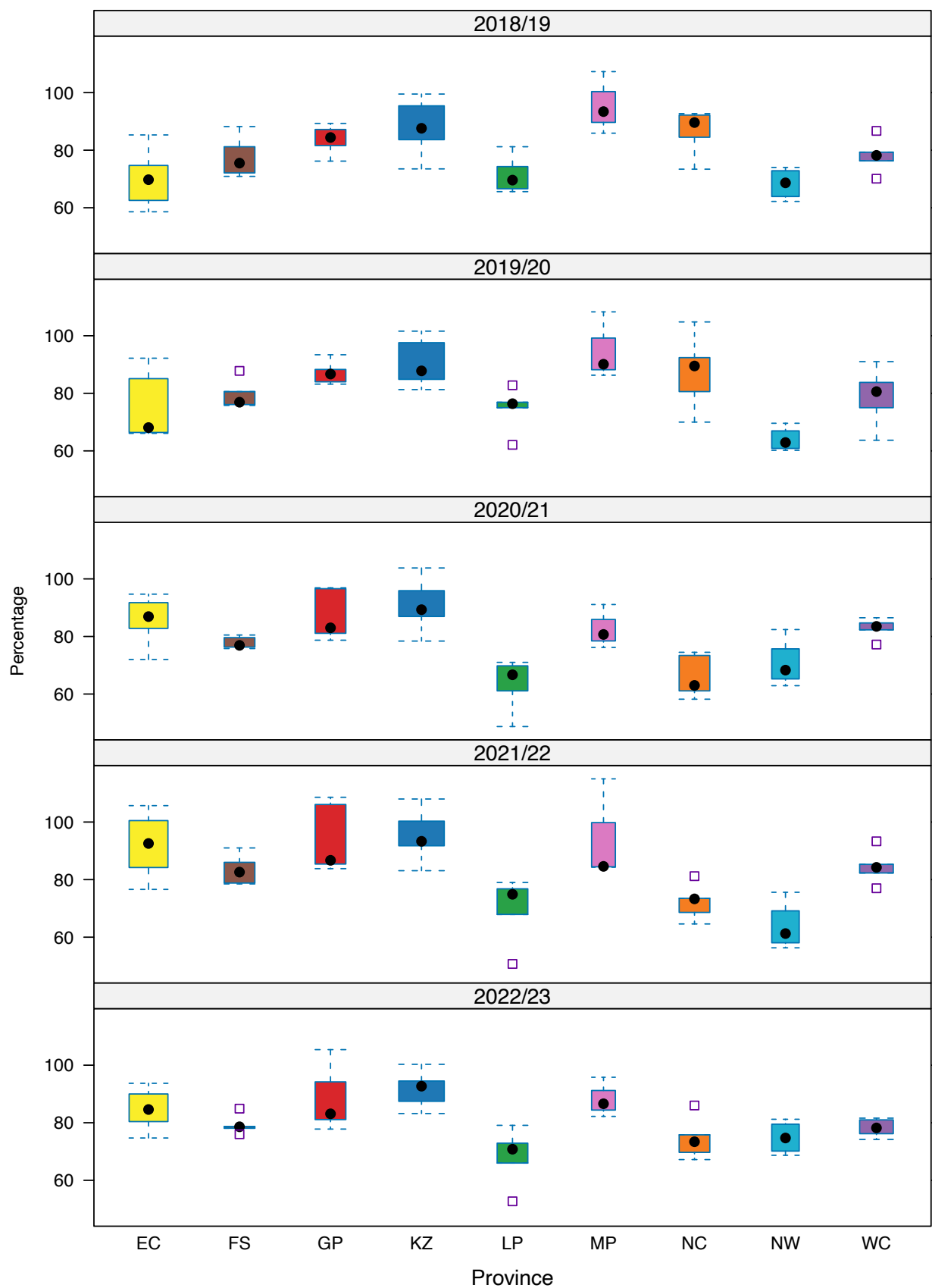


Figure 3: Immunisation coverage under 1 year by province, 2018/19–2022/23



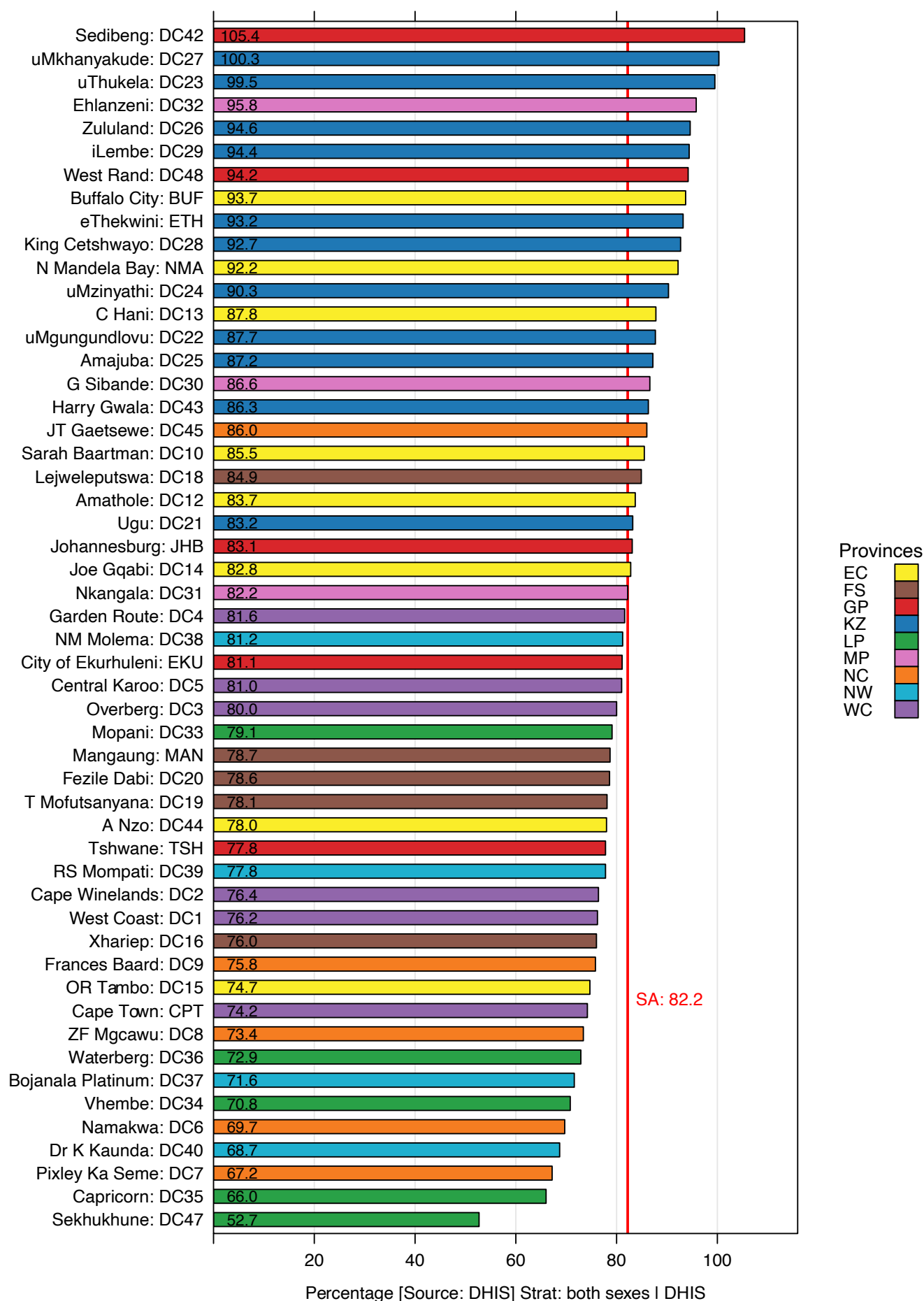
Source: DHIS

District overview

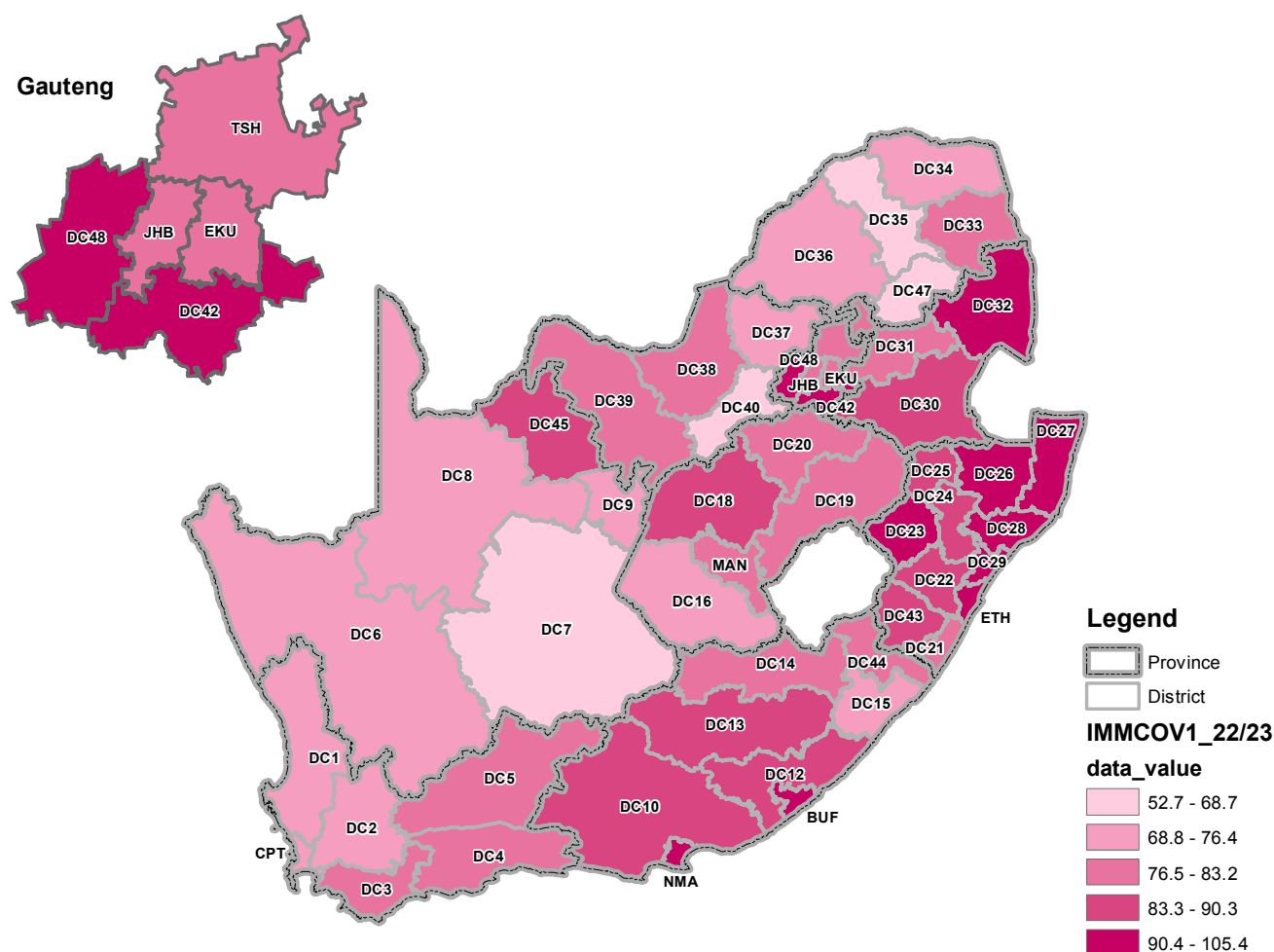
As shown in Figure 4, in 2022/23 Sedibeng (GP) reported the highest immunisation under 1 year coverage of 105.4% compared to Sekhukhune (LP) which reported the lowest coverage of 52.7%, where only one in two children under one year of age were immunised. The data from Sedibeng need to be treated with caution as the coverage of over 100% suggests that there could be data issues related to under-estimation of the population of children under a year

old. This, however, does not negate the consistent finding over many DHB reports which shows large inequities in immunisation coverage across districts. Map 1 shows that all districts in KwaZulu-Natal reported coverage rates that were above the national average in contrast to all districts in Limpopo reporting performance well below the national average.

Figure 4: Immunisation under 1 year coverage by district 2022/23



Map 1: Immunisation under 1 year coverage by local municipality/sub-district, 2022/23

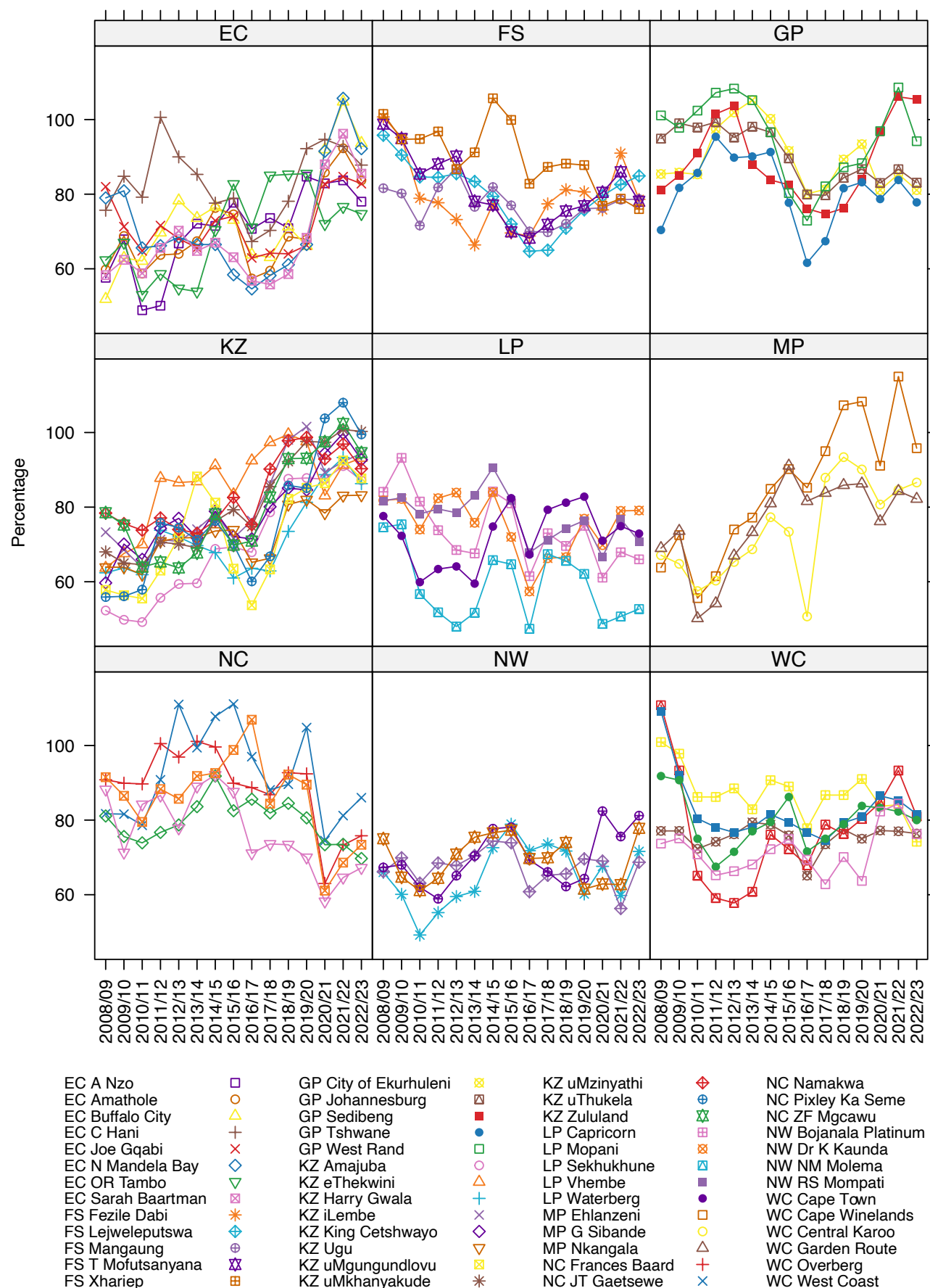


Source: DHIS

Sixteen districts reported an increase in coverage between 2021/22 and 2022/23 which varies between 15.1 percentage points in Ruth Segomotsi Mompati (NW) and 0.1 percentage point in Mopani (LP) and Ugu (KZN) districts. The three districts with the highest decrease (more than 13 percentage points) in the immunisation under 1 year

coverage in the same period were Ehlanzeni (MP), West Rand (GP) and Nelson Mandela Bay (EC). The coverage in these three districts was more than 100% in 2021/22 and dropped to a more realistic coverage of 95.8%, 94.2% and 92.2% respectively (Figure 5).

Figure 5: Annual trends: immunisation under 1 year coverage by district, 2008/09–2022/23



Source: DHIS

Measles 2nd dose coverage

Key findings

- The national average for measles second dose coverage was 84.8% in 2022/23.
- Mpumalanga province reported the highest coverage of measles second dose coverage of 97.4% and the Northern Cape province reported the lowest coverage of 73.6% which is 23.8% lower than Mpumalanga.
- Overberg district (WC) reported a measles second dose coverage of 151.2% that was the highest in the country while Dr Kenneth Kaunda district (NW) reported coverage of only 62.9%. The more than 100% measles second dose coverage in Overberg could be due to data quality issues or an under-estimation of the one-year-old population.
- All districts in the Northern Cape, North West and Free State provinces reported measles second dose coverages below the national average.

The measles 2nd dose coverage measures protection of children against measles. This indicator measures the proportion of children aged one year who received the measles second dose as a proportion of the one-year-old population. Although measles is a vaccine-preventable disease, it can be fatal in children who have not received their routine childhood immunisations.

The first measles dose (given at six months) has a failure rate of 15% and thus all children older than 12 months who have missed the first dose measles at six months should receive the second dose (given at 12 months) immediately and receive the second dose within four weeks. This ensures increased effectiveness, long-lasting protection, herd immunity, prevention of outbreaks and eventual eradication of measles.

The latest report of the National Institute for Communicable Diseases (NICD) of 9 October 2023⁸ notes a total of 1 214

measles cases in South Africa in the 40th epidemiological week. The most affected province was Limpopo (524 cases), followed by Gauteng (223 cases), Mpumalanga (120 cases), North West (222 cases), KwaZulu-Natal (51 cases), the Free State (35 cases), Western Cape (23 cases) and the Eastern Cape (9 cases). The measles outbreak was declared resolved in the Northern Cape in week 15, the North West in week 24, and the Free State in week 25. Mpumalanga and North West are still reporting sporadic cases according to the NICD. The NICD report of 7 August 2023 reported on transmission in the 5-to-14-year-old group, which is much older than the population reported in these indicators. Even though the data presented in this report do not aim to correlate the measles 2nd coverage of 2022/23 with the measles outbreak that started in October 2022, it is nonetheless important to note the comment in the NICD report that measles vaccination coverage remains low in the populations at risk.

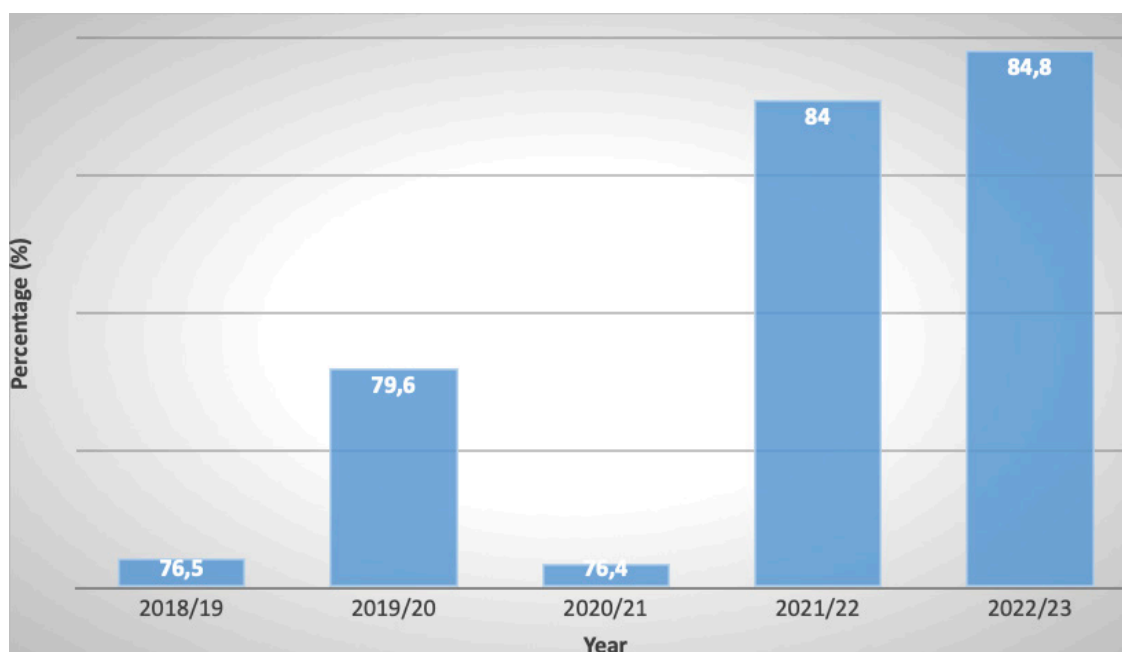
National overview

Figure 6 below shows that the national average measles 2nd dose coverage remained stable between 2021/22 and 2022/23 with coverage rates of 84.0% and 84.8% respectively. This was an improvement from 2018/19 when the coverage was 76.5%. The effects of COVID-19

were evident when coverage dropped once again to 76.4% in 2020/21. A measles outbreak was declared in South Africa in late 2022 but, by August 2023, after intensified vaccination campaigns the outbreak was determined to have been effectively over.

⁸National Institute for Communicable Diseases. South African Measles Outbreak: Interim Situation Report, 09 October 2023. Johannesburg: National Institute For Communicable Diseases; 2023. URL: <https://www.nicd.ac.za/south-african-measles-outbreak-update-2023-09-october-2023/>. [Accessed 13 October 2023].

Figure 6: National measles 2nd dose coverage, 2017/18–2022/23



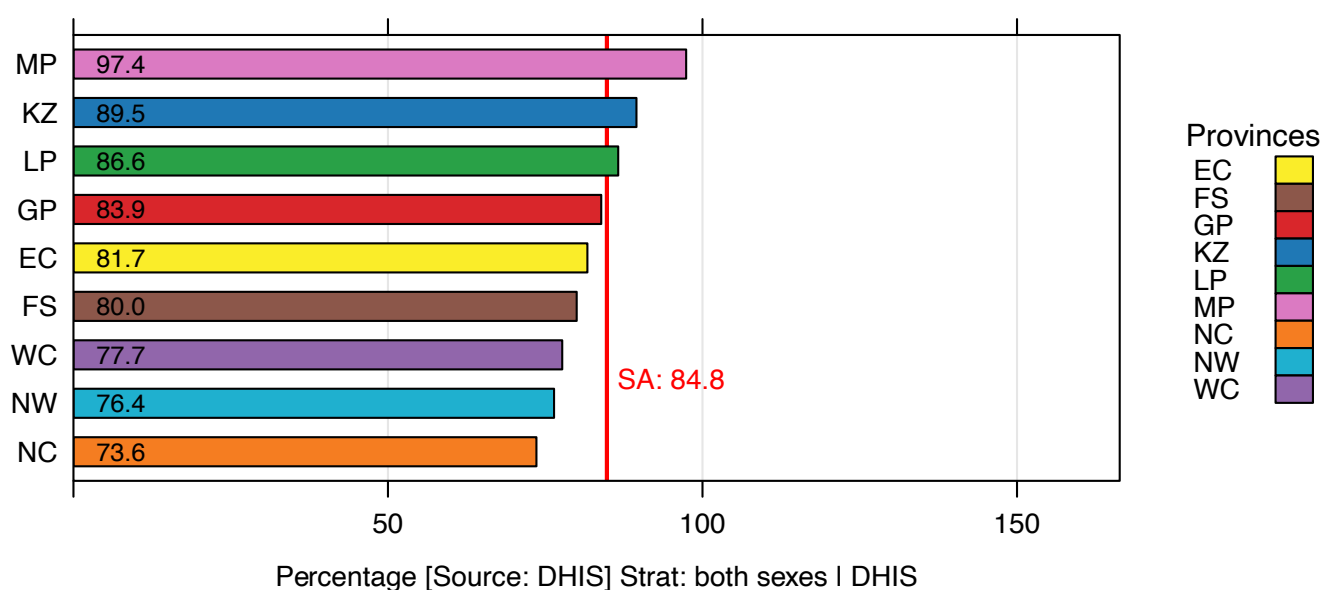
Source: DHIS

Provincial overview

Figure 7 shows that Mpumalanga reported the highest measles 2nd dose coverage of 97.4% and Northern Cape the lowest coverage of 73.6%, which is 23.8 percentage points lower than Mpumalanga. This interprovincial

inequity is similar to the immunisation under 1 year coverage. Only Mpumalanga, KwaZulu-Natal and Limpopo reported coverage above the national average.

Figure 7: Measles 2nd dose coverage by province, 2022/23

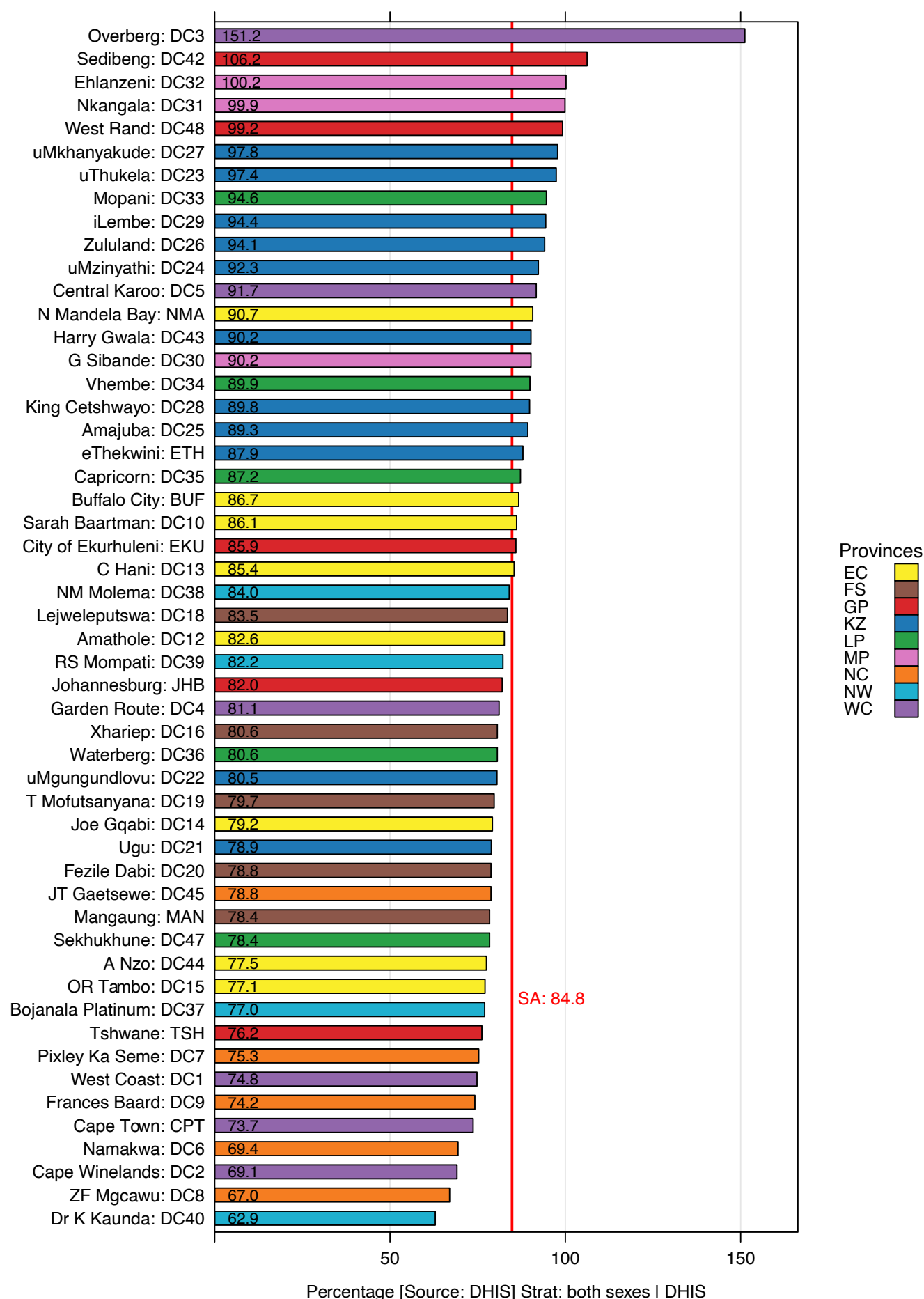


District overview

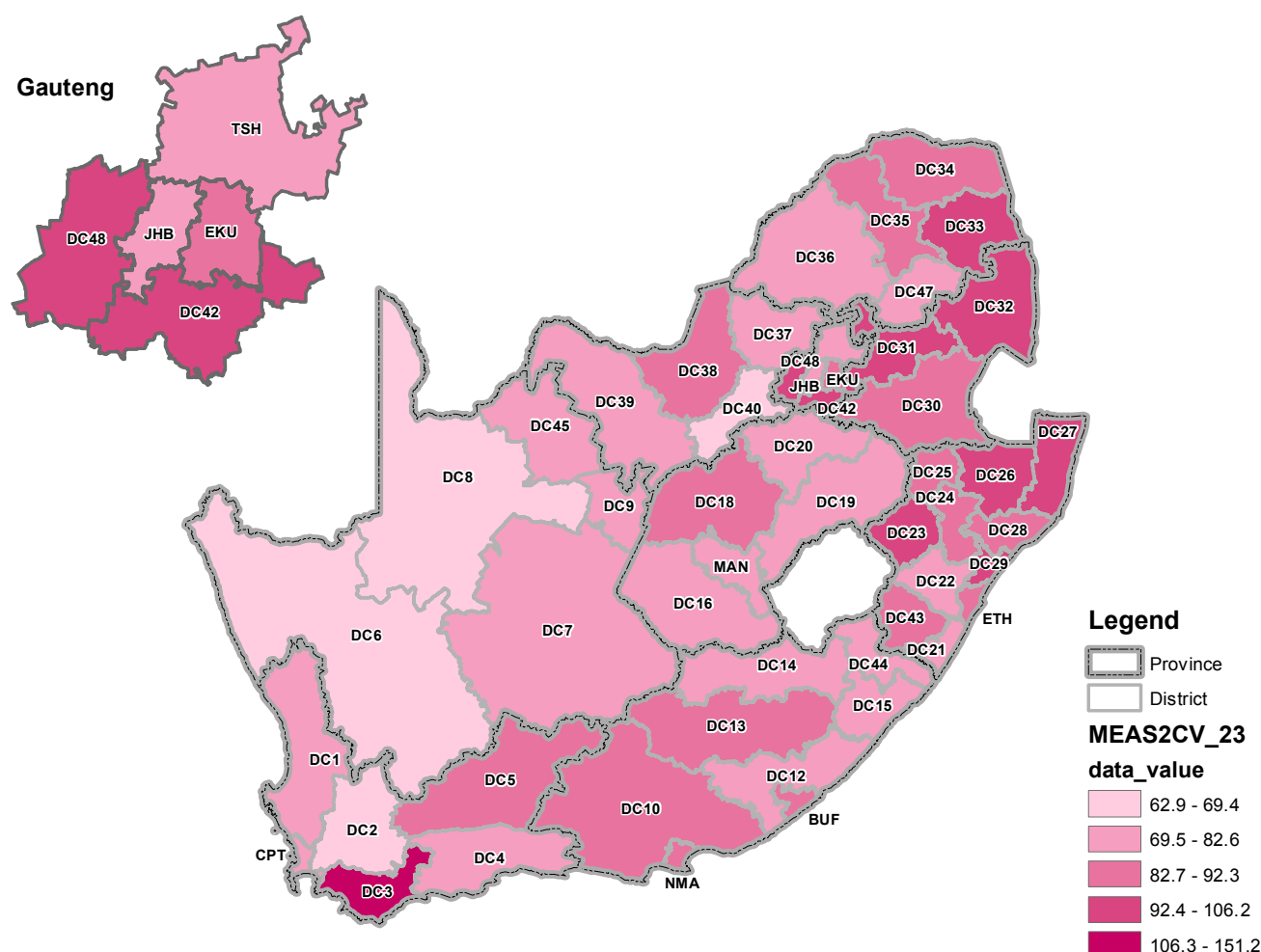
Overberg (WC) reported a 151.2% measles 2nd dose coverage that was the highest in the country compared to Dr Kenneth Kaunda (NW) with coverage of only 62.9% (Figure 8 below). Even though the coverage in Overberg is more than double that of Dr Kenneth Kaunda, this should

be interpreted with caution as Overberg district might have an underestimate of the denominator. All districts in the Northern Cape, North West and Free State reported measles 2nd dose coverage below the national average.

Figure 8: Measles 2nd dose coverage by district, 2022/23



Map 1: Measles 2nd dose coverage



Source: DHIS

Recommendations

Improving childhood immunisation in South Africa requires a multifaceted approach involving various stakeholders, including government bodies, healthcare providers, communities and international organisations. In South Africa, childhood immunisations are already integrated into primary health care (PHC) which is a key recommendation of the WHO Immunisation Agenda 2023. However, the inequity across districts and provinces, as well as findings by Oduwale and colleagues that defaulting remains a common challenge to ensure full coverage of childhood vaccines, suggests that more needs to be done to address both demand and supply issues.⁹ Measures could include the following:

- **Public awareness campaigns:** nationwide public awareness campaigns to educate parents and caregivers about the importance of immunisations, debunk myths and address concerns.
- **Accessible and convenient healthcare services:** ensure that healthcare facilities are easily accessible to all communities, especially in rural and underserved areas. Consider extending clinic hours to accommodate working parents and caregivers, establishing mobile vaccination units to reach remote areas.

⁹Oduwale EO, Laurenzi CA, Mahomed H, Wiysonge CS. Enhancing Routine Childhood Vaccination Uptake in the Cape Metropolitan District, South Africa: Perspectives and Recommendations from Point-of-Care Vaccinators. *Vaccines (Basel)*. 2022 Mar 16;10(3):453. doi: 10.3390/vaccines10030453. PMID: 35335085; PMCID: PMC8950960.

- Education for healthcare providers: provide training and education for healthcare workers on the latest immunisation guidelines, techniques and communication skills. Emphasise the importance of patient-centred care, addressing parents' concerns and ensuring they understand the vaccination schedule.
- Community engagement: engage community leaders, local influencers and religious figures to promote immunisation within communities. Address cultural or religious misconceptions about vaccines through community outreach programmes.
- Monitoring and data management: strengthen the healthcare system's data collection and management to monitor immunisation coverage accurately. Implement regular audits and assessments to identify gaps and areas for improvement in immunisation services.
- Financial support and incentives: consider conditional cash transfer programmes to families who ensure their children receive timely vaccinations.
- Partnerships and collaboration: collaborate with international organisations, non-government organisations and private sectors to enhance resources, funding and technical expertise for immunisation programmes.
- Addressing vaccine hesitancy: establish hotlines or counselling services for parents to address vaccine-related concerns. Train healthcare providers in effective communication techniques to address vaccine hesitancy during consultations.
- Regular evaluation and improvement: continuously evaluate immunisation programmes to identify weaknesses and areas for improvement. Use feedback and data to make necessary adjustments and enhancements to the vaccination strategy.

Implementing these recommendations requires a concerted effort from the government, healthcare providers, communities and international partners to ensure that every child in South Africa receives essential vaccinations to protect them from preventable diseases.

4. Reproductive health

Couple year protection rate

Mags Beksinska and Nzwakie Mosery

Key findings

- The national couple year protection rate (CYPR) decreased from 60.7% in 2018/19 to 45.0% in 2022/23.
- Compared to 2021/22, the CYPR declined in all but one province (Mpumalanga).
- Among the districts, the CYPR rate ranged from 103.5% in Xhariep in the Free State to 22.5% in Johannesburg in Gauteng, a 4.6-fold difference.
- Sixty-two local municipalities/sub-districts reported a CYPR of less than 30% in 2022/23. Eighteen local municipalities/sub-districts had a CYPR above 100%, with four over 200%.
- The contraceptive years equivalent declined between 2021/22 and 2022/23, possibly due to decreases in the distribution of female condoms (11.3%), male condoms (26.2%) and because oral pill cycles were down by 12.4%.
- Depot medroxyprogesterone acetate remains the most popular method of contraception; however, the implant has moved into second place and is increasing year-on-year more than any other method.

Introduction

This section reports on the indicator related to contraception and focuses on the couple year protection rate (CYPR).

There are mainly two indicators used to measure progress towards contraceptive availability and use in South Africa. These are the following:

- **Contraceptive prevalence rate (CPR):** This describes the percentage of in-union or sexually active women or all women aged 15–49 years who are currently using a modern method of contraception. The most recent South Africa Demographic and Health Survey (SADHS) 2016 reported a contraceptive prevalence rate of 55% of in-union women and 60% of sexually active women using a method of contraception.¹
- **Couple year protection rate:** The CYPR is a proxy indicator for CPR, and has been the indicator routinely used in the District Health Information System (DHIS) in South Africa. It forms part of the National Department of Health's 2023 National Indicator Data Set.² The couple year protection rate is based on dispensing, rather than end-use data.

The National Department of Health published the revised National Contraception Clinical Guidelines in 2019.³ The guidelines focus on the WHO medical eligibility criteria; method-specific guidelines for contraception; the provision of services for people with special needs (namely adolescents, menopausal women, women with

physical and intellectual disabilities, and women with chronic conditions); and issues relating to contraception and human immunodeficiency virus (HIV), including HIV acquisition, transmission, disease progression and drug interaction.

¹National Department of Health, Statistics South Africa, South African Medical Research Council, and ICF. South Africa Demographic and Health Survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: NDoH, StatsSA, SAMRC, and ICF; 2019.

²National Department of Health. National Indicator Data Set. 2023. Pretoria: NDoH; 2023.

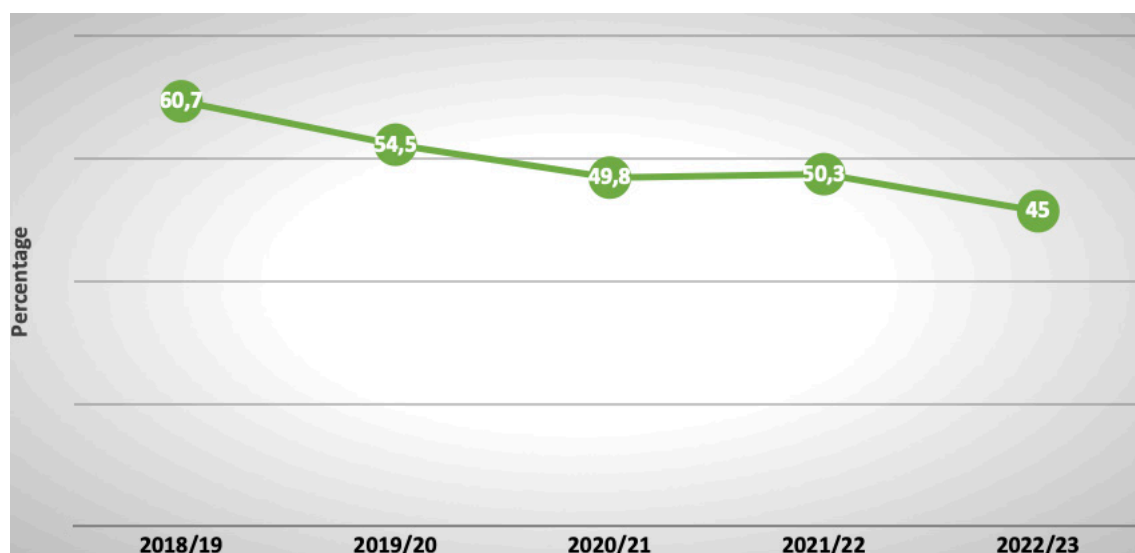
³National Department of Health. National Contraception Clinical Guidelines. Pretoria: NDoH; 2019.

National overview

South Africa had an overall national CYPR of 45.0% in 2022/23, with a decrease of 5.3 percentage points from 2021/22 (Figure 1). The CYPR has decreased by over 15 percentage points over the last five years, from a high

of 60.7% in 2018/19. The South African Medium Term Strategic Framework (MTSF)⁴ continues to use a target of 75% which was originally set in the National Strategic Plan 2015/16–2019/20.⁵

Figure 1: National couple year protection rate, 2018/19–2022/23



Source: DHIS

Table 1 shows the number of contraceptive years equivalent and contraceptive data elements for the last three periods of reporting – 2020/21, 2021/22 and 2022/23. The overall contraceptive years equivalent increased slightly in 2021/22 but has fallen back to the lowest level seen in the last five years.

The number of female condoms distributed decreased by 11.3% from the previous year. Similarly, male condom distribution decreased, but by a much larger proportion (26.2%) and fell below the levels seen in the last five years.

In terms of the two long-acting reversible contraceptives (LARCS) which are highly effective, with high continuation rates – the intra-uterine contraceptive device (IUCD) continued to gain ground and showed a 3.1 % increase in uptake in 2022/23 when compared to the previous year. Similarly, the sub-dermal implant uptake increased by 32.4% over the previous year. Historical data show an interesting pattern of implant uptake with a rapid increase after introduction in 2014, reaching a peak in 2018/19. This was followed by a decrease of 28.9% in 2019/20. However, the implant numbers have been increasing year-on-year since 2020/21 if compared to 2018/19. Of the two injectable methods, provision of Depot medroxyprogesterone acetate (known as Depo or DMPA) increased by 27.3% from

2021/22 to 2022/23. This increase in uptake of DMPA is likely to have been the recovery of uptake after decreases resulting from stock-outs in 2019/20 which were reported across the provinces.³

While provision of Norethisterone enantate (NET-EN) – the two-monthly injection – decreased significantly by 16.2% between 2021/22 and 2022/23, distribution was still higher than 2020/21. Although NET-EN has always represented a lower proportion of the hormonal injectable uptake, it now represents less than half of contraceptive years equivalent when compared to DMPA.

Oral pill uptake has fluctuated between 220 000 and 283 000 contraceptive years equivalent over the last five years, with a drop of 12.4% from 2021/22 to 2022/23.

Sterilisation for females and males has always played a small role in the contraceptive choice of men and women in South Africa. However, small and steady gains for both methods were noted over the last three years. Both female and male sterilisation increased in 2022/23 with male sterilisations increasing by 21.4%. However, as a contraceptive method, its uptake is the lowest of all methods available in South Africa.

⁴Department of Planning, Monitoring and Evaluation. Medium Term Strategic Framework (MTSF) 2014–2019. Pretoria: The Presidency; 2014.

⁵National Department of Health. National Strategic Plan 2015/16–2019/20. Pretoria: NDoH; 2015.

The IUCD increased by 3.1% from 2021/22 to 2022/23. This is one of the few methods that has seen slow and steady increases over the last five to 10 years.

The sub-dermal implant also gained ground over the last three years and, in 2022/23, was over double (404 861) the uptake that occurred in 2020/21 (181 553).

Although uptake of a few methods has increased percentage-wise between 2021/22 and 2022/23, it is important to note that the actual distribution of some of these methods is still low in terms of actual numbers

dispensed (e.g. IUCD, female/male sterilisation). The IUCD, for instance, increased by over seven thousand contraceptive years equivalent between 2021/22 and 2022/23, when compared to methods like the three-month injection (DMPA), which increased by over 300 000 contraceptive years equivalent over the same time period. Intra-uterine copper device insertions and sterilisation require skilled staff members with good experience. In addition, female sterilisation and, in many cases, IUCD insertion are referral procedures which will limit the uptake of these methods unless more staff with the appropriate level of skills are available.

Table 1: Total contraceptive years equivalent and contraception data elements, 2020/21–2022/23

	2020/2021 (number)	Contracep- tive years* equivalent	2021/2022 (number)	Contracep- tive years* equivalent	2022/2023 (number)	Contracep- tive years* equivalent	% Change (2021/22– 2022/23)
Contraceptive years* equivalent	6 032 412	7 426 920	6 513 038	8 213 497	6 288 406	7 461 028	-9.2
Female condoms distributed	16 325 536	136 046	17 487 705	145 731	15 512 957	129 275	-11.3
Male condoms distributed	542 144 989	4 517 875	545 372 354	4 544 770	402 808 623	3 356 739	-26.2
Depot medroxy- progesterone acetate injec- tion	4 978 082	1 244 521	4 400 217	1 100 054	5 602 230	1 400 558	27.3
Norethisterone enanthate injection	2 964 437	494 072	3 911 874	651 979	3 279 852	546 642	-16.2
Oral pill cycle	3 577 904	238 527	3 802 555	253 504	3 330 238	222 016	-12.4
Female sterilisation	47 089	470 890	50 748	507 480	53 849	538 490	6.1
Male sterilisation	467	4 670	1 002	10 020	1 216	12 160	21.4
IUCD	50 319	226 436	52 358	235 611	53 999	242 996	3.1
Sub-dermal contraceptive implant	181 553	453 883	305 739	764 348	404 861	1 012 152	32.4

*Calculated based on all methods distributed and a conversion factor which annualises their contraceptive protection.

Source: DHIS

Provincial overview

Figure 2 shows the CYPR per province for 2022/23. It reveals a 2.9-fold variation between the best-performing province (Free State – 83.9%) and the worst performing

province (Gauteng – 28.6%). Only one province (Free State) currently meets the 75% CYPR target. All other provinces had CYPRs below 60%.

Figure 2: Couple year protection rate by province, 2022/23

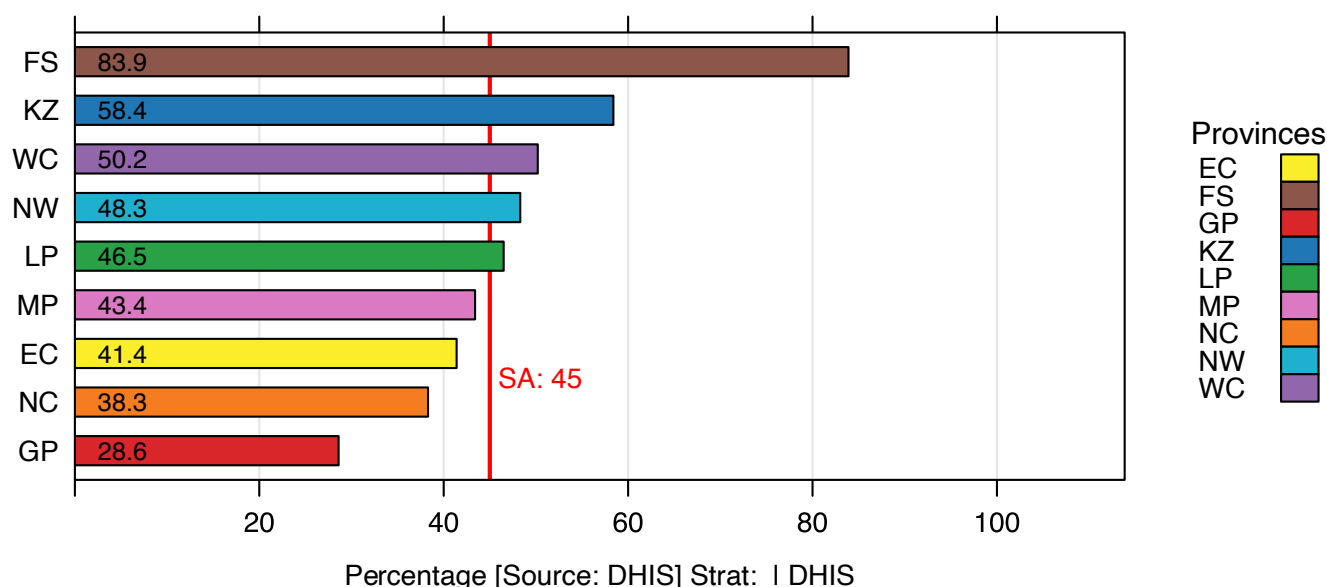


Table 2 shows the CYPR across provinces between 2020/21 and 2022/23. Only one province, Mpumalanga, showed an increase between 2021/22 and 2022/23. The CYPR decreased in all other provinces, with Gauteng and the Northern Cape showing the largest decreases (-9.2 %

and -8.5% respectively). The lowest prevalence is seen in Gauteng at 28.6%, which dropped from 44.9% in 2020/21. The Free State remains the only province with a CYPR over 60% across the three years.

Table 2: Couple year protection rate by province, 2020/21–2022/23

	2020/21 %	2021/22 %	2022/23 %	Percentage point difference between 2021/22 and 2022/23
Eastern Cape	41.0	49.0	41.4	-7.6
Free State	74.9	84.7	83.9	-0.8
Gauteng	44.9	37.8	28.6	-9.2
KwaZulu-Natal	51.5	60.3	58.4	-1.9
Limpopo	46.9	51.9	46.5	-5.4
Mpumalanga	39.8	39.2	43.4	4.2
Northern Cape	50.9	46.8	38.3	-8.5
North West	48.0	52.3	48.3	-4.0
Western Cape	50.5	56.9	50.2	-6.7
South Africa	49.8	50.3	45.0	-4.8

Source: DHIS

Table 3 depicts the number of methods issued by province, comparing 2021/22 and 2022/23.

- **Intra-uterine contraceptive device:** All provinces showed an increase in IUCD insertions, aside from Limpopo where 1 369 fewer IUCDs were inserted in 2022/23 and KwaZulu-Natal where 2 609 fewer IUCDs were inserted. However, KwaZulu-Natal continues to lead as the province with the largest number of IUCDs inserted for both years.
- **Depot medroxyprogesterone acetate injection:** Uptake increased across all provinces apart from the North West which showed a very small decrease. Some provinces doubled their uptake with KwaZulu-Natal increasing from 670 486 units to 1 203 512 and the North West from 1 438 to 3 116.
- **Norethisterone enanthate injection:** In an opposite trend to the DMPA injection, NET-EN uptake decreased in six of the nine provinces with a small increase seen in Gauteng, North West and the Western Cape.
- **Oral pill cycle:** Only two provinces saw an increase in oral pill cycle numbers, with a very slight issuing increase of 903 in the Western Cape but higher (56 131) in the North West. Uptake in the other seven provinces decreased slightly, with the largest decrease of 242 981 seen in Gauteng.
- **Female sterilisation:** All provinces showed an increase in female sterilisations. In 2022/23, KwaZulu-Natal led with 14 001 sterilisations, which was two or three times more than that performed in all other provinces, aside from Gauteng.
- **Male sterilisation:** Male sterilisation was low across the provinces, with five provinces – Eastern Cape, Gauteng, Limpopo, Mpumalanga and Northern Cape – recording single digits, with fewer than 10 male sterilisations in both years under review. North West performed no male sterilisations in the two-year period. Only one province reported more than 500 male sterilisations. This was KwaZulu-Natal which performed 672 in 2021/22, an increase from 619 the previous year.
- **Sub-dermal implants inserted:** All provinces showed an increase in implant insertions with two provinces doubling their numbers (Eastern Cape and Limpopo) while the North West almost trebled the insertions from 10 575 to 28 635. KwaZulu-Natal continues to lead in implant insertions. The numbers rose by more than 27 000 from 131 919 to 159 184 over the two-year period.
- **Condom distribution:** Three provinces (Free State, Western Cape and Limpopo) made modest increases in female condom distribution. The remaining provinces decreased. Gauteng and KwaZulu-Natal continue to lead the distribution of female condoms with over five million distributed in Gauteng in 2021/22 but this number fell below five million in 2022/23 to 4 497 159. Male condom distribution decreased nationally in 2022/23 by 26.2% from the previous year. All but one province showed a decrease over the two-year period, with Mpumalanga showing an increase of over four million. Although Gauteng led condom distribution in 2021/22 with 129 075 303 it fell by almost 50% to 69 220 678 in 2022/23 and moved into second place behind KwaZulu-Natal.

Table 3: Number of contraceptive methods issued by province, 2021/22–2022/23

		IUCD inserted	Depot medroxy progesterone acetate injection	Norethisterone enanthate injection	Oral pill cycle	Sterilisation – female	Sterilisation – male	Sub-dermal implant inserted	Female condoms distributed	Male condoms distributed
Eastern Cape	2021/22	4 623	650 700	548 770	254 978	5396	3	19 406	2 089 400	45 839 588
	2022/23	5 742	729 352	468 311	246 085	5403	4	37 046	1 279 500	25 490 700
Free State	2021/22	1 146	338 412	139 392	131 361	3738	63	9 407	1 421 800	55 352 800
	2022/23	1 197	350 660	122 794	126 536	3877	46	14 960	2 182 220	52 469 700
Gauteng	2021/22	5 930	755 067	711 707	1 298 893	9 206	1	53 874	5 228 585	129 075 303
	2022/23	8 421	1 001 632	718 019	1 055 912	10 294	2	69 155	4 497 159	69 220 678
KwaZulu-Natal	2021/22	29 180	670 486	843 718	666 454	13 426	619	131 919	3 813 200	106 967 000
	2022/23	26 571	1 203 512	391 873	517 324	14 001	672	159 184	3 047 100	89 664 600
Limpopo	2021/22	3 574	525 804	614 399	645 564	5 098	1	7 782	738 500	52 862 900
	2022/23	2 205	625 257	602 014	553 500	5 355	0	15 793	1 071 100	38 910 442
Mpumalanga	2021/22	1 388	153 291	484 008	212 508	3 415	4	18 557	1 997 762	31 364 066
	2022/23	1 390	342 651	367 895	181 637	3 677	7	19 669	1 367 918	35 627 000
Northern Cape	2021/22	136	121 287	62 352	49 161	1 362	2	6 444	113 700	9 518 000
	2022/23	306	144 620	47 703	48 574	1 448	0	8 398	101 513	5 194 000
North West	2021/22	1 438	326 680	238 599	145 933	2 712	0	10 575	931 858	42 361 097
	2022/23	3 116	322 176	275 366	202 064	3 160	0	28 635	708 047	30 810 803
Western Cape	2021/22	4 943	858 490	268 929	397 703	6 395	309	47 775	1 152 900	72 031 600
	2022/23	5 051	882 370	285 877	398 606	6 634	485	52 021	1 258 400	55 420 700

Source: DHIS

District overview

Figure 3 shows the CYPR by district. The rate ranged from 103.5% in Xhariep in the Free State to 22.5% in Johannesburg in Gauteng, a 4.6-fold difference. A rate above 100% might be due to poor data quality or an under-estimation of the female population aged between 15 and 49 years. Free State had the highest CYPR in 2022/23, and all five districts had a rate above 70%. Three KwaZulu-Natal

districts, namely Zululand, uThukela and iLembe, ranked among the 10 best-performing districts, along with two of the districts in the Western Cape (Central Karoo and Overberg). Three of the five districts in Gauteng ranked among the 10 districts with the lowest CYPR (Tshwane, Ekurhuleni and Johannesburg).

Figure 3: Couple year protection rate by district, 2022/23

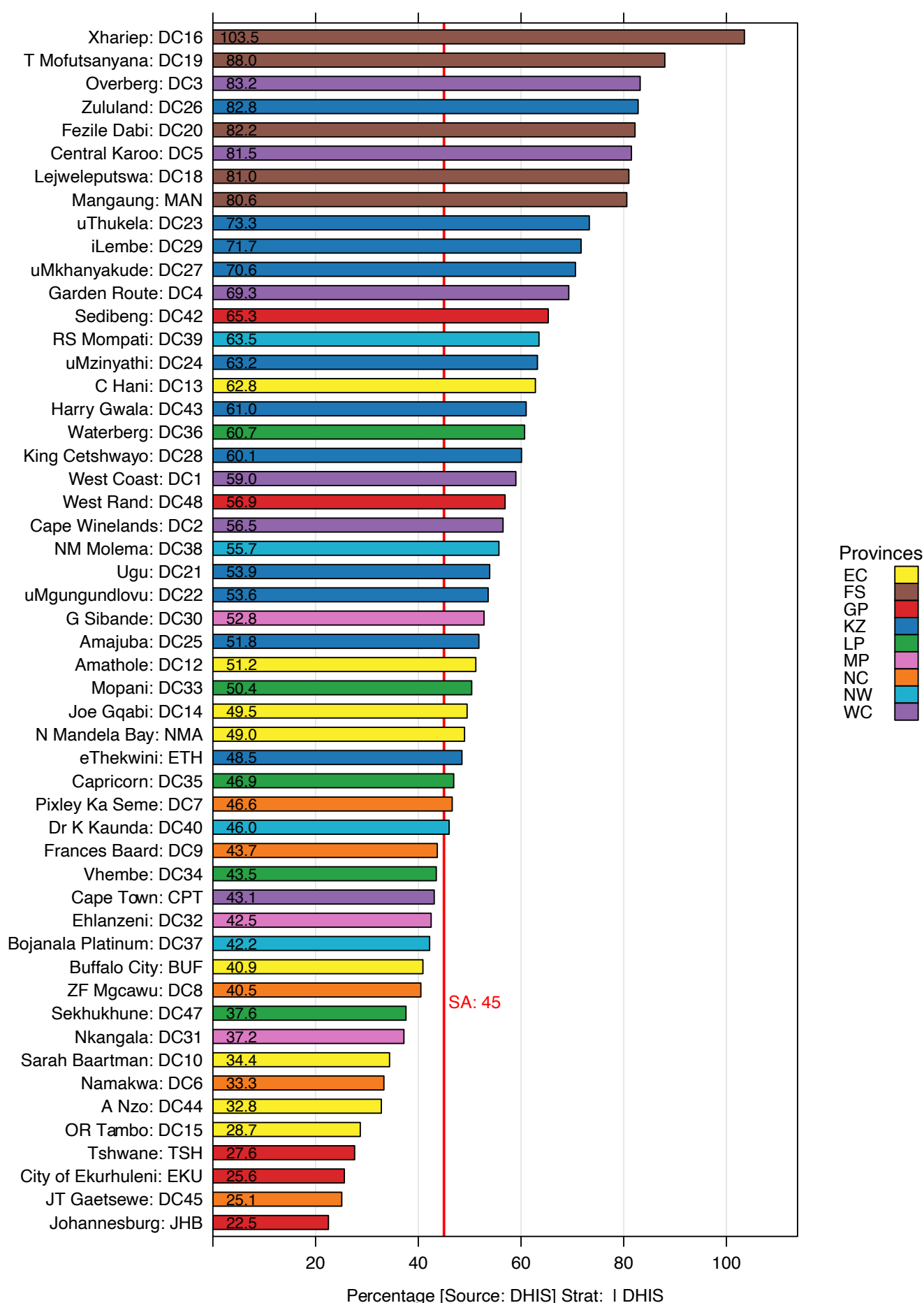


Table 4 shows the CYPR by district between 2020/21 and 2022/23. The highest decreases in the CYPR between the last two years of reporting were in Chris Hani in the Eastern Cape (22.6 percentage points), West Rand in Gauteng (20.0 percentage points), Sedibeng (19.5) and Ngaka Modiri Molema in North West (19.0 percentage points). Overall, few increases in the CYPR during the same period were

noted, with only nine districts showing an increase. The largest increases were seen in Dr Ruth Segomotsi Mompati in the North West (14.9 percentage points), Central Karoo in the Western Cape (14.9 percentage points) and Gert Sibande in Mpumalanga (10.9 percentage points). The other seven districts had increases under 10 percentage points.

Table 4: Couple year protection rate by district, 2020/21–2022/23

		2020/21 %	2021/22 %	2022/23 %	Percentage point difference between 2021/22 and 2022/23
Eastern Cape	Alfred Nzo	38.6	36.9	32.8	-4.1
	Amathole	65.8	59.3	51.2	-8.1
	Buffalo City	42.8	50.7	40.9	-9.8
	Chris Hani	94.5	85.4	62.8	-22.6
	Joe Gqabi	63.3	47.6	49.5	1.9
	Nelson Mandela Bay	40.7	52.9	49.0	-3.9
	OR Tambo	38.8	33.4	28.7	-4.7
	Sarah Baartman	53.1	48.6	34.4	-14.2
Free State	Fezile Dabi	90.7	89.0	82.2	-6.8
	Lejweleputswa	61.4	78.2	81.0	2.8
	Mangaung	78.5	78.7	80.6	1.9
	Thabo Mofutsanyana	85.1	90.1	88.0	-2.1
	Xhariep	90.7	10.5	103.5	-6.0
Gauteng	Ekurhuleni	49.6	36.3	25.6	-10.7
	Johannesburg	29.0	27.6	22.5	-5.1
	Sedibeng	64.6	84.8	65.3	-19.5
	Tshwane	37.4	37.0	27.6	-9.4
	West Rand	64.7	76.9	56.9	-20.0
KwaZulu-Natal	Amajuba	50.2	53.7	51.8	-1.9
	eThekweni	41.7	51.4	48.5	-2.9
	Harry Gwala	67.1	65.4	61.0	-4.4
	iLembe	66.4	80.9	71.7	-9.2
	King Cetshwayo	47.1	59.2	60.1	0.9
	Ugu DM	43.8	55.6	53.9	-1.7
	uMgungundlovu	57.8	63.5	53.6	-9.9
	uMkhanyakude	80.8	73.7	70.6	-3.1
	uMzinyathi	57.9	60.6	63.2	2.6
	uThukela	66.1	66.1	73.3	7.2
	Zululand	66.3	73.2	82.8	9.6
Limpopo	Capricorn	51.4	56.2	46.9	-9.3
	Mopani	64.2	50.9	50.4	-0.5
	Sekhukhune	41.4	41.9	37.6	-4.3
	Vhembe	45.5	46.1	43.5	-2.6
	Waterberg	57.7	75.2	60.7	-14.5
Mpumalanga	Ehlanzeni	44.6	44.5	42.5	-2.0
	Gert Sibande	43.2	41.9	52.8	10.9
	Nkangala	34.5	31.2	37.2	6.0

		2020/21 %	2021/22 %	2022/23 %	Percentage point difference between 2021/22 and 2022/23
Northern Cape	Frances Baard	50.1	49.2	43.7	-5.5
	John Taolo Gaetsewe	65.6	40.2	25.1	-15.1
	Namakwa	70.2	39.8	33.3	-6.5
	Pixley Ka Seme	33.3	50.7	46.6	-4.1
	Zwelentlanga Fatman Mgcawu	40.1	49.9	40.5	-9.4
North West	Bojanala Platinum	44.9	44.5	42.2	-2.3
	Dr Kenneth Kaunda	39.4	47.4	46.0	-1.4
	Ngaka Modiri Molema	63.8	74.7	55.7	-19.0
	Dr Ruth Segomotsi Mompati	48.7	48.6	63.5	14.9
Western Cape	Cape Town	41.7	49.8	43.1	-6.7
	Cape Winelands	51.8	59.9	56.5	-3.4
	Central Karoo	61.1	66.6	81.5	14.9
	Garden Route	64.9	82.3	69.3	-13.0
	Overberg	86.2	94.8	83.2	-11.6
	West Coast	61.3	65.8	59.0	-6.8

Source: DHIS

Local municipality/sub-district overview

Sixty-two local municipalities/sub-districts reported a CYPR of less than 30% in 2022/23. This is eight more than in 2021/22, when 54 local municipalities/sub-districts reported rates below 30%. Of the 62 local municipalities/sub-districts with a rate below 30%, 25 are located in KwaZulu-Natal and two of these had a CYPR below 15%. Four provinces (Free State, Limpopo, North West and Western Cape) had no local municipalities/sub-districts with a rate below 30%. Eighteen local municipalities/

sub-districts had a CYPR above 100%, with the highest rates found in Naledi (267.7%) in Mangaung, Free State, in Endumeni (249.1%) in Umzinyathi, KwaZulu-Natal, and in Msukaligwa (243.0%) in Gert Sibande, Mpumalanga.

Table 5 shows the 10 local municipalities/sub-districts with the lowest CYPR in 2022/23, which ranged between 11.1% and 17.0%.

Table 5: Ten local municipalities with the lowest couple year protection rate, 2022/23

Province	District	Local municipality/ sub-district	Couple year protection rate %
Northern Cape	Zwelentlanga Fatman Mgcawu	Kgatelopele	11.1
KwaZulu-Natal	uMgungundlovu	uMngeni	11.6
Mpumalanga	Gert Sibande	Govan Mbeki	11.9
Mpumalanga	Nkangala	Thembisile	15.0
Mpumalanga	Nkangala	Steve Tshwete	15.8
Northern Cape	Zwelentlanga Fatman Mgcawu	Tsantsabane	16.4
Mpumalanga	Nkangala	Dr JS Moroka	16.6
Gauteng	Tshwane	Tshwane 4	16.8
KwaZulu-Natal	uMgungundlovu	Mkhambathini	16.9
Mpumalanga	Gert Sibande	Mkhondo	17.0

Source: DHIS

Recommendations

- The continual decline in the CYPR since 2019/19 is of concern and requires further investigation. As long-acting methods of contraception are increasing, such as the implant, the CYPR has not been recalculated each year taking into consideration the previous year's CYPR.
- Investigation into the changes in uptake between methods and the strategies needed to understand them should be prioritised.
- Cost analysis of changes in method contribution to the CYPR may provide useful information for budgetary considerations.
- The South African Contraceptive Policy and Guidelines updated in 2019 have focused on expansion of method choice, on the understanding that increased options can improve choice and uptake. The introduction of the implant in 2014, which is now one of the two most popular methods of contraception, has not impacted on the CYPR. As new methods are considered in future contraceptive policies, the introductory strategies should incorporate plans for promotion of these methods and interventions for implementation of demand-creation activities that will contribute to an increase in overall method uptake.
- For training on long-acting reversible contraception (IUCD and sub-dermal implants), it is important that new staff members are trained on insertion and removal of these devices. This will ensure that all facilities have staff members who are confident in performing these procedures.
- Sustained strategies for demand creation should be implemented to ensure that awareness of contraceptive options is heightened, and that under-used but important barrier methods, such as the female condom, are promoted.

- The continual decline in the number of condoms distributed is of concern given the prevalence of HIV and sexually transmitted infections (STIs) in South Africa – and the reasons contributing to this decline should be closely analysed.
- Contraception and dual protection should be actively promoted, with integration into HIV, STI and other sexual reproductive health services and combination prevention options, including incorporation with provision of pre-exposure prophylaxis (PrEP).
- Special focus may be needed for particularly vulnerable groups, such as adolescent girls and young women between the ages of 15 and 24. Health service barriers to contraception access and negative perceptions about contraception services held by adolescent girls and young women may require further research.
- In terms of data quality, the data used to calculate the CYPR (both denominator and numerator) should be checked for accuracy, especially where considerable increases or decreases in facilities have been noted. The inclusion of condom distribution also contributes to the convolution of the CYPR. The wide intra-provincial variations and outliers are of particular concern, as these form the basis of the integrity of the CYPR.
- Provinces and districts with a decline in the CYPR in 2022/23 should review changes at facility level to identify local municipalities/sub-districts, and even facilities, that are reporting low levels of CYPR, and should investigate the possible causes, engage in quality improvement processes, and address challenges and gaps.
- The COVID-19 pandemic has refocused attention on the high rates of unintended pregnancy in South Africa, particularly among adolescents, with many reports across the provinces of increased rates of teenage pregnancy between 2020 and 2021. School-based life skills education and provision of services should be strengthened to ensure that adolescents receive quality education and are able to access condoms and other contraceptive methods without stigma.
- Emergency contraception is a method that can contribute to the CYPR (1 year = 20 emergency contraception doses). This is not included in the South African CYPR calculations and therefore is not presented in this report. Very little recent data are available on emergency contraception, yet such data are collected in the public health sector and reported to the DHIS.

2 Infectious disease control

2 Infectious disease control

Tuberculosis (TB) effective treatment and HIV antiretroviral treatment (ART) are two of the tracer indicators for the Universal Health Coverage (UHC) index that form part of the infectious disease control category.

This chapter will focus on selected TB and HIV indicators as a measure of whether we are on track to meet the Sustainable Development Goal (SDG) targets to end the epidemics of Acquired Immune Deficiency Syndrome (AIDS) and TB by 2030.

2.1 Tuberculosis

Shrikant Peters

Key findings

- In 2022/23, the TB symptom child under 5 years screened in facility rate was 94.5% and the TB symptom client 5 years and older screened in facility rate was 97.6%, both of which are above the 90% national target.
- Both indicators have increased steadily since 2019/20, however, these increases have been driven by a decrease in primary health care headcounts, rather than an increase in the number of screening events.
- Provincial TB symptom child under 5 years screened in facility rates varied from 79.5% in the Western Cape to 102.6% in KwaZulu-Natal.
- The provincial TB symptom client 5 years and older screened in facility rate varied from 73.4% in the Western Cape to 112.7% in Gauteng.
- The rates above 100% are indicative of poor data quality.
- Dr Ruth Segomotsi Mompoti district was the worst performing district for both indicators, scoring under 50% in the last year of review, and consistently being the worst performer from 2019/20 to 2022/23.

Introduction

In the decade preceding the COVID-19 pandemic, the tuberculosis (TB) death rate in South Africa had declined from 224 per 100 000 in 2010 to 110 per 100 000 in 2018.¹ Aiding the country's TB control programme was the roll-out of the largest anti-retroviral (ARV) campaign in the world during this period as well. The country's first case of COVID-19 was diagnosed on 5 March 2020 and, in 2021, after numerous waves of COVID-19 variants, South Africa was noted to have the highest burden of COVID-19 in Africa.²

During the years of the acute pandemic, COVID-19 added to South Africa's quadruple burden of disease, and resulted in major disruptions to routine ambulatory and in-patient

care, with TB care being no exception. To mitigate the spread of the COVID-19 virus, South Africa pursued a policy of national lockdown levels which progressed and regressed in line with the changing reproductive rates of the virus during wave and inter-wave periods. Disruptions in access to TB services were due to both supply and demand considerations. Many patients opted to avoid healthcare facilities out of fear of COVID-19 infection; human and capital resources were shifted away from TB services toward COVID-19 screening and testing, and in-patient and ambulatory care. Supply chain restrictions caused disruptions in the delivery of medicines and consumables to facilities in need.²

¹World Health Organization: Global TB database: 2000-2018. WHO Geneva, Switzerland; 2018. URL: <http://www.who.int/tb/country/data/download/en/index.html>.

²Abdool Karim Q, Baxter C. COVID-19: Impact on the HIV and Tuberculosis Response, Service Delivery, and Research in South Africa. *Curr HIV/AIDS Rep.* 2022 Feb;19(1):46-53. doi: 10.1007/s11904-021-00588-5. Epub 2022 Jan 22. PMID: 35064888; PMCID: PMC8783194.

The effects of the above disruptions were noted in monthly TB notifications, which decreased by more than 50% in 2020, and the weekly average of confirmed TB cases which declined by 33%.³ This represents a direct threat to the Global TB targets contained in the Sustainable

Development Goals⁴ and the World Health Organization End TB Strategy,⁵ which aims for an end to the TB epidemic by 2030 and an 80% reduction in the TB incidence rate by 2030.

Table 1: Global TB targets set in the Sustainable Development Goals and the End TB Strategy, 2030

SDG target 3.3	By 2030, end the epidemics of AIDS, TB, malaria and neglected tropical diseases, and combat hepatitis, water-borne diseases and other communicable diseases
WHO End TB Strategy	80% reduction in the TB incidence rate (new and relapse cases per 100 000 population per year) by 2030, compared with 2015–2020 milestone: 20% reduction; 2025 milestone: 50% reduction
	90% reduction in the annual number of TB deaths by 2030, compared with 2015–2020 milestone: 35% reduction; 2025 milestone: 75% reduction
	No households affected by TB face catastrophic costs by 2020

Source: World Health Organization, 2014

To this end, the National TB Recovery Plan was developed in partnership with the United States Agency for International Development (USAID) to support South Africa's National TB Programme in mitigating the fallout from COVID-19 on the country's TB response. To improve TB case finding and notification, components of this plan include:

- simultaneous screening and testing for TB together with COVID-19;
- expansion of TB contact tracing interventions via Community Health Worker (CHW) programmes;
- scale-up of Targeted Universal Testing for TB (TUTT) for asymptomatic high-risk groups such as TB contacts in People Living with HIV/AIDS (PLHIV's);
- scale-up of chest radiography and other TB diagnostic services; and
- improved linkage to treatment and services, especially for patients with TB, including drug-resistant-TB.⁶

In order to reverse the noted decline in TB treatment success rates, the Recovery Plan envisaged further training and implementation of technically and digitally assisted CHW's able to monitor treatment adherence,

and a medication delivery system to patient homes. Other areas of focus included provision of other resources as required, and improved data quality by real-time capture and conducting of data quality audits.⁶

³Madhi AS, Gray EG, Ismail N, Izu A, Mendelson M, Cassim N, Stevens W, Venter F. COVID-19 lockdowns in low-and middle-income countries: Success against COVID-19 at the price of greater costs. SAMJ: 2020 Aug;110(8):724-6. URL: <http://dx.doi.org/10.7196/SAMJ.2020.v110i8.15055>.

⁴Hogan DR, Stevens GA, Hosseinpoor AR, Boerma T. Monitoring universal health coverage within the Sustainable Development Goals: development and baseline data for an index of essential health services. The Lancet Global Health. 2018;6(2):e152-e68.

⁵World Health Organization. The End TB Strategy. WHO. Geneva: 2014. URL: https://www.who.int/tb/strategy/End_TB_Strategy.pdf?ua=1.

⁶USAID. South Africa TB Recovery Plan to mitigate the impact of COVID-19. URL: https://www.usaid.gov/sites/default/files/2022-05/Recovery_Plan_South_Africa_FINAL-remediated.pdf.

The 5th South African National Strategic Plan (NSP) outlines the country's response plan and targets for HIV, TB and sexually transmitted diseases (STI's) for 2023–2028, noting that 172 200 people were diagnosed with TB in 2021, of which 4% were with multidrug-resistant (MDR)-TB, and a high overall rate was noted of co-infection (53%) with HIV.⁷ Objectives of the plan include the capacitation of adequate human resources, information management and research on TB treatment, the building of a stronger healthcare supply chain management framework, and improved access to TB diagnostics and new health products. The level of planning, coordination and collaboration which the South African government, private sector and international aid organisations were able to achieve during the COVID-19 pandemic should be learnt from and adapted to recover the lost gains in TB control in the country. Targeted universal testing for TB is the spearhead of the National TB Recovery Plan – to test all those considered at high-risk of

contracting TB, regardless of symptomatology.

Critical enablers⁸ of the TB Recovery Plan are the use of integrated guidelines (such as the newly published National Guidelines on the Treatment of Tuberculosis Infection)⁹, improved real-time data management, capacity building throughout the health system, communication and advocacy, the adoption of quality improvement approaches and improved governance of TB services countrywide. The country remains committed to a 90-100-90 set of goals (screening 90% of high risk and vulnerable populations, diagnosing and testing 100% of those with prevalent TB, and successfully treating 90% of patients diagnosed with TB) set in the previous NSP.¹⁰ This was adapted from the Global Plan to end TB 2016–2020, with an update to the indicators to be published from the Second United Nations High-level Meeting on the fight against TB, which took place on 23 September 2023.

This section reports on the following TB indicators:

Case-finding

- TB symptom child under 5 years screened in facility rate
- TB symptom 5 years and older screened in facility rate

Treatment outcomes

- Drug-Susceptible (DS)-TB client treatment success rate
- DS-TB client loss to follow-up rate
- DS-TB client death rate
- MDR-TB treatment success rate
- Extremely drug-resistant (XDR) TB treatment success rate.

TB symptom child under 5 years screened in facility rate

The TB symptom child under 5 years screened in facility rate measures the children under 5 years screened for TB symptoms as a proportion of the total PHC headcount under five years. The numerator is TB symptom child under 5 years screened in facility and the denominator is PHC headcount under 5 years. It monitors trends in

early identification of children with TB symptoms in public healthcare facilities. The data in the District Health Information System (DHIS) for this indicator are calculated according to the indicator formula of the National Indicator Data Set (NIDS) 2023.

⁷National Department of Health. National Strategic Plan for HIV, TB and STIs: 2023–2028. Pretoria: NDoH. 2023.

⁸Rural Health Advocacy Project TB Accountability Consortium. The State of TB in South Africa. Wits Health Consortium. March 2022. URL: <https://www.wits.ac.za/media/wits-university/faculties-and-schools/health-sciences/images/faculty-news-images/StateOfTB-march2022.pdf>.

⁹National Department of Health. National Guidelines on the Treatment of Tuberculosis Infection. National Department of Health. Pretoria. 2023.

¹⁰Stop TB Partnership. 90(90)90 – The Tuberculosis Report for Heads of State and Governments: Global Plan to end TB 2016–2020. URL: http://www.stoptb.org/assets/documents/resources/publications/acsm/909090_PDF_LR.pdf.

National and provincial overview

Broadly, there have been decreases in TB symptom screening during and in the years following the acute phases of the COVID-19 pandemic, with DHIS data from 2022/23 recording less screening events in children under the age of five years, and less PHC visits during the year than in 2019/20. Despite this, the national TB symptom under 5 screened in facility rate improved markedly to 94.5% in 2022/23 (Figure 1 and Table 2), an increase of 6.9 percentage points from 2019/20. This may indicate greater vigilance among facility staff and management

to compensate for lower headcount numbers by offering screening to a greater proportion of children presenting under the age of five years. In total, there were more than half a million less screening events in children under five years in 2022/23, compared to 2019/20. Three provinces had a TB symptom child under 5 screened in facility rate above 100%, namely KwaZulu-Natal (KZN), Mpumalanga (MP) and the Free State (FS). A rate above 100% may be indicative of poor data quality.

Figure 1: TB symptom child under 5 years screened in facility rate by province, 2022/23

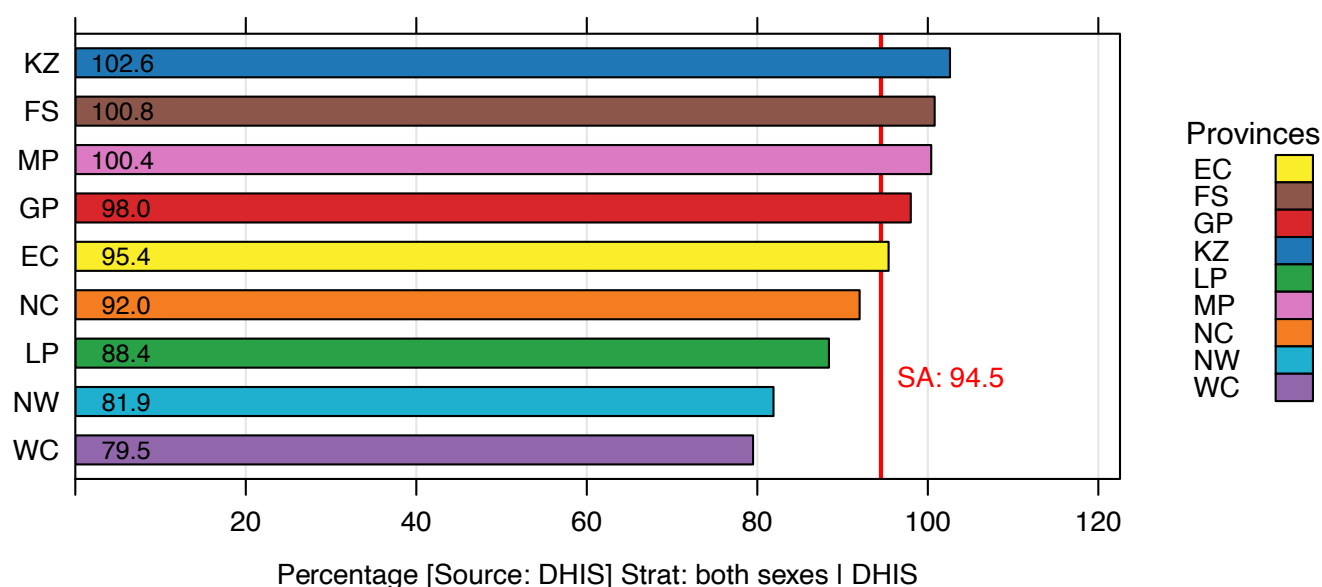


Table 2: Children under 5 years screened for TB symptoms, PHC headcount under 5 years and TB symptom child under 5 years screened in facility rate by province, 2022/23

	Children under 5 years screened for TB (number)	PHC headcount under 5 years (number)	TB symptom child under 5 years screened in facility rate (%)
Eastern Cape	2 100 216	2 201 577	95.4
Free State	780 122	774 079	100.8
Gauteng	3 286 015	3 354 446	98.0
KwaZulu-Natal	4 192 507	4 087 414	102.6
Limpopo	2 326 579	2 632 433	88.4
Mpumalanga	1 536 968	1 530 460	100.4
North West	962 655	1 175 482	81.9
Northern Cape	343 949	373 770	92.0
Western Cape	1 528 921	1 922 012	79.5
South Africa	17 057 932	18 051 673	94.5

Source: DHIS

District overview

Multiple districts in the country recorded a TB symptom child under 5 year screened in facility rate above 100%, with most districts in KwaZulu-Natal recording this in 2022/23 (Figure 2 and Map 1). The highest rate recorded was 111.4% in Amajuba (KZN) but needs investigation for data accuracy. The districts with the lowest rates were Dr Ruth Segomotsi Mompati (48.8%) (North West (NW)), Overberg (75.4%) (Western Cape (WC)), and Cape Town (75.6%) (WC). These were the only districts with recorded

rates below 80%. Dr Ruth Segomotsi Mompati district has continuously recorded similarly low screening rates below 50% year on year. Table 3 shows that between 2021/22 and 2022/23, rates declined in 12 districts: five in the Western Cape (Cape Winelands, Central Karoo, Overberg, West Coast and Garden Route), three in the Eastern Cape (EC) (Amathole, Chris Hani, OR Tambo), two in Limpopo (LP) (Capricorn, Waterberg), and two in the Northern Cape (NC) (Pixley Ka Seme, Zwelentlanga Fatman Mgcawu).

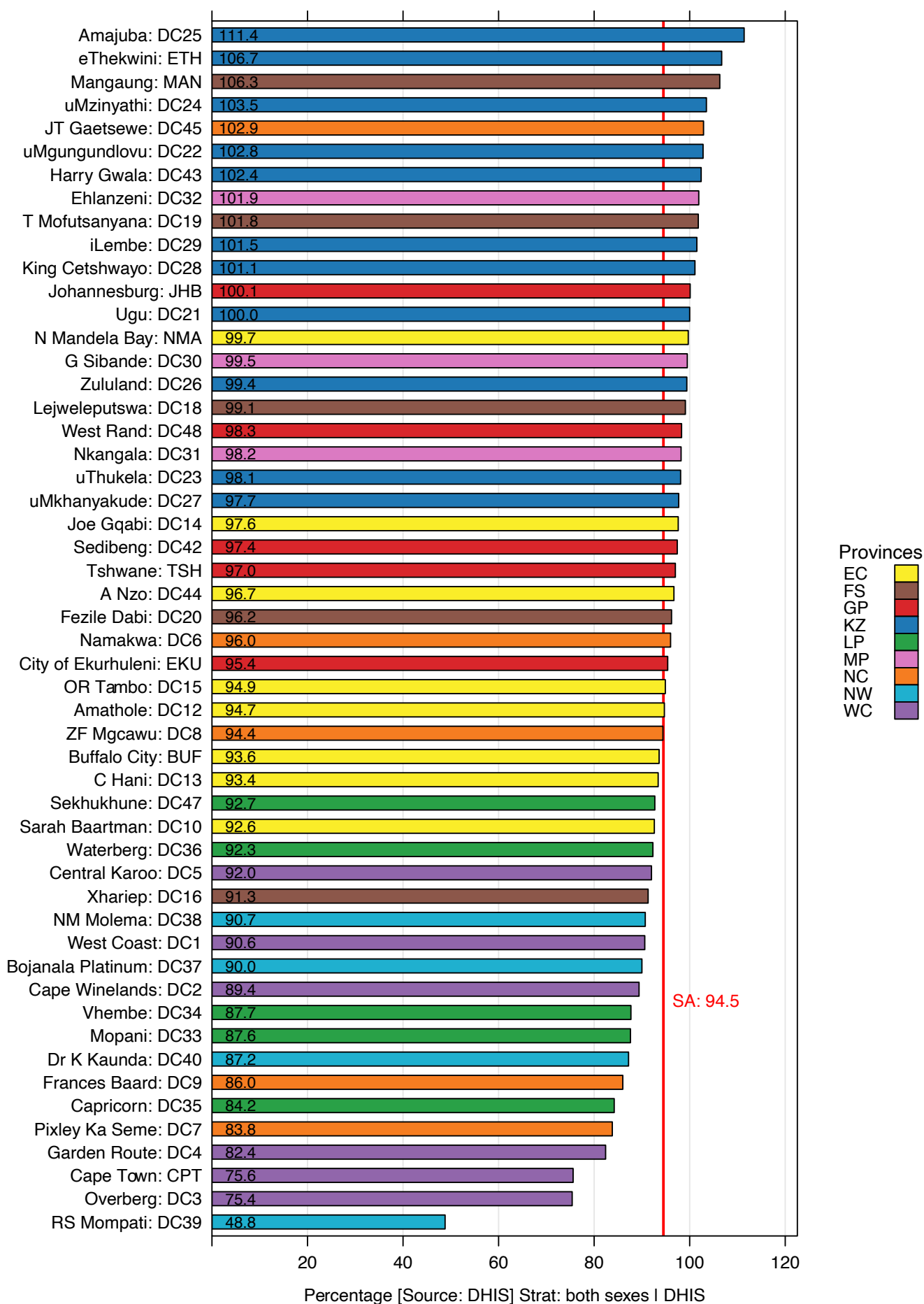
Table 3: TB symptoms child under 5 years screened in facility rate by district, 2019/20–2022/23

Province	District	2019/20	2020/21	2021/22	2022/23	Percentage point difference between 2021/22 and 2022/23
Eastern Cape	Alfred Nzo	74.5	91.6	96.0	96.7	0.7
	Amathole	90.3	91.2	97.6	94.7	-2.9
	Buffalo City	80.9	88.9	90.8	93.6	2.8
	Chris Hani	86.9	93.5	95.2	93.4	-1.8
	Joe Gqabi	90.6	91.6	94.6	97.6	3.0
	Nelson Mandela Bay	86.7	92.5	97.6	99.7	2.1
	OR Tambo	90.4	93.3	96.7	94.9	-1.8
	Sarah Baartman	80.0	88.3	91.5	92.6	1.1
Free State	Fezile Dabi	112.2	95.6	93.9	96.2	2.3
	Lejweleputswa	106.0	91.4	91.6	99.1	7.5
	Mangaung	110.9	100.5	105.0	106.3	1.3
	Thabo Mofutsanyana	101.2	98.5	100.3	101.8	1.5
	Xhariep	155.4	79.1	87.7	91.3	3.6
Gauteng	Ekurhuleni	81.5	83.2	92.8	95.4	2.6
	Johannesburg	87.7	93.9	98.5	100.1	1.6
	Sedibeng	93.7	90.3	95.7	97.4	1.7
	Tshwane	88.6	92.7	93.8	97.0	3.2
	West Rand	96.7	97.0	98.3	98.3	0.0
KwaZulu-Natal	Amajuba	101.0	102.2	110.7	111.4	0.7
	eThekweni	102.0	108.9	105.3	106.7	1.4
	Harry Gwala	98.9	100.0	99.9	102.4	2.5
	iLembe	100.8	98.9	101.1	101.5	0.4
	King Cetshwayo	98.3	96.8	98.1	101.1	3.0
	Ugu	97.3	99.4	98.6	100.0	1.4
	uMgungundlovu	99.0	100.5	100.7	102.8	2.1
	uMkhanyakude	94.2	98.3	96.7	97.7	1.0
	uMzinyathi	96.4	96.1	97.4	103.5	6.1
	uThukela	95.2	96.9	97.8	98.1	0.3
	Zululand	90.4	99.4	98.6	99.4	0.8

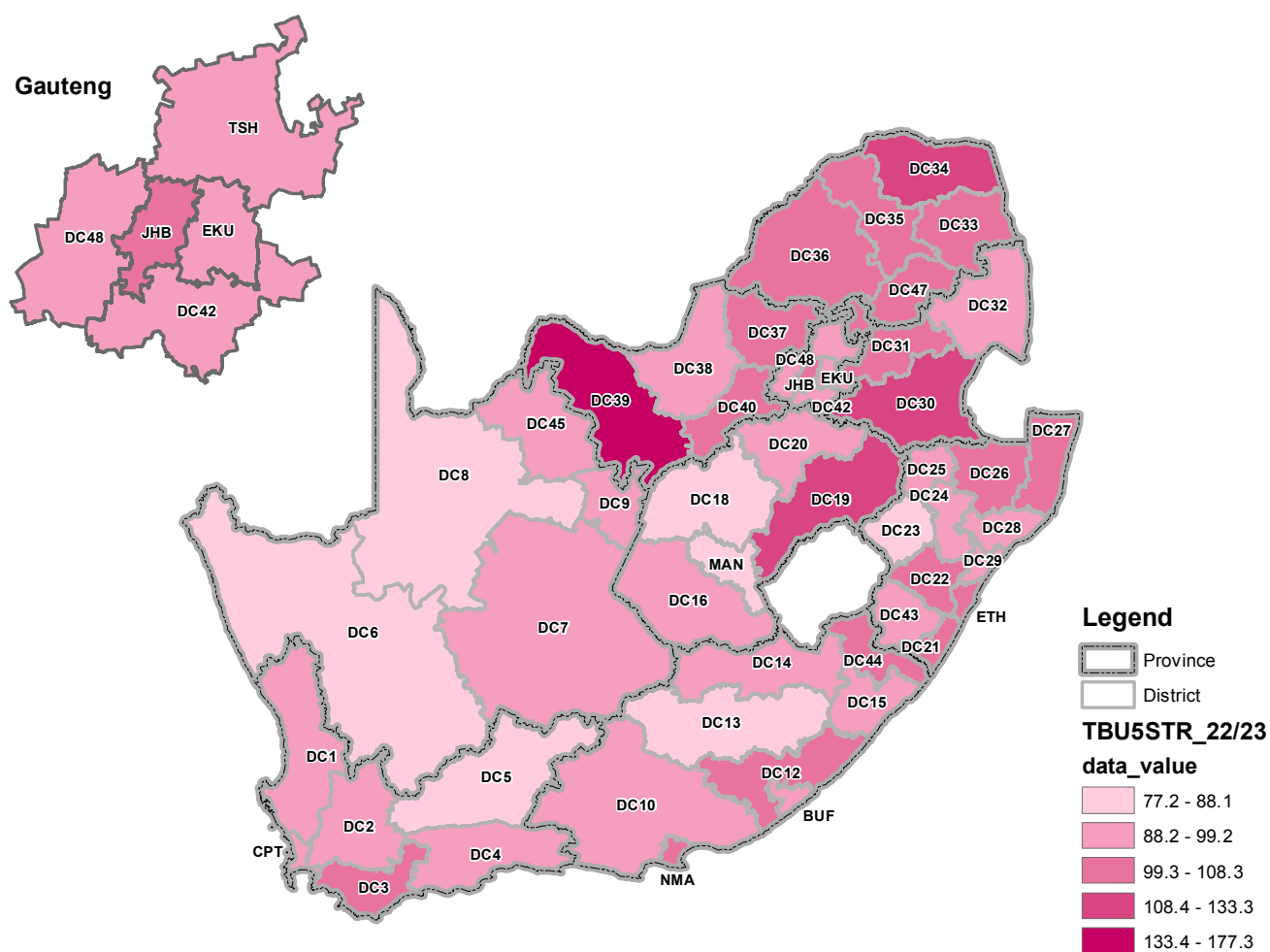
Province	District	2019/20	2020/21	2021/22	2022/23	Percentage point difference between 2021/22 and 2022/23
Limpopo	Capricorn	94.8	83.0	85.7	84.2	-1.5
	Mopani	85.3	85.0	86.0	87.6	1.6
	Sekhukhune	91.4	81.7	91.5	92.7	1.2
	Vhembe	80.8	82.0	86.5	87.7	1.2
	Waterberg	94.3	91.8	97.4	92.3	-5.1
Mpumalanga	Ehlanzeni	93.6	95.3	96.1	101.9	5.8
	Gert Sibande	87.9	100.3	97.3	99.5	2.2
	Nkangala	86.0	88.9	95.2	98.2	3.0
North West	Bojanala Platinum	72.2	58.9	76.8	90.0	13.2
	Dr Kenneth Kaunda	82.5	87.6	82.8	87.2	4.4
	Ngaka Modiri Molema	71.6	72.7	85.5	90.7	5.2
	Dr Ruth Segomotsi Mompati	51.2	48.2	46.8	48.8	2.0
Northern Cape	Frances Baard	59.8	56.0	74.9	86.0	11.1
	John Taolo Gaetsewe	47.9	54.1	76.8	102.9	26.1
	Namakwa	80.2	87.1	92.3	96.0	3.7
	Pixley Ka Seme	63.3	77.5	86.7	83.8	-2.9
	Zwelentlanga Fatman Mgcawu	90.4	91.7	98.1	94.4	-3.7
Western Cape	Cape Town	67.3	65.5	75.3	75.6	0.3
	Cape Winelands	80.7	89.7	91.1	89.4	-1.7
	Central Karoo	77.7	91.4	94.9	92.0	-2.9
	Garden Route	71.1	82.0	85.3	82.4	-2.9
	Overberg	76.5	83.2	87.8	75.4	-12.4
	West Coast	85.4	93.6	92.9	90.6	-2.3
South Africa		87.6	88.9	92.6	94.5	1.9

Source: DHIS

Figure 2: TB symptom child under 5 years screened in facility rate by district, 2022/23



Map 1: TB symptom child under 5 years screened in facility rate by district, 2022/23



Source: DHIS

TB symptom client 5 years and older screened in facility rate

The TB symptom client 5 years and older screened in facility rate measures the clients of five years and older screened for TB symptoms as a proportion of PHC

headcount five years and older. As for the TB symptom child under 5 years screened in facility rate, the rate can never exceed 100%.

National and provincial overview

Similar, to the under-5 indicator, the national TB symptom 5 years and older screened in facility rate has improved markedly since 2019/20, steadily improving from 88.6% to 97.6% in 2022/23 (Figure 3 and Table 4). However, in comparison to pre-pandemic data, this could be attributed to a drop in the denominator, PHC headcounts for those 5

years and older, rather than an increase in the number of clients screened for TB. The absolute numbers of clients screened for TB are actually less than pre-pandemic levels. The screening rates were highest in Gauteng and KwaZulu-Natal, both above 100%, and lowest in the Western Cape at 73.4%.

Figure 3: TB symptom 5 years and older screened in facility rate by province, 2022/23

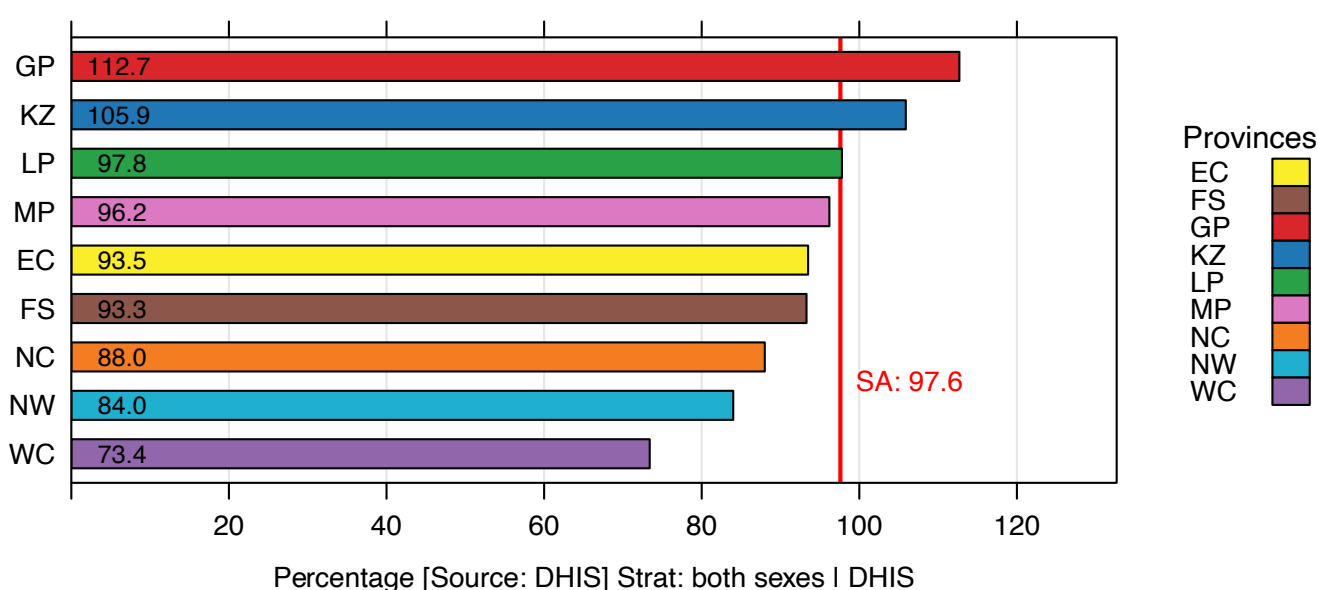


Table 4: Number of clients 5 years and older screened for TB, PHC headcount 5 years and older and TB symptom client 5 years and older screened in facility rate by province, 2022/23

	Clients 5 years and older screened for TB (number)	PHC headcount 5 years and older (number)	TB symptom 5 years and older screened in facility rate (%)
Eastern Cape	11 136 879	11 916 087	93.5
Free State	3 996 254	4 284 857	93.3
Gauteng	18 454 955	16 370 117	112.7
KwaZulu-Natal	21 848 377	20 626 617	105.9
Limpopo	10 182 567	10 414 507	97.8
Mpumalanga	6 354 327	6 603 275	96.2
North West	4 892 816	5 828 198	84.0
Northern Cape	1 904 378	2 164 037	88.0
Western Cape	7 442 153	10 141 916	73.4
South Africa	86 212 706	88 349 611	97.6

Source: DHIS

District overview

The spread in variation for different districts in the country for 2022/23 ranged from Dr Ruth Segomotsi Mompati (NW) at 48.2% to Tshwane (GP) at 120.6% (Table 5, Figure 4 and Map 2). Eighteen districts, mostly in Gauteng and KwaZulu-Natal, had rates higher than 100%. The districts with the highest percentage point gains from 2021/22 to 2022/23 were Frances Baard (NC) (22.1), uMzinyathi

(KZN) (12.5), Tshwane (GP) (11.8) and Bojanala (NW) (11.5). Districts with the highest percentage point losses over this period were Overberg (WC) (-10.6), eThekweni (KZN) (-2.6), Zwelentlanga Fatman Mgcawu (NC) (-2.6), Ekurhuleni (GP) (-2.3), Dr Kenneth Kaunda (NW) (-2.2) and iLembe (KZN) (-2.2).

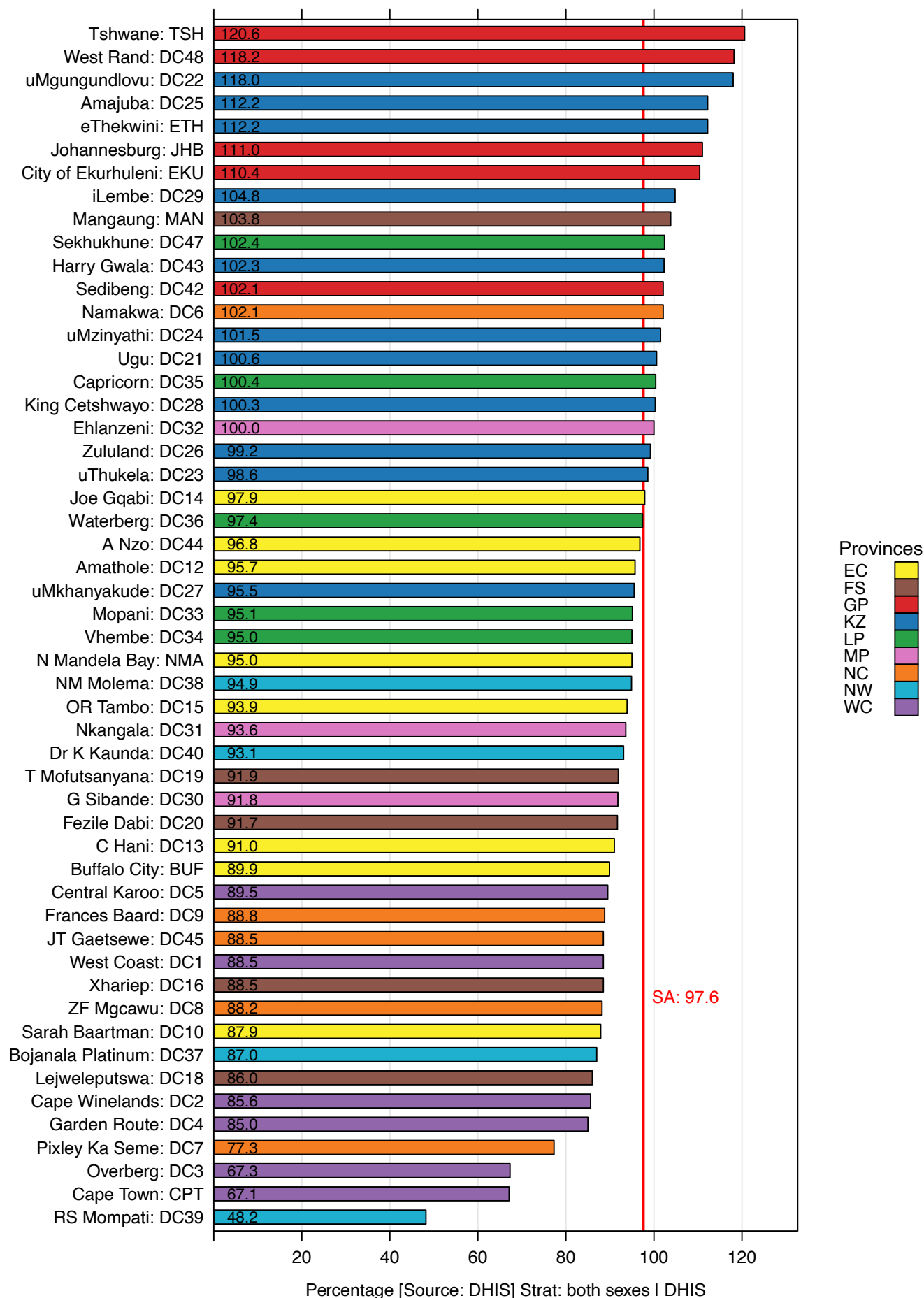
Table 5: TB symptoms client 5 years and older screened in facility rate by district, 2019/20 – 2022/23

Province	District	2019/20	2020/21	2021/22	2022/23	Percentage point difference between 2021/22 and 2022/23
Eastern Cape	Alfred Nzo	79.0	86.8	93.3	96.8	0.7
	Amathole	92.6	92.4	94.9	95.7	-2.9
	Buffalo City	78.0	77.9	86.3	89.9	2.8
	Chris Hani	87.0	88.5	89.5	91.0	-1.8
	Joe Gqabi	89.7	89.0	92.9	97.9	3.0
	Nelson Mandela Bay	82.9	79.4	85.8	95.0	2.1
	OR Tambo	92.2	88.4	95.2	93.9	-1.8
	Sarah Baartman	77.8	79.6	84.9	87.9	1.1
Free State	Fezile Dabi	113.5	85.0	90.2	91.7	2.3
	Lejweleputswa	118.2	77.0	82.3	86.0	7.5
	Mangaung	109.7	93.4	97.4	103.8	1.3
	Thabo Mofutsanyana	94.1	89.5	89.8	91.9	1.5
	Xhariep	146.1	78.0	79.6	88.5	3.6
Gauteng	Ekurhuleni	97.3	95.9	112.7	110.4	2.6
	Johannesburg	95.1	103.8	112.0	111.0	1.6
	Sedibeng	98.4	92.5	103.5	102.1	1.7
	Tshwane	93.7	93.6	108.8	120.6	3.2
	West Rand	125.7	105.7	119.1	118.2	0.0
KwaZulu-Natal	Amajuba	111.7	107.9	111.1	112.2	0.7
	eThekweni	108.9	105.4	114.8	112.2	1.4
	Harry Gwala	95.9	96.0	104.4	102.3	2.5
	iLembe	100.7	101.4	107.0	104.8	0.4
	King Cetshwayo	90.5	92.4	97.3	100.3	3.0
	Ugu	98.5	96.3	97.2	100.6	1.4
	uMgungundlovu	106.0	101.5	116.2	118.0	2.1
	uMkhanyakude	87.4	87.7	94.9	95.5	1.0
	uMzinyathi	89.1	85.0	89.0	101.5	6.1
	uThukela	90.0	89.8	90.3	98.6	0.3
	Zululand	90.8	96.1	97.4	99.2	0.8

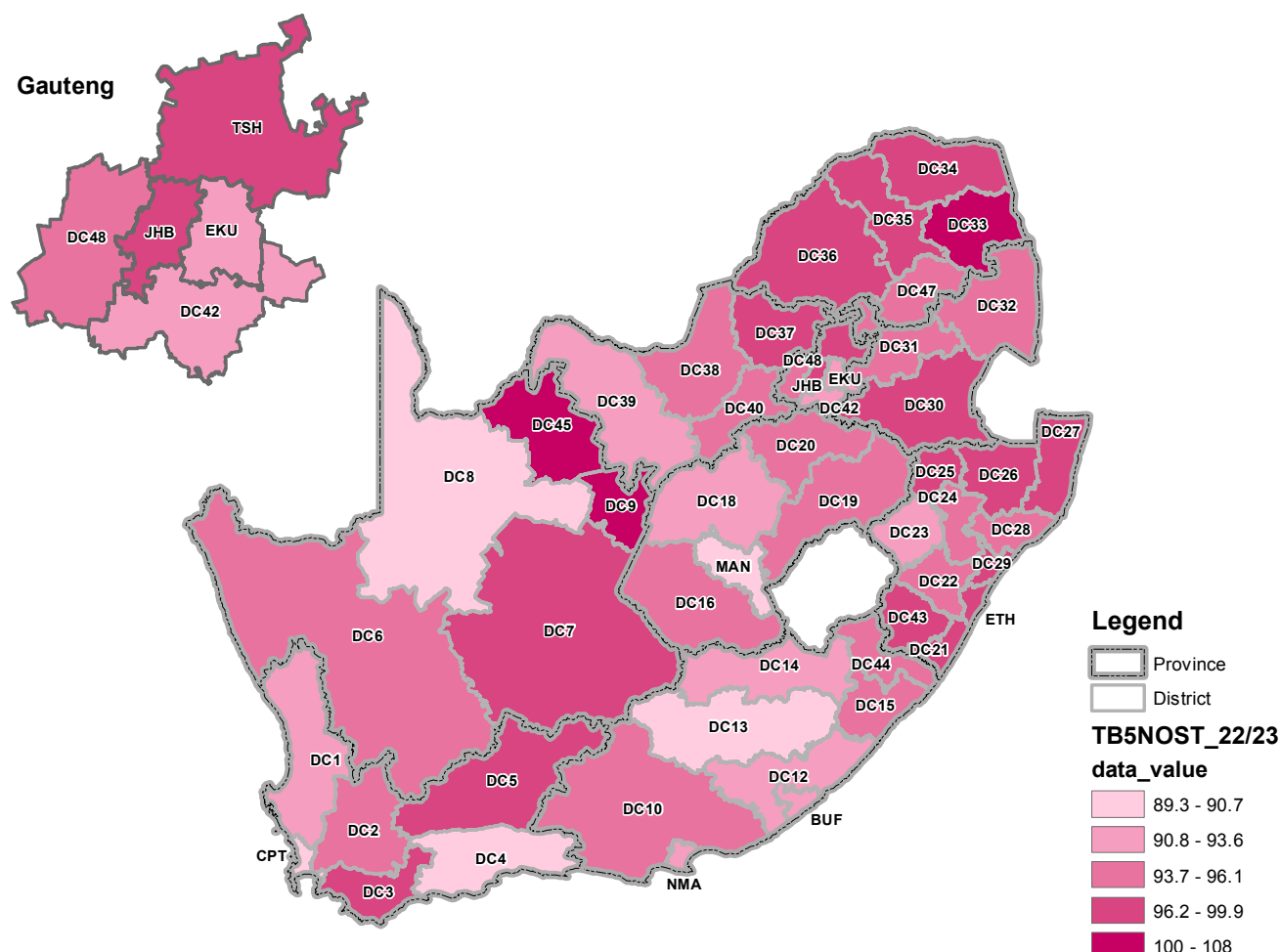
Province	District	2019/20	2020/21	2021/22	2022/23	Percentage point difference between 2021/22 and 2022/23
Limpopo	Capricorn	103.4	93.5	97.9	100.4	-1.5
	Mopani	94.4	87.2	92.5	95.1	1.6
	Sekhukhune	90.9	85.6	97.4	102.4	1.2
	Vhembe	90.9	86.7	92.9	95.0	1.2
	Waterberg	100.5	94.5	97.2	97.4	-5.1
Mpumalanga	Ehlanzeni	90.6	88.7	99.2	100.0	5.8
	Gert Sibande	84.1	87.0	92.0	91.8	2.2
	Nkangala	83.0	81.0	92.8	93.6	3.0
North West	Bojanala Platinum	75.2	65.0	75.5	87.0	13.2
	Dr Kenneth Kaunda	94.1	90.7	95.3	93.1	4.4
	Ngaka Modiri Molema	80.1	82.7	97.9	94.9	5.2
	Dr Ruth Segomotsi Mompati	52.7	43.4	44.4	48.2	2.0
Northern Cape	Frances Baard	58.0	43.3	66.7	88.8	11.1
	John Taolo Gaetsewe	64.0	65.1	87.8	88.5	26.1
	Namakwa	76.4	87.1	97.5	102.1	3.7
	Pixley Ka Seme	63.8	64.2	70.4	77.3	-2.9
	Zwelentlanga Fatman Mgcawu	88.1	83.7	90.8	88.2	-3.7
Western Cape	Cape Town	43.5	51.6	65.4	67.1	0.3
	Cape Winelands	75.0	78.7	83.1	85.6	-1.7
	Central Karoo	71.1	83.2	88.0	89.5	-2.9
	Garden Route	67.1	74.4	85.7	85.0	-2.9
	Overberg	68.6	72.6	77.9	67.3	-12.4
	West Coast	75.7	82.6	85.0	88.5	-2.3
South Africa		88.6	87.6	95.8	97.6	1.9

Source: DHIS

Figure 4: TB symptoms client 5 years and older screened in facility rate by district, 2022/23



Map 2: TB symptoms client 5 years and older screened in facility rate by district, 2022/23



Source: DHIS

Recommendations

- More emphasis should be placed on advocacy for preventative healthcare visits to local facilities, as well as increased home visit screening by Community Health Workers (CHWs).
- Facilities and CHWs should prioritise improvement of data quality. District TB coordinators should monitor both screening rates and absolute screening numbers.
- Districts should be supported by provinces to ensure that facilities understand and own the processes to be followed in terms of TB screening and recording.
- Provinces should use the routine DHIS data to identify districts as well as facilities that need support.
- Specific attention should be paid to the poorest performing districts, and sharing of good practices from well-performing districts to under-performing districts in general.

Drug-susceptible TB client treatment success rate

Key findings

- None of the provinces reached the National Strategic Plan (NSP) 90% target.
- The national drug-susceptible TB (DS-TB) treatment success rate in 2021 was 77.9% and the rate in the provinces varied between 64.9% in Northern Cape to 82.8% in Mpumalanga.
- The DS-TB treatment success rate in 2021 varied between 89.7% in the West Rand (GP) and 59.8% in John Taolo Gaetsewe (NC) while 52% of the districts had a drop in the DS-TB treatment success rate between 2020 and 2021.
- Fourteen sub-districts reached the target of 90% for DS-TB treatment success rate in 2021.
- In the Western Cape, five of the six districts had a drop in the rate between 2020 and 2021 and, in Northern Cape, four of the five districts also saw a drop.

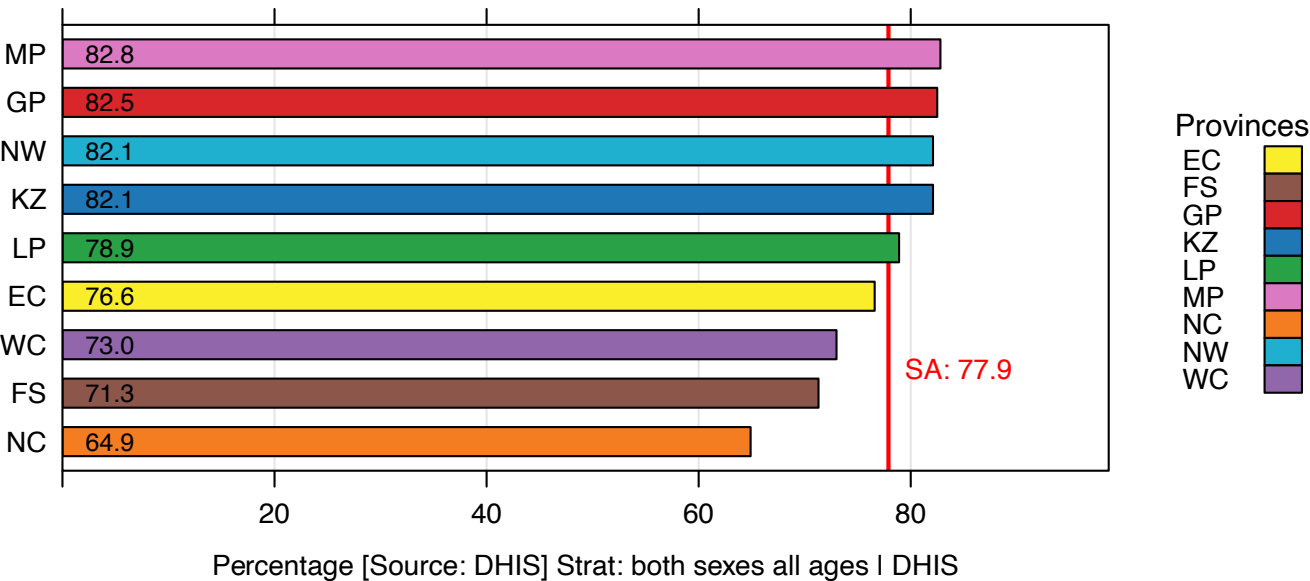
Introduction

The DS-TB client treatment success rate measures DS-TB clients who have successfully completed treatment (both cured and treatment completed) as a proportion of all DS-TB clients started on treatment. This applies to all DS-TB clients (new, retreatment, other, pulmonary and extra-pulmonary).

National and provincial overview

Nationally, the DS-TB treatment success rate in 2021 was 77.9%, still below the NSP 90% target (Figure 5). There have been small but consistent decreases in the DS-TB treatment success rate throughout the acute years of the COVID-19 pandemic, with 79.3% in 2019 and 78.9% in 2020 respectively. Provincially, in 2021, the DS-TB treatment success rate varied between 64.9% in the Northern Cape to 82.8% in Mpumalanga. Five provinces had a decrease in the DS-TB treatment success rate between 2020 and 2021 with the highest drop at 3.5 percentage points in the Northern Cape.

Figure 5: Drug-susceptible TB treatment success rate by province, 2021



District overview

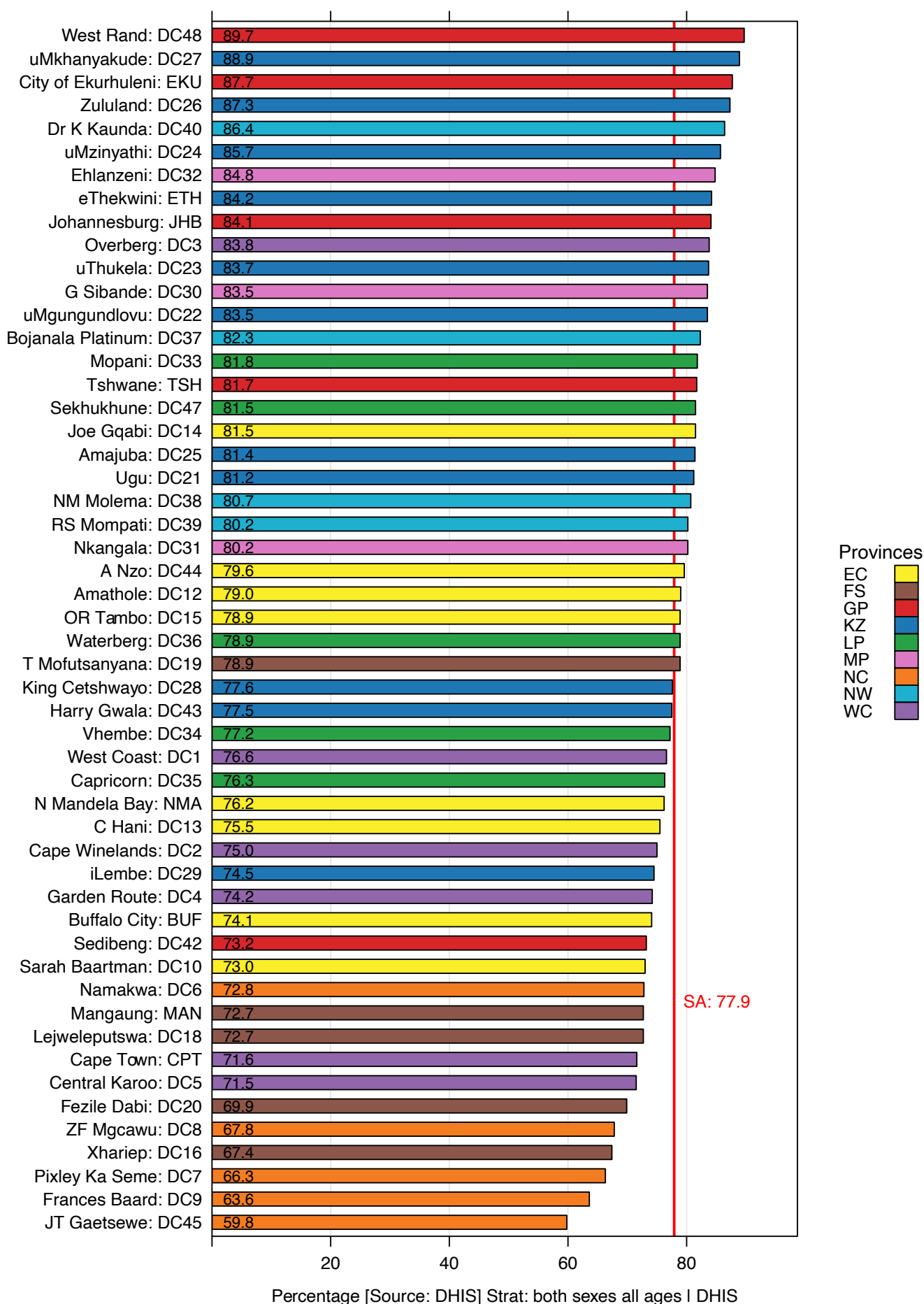
In 2021, the DS-TB treatment success rate varied between 89.7% in West Rand (GP) and 59.8% in John Taolo Gaetsewe (NC). None of the districts reached the NSP 90% target (Figure 6). Twenty-four districts, including all the districts in the Northern Cape and five of the six districts in the Western Cape, performed below the national average of 77.9% (Map 3).

However, 14 sub-districts were able to reach the target of 90% for DS-TB treatment success rate in 2021, these being Richmond (93.9%) in uMgungundlovu (KZN), Thabazimbi (93.3%) in Waterberg (LP), Merafong City (92.7%) in West Rand (GP), Mpofana (92.2%) in uMgungundlovu (KZN), Umhlabuyalingana (92.1%) in

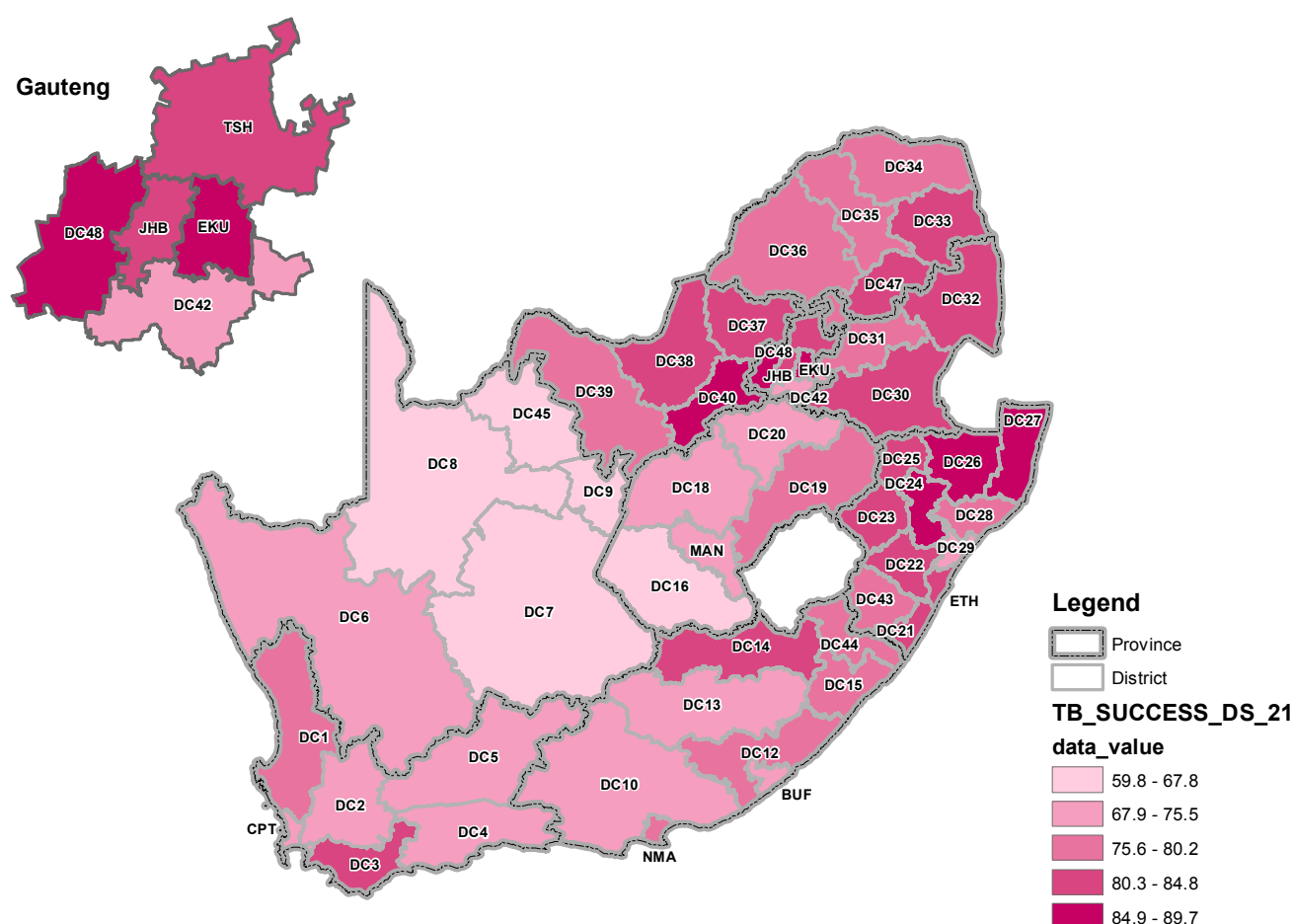
uMkhanyakude (KZN), Emakhazeni (91.3%) in Nkangala (MP), Rand West City (91.1%) in West Rand (GP), Mkhondo (91.1%) in Gert Sibande (MP), Theewaterskloof (90.9%) in Overberg (WC), Ekurhuleni N1 (90.6%) in Ekurhuleni (GP), Big 5 Hlabisa (90.4%) in uMkhanyakude (KZN), Molemole (90.4%) in Capricorn (LP), Mamusa (90.1%) in Dr Ruth Segomotsi Mompati (NW) and Lekwa (90.0%) in Gert Sibande (MP).

The Ga-Segonyana sub-district in John Taolo Gaetsewe (NC) was the worst-performing sub-district in 2021, at 42.1%. This was followed by two sub-districts in Pixley Ka Seme (NC), namely Umsobomvu at 48.2% and Renosterberg at 48.8%.

Figure 6: Drug-susceptible TB treatment success rate by district, 2021



Map 3: Drug-susceptible TB treatment success rate by district, 2021



Source: DHIS

Table 6 shows that 52% of the districts had a drop in the DS-TB treatment success rate between 2020 and 2021. The largest decrease was in Central Karoo (6.2 percentage points) followed by Cape Town (5.9 percentage points) in the Western Cape and Harry Gwala (4.2 percentage points) in KwaZulu-Natal.

The sub-districts with the largest increases, more than 10 percentage points, between 2020 and 2021 were Gamagara in John Taolo Gaetsewe (NC) (15.5), Lekwa in Gert Sibande (MP) (15.0), Mpofana in uMgungundlovu (KZN) (12.7), Mafube in Fezile Dabi (FS) (11.2), Emthanjeni in Pixley Ka Seme (NC) (11.2) and Greater Taung in Dr Ruth Segomotsi Mompati (NW) (10.0).

Recommendations

- There is a need to focus on root cause analyses and improvements on the lowest-performing districts in the country, especially in the Northern Cape and Western Cape.
- Provinces should develop strategies to ensure an increase in the DS-TB treatment success rate to meet the target of 90%.
- The National Department of Health should prioritise provinces with the worst DS treatment success outcomes and provinces should prioritise support to their districts with the worst TB success rates.

Table 6: Drug-susceptible TB treatment success rate by district, 2019–2021

Province	District	2019	2020	2021	Percentage points difference between 2020 and 2021
Eastern Cape	Alfred Nzo	81,4	81,1	79,6	-1,5
	Amathole	82,1	81,4	79	-2,4
	Buffalo City	70,5	70,4	74,1	3,7
	Chris Hani	78	77,9	75,5	-2,4
	Joe Gqabi	75,2	78,4	81,5	3,1
	Nelson Mandela Bay	82	81,2	76,2	-5
	OR Tambo	80,1	79,1	78,9	-0,2
	Sarah Baartman	77,6	75,1	73	-2,1
Free State	Fezile Dabi	78	71,1	69,9	-1,2
	Lejweleputswa	75,1	75,3	72,7	-2,6
	Mangaung	77,8	74,7	72,7	-2
	Thabo Mofutsanyana	80,2	79	78,9	-0,1
	Xhariep	75,8	68,4	67,4	-1
Gauteng	Ekurhuleni	86,7	84,7	87,7	3
	Johannesburg	84,8	84,1	84,1	0
	Sedibeng	77,8	75,1	73,2	-1,9
	Tshwane	80,4	80,2	81,7	1,5
	West Rand	88,8	85,2	89,7	4,5
KwaZulu-Natal	Amajuba	74,6	78,2	81,4	3,2
	eThekweni	83,7	85,8	84,2	-1,6
	Harry Gwala	80,6	81,7	77,5	-4,2
	iLembe	77,8	73,5	74,5	1
	King Cetshwayo	80,6	79,1	77,6	-1,5
	Ugu	78,5	78,1	81,2	3,1
	uMgungundlovu	84,7	82,3	83,5	1,2
	uMkhanyakude	88,3	88	88,9	0,9
	uMzinyathi	84,5	83	85,7	2,7
	uThukela	81,7	84,9	83,7	-1,2
	Zululand	87,9	87,4	87,3	-0,1
Limpopo	Capricorn	79,1	76,2	76,3	0,1
	Mopani	79,2	80	81,8	1,8
	Sekhukhune	77	78,3	81,5	3,2
	Vhembe	75,4	75,5	77,2	1,7
	Waterberg	80	79	78,9	-0,1
Mpumalanga	Ehlanzeni	83	82,6	84,8	2,2
	Gert Sibande	79,6	78,9	83,5	4,6
	Nkangala	78,2	78	80,2	2,2

Province	District	2019	2020	2021	Percentage points difference between 2020 and 2021
Northern Cape	Frances Baard	74,1	67,6	63,6	-4
	John Taolo Gaetsewe	66,3	61,9	59,8	-2,1
	Namakwa	82	76,1	72,8	-3,3
	Pixley Ka Seme	77,3	66,3	66,3	0
	Zwelentlanga Fatman Mgcawu	76,4	70,6	67,8	-2,8
North West	Bojanala Platinum	79,9	78,8	82,3	3,5
	Dr Kenneth Kaunda	74,7	78,9	86,4	7,5
	Ngaka Modiri Molema	81,8	83,4	80,7	-2,7
	Ruth Segomotsi Mompati	77,1	74,6	80,2	5,6
Western Cape	Cape Town	78	77,5	71,6	-5,9
	Cape Winelands	68,5	77,8	75	-2,8
	Central Karoo	82,6	77,7	71,5	-6,2
	Garden Route	77,6	73	74,2	1,2
	Overberg	81,3	85,6	83,8	-1,8
	West Coast	82,6	79,9	76,6	-3,3

Source: DHIS

Drug-susceptible TB client loss to follow-up rate

Key findings

- The national drug-susceptible TB (DS-TB) loss to follow-up (LTFU) rate in 2021 was 13.0%, the highest since 2019.
- Five provinces had an increase in the rate between 2020 and 2021 and none of the provinces reached the National TB Programme target of equal to or less than 5%.
- Six districts had DS-TB loss to follow-up rates greater than 20%. Four of these six districts are in the Northern Cape.
- The rate increased in 32 districts (61.5%) between 2019 and 2021.
- Only six districts achieved a DS-TB LTFU rate below the National TB Programme target of equal to or less than 5%, four of which are in KwaZulu-Natal.

Introduction

The drug-susceptible TB (DS-TB) client loss to follow-up (LTFU) rate measures the number of DS-TB clients who missed two or more months of treatment as a proportion

of DS-TB clients who were started on treatment. This applies to all DS-TB clients (new, re-treatment, other, pulmonary and extra-pulmonary).

National and provincial overview

Table 7 shows that the national DS-TB loss to follow-up rate in 2021 was 13.0%, the highest since 2019 when it was 11.2%. The rate among the provinces varied between 6.6% in Gauteng and 24.6% in the Northern Cape. Five provinces

had an increase in the rate between 2020 and 2021, with the highest increase in the Western Cape at 4.7 percentage points. None of the provinces reached the National TB Programme target equal to or less than 5%.

Table 7: Drug-susceptible TB client loss to follow-up rate by province, 2019–2021

	2019 (%)	2020 (%)	2021 (%)	Percentage points difference between 2020 and 2021 (%)
Eastern Cape	12.5	13.2	14.7	1.5
Free State	9.9	11.5	13.1	1.6
Gauteng	8.2	7.8	6.6	-1.2
KwaZulu-Natal	9.1	8.4	9.1	0.7
Limpopo	8.3	7.6	6.9	-0.7
Mpumalanga	9.5	8.5	6.9	-1.6
North West	11.4	9.9	7.7	-2.2
Northern Cape	16.0	22.0	24.6	2.6
Western Cape	18.3	16.8	21.5	4.7
South Africa	11.2	11.3	13.0	1.7

Source: DHIS

District overview

At a district level, the DS-TB client loss to follow-up rate varied from the worst-performing district being John Taolo Gaetsewe (34.0%) (NC) to the best-performing district being uMzinyathi (0.6%) (KZN) (Table 8). Six districts registered loss to follow-up rates greater than 20%. These were Xhariep (20.7%) (FS), Zwelentlanga Fatman Mgcawu (21.2%) (NC), Pixley Ka Seme (23.4%) (NC), Cape Town (24.8%) (WC), Frances Baard (27.8%) (NC) and John Taolo Gaetsewe (34.0%) (NC). The rate increased in 32 districts (61.5%) between 2019 and 2021.

Frances Baard (NC) had the highest increase in this period at 9.8 percentage points. Dr Kenneth Kaunda (NW) had the highest decrease of 8.5 percentage points in the same period. Only six districts achieved a rate below the National TB Programme target equal to or less than 5%, these being uMzinyathi (KZN) (0.6%), Zululand (KZN) (2.9%), uMkhanyakude (KZN) (3.3%), West Rand (GP) (3.5%), City of Ekurhuleni (GP) (4.1%) and uThukela (KZN) (4.7%).

Table 8: Drug-susceptible TB client loss to follow-up rate by district, 2019 – 2021

Province	District	2019	2020	2021	Percentage point difference between 2019 and 2021
Eastern Cape	Alfred Nzo	5.6	6.3	7.7	2.1
	Amathole	8.7	9.6	11.6	2.9
	Buffalo City	22.2	21.9	17.2	-5
	Chris Hani	11.2	12.1	15.1	3.9
	Joe Gqabi	15	10.9	8.8	-6.2
	Nelson Mandela Bay	10.1	11.3	16	5.9
	OR Tambo	13.2	12.9	13.6	0.4
	Sarah Baartman	15	17.4	18.3	3.3
Free State	Fezile Dabi	8.6	13.7	13.5	4.9
	Lejweleputswa	13.5	11.3	15.3	1.8
	Mangaung	10.3	12.1	13	2.7
	Thabo Mofutsanyana	5.5	6.4	7.3	1.8
	Xhariep	11.4	18.4	20.7	9.3
Gauteng	Ekurhuleni	5.7	6.2	4.1	-1.6
	Johannesburg	8.7	7.8	6.9	-1.8
	Sedibeng	9.3	9.9	11.2	1.9
	Tshwane	11.4	9.5	8.1	-3.3
	West Rand	2.7	4	3.5	0.8
KwaZulu-Natal	Amajuba	9.9	7.6	10.2	0.3
	eThekwini	11	8.2	9.3	-1.7
	Harry Gwala	9.5	7.3	10	0.5
	iLembe	15.1	17.5	17.7	2.6
	King Cetshwayo	9.3	9.4	10	0.7
	Ugu	12.2	12.5	12.1	-0.1
	uMgungundlovu	7.6	9.3	8.3	0.7
	uMkhanyakude	3	3.8	3.3	0.3
	uMzinyathi	1.4	1	0.6	-0.8
	uThukela	5.3	4.6	4.7	-0.6
	Zululand	2.8	3.3	2.9	0.1

Province	District	2019	2020	2021	Percentage point difference between 2019 and 2021
Limpopo	Capricorn	6.5	8.3	6.5	0
	Mopani	6	5.3	6.2	0.2
	Sekhukhune	7.9	7.5	5.3	-2.6
	Vhembe	13.9	10.1	8.5	-5.4
	Waterberg	7.9	6.9	8	0.1
Mpumalanga	Ehlanzeni	7.9	6.3	5.2	-2.7
	Gert Sibande	10.7	9.9	8	-2.7
	Nkangala	11.4	11.4	9.6	-1.8
North West	Bojanala Platinum	9	8.8	7.5	-1.5
	Dr Kenneth Kaunda	14.3	10.3	5.8	-8.5
	Ngaka Modiri Molema	9.6	8.7	8.7	-0.9
	Dr Ruth Segomotsi Mompati	13.7	12.9	9.2	-4.5
Northern Cape	Frances Baard	18	23.4	27.8	9.8
	John Taolo Gaetsewe	24.9	29.3	34	9.1
	Namakwa	9.4	16.5	17.7	8.3
	Pixley Ka Seme	13.8	23.1	23.4	9.6
	Zwelentlanga Fatman Mgcawu	12.9	18.9	21.2	8.3
Western Cape	Cape Town	16.8	18.5	24.8	8
	Cape Winelands	26.5	16.4	18.6	-7.9
	Central Karoo	11.6	11.5	18.8	7.2
	Garden Route	16	19.4	17.3	1.3
	Overberg	12.6	8.5	9.8	-2.8
	West Coast	10.4	12.5	17.2	6.8

Source: DHIS

Recommendations

- There is a need to focus root cause analyses and improvements on the lowest-performing districts in the country.
- Provinces should develop strategies to ensure a decrease in the DS-TB LTFU rate to meet the National TB Programme target equal to or less than 5%.
- The National Department of Health should prioritise provinces with the worst DS-TB LTFU rates and provinces should prioritise support to their districts with the worst DS-TB LTFU rates.
- The National Department of Health should facilitate sharing of good practices between districts to diffuse learning and enable improvement of poorly-performing districts.

Drug-susceptible TB client death rate

Key findings

- In 2021, the national drug-susceptible TB (DS-TB) client death rate was 7.7%.
- Limpopo has consistently reported the highest client death rates over the last three years in review, and the Western Cape has reported the lowest.
- The Eastern Cape and Free State reported increases in the death rate for the last year in review.
- The death rate varied from 3.0% in Cape Town (WC) to 16.7% in Capricorn (LP).
- Twenty-nine districts showed a decrease in the DS-TB death rate between 2020 and 2021.

Introduction

The drug-susceptible TB (DS-TB) client death rate measures the proportion of DS-TB clients who died during treatment. This applies to all DS-TB clients (new, re-treatment, other, pulmonary and extra-pulmonary). The death rate is understood to refer to clients who die while on DS-TB treatment. However, this does not imply that the

deaths are caused by TB.

There is no specific death rate target, but a DS-TB client death rate target equal to or less than 5% has been used in the past.

National and provincial overview

The national DS-TB client death rate was 7.7% in 2021, which was an improvement of 0.6% from 2020, but similar to the rate achieved in 2019 (7.9%) (Table 9). The lowest death rate was recorded in the Western Cape, at 3.9%, while the highest death rate was recorded in Limpopo,

at 13.3%. The Western Cape has consistently had the lowest rate over the past three years, while Limpopo has consistently had the highest rate. All provinces, except the Eastern Cape and Free State, showed decreases in the DS-TB client death rate between 2020 and 2021.

Table 9: Drug-susceptible TB client death rate by province, 2019–2021

	2019	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	7.7	7.7	7.8	0.1
Free State	11.4	12.6	12.9	0.3
Gauteng	7.4	9.2	9.0	-0.2
KwaZulu-Natal	7.5	8.0	7.6	-0.4
Limpopo	12.7	13.8	13.3	-0.5
Mpumalanga	9.0	10.5	9.2	-1.3
North West	9.6	10.3	8.8	-1.5
Northern Cape	7.8	8.4	8.3	-0.1
Western Cape	4.2	4.0	3.9	-0.1
South Africa	7.9	8.3	7.7	-0.6

Source: DHIS

District overview

The DS-TB client death rate in 2021 varied from 3.0% in Cape Town (WC) to 16.7% in Capricorn (LP) (Table 10). Five districts recorded DS-TB client death rates equal to or lower than 5%, these being Cape Town (3.0%), the Cape Winelands (4.2%), John Taolo Gaetsewe, West Coast and Overberg (all at 5.0%), with four of these being in the Western Cape and one (John Taolo Gaetsewe) being in

the Northern Cape. There were 16 districts with DS-TB client death rates greater than 10%. Five of these were in Limpopo and four in KwaZulu-Natal. Twenty-nine districts recorded decreases in the DS-TB client death rate between 2020 and 2021. The largest decrease was recorded in Amajuba (KZN) at 6.0 percentage points and the largest increase was recorded in Overberg (WC) at 2.1%.

Table 10: Drug-susceptible TB client death rate by district, 2019–2021

Province	District	2019	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	Buffalo City	6.1	6.9	7.9	1.0
	Sarah Baartman	6.7	6.7	7.5	0.8
	Amathole	8.0	7.7	8.7	1.0
	Chris Hani	9.9	9.2	8.8	-0.4
	Joe Gqabi	9.1	10.1	8.6	-1.5
	OR Tambo	6.3	7.4	7.0	-0.4
	Alfred Nzo	12.4	11.8	12.0	0.2
	Nelson Mandela Bay	7.1	6.6	6.7	0.1
Free State	Xhariep	11.4	12.0	10.9	-1.1
	Lejweleputswa	10.1	12.3	11.2	-1.1
	Thabo Mofutsanyana	13.1	13.7	12.8	-0.9
	Fezile Dabi	12.2	13.8	15.2	1.4
	Mangaung	10.7	11.8	13.6	1.8
Gauteng	Sedibeng	12.3	14.7	15.3	0.6
	West Rand	8.2	10.4	6.5	-3.9
	Ekurhuleni	7.1	8.3	7.5	-0.8
	Johannesburg	6.1	7.7	8.7	1.0
	Tshwane	7.9	10.0	9.8	-0.2
KwaZulu-Natal	Ugu	8.9	8.9	6.4	-2.5
	uMgungundlovu	7.4	8.0	7.6	-0.4
	uThukela	12.2	9.8	11.3	1.5
	uMzinyathi	13.9	15.7	13.5	-2.2
	Amajuba	14.1	12.8	6.8	-6.0
	Zululand	8.9	8.9	8.9	0.0
	uMkhanyakude	7.8	7.6	6.9	-0.7
	King Cetshwayo	9.7	11.0	12.0	1.0
	iLembe	6.5	8.6	7.5	-1.1
	Harry Gwala	9.1	10.2	10.6	0.4
	eThekweni	4.6	5.4	5.9	0.5
Limpopo	Mopani	14.3	13.7	11.6	-2.1
	Vhembe	9.9	13.6	13.6	0.0
	Capricorn	13.9	14.9	16.7	1.8
	Waterberg	11.1	13.2	12.1	-1.1
	Sekhukhune	14.1	13.3	11.8	-1.5

Province	District	2019	2020	2021	Percentage point difference between 2020 and 2021
Mpumalanga	Gert Sibande	9.4	10.9	8.2	-2.7
	Nkangala	9.3	9.7	9.3	-0.4
	Ehlanzeni	8.6	10.7	9.4	-1.3
North West	Bojanala Platinum	7.7	7.8	5.0	-2.8
	Ngaka Modiri Molema	7.7	7.0	8.1	1.1
	Dr Ruth Segomotsi Mompati	7.8	9.7	9.8	0.1
	Dr Kenneth Kaunda	8.4	8.4	9.6	1.2
Northern Cape	John Taolo Gaetsewe	7.3	8.2	7.4	-0.8
	Namakwa	10.7	12.1	9.5	-2.6
	Pixley Ka Seme	8.0	7.4	9.3	1.9
	Zwelentlanga Fatman Mgcawu	8.5	11.4	9.2	-2.2
	Frances Baard	10.4	10.0	7.1	-2.9
Western Cape	Cape Town	3.8	3.1	3.0	-0.1
	West Coast	4.7	5.3	5.0	-0.3
	Cape Winelands	3.9	4.0	4.2	0.2
	Overberg	3.9	2.9	5.0	2.1
	Garden Route	5.1	5.9	6.7	0.8
	Central Karoo	4.0	6.4	5.5	-0.9

Source: DHIS

Recommendations

- The National Department of Health should review good practices and other factors which may have influenced the DS-TB client death rate.
- Provinces and districts with high death rates need to investigate the reasons for this and take necessary action to reduce the death rate from DS-TB.

TB multidrug-resistant treatment success rate

Key findings

- There has been a steep drop in the multidrug-resistant-TB (MDR-TB) treatment success rate across the country of 10 percentage points on average nationally between 2020 and 2021.
- All the districts in Western Cape recorded large decreases in the MDR-TB treatment success rate from 2019. The reason might be poor data quality or incorrect recording of the TB data in general.
- The largest decreases in performance were noted in the Northern Cape, Western Cape and KwaZulu-Natal.
- No province was able to reach the national target of 70% treatment success rate in 2021.

Introduction

The multidrug-resistant TB (MDR-TB) treatment success rate measures the MDR-TB clients successfully completing treatment as a proportion of MDR-TB-confirmed clients started on treatment.

In 2021, the MDR-TB treatment success rate averaged 54.1% nationally, a steep drop of 10.0 percentage points from 64.1% in 2020, with decreases noted across all provinces in South Africa. The MDR-TB LTFU rate in 2020 was 16.5% and the death rate 16.7% in 2021. The lowest recorded MDR-TB treatment success rate across all

provinces was in the Western Cape at 43.4%, while the highest was 64.5% in the North West (Figure 7). The largest decreases in performance were noted in the Northern Cape (-13.3%), the Western Cape (-12.0%) and KwaZulu-Natal (-11.8%). The smallest decrease in the treatment success rate was in the North West (-2.9%) (Table 11). Again, no province was able to reach the national target of 70% treatment success, although Mpumalanga and KwaZulu-Natal came closest to it in 2020, with rates at 69.6% and 69.0% respectively.

Figure 7: TB MDR treatment success rate by province, 2021

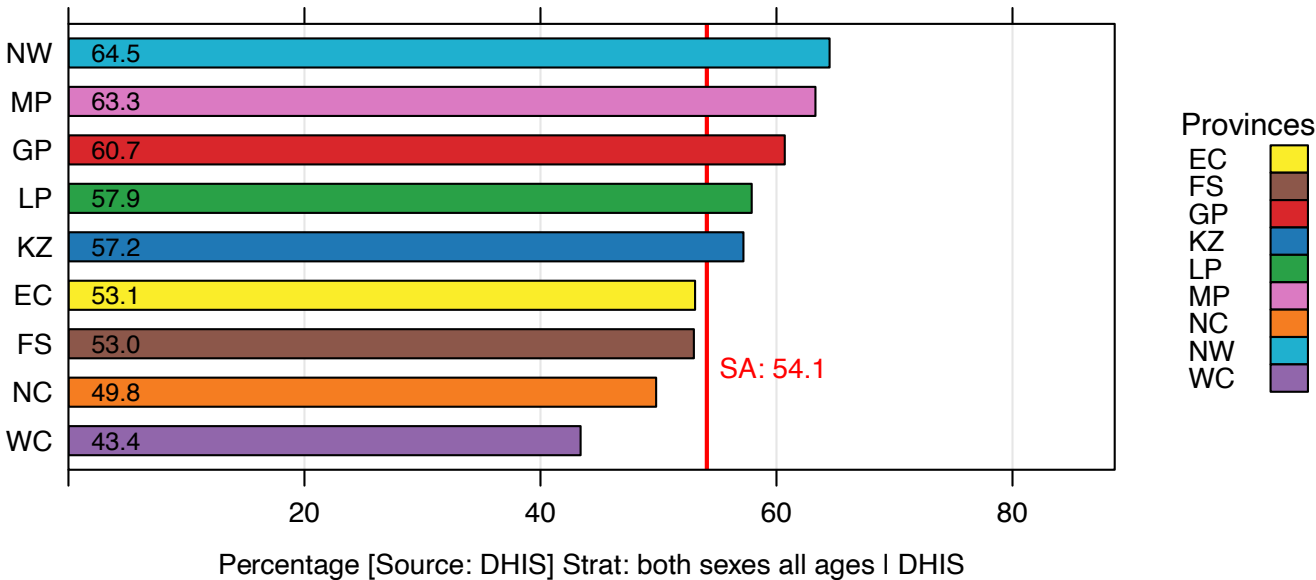


Table 11: TB MDR treatment success rate by province, 2020–2021

	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	62.3	53.1	-9.2
Free State	60.8	53.0	-7.8
Gauteng	66.4	60.7	-5.7
KwaZulu-Natal	69.0	57.2	-11.8
Limpopo	67.4	57.9	-9.5
Mpumalanga	69.6	63.3	-6.3
Northern Cape	63.1	49.8	-13.3
North West	67.4	64.5	-2.9
Western Cape	55.4	43.4	-12.0
South Africa	64.1	54.1	-10.0

Source: DHIS

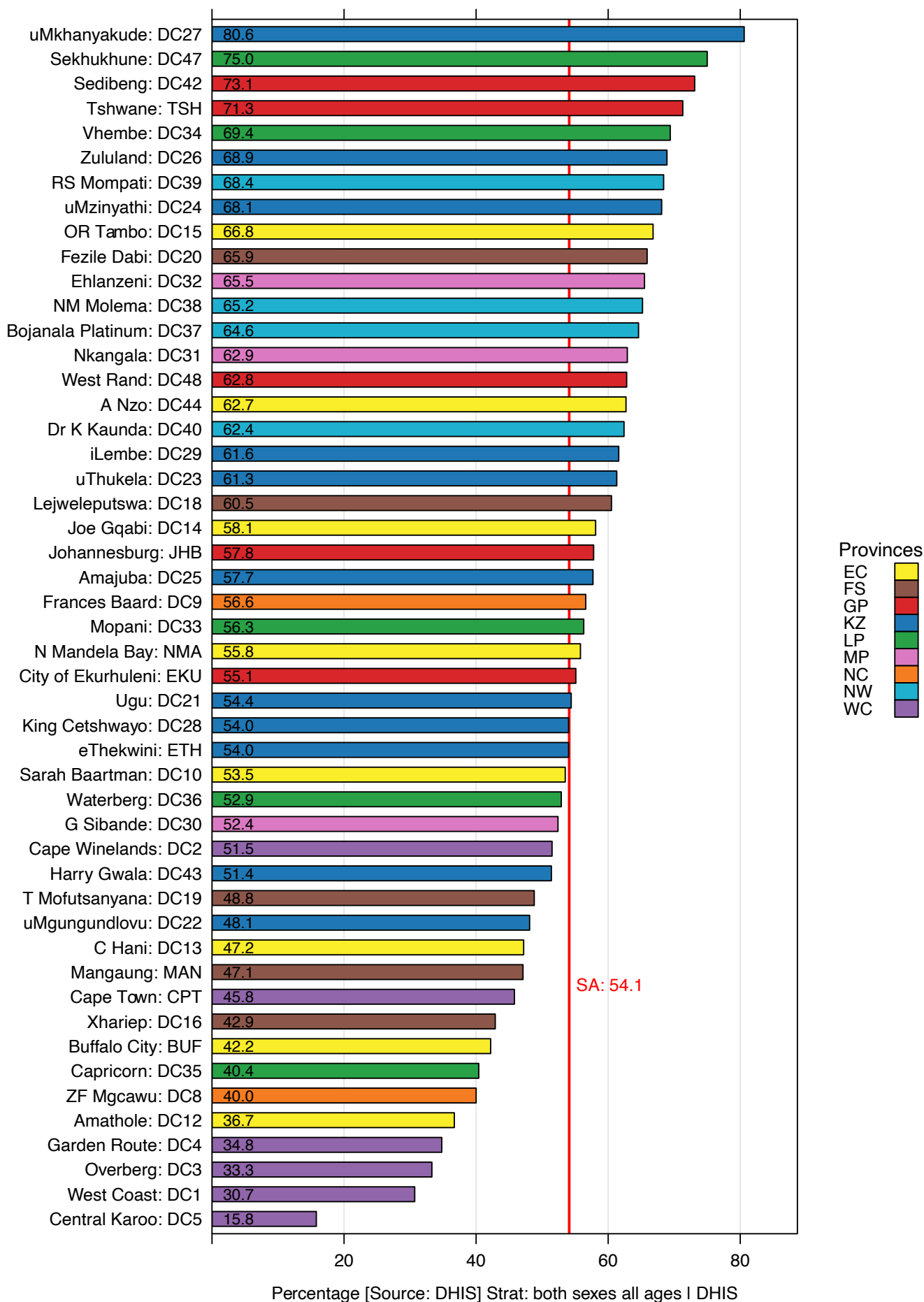
District overview

The range of performance for MDR-TB treatment success rates in 2021 for the different districts ranged from 15.8% for the Central Karoo (WC) to 80.6% in uMkhanyakude (KZN) (Figure 8). Fourteen districts reported rates below 50%, including five of the six districts in the Western Cape. Only four districts reported rates above the national target of 70%, these being uMkhanyakude (80.6%) in KwaZulu-Natal, Sekhukhune (75.0%) in Limpopo, and Sedibeng (73.1%) and Tshwane (71.3%) in Gauteng.

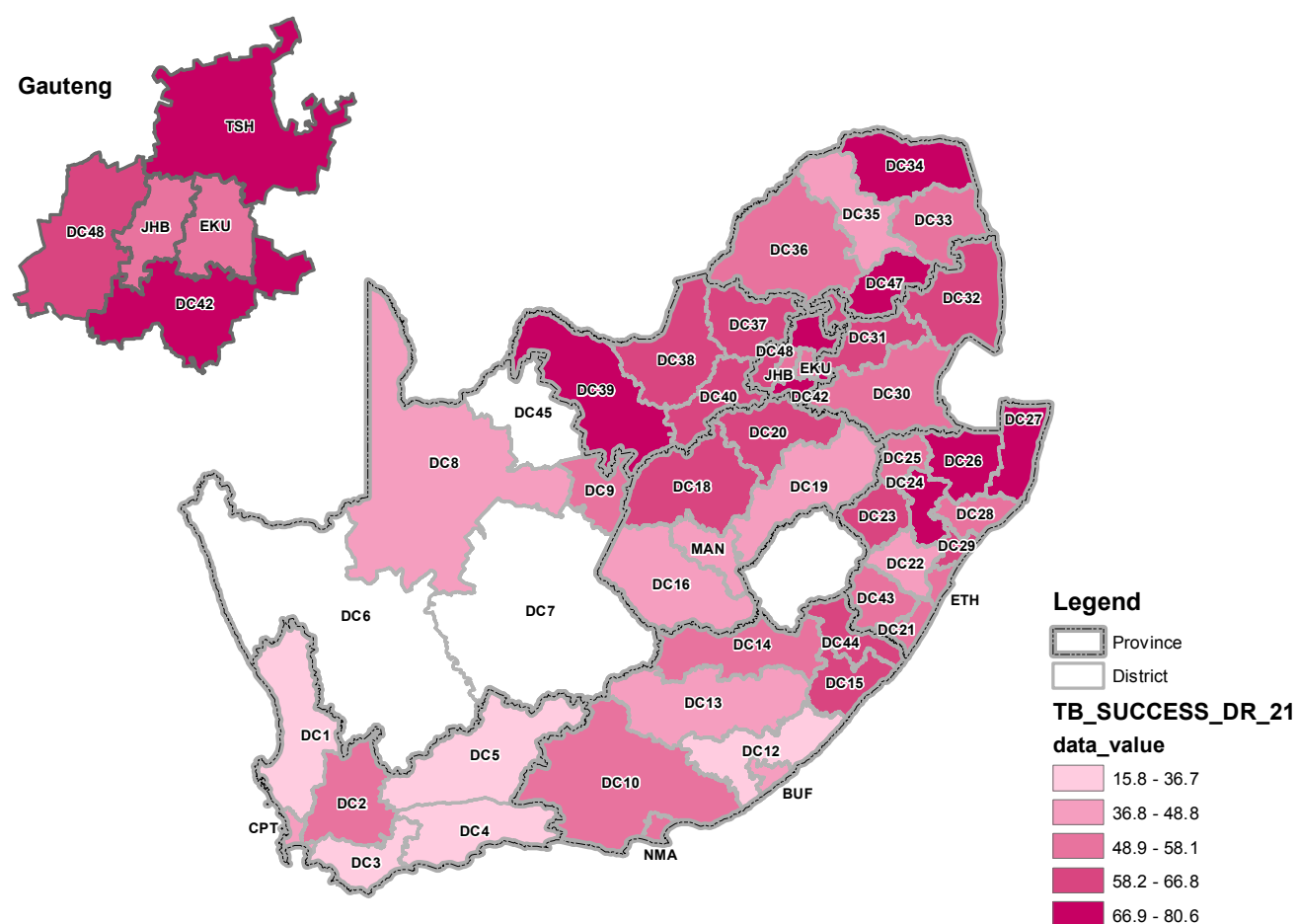
Three districts in the Northern Cape still refer MDR-TB clients to neighbouring districts and, as such, do not

report any MDR-TB treatment data. These districts are John Taolo Gaetsewe, Namakwa and Pixley Ka Seme (Map 4). Ten districts reported an improvement in the MDR-TB treatment success rate between 2020 and 2021, with Tshwane district showing the greatest improvement of 10.7 percentage points. Conversely, a large majority (39) of districts reported a deterioration in the MDR-TB treatment success rate between 2020 and 2021. Four districts recorded decreases over 20%: Central Karoo (-25.4%), Overberg (-23.8%) and West Coast (-23.8%) in the Western Cape, and King Cetshwayo (-21.5%) in KwaZulu-Natal (Table 12).

Figure 8: TB MDR treatment success rate by district, 2021



Map 4: TB MDR treatment success rate by district, 2021



Source: DHIS

Table 12: TB MDR treatment success rate by district, 2020–2021

Province	District	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	Buffalo City	54.4	42.2	-12.2
	Sarah Baartman	67.5	53.5	-14.0
	Amathole	42.9	36.7	-6.2
	Chris Hani	63.2	47.2	-16.0
	Joe Gqabi	50.0	58.1	8.1
	OR Tambo	67.7	66.8	-0.9
	Alfred Nzo	65.9	62.7	-3.2
	Nelson Mandela Bay	68.0	55.8	-12.2
Free State	Xhariep	40.0	42.9	2.9
	Lejweleputswa	70.0	60.5	-9.5
	Thabo Mofutsanyana	61.1	48.8	-12.3
	Fezile Dabi	82.2	65.9	-16.3
	Mangaung	51.8	47.1	-4.7
Gauteng	Sedibeng	63.6	73.1	9.5
	West Rand	67.3	62.8	-4.5
	Ekurhuleni	52.5	55.1	2.6
	Johannesburg	77.0	57.8	-19.2
	Tshwane	60.6	71.3	10.7
KwaZulu-Natal	Ugu	69.7	54.4	-15.3
	uMgungundlovu	67.4	48.1	-19.3
	uThukela	56.9	61.3	4.4
	uMzinyathi	62.3	68.1	5.8
	Amajuba	63.4	57.7	-5.7
	Zululand	78.1	68.9	-9.2
	uMkhanyakude	80.0	80.6	0.6
	King Cetshwayo	75.5	54.0	-21.5
	iLembe	66.7	61.6	-5.1
	Harry Gwala	62.2	51.4	-10.8
	eThekweni	67.1	54.0	-13.1
Limpopo	Mopani	67.3	56.3	-11.0
	Vhembe	75.6	69.4	-6.2
	Capricorn	55.0	40.4	-14.6
	Waterberg	63.6	52.9	-10.7
	Sekhukhune	80.0	75.0	-5.0
Mpumalanga	Gert Sibande	61.5	52.4	-9.1
	Nkangala	66.1	62.9	-3.2
	Ehlanzeni	74.1	65.5	-8.6
North West	Bojanala Platinum	76.4	64.6	-11.8
	Ngaka Modiri Molema	71.2	65.2	-6.0
	Dr Ruth Segomotsi Mompati	67.8	68.4	0.6
	Dr Kenneth Kaunda	59.8	62.4	2.6

Province	District	2020	2021	Percentage point difference between 2020 and 2021
Northern Cape	John Taolo Gaetsewe			
	Namakwa			
	Pixley Ka Seme			
	Zwelentlanga Fatman Mgcawu	54.7	40.0	-14.7
	Frances Baard	68.8	56.6	-12.2
Western Cape	Cape Town	55.6	45.8	-9.8
	West Coast	54.5	30.7	-23.8
	Cape Winelands	60.3	51.5	-8.8
	Overberg	57.1	33.3	-23.8
	Garden Route	50.7	34.8	-15.9
	Central Karoo	41.2	15.8	-25.4

Source: DHIS

Recommendations

- Districts which have performed poorly and which have registered large decreases in MDR-TB treatment success rates should be thoroughly investigated to understand the reason for these sharp declines in performance. The Western Cape, in general, requires attention to reverse this alarming trend.
- Documentation of patient information should be improved and data management needs to be prioritised.

Extensively drug-resistant TB treatment success rate

Key findings

- The national extensively drug-resistant TB (XDR-TB) treatment success rate decreased from 53.7% in 2020 to 49.1% in 2021.
- The rate varied between provinces, from 28.6% in the Free State to 77.8% in Gauteng.
- Seven districts had a 100% treatment success rate and seven districts had a 0% treatment success rate.
- Free State and Gauteng reported the largest improvement in XDR-TB treatment success rates between 2020 and 2021. Western Cape reported the worst deterioration over the same period.
- Inaccurate or incomplete data in the North West has resulted in no XDR-TB treatment success rate indicators being available for the last two years for the province.

Introduction

The extensively drug-resistant TB (XDR-TB) treatment success rate measures the number of XDR-TB clients successfully completing treatment as a proportion of XDR-TB-confirmed clients started on treatment.

National and provincial overview

In 2021, the national XDR-TB treatment success rate decreased to 49.1% from 53.7% in 2020 (Figure 9 and Table 13). The XDR-TB LTFU rate in 2020 was 17.8% and the death rate 16.5%. Provincially, there was large variation, with the range of the indicator between provinces varying between 28.6% in the Free State and 77.8% in Gauteng. The Free State also reported the greatest improvement in the indicator between 2020 and 2021, as the treatment success rate in 2020 for the province was 0.0%. Gauteng

reported the second largest increase in XDR-TB treatment success rates between 2020 and 2021, at 16.9%. Conversely, the province with the largest decrease in this indicator was the Western Cape, which reported a 30.6 percentage point drop in its XDR-TB treatment success rate. Inaccurate or incomplete data in the North West has resulted in no XDR-TB treatment success rate indicators being available for the last two years for the province.

Figure 9: TB extensively drug-resistant treatment success rate by province, 2021

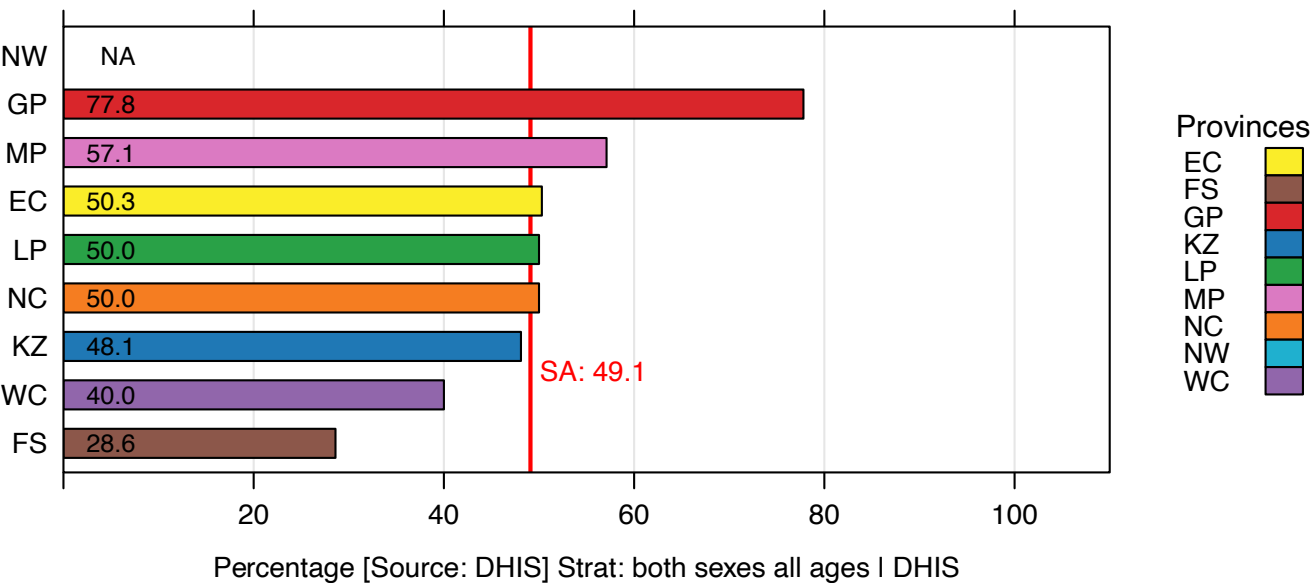


Table 13: TB MDR treatment success rate by province, 2020–2021

	2018	2019	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	57.9	52.1	51.6	50.3	-1.3
Free State	22.7	46.2	0.0	28.6	28.6
Gauteng	72.0	51.7	60.9	77.8	16.9
KwaZulu-Natal	73.0	55.8	54.9	48.1	-6.8
Limpopo	75.0	50.0	0.0	50.0	50.0
Mpumalanga	41.2	25.0	50.0	57.1	7.1
Northern Cape	45.5	47.6	42.9	50.0	7.1
North West	66.7	0.0			0.0
Western Cape	54.0	41.9	70.6	40.0	-30.6
South Africa	58.2	49.9	53.7	49.1	-4.6

Source: DHIS

District overview

In 2021, seven districts had a 100% XDR-TB treatment success rate (Figure 10). These were Waterberg (LP), Joe Gqabi (EC), Tshwane (GP), Ekurhuleni (GP), Nkangala (MP), OR Tambo (EC) and uMgungundlovu (KZN). Seven districts reported an XDR-TB treatment success rate of 0%, these being the districts of Garden Route (WC), uMzinyathi, Ugu, Zululand (both KZN), Vhembe (LP), Mangaung (FS) and Alfred Nzo (EC). The lowest ranked districts were King Cetshwayo (KZN) (14.3%), followed by Cape Winelands

(WC), iLembe (KZN) and Chris Hani (EC) (each with 25.0%). The districts with the greatest improvement between 2020 and 2021 (100%) were Joe Gqabi (EC), Waterberg (LP), and Ekurhuleni and Tshwane (both GP). The districts with the worst deterioration in the country during the same time period (-100%) were Amathole (EC), and the Garden Route and Overberg (both WC) (Table 14). However, due to the small numbers of cases diagnosed with XDR-TB, the information should be interpreted with caution.

Figure 10: Extensively drug-resistant TB treatment success rate by district, 2021

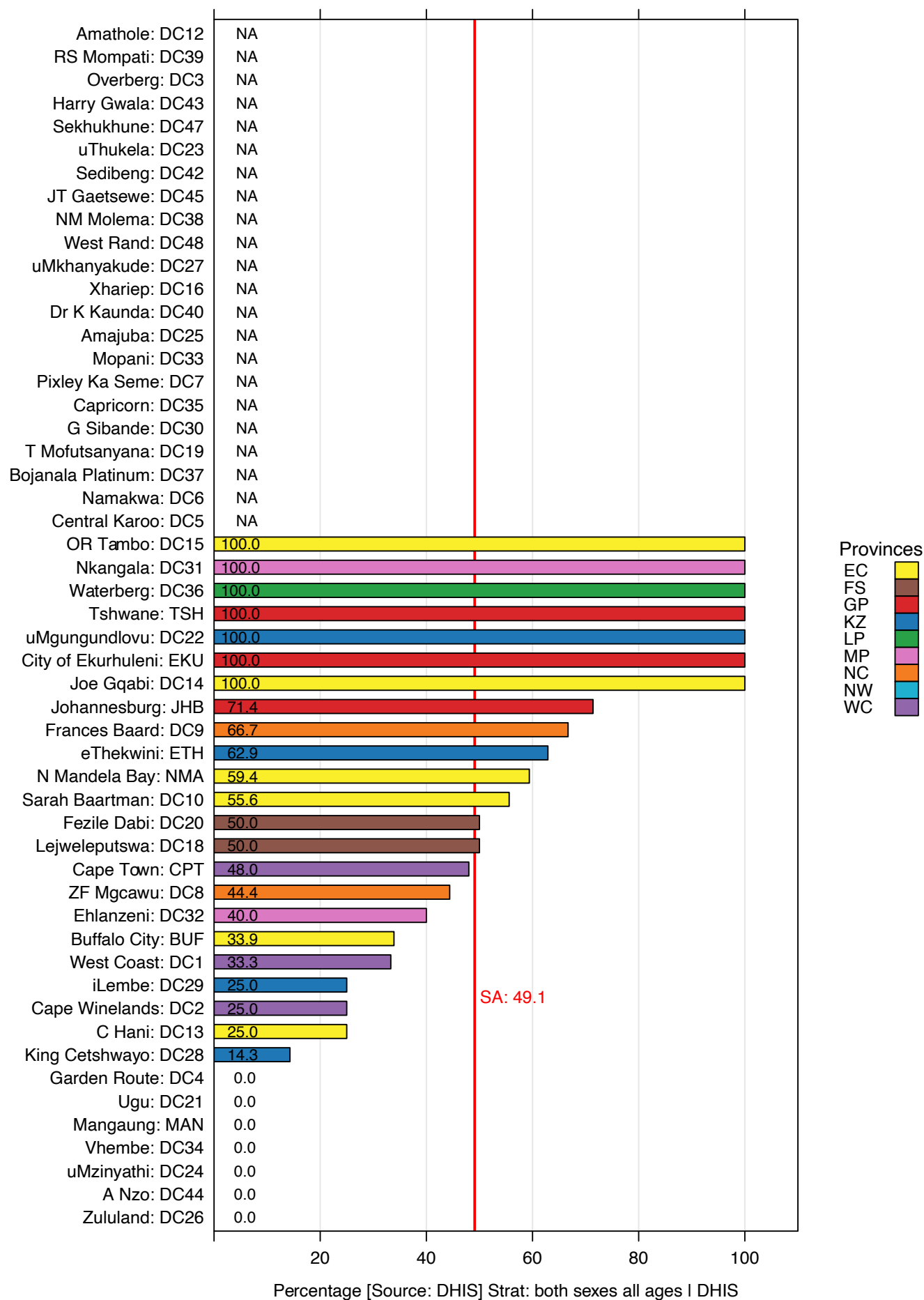


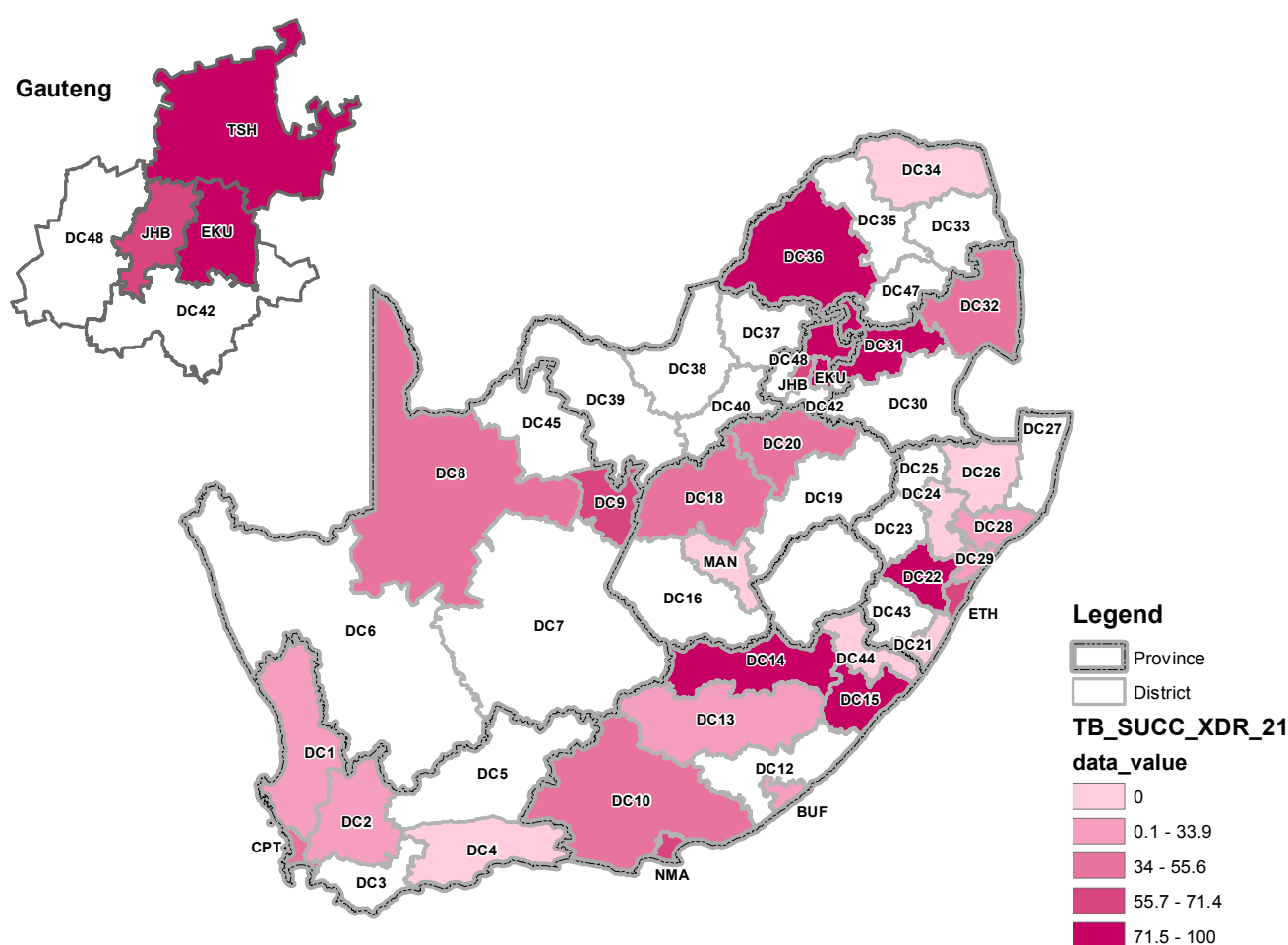
Table 14: XDR-TB treatment success rate by district, 2018–2021

Province	District	2018	2019	2020	2021	Percentage point difference between 2020 and 2021
Eastern Cape	Buffalo City	54.5	60.2	55.0	33.9	-21.1
	Sarah Baartman			54.5	55.6	1.1
	Amathole		100.0	100.0		-100.0
	Chris Hani		0.0	50.0	25.0	-25.0
	Joe Gqabi			0.0	100.0	100.0
	OR Tambo	33.3	66.7	57.1	100.0	42.9
	Alfred Nzo		200.0		0.0	
	Nelson Mandela Bay	61.5	66.7	51.6	59.4	7.8
Free State	Xhariep	100.0				
	Lejweleputswa			0.0	50.0	50.0
	Thabo Mofutsanyana	100.0	0.0			
	Fezile Dabi	40.0	66.7	100.0	50.0	-50.0
	Mangaung	6.7	40.0	0.0	0.0	0.0
Gauteng	Sedibeng	-	-	-	-	-
	West Rand	-	-	-	-	-
	Ekurhuleni	0.0	100.0	0.0	100.0	100.0
	Johannesburg	85.7	60.7	77.8	71.4	-6.4
	Tshwane	0.0		25.0	100.0	75.0
KwaZulu-Natal	Ugu	100.0	60.0	50.0	0.0	-50.0
	uMgungundlovu	16.7	50.0	100.0	100.0	0.0
	uThukela	0.0		0.0		0.0
	uMzinyathi	100.0	25.0	50.0	0.0	-50.0
	Amajuba	0.0	100.0	50.0		
	Zululand	100.0	100.0		0.0	0.0
	uMkhanyakude	62.5	0.0	66.7		
	King Cetshwayo	100.0	100.0	0.0	14.3	14.3
	iLembe	75.0	75.0	66.7	25.0	-41.7
	Harry Gwala	100.0	100.0			
	eThekweni	77.3	81.4	58.6	62.9	4.3
Limpopo	Mopani	-	-	-	-	-
	Vhembe				0.0	0.0
	Capricorn	-	-	-	-	-
	Waterberg	75.0	0.0	0.0	100.0	100.0
	Sekhukhune	-	-	-	-	-
Mpumalanga	Gert Sibande	-	-	-	-	-
	Nkangala	50.0	53.8	75.0	100.0	25.0
	Ehlanzeni	20.0	0.0	0.0	40.0	40.0
North West	Bojanala Platinum	-	-	-	-	-
	Ngaka Modiri Molema	100.0				0.0
	Dr Ruth Segomotsi Mompati	0.0				0.0
	Dr Kenneth Kaunda	100.0	100.0			0.0

Province	District	2018	2019	2020	2021	Percentage point difference between 2020 and 2021
Northern Cape	John Taolo Gaetsewe	-	-	-	-	-
	Namakwa	-	-	-	-	-
	Pixley Ka Seme	-	-	-	-	-
	Zwelentlanga Fatman Mgcawu	28.6	52.6	41.7	44.4	2.7
	Frances Baard	75.0	0.0	50.0	66.7	16.7
Western Cape	Cape Town	52.0	51.1	77.3	48.0	-29.3
	West Coast	0.0	100.0	0.0	33.3	33.3
	Cape Winelands	75.0	150.0	66.7	25.0	-41.7
	Overberg	100.0	100.0	100.0		-100.0
	Garden Route	50.0	28.6	100.0	0.0	-100.0
	Central Karoo	-	-	-	-	-

Source: DHIS

Map 5: XDR-TB treatment success rate by district, 2018



Source: DHIS

Recommendations

- There is a need for intensive case tracking and follow-up of cases on XDR-TB treatment.
- Good practices should be shared between provinces and districts within provinces.
- Documentation of patient information should be improved, and data management needs to be prioritised.

2.2 HIV and AIDS

Tinyiko Khosa and Joslyn Walker

Key findings

- In March 2023, the total number of people living with HIV (PLHIV) was 7 975 945 and 5 437 920 (68.2%) were on antiretroviral therapy (ART).
- By March 2023, none of the 52 districts had reached the second 95-95-95 UNAIDS target.
- KwaZulu-Natal was the best performing province with the clients remaining on ART rate at 76.0% while the Western Cape was the poorest performing province with a rate of 54.4%.
- The clients remaining on ART rate ranged from 90.7% in Xhariep district (Free State) to 38.1% in West Coast district (Western Cape), a 2.4-fold difference.
- Twenty-four districts had a decline in the clients remaining on ART rate between March 2019 and March 2022, with eight continuing the decline into March 2023. Four districts had a decline in the rate of more than 20 percentage points.
- The national ART viral load suppressed rate for Quarter 1 of 2023 was 90.0% which is an increase of 2.5 percentage points from 2020 Quarter 1.
- In 2023 Quarter 1 the adult viral load suppression (VLS) rate was 90.6% and the child VLS 60.1%. The child VLS rate declined by 7.9 percentage points from 2019 Quarter 1.
- Three provinces had an ART client VLS rate above the national average of 90.0% in 2023 Quarter 1. They were the Western Cape (93.0%), Mpumalanga and KwaZulu-Natal (91.0% each).
- Among the districts, the ART client VLS rate ranged from 100% in Namakwa (NC) to 79.0% in Central Karoo (WC). Namakwa (NC) and Amajuba (KZN) reached the 95% third UNAIDS 95-95-95 target. Thirty-one districts (59.6%) had an ART client viral load suppressed rate of 90.0% and above.
- In 2023 Quarter 1, four provinces had an adult with VLS rate at 12 months above the national average of 90.6% namely, Western Cape at 93.4%, Mpumalanga at 91.7%, KwaZulu-Natal at 91.4% and Free State at 91.2%.
- Four provinces had a child with viral load suppressed rate at 12 months in 2023 Quarter 1 above the national average of 60.1%. However, only the Western Cape (71.0%) reported a child VLS rate above 70% and performed the best among the provinces. Northern Cape had the lowest rate at only 50.0%.
- Namakwa (NC) had the highest adult with viral load suppressed rate at 12 months in 2023 Quarter 1 at 100% and Central Karoo (WC) the lowest at 78.9%. Only two districts reached the third UNAIDS 95-95-95 target of 95%, Namakwa (NC) and Amajuba (KZN).
- In 2023 Quarter 1, eight districts had a child with VLS rate below 50%. Four districts reached the third UNAIDS 95-95-95 target of 95% for the child with VLS rate of 100%, namely West Coast (WC), Pixley Ka Seme (NC), Ugu (KZN) and Fezile Dabi (FS).

Introduction

The two biggest challenges of the South African human immunodeficiency virus (HIV) programme are sub-optimal retention in the first 12 months of treatment and sub-optimal viral load (VL) suppression. This massive health system burden in relation to the high number of people living with HIV (PLHIV) or at risk of acquiring HIV has resulted in development and implementation of a range of responsive tools and standard operating procedures (SOPs) for comprehensive management of HIV.

Access to antiretroviral therapy (ART) has expanded immensely in South Africa since early 2000; ranging from 3 261 people on ART in 2000 to 5 588 062 in 2021.¹ Estimated ART coverage among children has also increased significantly, but at a slower rate than the adult population. ART coverage in children has increased from 4% in 2005 to 54% at the end of 2022.²

Consequently, South Africa has the largest reported number of people receiving ART in the world. This is due to the leadership that has forged strong political commitment to investing in evidence-based HIV prevention and treatment programmes.

In 2022, approximately 8 million people in South Africa were living with HIV. The National Strategic Plan (NSP) has set a goal that 95% of PLHIV know their status, 95% of those diagnosed are on treatment and retained in care, and 95% achieve long-term viral suppression.³ This aligns with the United Nations Programme on human immunodeficiency virus/acquired immune deficiency syndrome (UNAIDS) 95-95-95 targets and global objectives. Progress towards

this goal in South Africa is mixed. The Thembisa model⁴ indicates that progress towards the first UNAIDS target (95% of HIV-positive individuals diagnosed by 2025) is good. This progress has been relatively uniform across provinces, with most provinces at around 93%. However, progress towards the second UNAIDS target (95% of HIV diagnosed individuals on ART) is of concern as the third 95 (95% of ART patients are virally suppressed) depends on the second 95 through viral load completion.

Viral load (VL) testing is the gold standard for monitoring the response to HIV ART with the goal of durable suppression of viraemia to promote health and longevity, and decrease the risk of transmission.

Globally, HIV viral load suppression (VLS) is defined as VL less than 1 000 copies per millilitre (ml), which measures the effectiveness of ART. The ART client VLS rate monitors the proportion of documented VL results from clients who have been on ART for at least 12 months with a suppressed VL. The VL threshold of less than 400 copies per ml was used as per 2017 National Indicator Data Set (NIDS).⁷ However, the 2023 ART clinical guidelines for management of HIV in Adults, Pregnancy and Breastfeeding, Adolescents, children, infant and neonates¹¹ stipulates a viral suppression of less than 50 copies per ml. These changes have been introduced to respond to low level viraemia that may contribute to continued new infections and poorer outcomes for patients on ART. This chapter reflects on the ART rate and VLS rates across South Africa as indicators of success of the HIV programme.

Clients remaining on antiretroviral therapy rate

The clients remaining on ART rate is defined as the percentage of people living with HIV currently receiving ART, among the estimated number of adults and children living with HIV. The numerator is the total clients remaining on ART at the end of the month and the denominator is the estimated number of PLHIV.

The Global Health Sector Strategies (GHSS)⁵ on HIV, viral hepatitis and sexually transmitted infections for the period 2022–2030 promote disease-specific goals to end,

respectively, AIDS and the epidemics of viral hepatitis and sexually transmitted infections by 2030. This includes reducing the number of people newly infected with HIV per 1 000 uninfected population to 0.05 by 2025, and to 0.025 by 2030.

The infectious disease control category of universal health coverage index has one indicator to monitor ART treatment, namely the percentage of people with HIV receiving ART.

¹World Health Organization. HIV – Reported number of people receiving antiretroviral therapy. World Health Organization. URL: <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/reported-number-of-people-receiving-antiretroviral-therapy>. Accessed [22 November 2023].

²World Health Organization. HIV – Estimated antiretroviral therapy coverage among children. World Health Organization. URL: <https://www.who.int/data/gho/data/indicators/indicator-details/GHO/estimated-antiretroviral-therapy-coverage-among-children>. Accessed [22 November 2023].

³National Department of Health. National Strategic Plan for HIV, TB and STIs 2023–2028. Pretoria: NDoH; 2023

⁴Johnson LF, Dorrington RE. Modelling the impact of HIV in South Africa's provinces: 2023 update. Cape Town: Centre for Infectious Disease Epidemiology and Research, University of Cape Town; 2023.

⁵World Health Organization. URL: <https://www.who.int/publications/i/item/9789240053779>.

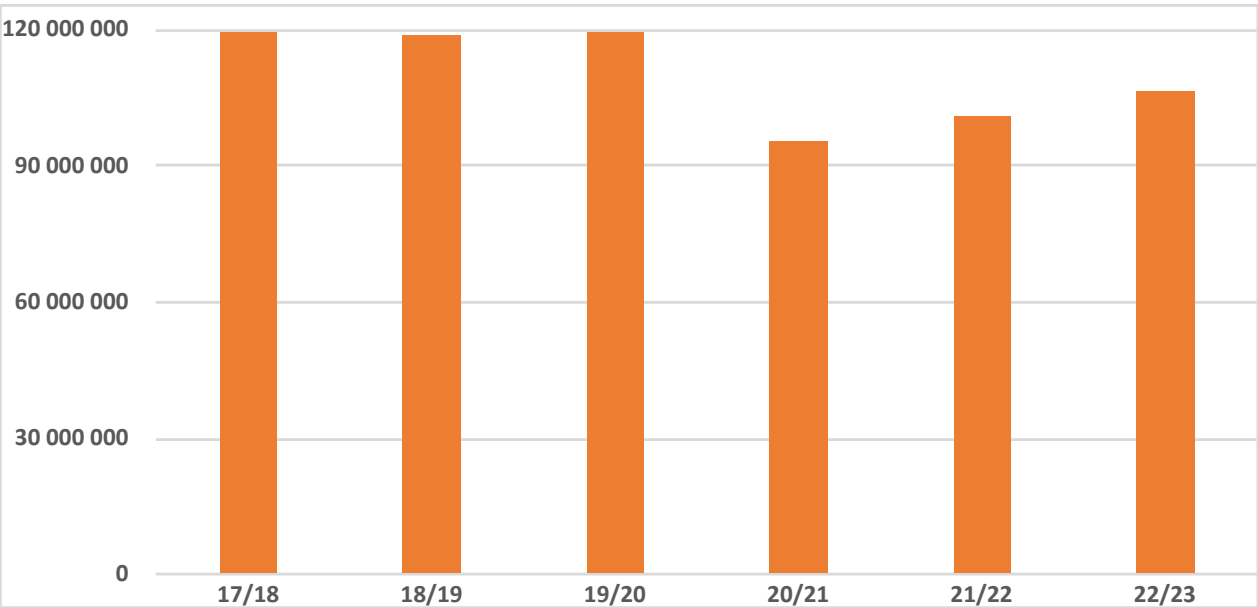
National overview

Table 1 shows that the national clients remaining on ART rate for the period March 2021 to March 2023 remained relatively stable around 68%.

The slight decline in the March 2022 rate to 67.7% could be partly attributed to the effect of the COVID-19 pandemic,

and is reflected in a reduced headcount in all facilities (Figure 1). According to DHIS, there were 7 975 945 total number of PLHIV at the end of March 2023. Of these 5 437 920 were total clients remaining on ART, reflecting a rate of 68.2%. This leaves a gap of 26.8% to reach the UNAIDS second 95 target.

Figure 1: PHC Headcount 2017/18 - 2022/23



Source: DHIS

The introduction of the 2023 ART Clinical Guidelines⁶ indicates a more patient-centred focus with emphasis on client retention and reflects the value of the new regimens with their associated speed to viral load suppression. This

will narrow the gap of the second UNAIDS target (95% of HIV diagnosed individuals on ART) and ultimately the gap to the third 95%.

Provincial overview

None of the nine provinces reached the second 95-95-95 UNAIDS target. In March 2023, the clients remaining on ART rate among the provinces ranged from 76.0% in KwaZulu-Natal (KZN) to 54.4% in the Western Cape (WC) (Figure 1).

Three provinces, KZN, Free State (FS) and Mpumalanga (MP), have been consistent in recording a rate of clients remaining on ART that is above the national average from March 2021 to March 2023.

⁶National Department of Health. 2023 ART Clinical Guidelines for the Management of HIV in Adults, Pregnancy and Breastfeeding, Adolescents, Children, Infants and Neonates. Pretoria: NDoH; 2023.

Figure 2: Clients remaining on ART by province, March 2023

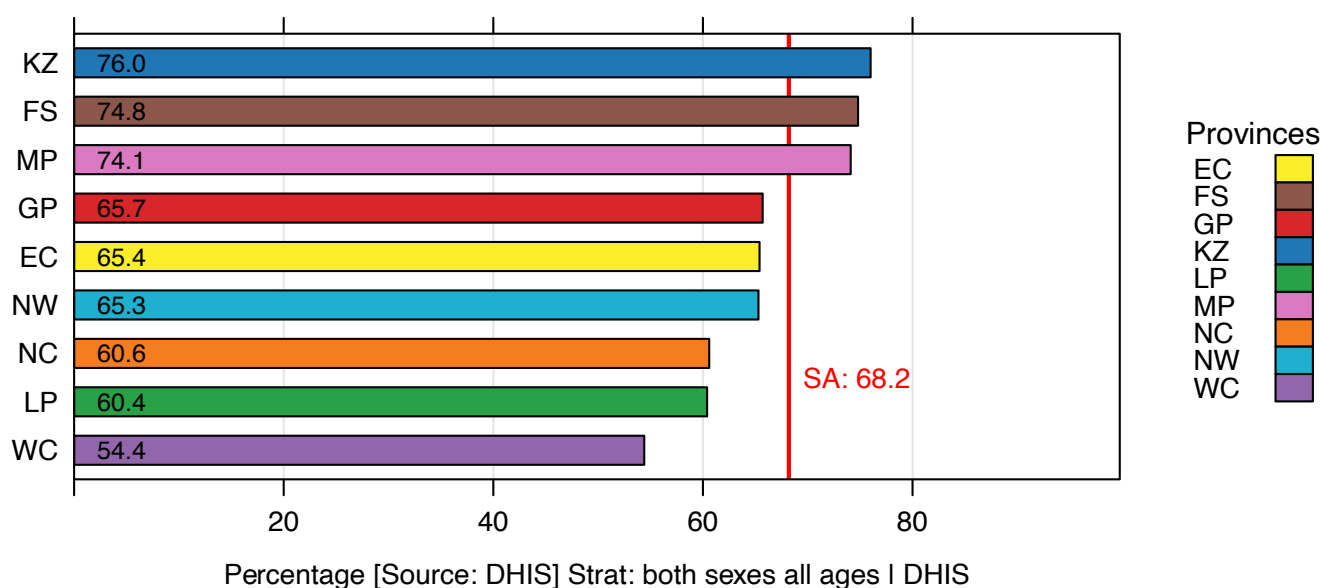


Table 1 indicates that four provinces recorded an increase in the ART rate in this period, namely FS (+2.9%), Gauteng (+2.6%), Northern Cape (+2.2%) and Eastern Cape (+2%). Five provinces had a decrease in the rate between March 2021 and March 2023. Western Cape and Limpopo (LP)

recorded the highest decline of 5.7 and 5.9 percentage points respectively. Despite KZN also recording a decline in ART rate (-2.2%), they remain the province with the highest ART rate at 76%.

Table 1: Total number of people living with HIV, total number of clients on ART and clients remaining on ART rate, March 2021–March 2023

	Total living with HIV			Total clients remaining on ART			Client remaining on ART rate		
	Mar 2021	Mar 2022	Mar 2023	Mar 2021	Mar 2022	Mar 2023	Mar 2021	Mar 2022	Mar 2023
Eastern Cape	857 315	865 925	908 742	543 572	567 839	594 015	63.4	65.6	65.4
Free State	413 274	404 647	418 905	296 971	306 397	313 273	71.9	75.7	74.8
Gauteng	1 801 439	1 885 857	1 866 926	1 136 662	1 180 097	1 226 382	63.1	62.6	65.7
KwaZulu-Natal	1 928 321	1 986 692	2 053 812	1 508 336	1 541 952	1 561 290	78.2	77.6	76.0
Limpopo	594 954	695 319	713 162	394 335	410 881	430 632	66.3	59.1	60.4
Mpumalanga	709 537	748 510	759 726	536 165	549 547	563 135	75.6	73.4	74.1
Northern Cape	106 905	108 236	113 613	62 471	61 326	68 863	58.4	56.7	60.6
North West	516 920	533 458	549 157	339 672	345 780	358 482	65.7	64.8	65.3
Western Cape	497 783	560 900	591 902	299 357	308 008	321 841	60.1	54.9	54.4
South Africa	7 426 448	7 789 544	7 975 945	5 117 541	5 271 827	5 437 913	68.9	67.7	68.2

Source: DHIS

Despite the decline in the ART rate when measured against total PLHIV, all provinces recorded a real increase in the total number of people on ART with a total increase of 640 744 people on treatment in March 2023 when compared to March 2021. The greatest increase was recorded in

Gauteng with a growth of 46 291 and second in the Eastern Cape (26 176). Although the greatest percentage growth in people on ART was in the Northern Cape with a 12.3% growth in people on ART. This is illustrated in Table 2.

Table 2: Total number of clients on ART and percentage difference, March 2022–March 2023

	Total clients remaining on ART at end of March 2022	Total clients remaining on ART at end of March 2023	Percentage difference between 2022 and 2023
EC	567 839	594 015	4,6
FS	306 397	313 273	2,2
GP	1 180 097	1 226 388	3,9
KZ	1 541 952	1 561 291	1,3
LP	410 881	430 632	4,8
MP	549 547	563 135	2,5
NC	61 326	68 863	12,3
NW	345 780	358 482	3,7
WC	308 008	321 841	4,5
ZA	5 271 827	5 437 920	3,2

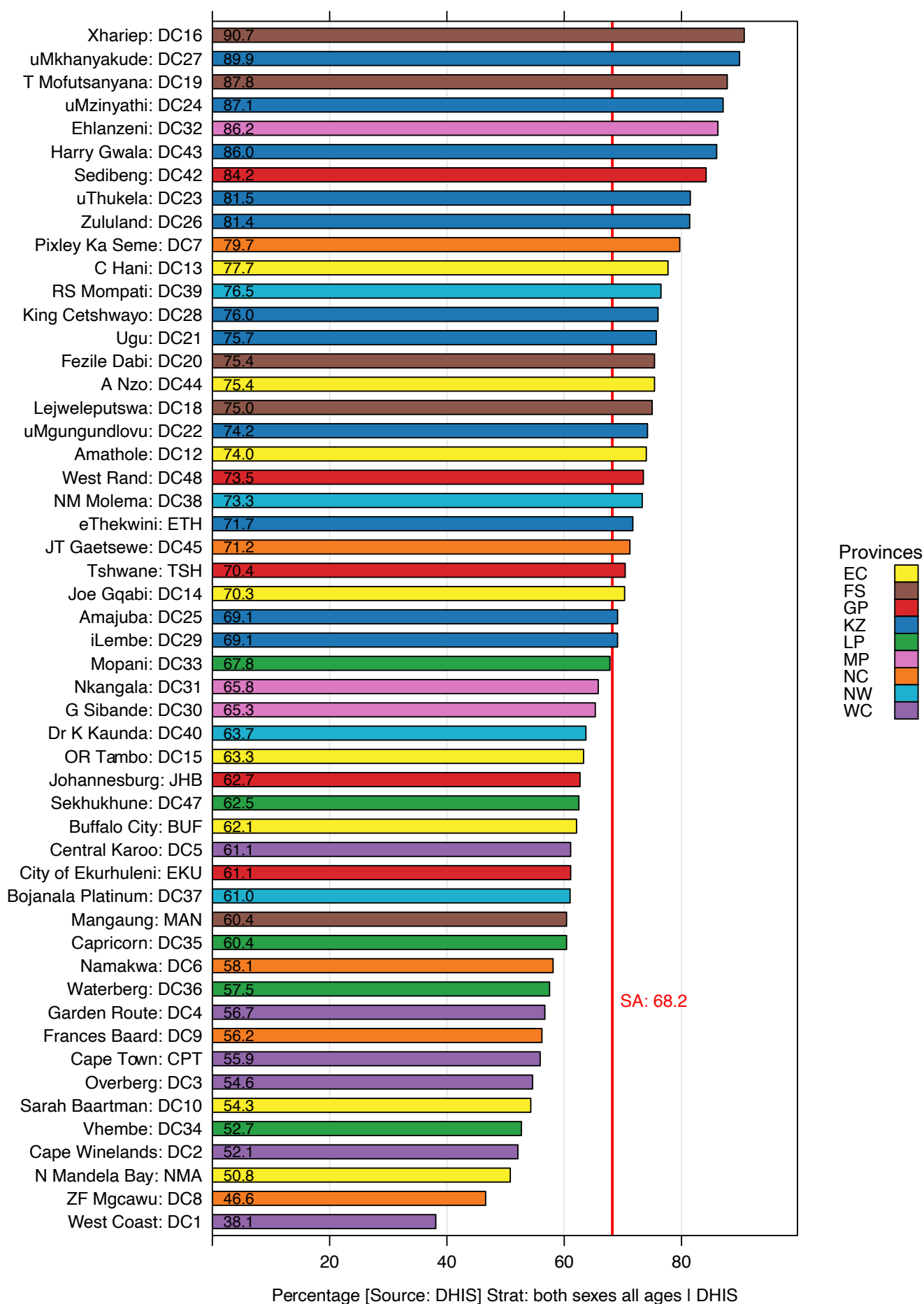
District overview

In March 2023, none of the 52 districts had reached the second 95-95-95 UNAIDS target. Twenty-seven districts recorded an ART rate above the national average of 68.2%, with the district with the highest ART rate being Xhariep (FS) with 90.7% of PLHIV recorded to be on ART. West Coast (WC) recorded the lowest ART rate at 38.1%, a 2.4-

fold difference (Figure 2 and Map 1).

Of the twenty-five districts recording ART rate below the national average, six are from the Western Cape, five from Limpopo, four from the Eastern Cape, three from the Northern Cape, two each in Mpumalanga, North West and Gauteng, and one district is in the Free State.

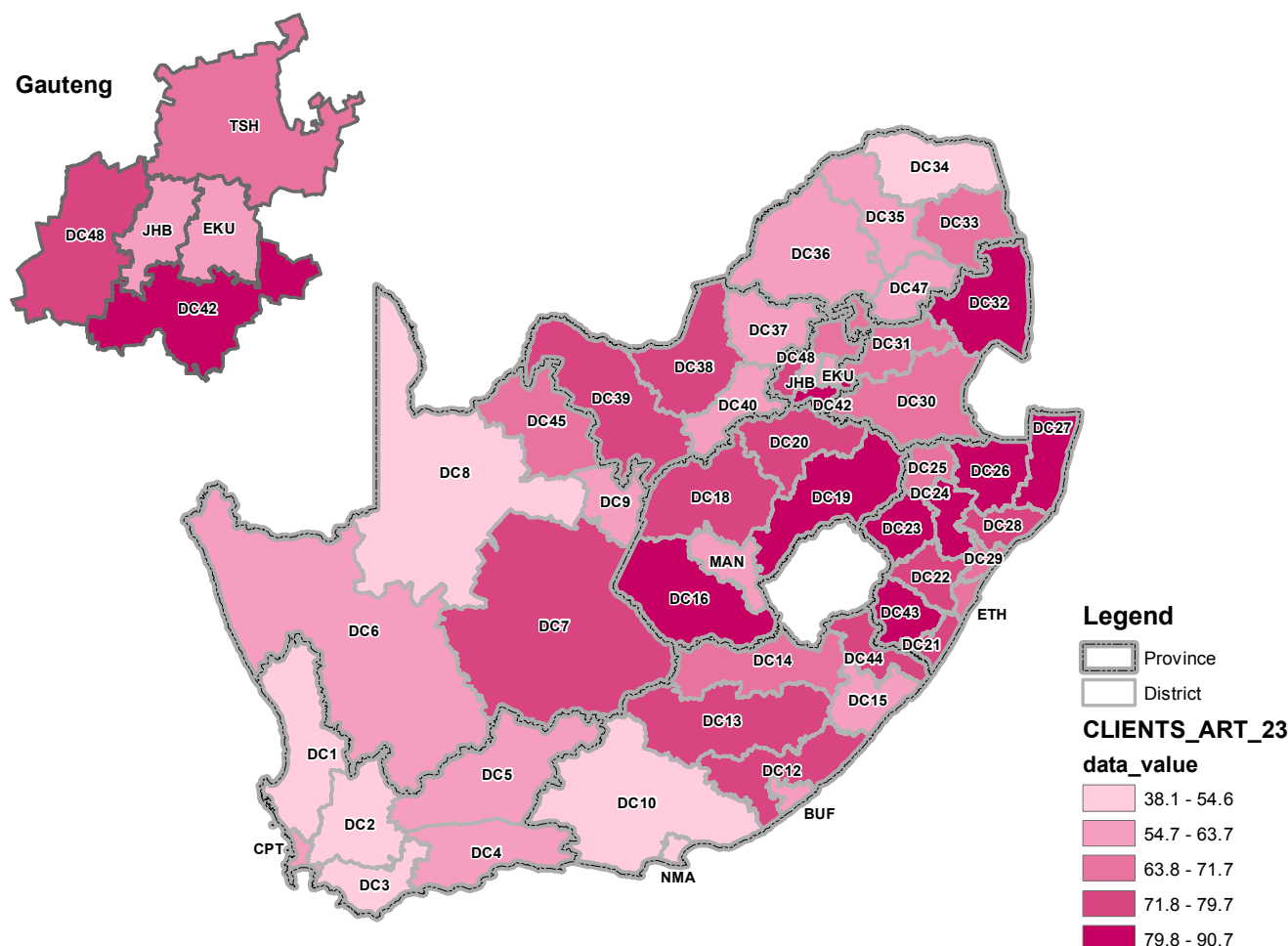
Figure 3: Clients remaining on ART rate by district, March 2023



All 11 districts in KwaZulu-Natal had a rate above the national average and five districts in KwaZulu-Natal were among the top-10-performing districts. Five of the six districts in the Western Cape were among the 10 districts with the poorest performance. The distribution of high ART rate districts correlates to rural, low density population districts, with the top 10 districts having

an average population density of only 68.1, skewed by Sedibeng with a population density of 250⁷. Although three of the high density metropolitan districts are identifiable in the mid ranges, and still above the national average. This is illustrated in Map 1, which shows the range in the ART rate across the country.

Map 1: Clients remaining on ART rate by district, March 2023



Source: DHIS

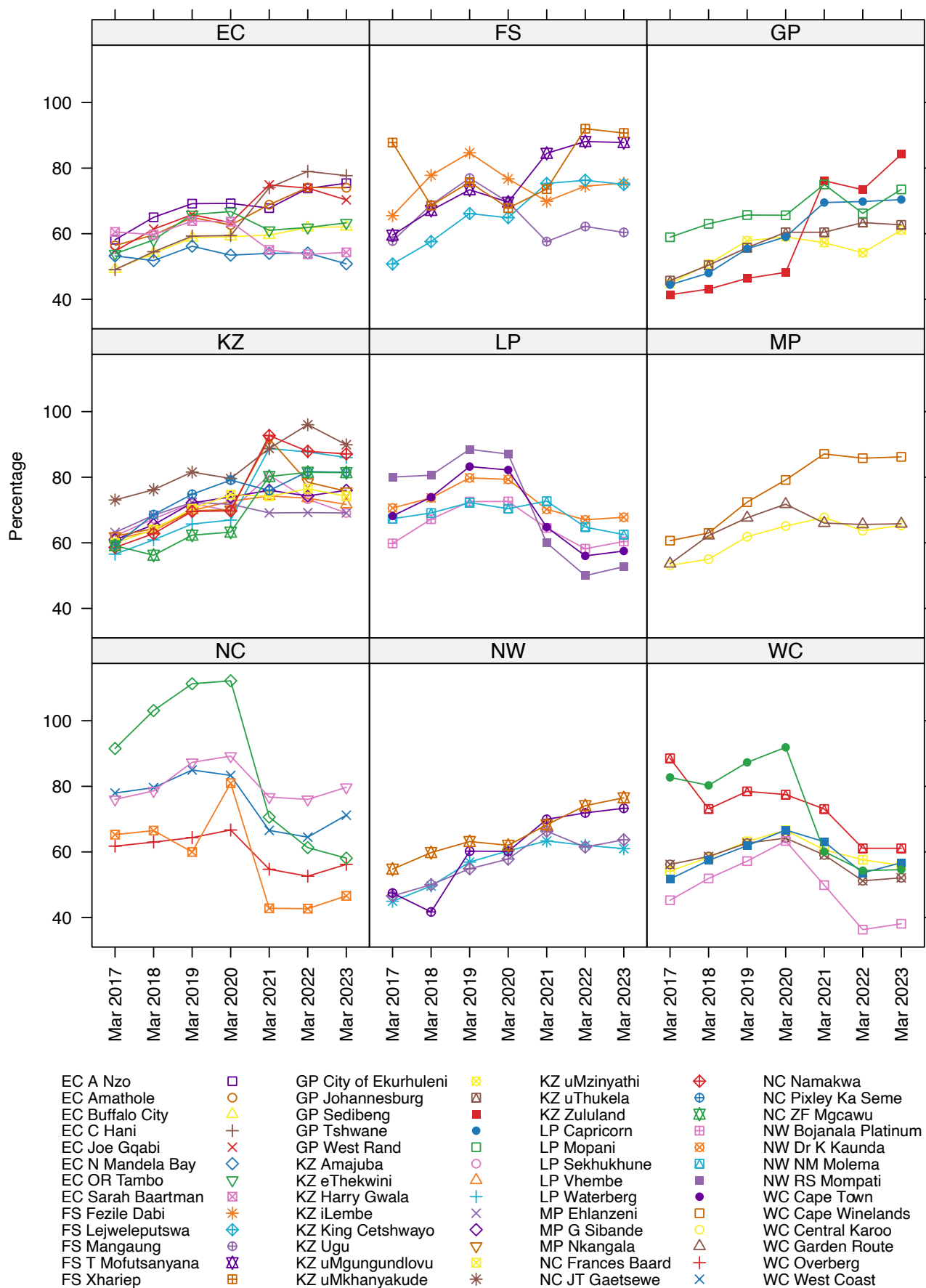
It is reasonable that the province with the highest prevalence, KZN, is also the province with the highest ART rate, both across provinces and between districts.

Twenty-four districts had a decline in the clients remaining on ART rate between March 2019 and March 2022, with eight districts continuing the downward trend to March 2023 (Figure 4). Four districts had a decline in the rate by more than 20 percentage points. These districts were Namakwa (Northern Cape (NC) (53.2 percentage points)), Vhembe (Limpopo (LP) (35.5 percentage points)), Overberg (WC) (32.7 percentage points)) and Waterberg (LP) (25.7

percentage points)). Two districts had an increase in the rate of more than 20 percentage points in the same period, namely Sedibeng (Gauteng (GP) (37.8 percentage points)) and Harry Gwala (KZN) (20.3 percentage points)). The annual trends in Figure 4 graphically illustrate significant drops in the clients on ART rate in 2020 in Limpopo, North West, Northern Cape and Western Cape, as well as some districts in Gauteng, KZN and Free State. These can be attributed to the impact of COVID-19 and related shutdowns. All districts have started to show a recovery since March 2022.

⁷Co-operative Governance and Traditional Affairs. District Development Model: Sedibeng District Municipality. Pretoria: Co-operative Governance and Traditional Affairs; 2020. URL: <https://www.cogta.gov.za/ddm/wp-content/uploads/2020/11/Sedibeng-October-2020.pdf>

Figure 4: Annual trends – clients remaining on ART rate by district, March 2017–March 2023



Recommendations

- Data validity should be closely monitored with outliers queried for consistency.
- Patient movement should be monitored to ensure ART rate declines are not related to movement, but reflect actual changes in retention.
- Develop and strengthen quality improvement plans (QIP) and strategies aimed at improving retention in care, which is fundamental for maximising the impact of ART on the reduction of HIV incidence. These should be data driven.
- Emphasis should be placed on educational programmes relating to clients' understanding of the goals of therapy and attaching the importance of ART treatment as a lifetime commitment to strengthen retention and adherence.
- Prioritise the differentiated model of care, which is client centred, and support innovative retention strategies for improved flexibility for patients, especially in urban areas where patient movement is most exaggerated.
- Capacity building of health and community caregivers with expansion of the role of expert clients and community linkage and retention facilitators.
- Address disengagement in care and reinforce welcome-back initiatives, including strengthening of community psychosocial services.

ART client viral load suppression

The principal goal of ART is to attain and maintain viral suppression. Since 2018, dolutegravir (DTG)-based antiretroviral treatment (ART) has been the preferred first-line treatment regimen in the World Health Organization

guidelines for adults and children with HIV, and has been adopted into the South African guidelines for adults since November 2019.

National overview

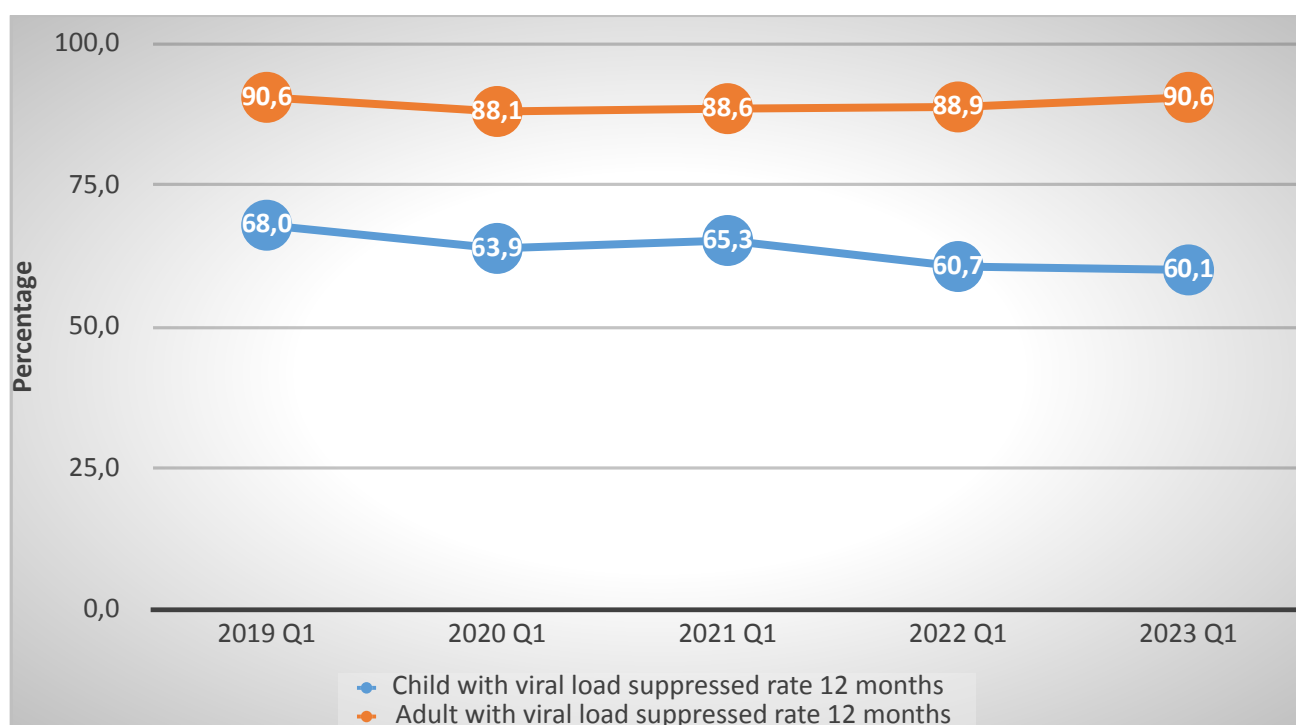
The webDHIS data show that the national ART viral load suppression rate for Quarter 1 of 2023 was 90.0%. Overall the country is on target to reach the third 95 within the cohort of those on ART by 2026 as per the National Strategic Plan (NSP). However, there are variations in the cascade, with the paediatric and adolescent cascades showing worrying trends as they lag behind adult VLS. In addition, unless the ART rate can be improved and the second 95 achieved, the total VLS when measured against the denominator of PLHIV remains concerning.

Figure 5 shows the ART VLS rate among adults 15 years and older and child ART VLS rate for the period between 2019 Quarter 1 and 2023 Quarter 1. In March 2023 Quarter 1, the

adult ART VLS rate was reported at 90.6%, similar to the rate in March 2019. A noticeable decline of 2.5 percentage points in 2020 Quarter 1 could be attributed to the negative effects of COVID-19 on the HIV programme.

The child ART VLS rate fluctuated year-on-year between 2019 Quarter 1 and 2023 Quarter 1 and was 60.1% in 2023 Quarter 1. The rate declined by 7.9 percentage points from March 2019. It is important to note that the child ART VLS rate is affected by children aging out of the paediatric cohort, and the cohort itself is not tracked. This contributes to the overall decline in the VLS rate. The overall national ART VLS rate as well as the adult VLS rate has met the 2025 target of 86%.

Figure 5: National adult and child ART viral load suppressed rate, 2019 Quarter 1–2023 Quarter 1

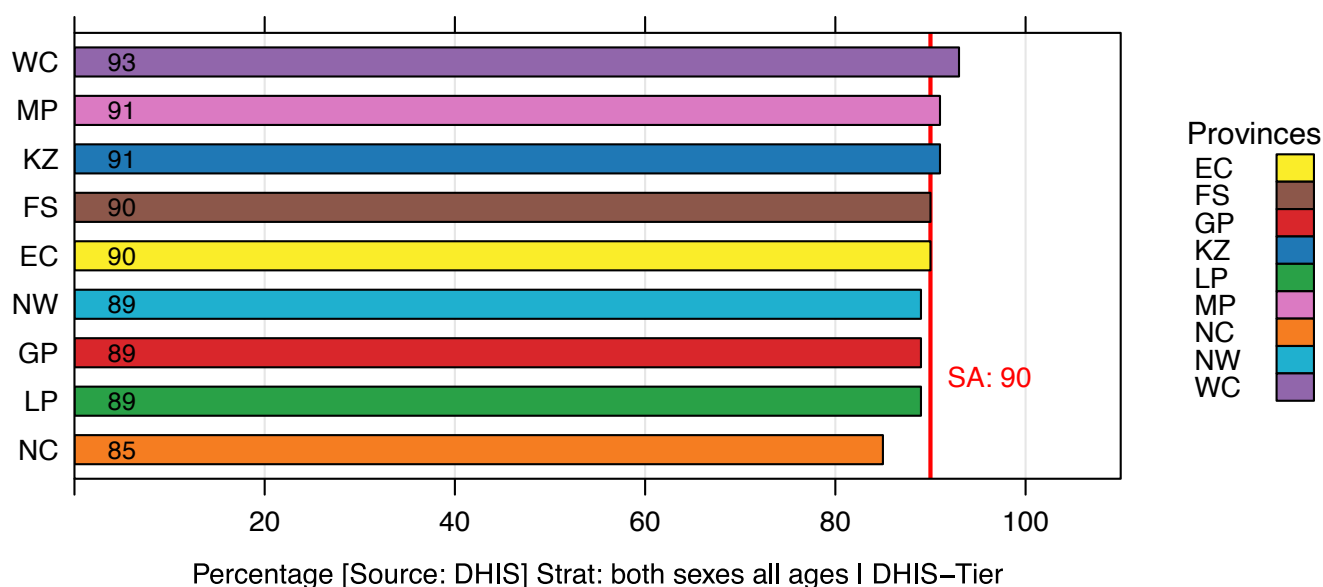


Source: DHIS

Provincial overview

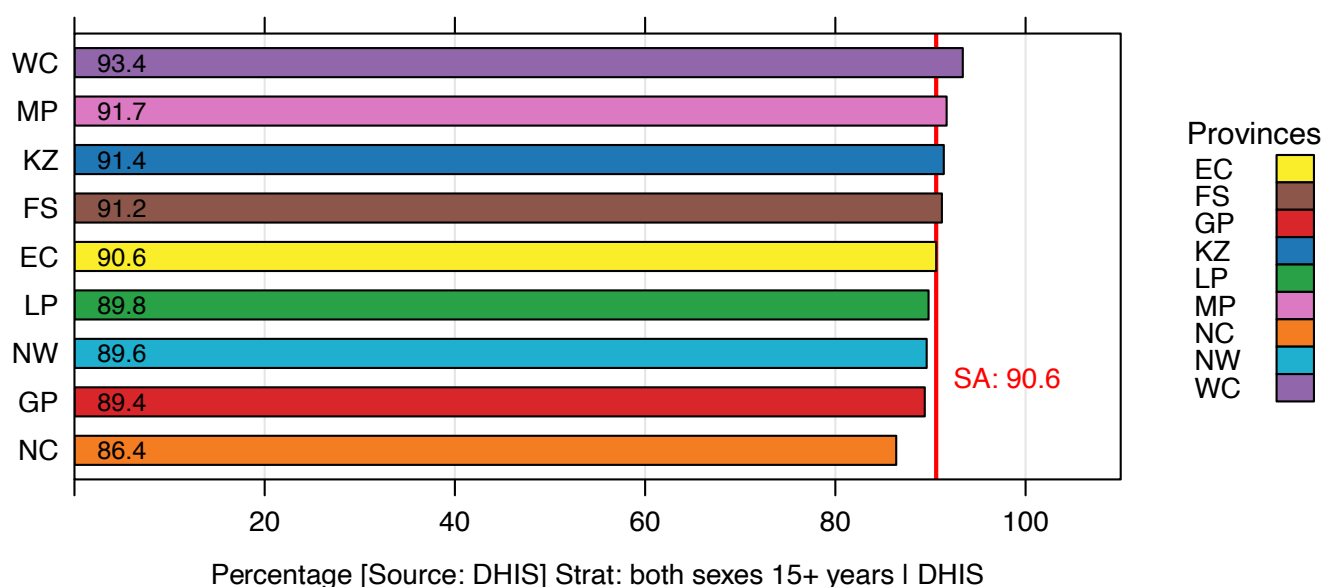
In Quarter 1 of 2023, the Western Cape, Mpumalanga and KwaZulu-Natal had an ART client VLS rate above the national rate at 93.0%, 91.0% and 91% respectively. Free

State and the Eastern Cape had similar VLS rates to the national rate at 90%. Northern Cape reported the lowest VLS rate at 85.0% (Figure 6).

Figure 6: ART client viral load suppressed rate by province, 2023 Quarter 1

In 2023 Quarter 1, four provinces had an adult with VLS rate at 12 months above the national average of 90.6%, namely Western Cape at 93.4%, Mpumalanga at 91.7%, KwaZulu-Natal at 91.4% and Free State at 91.2% (Figure

7). Northern Cape had the lowest adult with VLS rate at 86.4%. However, the rate is 2.8 percentage points higher than the rate in 2020 Quarter 1 when it was 83.6%, showing an improvement.

Figure 7: Adult with viral load suppressed rate at 12 months by province, 2023 Quarter 1

Although children and adolescents make up just 5.5% of the HIV-positive population in South Africa, they are an important group for monitoring and evaluating the HIV treatment programme. However, analysis of regular HIV viral load data indicates that paediatric and adolescent populations are still far from meeting the UNAIDS second and third 95 targets.⁸ Figure 8 shows the child with viral

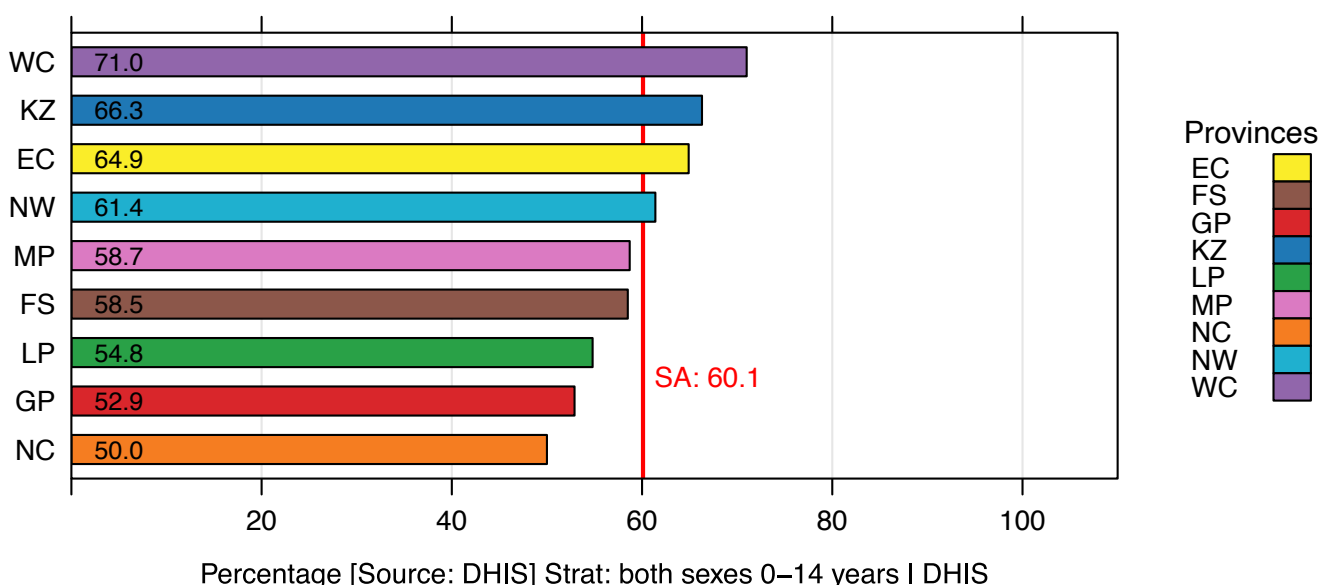
load suppressed rate at 12 months in Quarter 1 of 2023 by province. Four provinces had a child with viral load suppressed rate at 12 months above the national average of 60.1%. However, only the Western Cape (71.0%) reported a VLS rate above 70% and performed the best among the provinces. Northern Cape had the lowest rate at only 50.0%.

⁸Mazanderani AH, Sherman GG. Paediatric & Adolescent HIV Viral Load Monitoring, 2014-2020. Johannesburg: National Institute of Communicable Diseases; 2020.

The introduction of paediatric dolutegravir containing regimen for infants above 3kg and more than four weeks of age in the 2023 ART guidelines will ensure durable viral suppression to meet the third UNAIDS 95-95-95 target in children. These new drug regimens are credited with the improvement in VLS, with the Odyssey randomised trial

indicating the superior efficacy of dolutegravir-based ART over standard care in children and adolescents weighing at least 14 kg.⁹ However, switching regimens has been slow and more attention to this element of the treatment programme is required.

Figure 8: Child with viral load suppressed rate at 12 months by province, 2023 Quarter 1



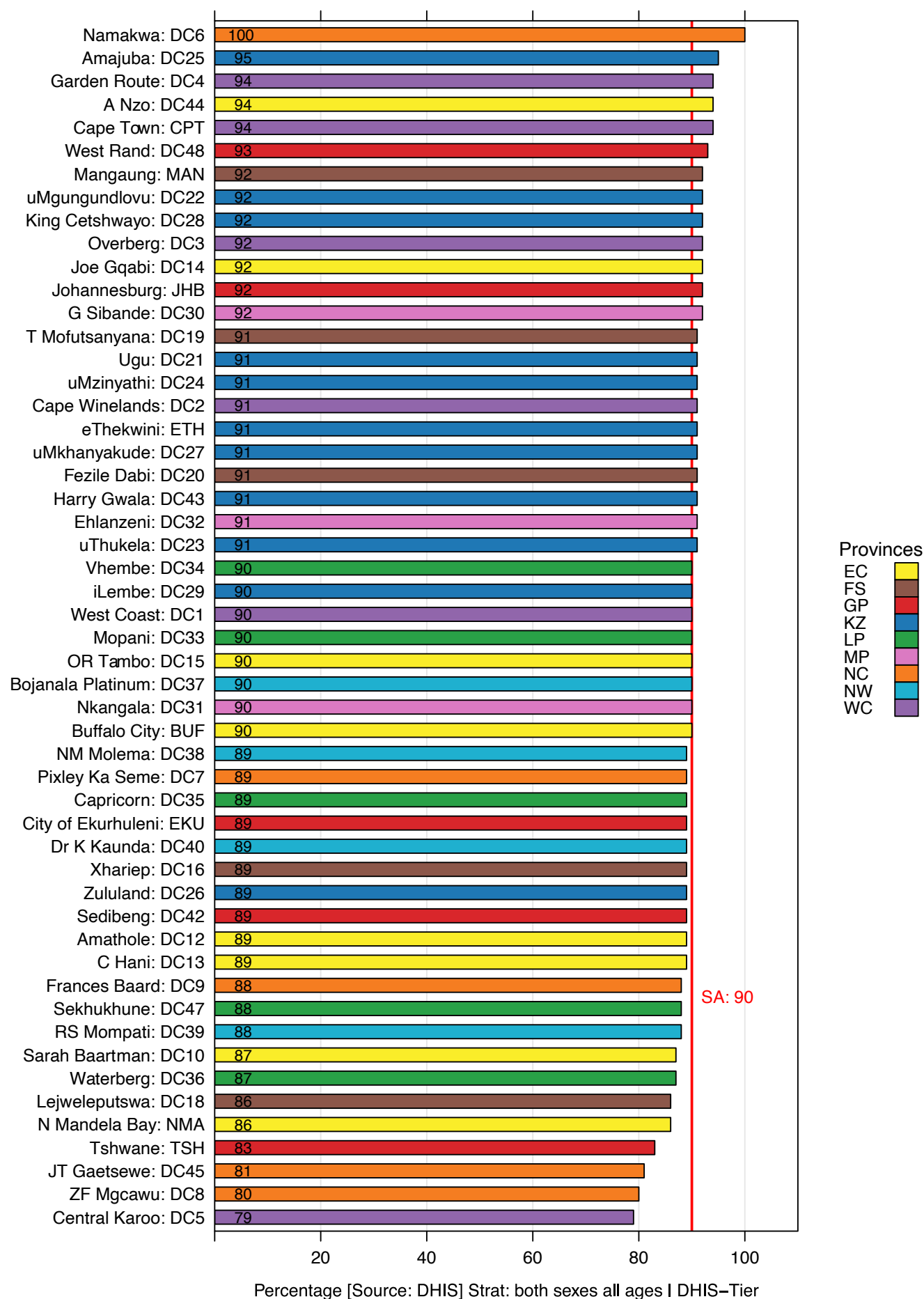
District overview

In 2023 Quarter 1, all 52 districts reported on ART client VLS rate. The rate among the districts ranged from 100% in Namakwa (NC) to 79.0% in Central Karoo (WC) (Figure 9). Thirty-one districts (59.6%) had an ART client viral load suppressed rate of 90.0% and above. Namakwa (NC) performed the best at 100%. The rate in Namakwa increased by 21.2 percentage points from 2020 Quarter 1. Twenty-one districts reported VLS rates below 90% of the cascade. The lowest VLS rate was reported in Central Karoo (WC) at 79%.

Ten of the 11 KwaZulu-Natal districts reported VLS rates of 90% and above. Zululand was the only district with a VLS rate below 90 at 89%. Namakwa (NC) and Amajuba (KZN) reached the 95% NSP and third UNAIDS 95-95-95 target. Only four districts have not reached the WHO testing and treatment cascade target of 86% by 2025, namely Central Karoo (WC), Zwelentlanga Fatman Mgcawu (NC), John Taolo Gaetsewe (NC) and Tshwane (GP).

⁹Turkova AEW, Mujuru HA, Adeodata R, Kekitiinwa CM, et.al. Dolutegravir as First- or Second-Line Treatment for HIV-1 Infection in Children. The New England Journal of Medicine. 2021;385:2531-43.

Figure 9: ART client viral load suppressed rate by district, 2023 Quarter 1

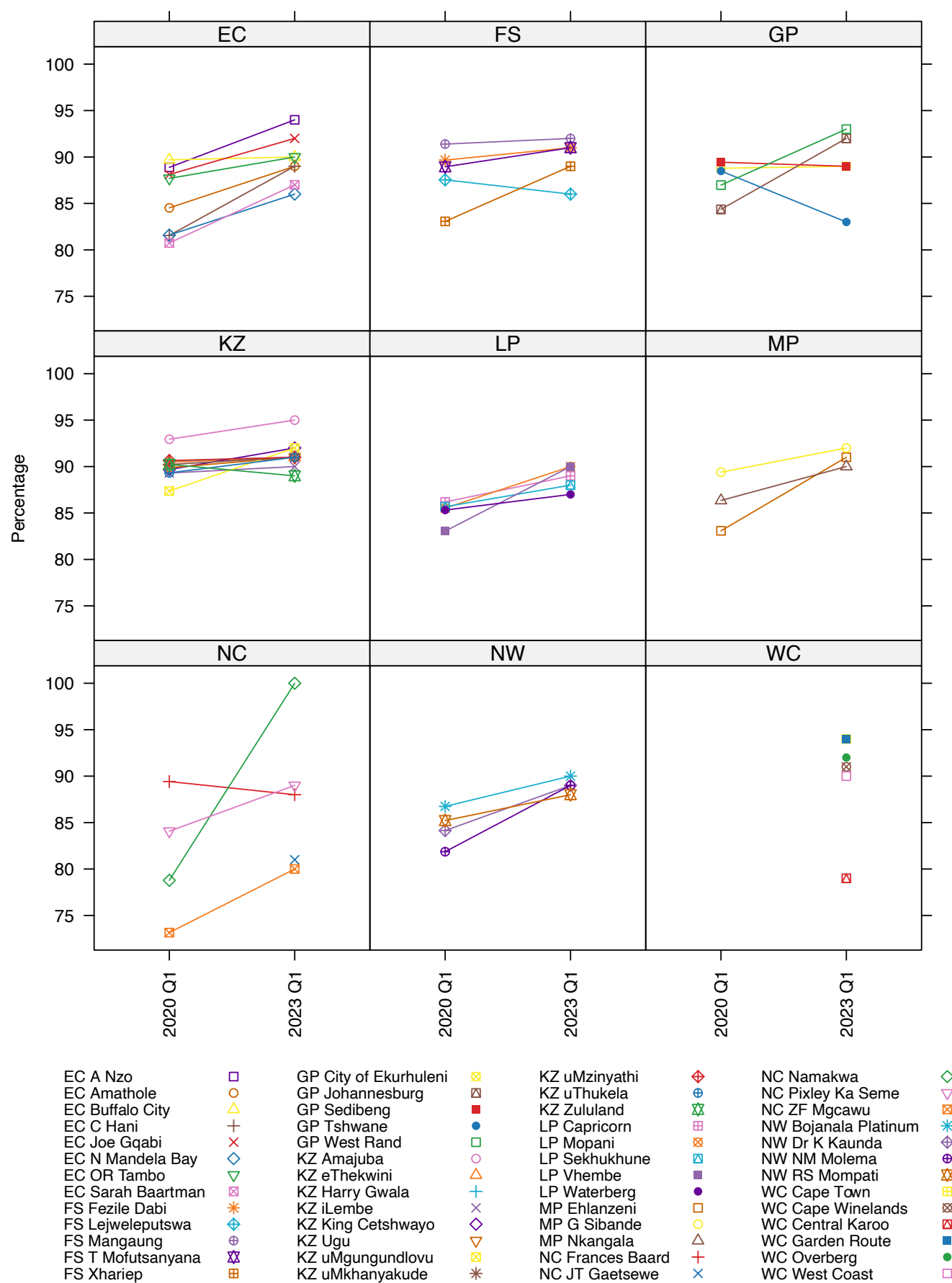


All the districts in Eastern Cape, Limpopo, Mpumalanga and North West (NW) had an increase in the ART client viral load suppressed rate between 2020 Quarter 1 and 2023 Quarter 1 (Figure 10). The following districts had a drop in the rate in the same period: Lejweleputswa (FS), Tshwane (GP), Zululand (KZN) and Frances Baard (NC).

These drops in VLS rate need to be investigated as they

go sharply against the trend in all other districts. This could indicate challenges related to supply chain in the new regimens, limited laboratory availability and/or poor adherence to laboratory guidelines and specimen management, and a lack of adherence to SOPs and guidelines related to viral load completion.

Figure 10: Annual trends - ART client viral load suppressed rate by district, 2020 Quarter 1–2023 Quarter 1

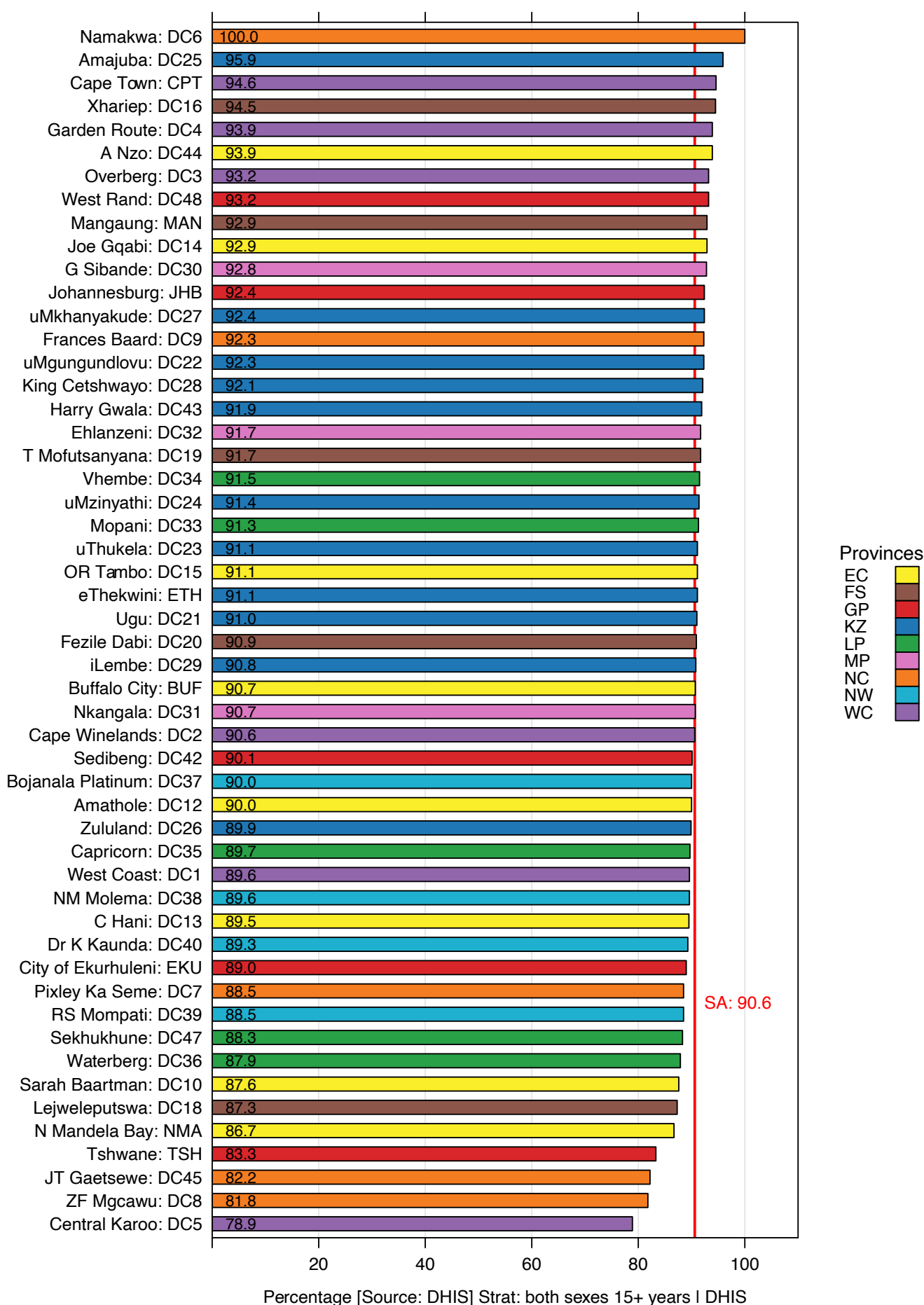


Source: DHIS

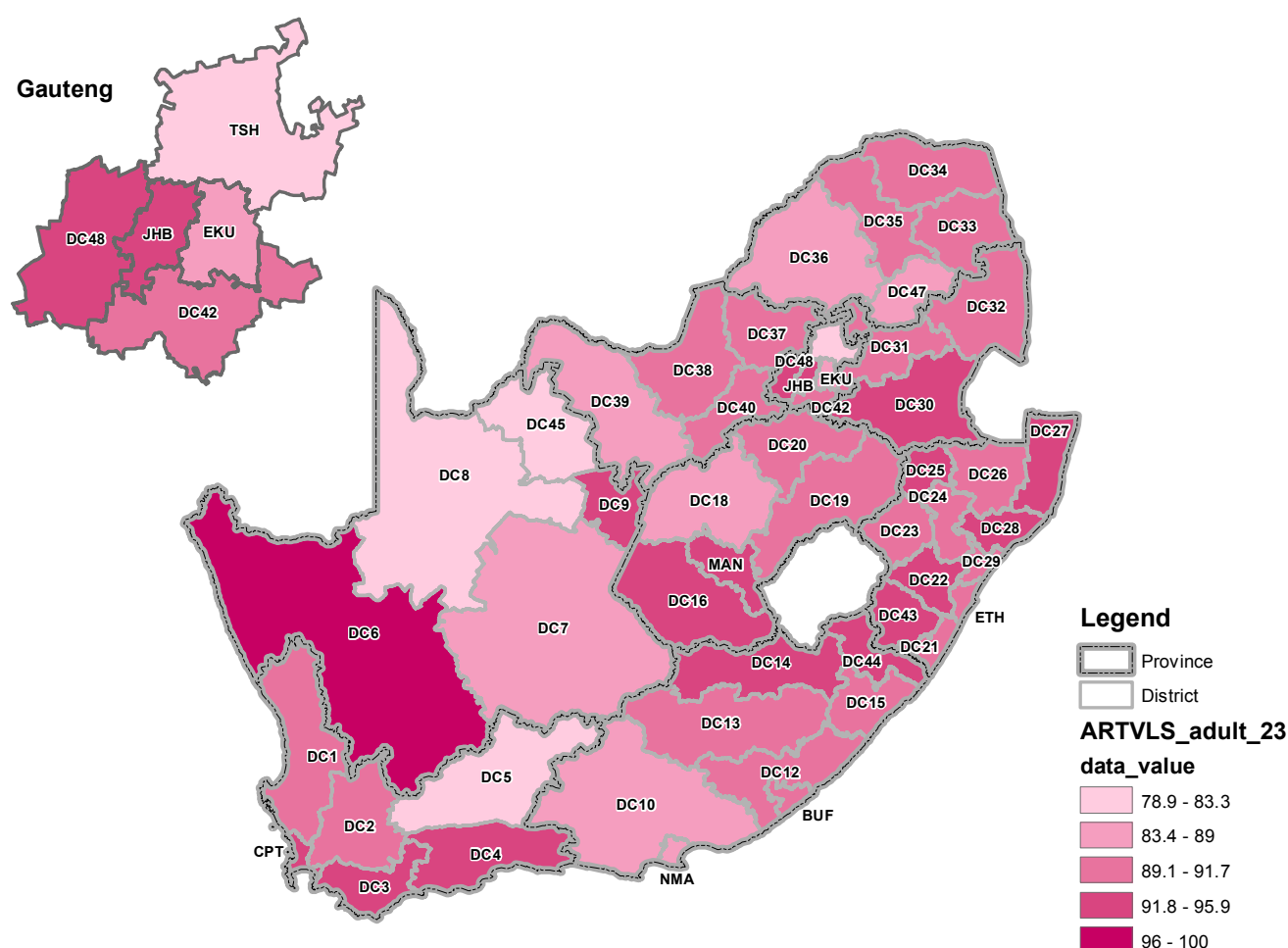
The annual trends illustrated in Figure 10 are consistent with an increase in VLS rates across all provinces, with only four identified anomalies to the trends. It is important to note that variations between the adult and children's cascades influence the overall picture, and when children's data is separated out, the picture for adults is even better. Figure 11 shows that Namakwa (NC) had the highest

adult with viral load suppressed rate at 12 months in 2023 Quarter 1 at 100% and Central Karoo (WC) the lowest at 78.9% (Figure 11 and Map 2). Only two districts reached the third UNAIDS 95-95-95 target of 95%: Namakwa (NC) and Amajuba (KZN). Eighteen districts remain below the 90% threshold and twenty-two are below the national average of 90.6% for adult viral load suppressed rate.

Figure 10: Adult with viral load suppressed rate at 12 months by district, 2023 Quarter 1



Map 2: Adult with viral load suppressed rate at 12 months by district, 2023 Quarter 1



Source: DHIS

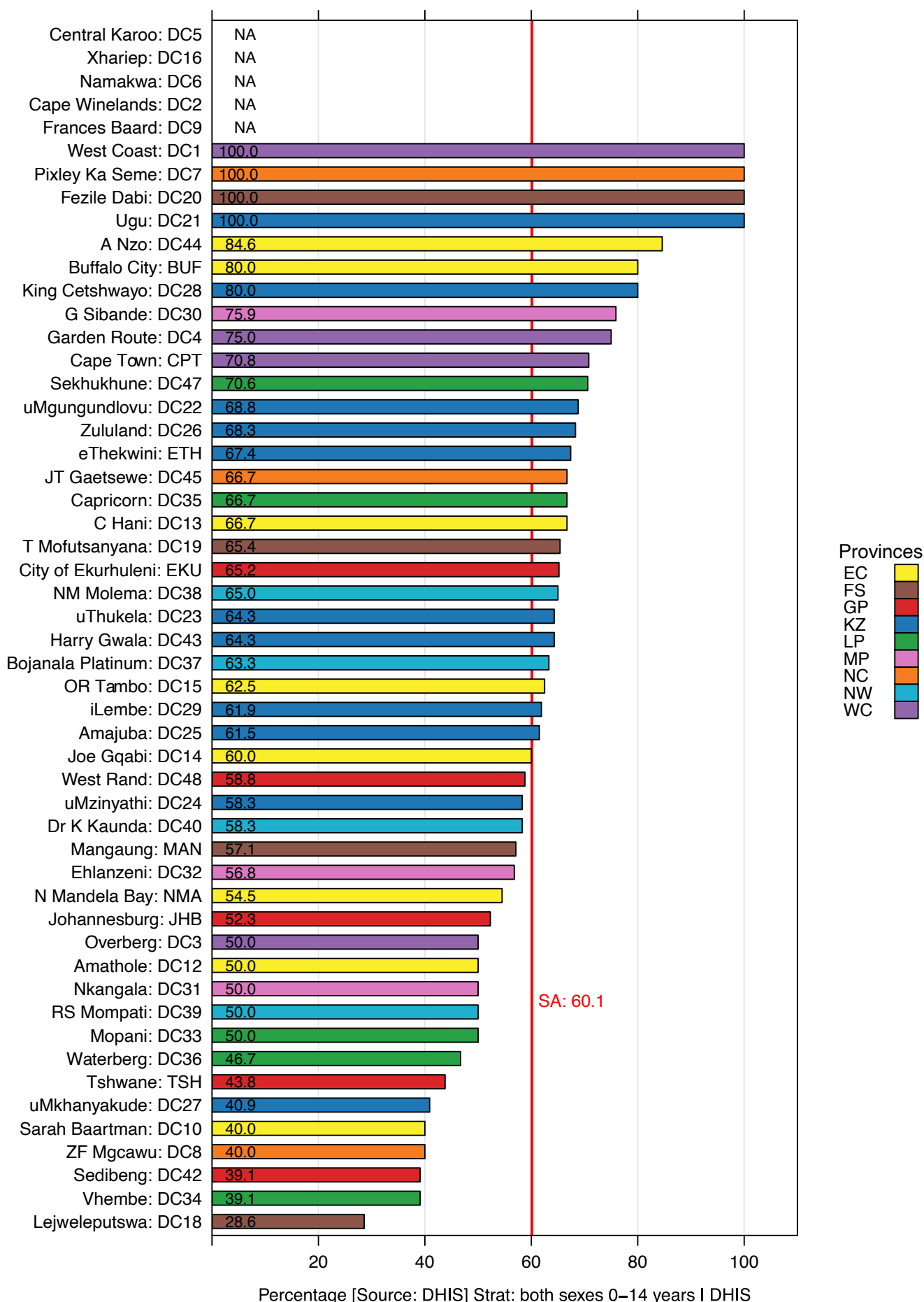
Unfortunately, there is a significantly different picture when we analyse the trends for children. While there are some data queries related to the cohort for children, and the fact that children age out of the paediatric cohort, meaning that there should be a decline in the number of children on ART if new infections are also declining, not all the declines in this portion of the treatment programme are only related to data, but are affected by socio-economic and clinical factors that impede the ability of children to be adherent and retained in care. There are also certain challenges that have been documented particularly in the older adolescent group (15 – 19 years) when they transition from the paediatric to adult HIV programmes, which is known as a high-risk period for disengagement with care.¹⁰

Figure 11 shows that 90.4% of the districts reported on the child VLS rate at 12 months in Quarter 1 of 2023. The five non-reporting districts (Map 4) in the first quarter of 2023 were Frances Baard and Namakwa in the Northern

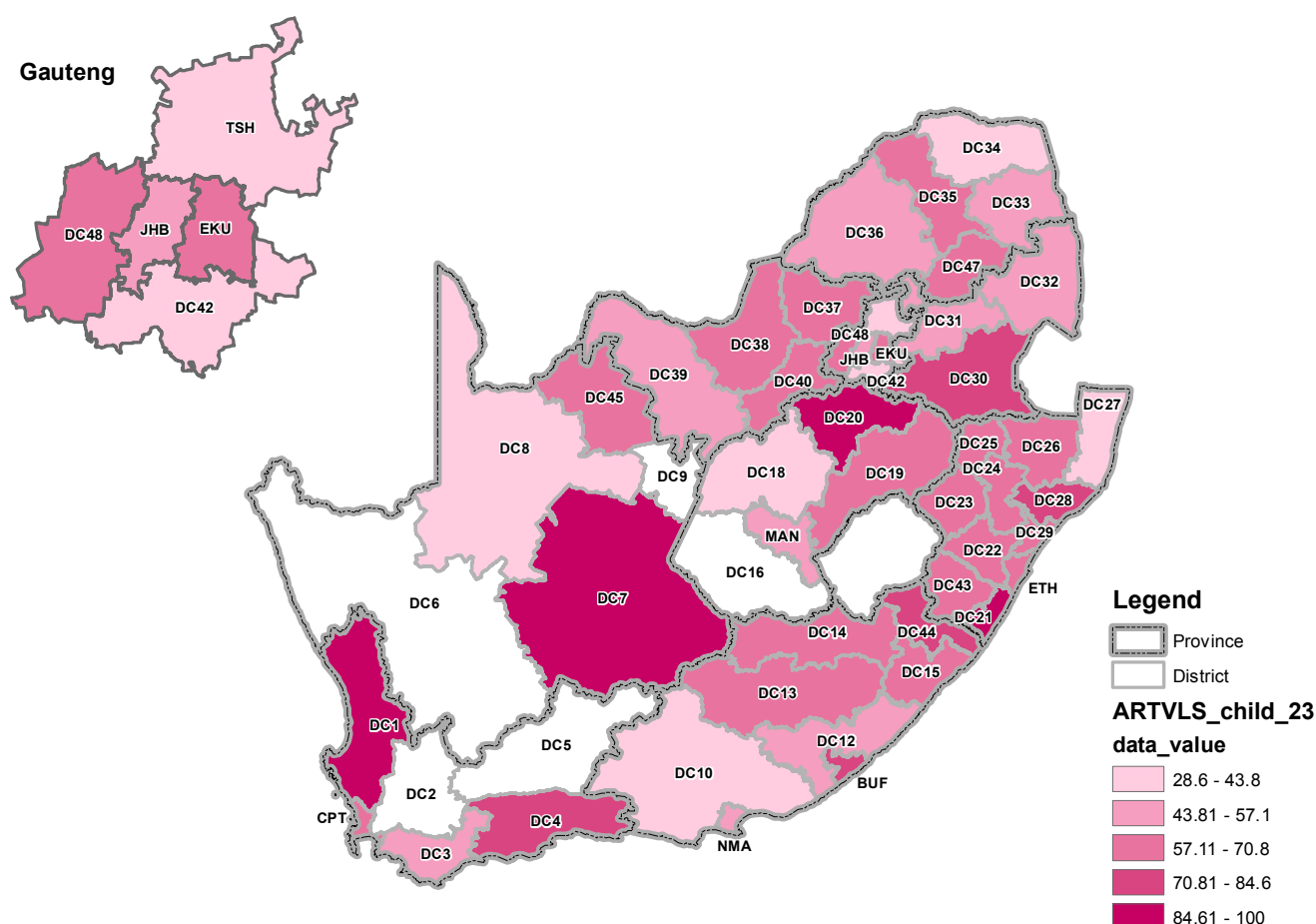
Cape; Cape Winelands and Central Karoo in the Western Cape; and Xhariep (FS) yet all these districts had child VLS rates of 100% in the first quarter of 2020. Only four districts reached the third UNAIDS 95-95-95 target with a rate of 100%, namely West Coast (WC), Pixley Ka Seme (NC), Ugu (KZN) and Fezile Dabi (FS) (Map 4). Twenty-six districts had a child with viral load suppressed rate at 12 months above the national rate of 60.1%. The districts with the lowest child VLS rates, which were below 50%, were quite diverse provincially, although four were in Limpopo and Gauteng. These were Lejweleputswa (FS) Vhembe (LP), Sedibeng (GP), ZF Mgcawu (NC), Sarah Baartman (EC), uMkhanyakude (KZN), Tshwane (GP) and Waterberg (LP). Children and adolescents living with HIV in South Africa continue to be an exceptionally vulnerable demographic. If South Africa is to reach the 95-95-95 goals, significant gains in paediatric HIV care, particularly retention in care and treatment adherence, will be necessary.

¹⁰van Wyk B, Kriel E, Mukumbang F. Retention in care for adolescents who were newly initiated on antiretroviral therapy in the Cape Metropole in South Africa. *South Afr J HIV Med.* 2020 Jul 22;21(1):1077. doi: 10.4102/hivmed.v21i1.1077. PMID: 32832112; PMCID: PMC7433256.

Figure 11: Child with viral load suppressed rate at 12 months by district, 2023 Quarter 1



Map 4: Child with viral load suppressed rate at 12 months by district, 2023



Source: DHIS

Recommendations

- Strengthen the implementation of 2023 ART guidelines for the management of HIV in adults, pregnancy and breastfeeding, adolescents, children, infants and neonates.
- Strengthen the early testing and introduction of optimised comprehensive, highly efficacious treatment and care for infants, children, adolescents and adults living with HIV to achieve universal coverage of ART and viral suppression.
- Strengthen VL monitoring and adherence, especially in infants, children and adolescents. Viral load monitoring and adherence should be instituted programmatically for the adolescents in the 15-19 years' age group.
- Expand access to optimised regimens with an ordered transition from boosted Lopinavir (LPV/r) to the optimised paediatric DTG (pDTG) containing regimen.
- Develop tailored interventions to improve viral suppression among adolescents on ART.
- Assessment of VL completion rates to ensure that reported VL suppression rates are accurate at district level.
- Track the cohort of children on ART for accurate VLS rates within the paediatric cascade. This data should also be reviewed together with new infection rates in the same age groups.
- Investigate anomalies in the data, such as districts that go against the VLS trend.

3 Non-communicable diseases

3 Non-communicable diseases

Non-communicable diseases (NCDs) refers to a group of conditions that are not caused by an acute infection, are non-infectious and result in a need for long-term treatment and care as a chronic condition. NCDs, which include cancer, heart disease, diabetes, chronic lung disease, hypertension

and stroke, account for 74% of all deaths worldwide.¹

This chapter will include just one indicator, namely, cervical cancer screening coverage.

Cervical cancer screening coverage

Nompumelelo Pamela Ntshangase and Hannah Sebitloane

Key findings

- None of the districts across South Africa reached the WHO cervical cancer screening target of 70% to be attained by 2030.
- KwaZulu-Natal was the best performing province in 2022/23, with all the districts obtaining a cervical cancer screening coverage above the national average of 21,4%.
- Northern Cape had the lowest coverage; three of its five districts had the lowest coverage in the country.
- All provinces had an increase in cervical cancer coverage in 2021/22 and all provinces recorded a decrease 2022/23. The biggest decrease was in Western Cape and Mpumalanga.
- Only 13 districts had an increase in the cervical cancer screening coverage in 2022/23.
- The COVID-19 pandemic coupled with the change in the definition of the cervical cancer screening coverage indicator in 2020 contributed to the decrease in the screening coverage in 2020/21.

Introduction

Cervical cancer is the fourth most common cancer among women globally, with an estimated 604 000 new cases and 342 000 deaths in 2020. About 90% of these occurred in low- and middle-income countries.² According to the National Cancer Registry (NCR), in 2019, cervical cancer was the second most diagnosed cancer in South African (SA) females after breast cancer. The NCR recorded 6 945 cases diagnosed histologically in 2019, which accounted for 15,85% of all female cancer cases in SA.³ Cervical cancer, however, remains the most common cancer diagnosed

in black females, amounting to 5 932 cases (or 85%) of all cervical cancer cases nationwide.

The World Health Organization (WHO) devised a global strategy to accelerate the elimination of cervical cancer as a public health problem. Elimination in this context means that a country reaches less than four cases of cervical cancer per 100 000 women per year. To reach this threshold by the end of 21st century, WHO has set up the 90-70-90 targets to be attained by 2030 and to be maintained.⁴

¹World Health Organization. Noncommunicable diseases: Overview. URL: https://www.who.int/health-topics/noncommunicable-diseases#tab=tab_1 Accessed: [30 November 2023]

²Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, et al. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA Cancer J Clin.* 2021;71:209-49. doi:10.3322/caac.21660.

³National Cancer Registry. https://NCR_Path_2019_Full_Report_8dec2021.pdf (nicd.ac.za). [Accessed – 9/10/2023].

⁴Lei J, Ploner A, Elfstrom KM, Wang J, Roth A, Fang F, et al. HPV Vaccination and the Risk of Invasive Cervical Cancer. *N Engl J Med.* 2020;383(14):1340-8.

These targets entail the following:

- 90% of girls to be fully vaccinated with human papilloma virus (HPV) vaccine by age 15;
- 70% of women to be screened with a high-performance test by 35, and again by 45 years of age;
- 90% of women identified with cervical disease to receive treatment (90% of women with pre-cancer treated; 90% of women with invasive cancer managed).

The age-standardised incidence rate for cervical cancer was 22.92 per 100 000 women in 2019. There has been a decrease in the past decade from 31.6 per 100 000 in 2009.⁵ However, this falls far below the WHO strategy's target of a threshold of less than four cases of cervical cancer per 100 000 women per year to eliminate cervical cancer.⁶ Even with the cervical cancer prevention and control policy in place for more than 10 years, SA still sees a high number of women presenting with advanced invasive disease. *Cancer Tomorrow*, a tool that predicts the future cancer incidence and mortality burden worldwide, estimates that deaths from cervical cancer will rise by almost 50% by 2040 if no drastic measures are taken.^a

Cervical cancer is unique in that it has a known causative agent (in most cases), well defined precancerous stages which, under most circumstances, are slowly progressive, and therefore provides an opportunity for screening in order to interrupt the eventual disease at any point. Screening and early detection of cervical cancer in asymptomatic women, with subsequent appropriate timely referral and treatment, are vital for reducing cervical cancer morbidity and mortality.⁷

According to the National Indicator Data Set (NIDS), cervical cancer screening coverage is defined as the number of women of 30 years and older who received a smear as a proportion of the female population that is 30 years and older. Eighty per cent of these women should be screened for cervical cancer every 10 years and 20% must be screened every three years. This should be included in the denominator because it is estimated that 20% of women aged 30 years and older are HIV positive. The numerator is cervical cancer screening in non-HIV women 30 years and older plus cervical cancer screening in HIV-positive women 20 years and older. The denominator is (80% of women aged 30 to 59 years)/10 plus (20% women aged 20 to 59 years)/3.⁸

The source of the data is the District Health Information System (DHIS) as a proxy for cervical cancer incidence. In this reporting period, cervical cancer screening coverage is still being used as a proxy for cervical cancer detection and treatment. The Large Loop Excision of the Transformation Zone (LLETZ) indicator was introduced into the NIDS from the April 2023. However, this will only reflect in the next reporting period.

National overview

The national average for cervical cancer screening coverage in 2022/23 was 21.4% which is significantly low in comparison to the 70% WHO target. There is also a marked drop from the last report of 45.8% in 2018/19 and 46.8% in 2019/20 (Figure 1). This is largely attributed to the COVID-19 pandemic, which negatively affected the screening coverage due to limited access to health care

facilities and reallocation of resources. This, coupled with the change in the definition of the screening indicator in 2020, which takes into consideration the three-yearly cervical cancer screening for HIV positive women, thereby increases the targeted number of women needing to be screened.

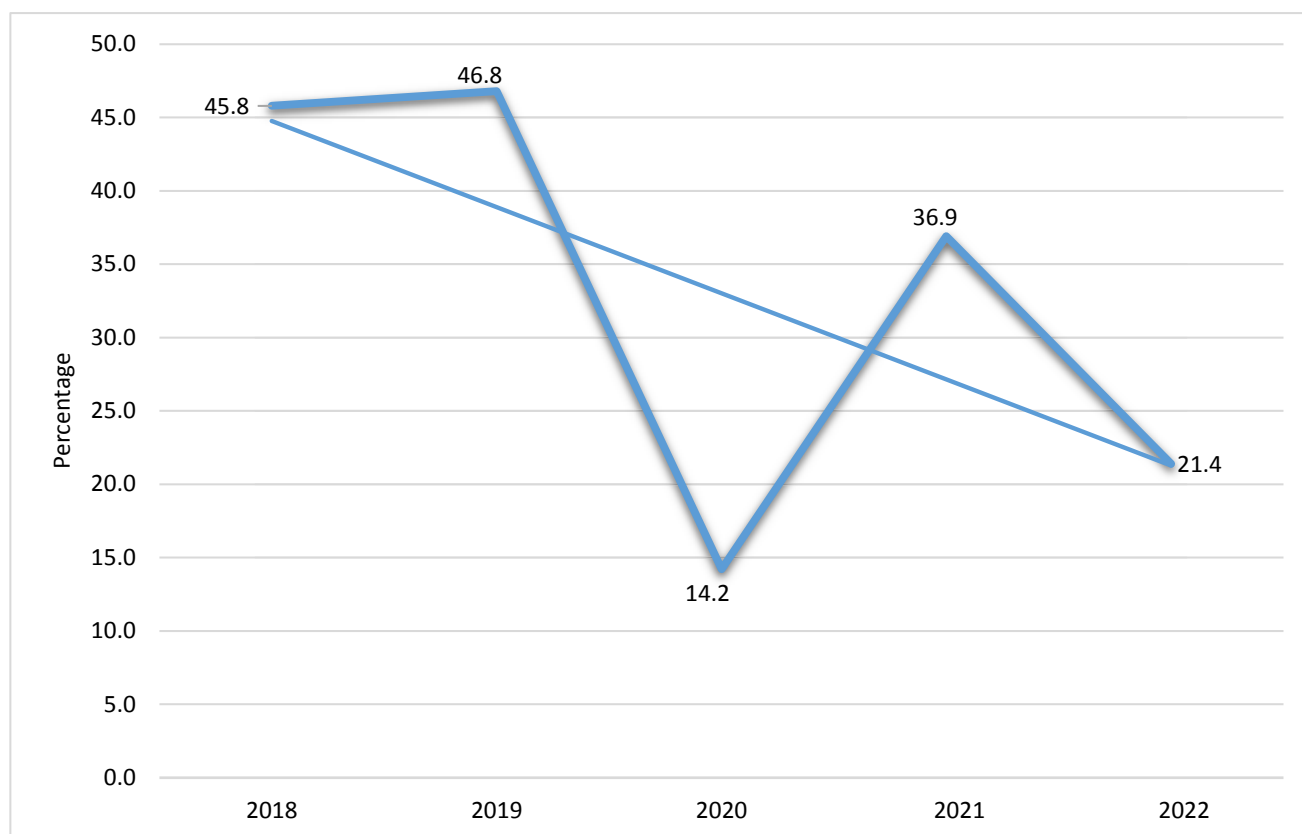
⁵Cowling N. Age-standardized incidence rate for cervical cancer in South Africa 2009-2019. URL: <https://www.statista.com/statistics/1387052/age-standardized-incidence-rate-for-cervical-cancer/>. [Accessed 9/10/2023].

⁶World Health Organization. Cervical Cancer Fact Sheet. URL: <https://www.who.int/news-room/fact-sheets/detail/cervical-cancer>. [Accessed – 9/10/2023].

⁷South African HPV Advisory Board. Cervical cancer and human papillomavirus: South African guidelines for screening and testing. South African Journal of Gynaecological Oncology; 2010; 2(1):23-6. <http://www.sasog.co.za/images/Guidelines.pdf>.

⁸National Department of Health. National Indicator Data Set 2020. Pretoria: NDoH; 2020.

^aCancer tomorrow is a tool that predicts the future cancer incidence and mortality burden worldwide. From the current estimates in 2020, deaths from cervical cancer will rise by almost 50% by 2040. Available from: Cancer Tomorrow (iarc.fr).

Figure 1: National cervical cancer screening coverage, 2018/19–2022/23

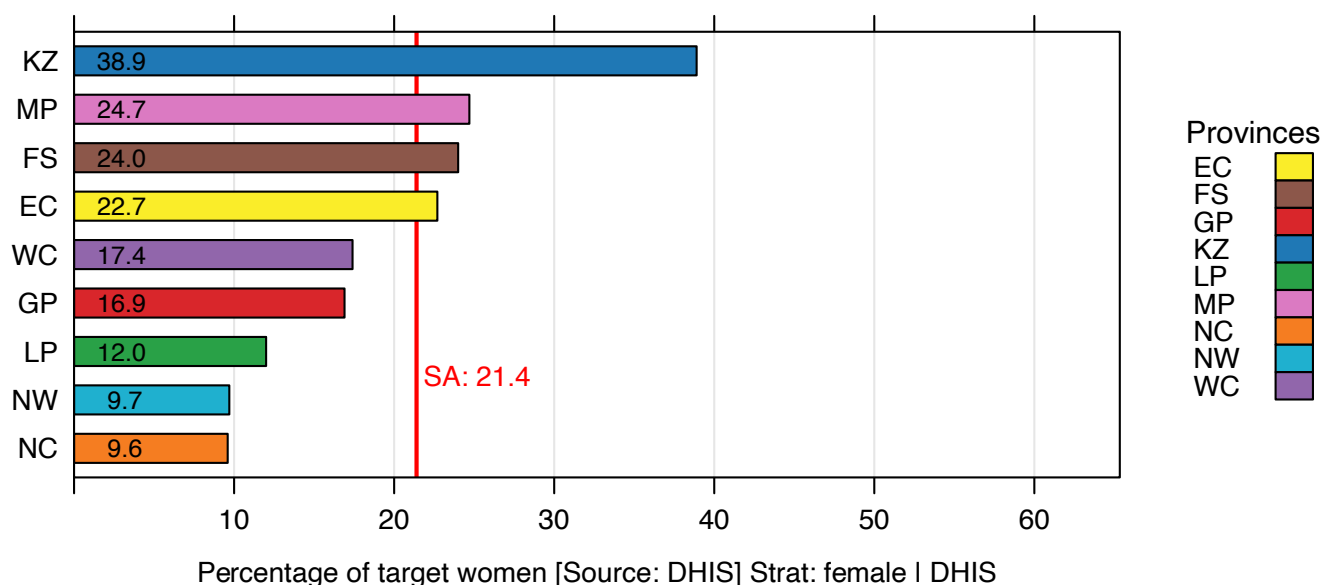
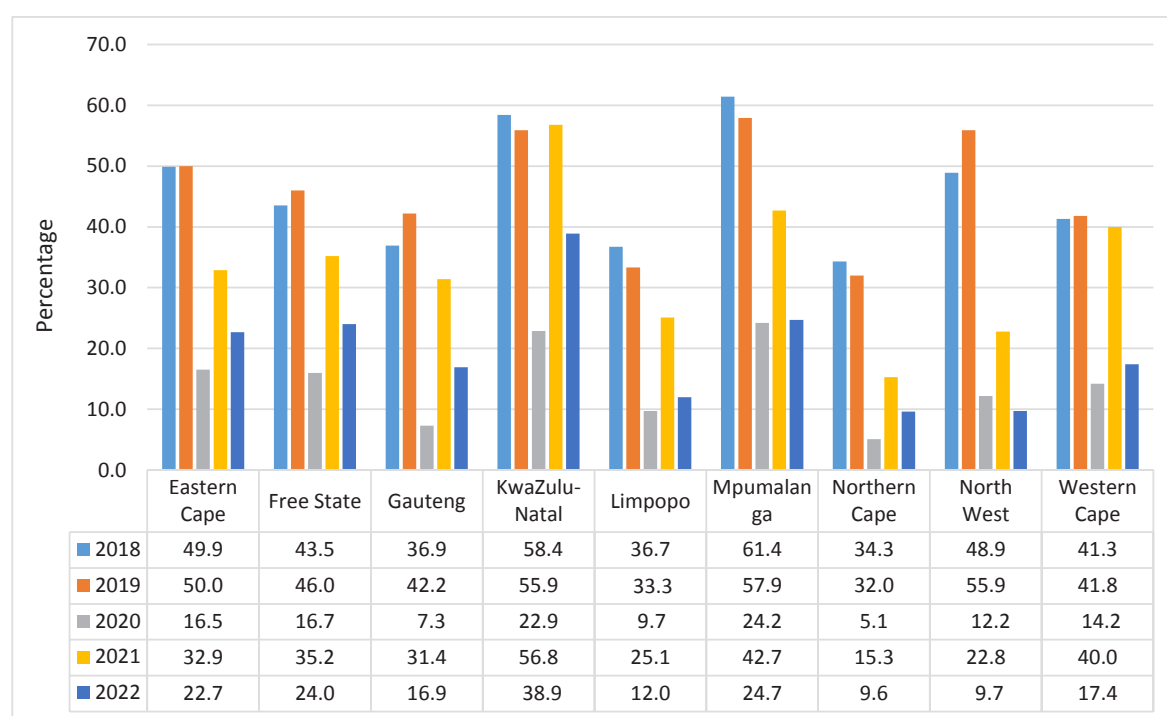
Source: DHIS

Provincial overview

Only four provinces performed above the national average of 21.4% and five provinces fell significantly below, while none of the provinces reached the target of 70% (Figure 2). KwaZulu-Natal (KZN) was the best performing, with coverage of 38.9%, followed by Mpumalanga (MP) at 24.7% and the Free State (FS) at 24.0%. The cervical cancer screening coverage in Northern Cape (NC) at 9.6% was the lowest, followed by North West (NW) at 9.7%.

The coverage fluctuated hugely in all provinces between

2019/20 and 2022/23 (Figure 3). The biggest decrease in the coverage between 2019/20 and 2020/21 of 43.7 percentage points was in the North West and the smallest of 23.6 percentage points was in Limpopo (LP). All provinces had an increase in the cervical cancer coverage in 2021/22 but all had a decrease 2022/23. The biggest decrease was in Western Cape (WC) with 22.6 percentage points, followed by Mpumalanga with 18.0 percentage points.

Figure 2: Cervical cancer screening coverage by province, 2022/23**Figure 3: Cervical cancer screening coverage by province, 2018/19–2022/23**

District overview

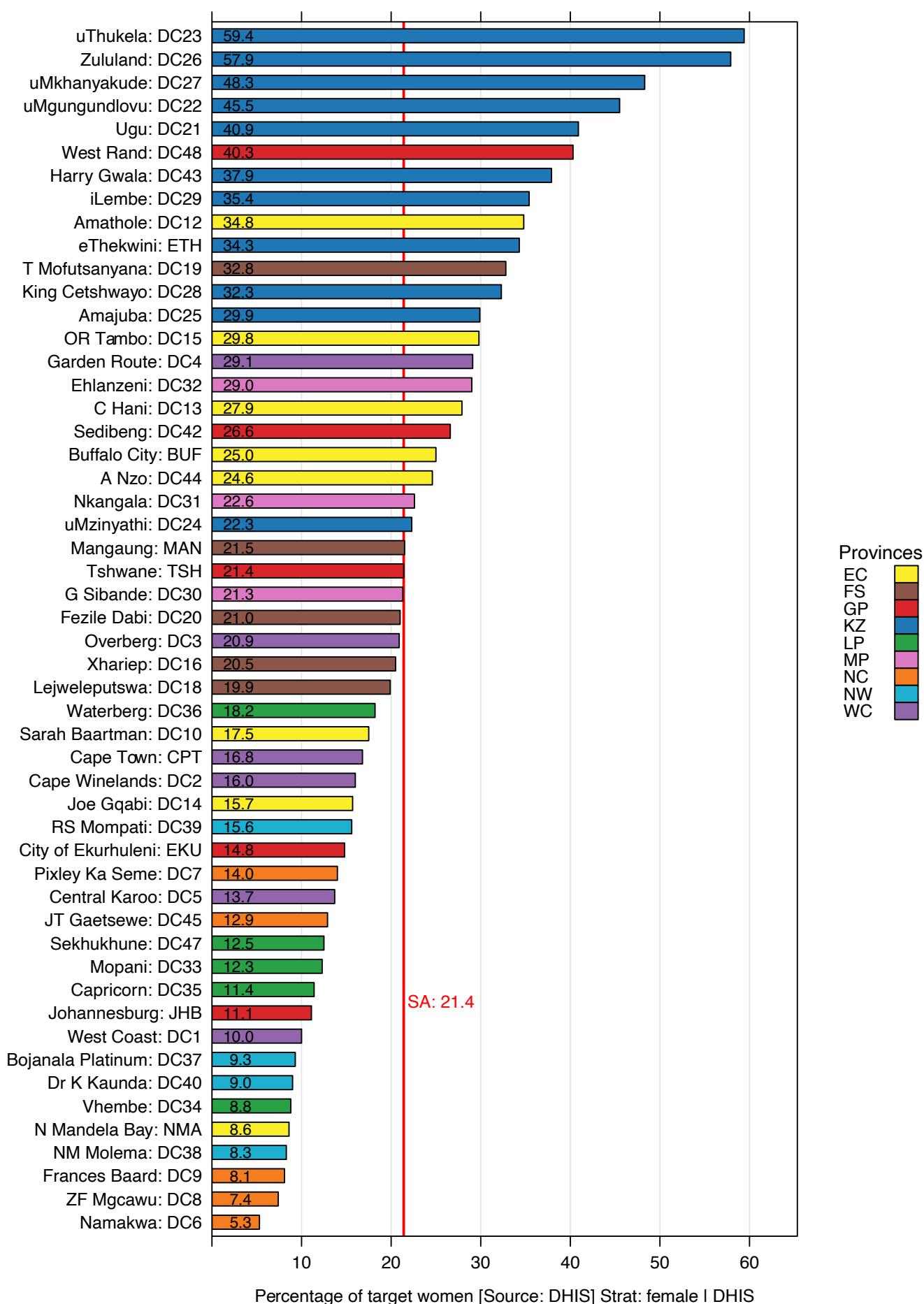
The inter-district variation, shown in Figure 4, reveals an 11.2-fold variation between Namakwa ((NC) with the lowest cervical cancer screening coverage of 5.3%) and uThukela (KwaZulu-Natal (KZN)) with the highest coverage of 59.4%.

Only 24 districts performed on par and above the national coverage of 21.4%. All 11 districts in KwaZulu-Natal performed above the national average, with eight of them being among the 10 districts with the highest cervical cancer screening coverage (Map 1). In Mpumalanga, all

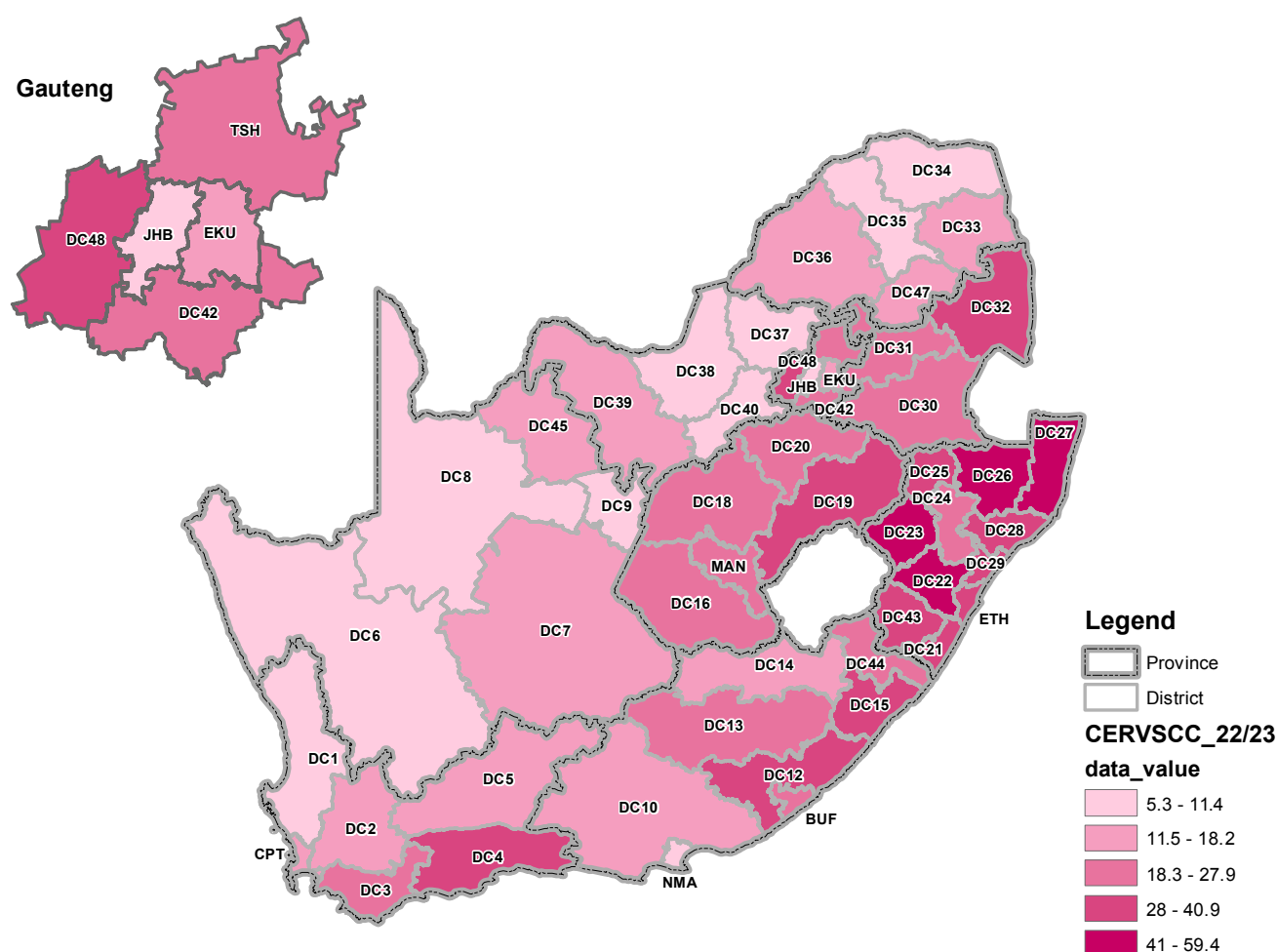
three districts also performed above the national average, placing the province second best in provincial performance.

The 10 districts with the poorest cervical cancer screening coverage of 10% and lower include three districts in the Northern Cape (Namakwa (5.3%), Zwelentlanga Fatman Mgcawu (7.4%) and Frances Baard (8.1%)), three in North West (Ngaka Modiri Molema (8.3%), Dr Kenneth Kaunda (9.0%) and Bojanala Platinum (9.3%)) and one each in the Eastern Cape (Nelson Mandela Bay (8.6%)), Limpopo (Vhembe (8.8%)) and Western Cape (West Coast (10.0%)).

Figure 4: Cervical cancer screening coverage by district, 2022/23



Map 1: Cervical cancer screening coverage by district, 2022/23



Source: DHIS

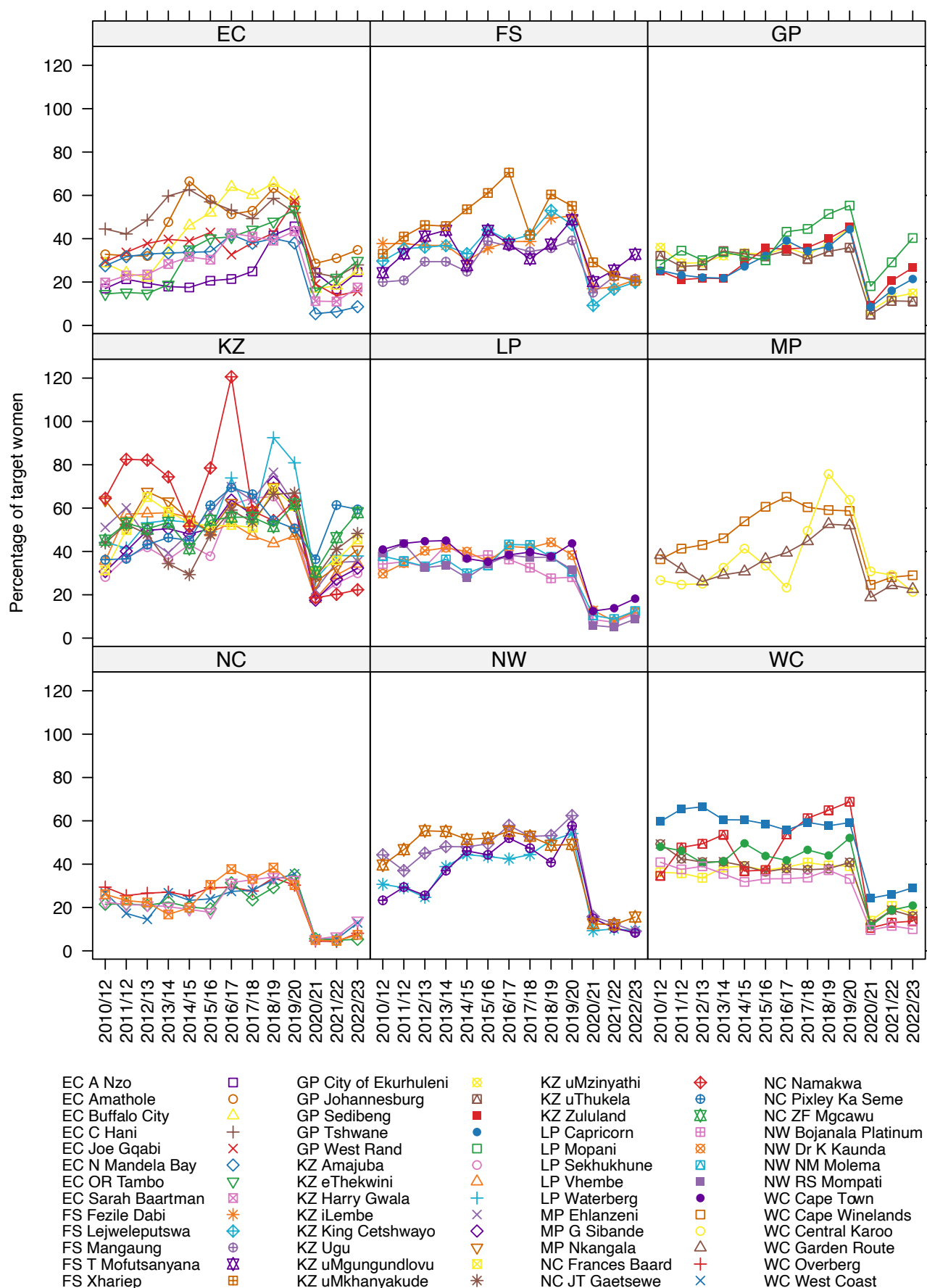
After an improvement in screening coverage in 2018/19, there was a significant drop observed across all districts. This possibly reflects the impact of the COVID-19 pandemic. While recovery is evident in a few districts, the majority are still lagging behind. A sharp rise in screening noted for KwaZulu-Natal in 2016/2017 reflects the activation of screening campaigns. However, this was not sustained, even in the pre-COVID-19 era. (Figure 5).

Only 13 districts had an increase in the cervical cancer screening coverage in 2022/23, with the highest increase of 7.8 percentage points in Gert Sibande (MP) followed by Cape Town (WC) with 3.9 percentage points. The

increases among these districts varied between 0.2 and 7.8 percentage points. The districts with the highest drop in coverage were Zululand (KZN) (11.5 percentage points) and West Rand (Gauteng (GP) (11.2 percentage points).

In the period 2018/19 to 2022/23 only two districts had an increase in coverage, namely Zululand and uThukela (both KZN) of 6.4 and 5.1 percentage points respectively. The districts with the highest decrease in cervical cancer screening coverage were Harry Gwala (KZN), Gert Sibande (MP) and Central Karoo (WC), with respective decreases of 54.6, 54.4 and 51.2 percentage points.

Figure 5: Annual trends: cervical cancer screening coverage by province and district, 2010/12–2022/23



Source: DHIS

Recommendations

- To reach the WHO 2030 goals, the district health system has to be strategic in the implementation of the Cervical Cancer Prevention and Control Policy.⁹ The strategic points mentioned in the policy should be constantly monitored and evaluated. Lessons can be taken from other priority programmes such as HIV.
- The National Department of Health should benchmark best practices from counties that have managed to reduce the cervical cancer burden and contextualise this to SA. The provinces that are not doing well such as the North West and Northern Cape should be prioritised.
- Intra-provincial district teams must collaborate to reduce significant gaps between districts in the same province, for example Gauteng where there is a great variation between the district performances.
- Cervical cancer screening services should be available at all health facilities, including hospitals.
- Capacity building on cervical cancer screening should be strengthened for the entire health workforce not only those managing women's health programmes.
- Detailed assessments must be undertaken to ensure the optimal implementation of policies and guidelines, and address barriers and facilitators to service delivery for the cervical cancer prevention programme.
- The cervical cancer guidelines and policy should be updated in line with newer approaches to screening (e.g. HPV testing which can be client administered).
- The current proxy indicator needs review to include the full treatment cascade of cervical cancer.
- A recovery plan needs to be put in place as most of the provinces have not yet recovered from the effects of the COVID-19 pandemic.
- Sustainability measures need to be built into the campaign models in order to avoid relapse of the programme after campaigns.
- The system needs to be intentional and employ a proactive approach. The budget for prevention services should be increased, which will eventually reduce the expenditure on cervical cancer treatment in the long run.

⁹National Department of Health. Cervical Cancer Prevention and Control Policy. Pretoria: NDoH; 2017.

4 Service capacity and access

4 Service capacity and access

4.1 Inpatient Management

Hospital beds per 10 000 target population

Joslyn Walker

Key findings

- In March 2023, the hospital beds for all types of hospitals in the public sector was 20.3 per 10 000 uninsured population, with a relatively substantial increase of 20.8% compared to March 2020. The difference in three years compared to a single annual change should be noted and counted together with investments in hospital beds due to the onset of the COVID-19 pandemic.
- The total number of beds in all hospitals increased markedly from 89 074 in March 2020 to 106 767 in March 2023 (19.8% increase). The increase in hospital beds was mostly in the Free State.
- District hospital bed totals remained stable. The hospital beds in district hospitals in March 2023 were 30 749 compared to 30 674 in March 2020, 30 883 in March 2021 and 30 904 in March 2022. The hospital beds per 10 000 uninsured population therefore remained stable around 6 per 10 000 uninsured population.
- The March 2023 data confirm previous findings of an extremely inequitable distribution in the number of hospital beds (either total or limited to district hospitals) per 10 000 uninsured population. Large differences were evident across provinces and across districts within the same province.
- It appears that there was no direct relationship between the rural location of a district, the number of hospitals and the number of beds per 10 000 target population. It also appears that there was no correlation between the hospital beds per 10 000, bed utilisation rate and average length of stay.
- Data quality appears to be problematic.

Introduction

The indicator 'hospital beds per 10 000 target population' measures the number of inpatient beds per 10 000 target population. For public sector beds, the uninsured population is used as the target.

According to the 2023 National Indicator Data Set (NIDS)¹ of the National Department of Health (NDoH), the total number of beds in the numerator is the sum of all inpatient beds approved for use. A 'bed' is defined as a unit of accommodation for admitted patients, that is, for patients who undergo the formal admission process as either an inpatient or a day patient because they require care that cannot be administered on an outpatient basis.

Depending on the level of care and the services provided, hospitals may have different categories of approved beds (specialities) such as medicine, surgery, gynaecology,

orthopaedics, paediatrics, maternity, psychiatry, intensive care unit (ICU), neonatal ICU and high care.

It is important to note that the numerator is the number of 'approved' beds, regardless of the actual capacity of the facility to admit patients. This number is a semi-permanent data element in the NIDS. Changes in actual bed availability do not reflect automatically in changes of the number of approved beds (for example, as a consequence of the closure of a hospital ward due to staff shortage). Any variation in this element must be ratified at provincial level by the Head of Department and the NDoH must be formally notified.² It is important to note that the impact of COVID-19, which resulted in several additional temporary wards and field hospitals, did not substantively increase the number of approved hospital beds.

¹National Department of Health. National Indicator Data Set 2023. Pretoria: NDoH; March 2023.

²Massyn N, Day C, Ndlovu N, Padayachee T. eds. District Health Barometer 2019/20. Durban: Health Systems Trust; December 2020.

The number of inpatient beds per 10 000 uninsured population can change over time due to various factors, including changes in healthcare infrastructure, population growth and shifts in healthcare delivery models. These changes are apparent in this chapter, following substantial

stresses on the health infrastructure since the 2019/2020 District Health Barometer last reviewed these data.²

Hospital bed density is associated with access equity and is linked to health outcomes through five elements³, notably:

1. **Healthcare access:** The availability of hospital beds is a critical factor in ensuring that individuals have access to medical care when needed. Bed availability reflects the country's capacity to handle healthcare needs, including emergencies and serious illnesses.
2. **Health system resilience:** The number of hospital beds per 10 000 population indicates the health system's capacity to respond to health crises, such as disease outbreaks, natural disasters or other emergencies. A higher bed density indicates greater resilience and ability to manage surges in demand for healthcare services.
3. **Quality of care:** Adequate hospital bed capacity can also be associated with the quality of care provided.

When there are enough beds, patients are less likely to face delays in receiving medical attention which leads to better outcomes in many cases.

4. **Equity and accessibility:** Monitoring hospital bed density helps assess whether healthcare services are distributed equitably across the country. Disparities in bed availability can indicate disparities in healthcare access for different populations.
5. **Planning and resource allocation:** Hospital bed density data is valuable for healthcare planning and resource allocation. It helps policymakers to make informed decisions about where to invest resources and how to expand or optimise healthcare infrastructure.

It is important to note that while hospital bed density is a valuable indicator, it should be considered alongside other indicators to provide a comprehensive assessment of healthcare service coverage. While it is evident that extremely low levels of hospital bed density suggest poor access to essential health services, there is no global norm for the density of hospital beds in relation to total population. The World Health Organization (WHO) uses the observed minimum value across the high-income countries belonging to the Organisation for Economic Co-operation and Development (OECD) – 1.8 beds per 1 000 population – as a reference.⁴ This number, however, should be considered as only a general term of reference, because the choice of the optimal hospital bed density for a population is highly contextual.

Distribution of hospital services remains a conundrum, even in high-income societies. Where the population is dispersed and distances are great, access to hospital and emergency services becomes more problematic. The financial sustainability of small hospitals in rural and remote areas has become a major concern in terms of both

capital expenditure and running costs. Attracting highly skilled staff to rural and remote locations remains a further challenge.⁵

South Africa has adopted the ideals of universal health coverage (UHC) and is in the process of establishing National Health Insurance (NHI) to ensure that needed health services of adequate quality are accessible to everyone, regardless of their socio-economic status and place of living.⁶ This is founded in a primary health care approach in which local clinics, close to where people live, are the point of access to the national health system and the fundamental provider of prevention and care, with progression towards higher levels happening gradually and only if strictly needed through a referral policy. This approach was envisaged both to enhance accessibility and convenience for the person by bringing health promotion and preventive and curative healthcare services closer to the patient's place of residence, and to minimise the burden on the health system for the provision of specialised, and necessarily expensive, services.⁷

²Massyn N, Day C, Ndlovu N, Padayachee T. eds. District Health Barometer 2019/20. Durban: Health Systems Trust; December 2020.

³Tian F, Pam J, Hospital bed supply and inequality as determinants of maternal mortality in China between 2004 and 2016, Intern Journ for Equity in Health. 2021; 20(51).

⁴Reid M, Gupta R, Roberts G, Goosby E, Wesson P. Achieving Universal Health Coverage (UHC): Dominance analysis across 183 countries highlights importance of strengthening health workforce. PLoS One. 2020; 15(3):e0229666.

⁵Massyn N, Barron P, Day C, Ndlovu N, Padarath A. eds. District Health Barometer 2018/19. Durban: Health Systems Trust; February 2020.

⁶Republic of South Africa. National Health Insurance Bill. Government Gazette No. 42598 of 26 July 2019. URL: https://www.gov.za/sites/default/files/gcis_document/201908/national-health-insurance-bill-b-11-2019.pdf.

⁷The South African Medical Association. Submission to the Competition Commission Market Enquiry into Private Health Care In Respect of Proposed Regulatory Interventions for Licensing of Health Facilities (14 February 2018). Pretoria: SAMA; 26 February 2018. URL: <https://www.samedical.org/file/678>.

Hospital beds per 10 000 target population (all hospital types)

The total number of hospital beds includes inpatient beds approved in all categories of health facility in the public sector, namely district, regional, provincial tertiary,

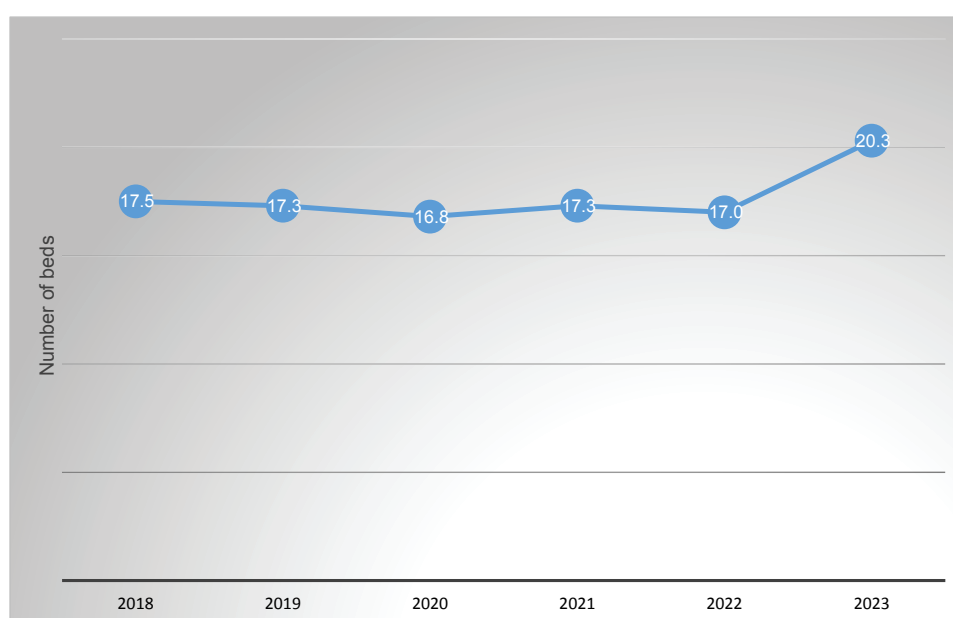
national central, specialised tuberculosis (TB), specialised psychiatric, specialised orthopaedic, specialised chronic hospitals and rehabilitation centres.

National overview

In March 2023, the hospital beds for all types of health facilities⁸ in the public sector per 10 000 uninsured population was 20.3 (Figure 1). The beds increased by 20.8% when compared to the 2020 value of 16.8 per 10 000 uninsured population. This was due to the real increase in the number of approved beds, which increased from 89 074 in March 2020 to 106 767 in March 2023 (19.8% increase).

It is important to note that the change in the number of approved beds cannot be interpreted directly as a change in the number of 'operational' beds, that is, beds actually available for use by patients. In many cases, it reflects the late adaptation of the official records to a situation already existent on the ground.

Figure 1: National hospital beds per 10 000 uninsured population (all types of hospitals), March 2018 – March 2023



Source: DHIS

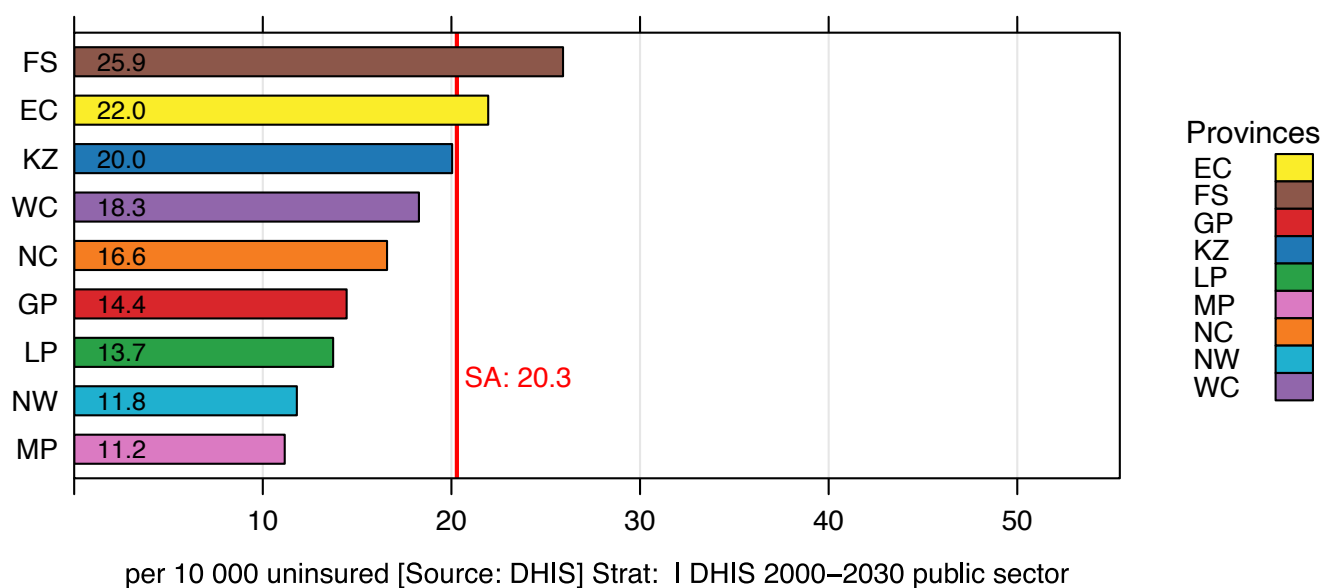
Provincial overview

There are significant variances between the provinces, with the Free State (FS) recording the highest number of beds per 10 000 population at 25.9 and Mpumalanga (MP) the lowest at 11.2 beds (Figure 2). In four provinces ((Eastern Cape (EC), KwaZulu-Natal (KZN), Western Cape (WC) and FS) the number of hospital beds per 10 000 was within the range observed in high-income OECD countries, that is, above 18 beds per 10 000 population.⁹ Free State with 25.9 beds per 10 000 uninsured population in March 2023 reflects a substantial increase of 6.3 beds per 10 000

population compared to the 19.6 beds in March 2020 data. This is the largest increase across the provinces. Other provinces recording an increase in bed density included the Northern Cape (NC) (+1.9 beds per 10 000), Western Cape (+0.7 beds per 10 000) and Eastern Cape (+0.2 beds per 10 000). Gauteng (GP), Limpopo (LP), KwaZulu-Natal and North West (NW) all recorded 0.3 beds per 10 000 reductions in bed density, while Mpumalanga recorded a reduction of 0.9 beds per 10 000 population.

⁸Excluding intermediary care and step-down/step-up beds, i.e. beds used to provide an intermediate level of care for patients with requirements somewhere between that of the general ward and the intensive care unit: patients deteriorating in a ward ('step-up'), a lower level of care for patients transitioning out of intensive care ('step-down'), or a lateral transfer of care from a recovery room for post-operative patients.

⁹The comparison should be treated with caution, both because the interpretation of the indicator changes according to the context, and because the methods used for counting beds and identifying the target population are not always comparable with those used in OECD countries.

Figure 2: Hospital beds per 10 000 uninsured population by province, March 2023 (all types of hospitals)

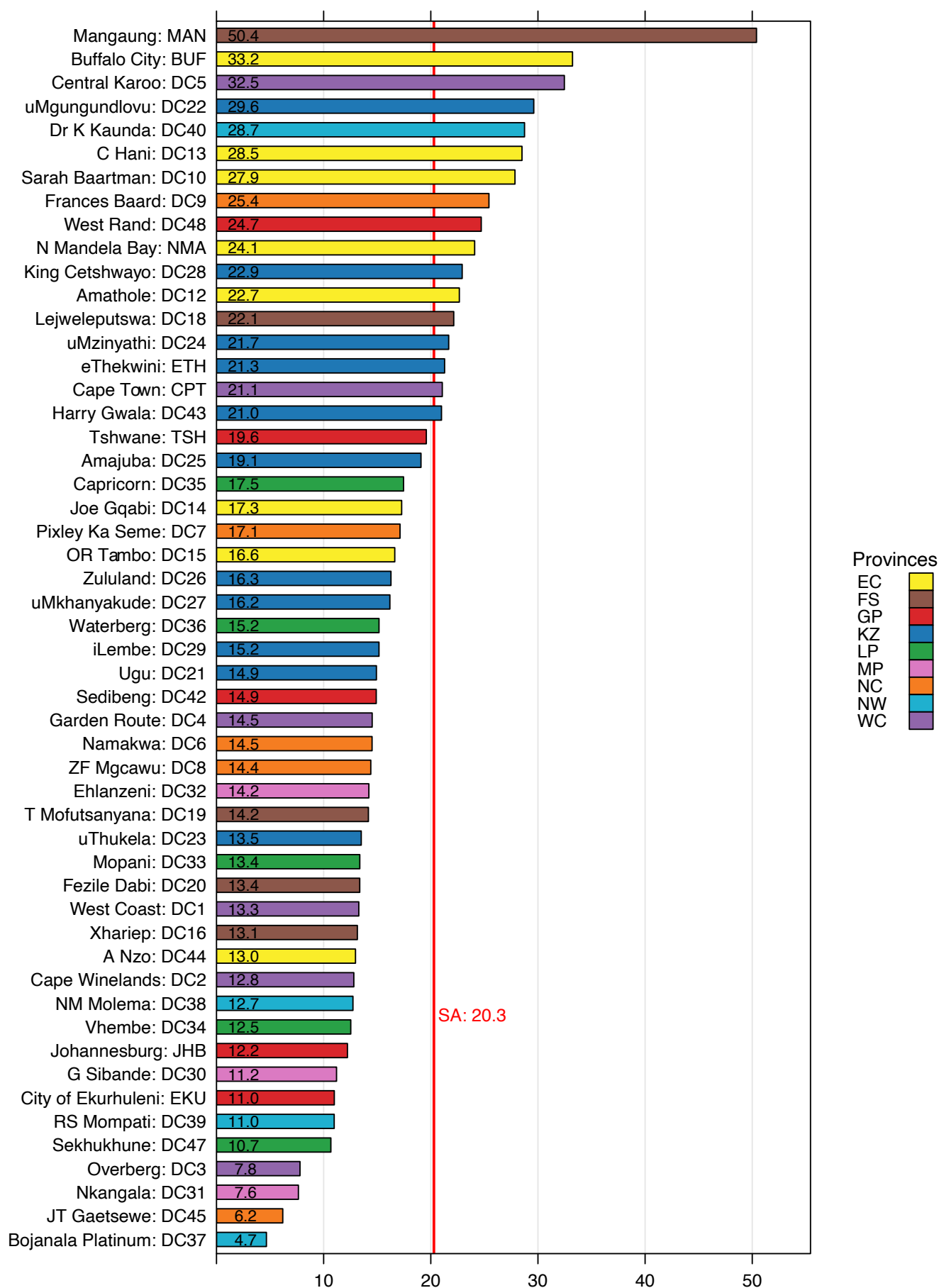
District overview

The number of hospital beds per 10 000 uninsured population varied largely across districts, from a minimum of 4.7 beds per 10 000 uninsured population (-6% compared to 2020 data) in Bojanala Platinum (NW) to a more than 10-fold value (50.4 per 10 000) in Mangaung (FS) (Figure 3 and Map 1).

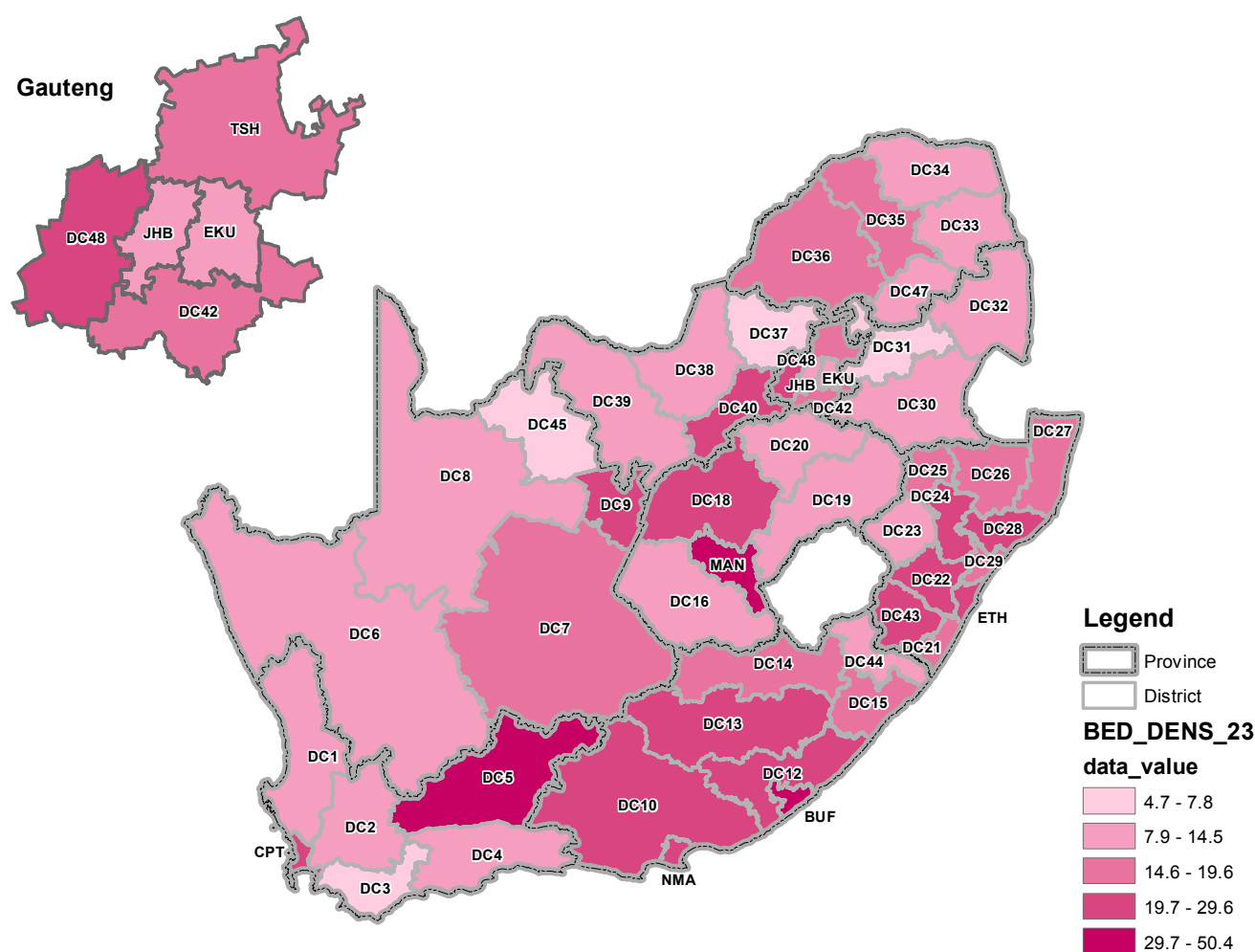
This large variability must be interpreted cautiously because this analysis includes hospital beds at all levels of

care, especially beds in provincial tertiary, national central and specialised hospitals which are counted in each district but serve populations well beyond the boundaries of the district and, often, the province. This fact helps to explain why most metropolitan municipalities (where provincial tertiary and national central hospitals are, located) have hospital beds more than the national average of 20.3 per 10 000 uninsured population. Johannesburg and Ekurhuleni (both GP) are outliers with 12.2 and 11.0 respectively.

Figure 3: Hospital beds per 10 000 uninsured population by district, March 2023 (all types of hospitals)



Map 1: Hospital beds per 10 000 uninsured population by district, March 2023 (all types of hospitals)



Source: DHIS

The range of values depicted in Figure 3 points clearly to a high level of inequality in the distribution of hospital beds across the country. This is exemplified within the single province of the Free State, namely Mangaung with the highest bed density at 50.4 beds per 10 000 uninsured population and Xhariep with only 13.1, well below the national average. This is a variance of 37.3 beds per 10 000 population, the highest variance between districts in a single province.

The most equal distribution of beds between districts in a province is in Mpumalanga, where the range is only 6.6 beds per 10 000 between the most (Ehlanzeni with 14.2 beds) and least density (Nkangala with 7.6 beds).

North West districts ranged from the lowest value at 4.7 beds per 10 000 uninsured population in Bojanala Platinum to a maximum of 28.7 beds per 10 000 uninsured population in Dr Kenneth Kaunda. These variances are illustrated in Table 1.

Table 1: Variance of beds per 10 000 uninsured population by province, March 2023

Province	Lowest number of beds per 10 000	Highest number of beds per 10 000	Variance
Eastern Cape	13,0	33,2	20,2
Free State	13,1	50,4	37,3
Gauteng	11,0	24,7	13,7
KwaZulu-Natal	14,9	29,6	14,7
Limpopo	10,7	17,5	6,8
Mpumalanga	7,6	14,2	6,6
Northern Cape	6,2	25,4	19,2
North West	4,7	28,7	24
Western Cape	7,8	32,5	24,7

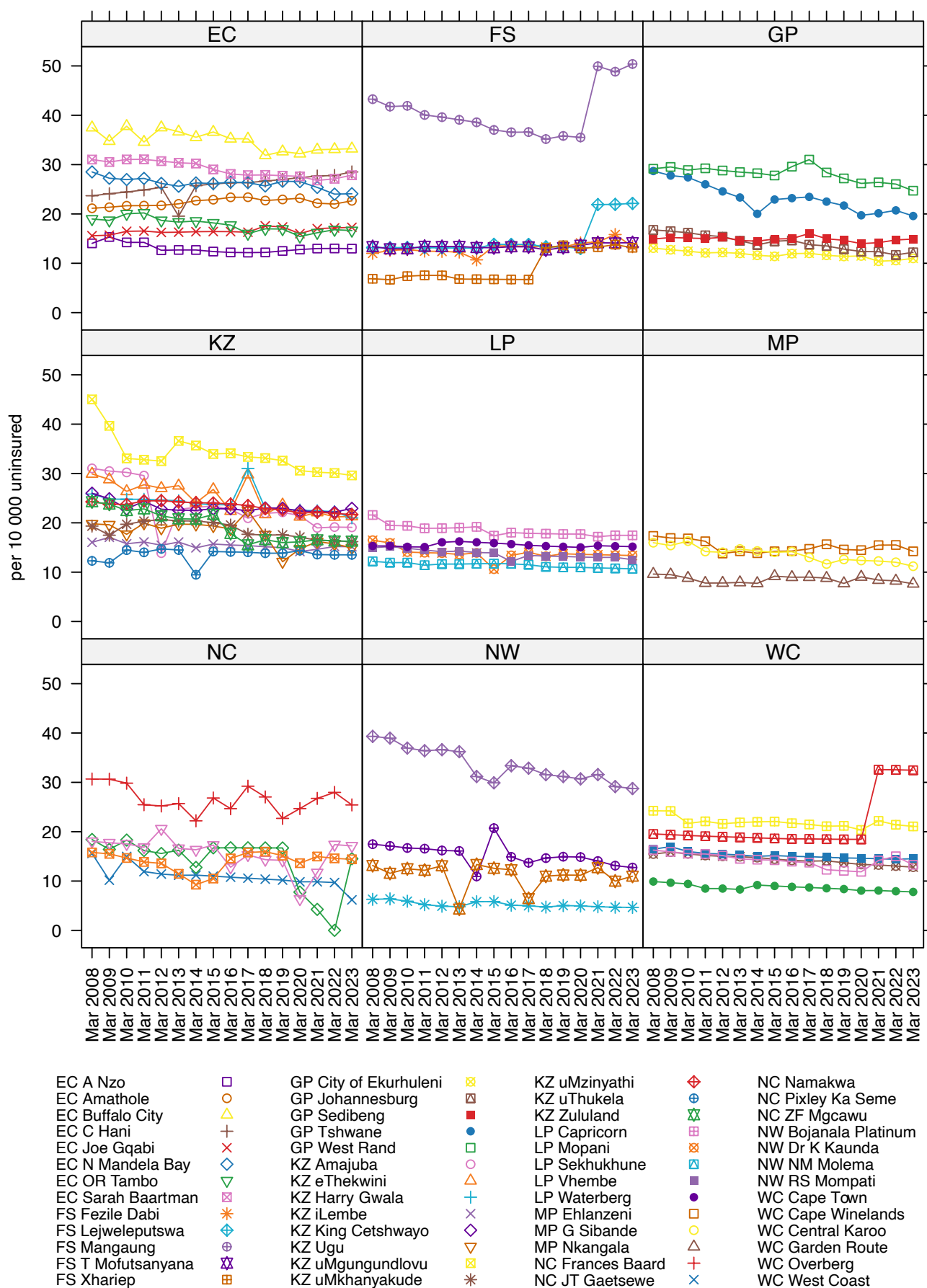
Source: DHIS

Long-term trends in the number of hospital beds per 10 000 uninsured population are shown in Figure 4. Taking into account data quality problems as likely explanations for the implausibly rapid oscillations evident in some graphs,¹⁰ the data suggest, for most districts, an overall modest downward trend in the number of hospital beds

per 10 000 population. However, the last three years have seen significant changes in three provinces, namely the Free State (Lejweleputswa and Mangaung), Western Cape (Central Karoo) and Northern Cape (Namaqualand).

¹⁰Massyn N, Barron P, Day C, Ndlovu N, Padarath A. eds. District Health Barometer 2018/19. Durban: Health Systems Trust; February 2020. URL: <https://www.hst.org.za/publications/District%20Health%20Barometers/District+Health+Barometer+2018-19+Web.pdf>

Figure 4: Annual trends—hospital beds per 10 000 target population by district, March 2008–March 2023 (all types of hospitals)



Source: DHIS

Hospital beds per 10 000 target population (district hospitals)

The total number of hospital beds considered in this section includes only hospital beds approved in public sector district hospitals, thus excluding those in hospitals at

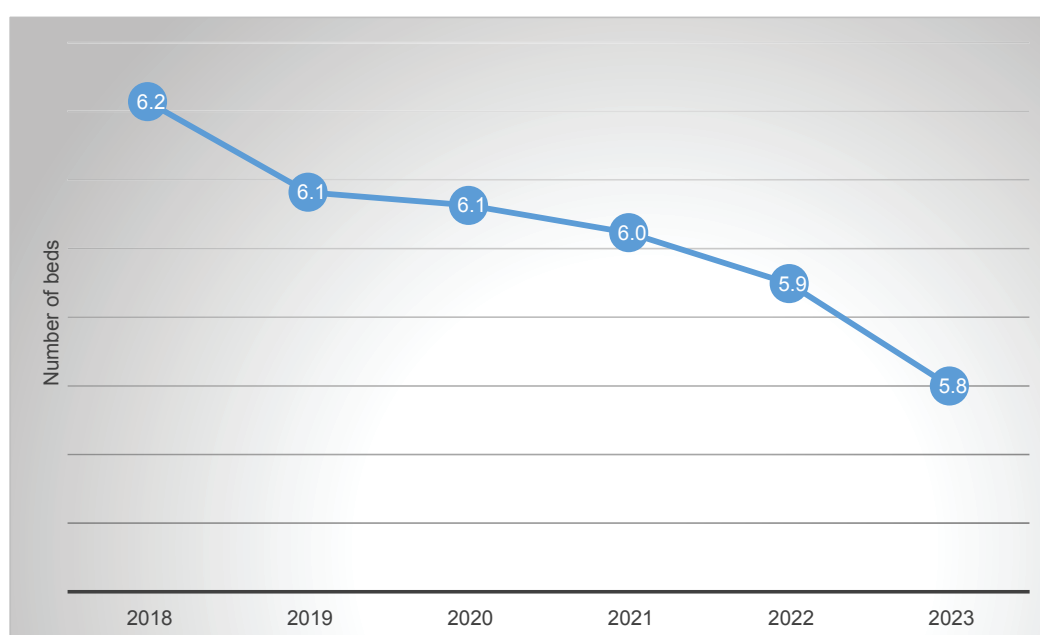
higher levels (regional, provincial, national and specialised) and those in rehabilitation centres.

National overview

In March 2023, the hospital beds for district hospitals in the public sector per 10 000 uninsured population was 5.8 (Figure 5). The beds per 10 000 uninsured population show an annual decrease between March 2018 and March

2023. The total number of hospital beds in March 2023 was 30 749 compared to 30 674 in March 2020, 30 883 in March 2021 and 30 904 in March 2022.

Figure 5: National hospital beds per 10 000 uninsured population (district hospitals), March 2018–March 2023

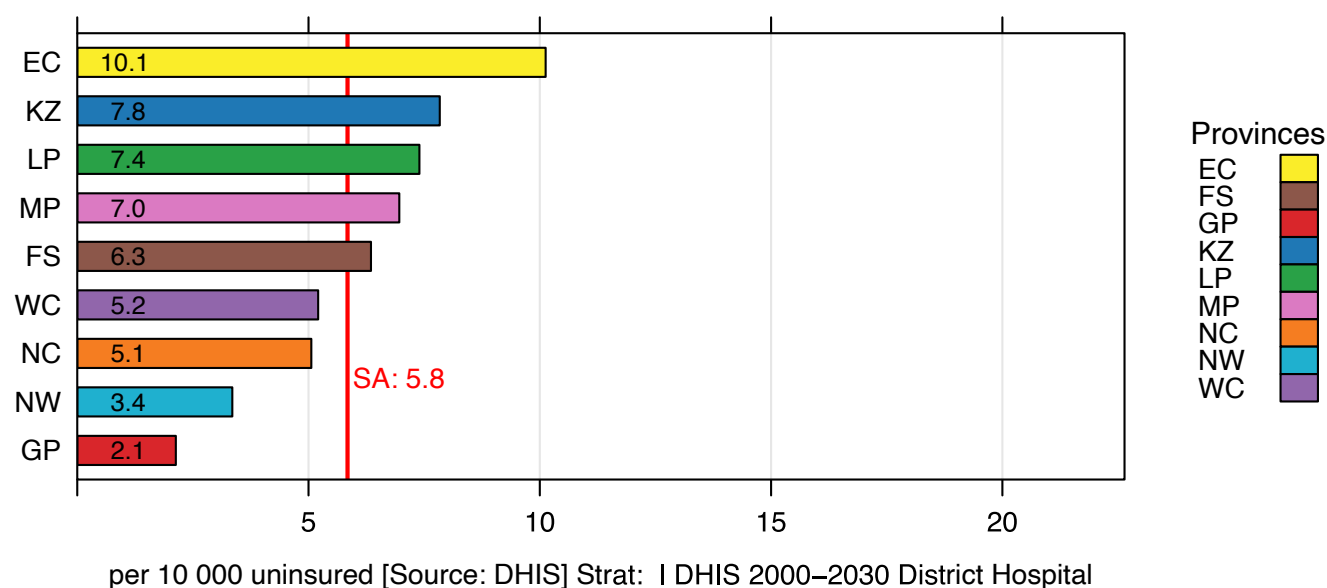


Source: DHIS

Provincial overview

The provincial hospital beds per 10 000 uninsured population for district hospitals is shown in Figure 6. Values range from the minimum observed in Gauteng (at 2.1 per 10 000 uninsured population) to the maximum of 10.0 per

10 000 uninsured population in the Eastern Cape, a 4.8-fold variation. Compared to March 2020, the beds per 10 000 uninsured population increased in only one province in March 2023 – the Eastern Cape (9.1 beds to 10.1 beds).

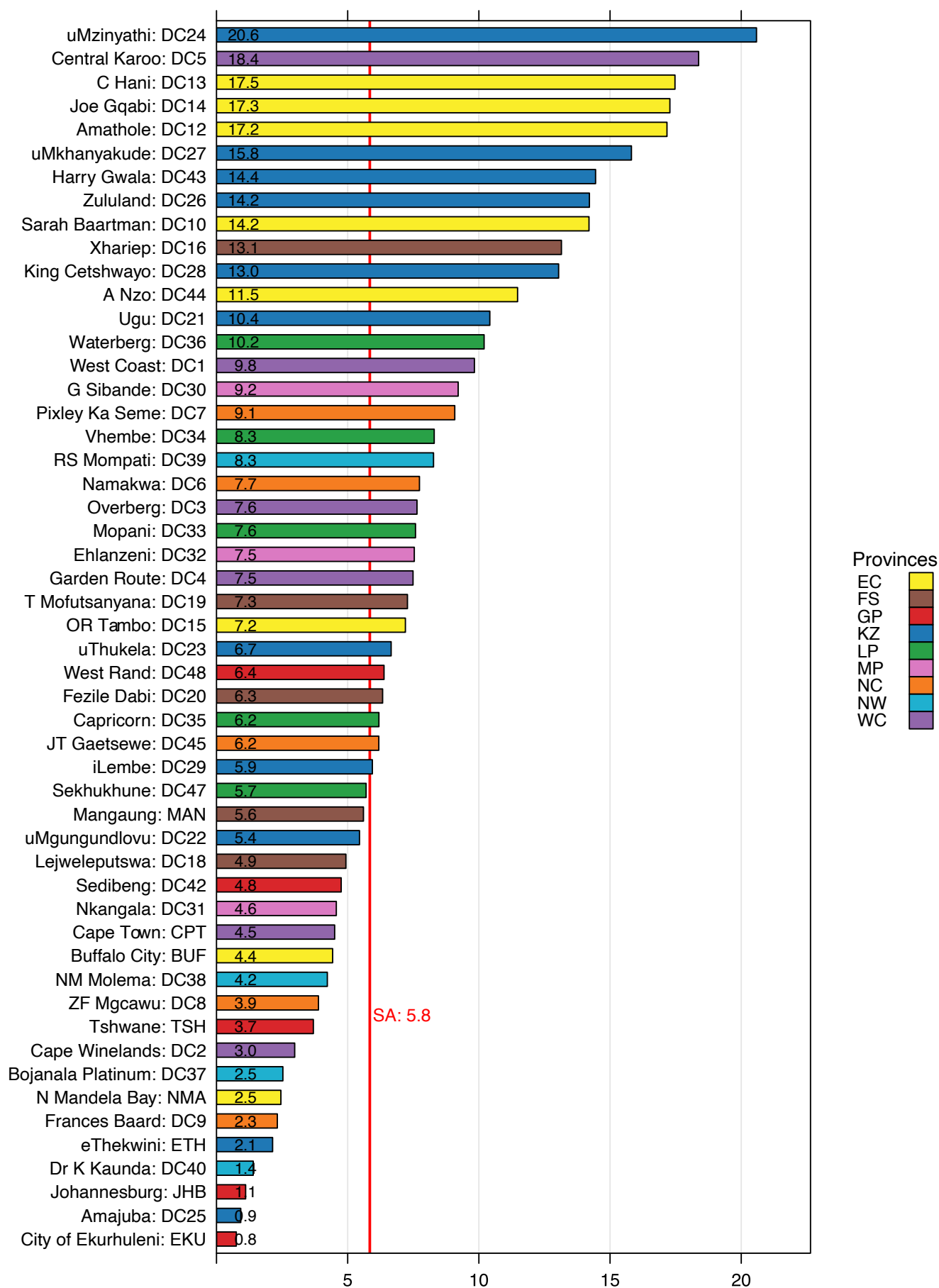
Figure 6: Hospital beds per 10 000 uninsured population by province, March 2023 (district hospitals)

District overview

The number of district hospital beds per 10 000 uninsured population observed in March 2023 also varied widely across districts. The extreme variations continue at a

district level, with 0.8 beds per 10 000 uninsured population in Ekurhuleni (GP) to 20.6 beds in uMzinyathi (KZN), a 25.7-fold variation (Figure 7).

Figure 7: Hospital beds per 10 000 uninsured population by district, March 2023 (district hospitals)



An analysis of the number of district hospital beds in March each year for the past three years (March 2021–March 2023) indicates that the number of beds fluctuated year-on-year in most districts (highlighted in yellow in Table 2). In some provinces there were huge outliers, especially in the Northern Cape in March 2022, for example, in Namakwa the district hospitals reported no beds. However, in some cases there may have been a real increase or decrease in the number of inpatient beds (highlighted in green).

Table 2 also shows inequity in the number of inpatient beds among district hospitals within provinces, which contributed to inequity in the number of hospital beds per 10 000 target population. In Mpumalanga, Nkangala with a population of 1 677 409 has 4.6 beds per 10 000 total population compared to the 7.5 beds in Ehlanzeni with a total population of 1 853 932. In KwaZulu-Natal, Amajuba with a population of 577 873 has 19.1 beds compared to 10.4 beds with a population of 838 465 in Ugu.

Table 2: Number of inpatient beds by district hospitals, March 2021–March 2023

Province	District	Total hospital beds – district hospitals March 2021	Total hospital beds – district hospitals March 2022	Total hospital beds – district hospitals March 2023	Total population	Beds per 10 000 uninsured population – district hospitals March 2023
Eastern Cape	OR Tambo	1 059	1 084	1 084	1 555 812	7.2
	Amathole	1 266	1 236	1 266	778 884	17.2
	Joe Gqabi	551	552	552	338 445	17.3
	Buffalo City	272	272	272	794 314	4.4
	Chris Hani	1 162	1 146	1 167	712 004	17.5
	Nelson Mandela Bay	238	237	238	1 216 179	2.5
	Sarah Baartman	574	593	630	484 665	14.2
	Alfred Nzo	917	920	919	831 112	11.5
Free State	Mangaung	400	395	400	884 908	5.6
	Lejweleputswa	285	269	280	644 397	4.9
	Thabo Mofutsanyana	501	501	501	757 178	7.3
	Fezile Dabi	279	278	279	506 744	6.3
	Xhariep	151	157	150	127 251	13.1
Gauteng	Sedibeng	350	361	366	968 999	4.8
	Johannesburg	566	574	559	6 295 072	1.1
	Ekurhuleni	247	247	245	4 165 110	0.8
	Tshwane	1 043	1 111	1 035	3 950 218	3.7
	West Rand	503	503	483	982 753	6.4
KwaZulu-Natal	iLembe	382	382	382	696 590	5.9
	Harry Gwala	706	706	706	513 778	14.4
	uMzinyathi	1 134	1 134	1 134	575 760	20.6
	Zululand	1 182	1 182	1 182	872 128	14.2
	King Cetshwayo	1 167	1 167	1 167	975 004	13.0
	uMgungundlovu	571	571	571	1 163 352	5.5
	uMkhanyakude	1 040	1 042	1 037	685 592	15.8
	Ugu	870	870	823	838 645	10.4
	uThukela	442	442	445	711 516	6.7
	Amajuba	33	54	50	577 873	19.1
	eThekweni	747	747	716	4 072 927	2.1

Province	District	Total hospital beds – district hospitals March 2021	Total hospital beds – district hospitals March 2022	Total hospital beds – district hospitals March 2023	Total population	Beds per 10 000 uninsured population-district hospitals March 2023
Limpopo	Waterberg	729	729	729	781 264	10.2
	Sekhukhune	679	679	679	1 249 787	5.7
	Capricorn	753	793	773	1 357 666	6.2
	Vhembe	1 186	1 186	1 174	1 501 251	8.3
	Mopani	878	878	878	1 234 474	7.6
Mpumalanga	Nkangala	656	656	665	1 677 409	4.6
	Gert Sibande	982	977	1044	1 283 719	9.2
	Ehlanzeni	1 362	1 373	1 264	1 853 932	7.5
North West	Bojanala Platinum	436	436	448	2 015 765	2.5
	Ngaka Modiri Molema	447	377	352	916 394	4.2
	Ruth Segomotsi Mompoti	438	320	366	475 637	8.3
	Dr Kenneth Kaunda	88	102	102	823 483	1.4
Northern Cape	Frances Baard	100	93	83	421 181	2.3
	Pixley Ka Seme	104	167	167	209 912	9.1
	John Taolo Gaetsewe	233	233	151	279 070	6.2
	Namakwa	40	-	73	114 245	7.7
	Zwelentlanga Fatman Mgcawu	99	95	95	286 400	3.9
Western Cape	Central Karoo	483	483	483	74 445	18.4
	Overberg	202	202	202	310 662	7.6
	Cape Town	1 717	1 706	1 706	4 776 492	4.5
	Garden Route	396	396	396	628 217	7.5
	West Coast	353	396	396	478 958	9.8
	Cape Winelands	247	247	247	974 747	3.0

Source: DHIS

The bed utilisation rate (BUR) is one of the indicators used to measure if the beds in a hospital are used cost effectively. The BUR also measures the occupancy of available beds and therefore indicates how efficiently a hospital is using its available capacity. It is calculated as follows: number of inpatient days added to half the number of day patients, and divided by usable bed days.

Average length of stay (ALOS) refers to the average number of days that patients spend in hospital. It is generally calculated as follows: total number of inpatient days during a year plus half the number of day patients, divided by the number of separations (deaths, discharges and transfers

out). If the ALOS is persistently high, it suggests that patients spend too much time in hospital either because they are not discharged when they should be or are not appropriately treated or transferred timeously, which results in longer recovery times. If the ALOS is persistently low (less than 1.5 days), it could mean that patients are being discharged earlier than they should be due to high BUR where demand for beds might lead to patients getting discharged too soon. It can also be because referral rates to other hospitals are high.

The target BUR in South Africa is between 70% and 80% and the target ALOS is between 3.5 and 4.5 days.

Table 3 shows the hospital beds per 10 000 uninsured population, BUR and ALOS for district hospitals. There is no correlation between the hospital beds per 10 000, BUR and ALOS. Except for the district hospitals in Gauteng and the Western Cape, none of the hospitals in the other seven provinces had a BUR between 70% and 80%. Almost all of the district hospitals in the Eastern Cape and KwaZulu-

Natal had an ALOS that exceeded 4.5 days and a BUR of less than 70%, indicating that the hospital beds may be under-utilised and may require rationalisation. The districts in which district hospitals had higher ALOS indicate that patients stayed longer than medically necessary and that district hospitals were not providing efficient services.

Table 3: Hospital beds per 10 000 uninsured population, bed utilisation rate and average length of stay for district hospitals by district, March 2023

Province	District	Beds per 10 000 uninsured population-district hospitals	Inpatient bed utilisation rate (percentage)	Average lengths of stay (days)
Eastern Cape	OR Tambo	7.2	45.5	5.1
	Amathole	17.2	39.5	4.9
	Joe Gqabi	17.3	44.5	4.6
	Buffalo City	4.4	44.2	5.8
	Chris Hani	17.5	38.2	4.7
	Nelson Mandela Bay	2.5	69.7	4.6
	Sarah Baartman	14.2	49.7	4.0
	Alfred Nzo	11.5	59.3	4.6
Free State	Mangaung	5.6	60.5	3.7
	Lejweleputswa	4.9	50.0	2.1
	Thabo Mofutsanyana	7.3	44.6	2.8
	Fezile Dabi	6.3	60.5	3.7
	Xhariep	13.1	42.5	3.8
Gauteng	Sedibeng	4.8	70.7	4.8
	Johannesburg	1.1	69.7	4.6
	Ekurhuleni	0.8	72.4	6.3
	Tshwane	3.7	69.3	4.5
	West Rand	6.4	57.0	4.3
KwaZulu-Natal	iLembe	5.9	43.2	5.2
	Harry Gwala	14.4	55.4	5.1
	uMzinyathi	20.6	47.7	5.4
	Zululand	14.2	54.7	4.4
	King Cetshwayo	13.0	36.6	5.0
	uMgungundlovu	5.5	67.1	5.3
	uMkhanyakude	15.8	60.0	5.2
	Ugu	10.4	61.3	5.0
	uThukela	6.7	60.3	5.9
	eThekweni	2.1	61.0	4.3
Limpopo	Waterberg	10.2	58.9	4.2
	Sekhukhune	5.7	62.9	3.6
	Capricorn	6.2	72.1	4.1
	Vhembe	8.3	64.2	4.4
	Mopani	7.6	74.2	4.4
Mpumalanga	Nkangala	4.6	63.5	4.7
	Gert Sibande	9.2	59.2	4.1
	Ehlanzeni	7.5	62.8	4.3

Province	District	Beds per 10 000 uninsured population-district hospitals	Inpatient bed utilisation rate (percentage)	Average lengths of stay (days)
North West	Bojanala Platinum	2.5	69.7	4.4
	Ngaka Modiri Molema	4.2	56.3	4.0
	Ruth Segomotsi Mompati	8.3	62.6	4.5
	Dr Kenneth Kaunda	1.4	55.3	3.5
Northern Cape	Frances Baard	2.3	30.0	2.5
	Pixley Ka Seme	9.1	44.1	3.8
	John Taolo Gaetsewe	6.2	43.9	3.2
	Namakwa	7.7	139.6	2.6
	Zwelentlanga Fatman Mgcawu	3.9	42.5	2.9
Western Cape	Central Karoo	18.4	71.5	3.1
	Overberg	7.6	86.5	3.0
	Cape Town	4.5	100.6	4.0
	Garden Route	7.5	79.3	2.8
	West Coast	9.8	82.2	3.1
	Cape Winelands	3.0	93.2	3.3

Source: DHIS

The presence of some outliers (such as the extremely low number of beds compared to the uninsured population in Johannesburg and Ekurhuleni (both GP)) is partly explained by the fact that provincial tertiary and national central hospitals also admit patients who should be treated at a lower level of care. This leads to inefficiency and unjustified increases in costs for the health system. However, the picture remains similar when comparing all hospitals (Figure 3) and district hospitals (Figure 7). The large inter-district differences observed in the distribution of the total number of beds are not merely the result of the presence of large hospitals with catchment areas spreading across multiple districts.

As a consequence of the contextual nature of the indicator, there is no straightforward way of directly interpreting trends and geographical discrepancies in the number of hospital beds per 10 000 population in terms of access to essential services. The relative burden of disease varies largely across districts and provinces.

The package of care rendered in district hospitals and the effectiveness of the primary health care (PHC) system

in acting as a 'filter' in reducing the number of hospital admissions also are far from uniform across different geographical areas. Each province has adapted the national referral policy and applies different criteria for referral for admission. These differences imply that the 'ideal' value of bed density is not the same across districts and provinces. Drawing conclusions regarding equity of access to health system resource requires deeper analysis, well beyond the scope of this chapter.

However, even considering the limitations of the analyses, the extreme (and possibly increasing) discrepancies observed in the values of the beds per 10 000 uninsured population across provinces and districts are unlikely to be explained only by data quality issues and differences in the burden of disease and/or functioning of the PHC referral system. It seems to suggest that the overall planning of the health system does not follow the criteria of equity and consistency with the objectives declared in policy documents,¹¹ and that greater efforts are warranted to ensure a distribution of hospital beds that is more compatible with the objectives of ensuring adequate access to essential health services to the entire population.

¹¹Chetty KS. Equity promoting health care policies in South Africa. A literature review commissioned by the Health Systems Knowledge Network. 2007. URL: https://www.who.int/social_determinants/resources/csdh_media/chetty_equity_2007_en.pdf.

Recommendations

The recommendations are the same as for previous editions of the District Health Barometer, namely:

- Data collection procedures at facility and district level and a mechanism of verification at provincial and national levels should be implemented to ensure the correctness of the data elements used for the calculation of these indicators.
- Data on the number of operational beds should be included among those routinely collected and data on forecast beds should be available.
- The NDoH should establish and implement a standardised approach to determine the number of inpatient beds needed at each level of care, and their distribution across provinces and districts. This approach should be based on evidence regarding the local burden of disease and other contextual factors. It should be an integral element of comprehensive and co-ordinated plans addressing all levels of the health system and their interconnections simultaneously.
- Based on the optimal distribution of inpatient resources established through the above procedure, every province should develop a service and system plan towards a coherent national plan to reduce inequities in access to district hospitals and other higher-level hospitals providing inpatient services.

4.2 Finance

Jonatan Davèn, Noxolo Madela, Aisha Khoele and Mark Blecher

Key findings

- The longer-term trend with two decades of real per capita increases in spending is now broken, with two subsequent years of real per capita declines.
- Although COVID-19 placed immense pressure on the health system, overall utilisation as measured by PHC headcount and district hospital PDEs declined sharply in 2020/21. However, expenditure remained the same, if not higher, resulting in huge increases in expenditure per PHC headcount and per district hospital PDE.
- Overall, provincial budgets declined by 6.6% in real terms (2022/23 prices) and the negative growth in expenditure across all three indicators, that is, PHC expenditure per capita, PHC expenditure per headcount and DHS expenditure per capita move along the same trajectory.
- Wide discrepancies remained across provinces and districts for both financial and non-financial indicators. However, it is also noted that the disparities may be due to the varying burden of disease, population density and demographics. Provinces would have to devise strategies to address inefficiencies that currently exist.
- The low growth rates in the provincial budgets reflect a very constrained fiscus. Also masked in expenditure outcomes is that the total PHC expenditure per capita in the country increased by 0.3% over the past five years (2018/19–2022/23) and district health services expenditure per capita declined by 0.2% in the same period. This may be an indication of prioritisation of PHC services which is good.

Introduction

Primary Health Care (PHC) in South Africa remains a priority for improving life expectancy and overall health outcomes. The World Health Organization (WHO) recommended reorienting health systems using the PHC approach as a means of achieving Universal Health Coverage (UHC). PHC is highly commended for being the most inclusive, equitable, efficient and cost-effective approach to improving population health outcomes.¹ In a continuous effort to move towards a largely preventative healthcare model and improve access to health care services, large investments have been made to strengthen the PHC platform as the first point of access to healthcare services. This has also included establishing programmes that assist in reaching densely populated and rural areas, such as the ward-based primary health care outreach teams (WBPHCOTs).

The much-anticipated health system reforms in South Africa, to be implemented through the National Health Insurance (NHI), place PHC in the forefront as the main vehicle to achieving UHC. Adequate financing of PHC services, including equitable distribution of the available

resources, is essential to ensuring fair and just access to quality healthcare services at this level.

Monitoring longitudinal trends as well as spatial distribution of health expenditure is key to measuring health system performance, prioritisation, efficiency and equity. In this chapter, the focus is mainly on four key health financing indicators measuring equity and efficiency of PHC and district hospital spending across South Africa, namely:

- Provincial and local government (LG) district health services (DHS) expenditure per capita (uninsured population)
- Provincial and LG PHC expenditure per capita (uninsured population)
- Provincial and LG PHC expenditure per PHC headcount
- Expenditure per patient day equivalent (PDE) (district hospitals).

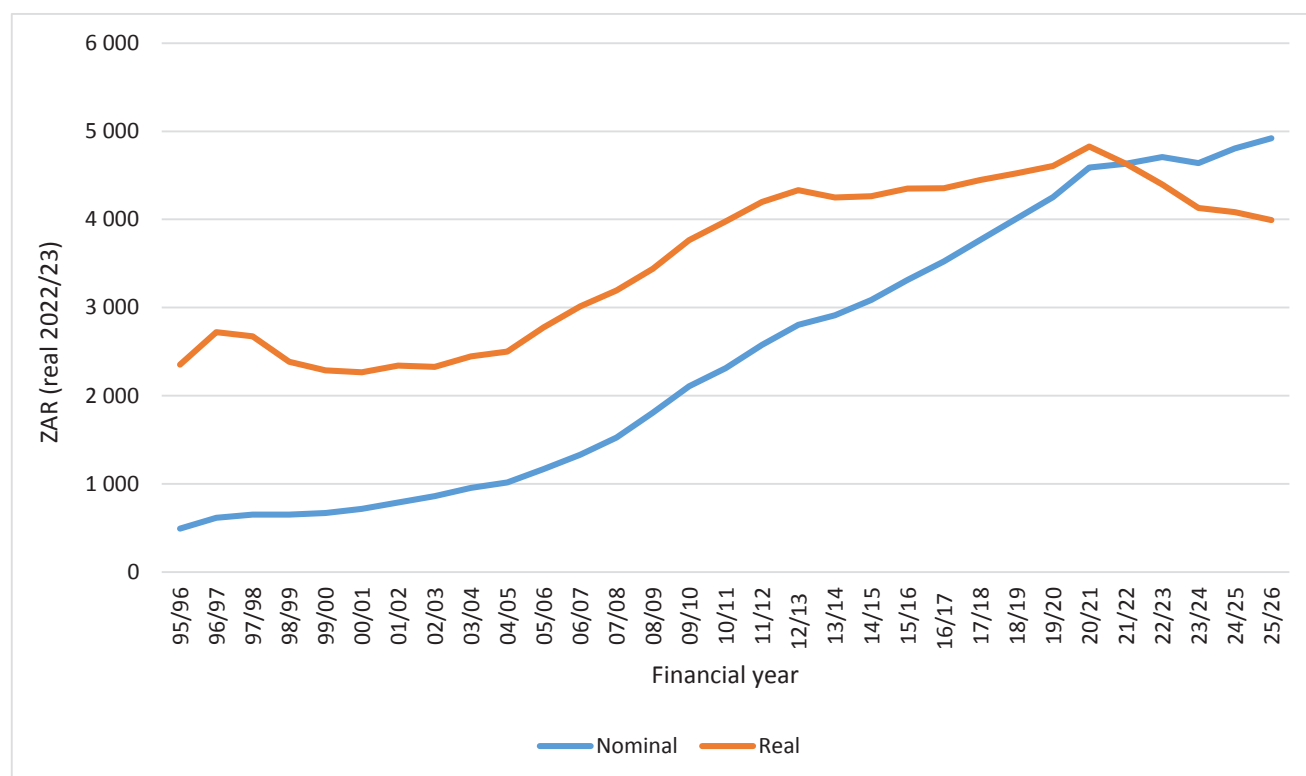
¹World Health Organization. 2023. Universal Health Coverage. World Health Organization. URL: Universal health coverage (UHC) (who.int). [Accessed: 04 November 2023].

Health financing context

Over the past two decades, South Africa has seen a considerable real increase in health expenditure (Figure 1), with real government health expenditure per capita more than doubling between 2000/01 and 2020/21. This upward trend peaked in 2020/21 with the large additional allocations made towards the COVID-19 response. However, due to the huge macro-economic impact of the

pandemic and prolonged lockdowns, including fall in tax revenue and increased borrowing,² health budgets from 2021/22 and onwards have been on the decline. Based on the budget projections published in Budget 2023, real health expenditure³ per capita, by 2025/26, will have regressed to approximately 2010/11 levels. Budgets are expected to remain constrained over the medium term.³

Figure 1: Provincial health expenditure per capita, 1995/96–2025/26



Source: Authors' calculations based on published provincial budgets

Given that this publication focuses on past expenditure rather than budgets going forward, the results presented below do not yet show the full potential impact of the increasingly constrained budget environment, but the decline is starting to be seen in 2021/22 and 2022/23.

²Blecher M, Davén J, Meyer-Rath G, Silal S, Makrellov K. The South African government's COVID-19 response: protecting lives and livelihoods. In: Govender K, George G, Padarath A, Moeti T, editors. South African Health Review 2021. Durban: Health Systems Trust; 2021. (2021)

³National Treasury. 2023 Medium-term budget policy statement. National Treasury. URL: <https://www.treasury.gov.za/documents/mtbps/2023/mtbps/FullMTBPS.pdf>. [Accessed: 03 November 2023].

⁴<https://www.treasury.gov.za/documents/provincial%20budget/Default.aspx>.

⁵Real expenditure means that where expenditure is presented for more than one year, it is adjusted for inflation in order to better reflect changes in actual resource use rather than just inflationary cost-fluctuations.

Methodology

In summary, provincial health expenditure up to 2022/23 was extracted from the Basic Accounting System (BAS) database and LG health expenditure was extracted from the Local Government Database and Reporting System. Given that municipal health services are partly funded by transfers from provincial health departments, these transfers are included under provincial spending. Local government health expenditure only includes spending from their own revenue to avoid double-counting. Expenditure allocated to specific health facilities under

the 'Responsibility' segment on BAS was coded to the latest District Health Information System (DHIS) facility information in order to identify the district where the expenditure was incurred. Unless otherwise stated, all changes in expenditure are presented in real 2022/23 prices using Statistics South Africa's (Stats SA) Consumer Price Index. Presenting expenditure in real prices means that changes over time reflect changes in actual resource use rather than inflationary changes in cost.

Overview of DHS expenditure

District health expenditure has a dedicated programme in the budget structure of provincial health departments. The programme has nine core sub-programmes, which are described in Box 1, most of which are based on the

level of care or type of services funded by the respective sub-programmes. In this chapter, LG health expenditure from LG own revenue is included to ensure that total government PHC spending is reflected.

Box 1: District health services sub-programme objectives

District management: Planning and administration of services; managing personnel and financial administration; co-ordination and management of the day hospital organisation and community health services rendered by local authorities and non-governmental organisations within the metro; determining work methods and procedures; and exercising district control.

Community health clinics: Rendering a nurse-driven PHC service at clinic level, including visiting points, mobile clinics and local authority clinics.

Community health centres: Rendering a PHC with full-time medical officers in respect of mother and child health, health promotion, geriatrics, occupational therapy, physiotherapy, psychiatry, speech therapy, communicable diseases, mental health, etc.

Community-based services: Rendering a community-based health service at non-health facilities in respect of home-based care, abuse victim care, mental health and chronic care, school health, etc.

Other community services: Rendering environmental and part-time district surgeon services, etc.

HIV and AIDS: Rendering a PHC service in respect of Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) campaigns and special projects.

Nutrition: Rendering a nutrition service aimed at specific target groups and combining direct and indirect nutrition interventions to address malnutrition.

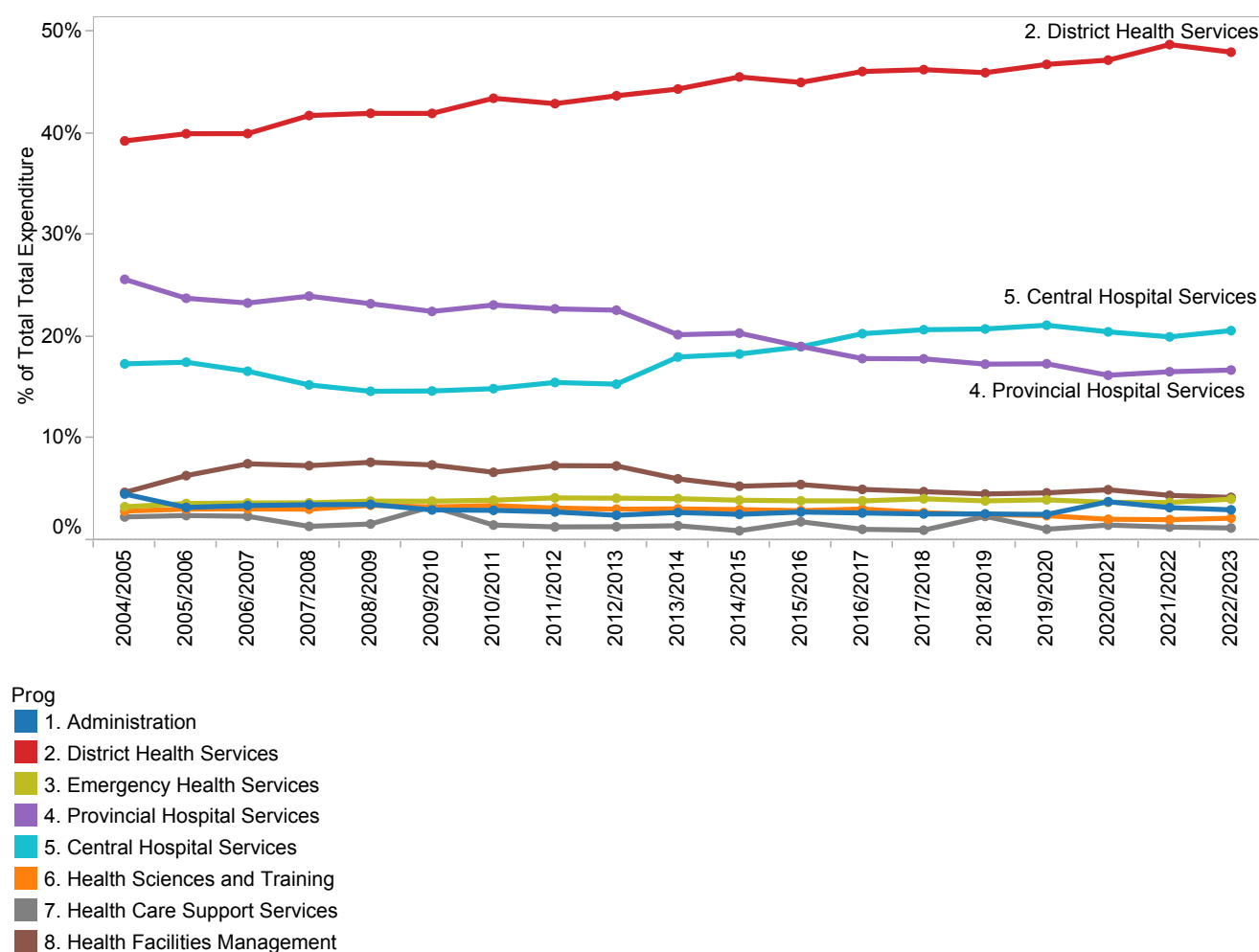
Coroner services: Rendering forensic and medico-legal services in order to establish the circumstances and causes surrounding unnatural death.

District hospitals: Rendering of a hospital service at district level.

Provincial budget structures have eight programmes and, as shown in Figure 2, District Health Services (DHS) is by far the largest programme. It accounted for almost half of total health expenditure in 2022/23 after increasing from below

40% in 2004/05. This is to a large extent driven by increases in the HIV/AIDS programme (see Figure 3) as a result of the rollout and expansion of antiretroviral therapy (ART), which now covers more than five million people.

Figure 2: Percentage of provincial health expenditure by programme

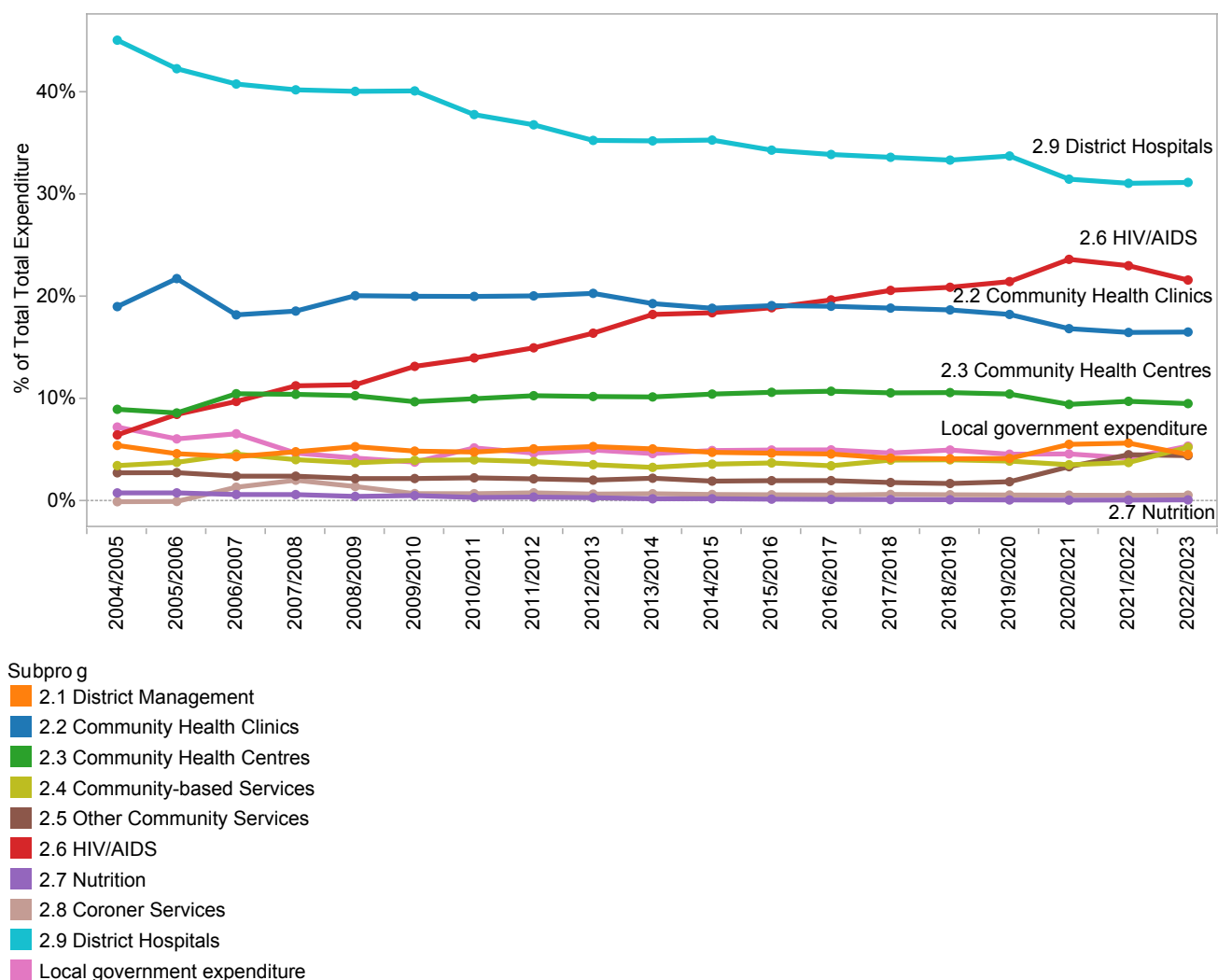


Source: BAS

Figure 3 below shows each sub-programme and LG expenditure as a percentage of total district health services expenditure from 2004/05 to 2022/23. The HIV/AIDS sub-programme has grown considerably as a result of the increased coverage of ART. The peak in 2020/21 is also partly due to a portion of COVID-19 allocations being channelled through a new component of the HIV/AIDS conditional grant. Several provinces therefore allocated it

to the HIV/AIDS sub-programme.

Although some sub-programmes, notably district hospitals, make up a declining share of total DHS expenditure, it should be noted that all sub-programmes saw a real increase in total spending over the period shown in Figure 3.

Figure 3: Percentage of provincial DHS expenditure by sub-programme, 2004/5–2022/23

Source: BAS

District health services expenditure per capita (uninsured)

Provincial and LG DHS expenditure per capita (uninsured) is the total expenditure on DHS per person not covered by a private medical scheme. Approximately 16% of the South African population are either members or beneficiaries of

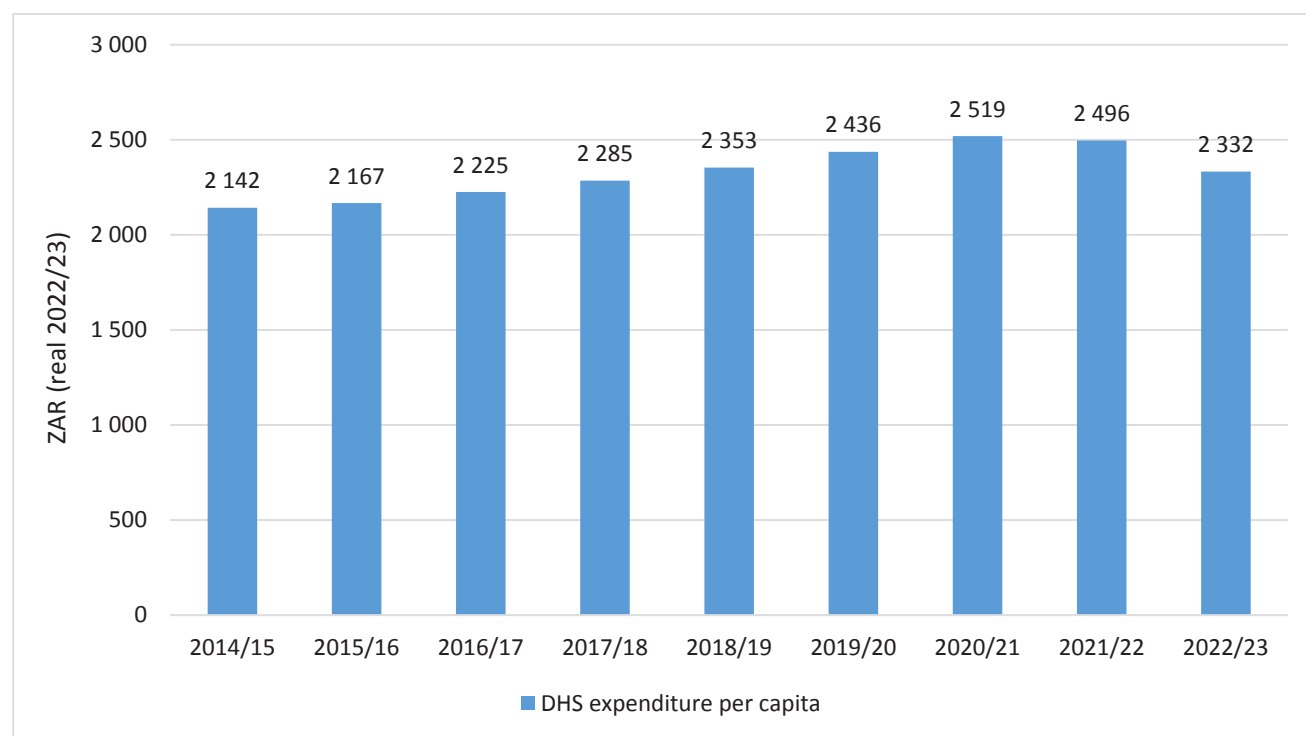
medical schemes, and are excluded from the denominators for all indicators in this chapter as they generally do not rely on the public sector for healthcare.

National overview

Real expenditure per capita (uninsured) on district health services increased considerably from R2 142 in 2014/15 to R2 519 in 2020/21, which is an average annual increase of 2.7%. However, in the two subsequent years, it

decreased to R2 332 in 2022/23, partly due to temporary COVID-19 allocations being phased out but also due to budget reductions due to declining tax revenue and the deteriorated macro-fiscal outlook.

Figure 4: Provincial and LG DHS expenditure per capita (uninsured real 2022/23 prices), 2014/15–2022/23



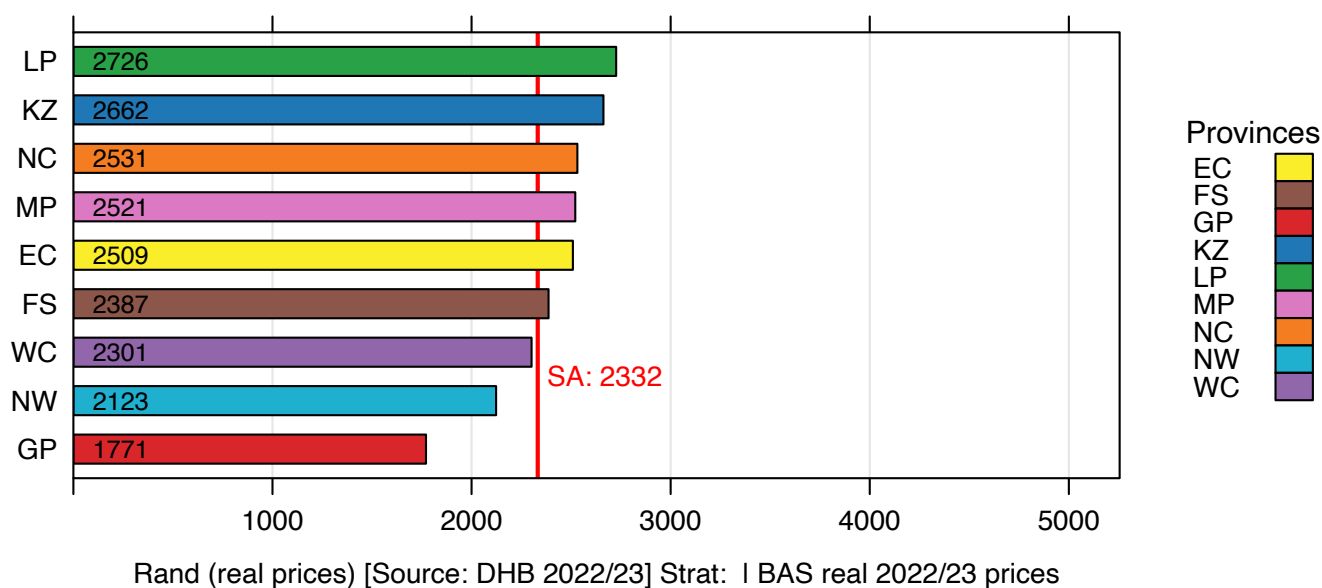
Source: BAS

Provincial overview

There is considerable variation across provinces in terms of how much is spent per capita on DHS, ranging from R1 771 in Gauteng (GP) to R2 726 in Limpopo (LP), with the national average sitting at R2 332. To some extent, DHS expenditure is difficult to compare across geographic regions because different areas have different degrees of reliance on district hospitals. A very urban province like Gauteng has a great concentration of higher-level hospitals and therefore relies

less on district hospitals, whereas a largely rural province like Limpopo relies heavily on district hospitals. Limpopo appears to also deliver a substantial share of primary healthcare services through its district hospitals as it has the country's highest outpatient department (OPD) visits not referred rate (71.7% compared to the national average of 58.3%).

Figure 5: Provincial and LG DHS expenditure per capita (uninsured) by province, 2022/23

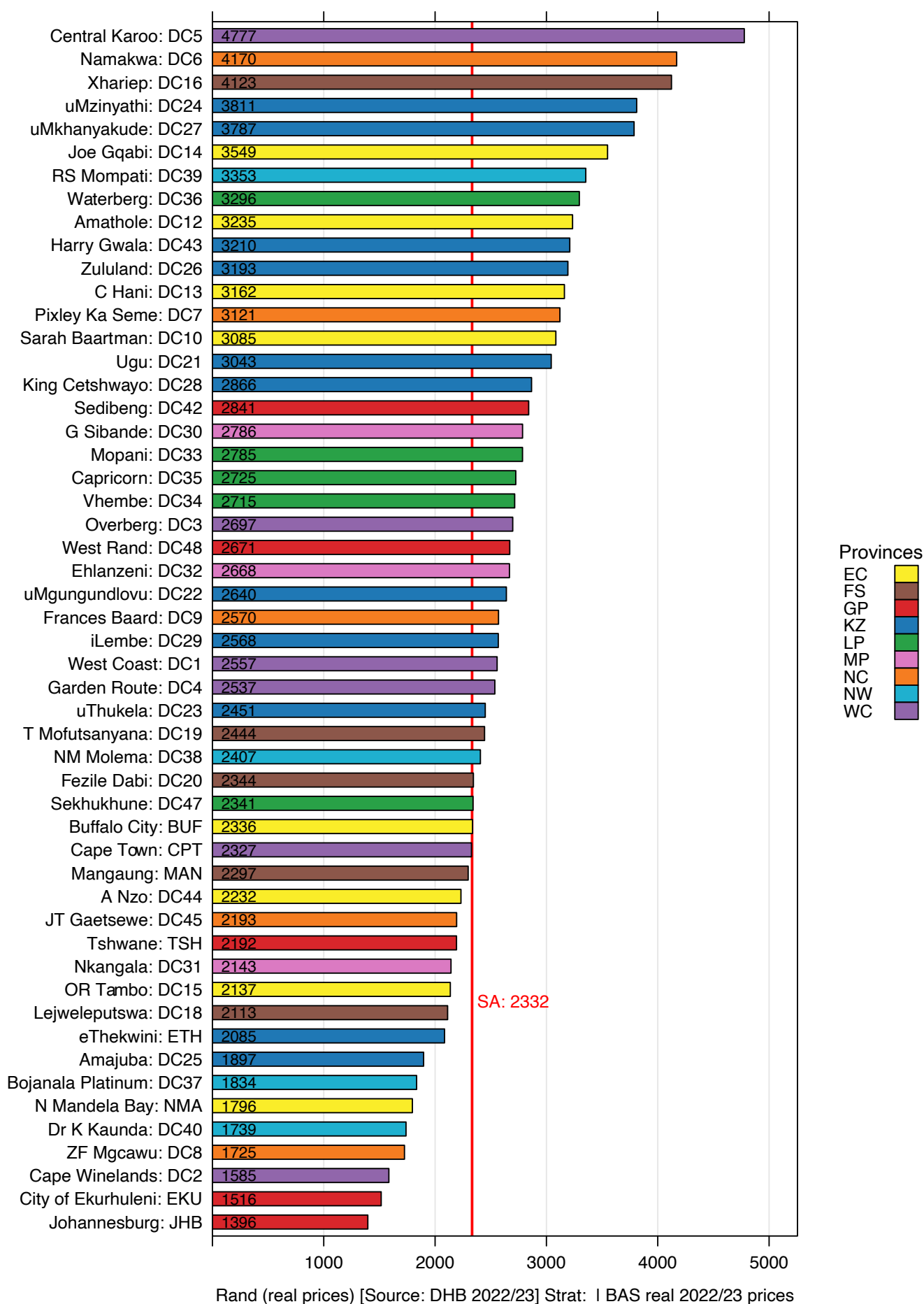


District overview

The difference in spending is even wider across districts, ranging from a low of R1 419 in Johannesburg (GP) to a high of R4 777 in Central Karoo (Western Cape (WC)). Again, this is partly due to the service configuration in each district and its reliance on district hospitals and the extent to which people in one district use hospitals in neighbouring districts, which in some communities may be closer than the hospital in their own district.

The ratio between the highest- and lowest-spending districts have widened somewhat over time. In 2014/15, the highest-spending district (also Central Karoo) spent 3.1 times more than the lowest-spending district (also Johannesburg). The standard deviation also increased from 609 to 703 over this period, which indicates widening differences in the spread of spending levels.

Figure 6: Provincial and LG DHS expenditure per capita (uninsured) by district, 2022/23



Primary health care expenditure per capita (uninsured)

Provincial and LG PHC expenditure per capita (uninsured) is calculated the same way as DHS expenditure per capita, except that it excludes district hospitals and district management. Given that it excludes district hospitals, which can be very unevenly distributed for reasons explained above, one would expect a more equal distribution of PHC expenditure. Although there are also

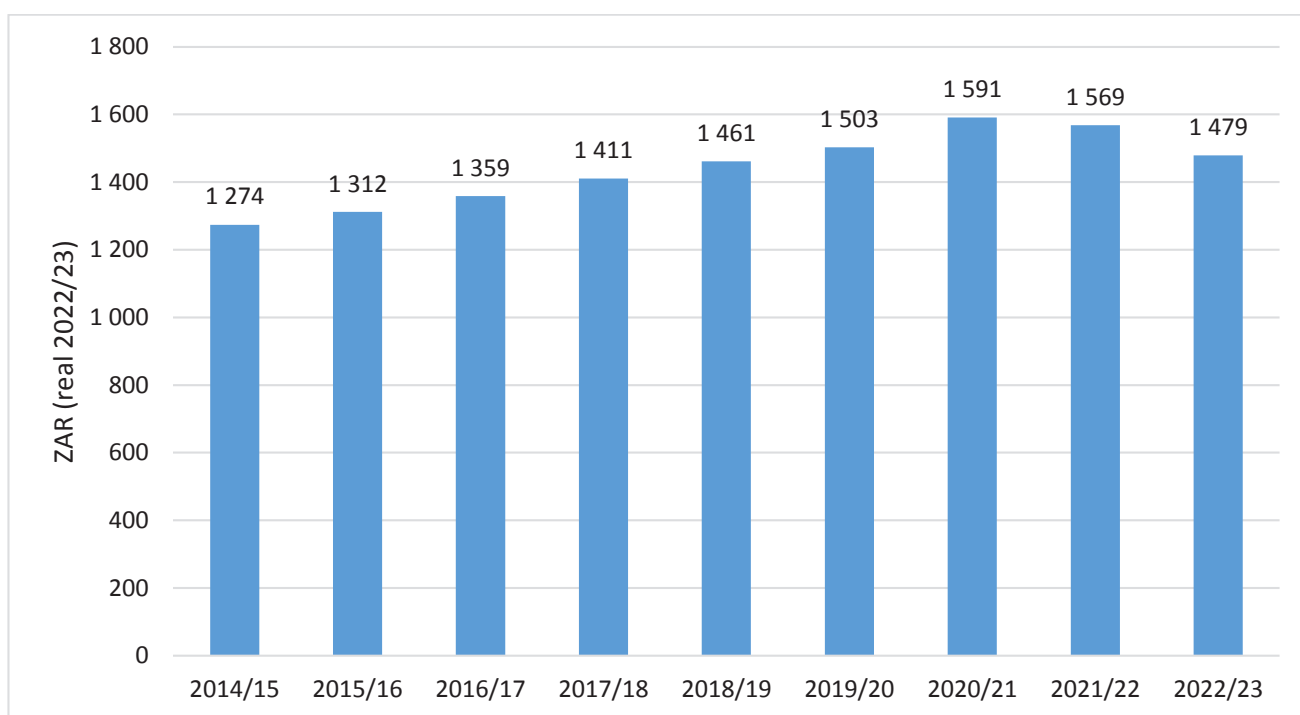
factors that can motivate for different expenditure levels, such as age and sex patterns, disease burden, socio-economic factors and population sparsity, very large differences in spending levels can be a sign of inequity in resource distribution. Very high levels of expenditure per capita could potentially be a sign of inefficiency and very low levels could be a sign of under-resourcing.

National overview

Similar to DHS expenditure per capita, PHC spending increased steadily in real terms between 2014/15 and 2020/21, from R1 274 to R1 591, an increase of 3.8% per year and 24.9% in total. This was followed by a decline over two years to R1 479 in 2022/23, as a result of COVID-19 allocations being phased out and budget reductions due to a worsened macro-fiscal climate.

The growth in PHC expenditure was to a large extent driven by increased spending on HIV/AIDS, which in 2022/23 made up 34.9% of PHC spending. The relationship between HIV/AIDS expenditure growth and PHC expenditure growth has been analysed in detail in previous versions of the District Health Barometer (DHB).^{5,6}

Figure 7: Provincial and LG PHC expenditure per capita (uninsured, real 2022/23 prices), 2014/15–2022/23



Source: BAS

⁵Massyn N, Pillay Y, Padarath A. eds. District Health Barometer 2017/18. Durban: Health Systems Trust; January 2019.

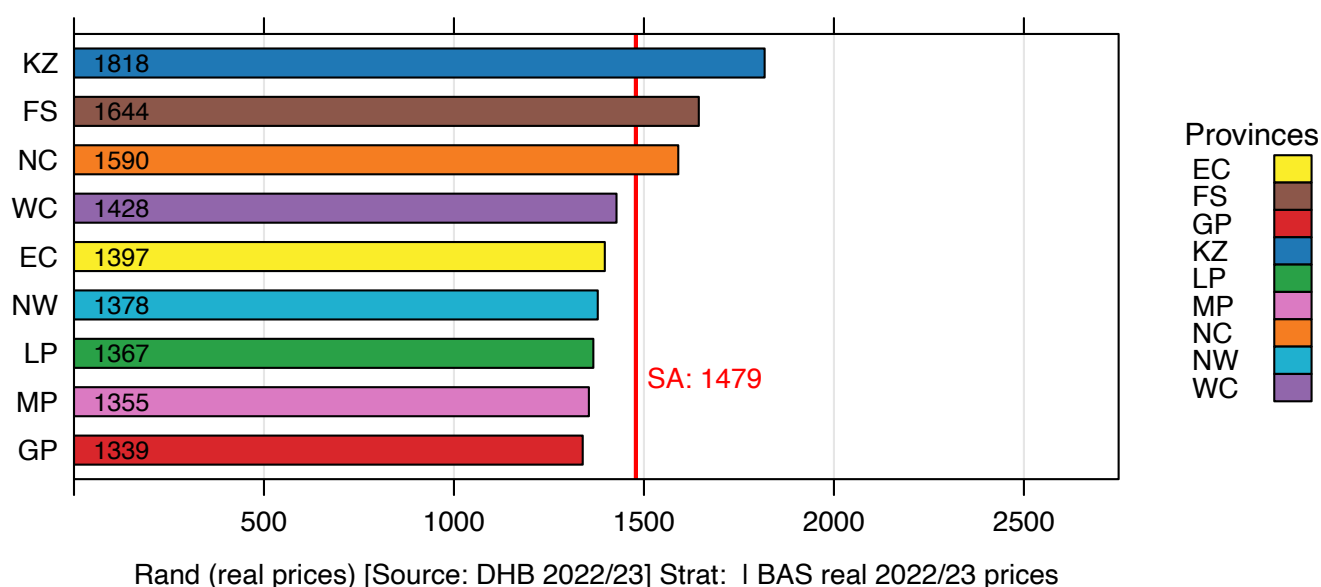
⁶Massyn N, Barron P, Day C, Ndlovu N, Padarath A. eds. District Health Barometer 2018/19. Durban: Health Systems Trust; February 2020.

Provincial overview

In 2022/23, PHC expenditure per capita (uninsured) was the highest in KwaZulu-Natal (KZN) at R1 818 and 35.8% higher than Gauteng, which had the lowest per capita spending at R1 339, and 22.9% higher than the national average of R1 479. The high spending in KwaZulu-Natal was partly due to its high HIV/AIDS burden and hence high HIV/AIDS expenditure per capita.

The relative gap between the highest- and lowest-spending provinces decreased slightly over the past nine years with the ratio declining from 1.44 in 2014/15 to 1.36 in 2022/23. This may indicate that PHC resources are gradually becoming more equitably distributed across provinces.

Figure 8: Provincial and LG PHC expenditure per capita (uninsured) by province, 2022/23



District overview

Compared to the difference between provinces, the difference between districts is vast, ranging from R1 013 in Alfred Nzo (Eastern Cape (EC)) to R2 499 in Xhariep (Free State (FS)), which is a 2.47-fold difference (Figure 9). Although this ratio narrowed from 2.69 in 2014/15, this is still a considerable gap, which indicates that, at a lower geographic level, PHC resources remain inequitably

distributed.

Also, within many provinces, there are wide differences in PHC expenditure by districts. For example, in the Eastern Cape expenditure ranges from R1 013 in Alfred Nzo to R1 751 in Buffalo City while in Gauteng it ranges from R1 149 in Johannesburg to R1 991 in Sedibeng (Figure 10).

Figure 9: Provincial and LG PHC expenditure per capita (uninsured) by district, 2022/23

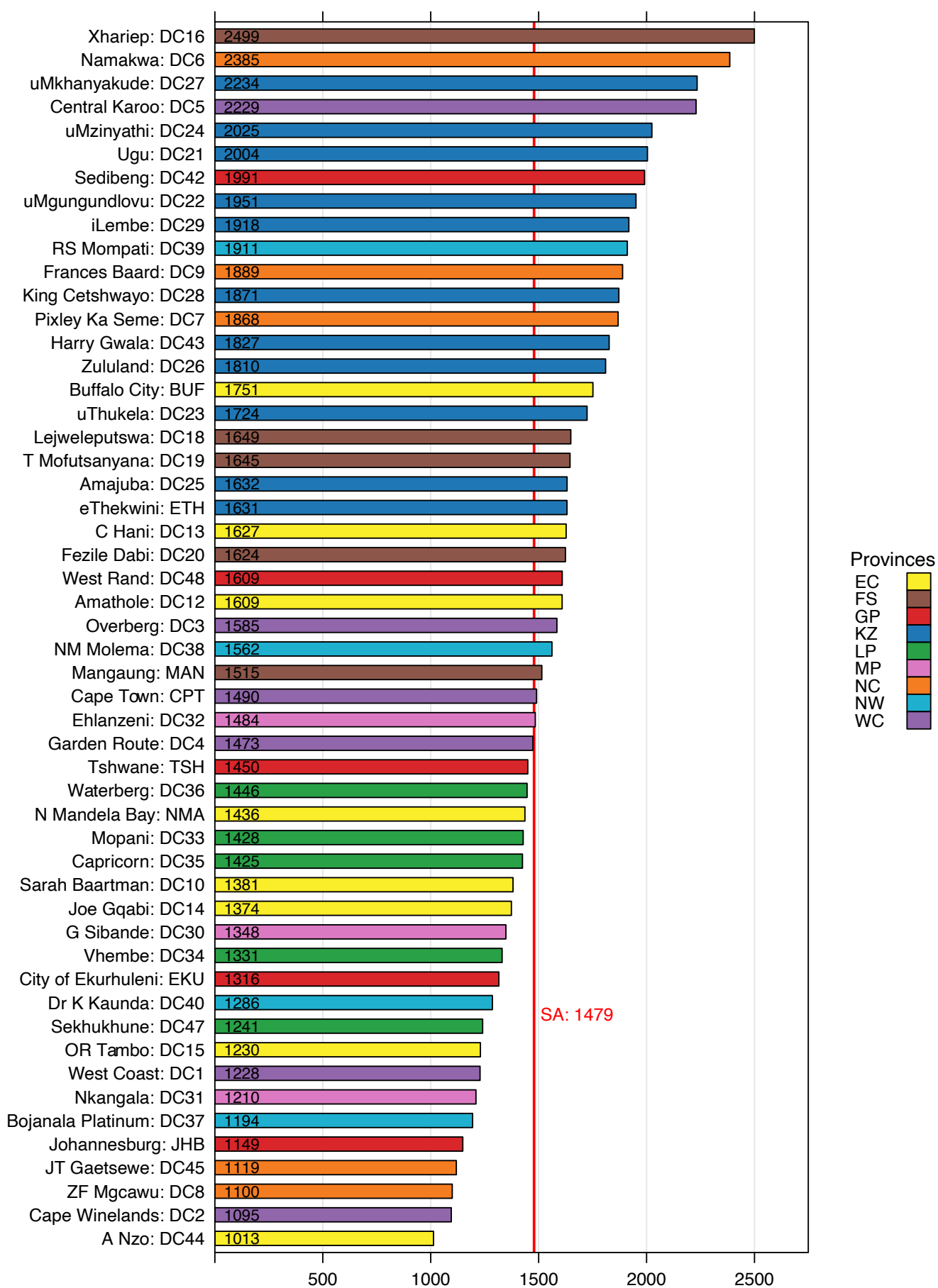
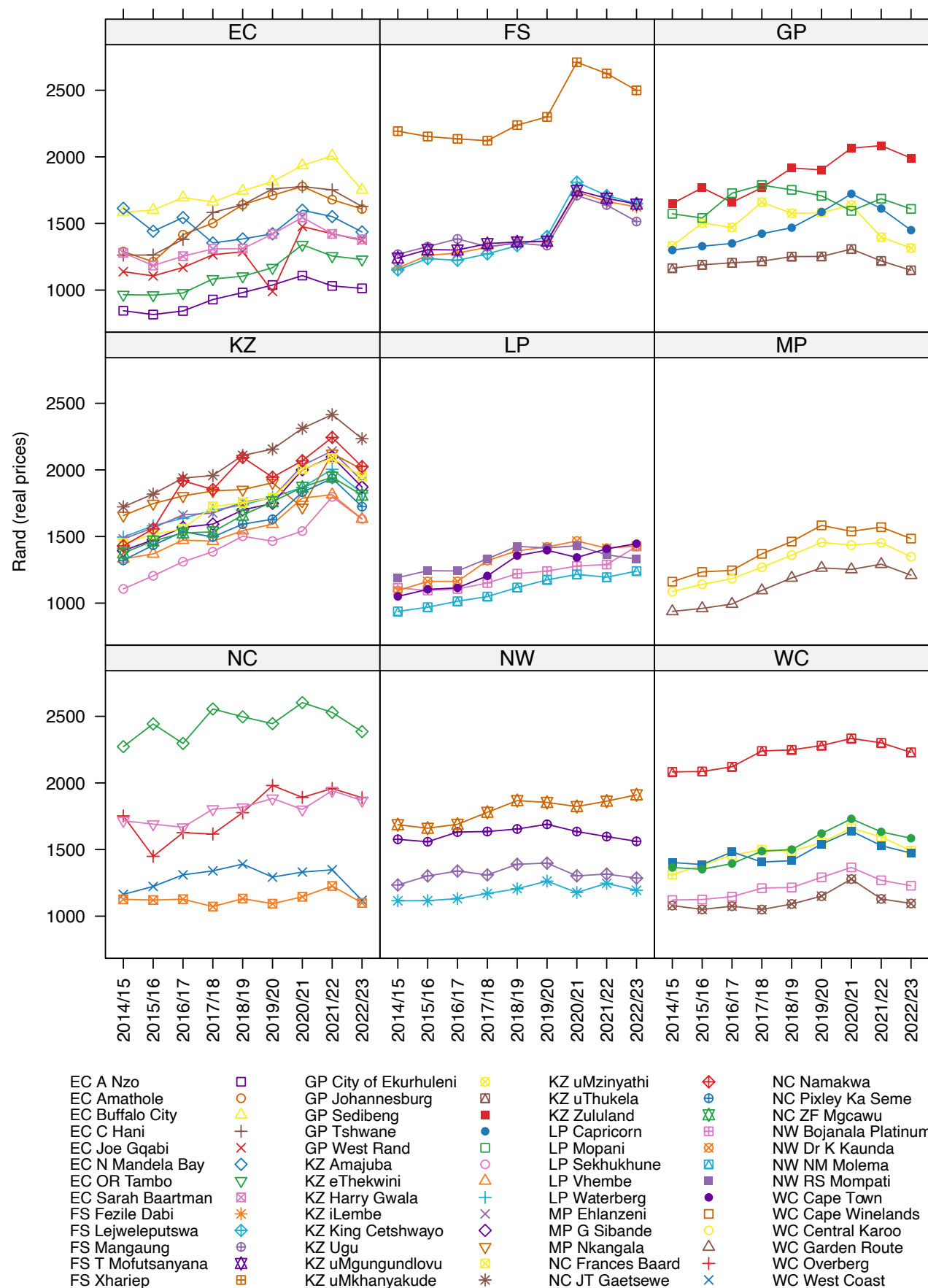


Figure 10: Annual trends – PHC expenditure per capita by district, 2014/15–2022/23



Source: BAS

Antenatal care 1st visit before 20 weeks rate

Antenatal care (ANC) is an important intervention for improving maternal and child health outcomes and is a strong determinant of maternal mortality. It allows for screening and detection of various infections and diseases that may cause serious health defects to the infant and the mother. Some of these include diabetes mellitus, anaemia, HIV/AIDS and other sexually transmitted infections. The ANC 1st visit before 20 weeks measures the number of women who had a first visit before they were 20 weeks into their pregnancy as a proportion of all antenatal care first visits. In South Africa, basic antenatal care services are accessible free of charge and these services are provided at primary health care facilities. The government recommends that all pregnant women attend their first antenatal visit before 20 weeks gestation. Effective activation of Prevention of Mother to Child Transmission of Communicable Infections (PMCTCI) depends on early presentation of pregnancy at the facility.⁷ In the absence of a target set by the National Department of Health for this indicator, the national average rate of ANC 1st visit before 20 weeks was 70.1% in 2022/23, an improvement from 68.9% in 2020/21. More than half of the 52 districts performed above the national average rate. The leading provinces include Western Cape (74.3%), Mpumalanga (77.3%), KwaZulu-Natal (73.8%), Gauteng (69.3%) and Limpopo (67.5%) (Table 1). Among these provinces, it was only KwaZulu-Natal that also exceeded the national average in PHC expenditure per capita (top spending

province). On the other hand, the Western Cape with the second-highest performance in ANC 1st visit before 20 weeks rate spent slightly below the national average. This may raise questions around efficiencies in the delivery of these health care services.

It is difficult to assume a strong relationship between spending in PHC and performance outcomes as they relate to this indicator. There are many other confounding factors which have not been considered in this analysis. However, the data presented above show that the top 10 spending districts had a higher average ANC 1st visit before 20 weeks rate than most of the 10 lowest-spending districts, indicating some correlation between the two variables. There are noticeable exceptions, where the district was in the 10 lowest-spending districts but performed above the national average. For instance, West Coast (WC) was in the ninth place of lowest-spending districts yet outperformed all 10 of the highest-spending districts for the ANC 1st visit before 20 weeks rate. This indicates that the use of ANC services was not only influenced by the available financial resources but that there were other factors that may have had an impact on use, for example, health seeking behaviour, education and accessibility of services. Further research may be undertaken for an in-depth analysis of the possible key drivers of performance in this indicator, the influence of financial resources and how these may be used optimally to maximise performance in health outcomes.

Neonatal death in facility rate per 1 000 live births

While South Africa has made significant strides in improving child health, the neonatal death in facility rate per 1 000 live births has remained static at 12.3 for the past three years.⁸ Although this is in line with the target of the Sustainable Development Goals (SDG), South Africa is eager to reduce this further by 50% by 2030.⁹ The neonatal death in facility measures the infants who die within the first 28 days of birth during their stay in the facility per 1 000 live births. Many of these infants may have suffered from diseases and conditions associated with poor access to quality care at the time of need. In 2022/23 the national average for the neonatal deaths in facility rate was 12.7 per 1 000 live births compared to 13.1 deaths per 1 000 live births in 2021/22. There is big variation in outcomes under this indicator across the 52 districts, with the highest death rate at 23.2 per 1 000 live births in Central Karoo (WC) and 14.6 in Chris Hani (EC). These districts are among the highest-spending districts with Central Karoo being in the fourth place. The

neonatal death in facility rate in Central Karoo stood at 7.5 per 1 000 live births in 2021/22; the increase to 23.2 deaths per 1 000 live births is alarming. Performance under this indicator does not seem to be informed by the level of PHC expenditure per capita. The second-lowest-spending district, Cape Winelands (WC), had the lowest neonatal death in facility rate of only 7.3 per 1 000 live births and, similarly, Namakwa (Northern Cape (NC)) being the second-highest spending district, had a neonatal death rate of 7.3 per 1 000 live births. The data show a clear relationship between antenatal 1st visit before 20 weeks and neonatal death in facility rate. In addition, both highest-spending and lowest-spending districts had a similar neonatal death in facility rate average of 11.9 per 1 000 live births, also indicating a negative relationship between the two variables. This signals a need to interrogate other potential influencing factors for this kind of performance.

⁷Ebonwu J, Mumbauer A, Uys M, Wainberg ML, Medina-Marino A. Determinants of late antenatal care presentation in rural and peri-urban communities in South Africa: A cross-sectional study. *PLoS One*. 2018 Mar 8;13(3).

⁸South African Medical Research Council. Rapid mortality surveillance report. South African Medical Research Council; 2021.

⁹National Department of Health. South African maternal and perinatal and neonatal health policy. Pretoria: NDOH; 2021. URL: knowledgehub.health.gov.za/system/files/elibdownloads/2021-06/SA_MPNH_Policy_23-6-2021_signed_Web_View_v2.pdf. [Accessed: 01 November 2023].

Maternal mortality in facility ratio per 100 000 live births

The maternal mortality in facility ratio (MMR) measures the number of maternal deaths occurring during a given period per 100 000 live births during the same period. It essentially indicates the risk of maternal death in a single pregnancy or a single live birth. The MMR is also somewhat of a proxy for quality of care received at PHC level during the antenatal care, childbirth and in post-partum care. The SDG target for the MMR is 70 maternal deaths per 100 000 live births by 2030. This is still to be reached by South Africa as data show a national MMR of 101.0 deaths per 100 000 live births in 2022/23. Table 2 below shows the districts that transcended the SDG target for 2023, with the West Coast

(WC) being one of the top performers with only 17.5 deaths per 100 000 live births. The relationship between this level of performance and PHC expenditure per capita as well as expenditure per PDE (district hospitals) is unclear, noting that, in both instances, the West Coast (WC) fell in the lowest 10 spending districts. KwaZulu-Natal, Western Cape and Eastern Cape had more districts represented in the top-performing districts and, of these districts, it was only KwaZulu-Natal that had two districts among the highest-spending districts both in PHC expenditure per capita and expenditure per PDE (district hospitals).

Table 1: Comparison between PHC expenditure per capita (uninsured population) (Rand), antenatal care 1st visit before 20 weeks rate, maternal mortality in facility ratio and neonatal death in facility rate by district, 2022/23

	Province	District	PHC expenditure per capita (uninsured population) Rand	ANC 1st visit before 20 weeks rate percentage	Neonatal death in facility rate per 1 000 live births	Maternal mortality in facility ratio per 100 000 live births
Top 10	Free State	Xhariep	2 499	76,6	7,5	0,0
	Northern Cape	Namakwa	2 385	72,3	7,3	0,0
	KwaZulu-Natal	uMkhanyakude	2 234	75,4	8,1	52,5
	Western Cape	Central Karoo	2 229	73,1	23,2	102,6
	KwaZulu-Natal	uMzinyathi	2 025	77,8	12,9	39,8
	KwaZulu-Natal	Ugu	2 004	73,8	12,9	87,3
	Gauteng	Sedibeng	1 991	70,0	11,3	78,0
	KwaZulu-Natal	uMgungundlovu	1 951	73,5	14,8	132,7
	KwaZulu-Natal	iLembe	1 918	73,9	10,8	48,9
	North West	Ruth Segomotsi Mompati	1 911	68,0	10,3	47,5
Bottom	Northern Cape	Frances Baard	1 889	51,8	18,3	105,0
	KwaZulu-Natal	King Cetshwayo	1 871	70,9	10,3	116,8
	Northern Cape	Pixley Ka Seme	1 868	68,5	9,9	33,7
	KwaZulu-Natal	Harry Gwala	1 827	67,2	10,6	91,8
	KwaZulu-Natal	Zululand	1 810	82,5	12,6	81,0
	Eastern Cape	Buffalo City	1 751	64,6	15,3	164,6
	KwaZulu-Natal	uThukela	1 724	70,8	13,0	41,7
	Free State	Lejweleputswa	1 649	59,0	19,4	105,7
	Free State	Thabo Mofutsanyana	1 645	63,3	13,0	135,0
	KwaZulu-Natal	Amajuba	1 632	70,5	11,5	37,1
	KwaZulu-Natal	eThekweni	1 631	73,5	12,5	78,9
	Eastern Cape	Chris Hani	1 627	68,4	14,6	187,6
	Free State	Fezile Dabi	1 624	61,5	14,6	63,2
	Gauteng	West Rand	1 609	72,4	11,9	115,8
	Eastern Cape	Amathole	1 609	74,5	8,0	44,2
	Western Cape	Overberg	1 585	79,2	8,0	0,0
	North West	Ngaka Modiri Molema	1 562	68,9	19,9	156,4
	Free State	Mangaung	1 515	61,0	17,7	77,1
	Western Cape	City of Cape Town	1 490	71,3	9,7	75,1
	Mpumalanga	Ehlanzeni	1 484	83,8	9,8	102,9
	Western Cape	Garden Route	1 473	81,0	7,9	61,2
	Gauteng	Tshwane	1 450	67,7	13,4	119,7
	Limpopo	Waterberg	1 446	66,3	11,8	87,1
	Eastern Cape	Nelson Mandela Bay	1 436	69,0	14,9	151,0
	Limpopo	Mopani	1 428	71,5	13,0	97,2
	Limpopo	Capricorn	1 425	63,0	19,4	198,3
	Eastern Cape	Sarah Baartman	1 381	66,1	9,8	31,0
	Eastern Cape	Joe Gqabi	1 374	62,8	7,7	0,0
	Mpumalanga	Gert Sibande	1 348	68,0	18,7	117,8
	Limpopo	Vhembe	1 331	71,4	8,6	64,2
	Gauteng	Ekurhuleni	1 316	69,0	12,9	129,3
	North West	Dr Kenneth Kaunda	1 286	69,0	9,0	181,9
	Limpopo	Sekhukhune	1 241	64,2	12,3	90,0
	Eastern Cape	OR Tambo	1 230	62,7	17,5	173,7
	Western Cape	West Coast	1 228	79,3	7,4	17,5
	Mpumalanga	Nkangala	1 210	76,0	13,3	133,3
	North West	Bojanala Platinum	1 194	74,6	13,1	81,3
	Gauteng	City of Johannesburg	1 149	69,8	14,0	116,5
	Northern Cape	John Taolo Gaetsewe	1 119	56,7	12,3	69,0
	Northern Cape	Zwelentlanga Fatman Mgcawu	1 100	62,1	13,0	99,2
	Western Cape	Cape Winelands	1 095	77,6	7,3	44,2
	Eastern Cape	Alfred Nzo	1 013	48,4	9,7	29,5

Source: DHIS, BAS

Table 2: Districts that reached the Sustainable Development Goals for maternal mortality ratio in facility, 2022/23

Joe Gqabi (Eastern Cape)	0.0
Xhariep (Free State)	0.0
Namakwa (Northern Cape)	0.0
Overberg (Western Cape)	0.0
West Coast (Western Cape)	17.5
Alfred Nzo (Eastern Cape)	29.5
Sarah Baartman (Eastern Cape)	31.0
Pixley Ka Seme (Northern Cape)	33.7
Amajuba (KwaZulu-Natal)	37.1
uMzinyathi (KwaZulu-Natal)	39.8
uThukela (KwaZulu-Natal)	41.7
Amathole (Eastern Cape)	44.2
Cape Winelands (Western Cape)	44.2
Ruth Segomotsi Mompati (North West)	47.5
iLembe (KwaZulu-Natal)	48.9
uMkhanyakude (KwaZulu-Natal)	52.5
Garden Route (Western Cape)	61.2
Fezile Dabi (Free State)	63.2
Vhembe (Limpopo)	64.2
John Taolo Gaetsewe (Northern Cape)	69.0

Source: DHIS

In summary, while the general view is that better-resourced provinces can achieve better health outcomes, the data seem to contend this across the three indicators, although there are glaring exceptions. The Western Cape had the most best-performing districts in the three indicators (surpassing that of the highest-spending districts) although none of the districts was in the 10 highest-spending districts. This proves that financial resources are not the only requirement for better health outcomes. On the contrary, KwaZulu-Natal had most of its districts (five of 11) in the top 10 highest-spending districts and performed quite well in the ANC 1st visit before 20 weeks. One could deduce a positive relationship between PHC

expenditure capita and performance. The two scenarios present differing perspectives as far as the extent to which better financial resources equate to better health outcomes. It is quite evident that there are other systemic elements that contribute to better performance in service delivery. These may include both technical and allocative efficiencies, accessibility of facilities and services, quality of care, infrastructure, good governance and leadership. Therefore, this suggests a need for further analysis, possibly with more rigorous statistical analysis adjusting for various variables that impact performance, apart from financial resources, to ascertain the underlying factors for good and/or bad performance in different districts.

PHC expenditure per headcount

While PHC expenditure per capita is a measure of how equitable resources are distributed across provinces and districts in relation to their population, expenditure per PHC headcount is more strongly linked to efficiency and productivity as it compares expenditure to actual utilisation of healthcare at facility level. Provinces and districts with high expenditure per headcount should be

looked into, to see whether these are over-resourced in relation to how many clients are serviced, whereas those with lower expenditure might either be very efficient, or the quality of care provided may be compromised due to under-resourcing. Further research and analysis would be required to determine the exact reasons and implications of these spending patterns.

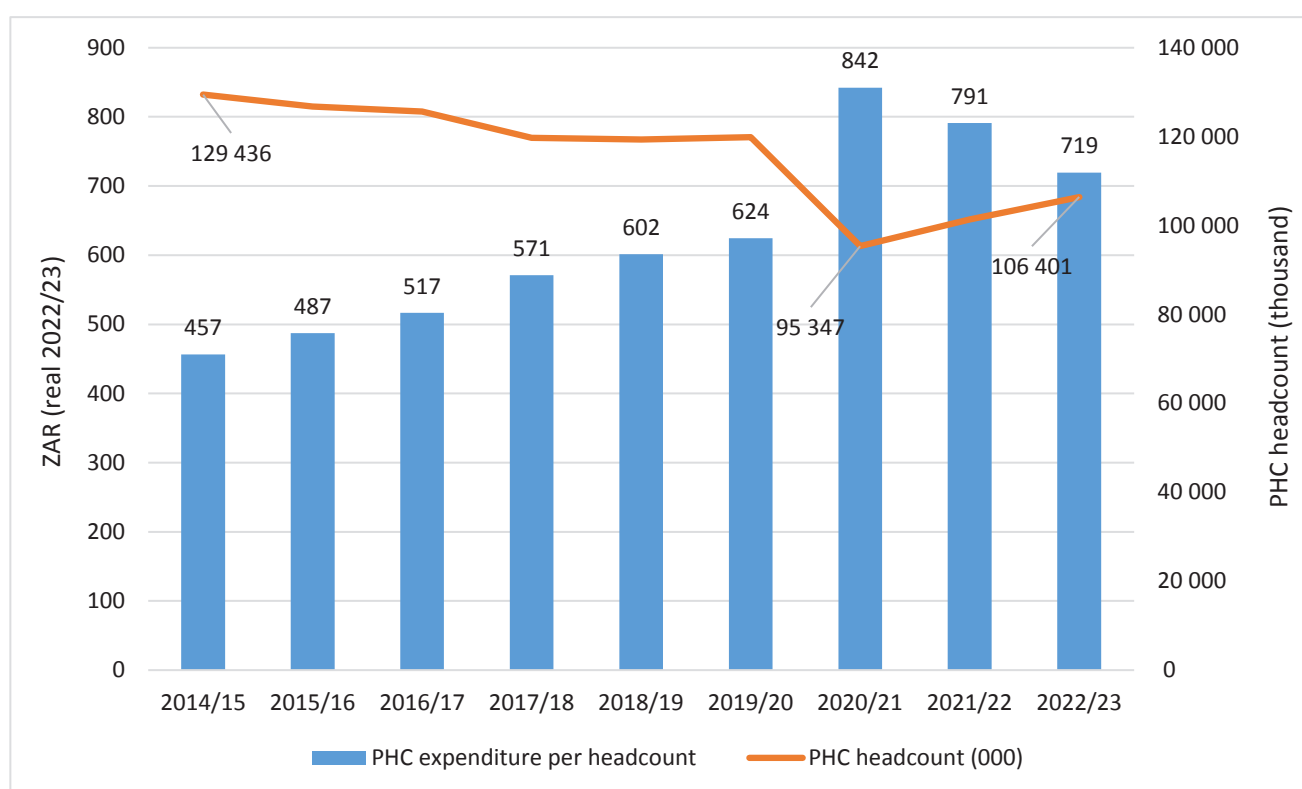
National overview

As has been seen also in previous editions of the DHB, real expenditure per PHC headcount has increased substantially over time. Figure 11 follows this trend since 2014/15 but, as seen in the 2014/15 edition of the DHB,¹⁰ this upward trend has been seen since at least 2005/6. The increase has been driven by both an increase in real expenditure, which grew by a total of 21.2% from R100.3 billion in 2014/15 to R121.6 billion in 2022/23, and by a decline in PHC headcount, which

declined from 129.4 million to 106.4 million during this period.

Expenditure per headcount shot up massively in 2020/21 due to a drop in utilisation during COVID-19, and has since declined due to partial rebound and a decline in real expenditure in the following two years.

Figure 11: Provincial and LG PHC expenditure per PHC headcount (real 2022/23 prices), 2014/15–2022/23



Source: DHIS, BAS

¹⁰Massyn N, Peer N, Padarath A, Barron P, Day C. eds. District Health Barometer 2014/15. Durban: Health Systems Trust; October 2015.

It is now widely known that the COVID-19 pandemic caused considerable disruptions to routine health services.^{11,12,13} As can be seen in Figure 11, there was a significant reduction in PHC headcount in 2020/21, which was the first and most severely impacted year of COVID-19. While a part of the decline during COVID-19 was likely due to fear of visiting health facilities at the time, the decline in PHC headcount was seen over many years before COVID-19 and has only partially rebounded since then.

As can be seen in Table 3 below, the decline in PHC visits at facilities was partially offset by increases in other linked outreach programmes, such as the Ward-based Primary Health Care Outreach Teams (WBPHCOTs), Central Chronic Medicines Dispensing and Distribution (CCMDD); and Chronic Dispensary Unit (CDU) for the Western Cape. A more complex definition of outputs, as noted in Table 3, would change, to some extent, the trend in average unit cost in Figure 11.

Table 3: Headcount from PHC facilities and other linked PHC utilisation measures

	17/18	18/19	19/20	20/21	21/22	22/23	Average annual growth 19/20 - 22/23
PHC facility headcount	119 588 991	119 230 911	119 747 673	95 269 421	101 311 634	106 401 284	-3,9%
Central Chronic Medicines Dispensing & Distribution	2 000 000	4 655 980	6 632 391	10 058 705	11 293 377	10 263 617	15,7%
WC Chronic Dispensing Units	1 400 000	1 800 000	2 200 000	2 697 786	2 958 568	2 707 342	7,2%
WBPHCOTs	12 741 681	12 741 681	13 277 553	11 141 905	16 215 694	19 016 453	12,7%
Integrated School Health Programme	1 011 390	916 198	954 151	104 725	376 153	633 982	-12,7%
Total	136 742 062	139 354 770	142 272 542	119 272 542	132 155 426	138 832 703	-0,9%

Source: DHIS, CCMD, WC Chronic Dispensing Units System

Provincial overview

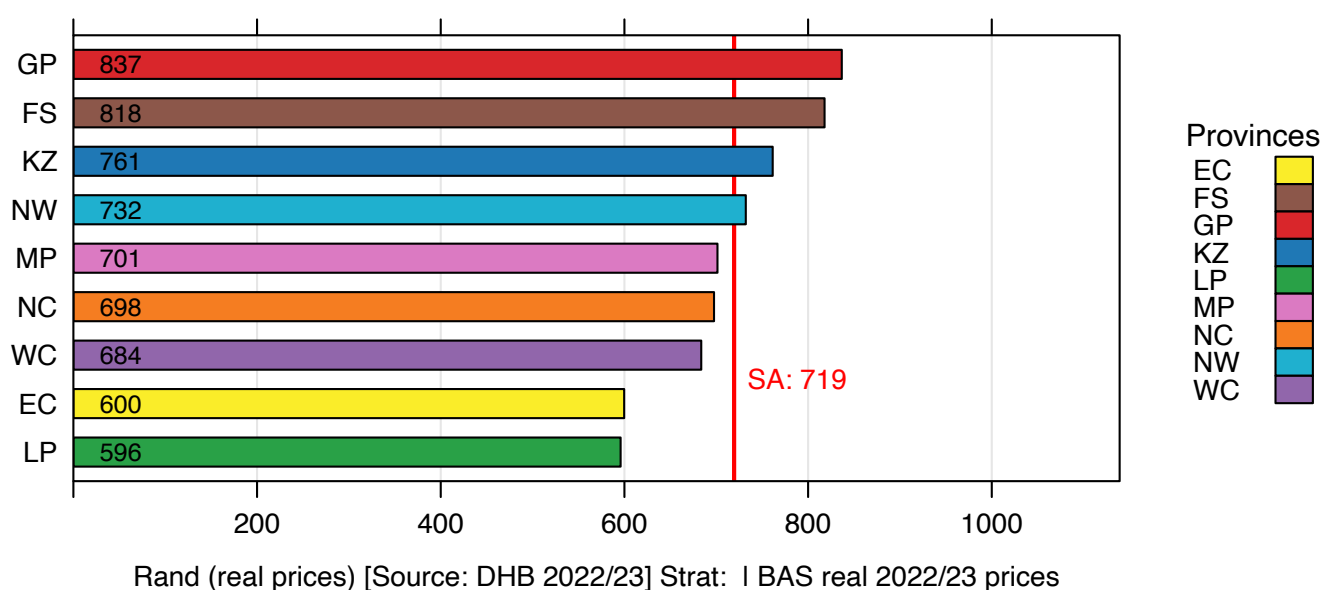
Expenditure per PHC headcount in 2022/23 ranged from R596 in Limpopo to R837 in Gauteng and the national average was R719 (Figure 12).

¹¹Pillay Y, Pienaar S, Barron P, Zondi T. Impact of COVID-19 on routine primary healthcare services in South Africa. SA Med Journ. 2021 Aug 1;111(8):714-9.

¹²Burger R, Day C, Deghaye N, Nkonki L, Rensburg R, Smith A, van Schalkwyk C. Examining the unintended consequences of the COVID-19 pandemic on public sector health facility visits: the first 150 days. Cramsurvey. org. URL: <https://cramsurvey.org/wp-content/uploads/2020/12/16.-Examining-the-unintendedconsequences-of-the-COVID-19-pandemic-on-public-sector-health-facility-visits-The-first-150-days-2.pdf>. 2020 Dec 10.

¹³Benade M, Long L, Rosen S, Meyer-Rath G, Tucker JM, Miot J. Reduction in initiations of HIV treatment in South Africa during the COVID pandemic. BMC Health Services Research. 2022 Dec;22(1):1-8.

Figure 12: Provincial and LG PHC expenditure per PHC headcount by province, 2022/23



District overview

The PHC expenditure per headcount in districts (Figure 13) decreased from 2021/22 expenditure. Most of Gauteng's districts were above average with Sedibeng being the top spending district in the country at R1036 followed by Tshwane at R982. Frances Baard (NC) spent the third highest (R944) per PHC headcount while Sarah Baartman (EC) spent the least (R504). All Eastern Cape districts fall below the national average, and spending per PHC headcount decreased by 8.5% from 2021/22 to 2022/23 (Figure 14).

There were major differences in the districts of the Northern

Cape with Frances Baard being the third-highest spending in PHC expenditure per headcount, Namakwa slightly above the national average, and John Taolo Gaetsewe and Zwelentlanga Fatman Mgcawu being considerably below the national average. This is a cause for concern around equity and efficiency in distribution of resources across districts in the Northern Cape. Similarly, in the Western Cape the highest-spending districts spent more than 30% more than the lowest-spending districts. Provinces may have to consider reviewing equity in the distribution of resources as it aligns to allocative efficiencies.

Figure 13: Provincial and LG PHC expenditure per PHC headcount by district, 2022/23

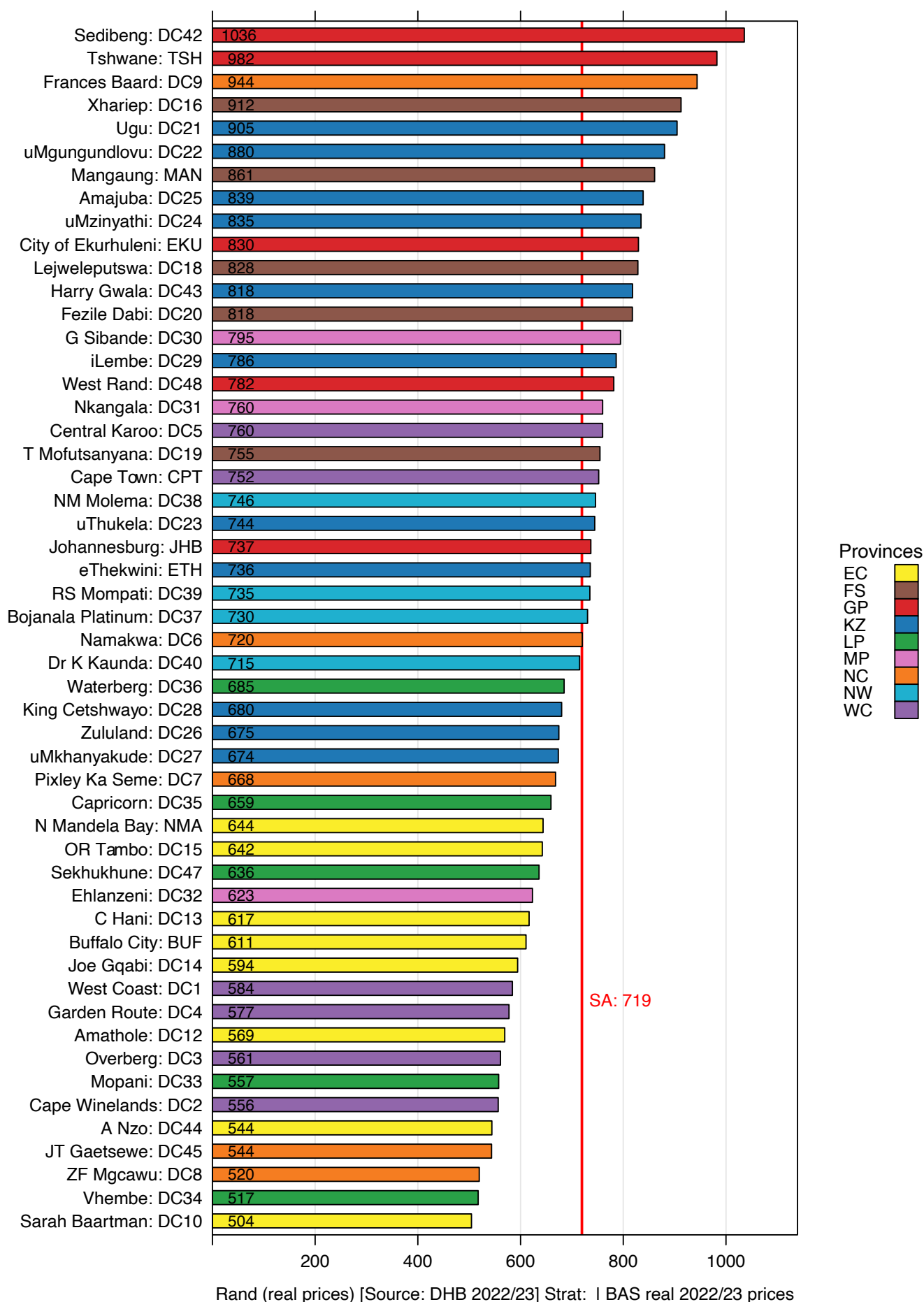
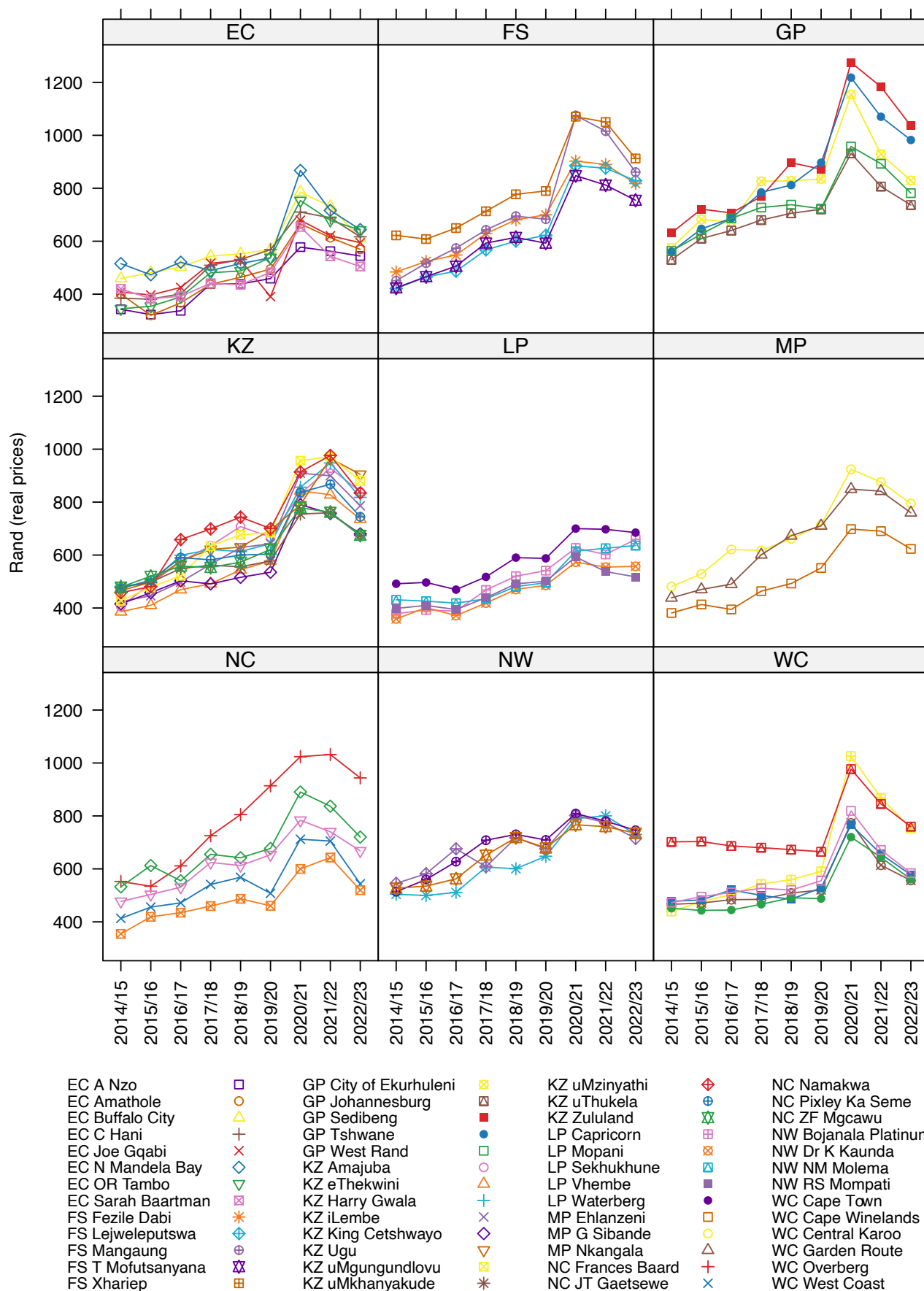


Figure 14: Annual trends – PHC expenditure per headcount by district



Source: BAS

District hospital expenditure per patient day equivalent

A patient day equivalent (PDE) is a composite utilisation measure, which includes inpatient days, day patients, outpatient department (OPD) headcounts and emergency/casualty headcounts. Given that these three utilisation measures required different amounts of resources, a PDE provides a simplified, weighted measure roughly equivalent to the resources required for one inpatient day, with day patient weighted as 1/2 and OPDs and emergency headcounts weighted as 1/3 of an inpatient day.

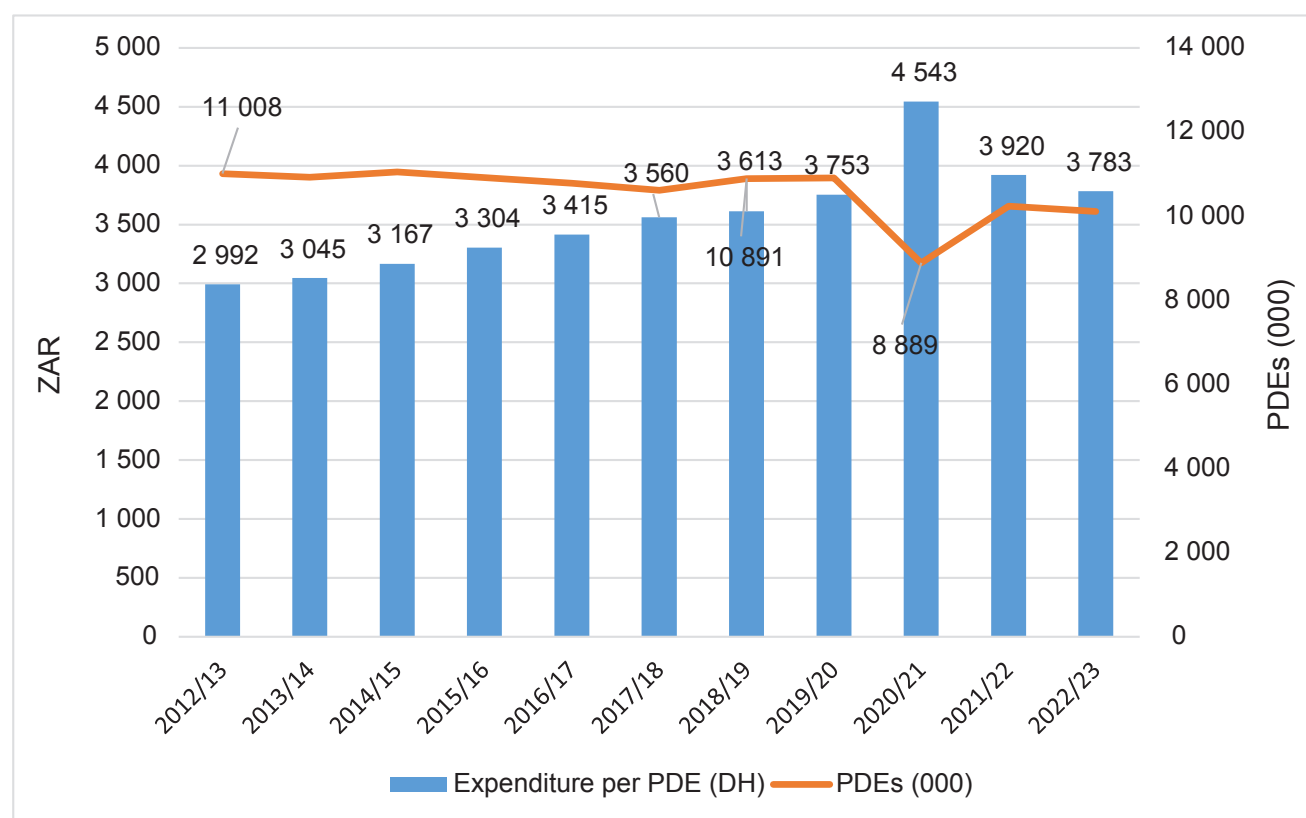
District hospital expenditure per PDE is expenditure on the district hospital sub-programme in provincial health departments divided by the number of district hospital PDEs. High expenditure per PDE could signify inefficiency, whereas low expenditure per PDE could mean that services at district hospitals are delivered efficiently or that the hospitals are relatively under-resourced, which could have a negative impact on quality of care.

National overview

In real prices, the national expenditure per PDE in district hospitals increased from R3 167 in 2014/15 to R3 783 in 2022/23 (Figure 15). There are similarities with the patterns seen above for expenditure per PHC headcount, in that total real expenditure increased until 2020/21, decreased

in the last two years and that utilisation declined (albeit not as sharply as PHC headcounts) over time. The number of PDEs dropped sharply in 2020/21 but only recovered partially in 2021/22 and declined again slightly in 2022/23.

Figure 15: District hospital expenditure per PDE and number of PDEs, 2012/13–2022/23

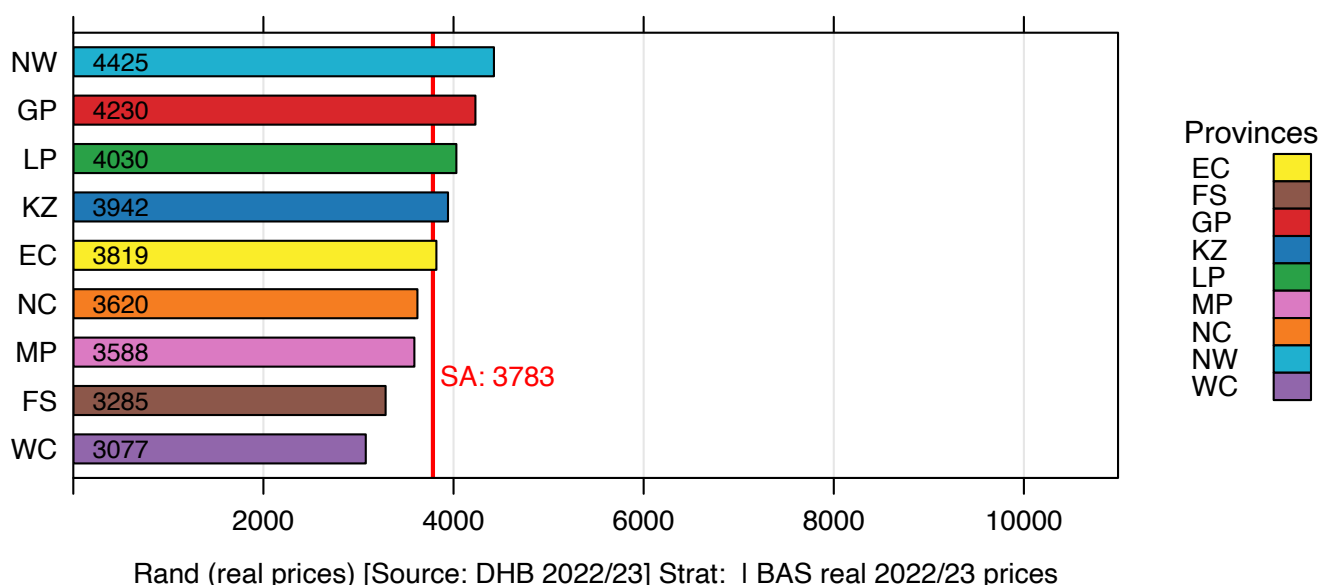


Source: DHIS, BAS

Provincial overview

Expenditure per PDE (district hospitals) in 2022/23 ranged from R3 077 in the Western Cape to R4 425 in the North West, with the national average sitting at R3 783 (Figure 16).

Figure 16: Expenditure per PDE (district hospitals) by province, 2022/23



District overview

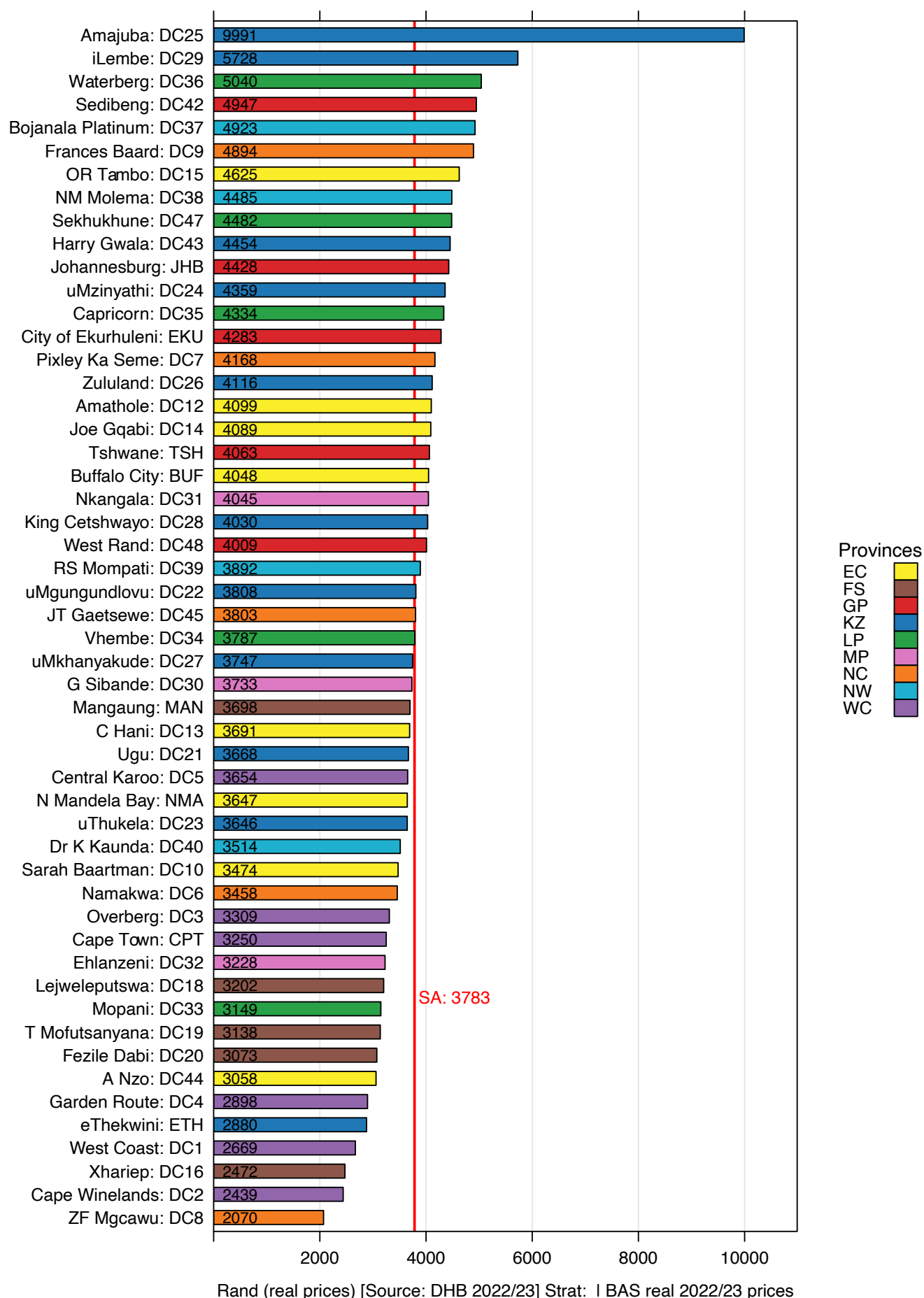
At a district level, there was a very wide spectrum in terms of how much was spent per PDE. Amajuba (KZN) was a clear outlier with the highest expenditure per PDE at R9 991 (Figure 17). The reason for this was that Niemeyer Hospital, which is its only hospital, was repurposed in 2020 to deal with only COVID-19 isolation and admission of patients who tested positive.¹⁴ Other services, for example, paediatric, maternal and other general services were stopped during this period and only resumed provision of

the normal district hospital package of services in June 2022.

Even when excluding Amajuba as an outlier, the difference between the lowest-spending district, Zwelentlanga Fatman Mgcawu (NC) at R2 070, and the second highest, iLembe (KZN) at R5 728, is very high with the latter being 2.8 times higher than the former. This difference has increased from 2.2 in 2014/15 to 2.8 in 2022/23.

¹⁴KwaZulu-Natal Department of Health [Internet]. Niemeyer Memorial Hospital. URL: <https://www.kznhealth.gov.za/niemeyershospital.htm>. [Accessed: 16 October 2023].

Figure 17: Expenditure per PDE (district hospitals) by province, 2022/23



Bed utilisation rate and average length of stay

The comparison of bed utilisation rate (BUR), average length of stay (ALOS) and expenditure per PDE provides a better understanding on whether the level of expenditure per PDE is related to BUR and ALOS in hospital. The target BUR in South Africa is between 70% and 80% and the target ALOS is between 3.5 and 4.5 days. The national average bed utilisation rate (district hospitals) of 60.0% for 2022/23 was below the target, while the average length of stay (district hospitals) of 4.3 was in the target range. Only six districts fell in the BUR target range and 22 districts fell in the ALOS target range. Districts with district hospitals with a low BUR

such as Frances Baard (NC) (30.0% BUR) (Table 4) indicate that the hospital beds may be under-utilised and districts with district hospitals with higher ALOS such as Ekurhuleni (GP) (6.3 days) indicate that patients may stay longer than medically necessary. Where BUR is low and ALOS is high, this indicates that hospital beds may be used for the wrong purposes, such as the case with iLembe (KZN) (43.2% BUR, 5.2 days ALOS). Other reasons for longer ALOS might be that planned transport is not readily available to patients in some districts, especially those within rural areas.

Inpatient crude death rate

The inpatient crude death is defined as the number of deaths that occur in a hospital among patients admitted for treatment of any cause. It is calculated by dividing the number of inpatient deaths by the total number of inpatient admissions and multiplying by 1 000 in that period, and it is expressed as percentage. The national inpatient crude death rate in district hospitals was 4.8% in 2022/23, ranging from 3.0% in the Cape Winelands (WC) to 7.4% in Chris Hani (EC) (Table 4).

The top 10 districts with the highest expenditure per PDE had an inpatient crude death rate of 4.8%, equal to the national average, compared to 4.3% in the bottom 10 spending districts. This indicates good quality health care can be achieved at low costs and that quality health care is driven more by non-financial indicators. In addition, variations in disease prevalence, socio-economic conditions, and the quality of district and facility management are likely to play a role.

Table 4: Comparison between expenditure per PDE, beds per 10 000 uninsured population rate, inpatient bed utilisation rate, average length of stay and inpatient crude death rate (district hospitals), 2022/23

	Province	District	Expenditure per PDE (Rand)	Beds per 10 000 uninsured population	Inpatient bed utilisation rate percentage	Average length of stay days	Inpatient crude death rate percentage
Top 10	KwaZulu-Natal	iLembe	5 728	5,9	43,2	5,2	4,2
	Limpopo	Waterberg	5 040	10,2	58,9	4,2	4,5
	Gauteng	Sedibeng	4 947	4,8	70,7	4,8	5,3
	North West	Bojanala Platinum	4 923	2,5	69,7	4,4	4,9
	Northern Cape	Frances Baard	4 894	2,3	30	2,5	4,1
	Eastern Cape	OR Tambo	4 625	7,2	45,5	5,1	5,5
	North West	Ngaka Modiri Molema	4 485	4,2	56,3	4	5
	Limpopo	Sekhukhune	4 482	5,7	62,9	3,6	4,2
	KwaZulu-Natal	Harry Gwala	4 454	14,4	55,4	5,1	4,5
	Gauteng	Johannesburg	4 428	1,1	69,7	4,6	5,5
	KwaZulu-Natal	uMzinyathi	4 359	20,6	47,7	5,4	4,5
	Limpopo	Capricorn	4 334	6,2	72,1	4,1	5,2
	Gauteng	Ekurhuleni	4 283	0,8	72,4	6,3	5,2
	Northern Cape	Pixley Ka Seme	4 168	9,1	44,1	3,8	5,6
	KwaZulu-Natal	Zululand	4 116	14,2	54,7	4,4	4,1
	Eastern Cape	Amathole	4 099	17,2	39,5	4,9	6,9
	Eastern Cape	Joe Gqabi	4 089	17,3	44,5	4,6	6,1
	Gauteng	Tshwane	4 063	3,7	69,3	4,5	5,1
	Eastern Cape	Buffalo City	4 048	4,4	44,2	5,8	6,8
	Mpumalanga	Nkangala	4 045	4,6	63,5	4,7	5,3
	KwaZulu-Natal	King Cetshwayo	4 030	13	36,6	5	4,7
	Gauteng	West Rand	4 009	6,4	57	4,3	5,6
	North West	Ruth Segomotsi Mompoti	3 892	8,3	62,6	4,5	5,5
	KwaZulu-Natal	uMgungundlovu	3 808	5,5	67,1	5,3	4,9
	Northern Cape	John Taolo Gaetsewe	3 803	6,2	43,9	3,2	5,2
	Limpopo	Vhembe	3 787	8,3	64,2	4,4	4,6
	KwaZulu-Natal	uMkhanyakude	3 747	15,8	60	5,2	4,3
	Mpumalanga	Gert Sibande	3 733	9,2	59,2	4,1	4
	Free State	Mangaung	3 698	5,6	60,5	3,7	3,4
	Eastern Cape	Chris Hani	3 691	17,5	38,2	4,7	7,4
	KwaZulu-Natal	Ugu	3 668	10,4	61,3	5	4,7
	Western Cape	Central Karoo	3 654	18,4	71,5	3,1	4
	Eastern Cape	Nelson Mandela Bay	3 647	2,5	69,7	4,6	7
	KwaZulu-Natal	uThukela	3 646	6,7	60,3	5,9	4,7
	North West	Dr Kenneth Kaunda	3 514	1,4	55,3	3,5	4,3
	Eastern Cape	Sarah Baartman	3 474	14,2	49,7	4	5,6
	Northern Cape	Namakwa	3 458	7,7	139,6	2,6	3,7
	Western Cape	Overberg	3 309	7,6	86,5	3	2,4
	Western Cape	Cape Town	3 250	4,5	100,6	4	3,2
	Mpumalanga	Ehlanzeni	3 228	7,5	62,8	4,3	4,3
	Free State	Lejweleputswa	3 202	4,9	50	2,1	5,2

	Province	District	Expenditure per PDE (Rand)	Beds per 10 000 uninsured population	Inpatient bed utilisation rate percentage	Average length of stay days	Inpatient crude death rate percentage
Bottom 10	Limpopo	Mopani	3 149	7,6	74,2	4,4	4,2
	Free State	Thabo Mofutsanyana	3 138	7,3	44,6	2,8	3,8
	Free State	Fezile Dabi	3 073	6,3	60,5	3,7	6,3
	Eastern Cape	Alfred Nzo	3 058	11,5	59,3	4,6	4,5
	Western Cape	Garden Route	2 898	7,5	79,3	2,8	3,7
	KwaZulu-Natal	eThekweni	2 880	2,1	61	4,3	4,3
	Western Cape	West Coast	2 669	9,8	82,2	3,1	3,3
	Free State	Xhariep	2 473	13,1	42,5	3,8	4,7
	Western Cape	Cape Winelands	2 439	3	93,2	3,3	3
	Northern Cape	Zwelentlanga Fatman Mgcawu	2 070	3,9	42,5	2,9	5,4

Source: DHIS, BAS

Hospital beds per 10 000 uninsured population

The top 10 districts with the highest expenditure per PDE had, on average, the lowest hospital beds per 10 000 uninsured population (5.8 hospital beds per 10 000 uninsured population) (Table 5). This is well below the national average of 8.0. This may be attributed to economies of scale, where a smaller district hospital (with potentially limited number of beds per hospital) results in higher expenditure per PDE. The bottom 10 districts with the lowest expenditure per PDE, however, had on average a high hospital bed per 10 000 uninsured of 7.2 hospital beds which is slightly closer to the national average of 8.0.

This implies that higher availability of beds results in lower unit costs. However, it is not applicable in eThekweni (KZN) with low unit cost and the lowest bed per 10 000 uninsured population; Cape Winelands (WC) (3.0 beds per 10 000 uninsured population) and Zwelentlanga Fatman Mgcawu (NC) (3.9 beds per 10 000 uninsured population). This could be due to low population numbers in those districts with smaller hospitals and a low number of beds, and the hospitals still being efficient due to the low population numbers.

Table 5: Comparison between average expenditure per PDE, beds per 10 000 uninsured population rate, inpatient bed utilisation rate, average length of stay and inpatient crude death rate (district hospitals), 2022/23

	Expenditure per PDE (Rand)	Beds per 10 000 uninsured population	Inpatient bed utilisation rate (%)	Average length of stay (days)	Inpatient crude death rate
Top 10 spending districts	4 801	5,8	56,2	4,4	4,8
All districts	3 798	8	61	4,2	4,8
Bottom 10 spending districts	2 785	7,2	63,9	3,6	4,3

Source: DHIS, BAS

When looking at BUR and ALOS together, it is possible to interpret if hospitals are providing efficient services. Table 6 below shows 10 districts that fall within the BUR range against their ALOS. Districts highlighted in green fall within the BUR and ALOS target ranges. Namakwa (NC) shows a very high BUR (139.6%) and a very low ALOS (2.6 days). This could indicate a shortage of beds in hospitals and patients being discharged early, which may result in poor quality of care if patients are being discharged before it is clinically advisable to do so because of high volumes of acutely ill patients who require hospital beds urgently. The rate above 100% could also be indicative of poor data

quality. Other hospitals have very low bed utilisation and may require rationalisation.

There seems to be an association between expenditure per PDE and ALOS. The 10 districts with the highest expenditure per PDE had an average BUR of 56.2% and ALOS of 4.4 days, compared to 63.9% BUR and 3.6 days ALOS of the bottom 10 spending districts. Expenditure may not be driven by patient load/ BUR, however. It may be driven by the length of stay in hospital. The longer a patient is in hospital, the higher the expenditure due to their needing longer treatment.

Table 6: Comparison of bed utilisation rate and average length of stay (district hospitals) for the 10 districts with the highest bed utilisation rate, 2022/23

District	Inpatient bed utilisation rate (%)	Average length of stay (days)
Sedibeng DM: DC42	70,7	4,8
Capricorn DM: DC35	72,1	4,1
City of Ekurhuleni: ECU	72,4	6,3
Central Karoo DM: DC5	71,5	3,1
Namakwa DM: DC6	139,6	2,6
Cape Town MM: CPT	100,6	4,6
Overberg DM: DC3	86,5	3
Mopani DM: DC33	74,2	4,4
Garden Route DM: DC4	79,3	2,8
West Coast DM: DC1	82,2	3,1
Cape Winelands DM: DC2	93,2	3,3

Source: DHIS

Provincial overview

The following section provides a summary of key observations made for each province which may be open to scrutiny for contextualisation.

Eastern Cape

The district hospital PDE declined by 21% from 2021/22 to 2022/23 and this contributed to the increase in expenditure per PDE where the province moved from being the lowest-spending province to fifth place in spending. This may partly explain the increase in PHC headcount which also resulted in a decline in PHC expenditure per headcount from R655 in 2021/22 to R600 in 2022/23. It is evident that the province relies more on the PHC service platform with its utilisation rate per uninsured person at 2.3 visits, which is above the national average of 2.0 visits. However, a concern is that the PHC expenditure per capita and per headcount remains below the national average. This may signal possible underfunding which may result in compromised quality care.

The decline in PHC expenditure per capita and DHS expenditure per capita from 2021/22 to 2022/23 varies across districts, which suggests that some districts may have been slightly protected over others during budget reductions. However, the order of expenditure in the districts did not change significantly from the previous year, as the rate at which districts spend did not shift so much from previous years. For instance, Alfred Nzo remained the lowest-spending district under PHC expenditure per capita in 2021/22 and 2022/23, with a decline of 1.8% in the same period, while Buffalo City was the highest-spending district under PHC expenditure per capita, with a decline of 12.8% in the same period.

Free State

Spending in PHC expenditure per capita and in DHS expenditure per capita remained stable between 2021/22 and 2022/23. This province was the second highest (R1 644) in PHC expenditure per capita and fourth highest (R2 387) in DHS expenditure per capita. PHC expenditure per headcount as well as expenditure per PDE for district hospitals declined at a rate almost similarly, at 9.4% and 9.6% respectively from 2021/22 to 2022/23. However, there was a notable increase in PHC headcount (6%) compared to a decline in PDE for district hospitals (8.6%) in the same period, indicating a shift towards increased use of PHC services. This is supported by a slight decrease in PHC expenditure per headcount from R903 in 2021/22 to R818 in 2022/23. This indicates some level of efficiency as the province has been the second-highest spending province in

this indicator over the past two years. Interestingly, despite the decline in PDEs in district hospitals, expenditure per PDE also decreased from R3 628 in 2021/22 to R3 228 in 2022/23, which may indicate that the budgets were already under strain (3.4% decline in district hospitals budget in 2022/23 year-on-year). In 2022/23, the province was the second-lowest spending in this indicator, from third place in 2021/22. It is concerning to see that although Mangaung had the lowest PHC expenditure per capita (R1 515) in 2022/23, the decline from 2021/22 to 2022/23 was the highest (7.5%) compared to Xhariep with the highest PHC expenditure per capita (R2 499) but only a decline of 4.8% in the same period. It may be worth investigating the underlying factors for such high spending in Xhariep compared to other districts in the province.

Gauteng

Over the past few years Gauteng has been shown to spend less in district health services per capita, mainly because of low reliance on district hospitals in Ekurhuleni and Johannesburg districts. The district hospitals PDE declined by 5.4% while PHC headcount increased by 5.8%. This was also reflected in expenditure where PHC expenditure per headcount declined by 9.8% from R928 in 2021/22 to R837 in 2022/23 (still the highest in the country). However, the decrease in district hospital PDE did not have a significant effect in expenditure per PDE as it also declined, although the opposite would have been expected. This indicates the general pressures in the district health services budget. The PHC utilisation rate remains the lowest in the country at 1.6 visits compared to 2.1 for the country. Therefore,

the high spending per PHC headcount is an indication of inefficiencies in the system and there are many factors that may contribute to low PHC utilisation.

It is of great concern that Gauteng continues to struggle with popularising the PHC platform as users continue to bypass PHC facilities. After consideration of the CCMDD programme and WBPHCOTs, which may have contributed to the low use of facilities, it is still noticeable that the province spends more (R740) than other provinces per headcount. The province should consider intensifying efforts to strengthen PHC facilities and demand creation for their use.

KwaZulu-Natal

District health services expenditure per capita was the second highest (R2 662) in the country, although the programme had a significant decline of 10.6% in the HIV/AIDS sub-programme which makes up most of the PHC expenditure. PHC expenditure per capita was the highest in the country (R1 818) while PHC expenditure per headcount was the third highest in the country (R761). The province maintained the highest PHC utilisation rate at 2.4 visits per uninsured person per year (compared to the national average of 2.1). The data also showed that the province prioritised community-based services, which saw an increase of 165% in 2022/23 year-on-year, from R355.8 million in 2021/22 to R944.8 million in 2022/23. KwaZulu-Natal is also the only province that had a growth

in community health clinics sub-programme (2.4%). The investments in PHC seem to be yielding good results as the non-financial performance in some of the explored indicators (antenatal care 1st visit before 20 weeks and MMR) was notably impressive. Ten out of 11 districts (73.6 provincial average) performed above the national average in ANC 1st visit before 20 weeks, and 50% of the districts surpassed the MMR SDG target by far. While there may still be questions around the efficient use of the available resources due to high PHC expenditure per headcount, it is encouraging to see good performance in women and child health outcomes. It can be deduced that PHC services are mostly accessible to the population.

Limpopo

Limpopo province had the highest district health services expenditure per capita of R2 726. The province has a large share of PHC services with the highest OPD visits not referred rate (71.7%) compared to the national average of 58.3%. This is problematic for the province as PHC is critically acclaimed for cost saving and cost effectiveness in the delivery of health care services. It is noticeable that the province is also trying to increase its investment in the community-based services and other community services sub-programmes, which increased by an average of 190% (from R536.7 million to R1.5 billion) year-on-year.

PHC expenditure per headcount remained the lowest (R596) in 2022/23, with a slight increase (2.3%) in PHC

headcount, resulting in a high utilisation rate of 2.3 visits per uninsured person (higher than the national average of 2.1 visits per uninsured). The PDEs for district hospitals also saw an increase of 6.6% year-on-year, which resulted in a slight decline (4.8%) in expenditure per PDE from R4 232 in 2021/22 to R4 030 in 2022/23. Expenditure per PDE at district level is quite dispersed from the provincial average, indicating significant disparities across districts. For instance, expenditure per PDE at Waterberg was R5 040 compared to Mopani at R3 149. This is also explained by lower BUR at Waterberg (58.9%) than Mopani (74.2%). This may warrant a need to investigate how the service platform may be improved to address these inequities as the current situation may compromise quality of care.

Mpumalanga

District health service expenditure per capita (R2 521) in the province was above the national average of R2 332, which was driven mostly by high spending in district hospitals. The province had the second-lowest PHC expenditure per capita (R1 355) in the country, indicating prioritisation of district hospitals. Although PHC headcount increased by 5.2%, this was slightly masked by an increase of 1.4% in uninsured population. However, there is still a noticeable decline in PHC headcount from R776 in 2021 to R701 in 2022/23. This may be informed by the increase in PHC headcount but also general budget reductions in PHC services. PHC utilisation rate of 1.9 visits per uninsured person in 2022/23 remained the same as in 2021/22, but this was slightly higher than the national average of 1.7 visits, which is in line with the observation that PHC services are not prioritised to the same extent as district hospitals.

While there were no large variations across districts, Gert Sibande had the highest DHS expenditure per capita of R2 786 and Nkangala had the lowest spending per capita of R2 143. In addition, despite Gert Sibande being one of the districts that surpassed the national average in DHS expenditure per capita, and in the sixth place of districts with highest district hospital PDE, the district did not perform well in the MMR where the outcome was 117 maternal deaths per 100 000 live births against the SDG target of 70 deaths per 100 000 live births. District hospital expenditure per PDE in Gert Sibande declined by 4.2% year-on-year, which may be attributable to the increase in PDE by 5.1% because there was no decline in the budget (a growth of 0.7% while other districts in the province had a decline).

Northern Cape

The province had a decline of 7.8% year-on-year in the district health services budget, the second highest in the country. Of all the sub-programmes, only HIV/AIDS was protected and had a budget increase of 8% year-on-year. The PHC utilisation rate increased by 7.6% year-on-year and was 2.3 visits per uninsured person. This is higher than the national average of 1.7 visits. This indicates improved accessibility of PHC services. This increase had an impact on PHC expenditure per headcount which declined by

13.9% year-on-year. In this analysis, it is difficult to assess whether this means efficient use of the available resources or that the province is overstretched. The province also had the highest decline in district hospital expenditure per PDE from R4 268 in 2021/22 to R3 620 in 2022/23, which may be partly explained by a high increase (7.7%) in PDE and a significant decline of 8.6% in the district hospitals expenditure. The province seems to be relying on district hospitals as much as it relies on PHC facilities.

North West

North West had below-average expenditure (R698) per PHC headcount and the highest expenditure per PDE (R4 425) in the country for district hospitals. Three of its districts were above the national average: Bojanala Platinum district being the fifth-highest-spending district (R4 923), Ngaka Modiri Molema (R4 485) and Dr Ruth Segomotsi Mompati (R3 892). This suggests that utilisation, such as bed utilisation rate, in North West districts is low. The BUR in Bojanala was 69.7%,

55.3% in Dr K Kaunda, 56.3% in Ngaka Modiri Molema and 62.6% in Dr Ruth Segomotsi Mompati. The province had below-average DHS (R2 123) and PHC expenditure per capita (R1 378). This therefore presents a case for enquiry into whether district hospital services should be made more accessible or whether better efficiency could be achieved, thereby lowering unit costs.

Western Cape

Western Cape had slightly below-average DHS expenditure per capita, although major differences in expenditure between its districts. Central Karoo had the highest DHS expenditure in the country (R4 777), most of it being district hospital spending, Cape Winelands had the third-lowest DHS expenditure (R1 585). These differences mainly emanate from over reliance on district hospitals in high-spending districts which may be closer to district hospitals.

Western Cape's expenditure per PDE for district hospitals was below the national average in all districts. However, the province had a very low inpatient death rate in all districts. This shows that comparably good quality of care can be achieved at low cost if facilities are well managed. The low expenditure per PDE combined with high BUR and low ALOS is likely to reflect a combination of high service demand and efficiencies in hospital management.

Recommendations

- Provinces with wide differences between their districts should investigate whether equity in resource distribution needs to be improved.
- Provinces and districts with high expenditure per unit of utilisation (for example, PHC headcount and PDE) should look into whether services can be delivered more efficiently.
- Provinces and districts with very low expenditure per capita and per unit of utilisation are recommended to look into whether this is due to efficiency or whether this low spending causes deficiencies in quality of care.
- Correlation between expenditure and performance should be further explored. A more complex indicator of performance which includes CCMDD may provide a better estimate of efficiency trends.
- Given the high-level nature of the analysis in this chapter, some of the above analyses, conclusions and recommendations should be considered tentative, and subject to more comprehensive research using information other than the routine health service data. In many cases, the findings should be tested at the local level, taking context-specific factors into account.

4.3 Human resources for health

Jodi Wishnia, Claire Gomes and Suhavna Khalawan

Key findings

- South Africa is still a distance away from its stated human resources for health (HRH) targets and policy goals.
- South Africa's HRH policy goals are not supported by an accompanying forecasted health budget, leaving an inevitable gap between HRH policy and its implementation.
- Data show an estimated 17% emigration rate for skilled health professionals, which is a key risk for the current health system and the health system envisioned under National Health Insurance.
- Medical practitioners, professional nurses and pharmacists show positive growth in number between March 2009 and March 2023, with pharmacists experiencing the highest growth rate at 186%. Professional nurses show the lowest growth at 29%.
- The March 2023 professional nursing ratio of 148.9 per 100 000 uninsured population closely aligns with the HRH 2030 strategy target for professional nurses. However, the Sustainable Development Goal for 2030, to which South Africa is a signatory, has a target ratio of 830 nurses per 100 000 population, which would require more than doubling our current nursing workforce.
- The professional nursing workforce has the most concerning age profile, with 38% of the workforce over 50 years, implying that nearly two in five nurses will retire in the next 15 years.
- There is no standardisation in the mix of clinical staff across districts (for example, professional nurse to assistant nurse ratios). This demonstrates the lack of national workforce planning guidance on the optimal mix and ratio of staff to one another and to the population.
- There is huge inequity between districts within provinces for medical practitioners, professional nurses, pharmacists and allied health professionals per 100 000 uninsured population.
- The need for allied health professionals is large, with one in three people with a disease or injury benefiting from rehabilitative care from an allied health professional. Allied health professionals should be seen as a critical part of the clinical team, particularly within primary health care settings.

Introduction

Human Resources for Health (HRH) spending makes up the largest share of public health spending in South Africa.¹ In the financial year 2021, HRH spending comprised R152 billion (63%) of the total provincial public health budget of R243 billion.^{1,2} Human Resources for Health spending is therefore an important area for analysis and monitoring when analysing the performance of South Africa's public health system.

Despite ongoing HRH planning and strategic policy documentation since 1994, South Africa has a stated shortage of HRH. Considering the latest HRH 2030 strategy, which has defined targets for the ratio of different health cadres to the population, South Africa remains below optimal targets for most of its health professional cadres. This stated shortage in HRH, and intention to increase the HRH levels to improve access for the population,¹ leaves a concerning gap between policy and the health budget.

South Africa has made progress on its National Health Insurance (NHI) policy, with the current NHI Bill now with the National Council of Provinces (NCOP) for review and inputs. The NHI Bill is pertinent to the discussion around HRH because one of its (most contentious) clauses proposes to close down medical schemes,³ which will, in effect, pool the entire public sector and private sector HRH in South Africa to serve the full population. Unfortunately, even when pooled, South Africa's ratio of many of the different health professionals to the total South African population, particularly in rural regions, remains below the country's stated targets as well as globally recognised optimal targets.⁴

South Africa has also seen an increase in the emigration of health professionals since 2015, with an anticipated 17% emigration rate for skilled health professionals between 2020 and 2040.⁵ Reasons for emigration range from concerns around personal safety to the economy, working conditions in the public health sector and the uncertainty around the NHI implementation.⁶

When considering this, regular and routine health workforce monitoring and planning are required to increase and maintain the supply of critical health cadres. This is only possible with effective and accurate health workforce datasets that are publically accessible and regularly updated. This chapter of the District Health Barometer provides valuable data and analysis on the state of South Africa's HRH, particularly in the public health sector, and aims to highlight key areas for investigation and investment.

However, even where it is clear that more personnel are required, the flat lining in health spending for South Africa over the medium-term is likely to thwart the ability of Provincial Departments of Health (PDoHs) to hire. The inability to hire widens the gap between what we need and what we have. The consequences thereof are a deteriorating healthcare sector, where the impacts are worse in the most vulnerable populations. A widening gap could potentially result in reduced access to care, longer waiting times and reduced quality of care. This has implications for population health, the burden of disease and for increased medical negligence litigation which is financially crippling for PDoHs.

National overview

Figure 1 below shows the trends of professional nurses, medical practitioners and pharmacists (including those completing their mandatory community service year) between March 2009 and March 2023. By converting the data into ratios per 100 000 uninsured population, the real increases or decreases in HRH are shown when considering population growth.

The jump from March 2009 ratios to March 2016 is driven by the introduction of the occupation-specific dispensation (OSD) which was a financial incentive introduced to retain and attract health professionals in and to the public sector.⁷ Occupation-specific dispensation not only increased the number of HRH in the system, it also dramatically increased the wage bill.⁸

¹National Department of Health: South Africa. 2030 Human Resources for Health Strategy: Investing in the Health Workforce for Universal Health Coverage. Pretoria: NDoH; 2020.

²UNICEF. Quality in health outcomes and health budget frameworks [Internet]. Pretoria: UNICEF; 2022. URL: <https://www.unicef.org/southafrica/media/7551/file/ZAF-health-budget-brief-2022.pdf>

³National Department of Health. National Health Insurance Bill: As introduced in the National Assembly (proposed section 76); explanatory summary of Bill and prior notice of its introduction published in Government Gazette No. 42598. Cape Town: Creda Communications; 2019.

⁴Van Ryneveld M, Schneider H, Lehmann U. Looking back to look forward: a review of human resources for health governance in South Africa from 1994 to 2018. *Hum Resour Health*. 2020;18(1):92.

⁵Halstein J. Skilled labour emigration in South Africa: Exploring the long-term implications. SA-TIED.; 2021. URL: <http://sa-tied.wider.unu.edu/article/skilled-labour-emigration-south-africa-exploring-long-term-implications>

⁶South Africa health minister on migration of skilled health workers. BusinessTech. Available at: <https://businesstech.co.za/news/government/630825/south-africa-health-minister-on-migration-of-skilled-health-workers/>. Published [4 Oct 2022]. Accessed [26 Oct 2023].

⁷Ditlopo P, Blaauw D, Rispel Laetitia C, Thomas S, Bidwell P. Policy implementation and financial incentives for nurses in South Africa: a case study on the occupation-specific dispensation. *Glob Health Action*. 2013; 6(1):19289.

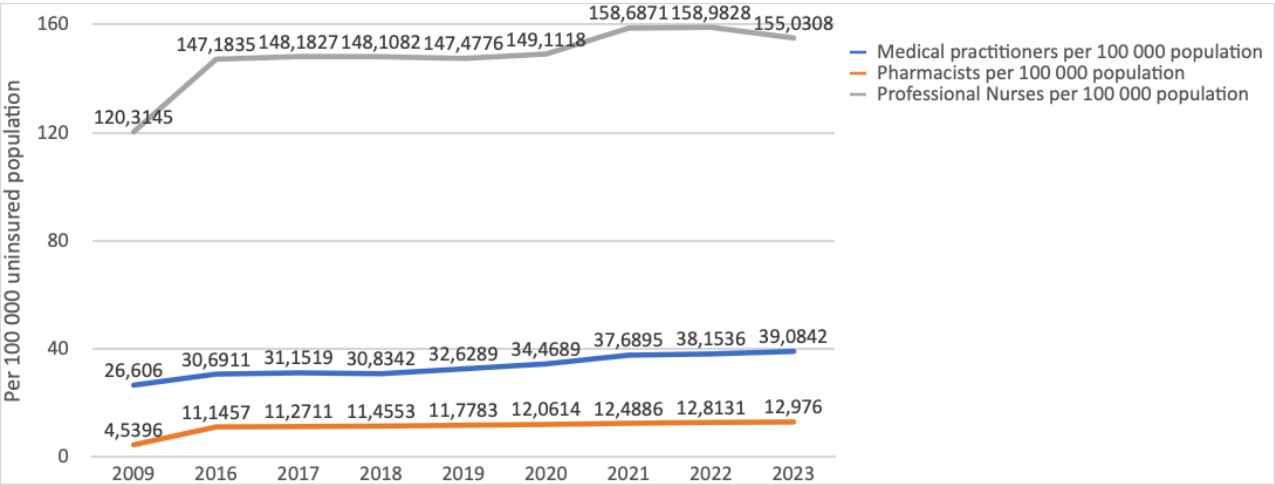
⁸Blecher M, Kolipara A, Maharaj Y, Mansvelder A, Davén J, Gaarekwe O. Health spending at a time of low economic growth and fiscal constraint. In: Padarath A, Barron P, editors. *South African Health Review 2017*. URL: <http://www.hst.org.za/publications/south-african-health-review-2017>

All three cadres show growth between March 2009 and March 2023, with pharmacists experiencing the highest growth rate at a 186% increase (from 1 855 to 6 557 pharmacists). Professional nurses show the lowest growth, at 29%, going from 49 164 professional nurses in March 2009 to 78 340 in March 2023.

The March 2023 ratio closely aligns with the HRH 2030

strategy target for professional nurses. However, the targets given in the HRH 2030 strategy are equity-based targets to bring all provinces up to the average of the three provinces with the highest ratio per uninsured population. Therefore, these targets are not necessarily a reflection of need. These targets consider all nurse cadres, except specialist nurses (that is, nursing assistants, enrolled nurses and professional nurses).

Figure 1: Ratio of professional nurses, pharmacists and medical practitioners per 100 000 uninsured population, March 2009–March 2023

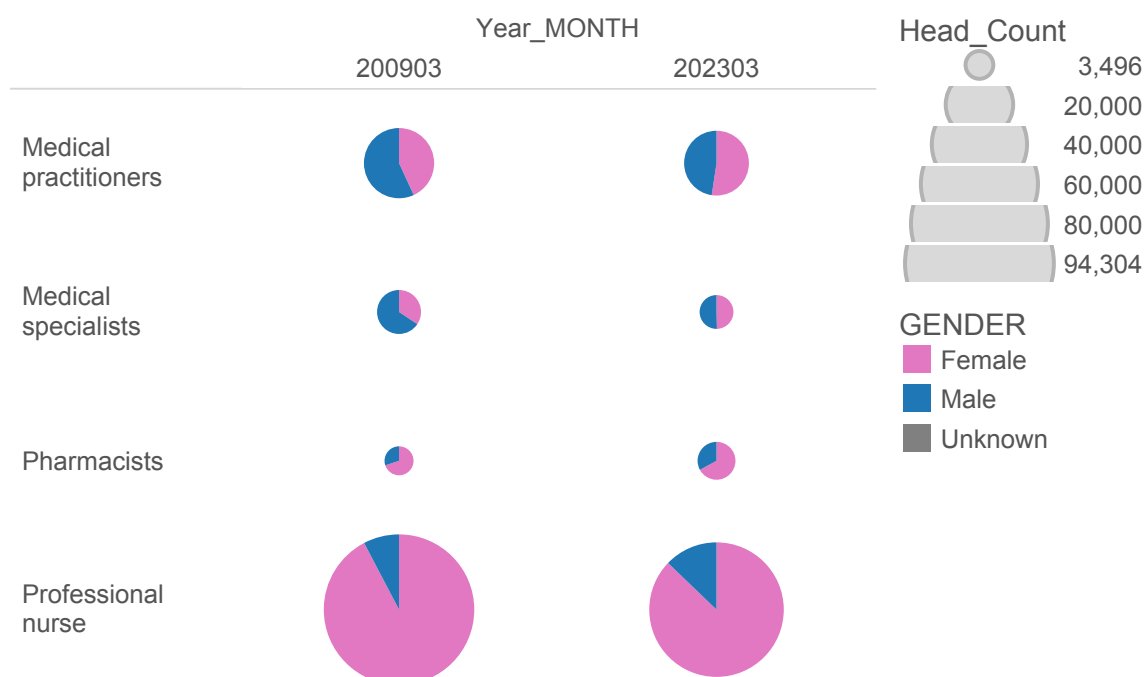


Source: PERSAL

South Africa’s public sector total nursing ratio, excluding specialist nurses, was 296 per 100 000 uninsured population in March 2023. This is against a stated target in the HRH 2030 strategy of 337.64 per 100 000. A review of the literature shows that the global average for all nursing cadres is approximately 400 nurses per 100 000 population. If we were to include specialist nurses in the public sector nursing ratio mentioned above, South Africa still falls below the global average.⁹ The Sustainable Development Goals (SDG) for 2030 have a target ratio of 830 nurses per 100 000 population,¹⁰ which would require more than doubling the current nursing workforce.

Figure 2 shows that clinical degrees are still female dominated. This is most clear in the nursing and allied health categories, but there has also been a shift in the proportion of women in the medical practitioner and medical specialist categories.¹¹ This is important progress for the country in terms of gender parity and strengthening women’s economic empowerment. In marketing different professions to potential students, all genders^a should be encouraged to enrol to allow South Africa to get closer to a more equitable split between the genders. This may require undoing some of the societal stigma about which genders are most suited to certain professions.

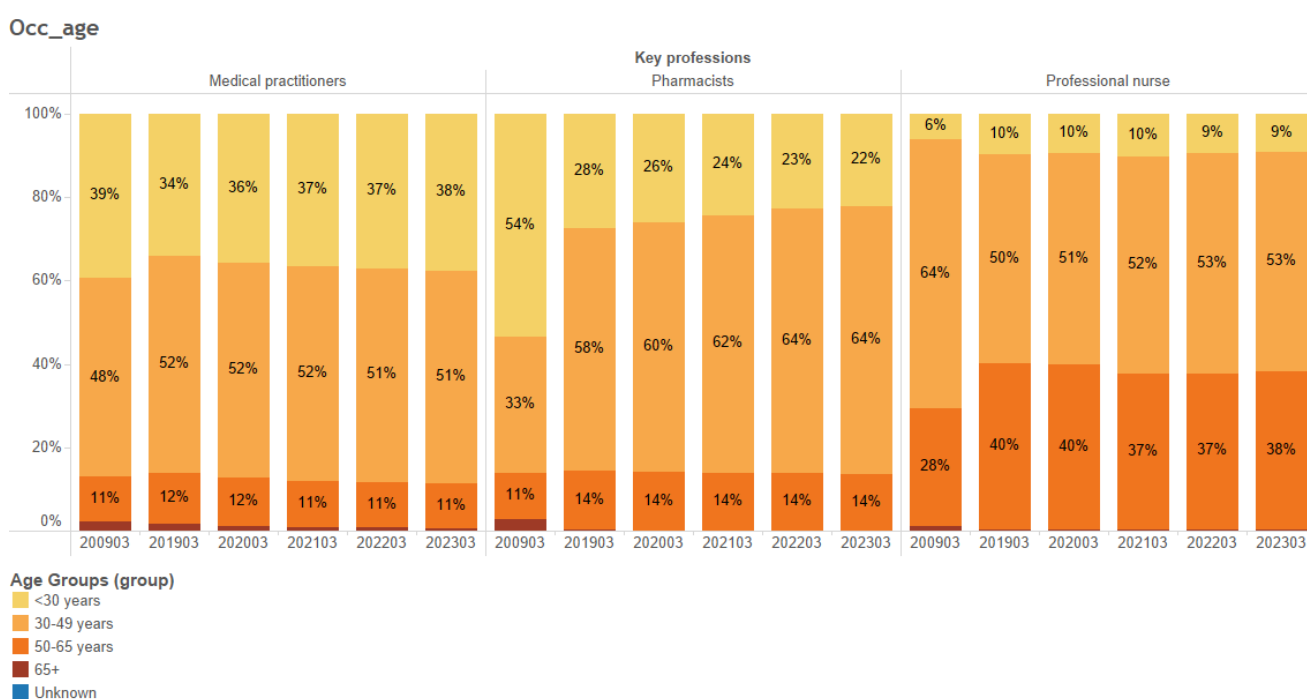
⁹Kharazmi E, Bordbar N, Bordbar S. Distribution of nursing workforce in the world using Gini coefficient. BMC Nurs. 2023; 22:151.
¹⁰Bakibinga P. Africa can and must do more to support nurses and midwives. The Conversation; 2020. URL: <http://theconversation.com/africa-can-and-must-do-more-to-support-nurses-and-midwives-135722>.
¹¹Wishnia J, Strugnell D, Smith A, Ranchod S. The supply of and need for medical specialists in South Africa. Cape Town: Percept; 2019.
^aThe data systems still only capture male, female and unknown: essentially biological sex and a catch-all bucket for those who did not respond. But the authors of this paper acknowledge that gender is not binary and there are multiple gender expressions that might be lost in the ‘unknown’ category. We therefore refer to ‘all genders’ in this chapter, rather than only the binary sex categories.

Figure 2: Sex distribution by health profession type, March 2009 and March 2023

Source: PERSAL

Figure 3 shows the age split for South Africa's HRH workforce. The professional nursing workforce has the most concerning profile, with 38% of the workforce above 50 years of age. This has implications for the workforce when these nurses retire at 65 years, as it is unlikely that the nursing education institutions will be able to train sufficient nurses to replace those exiting the workforce in time. Medical practitioners have the largest proportion of

people under 30 years working in the public sector, which is likely to be influenced by the specialisation process. Getting into a medical specialist programme is competitive and those already working in the public sector have a better chance of getting in. This keeps junior doctors in the public service between completing their community service and starting their specialist training.

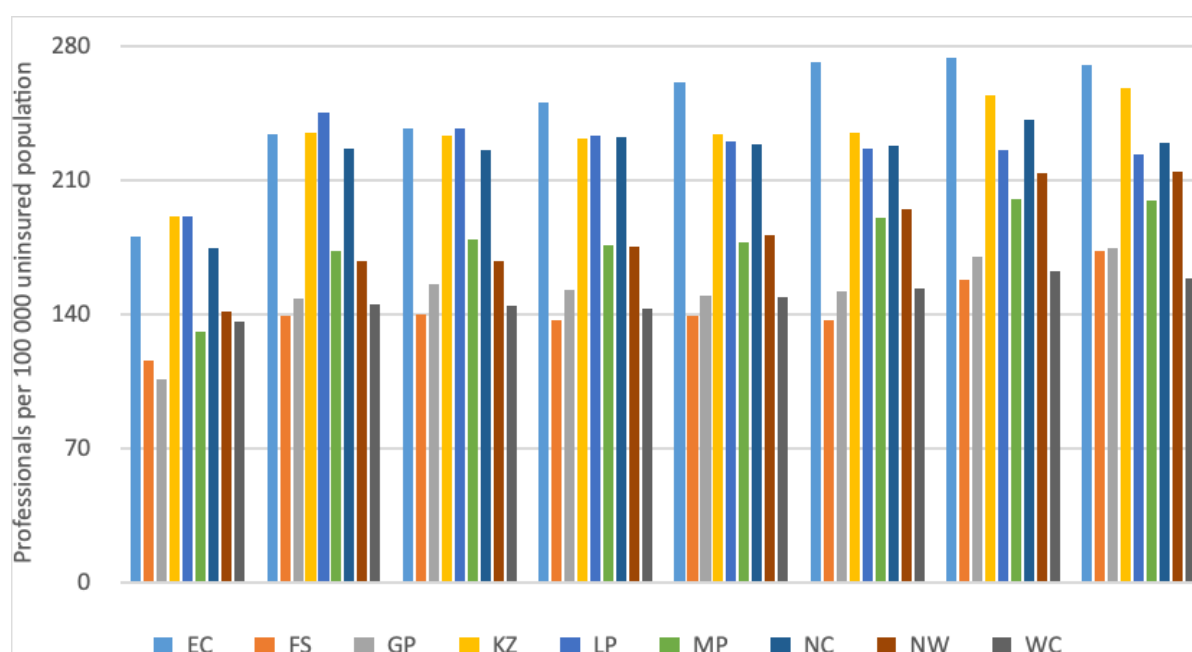
Figure 3: Age distribution by health professional type, March 2009–March 2023

Provincial overview

At a provincial level, there are inequities between the rural and urban areas. Even with the introduction of the rural allowance, these areas struggle to attract health personnel, particularly medical practitioners and allied health professionals. Figure 4 shows the inequity of the ratio of medical practitioners, professional nurses and pharmacists, combined, to uninsured population on a per province basis. In 2022, the Eastern Cape (EC) had a combined ratio of 270 per 100 000 uninsured population for these three cadres, while the Western Cape (WC) had a ratio of just 159 per 100 000 population uninsured.

While these inter-provincial differences in access to professionals are extremely important, there is no guidance on what the optimal ratio should be. It is possible that the Western Cape's low ratio is optimal for a mostly urban province, or that the Eastern Cape's medical practitioner, professional nurse and pharmacist workforce is unnecessarily large. Health outcomes give some sense of performance per province, but the availability of HRH is only one factor contributing to outcomes.

Figure 4: Medical practitioners, professional nurses and pharmacists combined per 100 000 uninsured population, by province: 2009–2022



Source: PERSAL

District overview

Medical practitioners

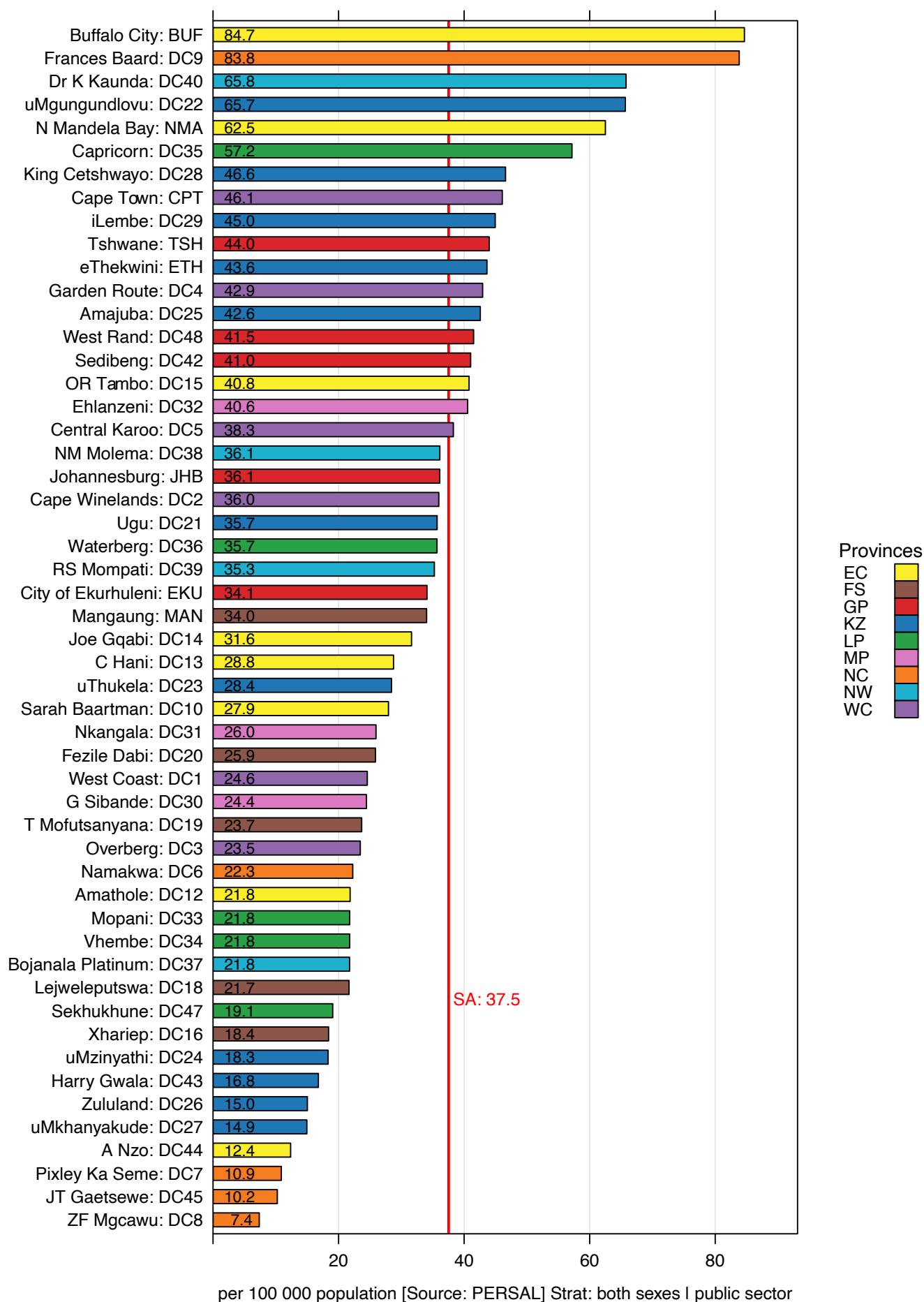
Figure 5 shows the medical practitioner ratio per 100 000 uninsured population, per district. In March 2023, Buffalo City (EC) had the highest ratio at 84.7 medical practitioners per 100 000 uninsured population compared to Zwelentlanga Fatman Mgcawu in Northern Cape (NC) at 7.4 per 100 000. Map 1 shows that the inequity within provinces is even more stark than the inequity between provinces. In the North West (NW), Dr Kenneth Kaunda and Ngaka Modiri Molema districts had 65.8 and 36.1 medical practitioners per 100 000 uninsured population respectively in March 2023. The two districts have almost similar populations (Ngaka Modiri Molema's population is 87 600 more) and are positioned next to each other geographically but, due to

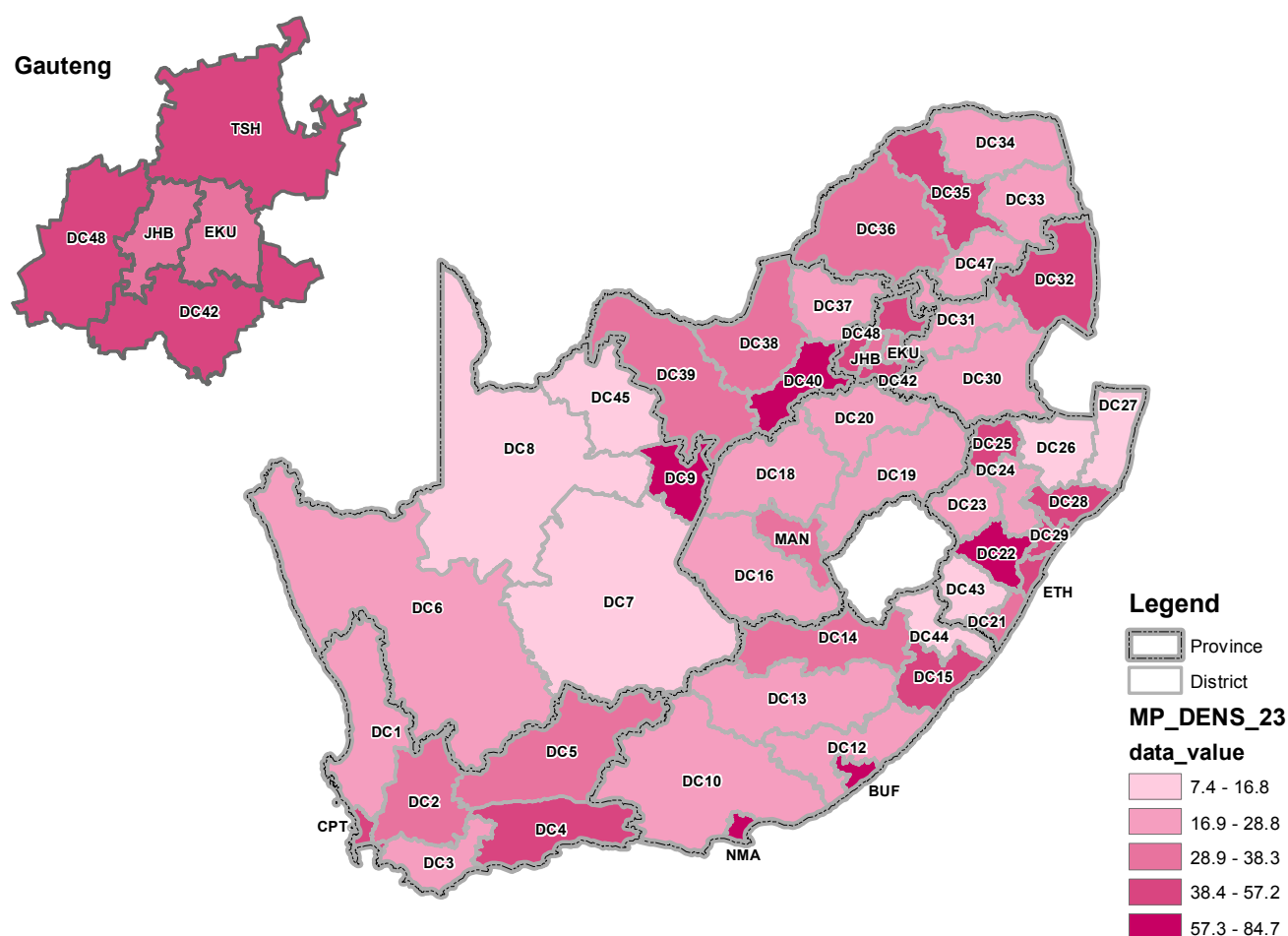
the size of the district, Dr Kenneth Kaunda is much more densely populated.¹² Dr Kenneth Kaunda district has the benefit of the Klerksdorp/Tshepong Hospital Complex which attracts medical practitioners to the region. This is likely to drive the higher number of doctors to this district. It also has the highest medical scheme coverage in the province, which provides opportunities for remunerated work outside of the public sector that are attractive for doctors.

Map 1 also shows the same trend between urban and rural districts, possibly for the same reason.

¹²Massyn N, Day C, Ndlovu N, Padayachee T. Editors. District Health Barometer 2019/20. Durban: Health Systems Trust; December 2020.

Figure 5: Medical practitioners per 100 000 uninsured population by district, March 2023



Map 1: Medical practitioners per 100 000 uninsured population by district, March 2023

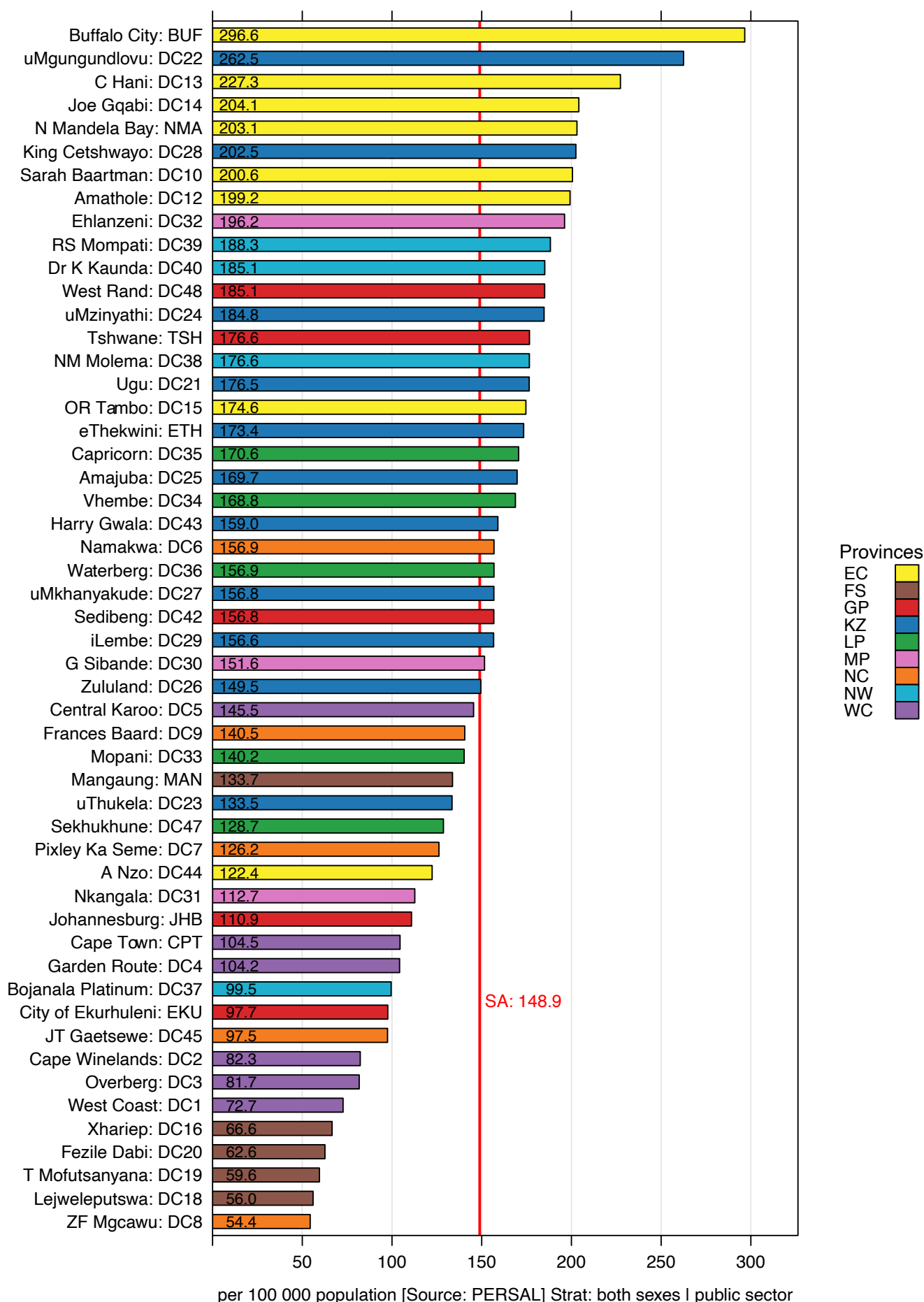
Source: PERSAL

Professional nurses

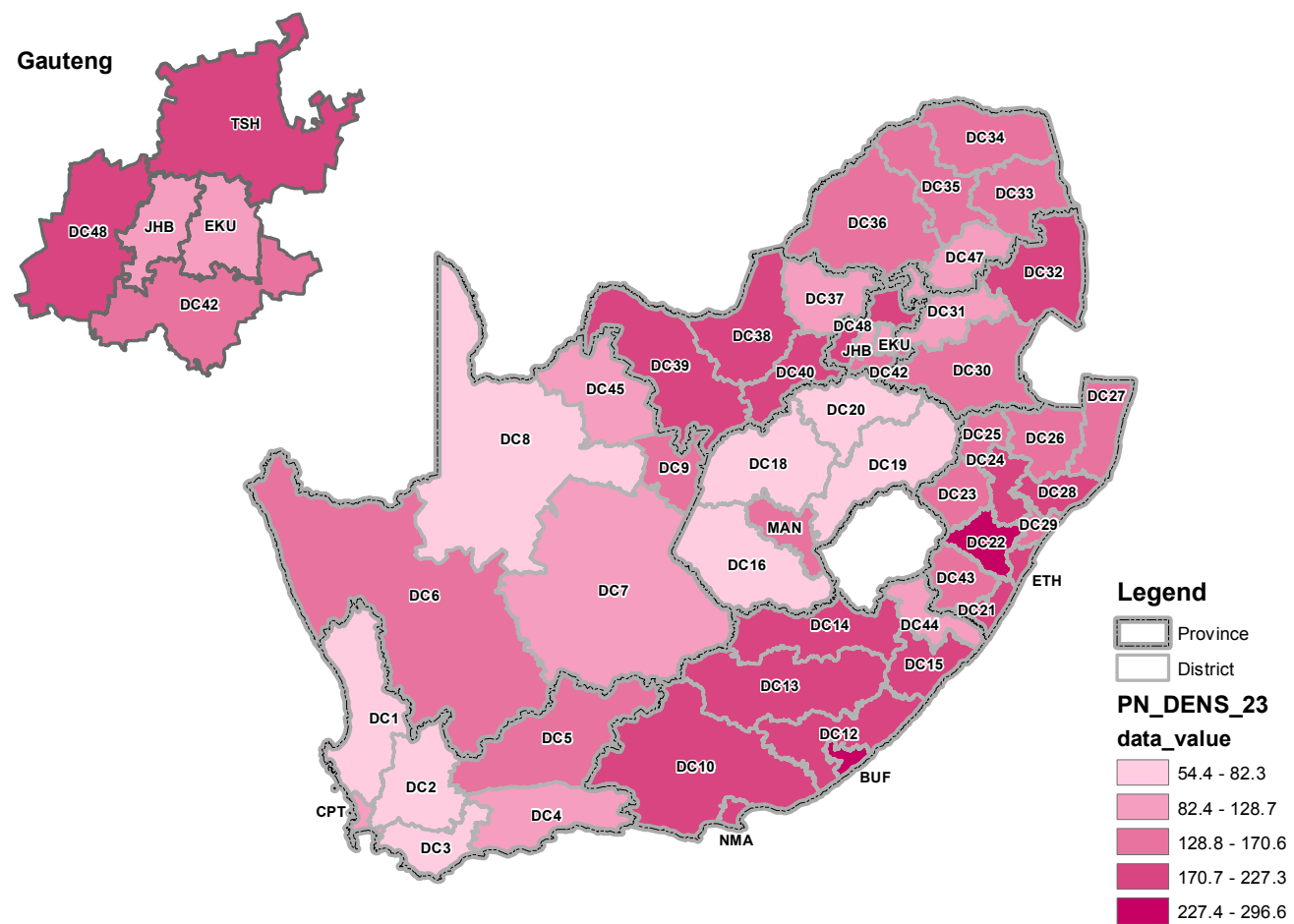
The interdistrict variation for professional nurses per 100 000 uninsured population, shown in Figure 6, reveals a 5.5-fold variation between the best and the worst performing districts (Buffalo City (EC), 296.6 professional nurses per 100 000 uninsured population and Zwelentlanga Fatman Mgcawu (NC), 54.4 per 100 000). Five of the seven districts in the Eastern Cape (EC) were among the 10 districts with the highest ratio of professional nurses per 100 000 uninsured population. Four of the five districts in the Free State (FS) were among the 10 districts with the lowest ratio of professional nurses per 100 000 uninsured

population. All six districts in the Western Cape (WC) had a ratio below the national average of 148.9 professional nurses per 100 000 uninsured population. Map 2 shows that there is a similar discrepancy in the professional nurse ratio across districts in the same province. In KwaZulu-Natal (KZN), uMgungundlovu had a ratio of 262.5 and Zululand had a ratio of 149.5 per 100 000 uninsured population. uMgungundlovu is a more urban area and therefore could attract nurses more easily than the deeply rural Zululand district.

Figure 6: Professional nurse per 100 000 uninsured population by district, March 2023



Map 2: Professional nurse per 100 000 uninsured population by district, March 2023



Source: PERSAL

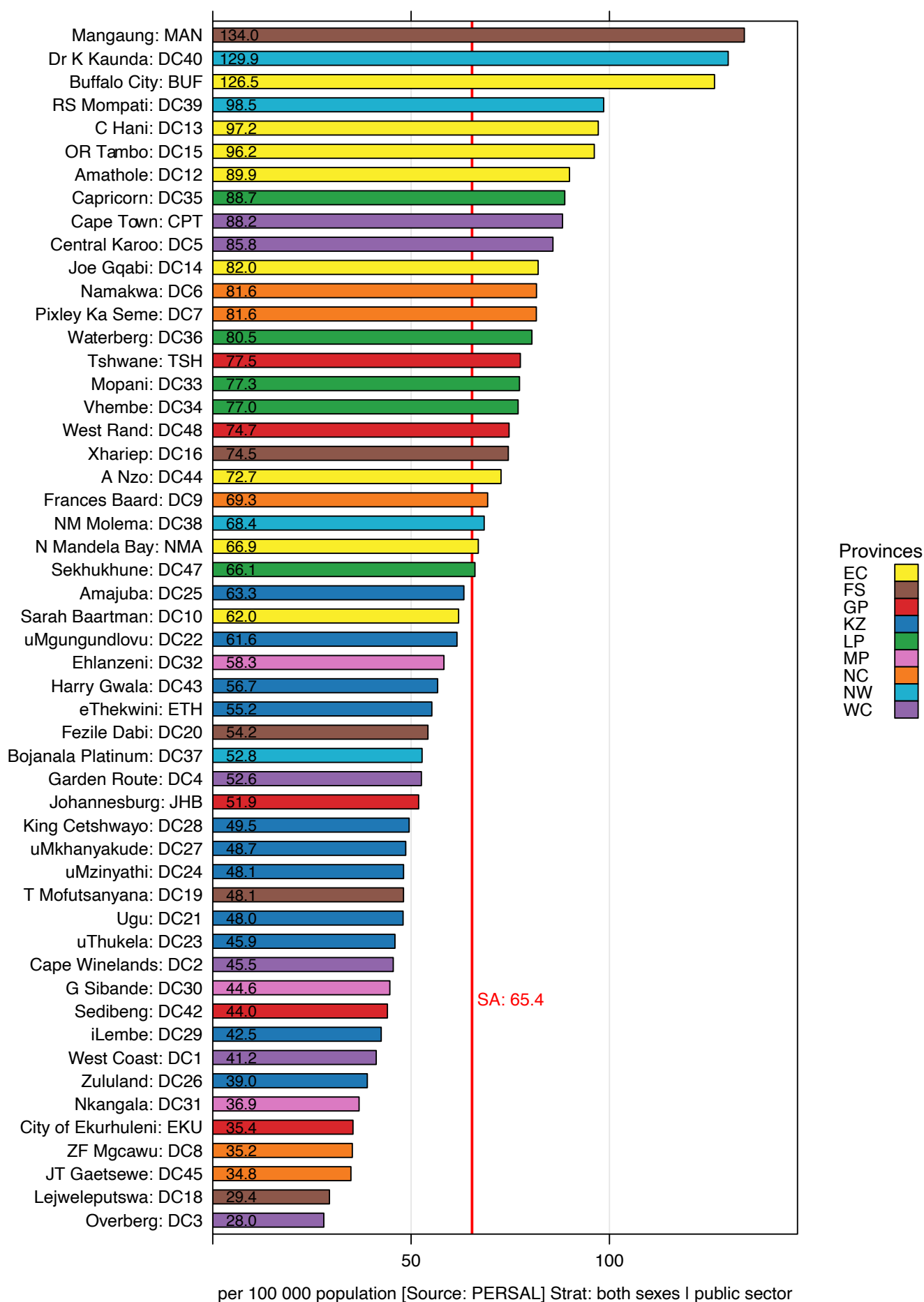
Nursing assistants

Nursing assistant (auxiliary nurse) ratios show less intra-provincial discrepancy; but the inter-provincial inequity is stark. Nursing assistants perform the day-to-day basic caring functions for patients. They are critical to ensuring that the professional nurses can concentrate on more complex cases and are an integral part of nursing teams.

The South African average for nursing assistants was 65.4 per 100 000 uninsured population in March 2023 (see Figure 7). However, the maximum ratio is double that of the average, at 134.0 in Mangaung (Free State), while the smallest ratio is 28.0 assistant nurses per 100 000

uninsured population in Overberg (Western Cape). In these same two districts, the professional nurse ratios were 133.7 in Mangaung (below the professional nurse country average of 148.9) and 81.7 per 100 000 in Overberg (also below the national average). The ratio of professional nurses per 100 000 is similar to nursing assistants per 100 000 in Mangaung. However, there are almost three professional nurses for each nursing assistant in Overberg. This wide range demonstrates the lack of strategic planning guidance on the optimal mix and ratio of staff to each other and to the population.

Figure 7: Nursing assistants per 100 000 uninsured population by district, March 2023

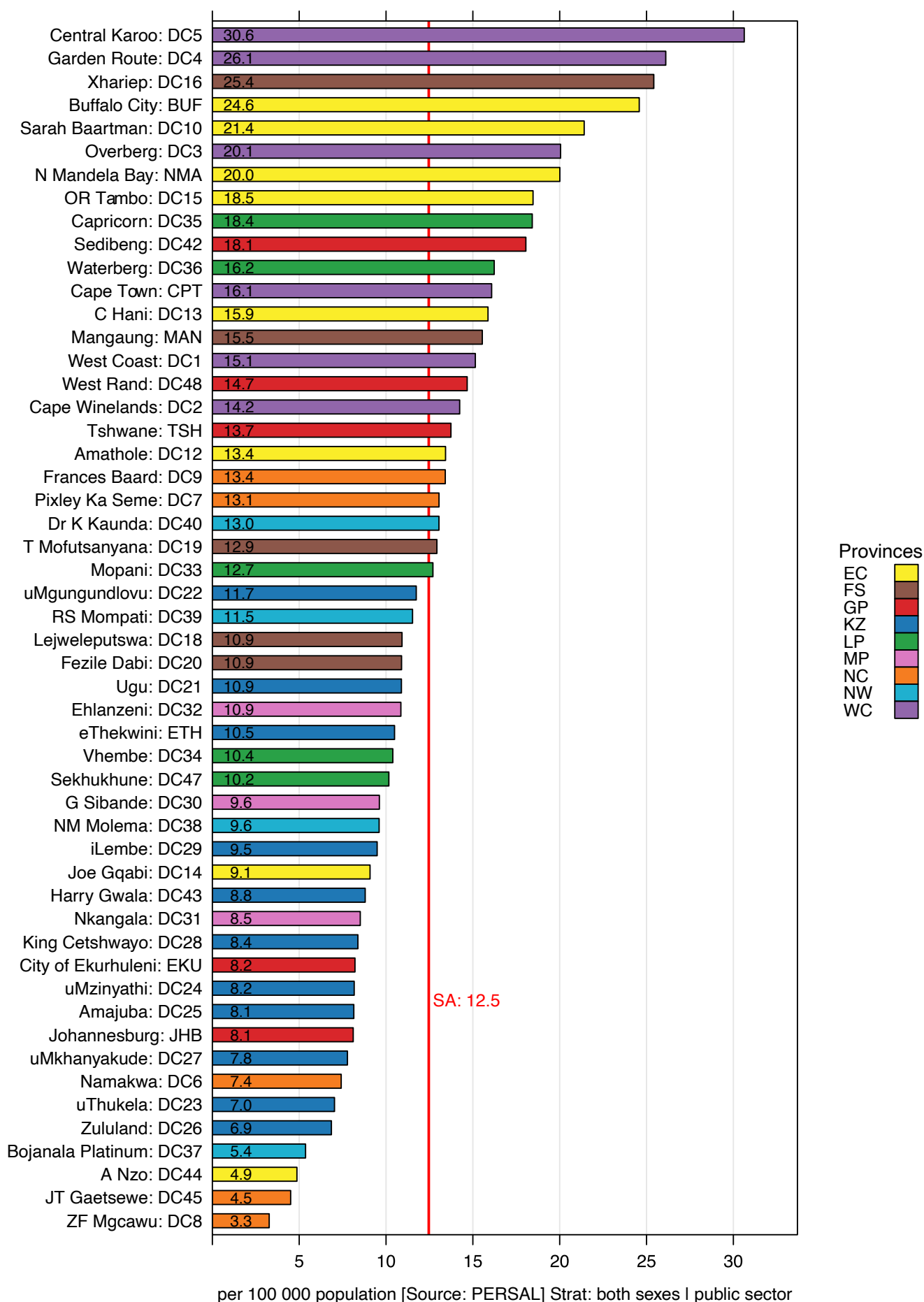


Pharmacists

Figure 8 shows that only 24 districts had a pharmacist per 100 000 uninsured population ratio above the national average of 12.5 pharmacists per 100 000 in March 2023. All six districts of the Western Cape and six of the eight districts in the Eastern Cape were among the best performing districts. There is a 9.3-fold variation between

the best and the worst performing districts (Central Karoo (WC), 30.6 pharmacists per 100 000 uninsured population and Zwelentlanga Fatman Mgcawu (NC), 3.3 per 100 000). All the districts in KwaZulu-Natal have a ratio below the national average.

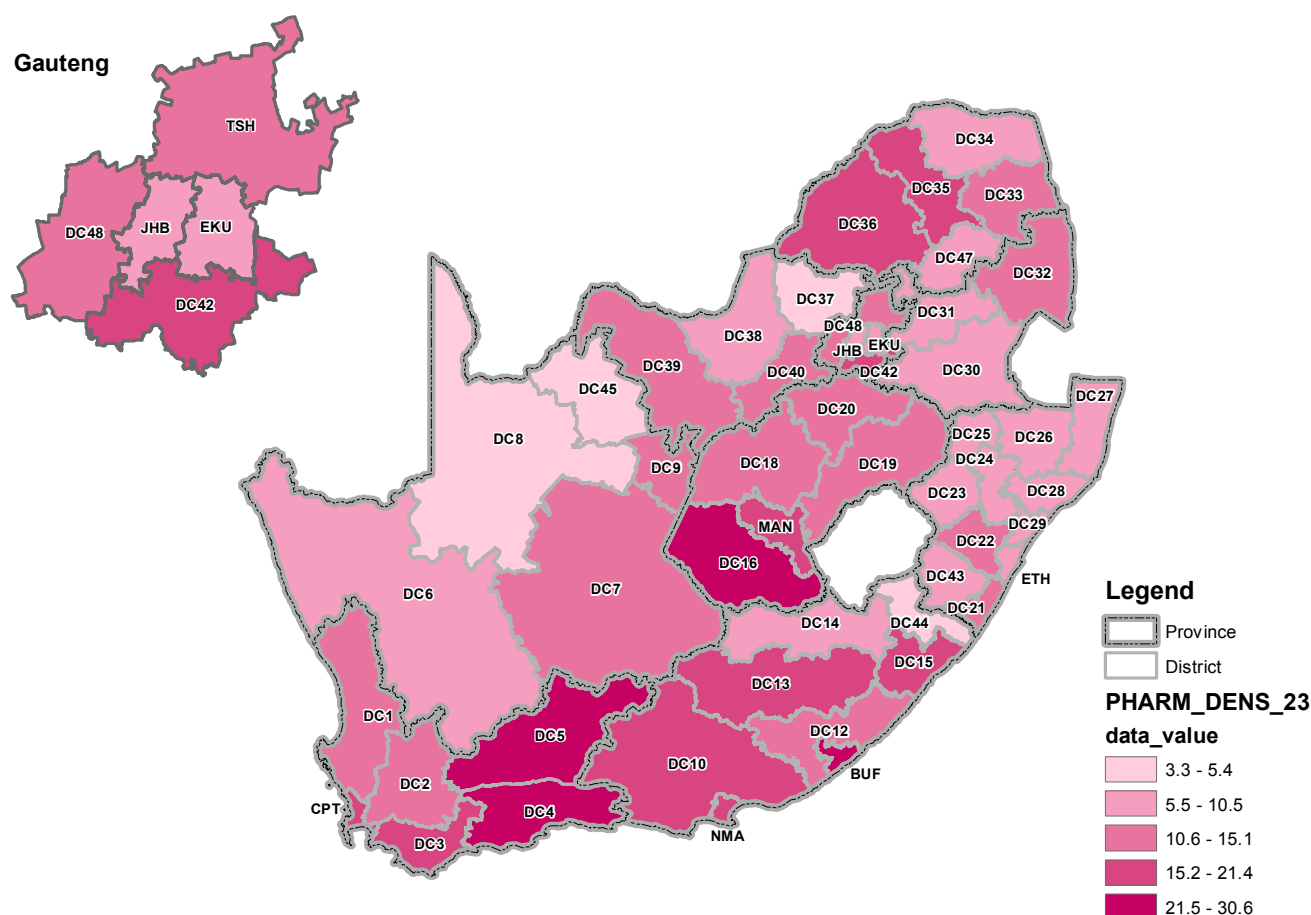
Figure 8: Pharmacists per 100 000 uninsured population by district, March 2023



Map 3 shows that there is a similar discrepancy in the pharmacist ratio across districts in the same province. In the Northern Cape, Frances Baard and Pixley Ka Seme had a ratio of 13.4 and 13.1 in March 2023, and John Taolo Gaetsewe and Zwelentlanga Fatman Mgcawu had a ratio of 4.5 and 3.3 per 100 000 uninsured population respectively. Frances Baard is a more urban area and therefore could

attract pharmacists more easily. However, Pixley Ka Seme, John Taolo Gaetsewe and Zwelentlanga Fatman Mgcawu districts are more rural districts, but Pixley Ka Seme has a much higher ratio. This is probably due to the higher population numbers in John Taolo Gaetsewe and Zwelentlanga Fatman Mgcawu districts.

Map 3: Pharmacists per 100 000 uninsured population by district, March 2023



Source: PERSAL

Allied health professionals

Allied health professionals, made up predominantly of occupational therapists (OTs), physiotherapists (PTs) and speech therapists (STs) work with patients to support them in living as full and independent a life as possible. The three categories are discussed together as they often work in teams, given the nature of the rehabilitation process. Having other allied health professionals in a district is an attractive proposition for someone considering where to work.

Allied health professionals, and particularly the rehabilitation team (OTs, PTs and STs), are widely known to be integral to patients' quality of life. These professionals are also a cost-saving measure for health systems as they can help to prevent costly hospitalisation due to complications resulting from untreated disabilities (whether permanent or temporary disabilities).¹³ A 2020 study found that one in three people with a disease or injury would benefit from rehabilitative care from an allied health professional.¹⁴

Figure 9, Figure 10 and Figure 11 show the distribution of OTs, PTs and STs by district. The first notable feature is the substantial drop in the average ratios per 100 000 uninsured population. Where the combined average for medical practitioners, professional nurses and pharmacists was above 100 per 100 000 in March 2023, the allied health professionals had ratios of 2.7 (OTs), 3.0 (PTs) and 1.6 (STs) per 100 000 uninsured population respectively. The Framework and Strategy for Disability and Rehabilitation:

2015–2030 was released in 2015 and made clear the country's intentions of broadening access to the allied health multidisciplinary team.¹⁴ In 2015, the national average vacancy rate for OTs was 22%, varying from 54% in the Eastern Cape (EC) and Mpumalanga (MP) to 3% in Limpopo (LP).¹⁵

A positive policy change between the previous HRH strategy 2011/12–2016/17 and the current HRH 2030 strategy is the inclusion of allied health professionals in workforce planning. The older strategy made no room for allied health professionals within the primary health care (PHC) environment and de-prioritised them against other clinical cadres (doctors and nurses mostly).¹⁵

The World Federation of Occupational Therapists recommends a ratio of 75 per 100 000 population for OTs. South Africa is performing well below this recommendation at 2.7 per 100 000 uninsured population. Recommended targets for physiotherapists are unavailable, but one can assume that it would be similar to the OT ratio given the similarity in the patient profile that these two professions work with. A paper by Pillay et al. attempted to forecast the need for speech and audiology therapists given the lack of global recommended target ratios. One of their scenarios, albeit a conservative one, suggests a recommended ratio of 3.9 speech therapists per 100 000 population.¹⁵ Even with such a low target the country is still sitting at less than half that ratio in the public health sector.

¹³Cieza A, Causey K, Kamenov K, Hanson SW, Chatterji S, Vos T. Global estimates of the need for rehabilitation based on the Global Burden of Disease Study 2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*. 2020; 396(10267):2006–17.

¹⁴Ned L, Tiwari R, Buchanan H, Van Niekerk L, Sherry K, Chikte U. Changing demographic trends among South African occupational therapists: 2002 to 2018. *Hum Resour Health*. 2020; 18:22.

¹⁵Pillay M, Tiwari R, Kathard H, Chikte U. Sustainable workforce: South African Audiologists and Speech Therapists. *Hum Resour Health* 2020;18(1):47.

Figure 9: Occupational therapists per 100 000 uninsured population by district, March 2023

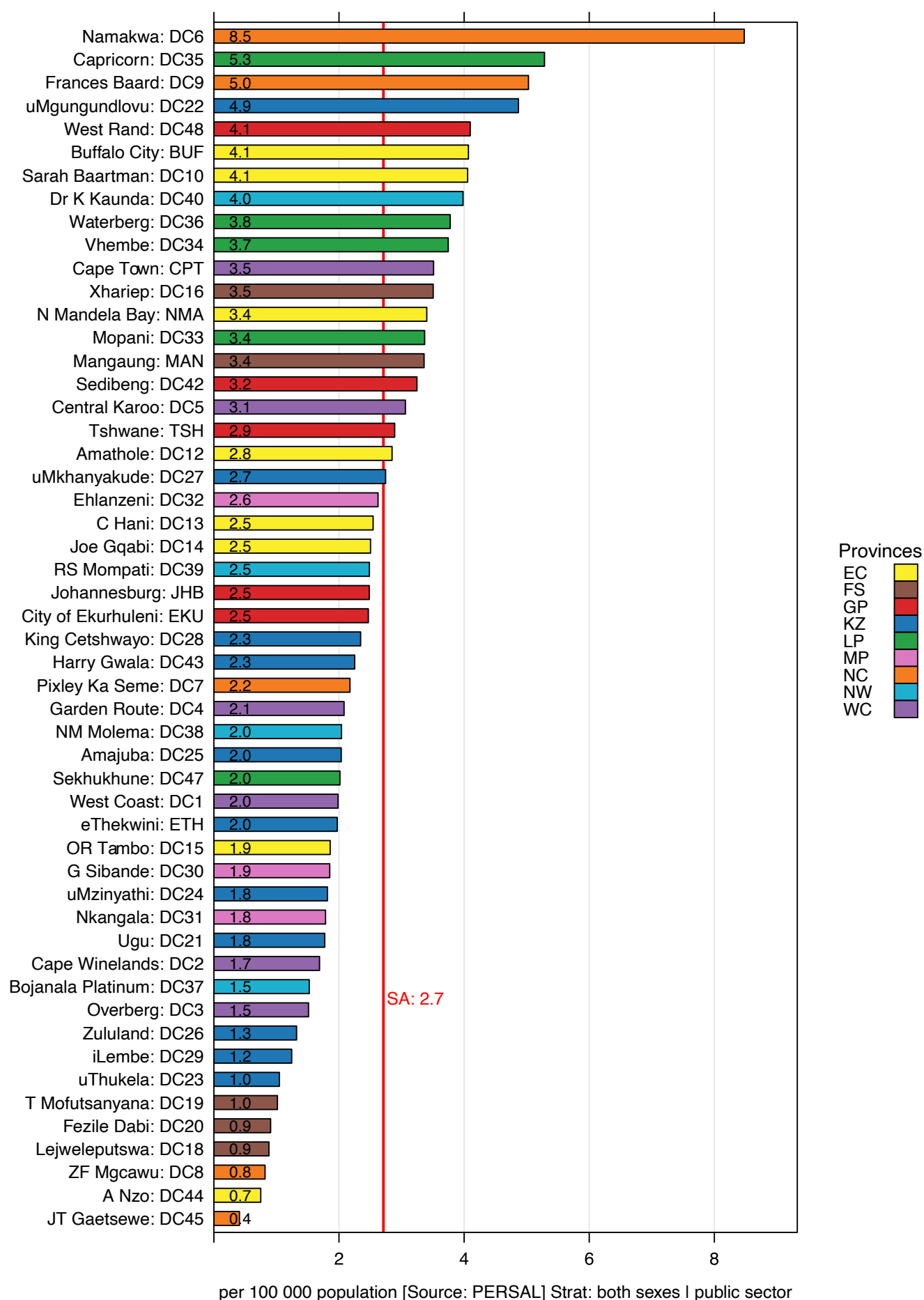


Figure 10: Physiotherapists per 100 000 uninsured population by district, March 2023

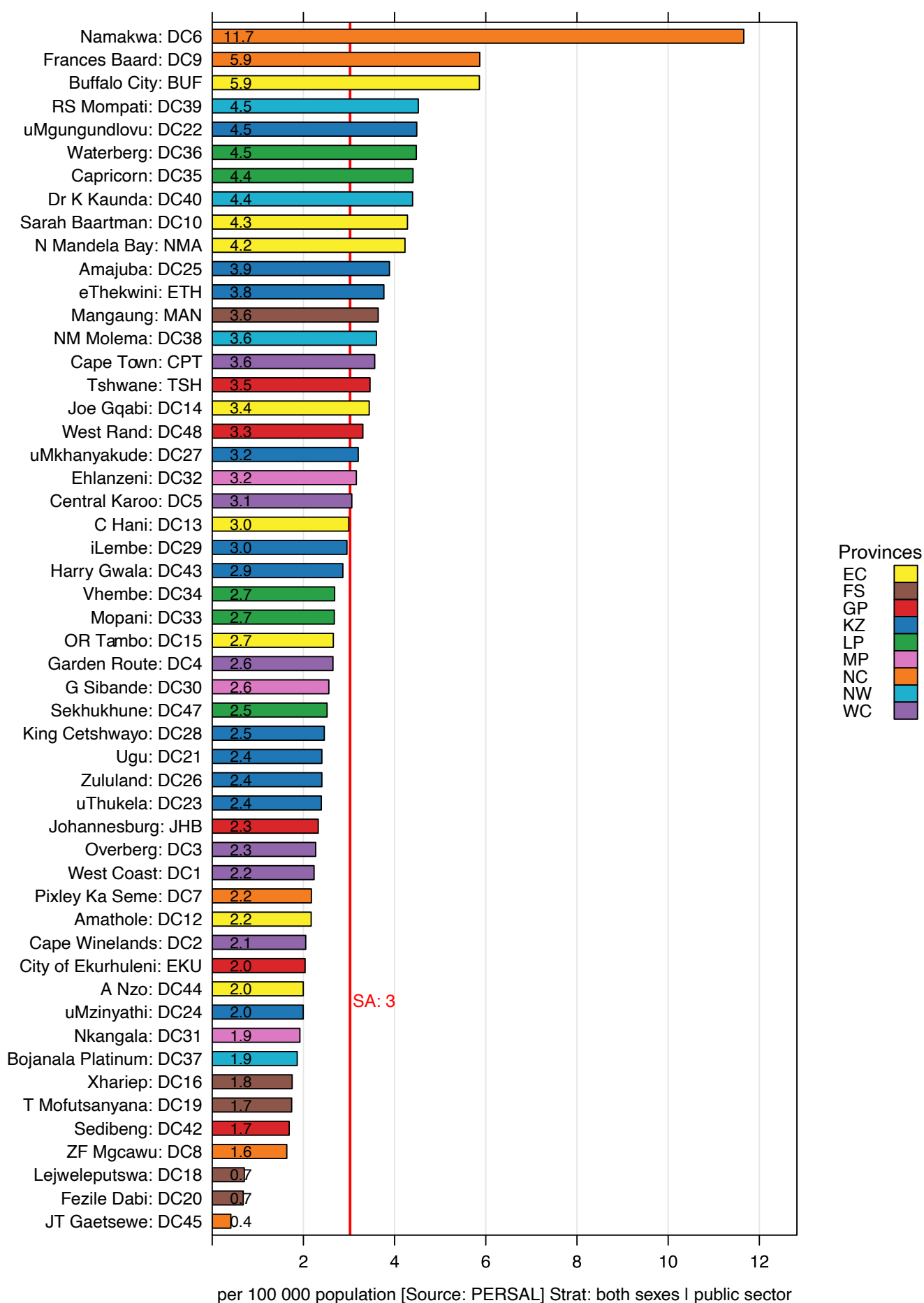
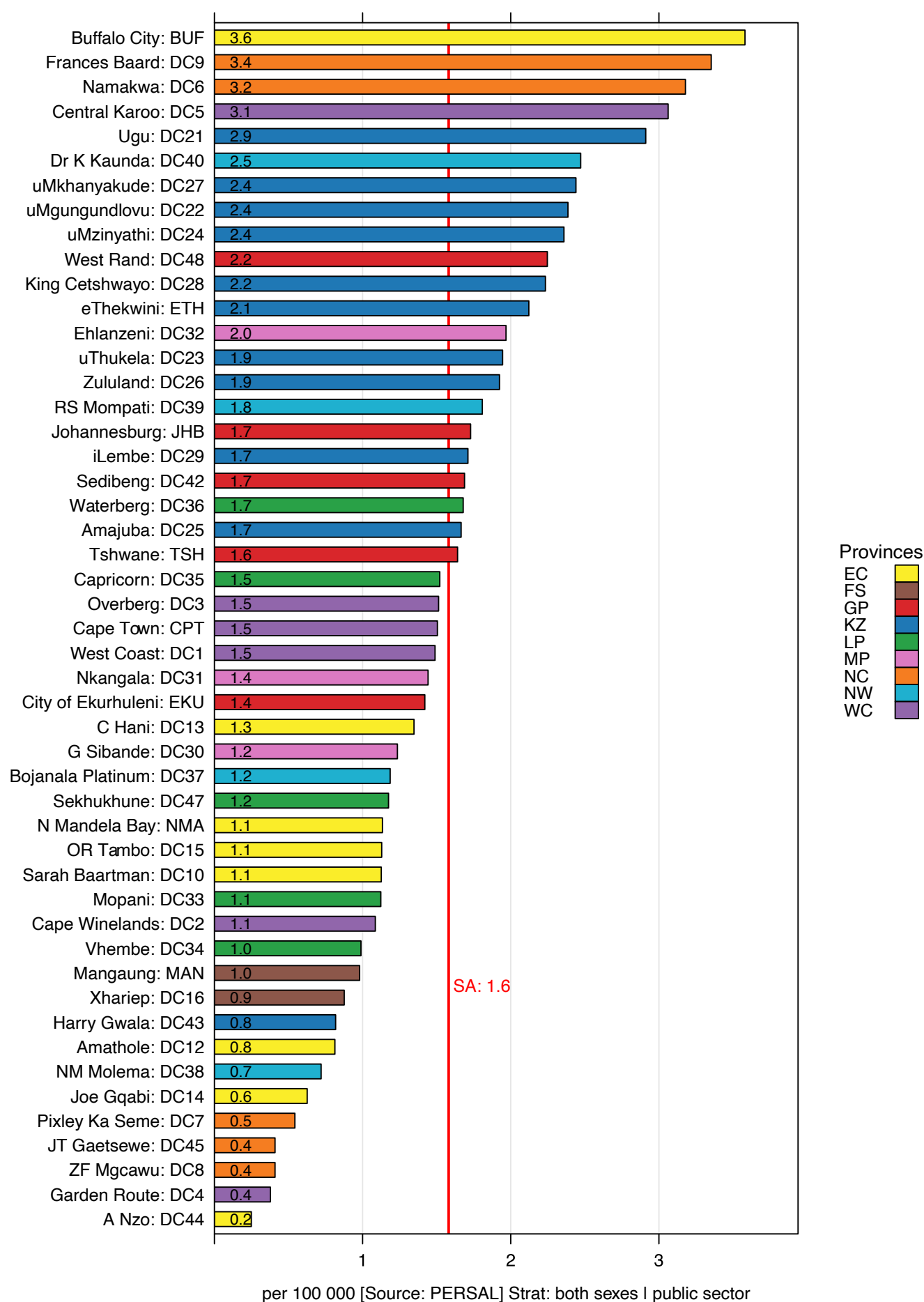


Figure 11: Speech therapists per 100 000 uninsured population by district, March 2023



Except for the nursing assistant category, Alfred Nzo (EC), John Taolo Gaetsewe and Zwelentlanga Fatman Mgcawu (both NC) are the districts with the lowest ratio per 100 000 uninsured population for all the other categories of staff.

Recommendations

- In the current fiscal climate, it is difficult to recommend that the PDoHs employ more staff. Every additional Rand spent is now a trade-off between multiple priorities. However, there is some foundational policy work that can be done to provide South Africa with more evidence-based targets, which can support more effective workforce planning.
- The NDoH should support the development of needs-based target ratios for health professions that are driven by demographic and epidemiological needs, with a geographic lens to improve accuracy. This is no small feat given the dearth of data and the need to ensure a collaborative process across public and private sectors. Once this information is available, the NDoH will then be able to support training institutions to increase supply and, where required, to meet the future need.
- Another recommendation that aligns with the current policy intention around NHI, is the improvement of working conditions in the public sector. This is already a key priority for South Africa and the relationship between working conditions and emigration (or migration into the private sector) is direct. The OSD and rural allowance policies have shown that financial incentives are insufficient to retain our health workforce in the public sector – sufficient support and resources are needed to prevent out-migration from the public sector.

5 Air quality and health

Juanette John, Sarisha Perumal, Mfundo Mlambo and Mogesh Naidoo

Introduction

Exposure to polluted air causes millions of premature deaths each year and can lead to health risks such as reduced lung growth and function, respiratory infections and aggravated asthma. Many deaths related to air pollution occur in Asia and Africa and poor air quality places an additional burden on the health.

This chapter considers the linkages between air quality and health in the South African context and highlights the benefits for future iterations of the District Health Barometer to include an analysis of the impact of air quality on health.

Background to air quality and health in South Africa

In South Africa, air quality is generally perceived as good. However, this is misleading because global models consistently underestimate air pollution in the region. Air pollution has multiple impacts on human health, ecosystems, agriculture, water, materials, visibility and climate. Indoor air pollution associated with domestic fuel use also has the potential for a significant impact on health. Air pollution in South Africa is the result of complex processes and drivers.

In the Highveld, for example, air pollution often exceeds health-based ambient air quality standards; particulate matter (PM) and ozone (O₃) levels are regularly out of compliance with National Ambient Air Quality Standards (NAAQS), especially in low-income areas. Emissions vary in time and space as do ambient concentrations and their impact. There are many gaps in understanding the processes and chemistry involved in these reactions.

Ambient air quality guidelines and standards

In 2021, the World Health Organization (WHO) released updated air quality guidelines to address the continued threat of air pollution to public health.¹ The current guidelines, which are all lower than the previous ones set in 2005, are based on global scientific evidence.² Although these guidelines are not standards and are thus not legally binding, they offer expert guidance on how to reduce the impact of air pollution on health, even at low exposure levels. A commentary published in the Clean Air Journal in response to the guidelines stated that, while the guidelines motivate for swifter actions to improve air quality, it should be acknowledged that these levels are not attainable in many parts of South Africa. This is because of the many natural sources of pollution, including dust, biomass burning, biogenic and marine sources, are areas that require further research.³

The National Environment Management: Air Quality Act 39 of 2004⁴ (NEMAQA) aims to protect the environment by regulating air quality and taking reasonable steps to prevent pollution, ecological damage and unsustainable

development, while also promoting justifiable economic and social growth. National Ambient Air Quality Standards (NAAQS) have been stipulated to regulate air quality monitoring, management and control of all criteria pollutants. In Table 1 below, regulatory concentrations or limit values are quoted in relation to their averaging periods, the allowable frequency of exceedance (FOE) and the compliance date. The averaging period refers to the length of time over which an average is calculated. The FOE refers to the number of times that the limit value can be exceeded within one calendar year. If the limit value is exceeded on more occasions than specified by the FOE value, then there is no longer compliance with that standard. The compliance date refers to the date that the standard was promulgated and the period over which compliance of the standard is required. Air quality standards are essential for effective air quality management as they provide the indicators to safe exposure levels with respect to human health. Should the need arise, the NEMAQA allows local authorities to develop their own standards that are stricter or that address additional pollutants.

¹World Health Organization. WHO global air quality guidelines: particulate matter (PM_{2.5} and PM₁₀), ozone, nitrogen dioxide, sulfur dioxide and carbon monoxide; 2021. URL: <https://www.who.int/publications/i/item/9789240034228>

²World Health Organization. What are the WHO air quality guidelines? 2021. URL: <https://www.who.int/news-room/feature-stories/detail/what-are-the-who-air-quality-guidelines> Accessed: [20 November 2023]

³Garland R, Wernecke B, Feig G, Langerman K. The new WHO Global Air Quality Guidelines: What do they mean for South Africa? Clean Air J. 2021; 31(2). URL: <https://cleanairjournal.org.za/article/view/12915>

⁴National Environment Management: Air Quality Act 39 of 2004. URL: <https://www.gov.za/documents/national-environment-management-air-quality-act#>

Table 1: South African National Ambient Air Quality Standards (NAAQS) per pollutant, averaging period and allowed frequency of exceedance (FOE)⁵

Pollutant	Averaging Period					
		10 minutes	1 hour	8h (running)	24 hours	1 year
Sulphur dioxide (SO ₂)	Limit Value	500 µg/m ³	350 µg/m ³		125 µg/m ³	50 µg/m ³
	FOE	526	88		4	0
	Compliance Date	Immediate	Immediate		Immediate	Immediate
Nitrogen dioxide (NO ₂)	Limit Value		200 µg/m ³			40 µg/m ³
	FOE		88			0
	Compliance Date		Immediate			Immediate
Particulate Matter (PM ₁₀) Original	Limit Value				120 µg/m ³	50 µg/m ³
	FOE				4	0
	Compliance Date				Immediate – 31-12-2014	Immediate – 31-12-2014
Particulate Matter (PM ₁₀) Revised	Limit Value				75 µg/m ³	40 µg/m ³
	FOE				4	0
	Compliance Date				01-01-2015	01-01-2015
Particulate Matter (PM _{2.5}) Original	Limit Value				65 µg/m ³	25 µg/m ³
	FOE				4	0
	Compliance Date				Immediate – 31-12-2015	Immediate – 31-12-2015
Particulate Matter (PM _{2.5}) Revised	Limit Value				40 µg/m ³	20 µg/m ³
	FOE				4	0
	Compliance Date				01-01-2016-31-12-2029	01-01-2016-31-12-2029

⁵Department of Forestry, Fisheries and the Environment. National Environmental Management: Air Quality Act 2004. National Ambient Air Quality Standards; 2019.

Pollutant	Averaging Period					
		10 minutes	1 hour	8h (running)	24 hours	1 year
Particulate Matter (PM _{2.5}) Revised	Limit Value				25 µg/m ³	15 µg/m ³
	FOE				4	0
	Compliance Date				01-01-2030	01-01-2030
Ozone (O ₃)	Limit Value			120 µg/m ³		
	FOE			11		
	Compliance Date			Immediate		
Benzene (C ₆ H ₆)	Limit Value					10 µg/m ³
	FOE					0
	Compliance Date					Immediate 31-12-2014
Benzene (C ₆ H ₆) Revised	Limit Value					5 µg/m ³
	FOE					0
	Compliance Date					01-01-2015
Lead (Pb)	Limit Value					0.5 µg/m ³
	FOE					0
	Compliance Date					Immediate
Carbon monoxide (CO)	Limit Value		30 mg/m ³	10 mg/m ³		
	FOE		88	11		
	Compliance Date		Immediate	Immediate		

Note: Grey text indicates earlier limit values that are no longer current.

The application of SAAQIS data for public health purposes

Air quality monitoring is an essential tool to ensure compliance with the ambient air quality guidelines.⁶ The South African Air Quality Information System (SAAQIS) is a central repository for managing and sharing air quality information with all stakeholders, including the public.⁷ It aims to provide all South Africans with accurate and up-to-date information on the state of their air quality and the progress of efforts to ensure their right to clean and healthy air. In 2017, the South African Air Quality Information System (SAAQIS) mobile information tool was launched, providing stakeholders with real-time air quality information.⁸ Data from air quality monitoring networks are also used in research projects, such as burden of disease estimations and environmental impact assessments.⁶ The design of air quality monitoring approaches varies, depending on whether the objectives are to protect people's health or map the general impact of industrial sources.

There are several locations in South Africa where the South

African National Ambient Air Quality Standard (NAAQS) for O₃ is exceeded [an 8-h running average of 61 parts per billion (ppb)]. Two areas, identified by the South African government as areas with consistently poor air quality, have been declared as national air pollution priority areas (Vaal Triangle Air Pollution Priority Area and the Highveld Air Pollution Priority Area). The O₃ exceedances in these areas occurred from August to September 2014 and were most likely attributed to the increase in biomass burning during this time. This poses a risk to the health of residents in the priority areas and requires ambient air quality management interventions. In rural areas, O₃ is often higher than in industrial areas. This has been observed in Hendrina where a monitoring station measured 234 exceedances in one year.⁹ High levels of O₃ were attributed to the absence of nitrogen monoxide (NO) from urban emission sources, which is required to remove O₃ from the air. O₃ has a negative impact on the respiratory system and can reduce lung function, cause lung irritation. Furthermore, it can increase the risk of mortality in the long term.¹⁰

Determinants of disease burden associated with air pollution exposure

When assessing the health impacts of air quality exposure, it is important to consider all the relevant information, including the type and concentration of pollutants, the duration of exposure and the characteristics of the exposed population. Different tools can be used to assess the impact of air quality exposure on health.

Exposure-response functions (which relate the pollution concentration to which the population is exposed to the increase in health risk) are used to estimate the risk of developing cancer or other chronic health conditions from exposure to a single air pollutant or a mixture of pollutants. They are based on data from epidemiological studies that have measured the health effects of people exposed to different levels of air pollution. The outcomes may be used to inform public health policy and decision-making. It is, however, important to consider whether a particular exposure-response function is relevant to the South African context.¹¹ Factors that may contribute to under- or over-estimation of health risks include whether multiple or individual sources are considered, and whether

the exposure-response functions are linear or exponential.

The WHO's Ambient air pollution: Global assessment of exposure and burden of disease has used integrated exposure-response (IER) functions to model disease risks from different sources of air pollution.¹¹ These functions show that the relative risk of mortality for an incremental increase in exposure may vary between lower and higher concentrations for some pollutants.

To get a more accurate estimate of health effects from air pollution, different sources of pollution, such as vehicles, households and industry, should be considered as well as how much they contribute to the total amount of pollution people are exposed to.¹¹ The health costs of the emissions should be weighed against the health benefits of alternatives. For example, whether or not reducing emissions from cars will improve air quality and reduce the risk of death from air pollution. However, the benefits of cars, such as transportation and economic activity, should also be considered.

⁶Wright CY, Benyon M, Mahlangeni N, Kapwata T, Laban T, Garland RM. Data gaps will leave scientists 'in the dark: How load shedding is obscuring our understanding of air quality. *South Afr J Sci.* 2023; 119(9/10). URL: <https://sajs.co.za/article/view/16009>

⁷South African Air Quality Information System (SAAQIS). URL: <https://saaqis.environment.gov.za/>

⁸Gwaze P, Mashele SH. South African Air Quality Information System (SAAQIS) mobile application tool: bringing real time state of air quality to South Africans. *Clean Air Journal.* 2018. URL: <https://www.scielo.org.za/pdf/caj/v28n1/01.pdf>

⁹Beukes JP, Van Zyl PG and Laban TL. Measurement of surface ozone in South Africa with reference to impacts on human health: commentary. *Clean air journal* 7461; *Tydskrif vir Skoon Lug.* 2015; 25(1):9-12.

¹⁰Vicedo-Cabrera AM, Sera F, Liu C et al. Short Term Association Between Ozone and Mortality: Global Two Stage Time Series Study In 406 Locations In 20 Countries. *BMJ;* 2020.

¹¹Langerman KE, Pauw CJ. A critical review of health risk assessments of exposure to emissions from coal-fired power stations in South Africa *Clean Air J.* [Internet]. 2018. [cited: 2023 Nov 30]; 28(2): 68-79. Available from: https://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S2410-972X2018000200019

A Health Risk Assessment (HRA) may be used to assess the potential for health effects from exposure to a single air pollutant, to compare the potential health risks of different air pollutants and to screen for potential health risks in a population. For single-pollutant exposure, hazard quotients (HQ) and estimates of cancer risk are calculated to assess the potential for non-cancer and cancer health effects respectively. An HQ is calculated by dividing the

exposure dose by a reference dose, which is the maximum dose that a person can be exposed to without experiencing adverse health effects.¹² A health risk due to exposure to multiple pollutants that affect the same target organ or organ system can be determined by calculating a Hazard Index (HI), which is the sum of the HQs of the pollutants in the mixture.

Health impacts

Different studies have reported a wide range of health effects from air pollution, which can be confusing.¹¹ These health effects are typically divided into categories based on the length of exposure, the type of health effect and the age of the population. Effects are often measured in terms of premature mortality, morbidity, such as hospital admissions or incidences of illness, and disability-adjusted life years (DALYs). DALYs are a measure of the total health impact of air pollution, including both the years of life lost and the years of life lived with disability. It is important to note that health impacts are estimated at population level rather than for individuals, so it is not possible to identify which individuals died because of air pollution.

National burden of disease studies contribute to evidence of the association between air pollution and health impacts in the South African context. One specific assessment found, for example, that outdoor air pollution causes 3.7% of mortality from cardiopulmonary disease and 5.1% of mortality is attributable to cancers of the trachea, bronchus and lungs.¹³ Local epidemiological studies confirm these findings, including the Vaal Triangle Air Pollution and Health Survey, which assessed whether air pollution in this highly polluted area was detrimental to the health of school children.¹⁴ Sixty-five percent of participants suffered from upper respiratory diseases and 29% from 234 lower respiratory diseases. School children in the Vaal Triangle

had a 134% higher risk of developing upper respiratory illnesses and a 203% higher risk of developing lower respiratory illnesses than the children in a control area.¹⁴

A comparative risk assessment investigated short-term association between O₃ and mortality in 20 countries, including South Africa.¹⁰ A 10 µg/m³ increase in ozone during the day of assessment and the previous day was found to be associated with an overall relative risk of mortality of 1.0018 (95% confidence interval 1.0012 to 1.0024). The study suggested that stricter air quality standards might reduce ozone-related mortality. South Africa does, however, not consider O₃ as a key pollutant of concern.⁹

Particulate matter (PM) is widely studied. One such study investigated the association between ambient air pollution (PM₁₀, NO₂, and SO₂) and cause-specific mortality in three South African cities – Cape Town, Durban and Johannesburg.¹⁵ The study found independent associations between air pollution, susceptible groups and environmental conditions. The highest number of deaths from cardiovascular and respiratory diseases occurred in winter, which the authors attributed to colder temperatures.¹⁵ Another study, using the BenMap model,¹⁶ found that reducing exposure to PM_{2.5} would avoid 28 000 premature deaths in South Africa.¹⁷

¹²Goumenou M, Tsatsakis A. Proposing new approaches for the risk characterisation of single chemicals and chemical mixtures: The source related Hazard Quotient (HQS) and Hazard Index (HIS) and the adversity specific Hazard Index (HIA). *Toxicol Rep.* 2019 Jun 21;6:632-636. doi: 10.1016/j.toxrep.2019.06.010. PMID: 31334033; PMCID: PMC6616343.

¹³Norman R, Cairncross E, Witi J, Bradshaw D. Collaboration, South African Comparative Risk Assessment. Estimating the burden of disease attributable to urban outdoor air pollution in South Africa in 2000. *SA Med Jour.* 2007; 97(8):782-790.

¹⁴Gerblanche AP. Vaal Triangle Air Pollution Health Study: Summary of Key Findings, Recommendations and Bibliography. National Urbanisation & Health Research Programme, Medical Research Council; 1998.

¹⁵Thabethe NDL, Vuyi K, Wichmann J. Association between ambient air pollution and cause-specific mortality in Cape Town, Durban, and Johannesburg, South Africa: any susceptible groups? *Environ Sci Pollut Res Int.* 2021 Aug;28(31):42868-42876. doi: 10.1007/s11356-021-13778-w. Epub 2021 Apr 7. PMID: 33825108; PMCID: PMC8354869.

¹⁶BenMap. Environmental Benefits Mapping and Analysis Program - Community Edition (BenMAP-CE); 2023. URL: <https://www.epa.gov/benmap>

¹⁷Altieri KE, Keen SL. Public health benefits of reducing exposure to ambient fine particulate matter in South Africa. *Science of the Total Environment* 684; 2019. URL: <https://www.sciencedirect.com/science/article/abs/pii/S0048969719324088>

The lack of access to clean energy is a key driver of the impact on health of air pollution in Southern Africa, as is the case with the rest of Africa. A narrative review of household air pollution (HAP) exposure and respiratory health outcomes found that many South Africans burn coal, charcoal, wood, agricultural residues and kerosene for heating and cooking.¹⁸ They often use open fires or cookstoves with limited ventilation and are exposed to high

concentrations of air pollutants, specifically particulate matter. This renders women, often tasked with cooking, particularly vulnerable to PM exposure. Although the review indicated the possible association of HAP with negative health outcomes, none of the studies provided local estimates of relative risks and concentration-response functions for criteria pollutants that may be applied in burden of disease studies.¹⁹

Air quality and the District Health Barometer

Many of the leading causes of death listed in previous versions of the District Health Barometer (DHB), including respiratory diseases, preterm birth complications, cerebrovascular disease, hypertensive heart disease and diabetes, have been linked to air pollution in other studies, both locally and internationally.¹⁹

Information on the impact of ambient air pollution on

health in South Africa is sparse. However, there is growing evidence that air quality in the region is deteriorating, and that human health is being affected. In addition to ambient or outdoor air pollution, people are also exposed to indoor air pollution from inefficient cookstoves in poorly ventilated spaces, which poses a considerable threat to health. Epidemiological studies point to O₃ and PM_{2.5} as significant hazards for human health.⁸

Conclusion

A key challenge to assessing health effects of air pollution in South Africa is the lack of relevant data at appropriate scale and distribution¹⁷, which includes ambient monitoring data and population statistics, such as concentration-response

functions for the South African population.⁹ This will enable researchers to pursue studies such as cohort, time series and randomised intervention trials.¹⁹

¹⁸Shezi B, Wright CY. Household air pollution exposure and respiratory health outcomes: a narrative review update of the South African epidemiological evidence. *Clean Air J*. [Internet]. 2018 May 31 [cited 2023 Nov. 30];28(1). Available from: <https://cleanairjournal.org.za/article/view/6962>

¹⁹Wernecke B, Pillay Naidoo N, Wright CY. Establishing a baseline of published air pollution and health research studies in the Waterberg-Bojanala Priority Area. *Clean Air J* [Internet]. 2023 Jun 26 [cited 2023 Oct 18];33(1). Available from: <https://cleanairjournal.org.za/article/view/14887>

South Africa

In 2022, South Africa had an estimated population of just over 61.4 million. The provincial population estimates are listed in Table 1.

Table 1: Provincial population estimates, 2022

Eastern Cape	6,711,413
Free State	2,920,480
Gauteng	16,362,150
KwaZulu-Natal	11,683,165
Limpopo	6,124,446
Mpumalanga	4,815,058
Northern Cape	1,310,806
North West	4,231,278
Western Cape	7,243,562
South Africa	61,402,358

Source: Statistics South Africa.

¹Indicators from the DHIS and the BAS financial system cover the 12 months from April to March, which is the financial year of the NDoH. Indicators for financial years are annotated as 2022/23 or FY 2022. Other sources, such as the TB data cover a calendar year.

The national and provincial indicator averages included in the *District Health Barometer* for the period 2018–2022 are listed in Tables 2 and 3.

Table 2: SA averages, 2018–2022 (abbreviations given in footnote)

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	68,1	69,7	67,9	68,9	70,1
	Antenatal 1st visit coverage (%)	80,8	83,1	83,9	81,5	76,4
	Caesarean section rate (District Hospital) (%)	24,3	24,7	25,5	25,9	27,0
	Caesarean section rate (%)	27,9	29,0	29,1	29,6	31,3
	Delivery in 10 to 19 years in facility rate (%)	12,9	13,2	14,3	13,7	13,9
	Maternal mortality in facility ratio (per 100 000 live births)	105,9	88,0	120,9	119,1	101,0
	Early Neonatal death in facility rate (per 1 000 live births)	9,8	9,6	9,7	10,0	9,6
Immunization	Neonatal death in facility rate (per 1 000 live births)	12,1	11,9	12,6	13,1	12,7
	Immunisation under 1 year coverage (%)	81,9	83,5	79,5	85,5	82,2
	Measles 2nd dose coverage (%)	76,5	79,6	76,4	84,0	84,8
Child health and nutrition	Vaccine expenditure per population under 1 year (Rand)	2418	2639	2771	2563	2348
	Death against live birth under 5 rate (%)	1,8	1,7	1,6	1,8	1,8
	Pneumonia case fatality under 5 years rate (%)	1,9	1,6	2,1	1,7	1,5
Women's health	Severe acute malnutrition case fatality under 5 years rate (%)	7,1	7,8	7,3	7,9	7,2
	Couple year protection rate (%)	60,7	54,5	49,8	50,3	45,0
Tuberculosis	TB child under 5 years start on treatment rate (%)		11,3	93,2	94,8	97,8
	TB client 5 years and older start on treatment rate (%)	97,6	97,0	94,8	93,4	94,6
	TB DS death rate (%)	7,0	7,9	8,3	7,7	
	TB DS success rate (%)	79,2	79,3	78,9	77,9	
HIV/AIDS	Adult with viral load suppressed rate (%)	90,6	88,1	88,6	88,9	90,6
	Child with viral load suppressed rate (%)	68,0	63,9	65,3	60,7	60,1
	Antiretroviral effective coverage (0-14 years) (%)	20,6	18,7	22,7	19,0	21,2
	Antiretroviral effective coverage (15+ years) (%)	43,5	41,8	46,4	46,1	47,2
	Antiretroviral effective coverage (%)	42,5	40,8	45,5	45,1	46,4
	Clients remaining on ART rate (%)	65,1	66,9	68,9	67,7	68,2
Non-communicable diseases	Cervical cancer screening coverage (%)	45,8	46,8	14,2	36,9	21,4
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	6,1	6,1	6,0	5,9	5,8
	Hospital beds per 10 000 target population (number)	17,3	16,8	17,3	17,0	20,3
Human Resources	Medical practitioners per 100 000 population - public sector (number)	30,9	33,6	36,5	36,7	37,5
	Pharmacists per 100 000 population - public sector (number)	11,3	11,8	12,1	12,3	12,5
	Professional nurses per 100 000 population - public sector (number)	144,0	145,4	153,6	153,1	148,9
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2353	2436	2519	2496	2332
	Expenditure per patient day equivalent (district hospitals) (Rand)	3613	3753	4543	3920	3783
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1461	1503	1591	1569	1479
	Provincial & LG PHC expenditure per PHC headcount (Rand)	602	624	842	791	662
Extra	Average length of stay (district hospitals) (days)	4,3	4,2	4,1	4,2	4,3
	Average length of stay (all hospitals) (days)	6,0	6,1	5,9	6,1	6,2
	Inpatient crude death rate (%)	4,6	4,6	5,7	5,3	4,6
	Inpatient bed utilisation rate (district hospitals) (%)	65,2	64,8	53,6	57,3	60,0
	Inpatient bed utilisation rate (all hospitals) (%)	72,5	72,4	60,7	65,9	66,9
	OPD new client not referred rate (district hospitals) (%)	60,8	60,0	57,5	47,0	58,3
	OPD new client not referred rate (%)	47,0	46,5	47,0	39,5	42,6
	PHC utilisation rate (number)	2,1	2,0	1,6	1,7	1,7
	Diarrhoea case fatality under 5 years rate (%)	1,9	1,8	2,6	1,8	1,7
	Infant exclusively breastfed at DTap-IPV-Hib-HBV 3rd dose rate (%)	49,5	48,8	45,9	44,4	44,7
	Male condom distribution coverage (number)	36,8	32,1	26,5	26,1	18,9
	Infant PCR test positive around 10 weeks rate (%)	0,7	0,7	0,6	0,6	0,4
	Mother postnatal visit within 6 days rate (%)	75,3	80,1	76,6	78,6	80,0
	School Grade 1 screening coverage (%)	32,7	34,2	4,0	14,3	21,2
	School Grade 8 screening coverage (%)	22,1	26,4	1,7	7,9	14,5

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Table 3: Provincial averages, 2018- 2022 (abbreviations given in footnote)

Eastern Cape

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	61,7	62,5	62,5	63,0	63,5
	Antenatal 1st visit coverage (%)	65,6	68,7	68,2	81,2	74,8
	Caesarean section rate (District Hospital) (%)	24,9	25,4	25,5	25,9	26,8
	Caesarean section rate (%)	30,4	30,9	31,7	32,3	33,2
	Delivery in 10 to 19 years in facility rate (%)	16,4	16,7	17,1	17,4	17,6
	Maternal mortality in facility ratio (per 100 000 live births)	106,1	108,2	146,2	114,6	124,3
	Early Neonatal death in facility rate (per 1 000 live births)	10,3	10,0	10,4	10,3	10,3
Immunization	Neonatal death in facility rate (per 1 000 live births)	12,5	12,3	13,1	13,2	13,8
	Immunisation under 1 year coverage (%)	71,9	76,0	69,5	88,7	82,3
	Measles 2nd dose coverage (%)	65,1	73,7	66,7	83,3	81,7
Child health and nutrition	Vaccine expenditure per population under 1 year (Rand)	2707	3589	3030	3089	2290
	Death against live birth under 5 rate (%)	2,1	2,0	1,8	2,0	2,1
	Pneumonia case fatality under 5 years rate (%)	3,2	3,4	3,3	3,3	2,8
	Severe acute malnutrition case fatality under 5 years rate (%)	8,9	9,9	8,6	9,7	7,6
Women's health	Couple year protection rate (%)	53,2	55,2	41,0	49,0	41,4
Tuberculosis	TB child under 5 years start on treatment rate (%)		9,6	99,5	79,6	98,1
	TB client 5 years and older start on treatment rate (%)	101,0	98,3	93,0	92,7	93,1
	TB DS death rate (%)	7,2	7,7	7,7	7,8	
	TB DS success rate (%)	78,3	77,9	78,2	76,6	
HIV/AIDS	Adult with viral load suppressed rate (%)		86,8	88,6	86,7	90,6
	Child with viral load suppressed rate (%)		62,9	62,3	63,2	64,9
	Antiretroviral effective coverage (0-14 years) (%)	18,1	19,1	20,0	21,2	20,2
	Antiretroviral effective coverage (15+ years) (%)	38,2	37,8	40,7	40,7	40,8
	Antiretroviral effective coverage (%)	37,2	36,8	39,9	40,0	40,2
Non-communicable diseases	Clients remaining on ART rate (%)	62,9	62,4	63,4	65,6	65,4
	Cervical cancer screening coverage (%)	49,9	50,0	16,5	32,9	22,7
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	10,0	10,0	10,0	10,0	10,1
	Hospital beds per 10 000 target population (number)	22,3	21,8	21,8	21,8	22,0
Human Resources	Medical practitioners per 100 000 population - public sector (number)	31,9	34,1	35,7	36,1	39,9
	Pharmacists per 100 000 population - public sector (number)	13,2	15,4	16,2	15,8	16,4
	Professional nurses per 100 000 population - public sector (number)	184,0	193,8	194,0	190,6	197,1
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2588	2637	2861	2680	2509
	Expenditure per patient day equivalent (district hospitals) (Rand)	3716	3759	4962	3102	3819
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1355	1404	1539	1480	1397
	Provincial & LG PHC expenditure per PHC headcount (Rand)	494	518	720	655	600
Extra	Average length of stay (district hospitals) (days)	4,7	4,6	4,4	4,5	4,7
	Average length of stay (all hospitals) (days)	6,8	6,8	6,3	6,4	6,9
	Inpatient crude death rate (%)	5,8	5,8	7,7	6,4	6,2
	Inpatient bed utilisation rate (district hospitals) (%)	54,9	54,5	42,2	46,0	46,2
	Inpatient bed utilisation rate (all hospitals) (%)	64,8	64,0	50,8	55,4	56,5
	OPD new client not referred rate (district hospitals) (%)	63,0	63,7	62,2	24,5	60,2
	OPD new client not referred rate (%)	47,2	50,0	49,0	26,0	44,8
	PHC utilisation rate (number)	2,3	2,2	1,7	2,0	2,1
	Diarrhoea case fatality under 5 years rate (%)	3,0	2,8	4,0	3,4	2,6
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	50,0	48,2	45,2	43,2	42,1
	Male condom distribution coverage (number)	33,3	34,7	22,3	22,4	12,4
	Infant PCR test positive around 10 weeks rate (%)	1,0	0,9	0,7	0,8	0,6
	Mother postnatal visit within 6 days rate (%)	67,1	69,0	71,2	78,6	80,6
	School Grade 1 screening coverage (%)	17,7	19,0	3,3	3,5	4,9
	School Grade 8 screening coverage (%)	13,1	15,7	2,7	2,3	1,5

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Free State

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	65,2	66,6	61,3	60,5	62,1
	Antenatal 1st visit coverage (%)	79,2	79,3	78,5	78,9	75,4
	Caesarean section rate (District Hospital) (%)	15,7	14,9	13,9	14,0	14,9
	Caesarean section rate (%)	31,3	31,8	30,4	32,3	34,3
	Delivery in 10 to 19 years in facility rate (%)	11,9	12,7	13,1	13,3	13,3
	Maternal mortality in facility ratio (per 100 000 live births)	13,5	11,9	11,9	12,6	11,6
	Early Neonatal death in facility rate (per 1 000 live births)	168,3	116,2	178,8	156,5	95,1
	Neonatal death in facility rate (per 1 000 live births)	16,8	15,6	16,0	15,9	16,2
Immunization	Immunisation under 1 year coverage (%)	74,8	77,4	75,9	83,6	79,7
	Measles 2nd dose coverage (%)	72,1	73,3	73,3	77,5	80,0
	Vaccine expenditure per population under 1 year (Rand)	2891	2662	3593	2793	2547
Child health and nutrition	Death against live birth under 5 rate (%)	2,3	2,1	2,0	2,2	2,4
	Pneumonia case fatality under 5 years rate (%)	1,7	1,8	3,1	3,2	1,7
	Severe acute malnutrition case fatality under 5 years rate (%)	6,2	6,0	3,2	8,6	9,7
Women's health	Couple year protection rate (%)	76,5	78,9	74,9	84,7	83,9
Tuberculosis	TB child under 5 years start on treatment rate (%)		4,5	103,7	65,6	87,8
	TB client 5 years and older start on treatment rate (%)	82,4	97,6	93,2	90,6	92,6
	TB DS death rate (%)	9,1	11,4	12,6	12,9	
	TB DS success rate (%)	78,0	77,3	74,6	71,3	
HIV/AIDS	Adult with viral load suppressed rate (%)		89,7	89,3	92,8	91,2
	Child with viral load suppressed rate (%)		64,3	72,5	61,4	58,5
	Antiretroviral effective coverage (0-14 years) (%)	22,5	17,4	20,6	17,8	19,2
	Antiretroviral effective coverage (15+ years) (%)	46,6	39,9	44,9	51,1	49,2
	Antiretroviral effective coverage (%)	45,4	38,8	43,9	49,9	48,2
	Clients remaining on ART rate (%)	74,1	69,4	71,9	75,7	74,8
Non-communicable diseases	Cervical cancer screening coverage (%)	43,5	46,0	16,0	35,2	24,0
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	6,8	6,8	6,4	6,3	6,4
	Hospital beds per 10 000 target population (number)	19,4	19,6	25,8	25,8	25,9
Human Resources	Medical practitioners per 100 000 population - public sector (number)	26,9	27,9	33,3	32,9	35,3
	Pharmacists per 100 000 population - public sector (number)	13,6	14,4	15,1	18,9	17,4
	Professional nurses per 100 000 population - public sector (number)	91,5	88,7	102,3	112,7	108,0
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2168	2240	2577	2487	2387
	Expenditure per patient day equivalent (district hospitals) (Rand)	3303	3590	3950	3628	3285
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1392	1408	1793	1718	1644
	Provincial & LG PHC expenditure per PHC headcount (Rand)	652	651	932	903	818
Extra	Average length of stay (district hospitals) (days)	3,4	3,3	3,0	3,2	3,0
	Average length of stay (all hospitals) (days)	5,6	5,6	5,7	5,9	5,7
	Inpatient crude death rate (%)	4,3	4,1	5,4	5,2	4,2
	Inpatient bed utilisation rate (district hospitals) (%)	60,3	57,7	47,0	51,5	52,1
	Inpatient bed utilisation rate (all hospitals) (%)	73,9	72,4	57,1	66,6	67,7
	OPD new client not referred rate (district hospitals) (%)	66,3	66,1	59,2	53,0	56,0
	OPD new client not referred rate (%)	57,3	57,4	50,9	44,4	45,5
	PHC utilisation rate (number)	1,8	1,8	1,6	1,6	1,7
	Diarrhoea case fatality under 5 years rate (%)	1,1	0,9	2,7	2,3	1,8
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	53,8	53,6	46,4	43,8	42,5
	Male condom distribution coverage (number)	50,2	52,3	50,9	56,1	52,7
	Infant PCR test positive around 10 weeks rate (%)	0,7	0,5	0,5	0,6	0,4
	Mother postnatal visit within 6 days rate (%)	72,1	80,5	79,9	76,6	78,2
	School Grade 1 screening coverage (%)	36,4	37,8	6,4	17,0	23,4
	School Grade 8 screening coverage (%)	25,0	33,6	0,0	2,7	19,9

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Gauteng

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	64,7	66,5	63,3	66,8	69,3
	Antenatal 1st visit coverage (%)	88,9	90,2	88,3	82,5	76,1
	Caesarean section rate (District Hospital) (%)	27,0	27,5	30,7	33,2	33,1
	Caesarean section rate (%)	28,4	31,2	30,3	30,6	32,5
	Delivery in 10 to 19 years in facility rate (%)	6,7	7,5	8,9	9,1	9,6
	Maternal mortality in facility ratio (per 100 000 live births)	122,8	102,9	118,7	129,3	118,5
	Early Neonatal death in facility rate (per 1 000 live births)	9,8	9,3	9,6	10,5	9,3
Immunization	Neonatal death in facility rate (per 1 000 live births)	13,0	12,4	13,2	14,3	13,2
	Immunisation under 1 year coverage (%)	84,4	86,9	85,0	88,0	83,2
	Measles 2nd dose coverage (%)	78,9	79,8	77,8	83,2	83,9
Child health and nutrition	Vaccine expenditure per population under 1 year (Rand)	3258	3177	3130	2937	2405
	Death against live birth under 5 rate (%)	1,8	1,6	1,7	1,9	1,9
	Pneumonia case fatality under 5 years rate (%)	2,8	1,8	2,3	1,5	1,5
	Severe acute malnutrition case fatality under 5 years rate (%)	6,8	6,4	7,7	7,7	6,5
Women's health	Couple year protection rate (%)	54,1	43,7	44,9	37,8	28,6
Tuberculosis	TB child under 5 years start on treatment rate (%)		15,0	80,0	98,7	97,8
	TB client 5 years and older start on treatment rate (%)	91,8	95,5	93,4	94,8	95,1
	TB DS death rate (%)	7,0	7,4	9,2	9,0	
	TB DS success rate (%)	82,0	83,6	82,4	82,5	
HIV/AIDS	Adult with viral load suppressed rate (%)		87,6	88,7	91,3	89,4
	Child with viral load suppressed rate (%)		64,3	65,2	63,2	52,9
	Antiretroviral effective coverage (0-14 years) (%)	19,3	18,8	22,4	18,7	17,4
	Antiretroviral effective coverage (15+ years) (%)	41,1	41,6	45,6	46,0	46,4
	Antiretroviral effective coverage (%)	40,4	40,9	45,0	45,3	45,8
	Clients remaining on ART rate (%)	56,0	58,9	63,1	62,6	65,7
Non-communicable diseases	Cervical cancer screening coverage (%)	36,9	42,2	7,3	31,4	16,9
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	2,3	2,2	2,2	2,3	2,1
	Hospital beds per 10 000 target population (number)	15,4	14,7	14,5	14,5	14,4
Human Resources	Medical practitioners per 100 000 population - public sector (number)	31,8	33,9	38,3	39,7	38,5
	Pharmacists per 100 000 population - public sector (number)	10,8	10,7	11,1	11,0	10,5
	Professional nurses per 100 000 population - public sector (number)	125,2	124,1	136,4	138,4	131,1
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	1864	1914	2005	1930	1771
	Expenditure per patient day equivalent (district hospitals) (Rand)	4243	4305	5402	4828	4230
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1460	1483	1552	1436	1339
	Provincial & LG PHC expenditure per PHC headcount (Rand)	778	800	1078	928	837
Extra	Average length of stay (district hospitals) (days)	4,1	4,2	4,3	4,4	4,7
	Average length of stay (all hospitals) (days)	6,0	6,7	6,9	7,0	7,2
	Inpatient crude death rate (%)	4,5	5,0	6,3	6,1	5,3
	Inpatient bed utilisation rate (district hospitals) (%)	68,1	70,2	59,9	63,7	67,7
	Inpatient bed utilisation rate (all hospitals) (%)	80,7	82,0	70,7	75,0	77,2
	OPD new client not referred rate (district hospitals) (%)	71,1	66,8	66,4	64,6	64,9
	OPD new client not referred rate (%)	32,3	30,6	24,9	30,0	27,6
	PHC utilisation rate (number)	1,5	1,5	1,2	1,2	1,2
	Diarrhoea case fatality under 5 years rate (%)	2,1	1,7	2,7	1,8	1,9
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	46,1	45,7	45,2	46,7	48,1
	Male condom distribution coverage (number)	32,7	25,1	26,3	21,1	11,1
	Infant PCR test positive around 10 weeks rate (%)	0,7	0,7	0,7	0,7	0,5
	Mother postnatal visit within 6 days rate (%)	75,1	85,5	75,0	74,7	78,3
	School Grade 1 screening coverage (%)	36,9	30,9	7,5	22,8	30,2
	School Grade 8 screening coverage (%)	27,7	30,7	2,8	20,0	28,8

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

KwaZulu-Natal

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	73,2	74,5	74,6	74,2	73,8
	Antenatal 1st visit coverage (%)	74,9	75,0	76,3	77,3	75,1
	Caesarean section rate (District Hospital) (%)	27,5	28,2	29,1	29,3	30,2
	Caesarean section rate (%)	32,7	33,7	35,3	36,4	36,8
	Delivery in 10 to 19 years in facility rate (%)	17,3	16,3	16,5	16,6	16,2
	Maternal mortality in facility ratio (per 100 000 live births)	88,4	76,9	123,9	100,6	78,5
	Early Neonatal death in facility rate (per 1 000 live births)	9,0	8,7	9,4	9,8	9,1
	Neonatal death in facility rate (per 1 000 live births)	11,5	10,9	12,1	13,0	12,0
Immunization	Immunisation under 1 year coverage (%)	90,8	91,4	86,4	94,8	92,2
	Measles 2nd dose coverage (%)	77,9	82,6	80,6	91,3	89,5
	Vaccine expenditure per population under 1 year (Rand)	2555	2675	2994	2706	2587
Child health and nutrition	Death against live birth under 5 rate (%)	1,7	1,6	1,6	1,8	1,8
	Pneumonia case fatality under 5 years rate (%)	2,3	2,0	2,3	2,2	1,9
	Severe acute malnutrition case fatality under 5 years rate (%)	7,8	7,6	10,5	10,4	9,2
Women's health	Couple year protection rate (%)	59,2	56,5	51,5	60,3	58,4
Tuberculosis	TB child under 5 years start on treatment rate (%)		11,1	92,4	101,8	99,0
	TB client 5 years and older start on treatment rate (%)	104,6	99,0	96,4	94,8	96,4
	TB DS death rate (%)	7,4	7,5	8,0	7,6	
	TB DS success rate (%)	80,0	81,9	83,0	82,1	
HIV/AIDS	Adult with viral load suppressed rate (%)		90,6	89,1	90,5	91,4
	Child with viral load suppressed rate (%)		68,8	53,1	55,8	66,3
	Antiretroviral effective coverage (0-14 years) (%)	24,5	21,2	29,1	22,7	26,8
	Antiretroviral effective coverage (15+ years) (%)	49,0	49,0	53,5	57,3	58,2
	Antiretroviral effective coverage (%)	47,8	47,6	52,6	56,0	57,2
	Clients remaining on ART rate (%)	70,5	72,2	78,2	77,6	76,0
Non-communicable diseases	Cervical cancer screening coverage (%)	58,4	55,9	22,9	56,8	38,9
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	8,0	8,1	8,1	8,0	7,8
	Hospital beds per 10 000 target population (number)	21,2	20,3	20,5	20,1	20,0
Human Resources	Medical practitioners per 100 000 population - public sector (number)	35,3	39,1	41,7	41,7	40,0
	Pharmacists per 100 000 population - public sector (number)	8,7	9,3	9,4	9,6	9,6
	Professional nurses per 100 000 population - public sector (number)	172,5	169,8	184,1	186,2	178,1
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2582	2706	2785	2880	2662
	Expenditure per patient day equivalent (district hospitals) (Rand)	3639	3814	4687	4435	3942
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1699	1735	1886	1996	1818
	Provincial & LG PHC expenditure per PHC headcount (Rand)	591	614	839	856	761
Extra	Average length of stay (district hospitals) (days)	5,4	5,2	4,9	5,0	5,0
	Average length of stay (all hospitals) (days)	6,8	6,6	6,3	6,4	6,4
	Inpatient crude death rate (%)	4,7	4,6	5,8	5,0	4,5
	Inpatient bed utilisation rate (district hospitals) (%)	59,5	59,2	47,6	50,2	53,7
	Inpatient bed utilisation rate (all hospitals) (%)	65,4	65,0	51,9	56,5	59,3
	OPD new client not referred rate (district hospitals) (%)	52,4	52,1	55,0	57,1	54,7
	OPD new client not referred rate (%)	48,7	48,2	48,5	48,6	46,8
	PHC utilisation rate (number)	2,5	2,4	1,9	2,1	2,1
	Diarrhoea case fatality under 5 years rate (%)	2,2	1,7	2,6	1,8	1,8
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	57,3	56,5	56,7	56,3	54,9
	Male condom distribution coverage (number)	31,5	30,1	26,6	29,0	24,0
	Infant PCR test positive around 10 weeks rate (%)	0,6	0,5	0,4	0,4	0,3
	Mother postnatal visit within 6 days rate (%)	74,9	76,1	76,2	79,3	78,6
	School Grade 1 screening coverage (%)	27,9	28,8	4,3	12,4	21,8
	School Grade 8 screening coverage (%)	17,8	24,3	2,3	4,3	13,2

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Limpopo

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	67,2	69,0	66,8	66,7	67,5
	Antenatal 1st visit coverage (%)	85,7	90,7	93,9	88,0	80,1
	Caesarean section rate (District Hospital) (%)	22,1	22,5	24,8	24,4	25,6
	Caesarean section rate (%)	21,2	21,4	23,1	23,2	25,5
	Delivery in 10 to 19 years in facility rate (%)	13,4	14,1	13,8	13,5	14,2
	Maternal mortality in facility ratio (per 100 000 live births)	111,6	97,8	120,1	134,6	109,0
	Early Neonatal death in facility rate (per 1 000 live births)	13,2	14,3	12,7	13,2	13,1
	Neonatal death in facility rate (per 1 000 live births)	71,0	73,6	60,6	69,2	67,5
Immunization	Immunisation under 1 year coverage (%)	80,5	79,0	76,3	83,2	86,6
	Measles 2nd dose coverage (%)	2756	2484	2859	2657	3911
	Vaccine expenditure per population under 1 year (Rand)	1,8	1,9	1,7	1,8	1,9
Child health and nutrition	Death against live birth under 5 rate (%)	11,7	12,5	10,6	10,7	10,6
	Pneumonia case fatality under 5 years rate (%)	3,3	2,7	4,2	2,3	2,6
	Severe acute malnutrition case fatality under 5 years rate (%)	6,3	7,9	8,0	6,2	7,4
Women's health	Couple year protection rate (%)	63,4	55,3	46,9	51,9	46,5
Tuberculosis	TB child under 5 years start on treatment rate (%)		7,6	62,9	105,7	105,3
	TB client 5 years and older start on treatment rate (%)	99,4	98,8	96,2	97,2	97,3
	TB DS death rate (%)	10,6	12,7	13,8	13,3	
	TB DS success rate (%)	79,9	77,2	77,7	78,9	
HIV/AIDS	Adult with viral load suppressed rate (%)		86,5	88,3	79,9	89,8
	Child with viral load suppressed rate (%)		51,5	68,4	62,3	54,8
	Antiretroviral effective coverage (0-14 years) (%)	24,1	19,1	15,7	14,6	19,1
	Antiretroviral effective coverage (15+ years) (%)	53,7	53,6	45,6	37,5	45,2
	Antiretroviral effective coverage (%)	52,2	51,6	44,2	36,5	44,3
	Clients remaining on ART rate (%)	78,7	77,8	66,3	59,1	60,4
Non-communicable diseases	Cervical cancer screening coverage (%)	36,7	33,3	9,7	25,1	12,0
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	7,6	7,6	7,5	7,5	7,4
	Hospital beds per 10 000 target population (number)	14,1	14,0	13,9	13,9	13,7
Human Resources	Medical practitioners per 100 000 population - public sector (number)	23,6	24,8	26,0	27,4	31,2
	Pharmacists per 100 000 population - public sector (number)	10,9	10,5	10,4	11,5	13,7
	Professional nurses per 100 000 population - public sector (number)	168,7	164,5	163,4	159,0	153,9
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2863	2943	2875	2755	2726
	Expenditure per patient day equivalent (district hospitals) (Rand)	3875	3948	4505	4232	4030
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1301	1326	1349	1328	1367
	Provincial & LG PHC expenditure per PHC headcount (Rand)	501	514	611	588	130
Extra	Average length of stay (district hospitals) (days)	4,3	4,2	4,0	4,0	4,2
	Average length of stay (all hospitals) (days)	5,4	5,3	5,1	5,3	5,4
	Inpatient crude death rate (%)	4,8	4,8	5,2	5,2	4,6
	Inpatient bed utilisation rate (district hospitals) (%)	73,1	72,9	60,9	62,6	66,6
	Inpatient bed utilisation rate (all hospitals) (%)	74,9	74,2	63,1	66,2	68,5
	OPD new client not referred rate (district hospitals) (%)	73,6	71,8	69,3	69,8	71,7
	OPD new client not referred rate (%)	66,4	65,4	61,1	59,5	62,8
	PHC utilisation rate (number)	2,4	2,4	2,0	2,1	2,1
	Diarrhoea case fatality under 5 years rate (%)	2,2	2,8	3,8	2,4	2,0
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	43,0	40,3	38,1	32,7	34,8
	Male condom distribution coverage (number)	44,4	35,5	27,5	28,3	20,6
	Infant PCR test positive around 10 weeks rate (%)	0,7	0,7	0,7	0,8	0,5
	Mother postnatal visit within 6 days rate (%)	98,2	104,2	94,7	95,2	97,6
	School Grade 1 screening coverage (%)	46,7	48,3		6,6	11,3
	School Grade 8 screening coverage (%)	29,1	28,3		6,3	10,1

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Mpumalanga

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	75,6	77,4	74,9	74,3	77,3
	Antenatal 1st visit coverage (%)	88,0	92,7	107,4	87,6	78,1
	Caesarean section rate (District Hospital) (%)	21,1	21,2	20,2	20,4	22,3
	Caesarean section rate (%)	21,6	22,4	21,0	20,3	23,4
	Delivery in 10 to 19 years in facility rate (%)	14,8	14,9	15,5	15,8	16,2
	Maternal mortality in facility ratio (per 100 000 live births)	10,2	9,6	10,3	10,5	10,5
	Early Neonatal death in facility rate (per 1 000 live births)	92,4	67,1	108,3	130,0	114,5
	Neonatal death in facility rate (per 1 000 live births)	11,5	11,2	12,7	12,9	12,9
Immunization	Immunisation under 1 year coverage (%)	96,8	96,6	91,5	97,3	89,1
	Measles 2nd dose coverage (%)	85,9	93,9	84,2	91,6	97,4
	Vaccine expenditure per population under 1 year (Rand)	142	2879	2960	2872	2242
Child health and nutrition	Death against live birth under 5 rate (%)	1,6	1,5	1,7	1,7	1,8
	Pneumonia case fatality under 5 years rate (%)	2,7	2,3	5,3	2,2	2,8
	Severe acute malnutrition case fatality under 5 years rate (%)	9,1	10,6	16,0	10,9	7,8
Women's health	Couple year protection rate (%)	64,4	48,2	39,8	39,2	43,4
Tuberculosis	TB child under 5 years start on treatment rate (%)		3,5	122,3	87,6	98,2
	TB client 5 years and older start on treatment rate (%)	101,6	101,1	96,0	93,4	95,3
	TB DS death rate (%)	8,5	9,0	10,5	9,2	
	TB DS success rate (%)	81,1	80,0	80,6	82,8	
HIV/AIDS	Adult with viral load suppressed rate (%)		86,2	88,3	87,7	91,7
	Child with viral load suppressed rate (%)		60,9	64,0	53,1	58,7
	Antiretroviral effective coverage (0-14 years) (%)	16,2	20,2	24,2	18,1	22,3
	Antiretroviral effective coverage (15+ years) (%)	50,9	52,5	51,3	52,0	57,5
	Antiretroviral effective coverage (%)	48,4	50,8	50,3	50,6	56,3
	Clients remaining on ART rate (%)	68,0	73,1	75,6	73,4	74,1
Non-communicable diseases	Cervical cancer screening coverage (%)	61,4	57,9	24,2	42,7	24,7
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	6,5	6,9	7,2	7,1	7,0
	Hospital beds per 10 000 target population (number)	11,8	12,1	12,2	12,1	11,2
Human Resources	Medical practitioners per 100 000 population - public sector (number)	25,6	27,0	28,9	28,0	31,3
	Pharmacists per 100 000 population - public sector (number)	8,0	8,6	9,2	9,6	10,0
	Professional nurses per 100 000 population - public sector (number)	138,6	149,9	155,6	154,6	160,1
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2484	2633	2547	2688	2521
	Expenditure per patient day equivalent (district hospitals) (Rand)	3232	3438	4062	3778	3588
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1345	1443	1416	1446	1355
	Provincial & LG PHC expenditure per PHC headcount (Rand)	577	631	792	776	701
Extra	Average length of stay (district hospitals) (days)	4,4	4,1	3,9	4,0	4,3
	Average length of stay (all hospitals) (days)	4,9	4,5	4,2	4,5	4,7
	Inpatient crude death rate (%)	5,0	4,6	4,7	4,9	4,4
	Inpatient bed utilisation rate (district hospitals) (%)	69,9	67,0	57,0	58,7	61,7
	Inpatient bed utilisation rate (all hospitals) (%)	64,5	63,6	57,4	59,8	64,4
	OPD new client not referred rate (district hospitals) (%)	65,3	64,3	63,0	63,4	63,5
	OPD new client not referred rate (%)	56,5	56,5	58,1	54,8	52,6
	PHC utilisation rate (number)	2,1	2,0	1,6	1,6	1,7
	Diarrhoea case fatality under 5 years rate (%)	2,3	2,1	2,5	1,9	2,2
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	52,2	51,9	43,0	38,8	39,9
	Male condom distribution coverage (number)	43,8	32,8	23,9	19,1	21,3
	Infant PCR test positive around 10 weeks rate (%)	0,9	0,9	0,6	0,6	0,5
	Mother postnatal visit within 6 days rate (%)	67,7	70,9	73,9	74,2	76,2
	School Grade 1 screening coverage (%)	39,6	34,5	1,3	10,5	22,1
	School Grade 8 screening coverage (%)	27,4	26,9	0,7	3,5	11,0

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Northern Cape

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	63,1	65,0	58,6	56,3	58,5
	Antenatal 1st visit coverage (%)	107,3	105,6	109,9	88,6	91,2
	Caesarean section rate (District Hospital) (%)	14,8	15,5	19,9	15,7	16,9
	Caesarean section rate (%)	21,6	21,5	23,9	22,2	26,9
	Delivery in 10 to 19 years in facility rate (%)	18,4	18,4	19,3	17,6	17,0
	Maternal mortality in facility ratio (per 100 000 live births)	10,0	13,1	11,5	10,3	11,3
	Early Neonatal death in facility rate (per 1 000 live births)	71,3	109,9	80,6	157,5	80,0
	Neonatal death in facility rate (per 1 000 live births)	11,7	15,5	13,8	12,9	14,2
Immunization	Immunisation under 1 year coverage (%)	87,5	89,0	79,9	72,8	75,9
	Measles 2nd dose coverage (%)	86,3	89,8	83,5	72,2	73,6
	Vaccine expenditure per population under 1 year (Rand)	2102	2694	3245	3076	480
Child health and nutrition	Death against live birth under 5 rate (%)	1,7	2,2	1,9	1,8	2,2
	Pneumonia case fatality under 5 years rate (%)	2,3	1,7	2,1	3,0	2,4
	Severe acute malnutrition case fatality under 5 years rate (%)	4,3	4,7	5,0	5,9	8,5
Women's health	Couple year protection rate (%)	60,6	56,6	50,9	46,8	38,3
Tuberculosis	TB child under 5 years start on treatment rate (%)		11,6	70,1	114,4	91,6
	TB client 5 years and older start on treatment rate (%)	100,6	99,5	99,8	87,9	97,3
	TB DS death rate (%)	7,2	7,8	8,4	8,3	
	TB DS success rate (%)	76,5	72,6	68,4	64,9	
HIV/AIDS	Adult with viral load suppressed rate (%)		83,6	83,3	85,0	86,4
	Child with viral load suppressed rate (%)		75,2	69,8		50,0
	Antiretroviral effective coverage (0-14 years) (%)	23,8	13,9	14,1		17,6
	Antiretroviral effective coverage (15+ years) (%)	26,4	17,8	23,0	22,5	18,5
	Antiretroviral effective coverage (%)	26,2	17,6	22,5	21,5	18,4
	Clients remaining on ART rate (%)	73,5	77,5	58,4	56,7	60,6
Non-communicable diseases	Cervical cancer screening coverage (%)	34,3	32,0	5,1	15,3	9,6
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	5,6	5,5	5,2	5,3	5,1
	Hospital beds per 10 000 target population (number)	16,5	14,7	16,2	17,0	16,6
Human Resources	Medical practitioners per 100 000 population - public sector (number)	41,7	37,9	40,9	41,2	40,0
	Pharmacists per 100 000 population - public sector (number)	16,9	13,1	14,5	12,6	13,2
	Professional nurses per 100 000 population - public sector (number)	142,2	146,1	152,1	140,9	135,6
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2536	2717	2676	2775	2531
	Expenditure per patient day equivalent (district hospitals) (Rand)	3483	3792	4716	4268	3620
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1628	1669	1658	1715	1590
	Provincial & LG PHC expenditure per PHC headcount (Rand)	637	658	816	810	698
Extra	Average length of stay (district hospitals) (days)	3,3	3,5	3,0	3,1	3,1
	Average length of stay (all hospitals) (days)	5,0	5,1	5,2	5,4	5,3
	Inpatient crude death rate (%)	5,2	5,2	5,8	6,6	4,8
	Inpatient bed utilisation rate (district hospitals) (%)	54,2	53,6	48,8	43,4	47,4
	Inpatient bed utilisation rate (all hospitals) (%)	60,4	61,7	62,0	59,4	31,1
	OPD new client not referred rate (district hospitals) (%)	70,2	70,8	65,4	64,2	69,6
	OPD new client not referred rate (%)	63,0	64,9	63,7	64,1	66,5
	PHC utilisation rate (number)	2,2	2,2	1,8	1,8	1,9
	Diarrhoea case fatality under 5 years rate (%)	2,4	1,5	2,3	2,1	1,5
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	55,3	55,9	52,7	49,0	53,6
	Male condom distribution coverage (number)	31,4	28,9	23,8	20,9	11,2
	Infant PCR test positive around 10 weeks rate (%)	1,4	1,3	1,0	1,1	0,8
	Mother postnatal visit within 6 days rate (%)	65,3	68,6	66,8	61,1	64,4
	School Grade 1 screening coverage (%)	21,6	16,4		14,0	14,3
	School Grade 8 screening coverage (%)	9,3	19,6		7,5	3,6

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

North West

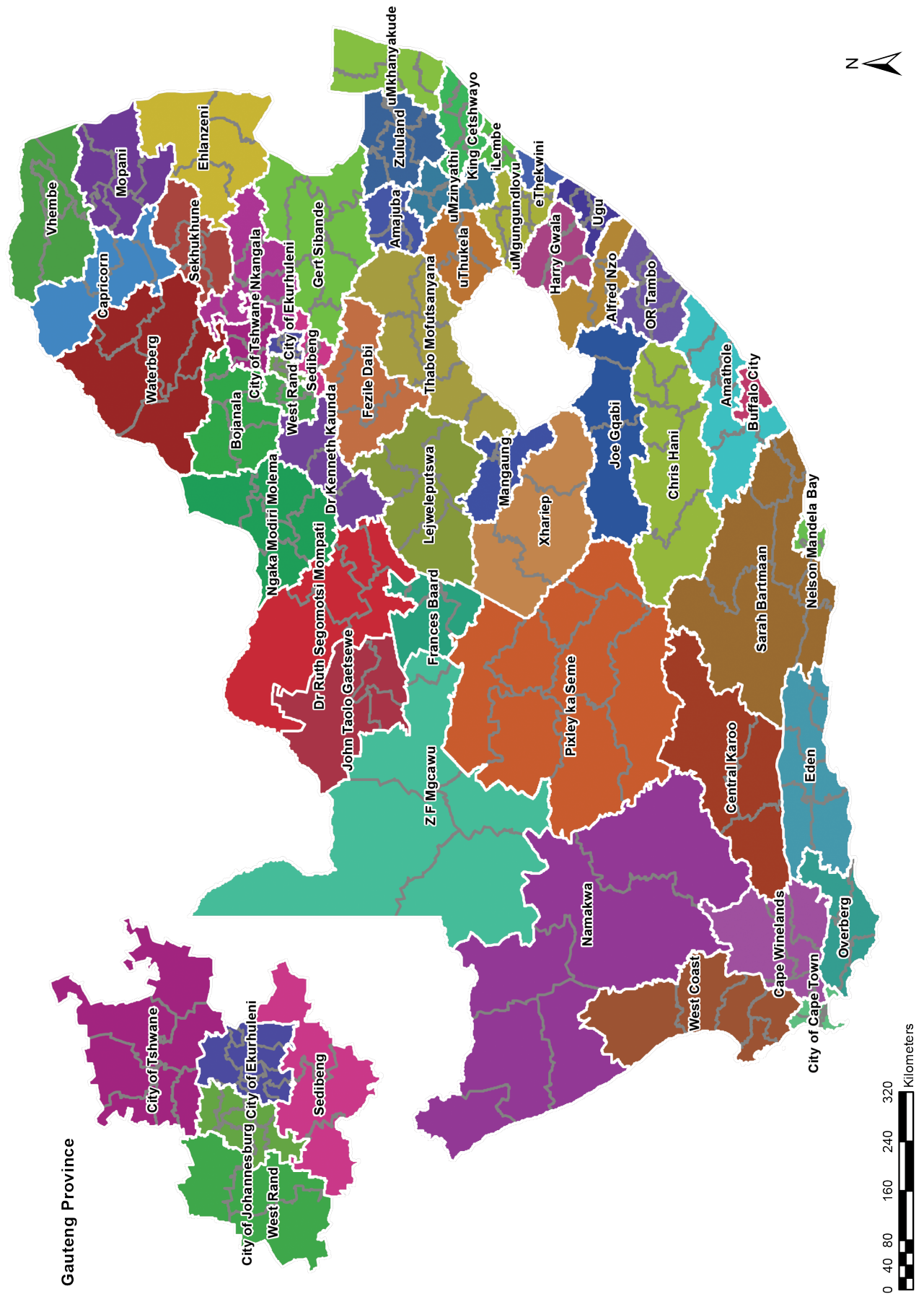
		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	69,0	70,9	68,0	70,1	71,2
	Antenatal 1st visit coverage (%)	78,1	77,7	76,4	72,1	69,6
	Caesarean section rate (District Hospital) (%)	28,4	29,8	28,9	28,6	33,0
	Caesarean section rate (%)	25,9	25,0	24,1	23,4	25,7
	Delivery in 10 to 19 years in facility rate (%)	13,3	13,1	14,0	15,0	14,5
	Maternal mortality in facility ratio (per 100 000 live births)	137,4	88,0	124,6	129,9	118,0
	Early Neonatal death in facility rate (per 1 000 live births)	8,9	9,5	10,8	11,1	10,4
	Neonatal death in facility rate (per 1 000 live births)	10,6	11,5	13,9	14,6	13,4
Immunization	Immunisation under 1 year coverage (%)	68,4	63,0	71,2	62,8	74,1
	Measles 2nd dose coverage (%)	69,0	66,9	65,0	71,5	76,4
	Vaccine expenditure per population under 1 year (Rand)	1736	307	403	239	481
Child health and nutrition	Death against live birth under 5 rate (%)	1,8	1,9	1,7	2,1	1,9
	Pneumonia case fatality under 5 years rate (%)	2,2	1,2	3,2	2,3	1,4
	Severe acute malnutrition case fatality under 5 years rate (%)	9,3	11,8	4,9	6,6	3,9
Women's health	Couple year protection rate (%)	59,3	62,4	48,0	52,3	48,3
Tuberculosis	TB child under 5 years start on treatment rate (%)		10,1	108,7	108,9	105,0
	TB client 5 years and older start on treatment rate (%)	103,1	99,9	95,3	95,3	95,4
	TB DS death rate (%)	8,8	9,6	10,3	8,8	
	TB DS success rate (%)	77,5	77,6	79,1	82,1	
HIV/AIDS	Adult with viral load suppressed rate (%)		85,5	86,5	84,3	89,6
	Child with viral load suppressed rate (%)	14,5	17,5	20,0	17,4	23,9
	Antiretroviral effective coverage (0-14 years) (%)	38,2	37,7	44,3	44,8	50,5
	Antiretroviral effective coverage (15+ years) (%)	37,1	36,8	43,5	43,8	49,7
	Antiretroviral effective coverage (%)		65,3	68,0	59,4	61,4
	Clients remaining on ART rate (%)	57,8	59,9	65,7	64,8	65,3
Non-communicable diseases	Cervical cancer screening coverage (%)	48,9	55,9	12,2	22,8	9,7
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	3,9	3,9	3,8	3,3	3,4
	Hospital beds per 10 000 target population (number)	13,1	12,9	13,0	11,9	11,8
Human Resources	Medical practitioners per 100 000 population - public sector (number)	25,6	28,3	32,9	33,3	35,1
	Pharmacists per 100 000 population - public sector (number)	8,3	9,5	9,8	9,4	8,9
	Professional nurses per 100 000 population - public sector (number)	131,3	142,9	153,8	152,8	144,2
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2073	2134	2246	2395	2123
	Expenditure per patient day equivalent (district hospitals) (Rand)	4032	4335	4890	4363	4425
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1427	1459	1383	1412	1378
	Provincial & LG PHC expenditure per PHC headcount (Rand)	671	673	793	784	732
Extra	Average length of stay (district hospitals) (days)	4,3	4,3	4,0	4,3	4,3
	Average length of stay (all hospitals) (days)	6,9	6,8	6,0	6,3	6,1
	Inpatient crude death rate (%)	5,9	5,5	5,8	5,8	4,8
	Inpatient bed utilisation rate (district hospitals) (%)	60,3	62,8	52,7	59,3	62,7
	Inpatient bed utilisation rate (all hospitals) (%)	72,1	73,8	63,6	72,2	73,2
	OPD new client not referred rate (district hospitals) (%)	55,9	57,8	53,6	58,6	52,2
	OPD new client not referred rate (%)	45,8	38,2	49,6	56,6	46,6
	PHC utilisation rate (number)	1,9	1,9	1,6	1,6	1,7
	Diarrhoea case fatality under 5 years rate (%)	3,4	2,8	2,7	2,3	1,3
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	56,3	59,7	41,6	33,2	34,0
	Male condom distribution coverage (number)	36,3	38,7	27,4	28,1	20,1
	Infant PCR test positive around 10 weeks rate (%)	0,9	0,9	0,7	0,6	0,3
	Mother postnatal visit within 6 days rate (%)	88,9	93,2	94,9	102,6	98,2
	School Grade 1 screening coverage (%)	59,2	60,2	8,1	33,2	27,4
	School Grade 8 screening coverage (%)	44,3	49,5	3,4	17,6	21,7

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department

Western Cape

		2018	2019	2020	2021	2022
Maternal and Neonatal	Antenatal 1st visit before 20 weeks rate (%)	70,3	71,9	70,6	72,6	74,3
	Antenatal 1st visit coverage (%)	84,1	91,1	86,7	82,6	78,6
	Caesarean section rate (District Hospital) (%)	27,4	27,2	27,0	28,5	28,3
	Caesarean section rate (%)	29,1	29,9	30,0	30,9	32,0
	Delivery in 10 to 19 years in facility rate (%)	11,1	11,1	10,8	11,2	11,2
	Maternal mortality in facility ratio (per 100 000 live births)	66,8	43,6	83,9	75,1	62,0
	Early Neonatal death in facility rate (per 1 000 live births)	7,2	6,5	6,5	6,1	7,1
	Neonatal death in facility rate (per 1 000 live births)	8,9	8,2	8,3	7,7	9,0
Immunization	Immunisation under 1 year coverage (%)	82,7	84,9	85,0	83,2	75,7
	Measles 2nd dose coverage (%)	77,6	80,0	80,6	79,2	77,7
	Vaccine expenditure per population under 1 year (Rand)	1677	1765	2072	1821	1764
Child health and nutrition	Death against live birth under 5 rate (%)	1,2	1,1	1,1	1,1	1,3
	Pneumonia case fatality under 5 years rate (%)	0,2	0,2	0,2	0,2	0,2
	Severe acute malnutrition case fatality under 5 years rate (%)	1,6	1,5	2,2	2,4	2,4
Women's health	Couple year protection rate (%)	75,9	64,5	50,5	56,9	50,2
Tuberculosis	TB child under 5 years start on treatment rate (%)		40,7	99,2	96,5	96,8
	TB client 5 years and older start on treatment rate (%)	89,0	90,0	90,3	91,4	92,2
	TB DS death rate (%)	3,8	4,2	4,0	3,9	
	TB DS success rate (%)	77,1	76,5	74,9	73,0	
HIV/AIDS	Adult with viral load suppressed rate (%)		92,4	90,3	91,6	93,4
	Child with viral load suppressed rate (%)	21,8		18,0	17,2	11,6
	Antiretroviral effective coverage (0-14 years) (%)	24,1		33,0	20,1	11,5
	Antiretroviral effective coverage (15+ years) (%)	24,0		32,6	20,0	11,5
	Antiretroviral effective coverage (%)			64,5	69,3	71,0
	Clients remaining on ART rate (%)	63,7	67,1	60,1	54,9	54,4
Non-communicable diseases	Cervical cancer screening coverage (%)	41,3	41,8	14,2	40,0	17,4
Inpatient Management	Hospital beds per 10 000 target population (District Hospitals) (number)	5,4	5,3	5,3	5,3	5,2
	Hospital beds per 10 000 target population (number)	18,3	17,6	19,1	18,6	18,3
Human Resources	Medical practitioners per 100 000 population - public sector (number)	34,7	41,6	43,7	41,7	42,4
	Pharmacists per 100 000 population - public sector (number)	18,0	18,4	18,2	18,5	18,6
	Professional nurses per 100 000 population - public sector (number)	98,9	100,0	106,0	102,7	99,5
Finance	Provincial & LG District Health Services expenditure per capita (uninsured) (Rand)	2299	2388	2495	2424	2301
	Expenditure per patient day equivalent (district hospitals) (Rand)	3039	3172	3785	3277	3077
	Provincial & LG PHC expenditure per capita (uninsured) (Rand)	1416	1489	1595	1511	1428
	Provincial & LG PHC expenditure per PHC headcount (Rand)	541	569	928	784	684
Extra	Average length of stay (district hospitals) (days)	3,4	3,4	3,5	3,6	3,6
	Average length of stay (all hospitals) (days)	5,5	5,3	5,6	5,6	5,6
	Inpatient crude death rate (%)	2,9	2,9	4,2	4,1	3,2
	Inpatient bed utilisation rate (district hospitals) (%)	91,4	90,4	78,5	90,0	92,8
	Inpatient bed utilisation rate (all hospitals) (%)	86,6	86,9	73,7	82,2	84,9
	OPD new client not referred rate (district hospitals) (%)	12,6	9,6	15,5	20,3	14,8
	OPD new client not referred rate (%)	12,3	11,3	17,4	16,1	11,3
	PHC utilisation rate (number)	2,2	2,2	1,4	1,5	1,7
	Diarrhoea case fatality under 5 years rate (%)	0,1	0,2	0,2	0,3	0,3
	Infant exclusively breastfed at DTaP-IPV-Hib-HBV 3rd dose rate (%)	38,7	39,7	37,6	40,3	39,0
	Male condom distribution coverage (number)	42,7	33,2	21,4	27,3	20,5
	Infant PCR test positive around 10 weeks rate (%)	0,3	0,3	0,3	0,6	0,2
	Mother postnatal visit within 6 days rate (%)	57,9	60,1	53,7	57,1	60,2
	School Grade 1 screening coverage (%)	16,5	44,2	0,2	16,1	35,0
	School Grade 8 screening coverage (%)	5,0	15,4	0,1	1,2	9,6

Ave = Average; ART = Antiretroviral treatment; DS = Drug-susceptible; HIV = Human immunodeficiency virus; LG = Local Government; MDR = Multi-drug-resistant; PHC = Primary Health Care; TB = Tuberculosis; PCR = Polymerase Chain Reaction; OPD = Outpatient Department



Eastern Cape Province

Buffalo City Metropolitan Municipality (BUF)

The Buffalo City Metropolitan Municipality¹ is a Category A municipality situated on the east coast of the Eastern Cape Province. The boundaries of the newly established municipality now make up a large area characterised by very different features. Two former municipalities, Transitional Local Councils – that of East London and King William's Town – have merged into one. Other areas that were previously not included in either of them are now part of Buffalo City.

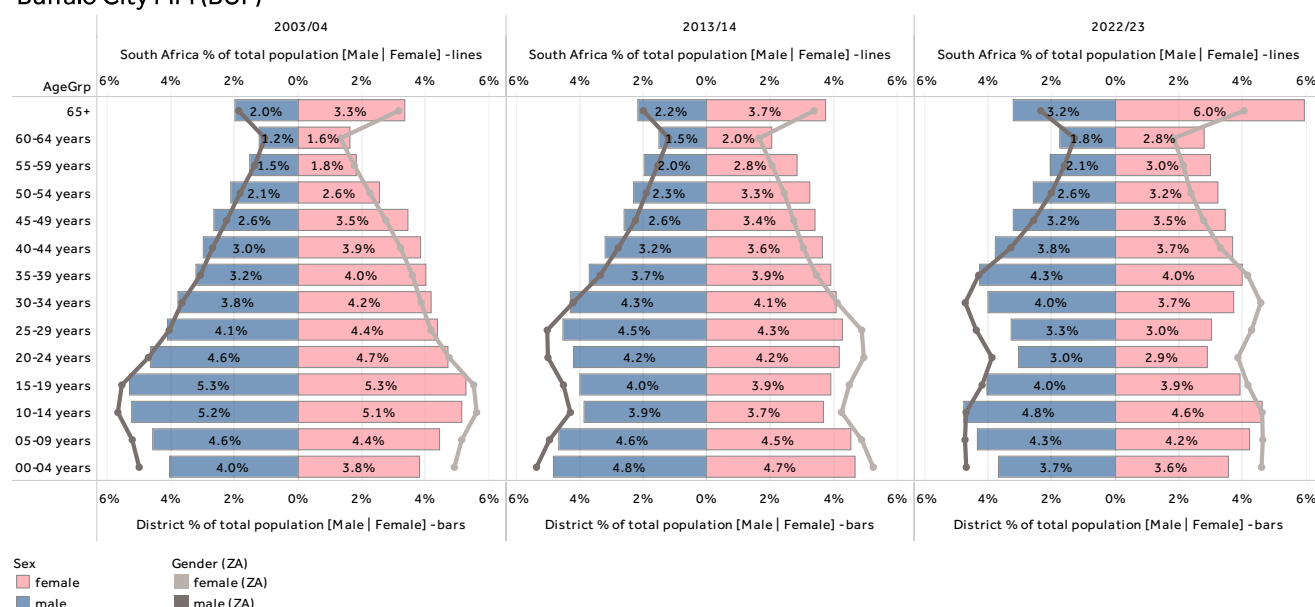
Cities/Towns: Beacon Bay, Berlin, Bisho, Breidbach, Dimbaza, East London, Kidd's Beach, King William's Town, Mdantsane, Phakamisa, Potsdam, Zwelitsha

Area: 2 753km²

Population (2022)²: 794 314

District percentage population by age-gender group compared to South Africa

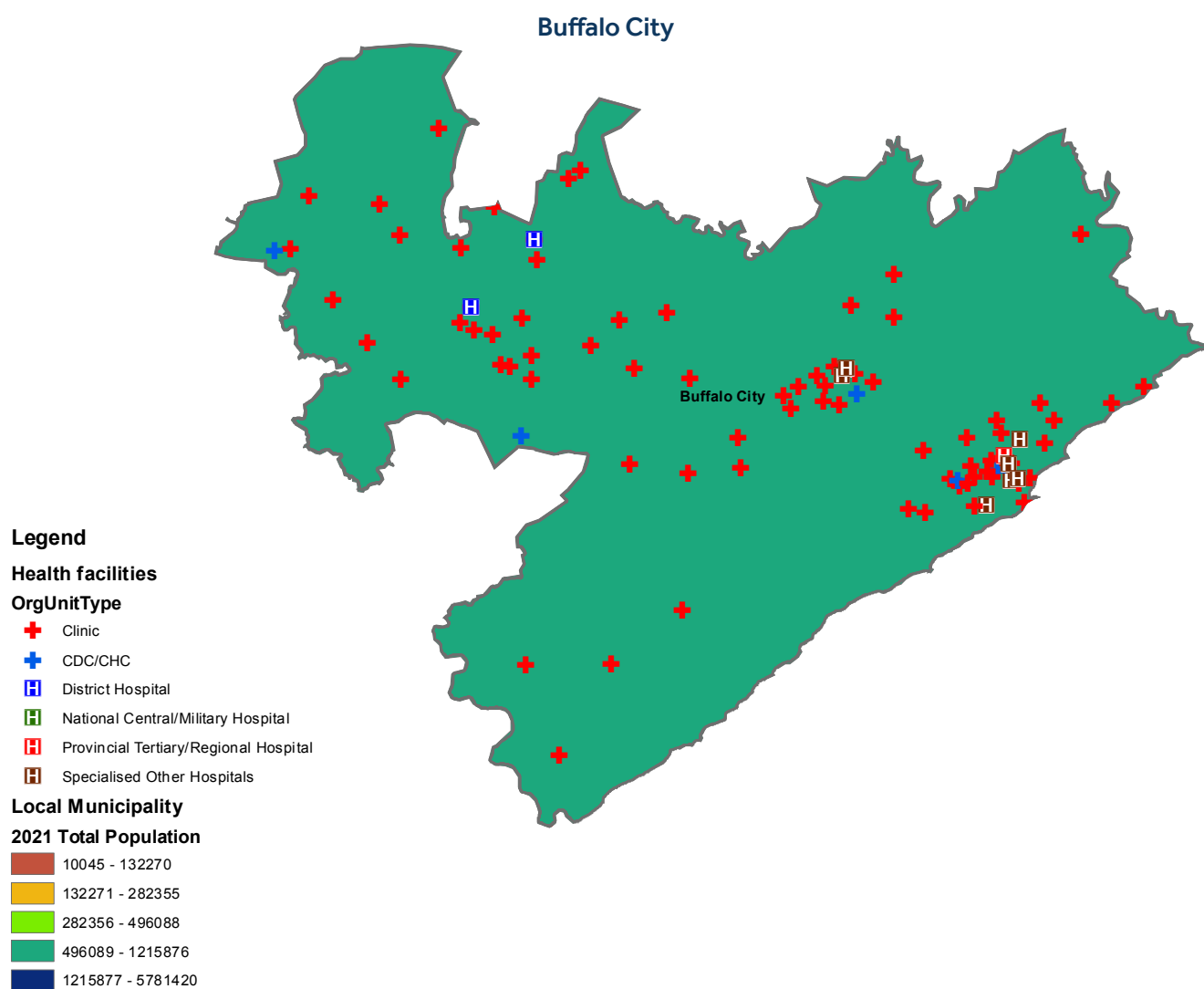
Buffalo City MM (BUF)



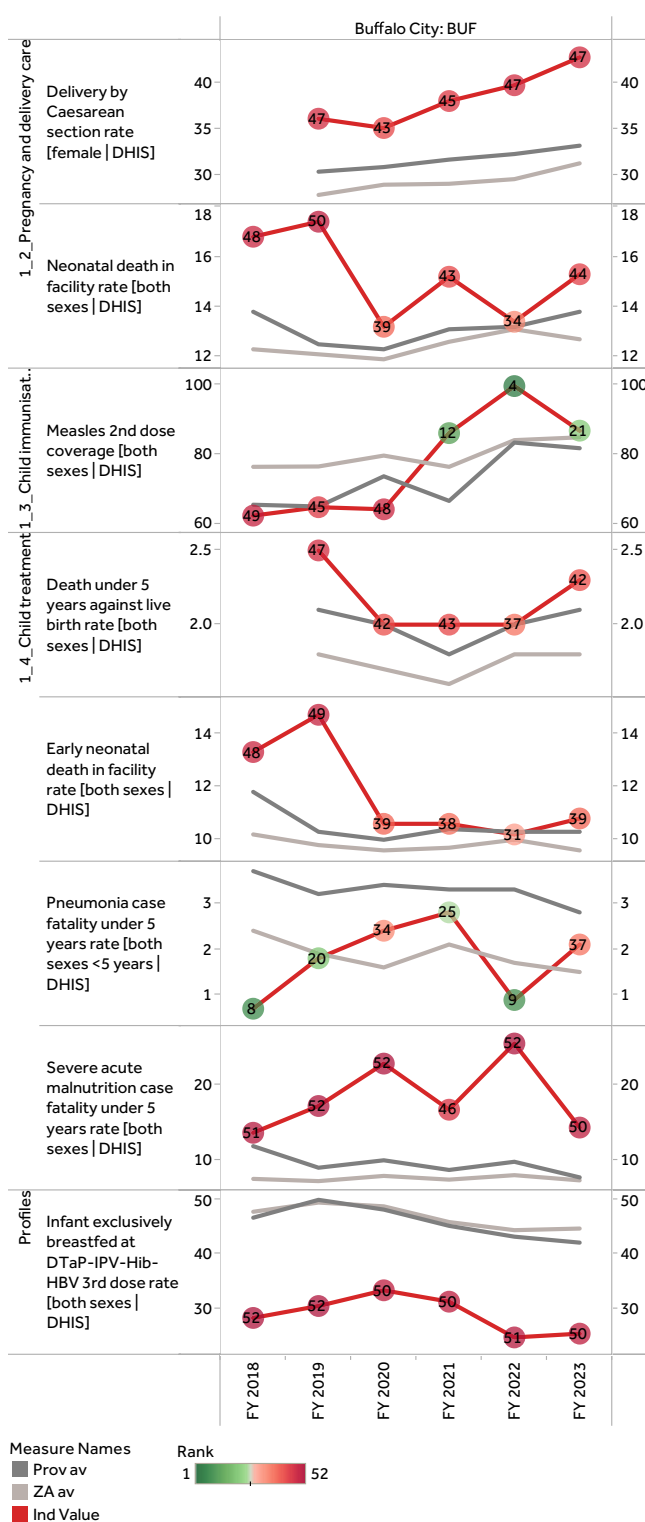
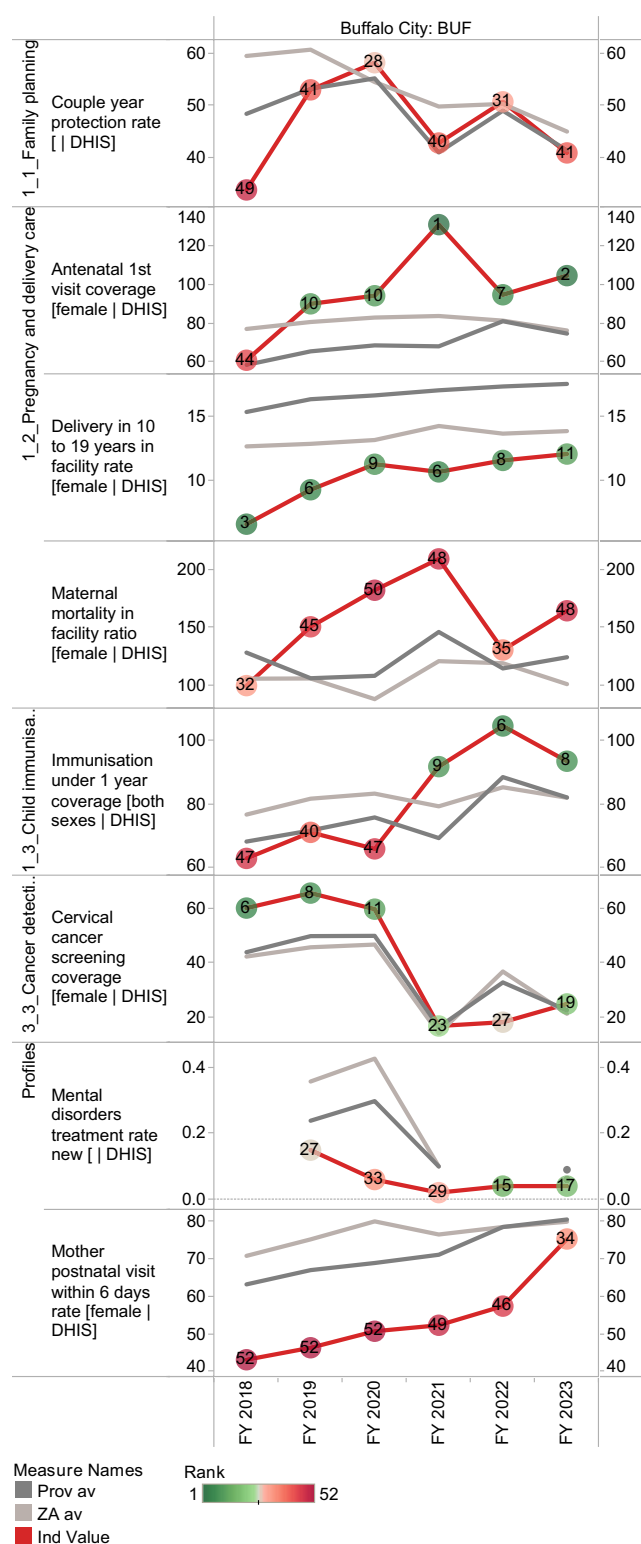
¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

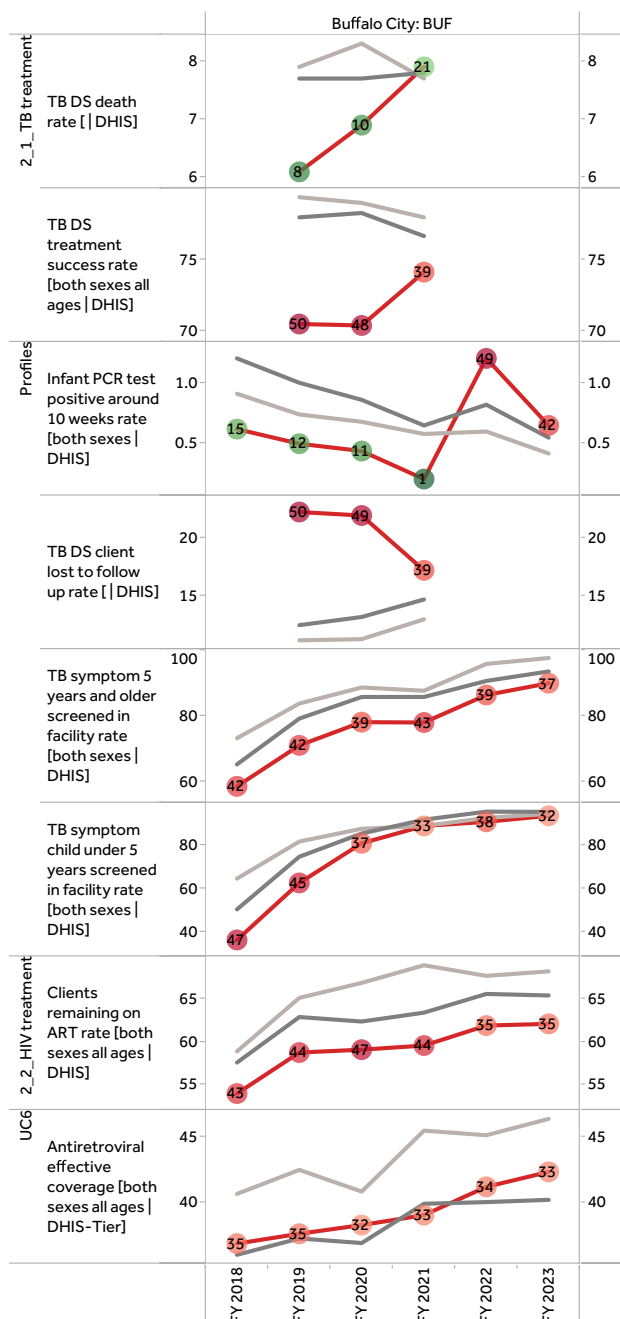
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

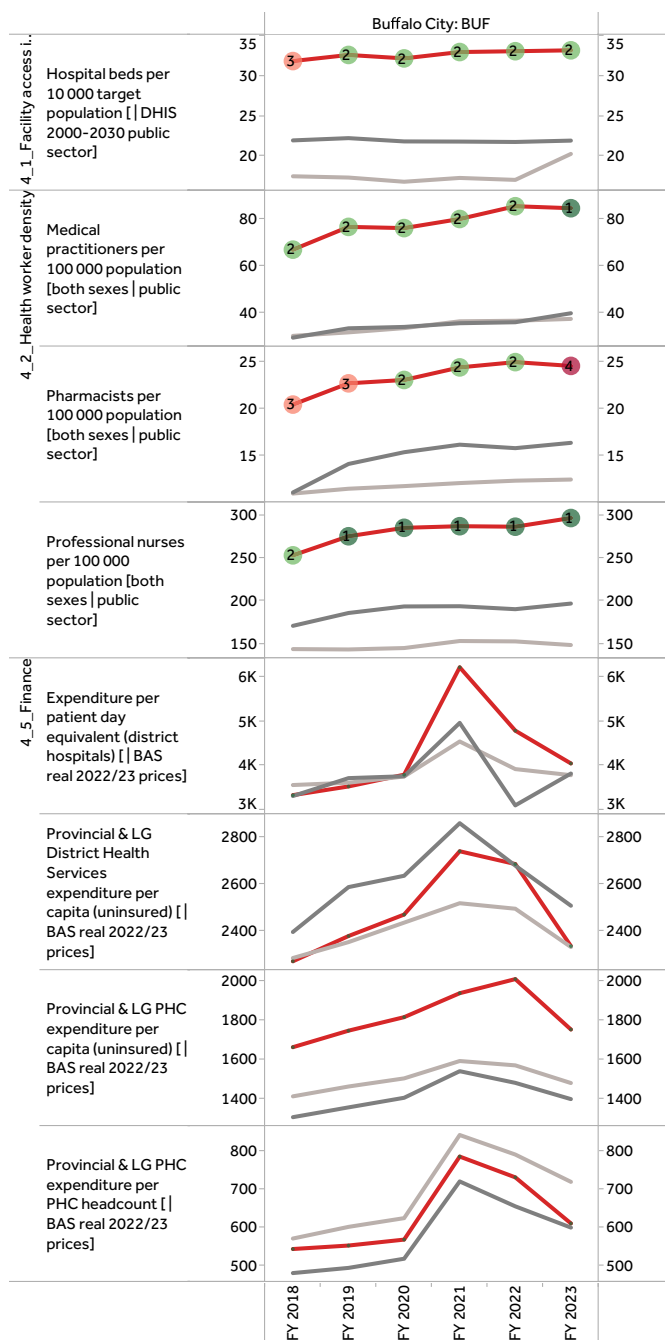


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 50



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 4

Sarah Baartman District Municipality (DC10)

The Sarah Baartman District Municipality³ is a Category C municipality situated in the Eastern Cape Province. Sarah Baartman is the largest district in the province, making up approximately a third of its geographical area. It comprises seven local municipalities: Dr Beyers Naudé, Blue Crane Route, Makana, Ndlambe, Sundays River Valley, Kouga and Koukamma.

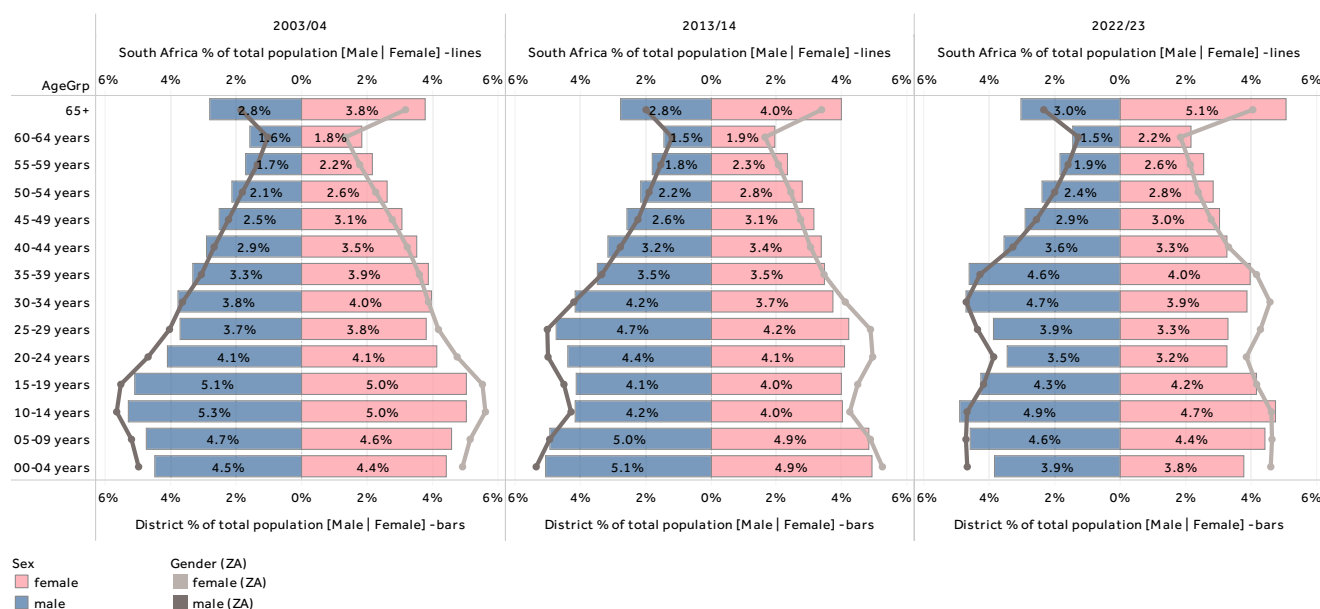
Cities/Towns: Aberdeen, Addo, Adendorp, Alexandria, Alicedale, Bathurst, Boknes/Cannon Rocks, Bushmans River, Cape St Francis, Clarkson, Cookhouse, Graaff-Reinet, Hankey, Humansdorp, Jansenville, Jeffreys Bay, Joubertina, Kareedouw, Kendrew, Kenton-on-Sea, Kirkwood, Klipplaat, Krakeel River, Loerie, Louterwater, Makhanda (Grahamstown), Misgund, Nieu-Bethesda, Nompumelelo, Oyster Bay, Patensie, Paterson, Pearston, Petersburg, Port Alfred, Riebeeck East, Rietbron, Sanddrif, Seafeld, Sidbury, Somerset East, St Francis Bay, Steytlerville, Storms River, Thornhill, Waterford, Willowmore, Woodlands

Area: 58 244km²

Population (2022)⁴: 484 662

District percentage population by age-gender group compared to South Africa

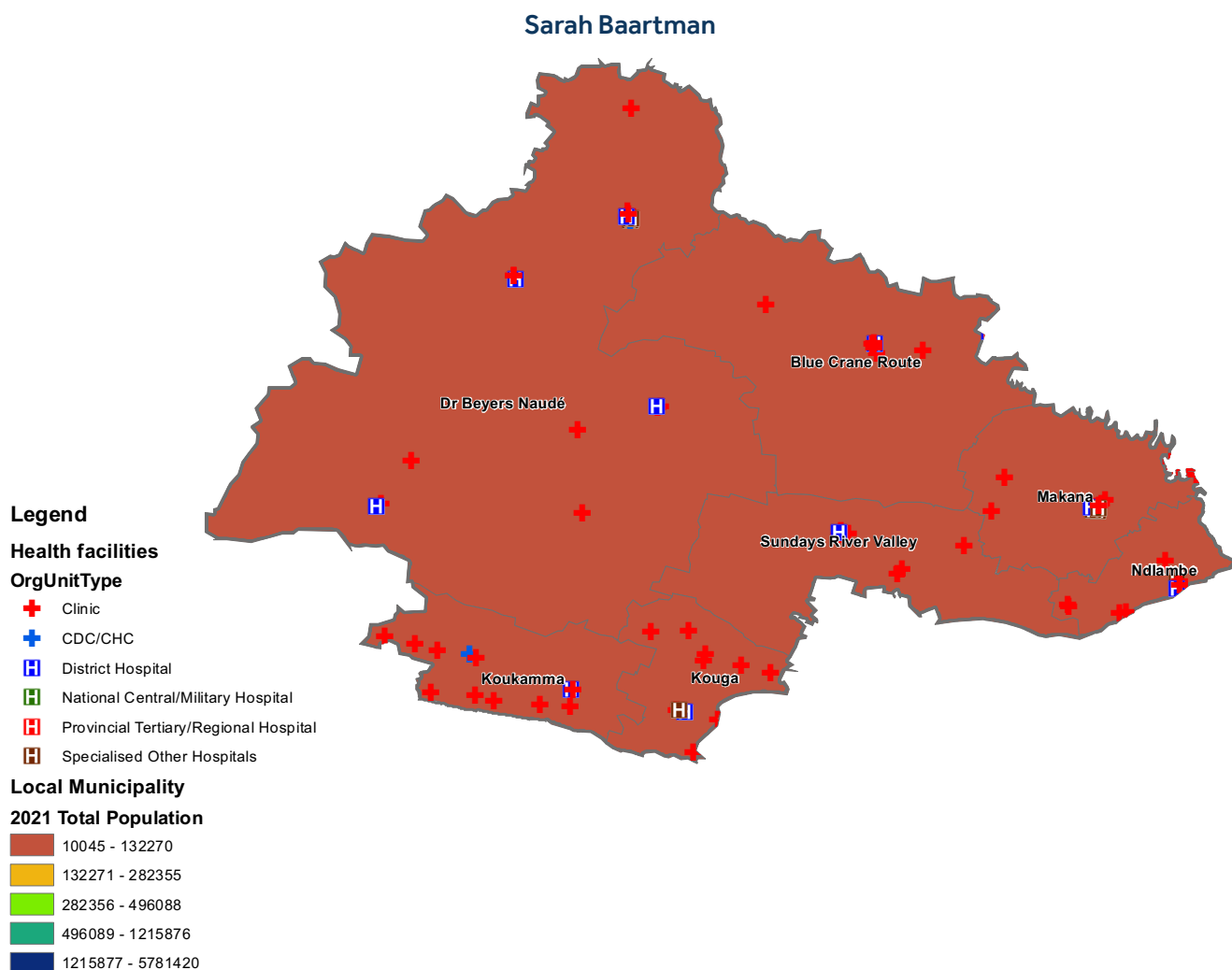
Sarah Baartman DM (DC10)



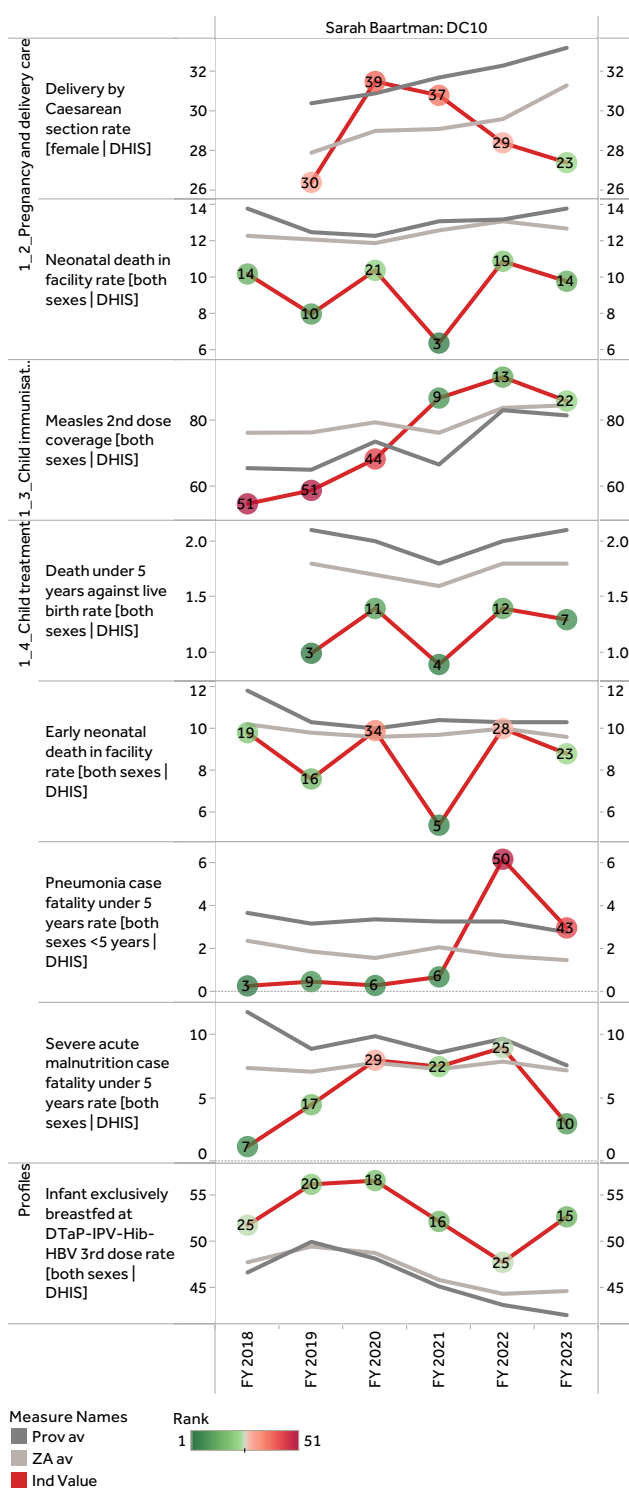
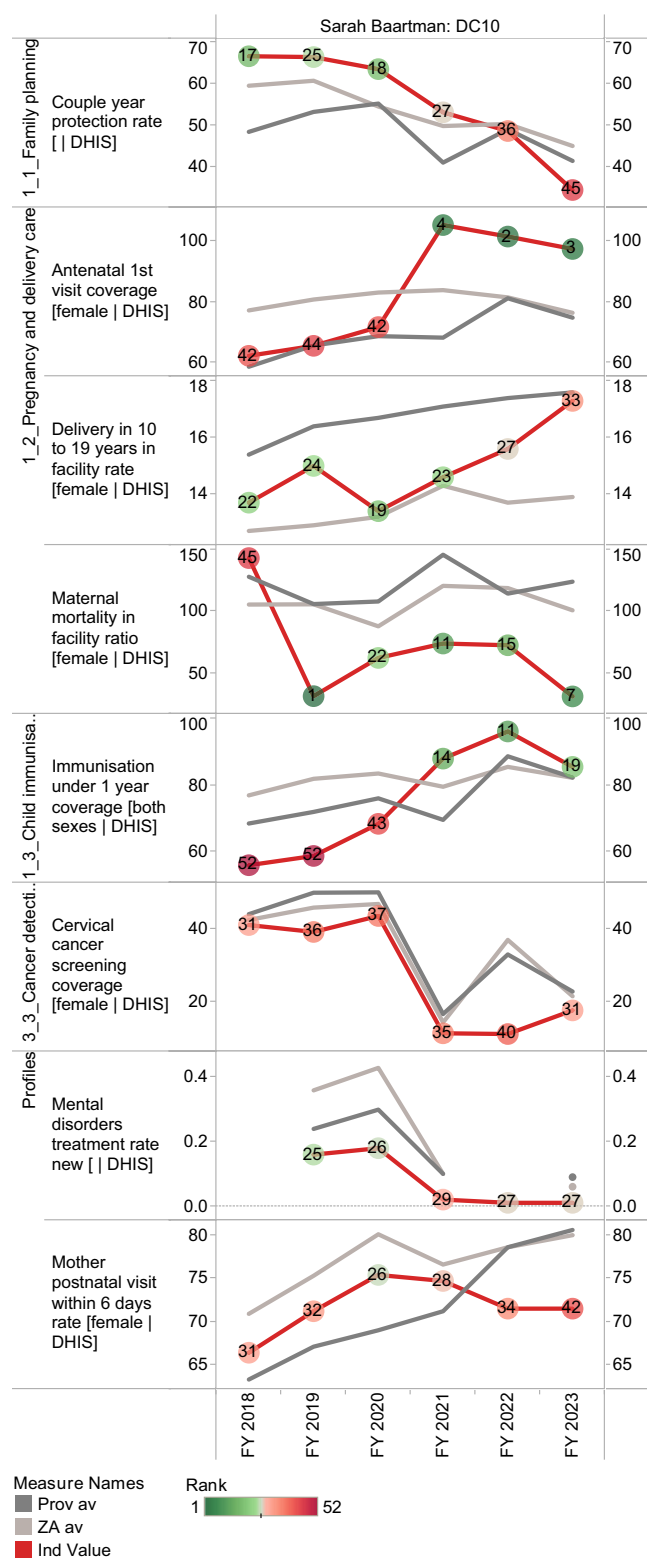
³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

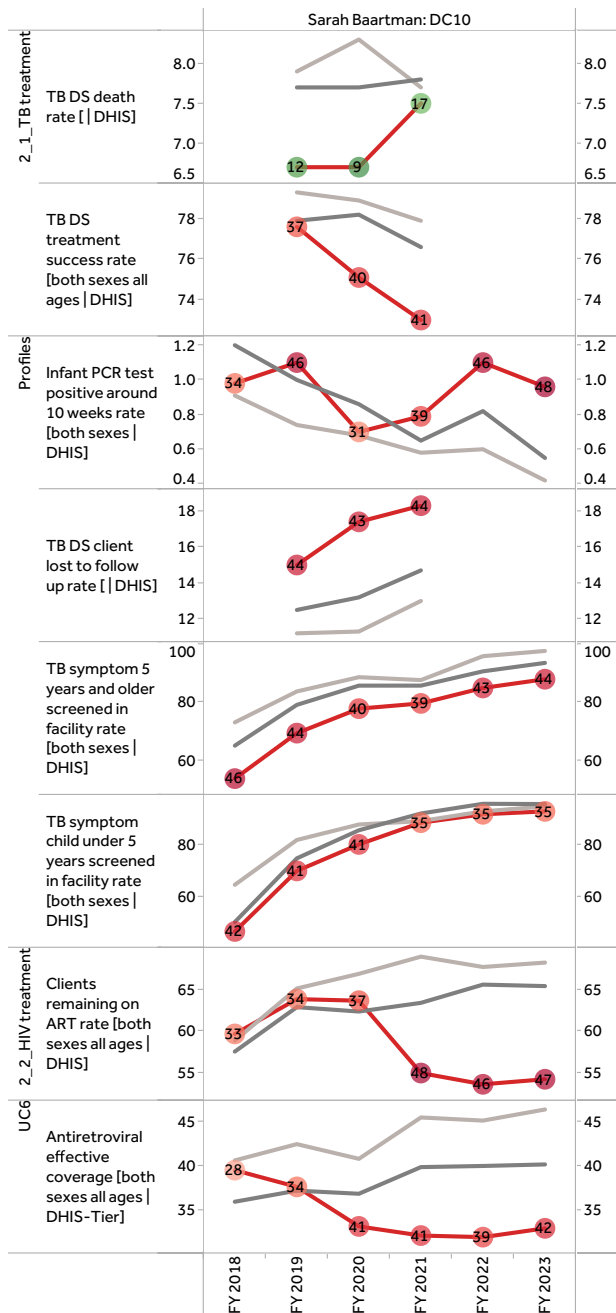
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

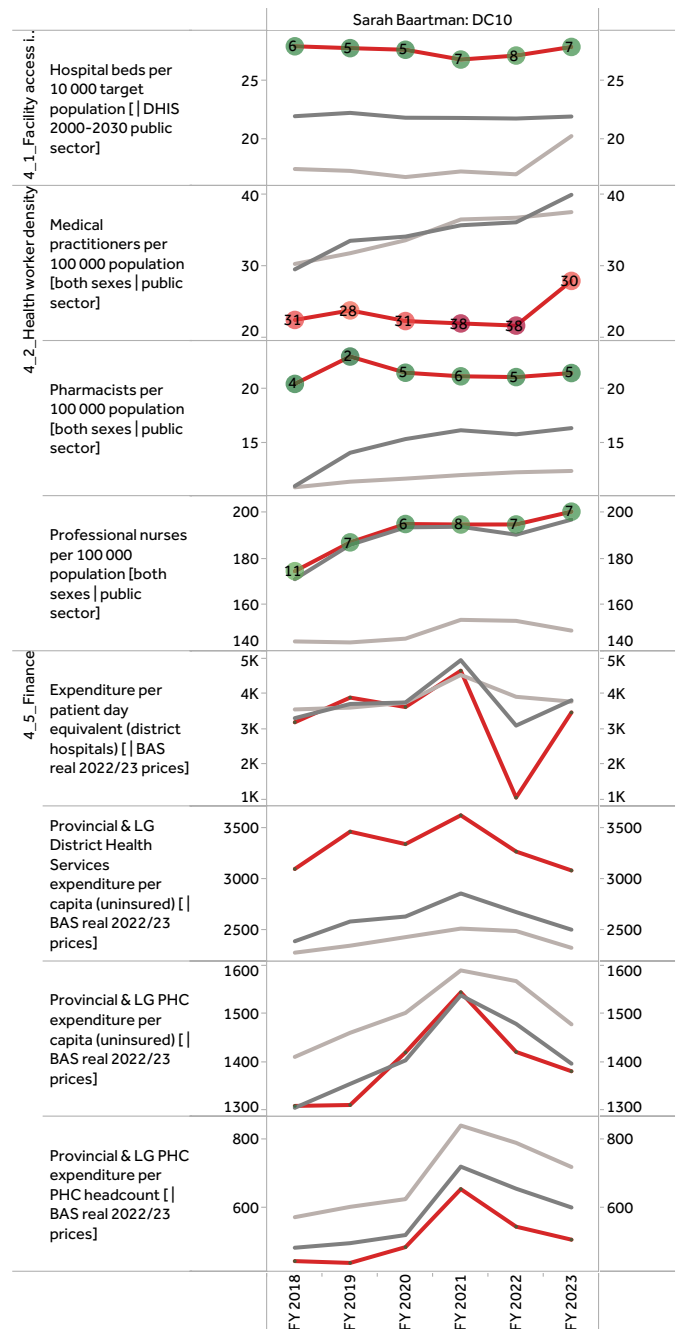


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 48



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 38

Amathole District Municipality (DC12)

The Amathole District Municipality⁵ is a Category C municipality situated in the central part of the Eastern Cape. The district comprises six local municipalities: Mbhashe, Mnquma, Great Kei, Amahlathi, Ngqushwa and Raymond Mhlaba.

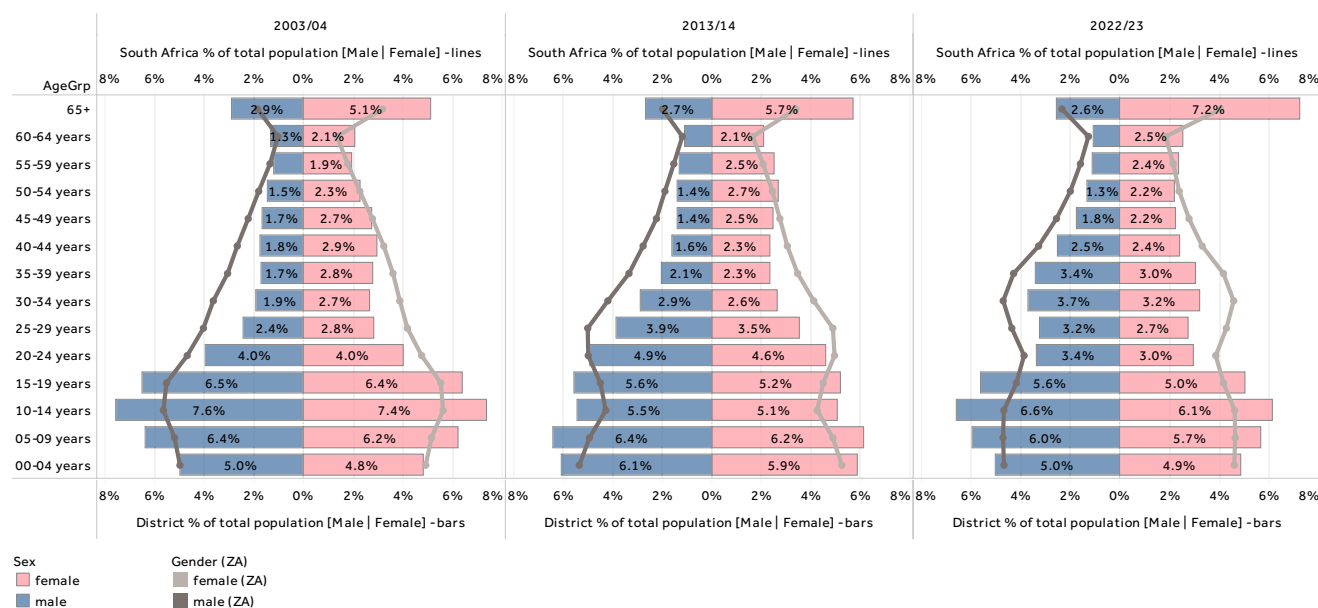
Cities/Towns: Adelaide, Alice, Amatola Coastal, Bedford, Butterworth, Cathcart, Dutywa, Elliotdale, Fort Beaufort, Hamburg, Hogsback, Kei Mouth, Kei Road, Keiskammahoek, Kentani, Komga, Middeldrift, Morgan Bay, Ngqamakhwe, Peddie, Seymore, Stutterheim, Willowvale

Area: 21 114km²

Population (2022)⁶: 778 884

District percentage population by age-gender group compared to South Africa

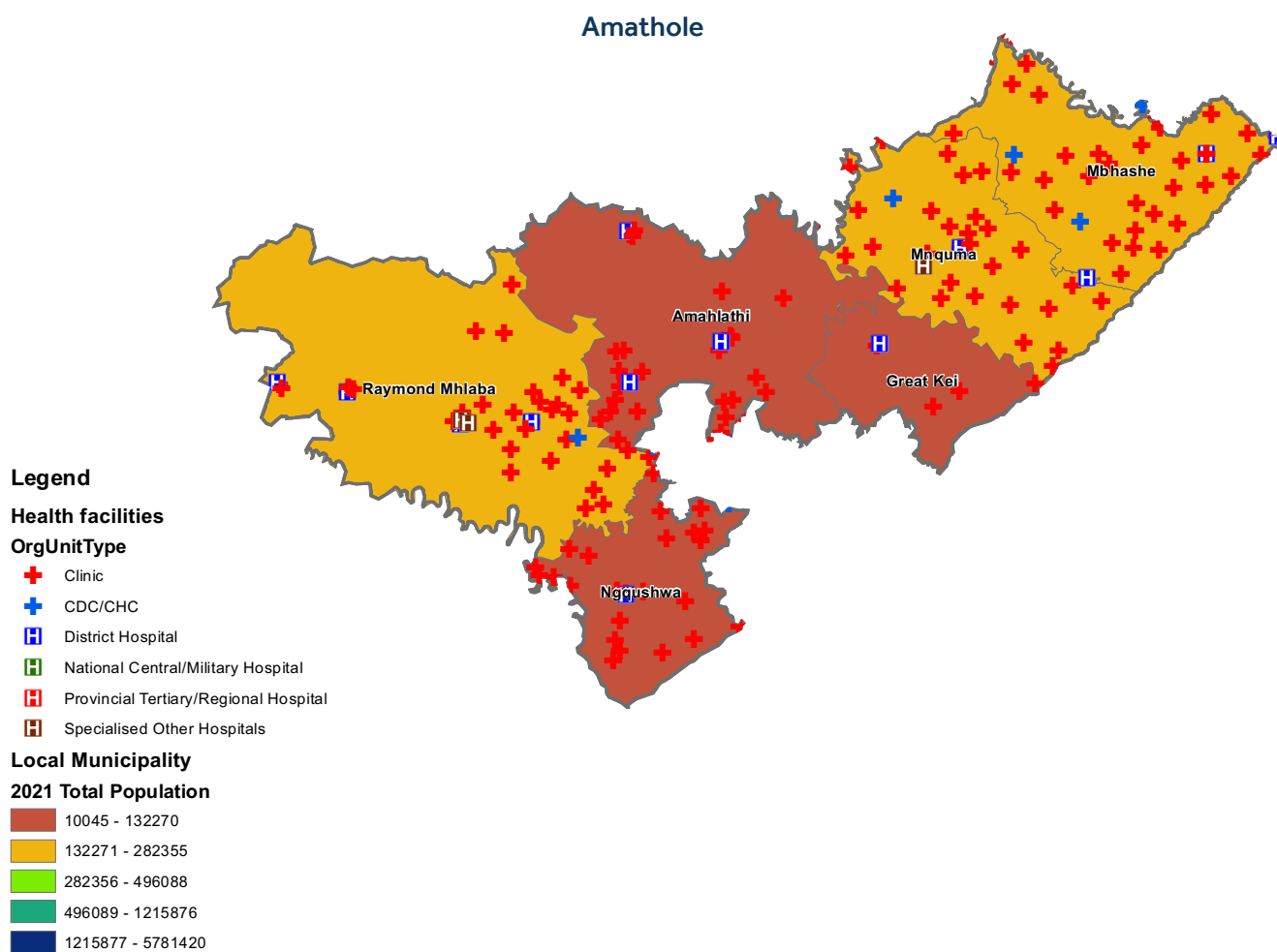
Amathole DM (DC12)



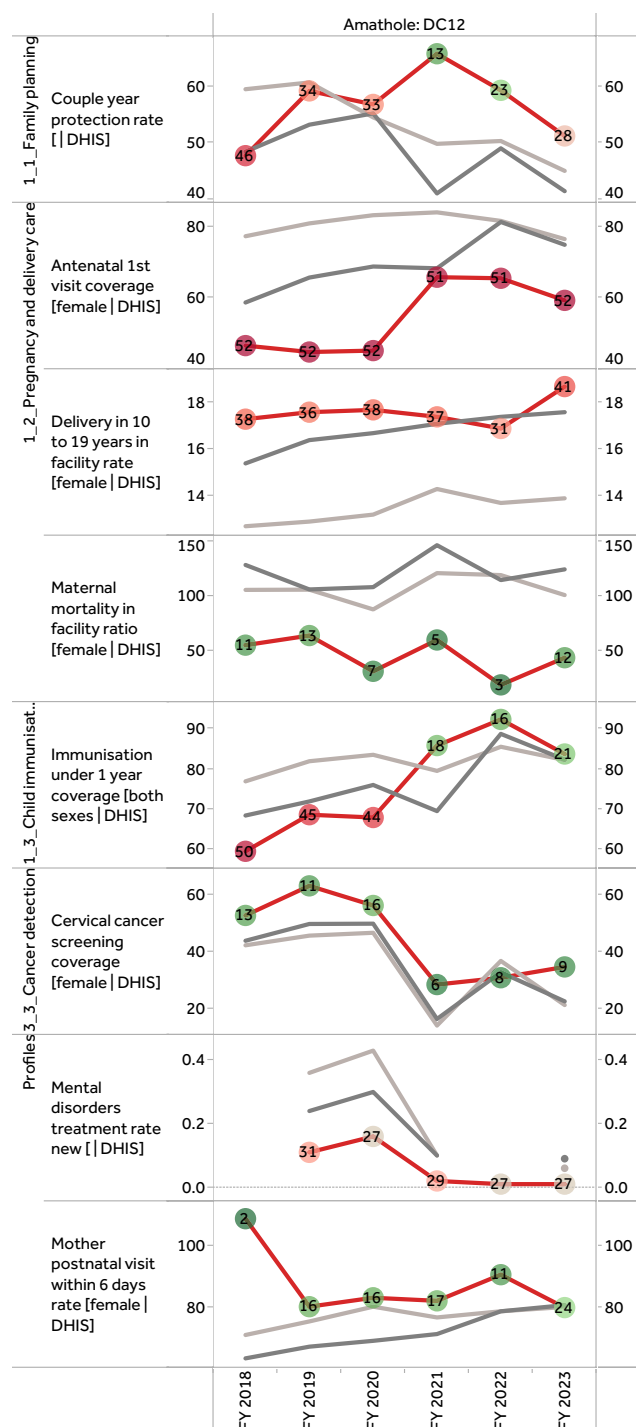
⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

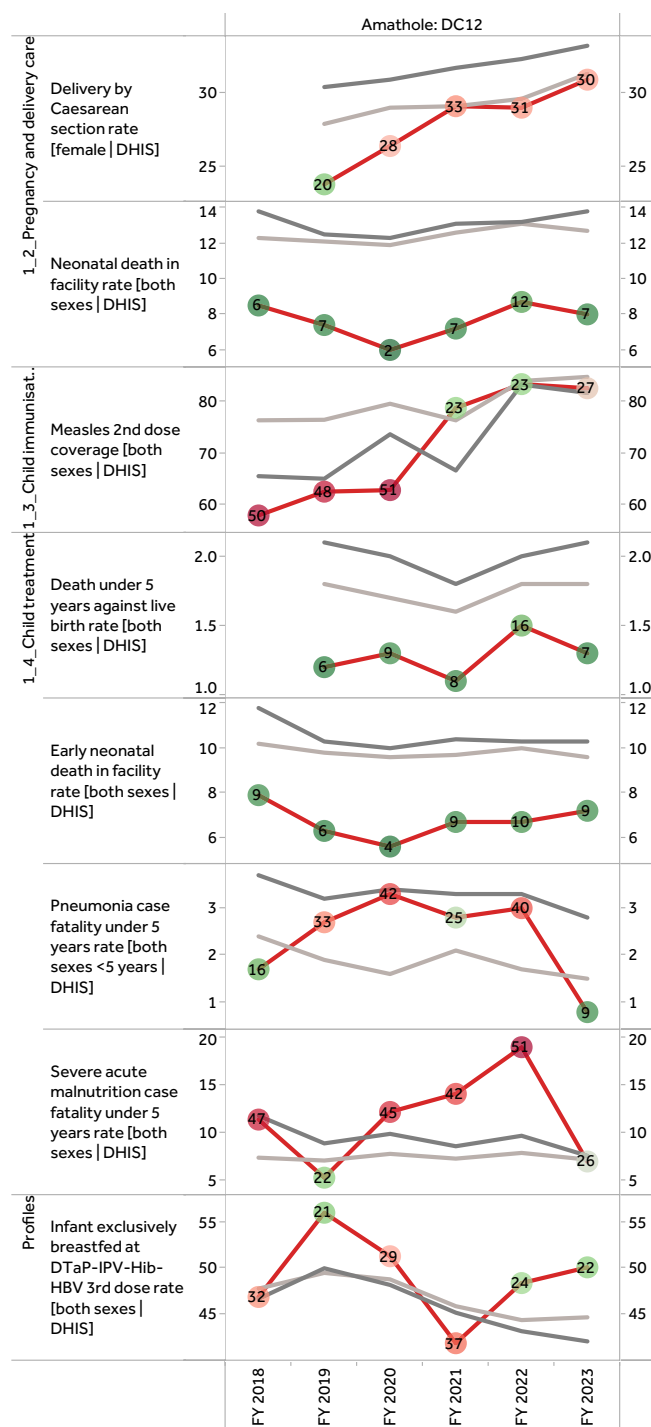
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

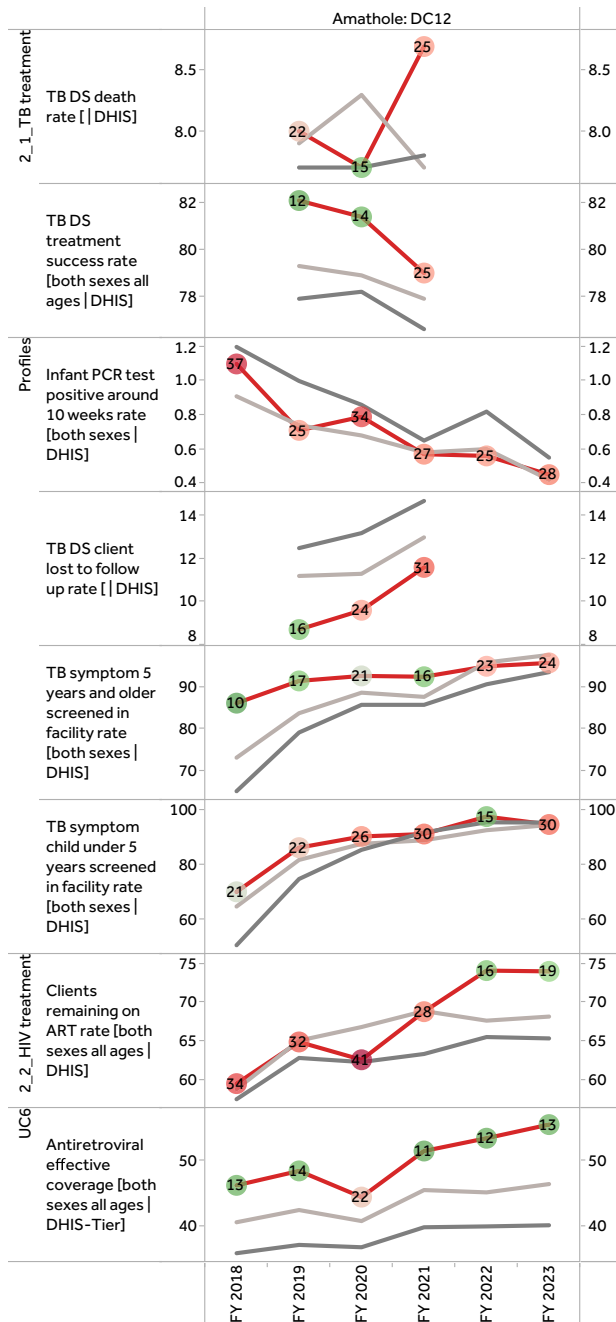


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 Prov av
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Measure Names
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Annual trends, 2018/19–2022/23



Measure Names

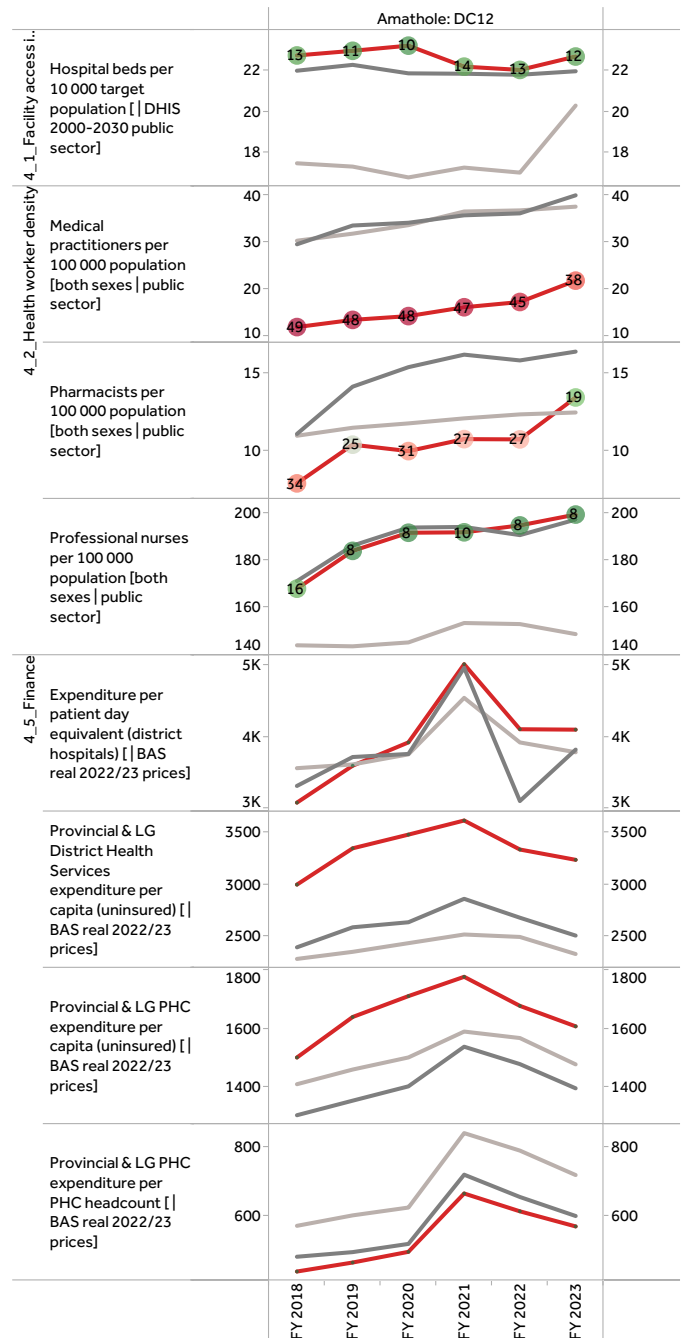
Rank

1 41

Prov av

ZA av

Ind Value



Measure Names

Rank

1 49

Prov av

ZA av

Ind Value

Chris Hani District Municipality (DC13)

The Chris Hani District Municipality⁷ is a Category C municipality situated in the north-eastern part of the Eastern Cape, and is a linking node to all regions in the province. Chris Hani is the second-largest district in the province, making up almost a third of its geographical area. The district comprises six local municipalities: Inxuba Yethemba, Enoch Mgijima, Intsika Yethu, Engcobo, Sakhisizwe and Emalahleni.

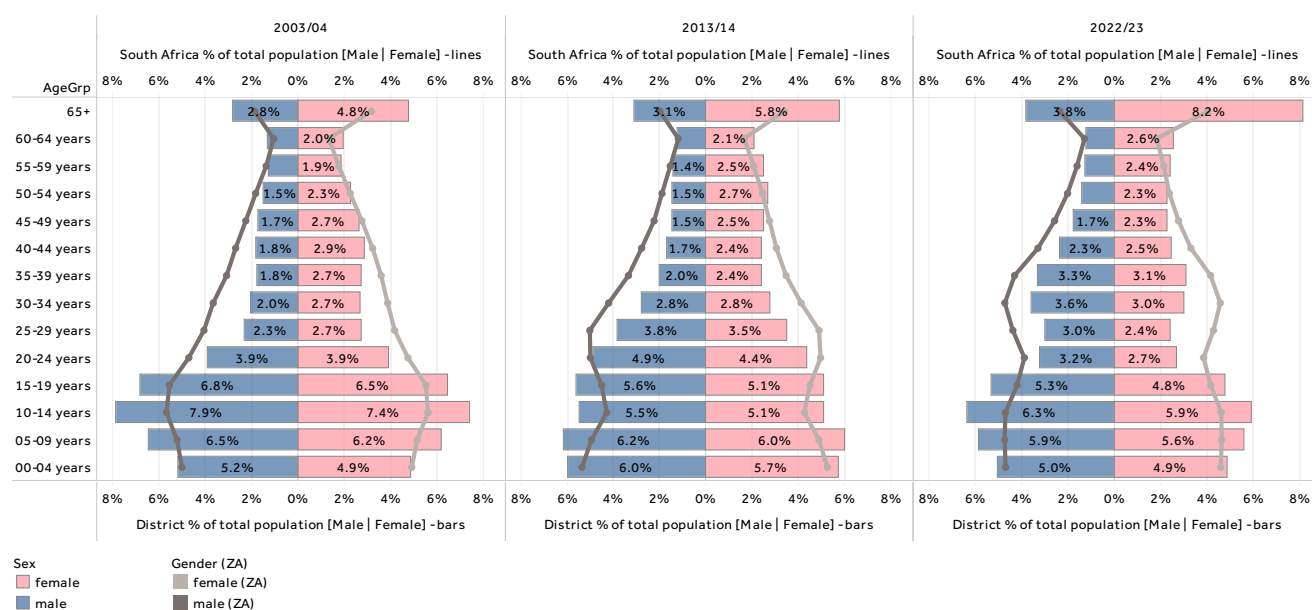
Cities/Towns: Cacadu (Lady Frere), Cala, Cofimvaba, Cradock, Dordrecht, Engcobo, Hofmeyr, Indwe, Khowa (Elliot), Komani (Queenstown), Middelburg, Molteno, Mount Zebra National Park, Sada, Sterkstroom, Tarkastad, Tsomo, Whittlesea

Area: 36 407km²

Population (2022)⁸: 712 003

District percentage population by age-gender group compared to South Africa

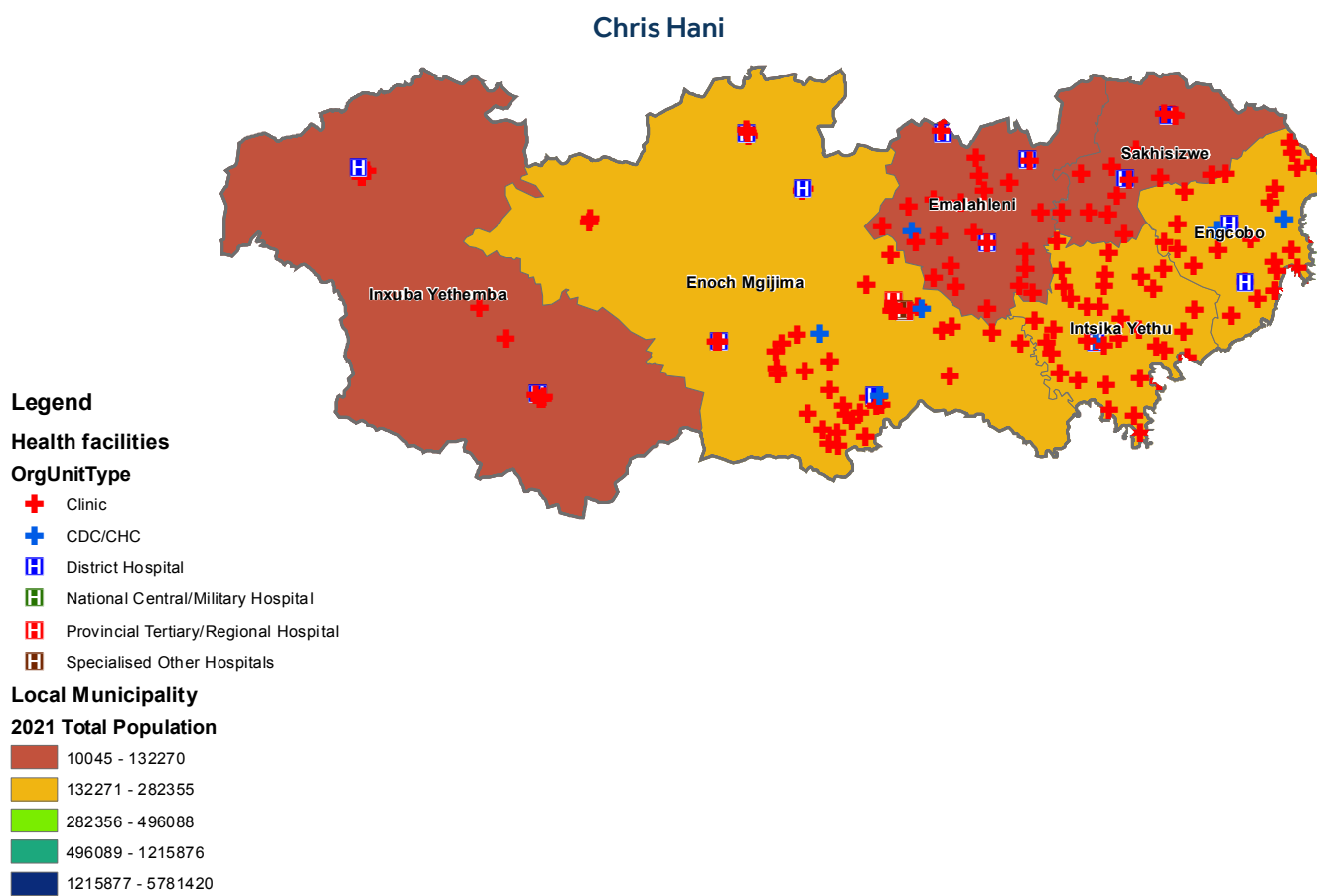
C Hani DM (DC13)



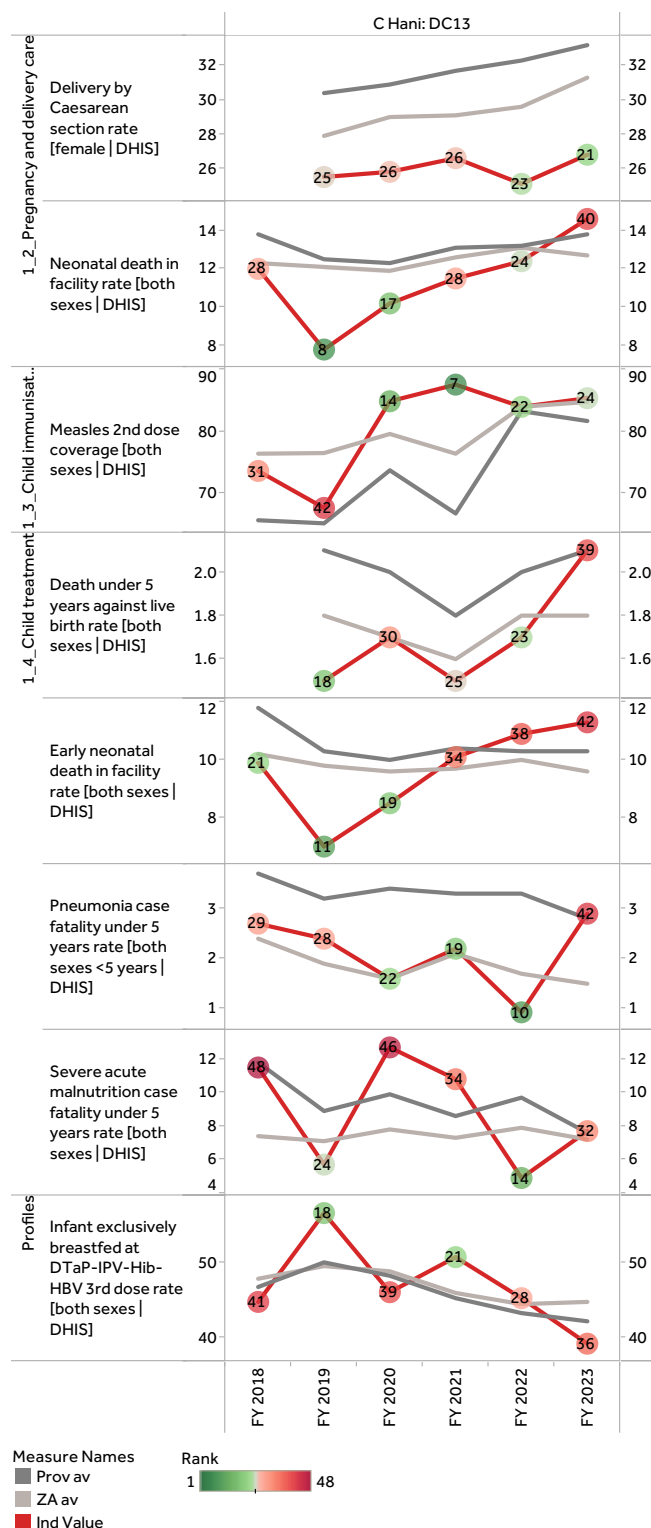
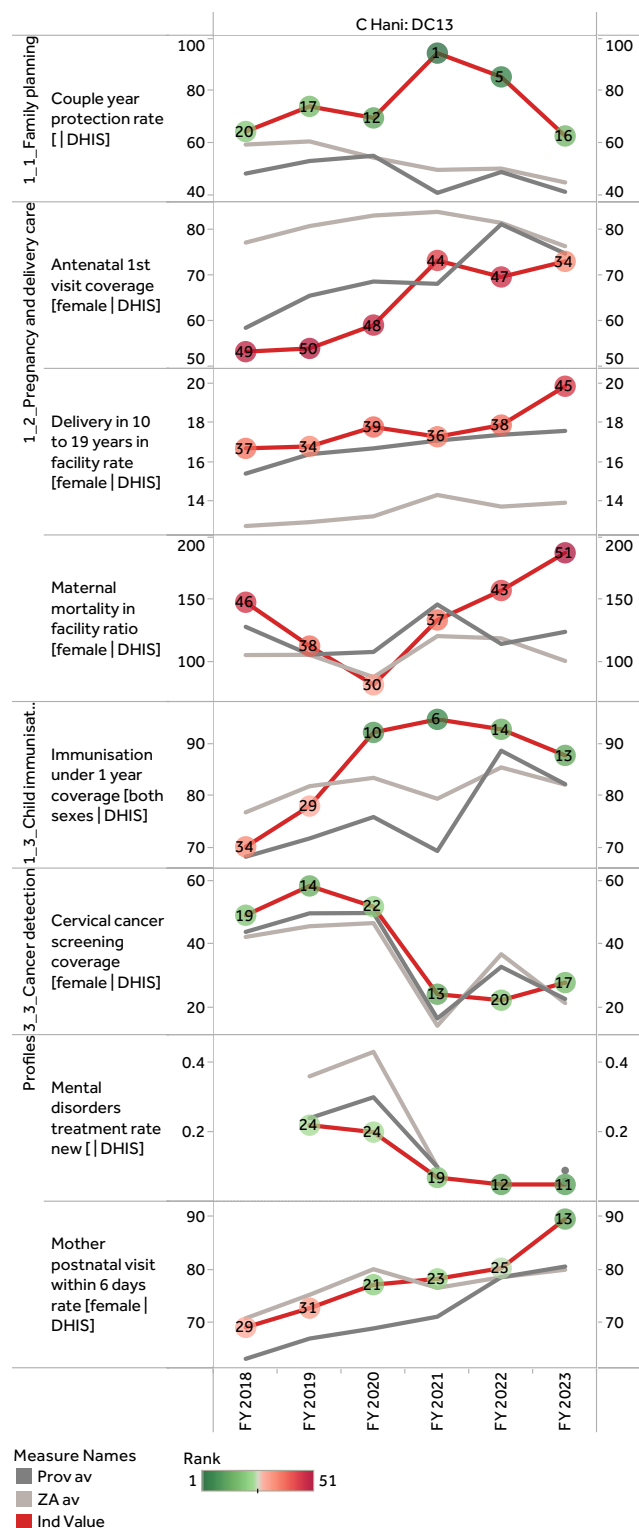
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

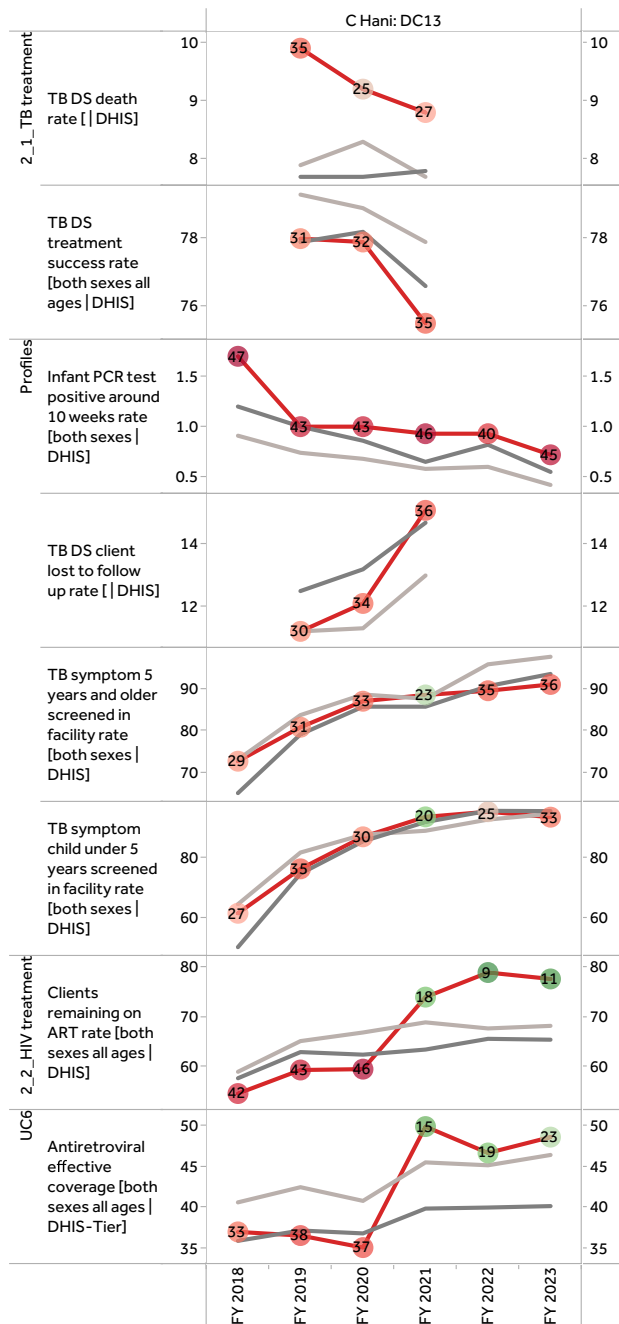
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

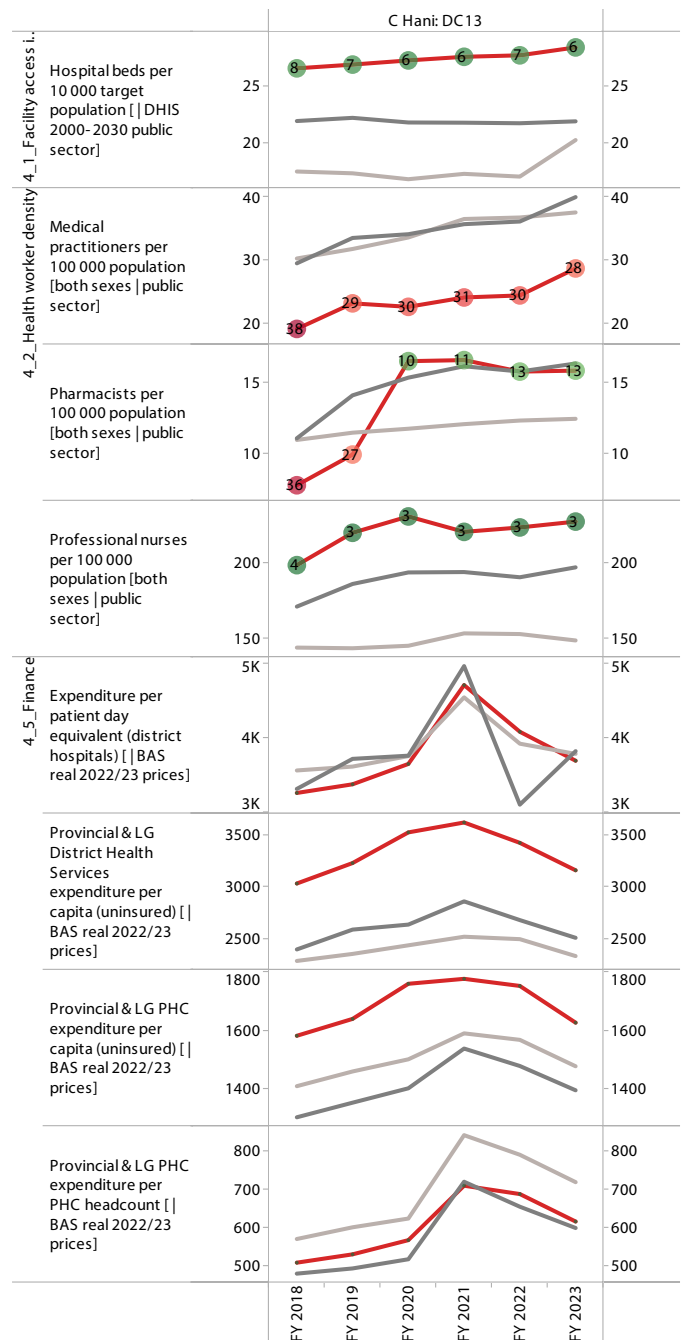


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
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Rank
 1 47



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 38

Joe Gqabi District Municipality (DC 14)

The Joe Gqabi District Municipality⁹ is a Category C municipality located within the Eastern Cape. It consists of three local municipalities: Elundini, Walter Sisulu and Senqu.

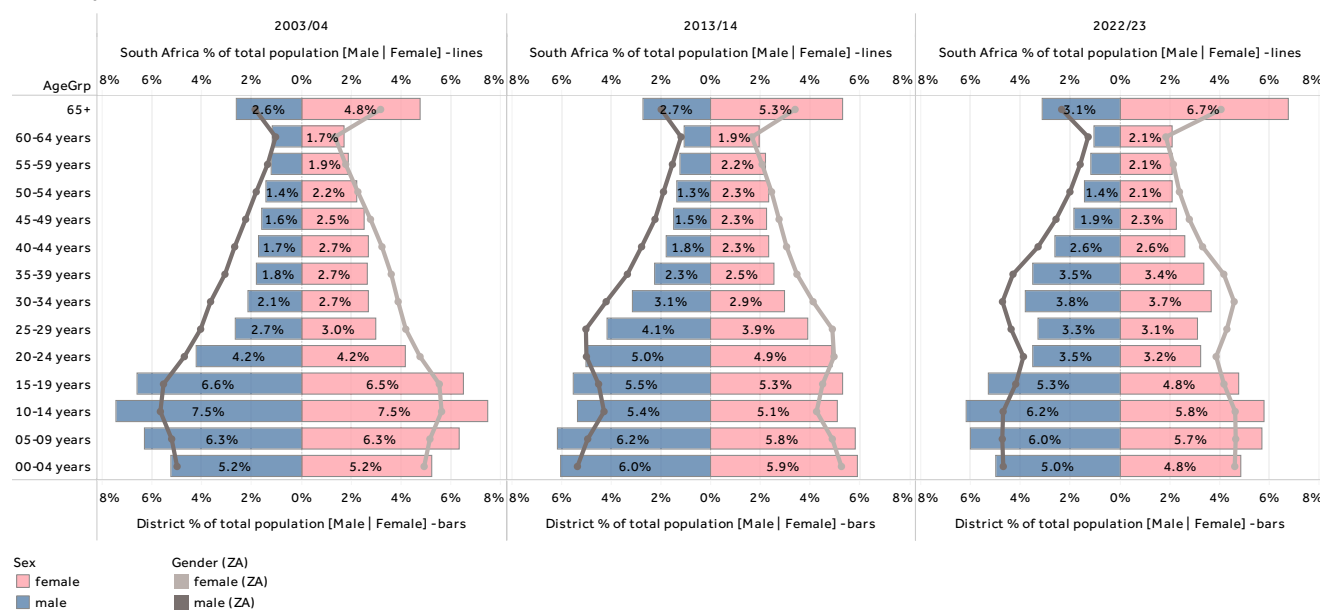
Cities/Towns: Aliwal North, Barkly East, Burgersdorp, Jamestown, Lady Grey, Maclear, Mount Fletcher, Oviston, Rhodes, Rossouw, Sterkspruit, Steynsburg, Ugie, Venterstad.

Area: 25 617km²

Population (2022)¹⁰: 338 446

District percentage population by age-gender group compared to South Africa

Joe Gqabi DM (DC14)

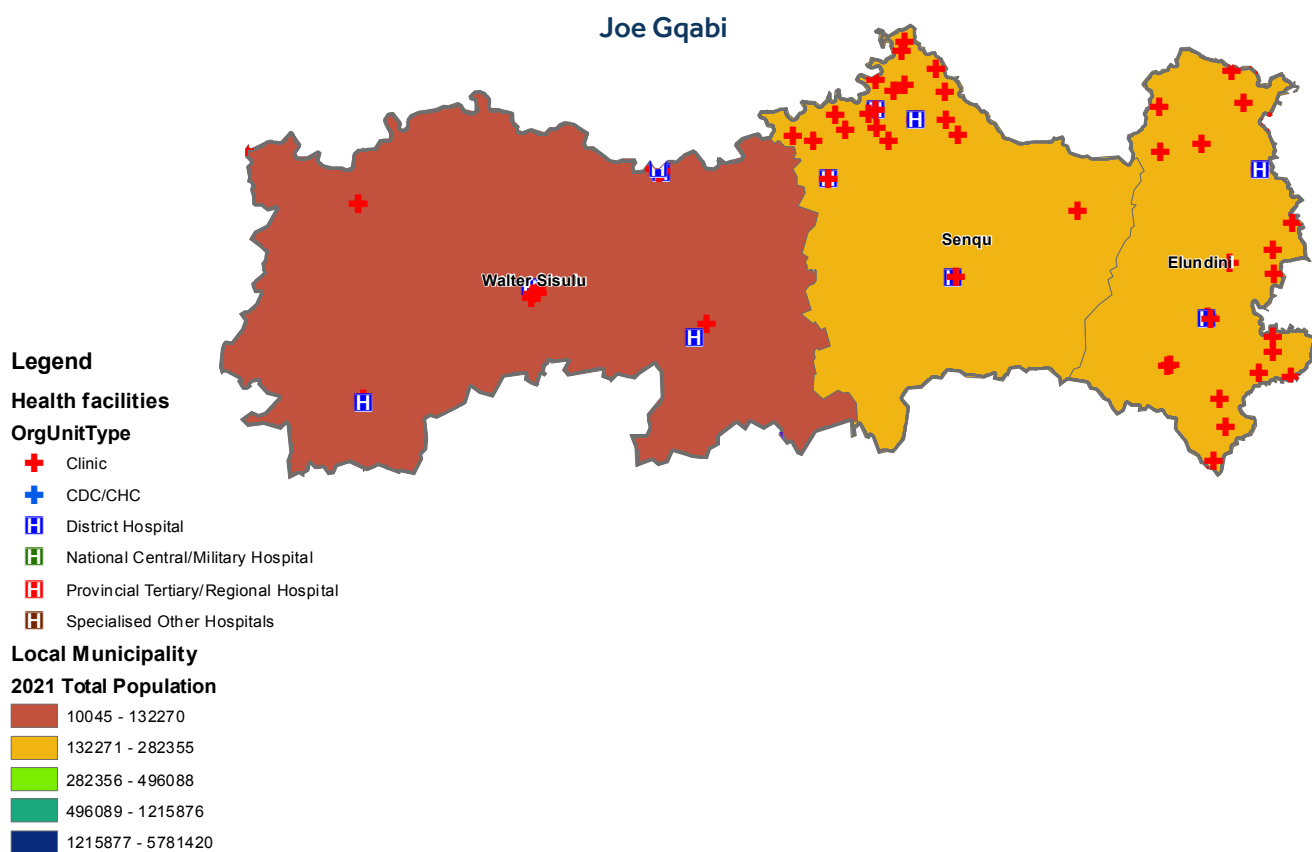


⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

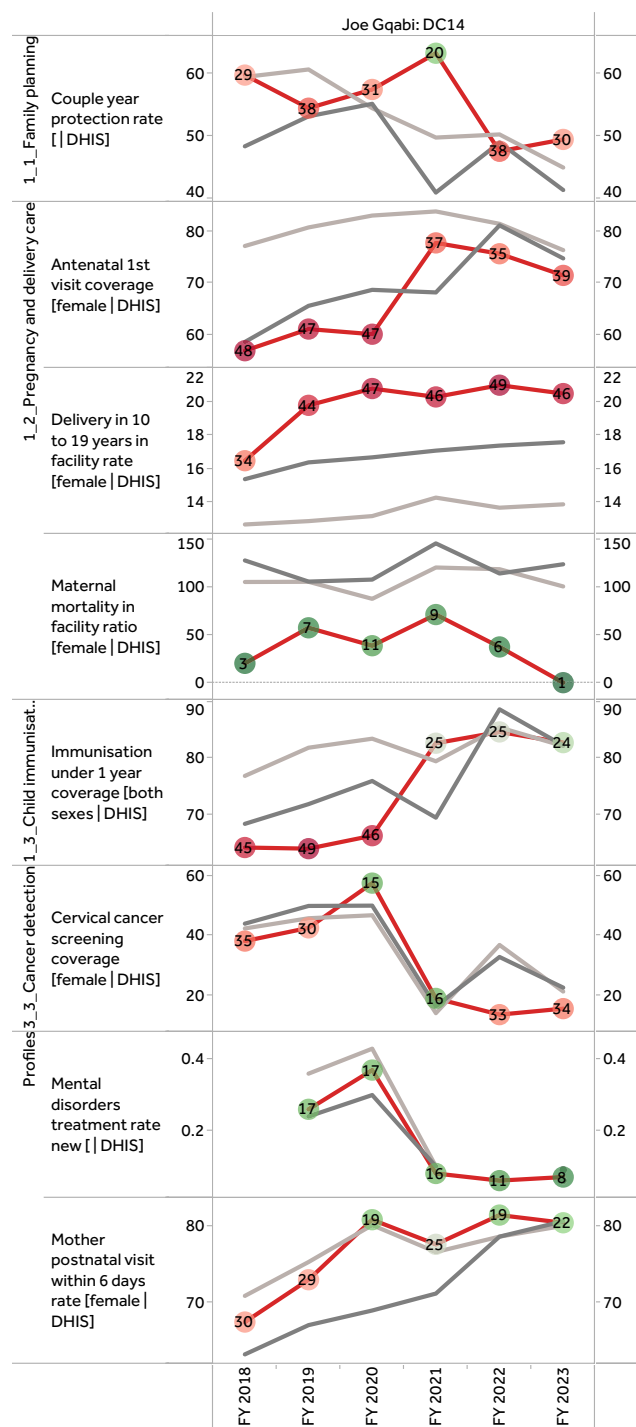
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Measure Names

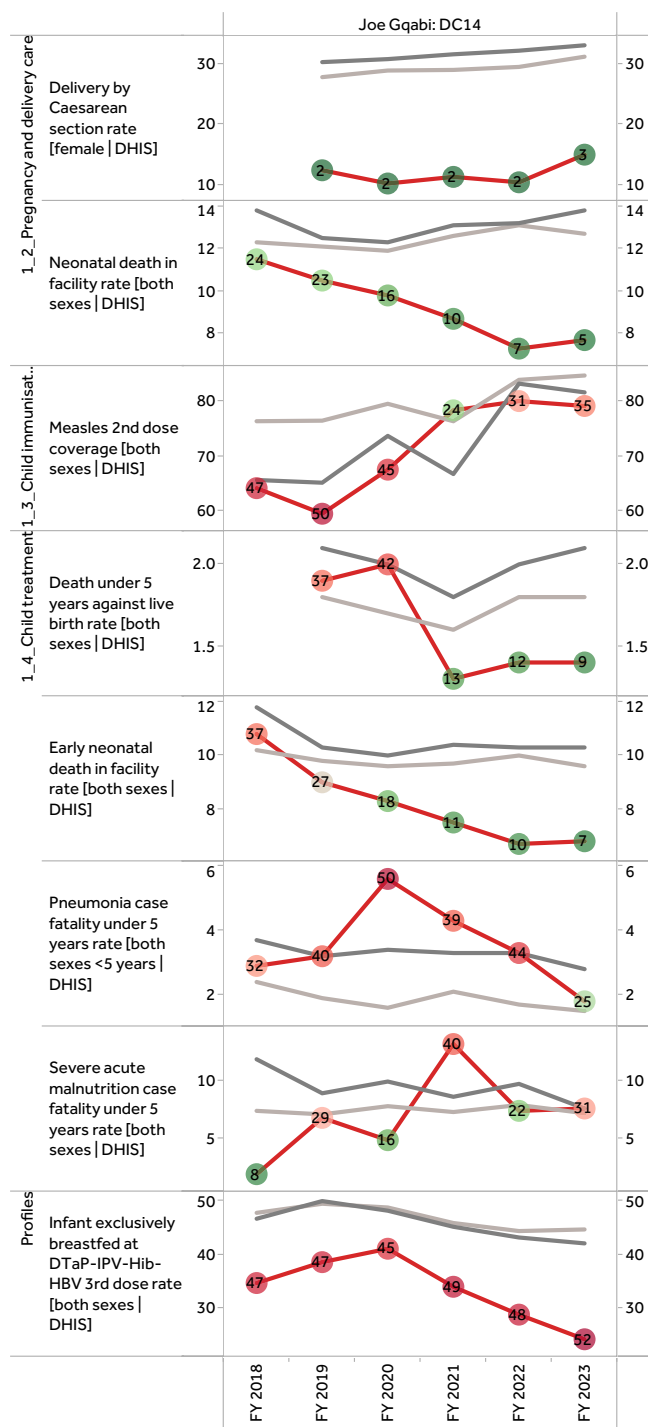
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Measure Names

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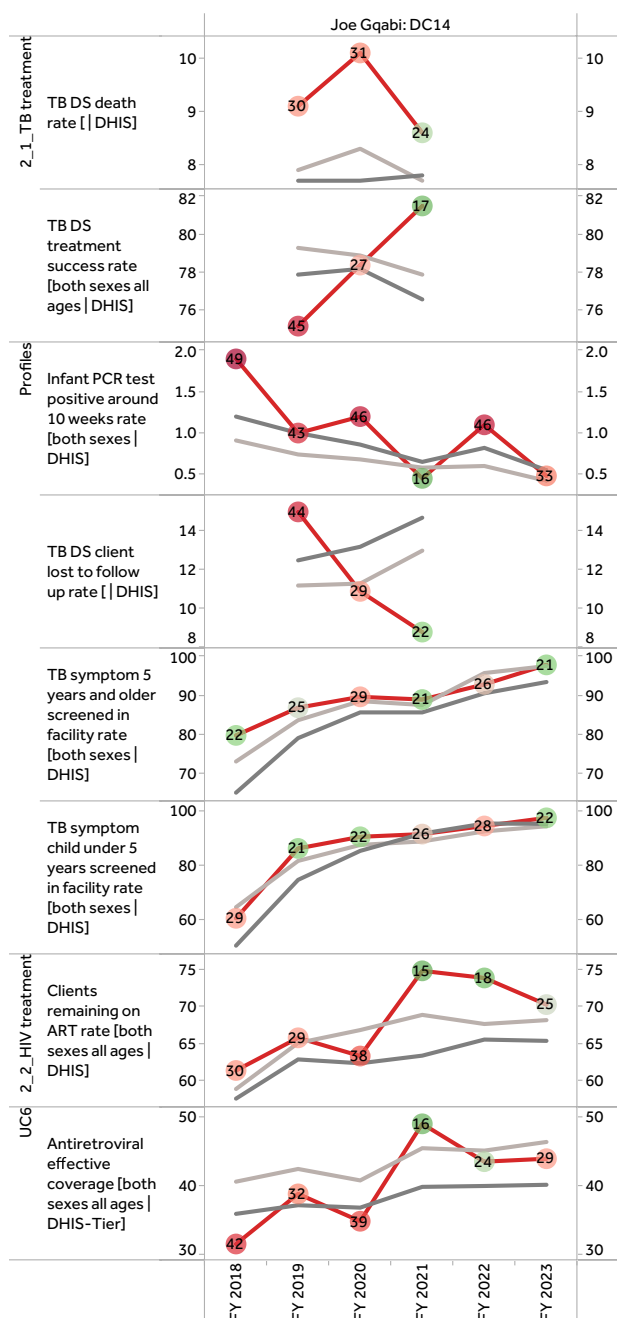
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Prov av

ZA av

Ind Value

Annual trends, 2018/19–2022/23

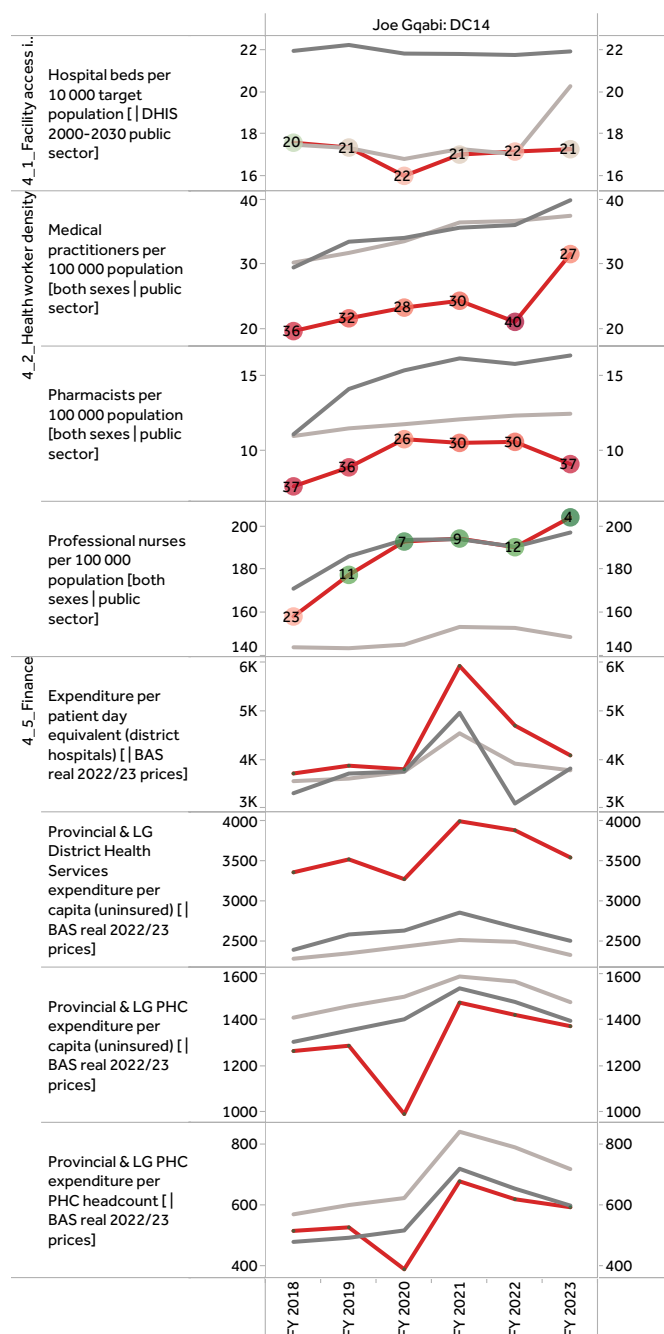


Measure Names

- Prov av
- ZA av
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Rank

1 49



Measure Names

- Prov av
- ZA av
- Ind Value

Rank

1 40

OR Tambo District Municipality (DC15)

The OR Tambo District Municipality¹¹ is a Category C municipality located to the east of the Eastern Cape Province. It covers about 80% of what used to be marginalised homeland in the Transkei. The district is formed by five local municipalities: King Sabata Dalindyebo, Nyandeni, Mhlontlo, Port St Johns and Ingquza Hill.

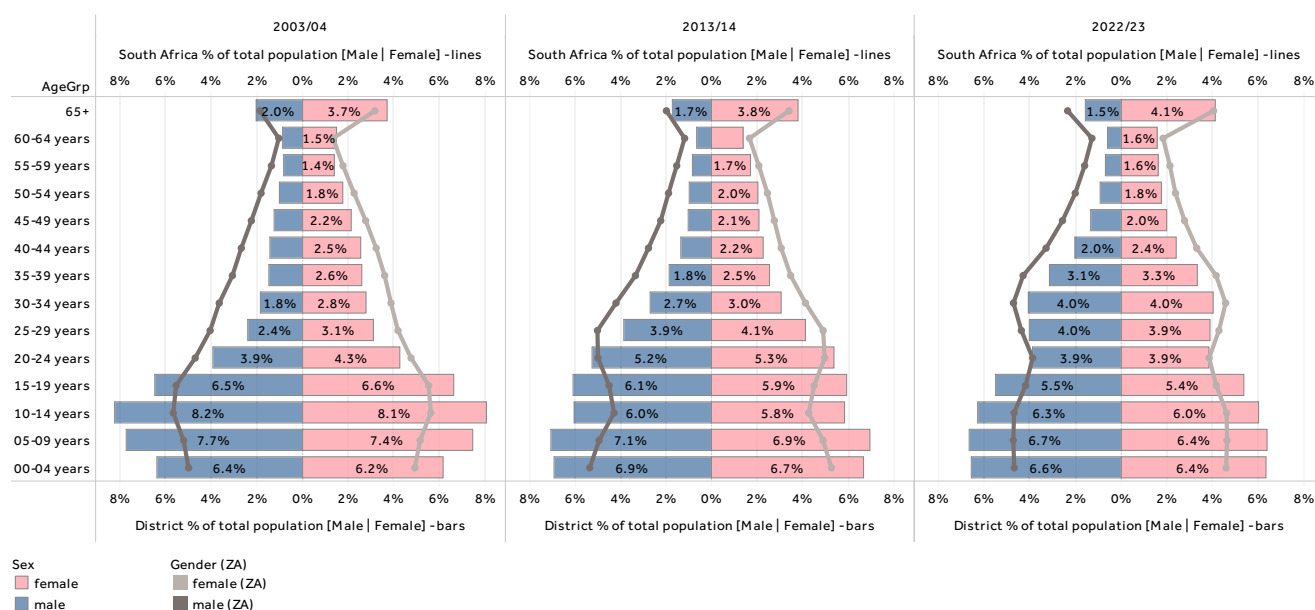
Cities/Towns: Flagstaff, Libode, Lusikisiki, Mqanduli, Mthatha (previously Umtata), Ngqeleni, Port St Johns, Qumbu, Tsolo

Area: 12 141km²

Population (2022)¹²: 1 555 812

District percentage population by age-gender group compared to South Africa

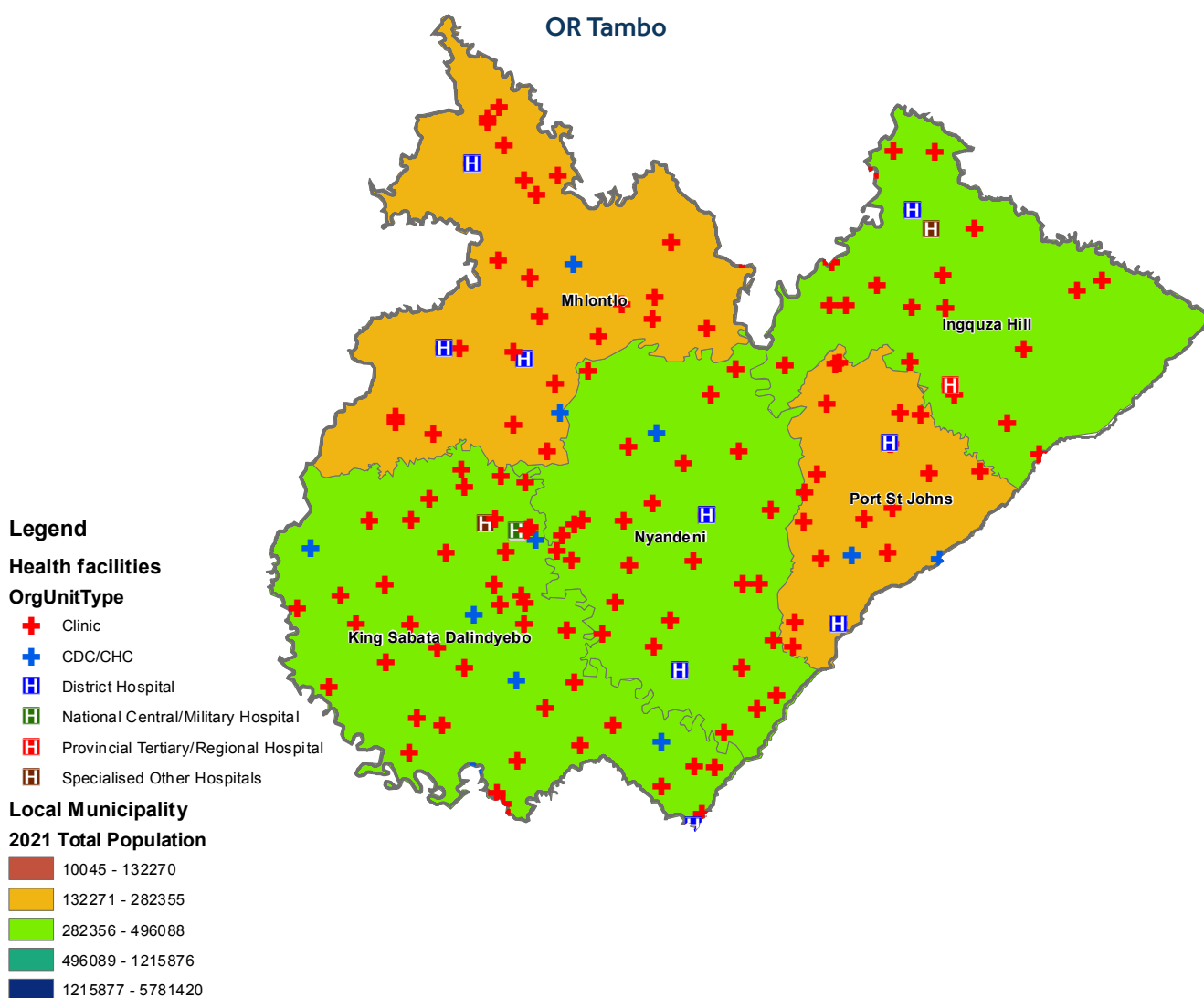
OR Tambo DM (DC15)



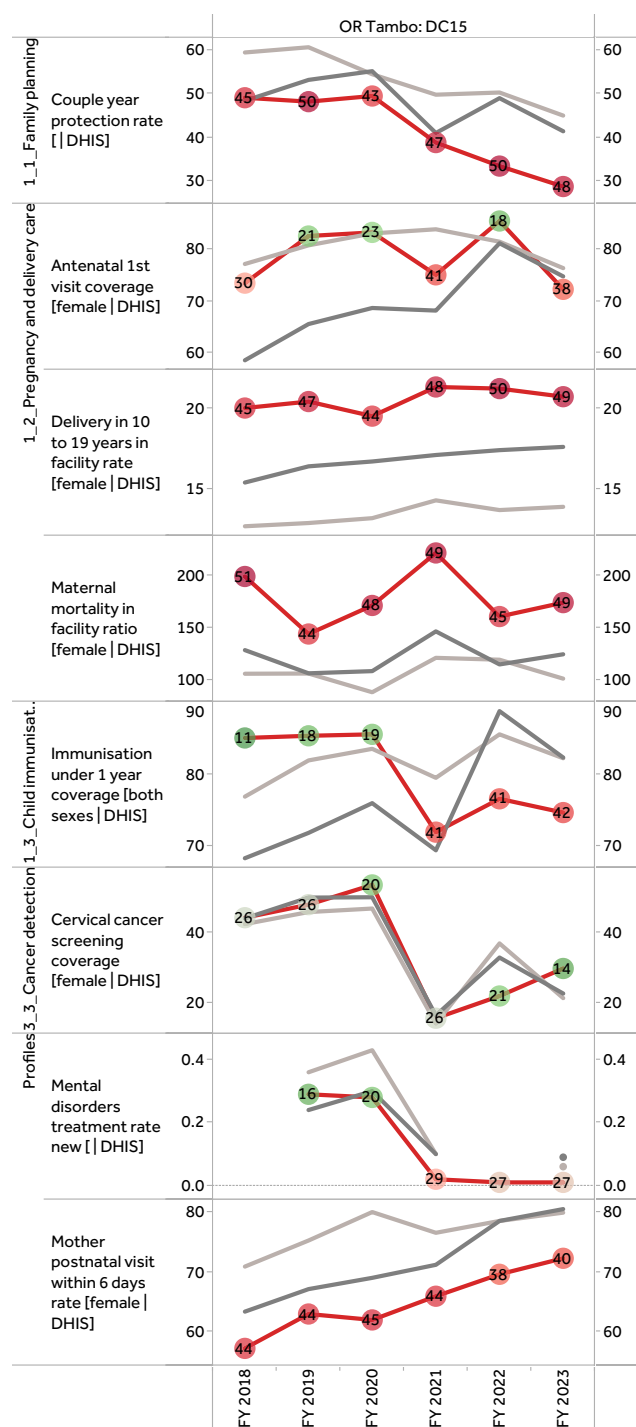
¹¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹²Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

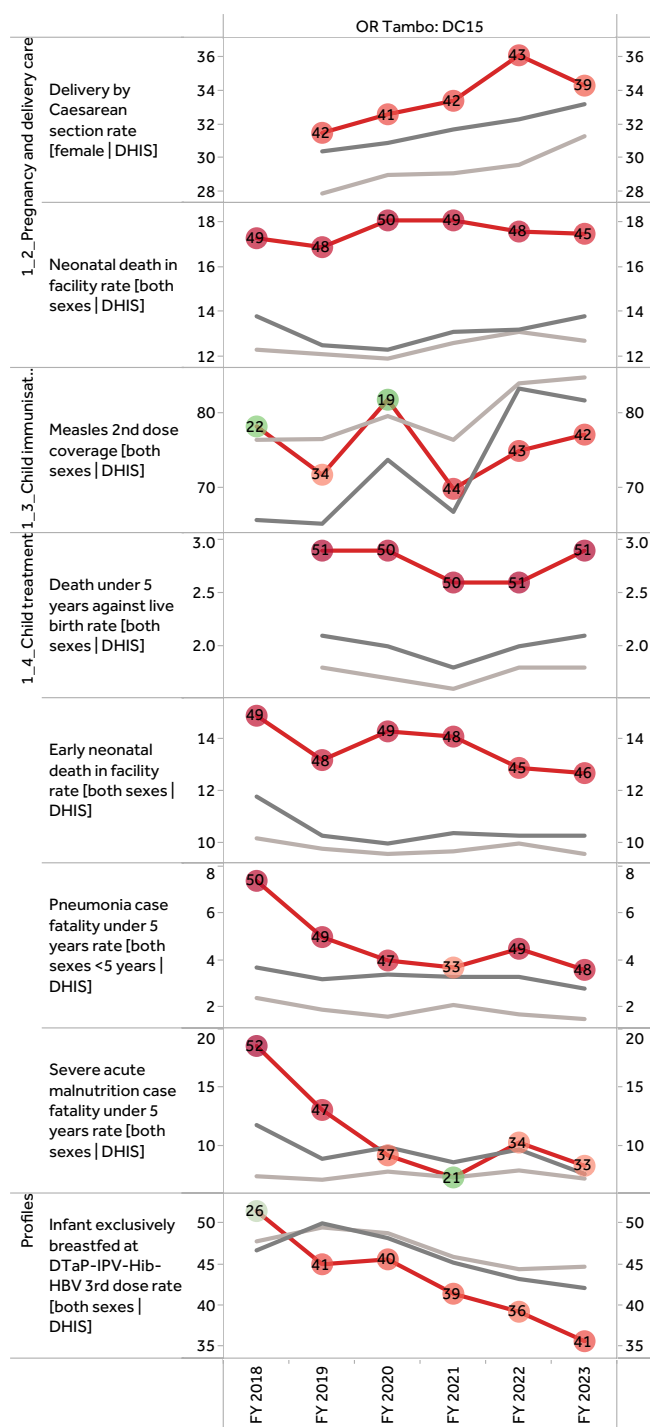


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

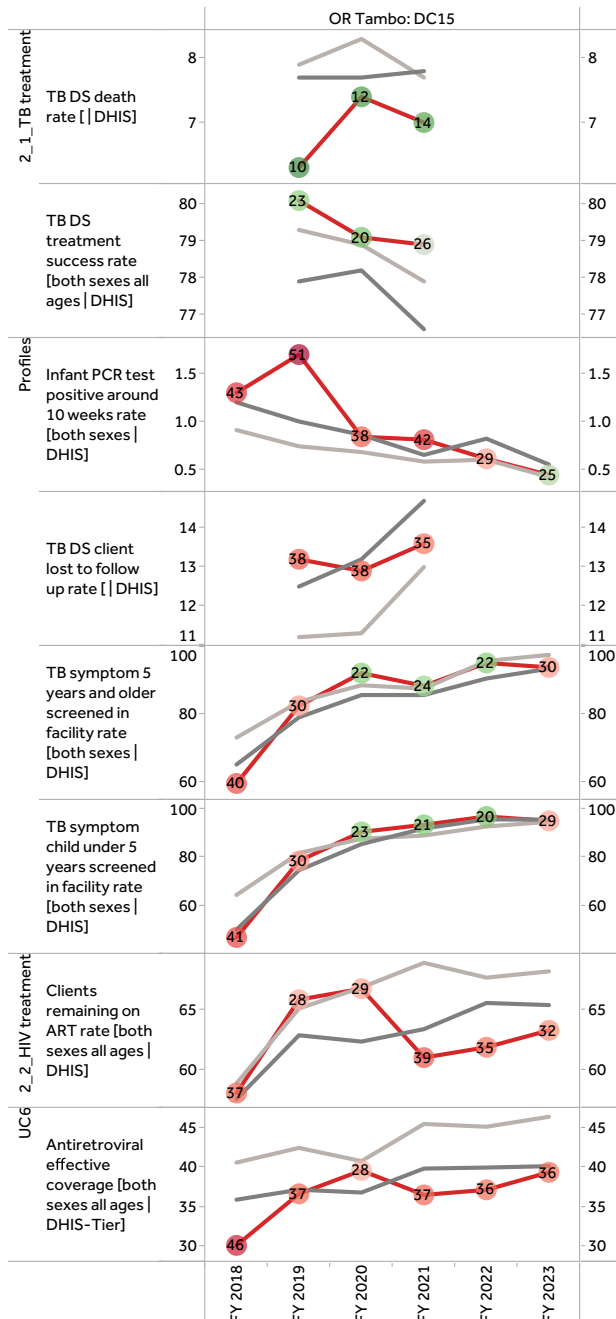
Rank
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Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52

Annual trends, 2018/19–2022/23



Measure Names

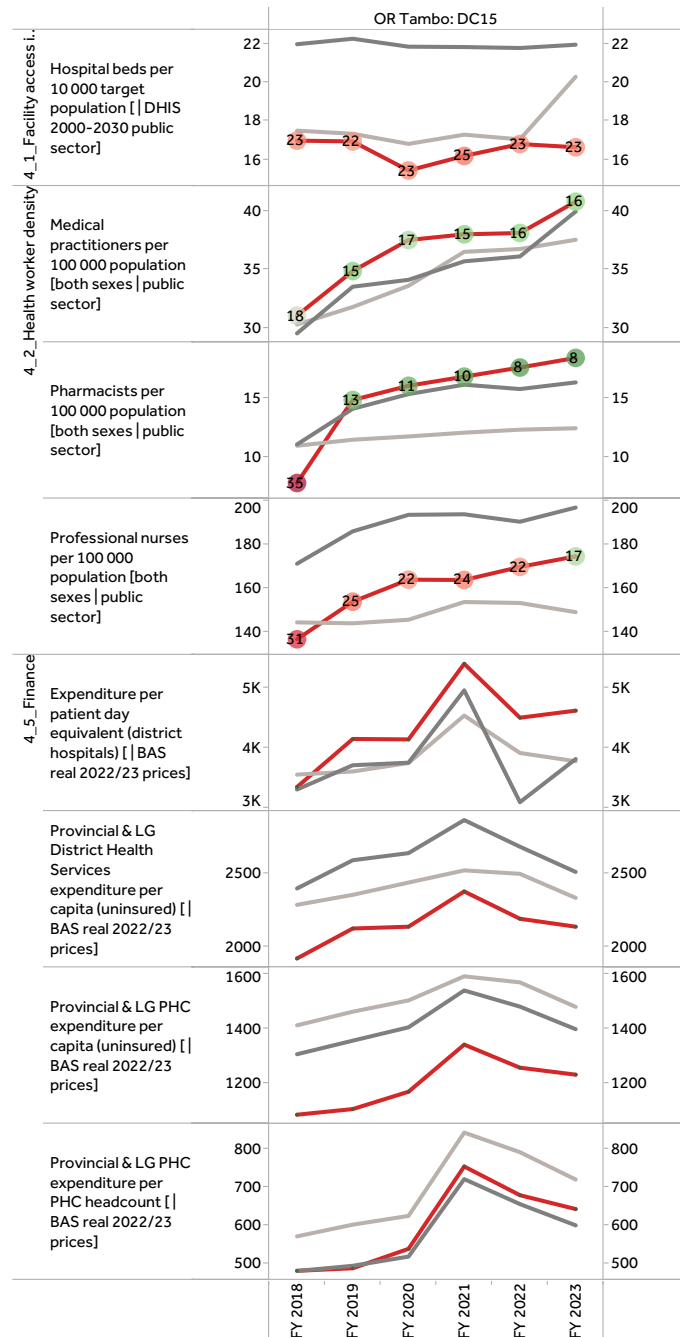
Rank

1 51

Prov av

ZA av

Ind Value



Measure Names

Rank

1 35

Prov av

ZA av

Ind Value

Alfred Nzo District Municipality (DC44)

The Alfred Nzo District Municipality¹³ is a Category C municipality located in the north-eastern corner of the Eastern Cape Province. Alfred Nzo is the smallest district in the province, covering only 6% of the geographical area. The district comprises the Matatiele, Ntabankulu, Mbizana and Umzimvubu Local Municipalities.

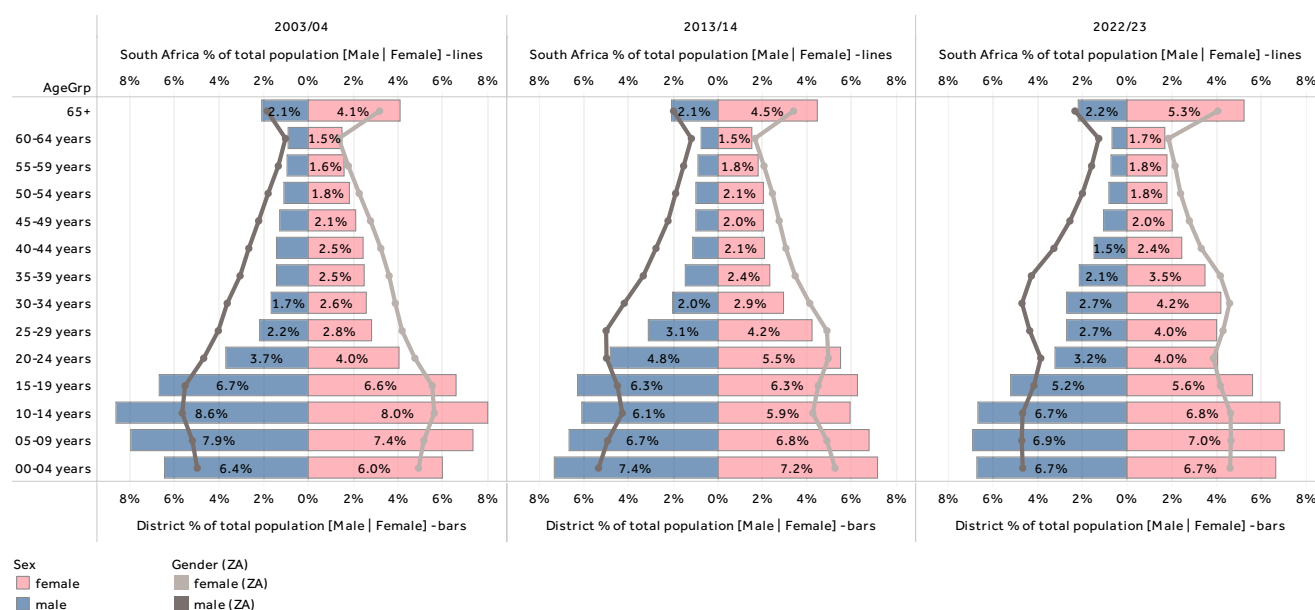
Cities/Towns: Bizana, Cedarville, KwaBhaca (Mount Frere), Matatiele, Tabankulu, eMaxesibeni (Mount Ayliff)

Area: 10 731km²

Population (2022)¹⁴: 831 112

District percentage population by age-gender group compared to South Africa

A Nzo DM (DC44)

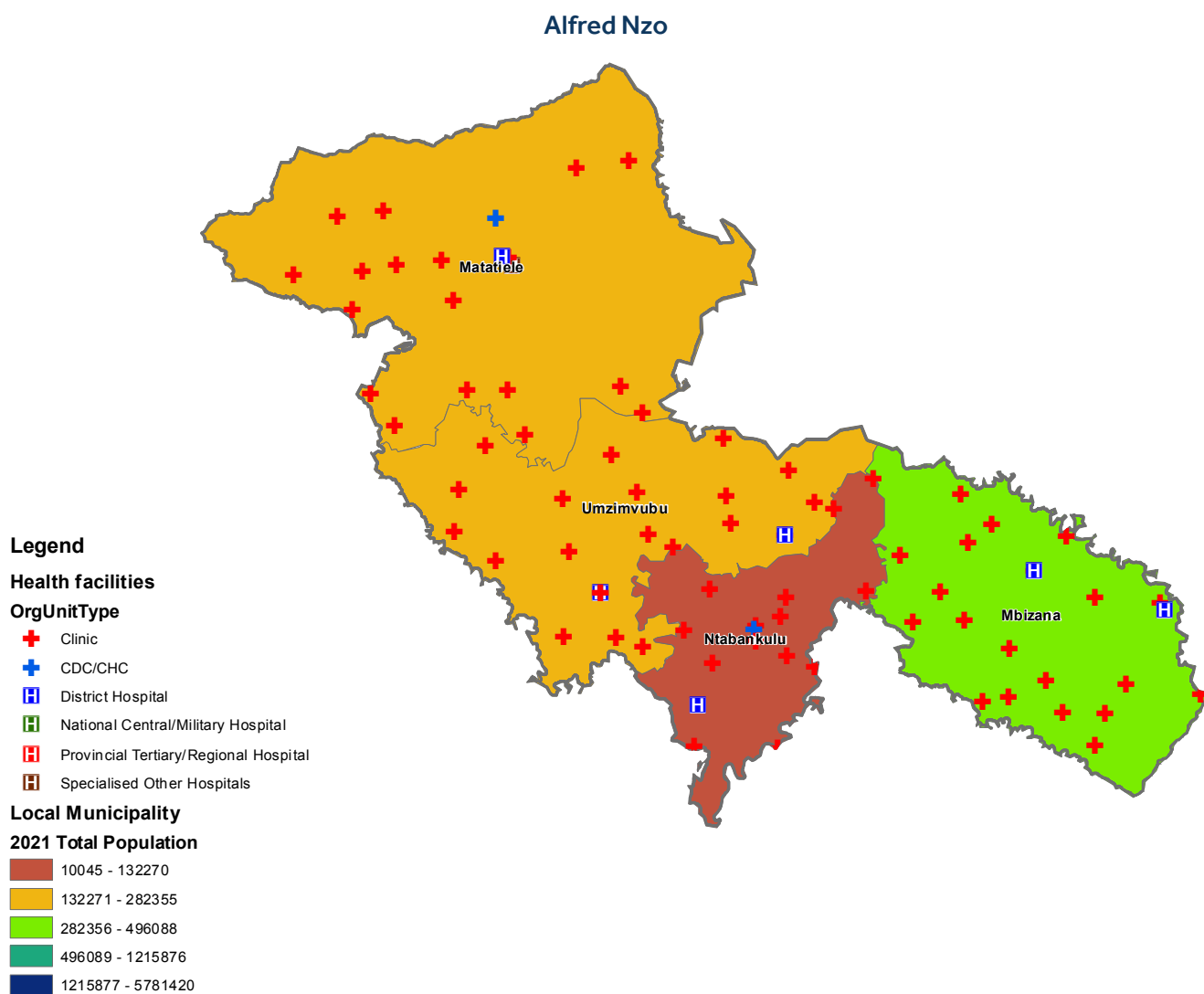


¹³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

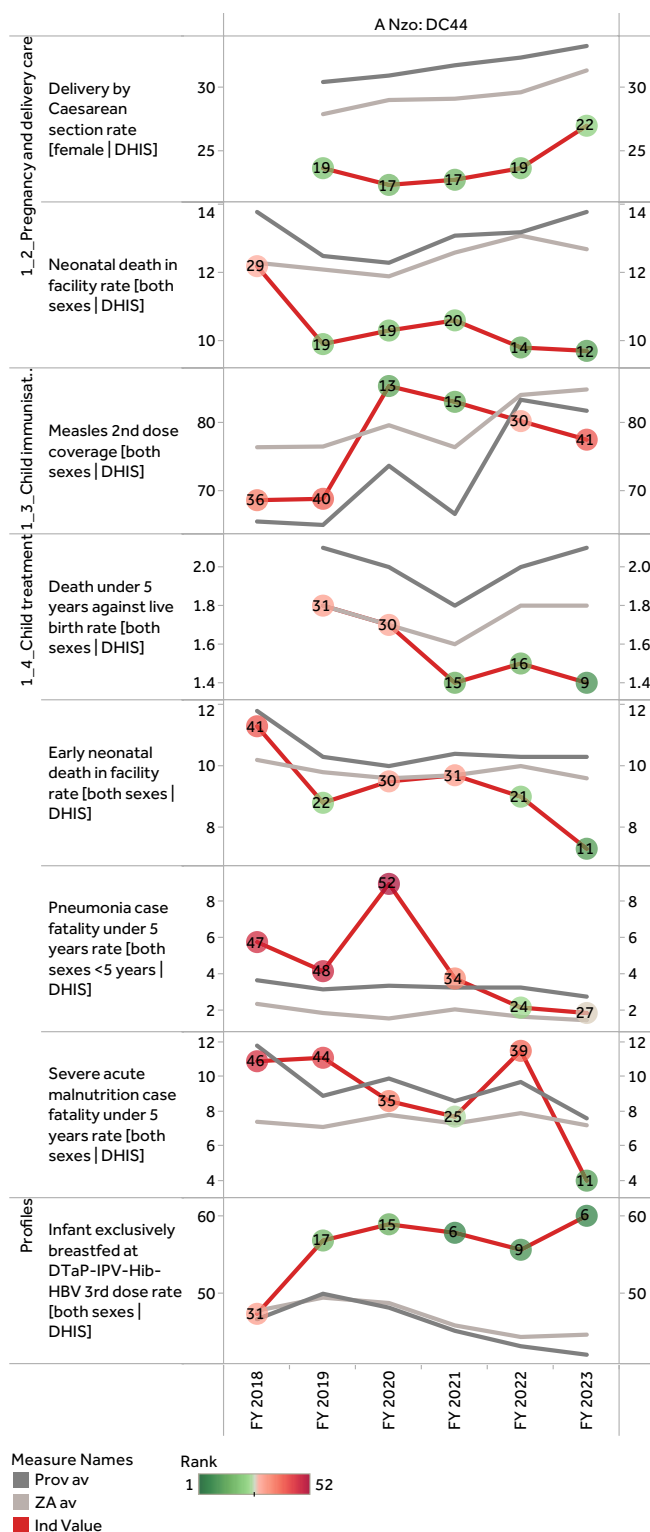
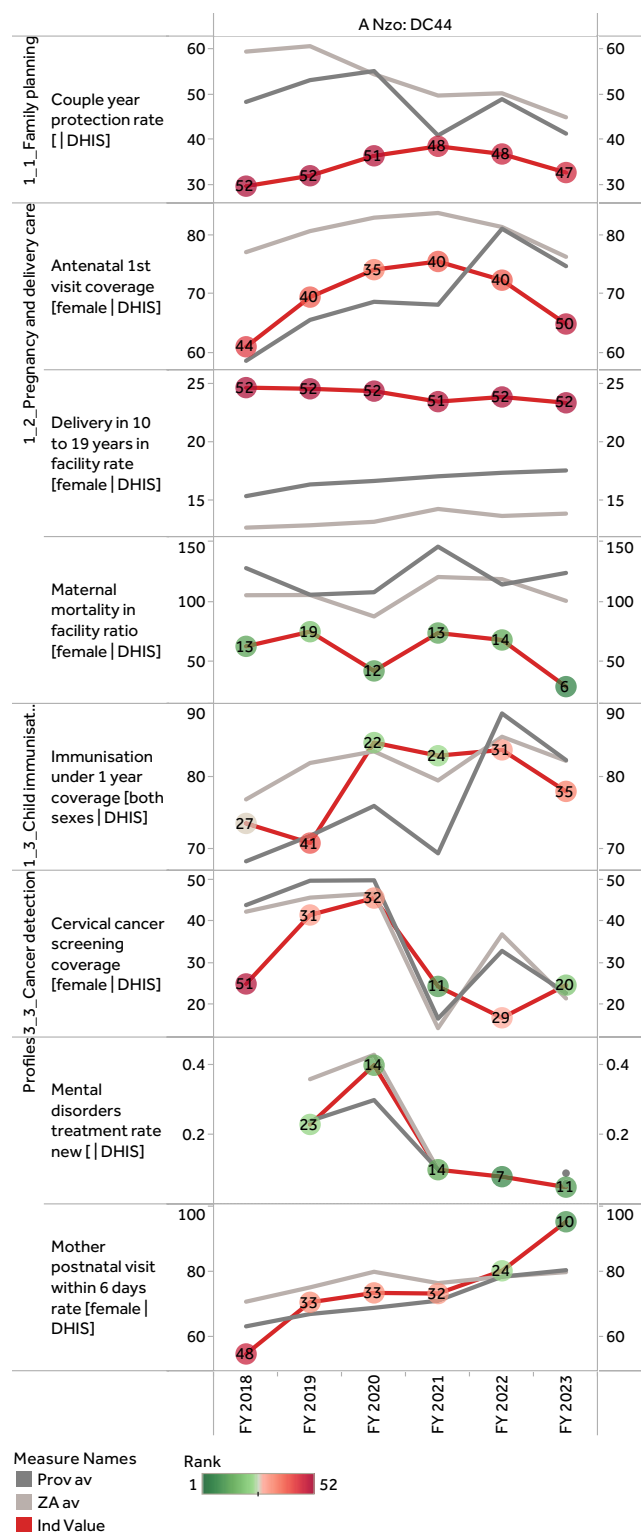
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁴Mid-year Population Estimates 2022, Stats SA.

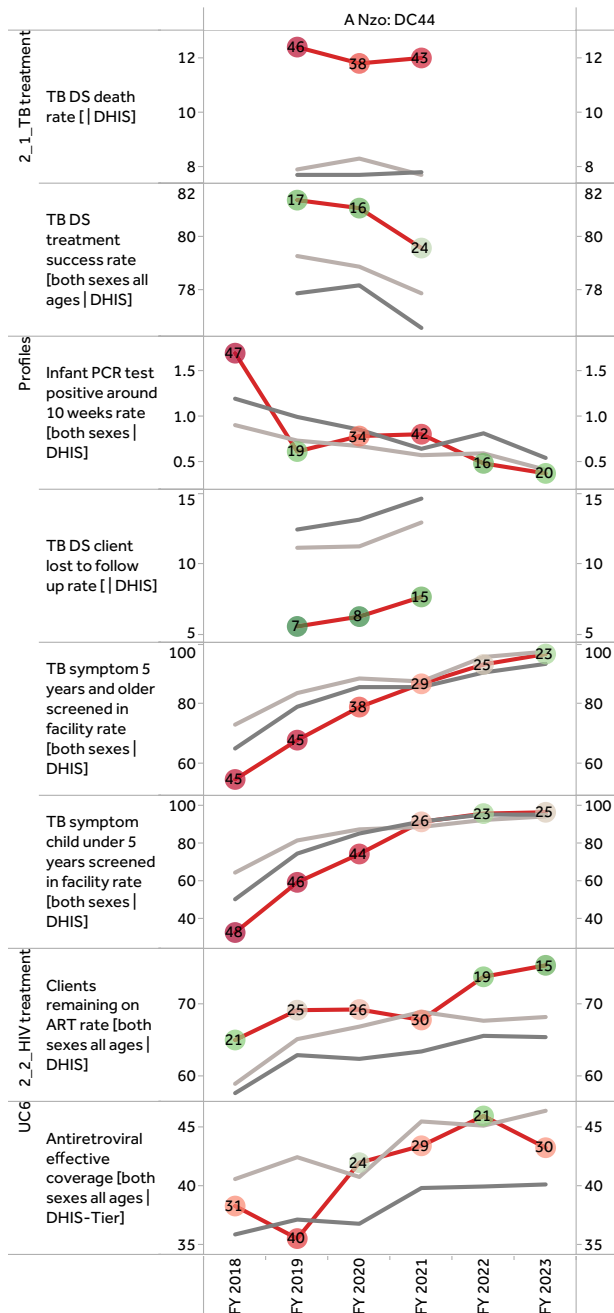
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

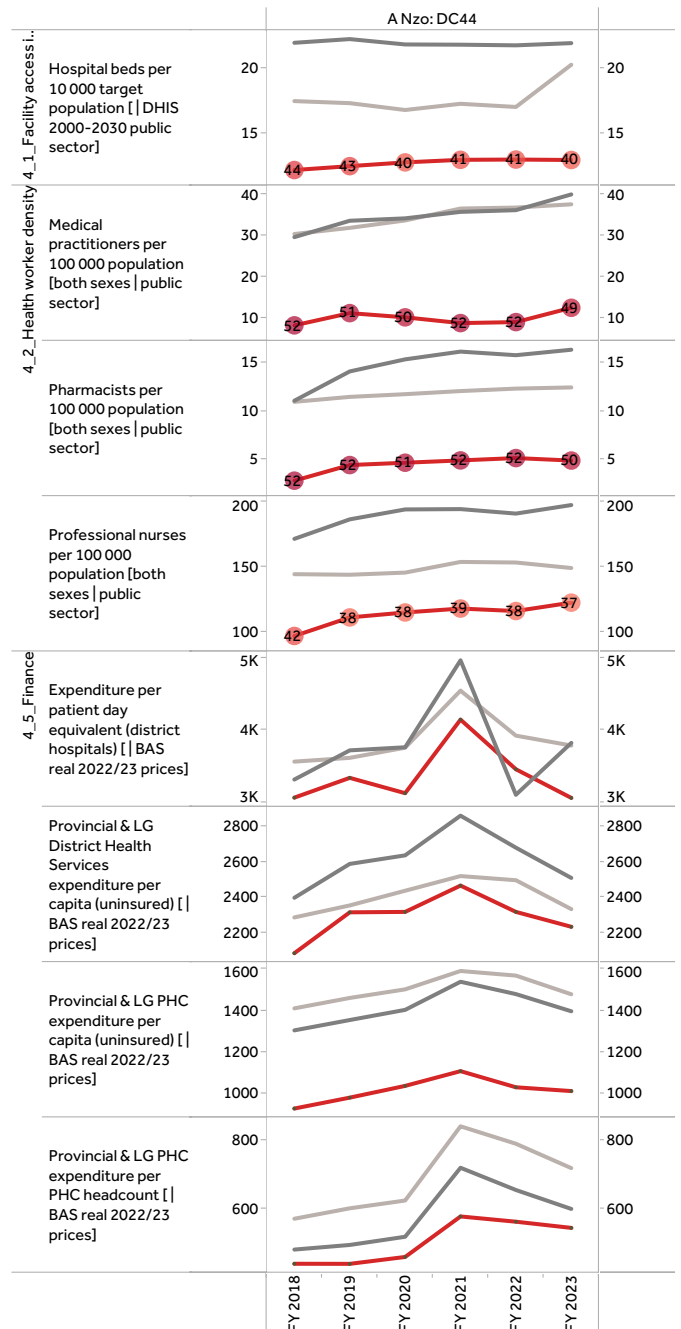
Prov av

ZA av

Ind Value

Rank

1 48



Measure Names

Prov av

ZA av

Ind Value

Rank

1 52

Nelson Mandela Bay Metropolitan (NMA)

The Nelson Mandela Bay Metropolitan Municipality¹⁵ is a Category A municipality. As a major seaport and automotive manufacturing centre located on the south-eastern coast of Africa, it is the economic powerhouse of the Eastern Cape. The Metropolitan Municipality comprises three health sub-districts, namely: Nelson Mandela A, Nelson Mandela B and Nelson Mandela C.

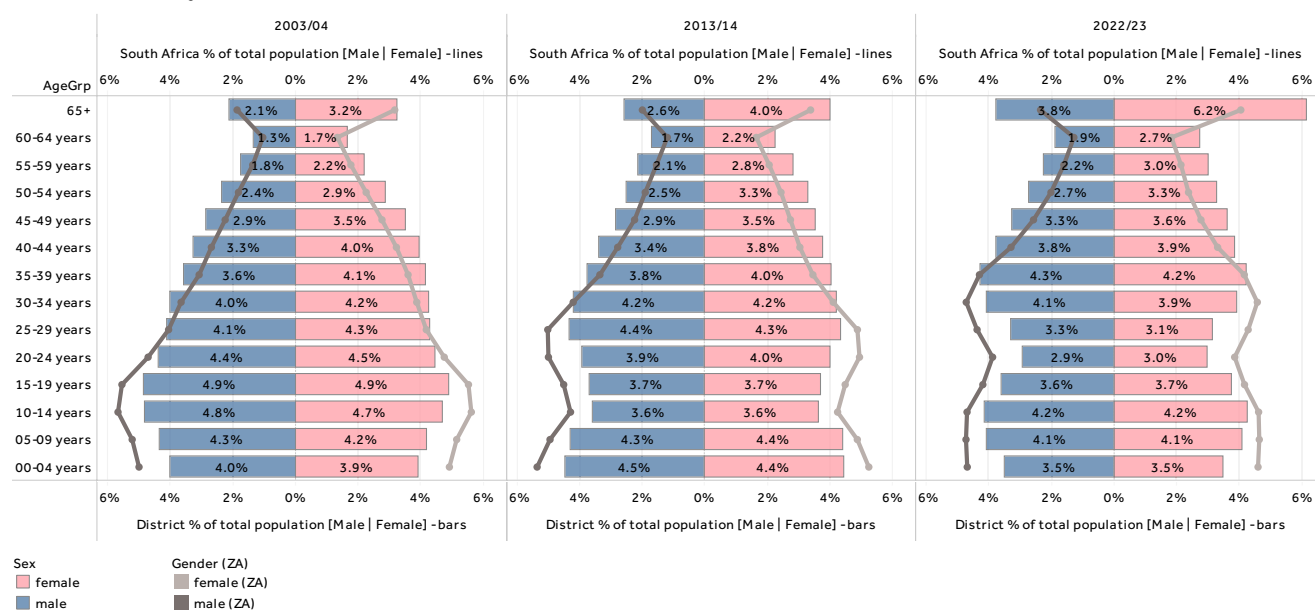
Cities/Towns: Bethelsdorp, Bloemendal, Blue Horizon Bay, Clarendon Marine, Despatch, KwaNobuhle, Motherwell, Gqeberha (Port Elizabeth), Summerstrand, Swartkops, Uitenhage

Area: 1 957km²

Population (2022)¹⁶: 1 216 180

District percentage population by age-gender group compared to South Africa

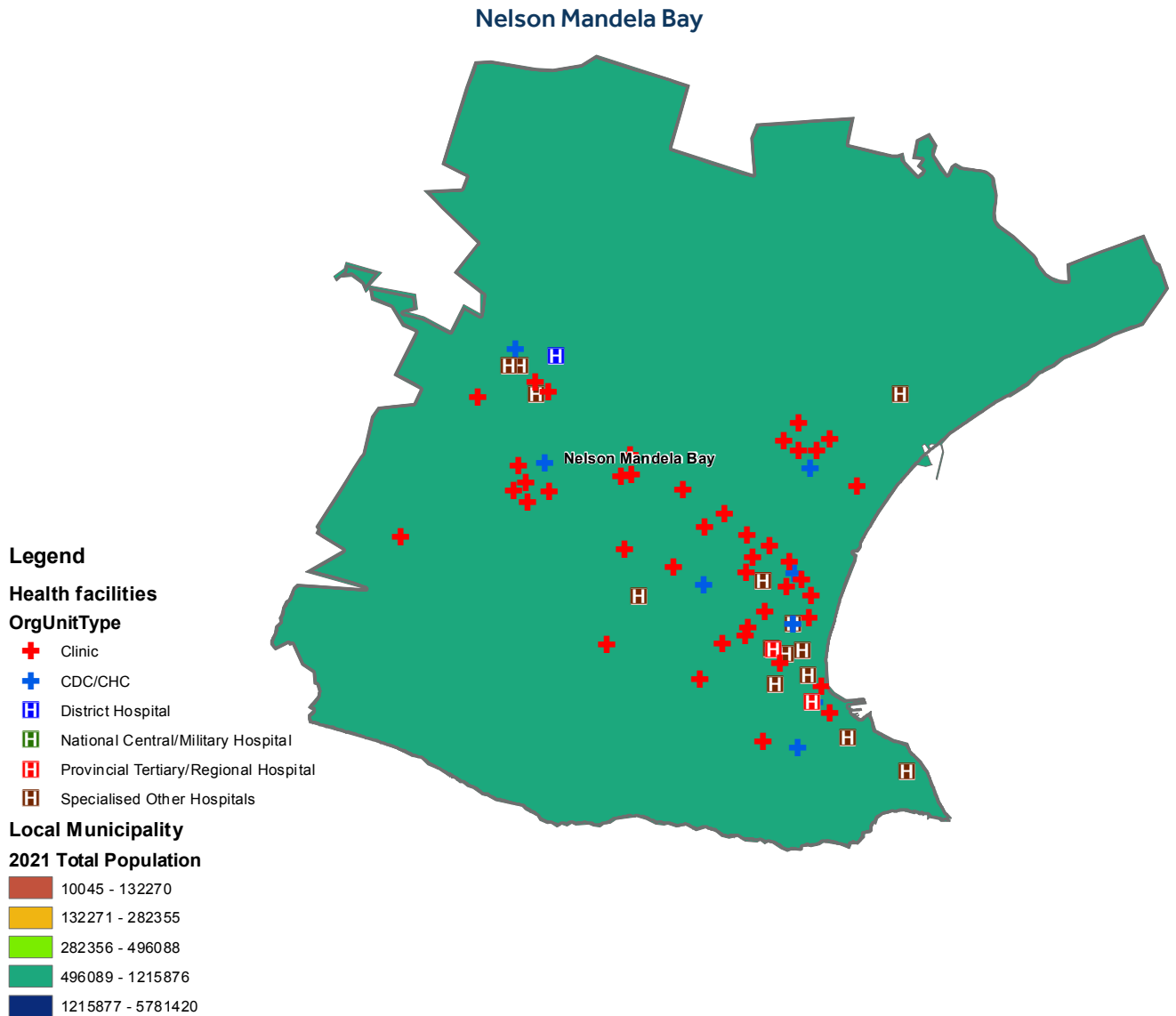
N Mandela Bay MM (NMA)



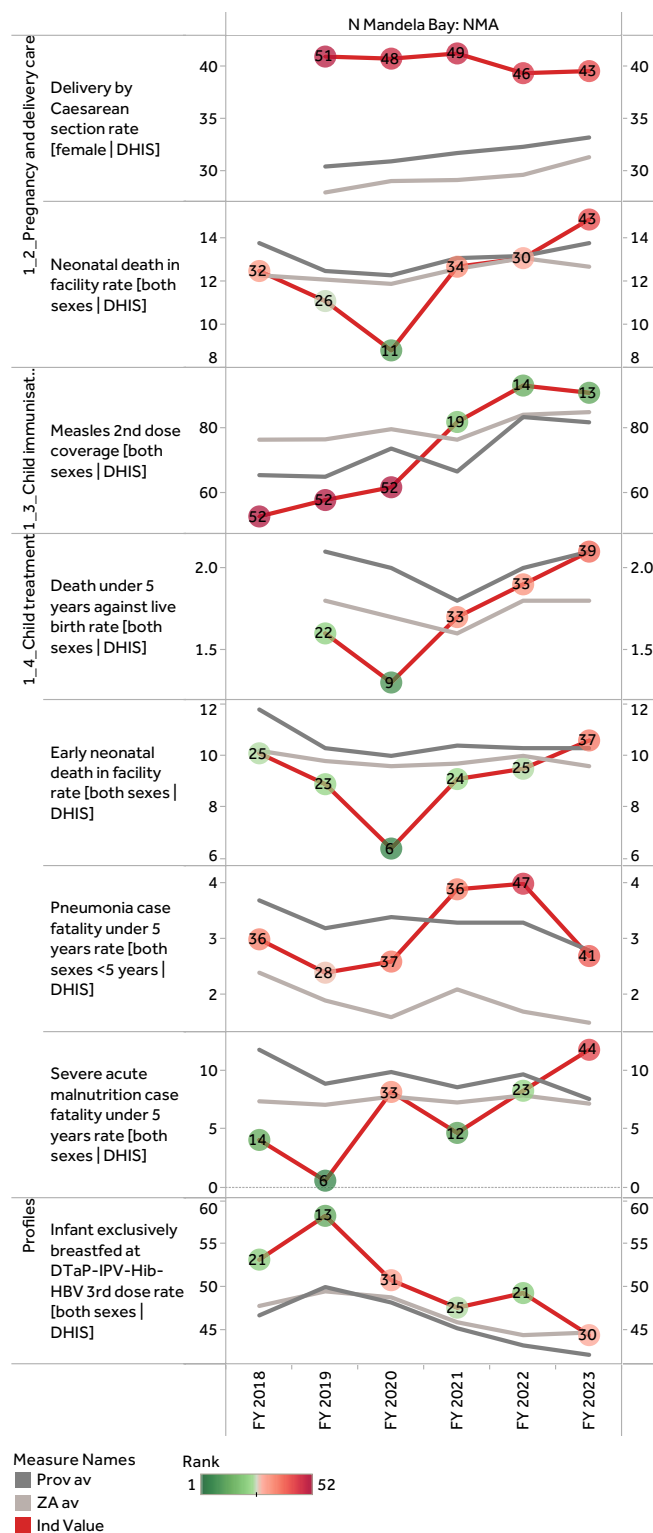
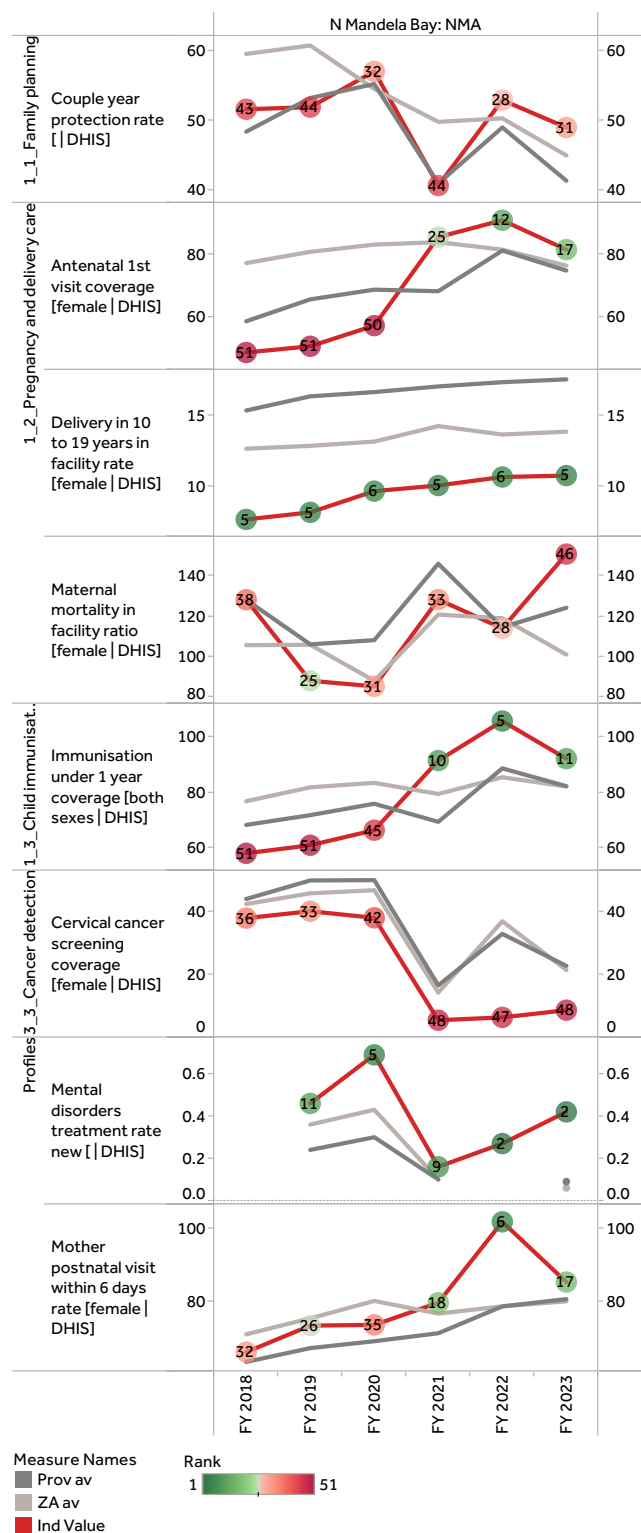
¹⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁶Mid-year Population Estimates 2022, Stats SA.

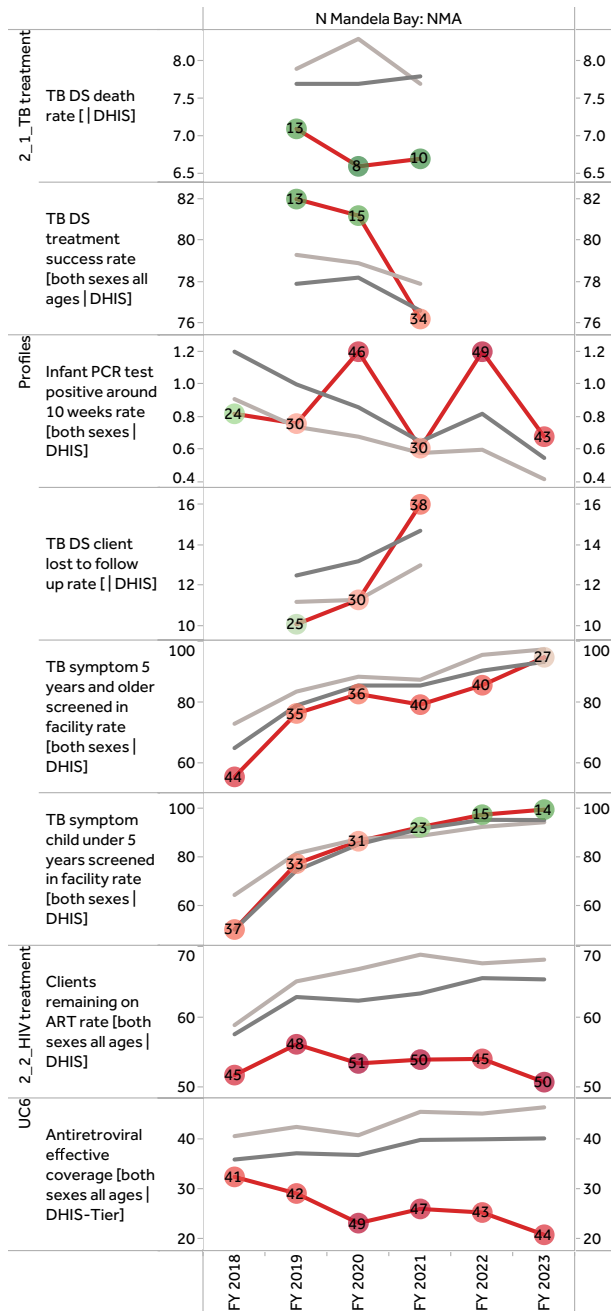
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

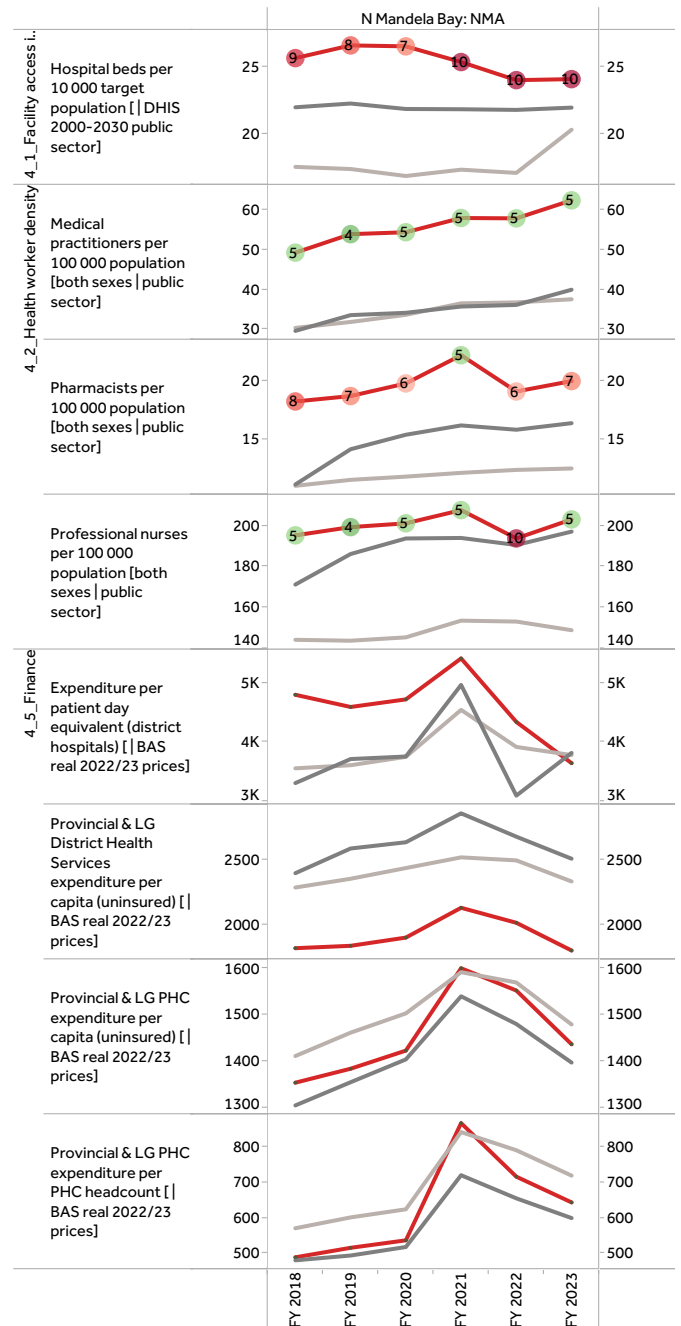
Rank

1 51

Prov av

ZA av

Ind Value



Measure Names

Rank

1 10

Prov av

ZA av

Ind Value

Free State Province

Xhariep District Municipality (DC16)

The Xhariep District Municipality¹ is a Category C municipality situated in the southern part of the Free State. It is the largest district in the province, making up just more than a third of its geographical area. It comprises three local municipalities: Letsemeng, Kopanong and Mohokare.

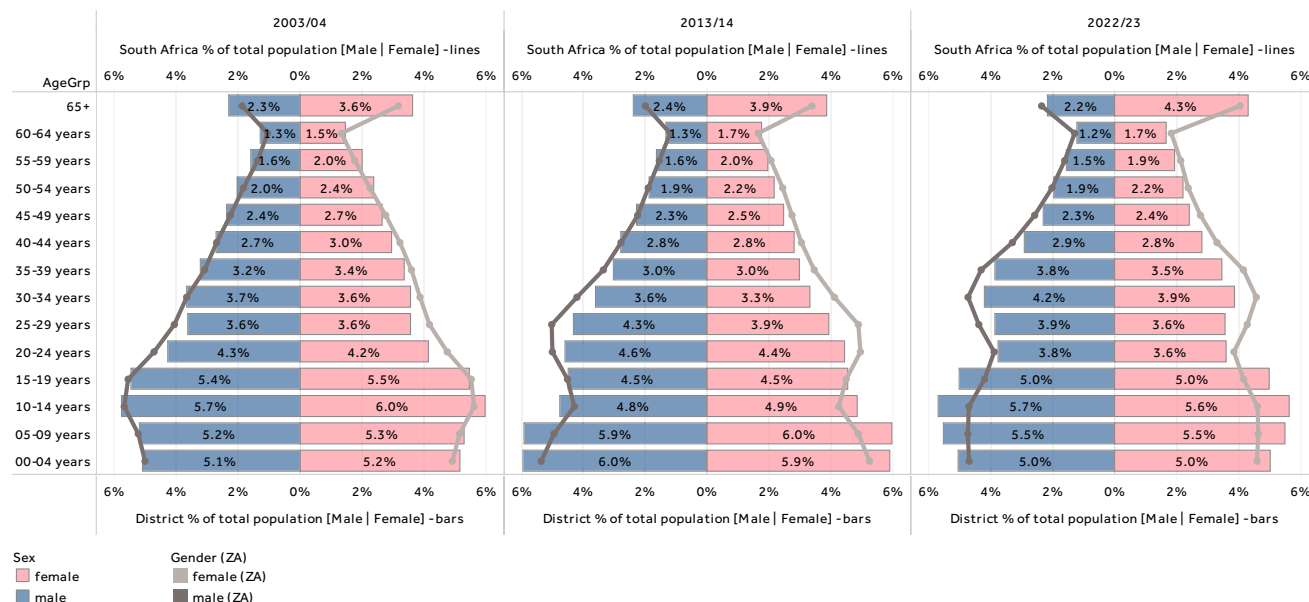
Cities/Towns: Bethulie, Edenburg, Fauresmith, Gariep Dam, Jacobsdal, Jagersfontein, Koffiefontein, Luckhoff, Oppermansgronde, Petrusburg, Philippolis, Reddersburg, Rouxville, Smithfield, Springfontein, Trompsburg, Waterkloof, Zastron

Area: 34 250km²

Population (2022)²: 127 251

District percentage population by age-gender group compared to South Africa

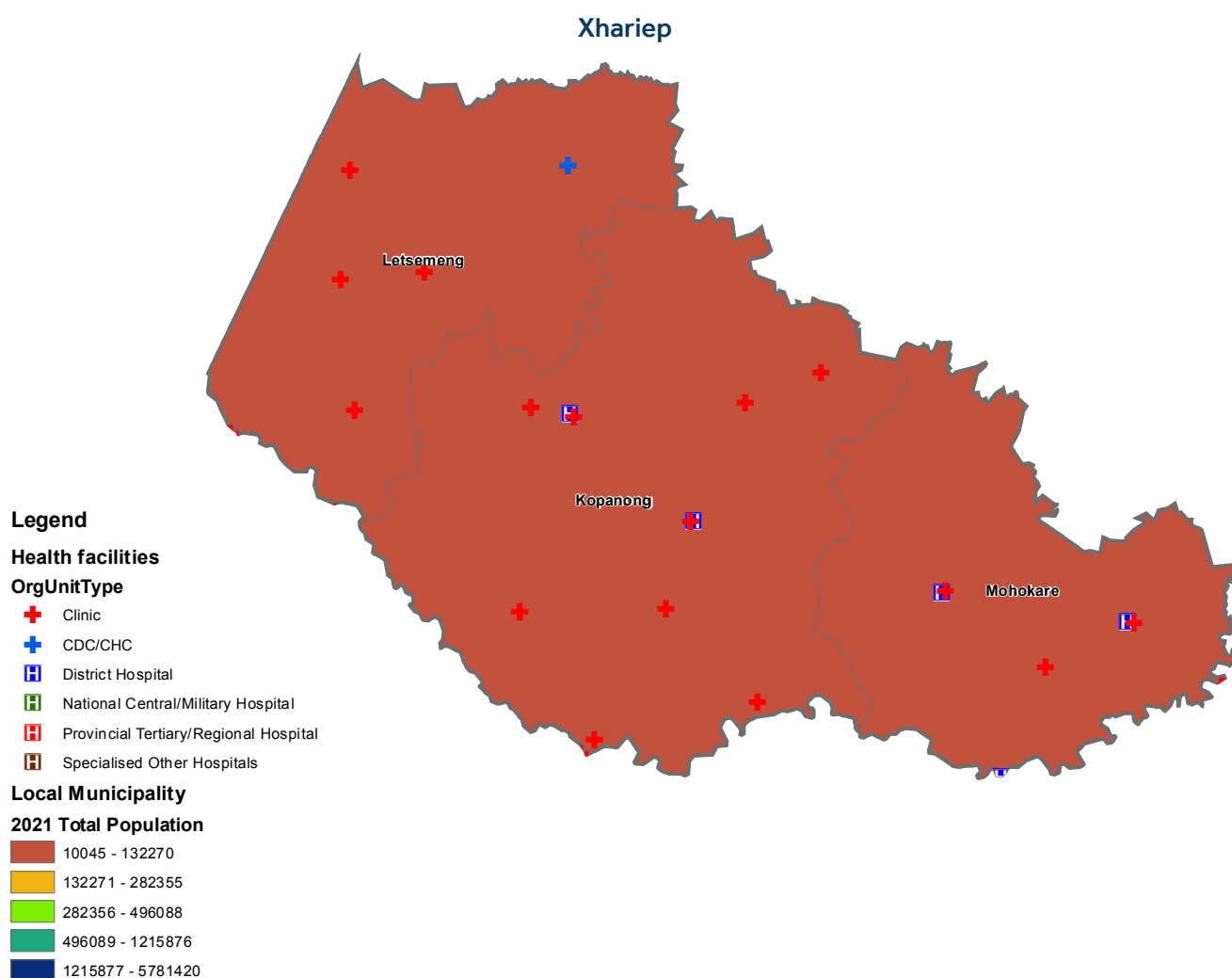
Xhariep DM (DC16)



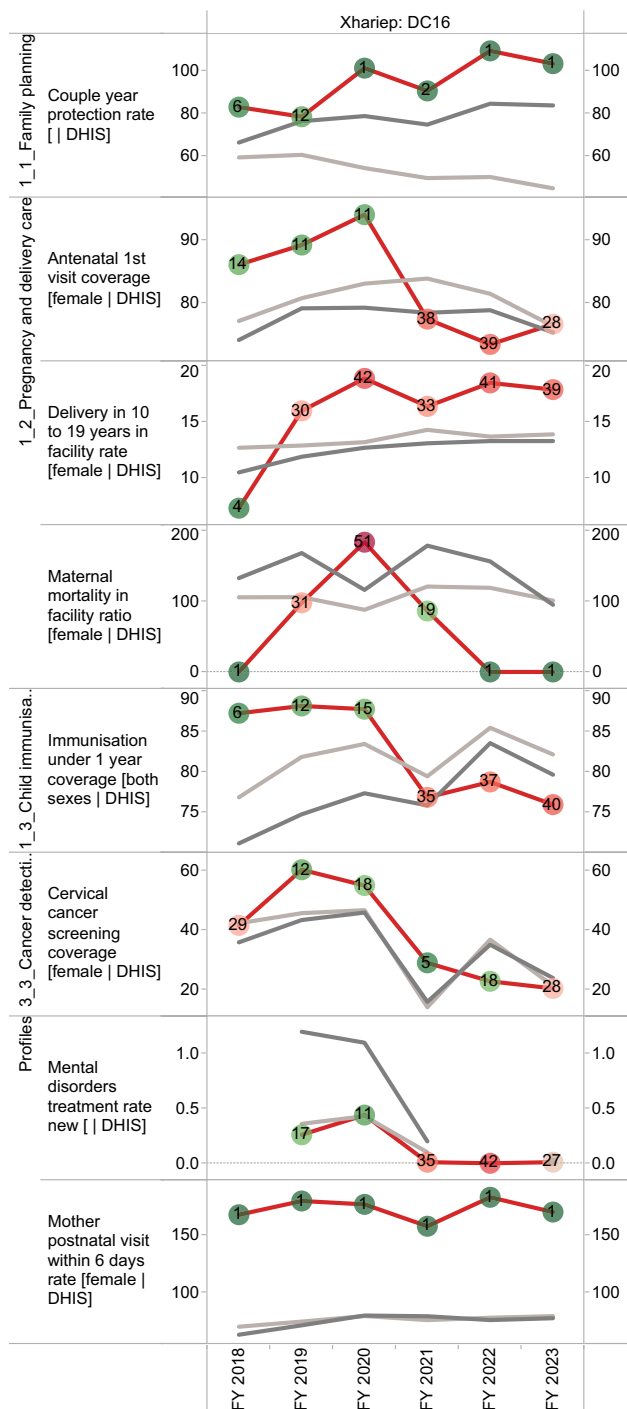
¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

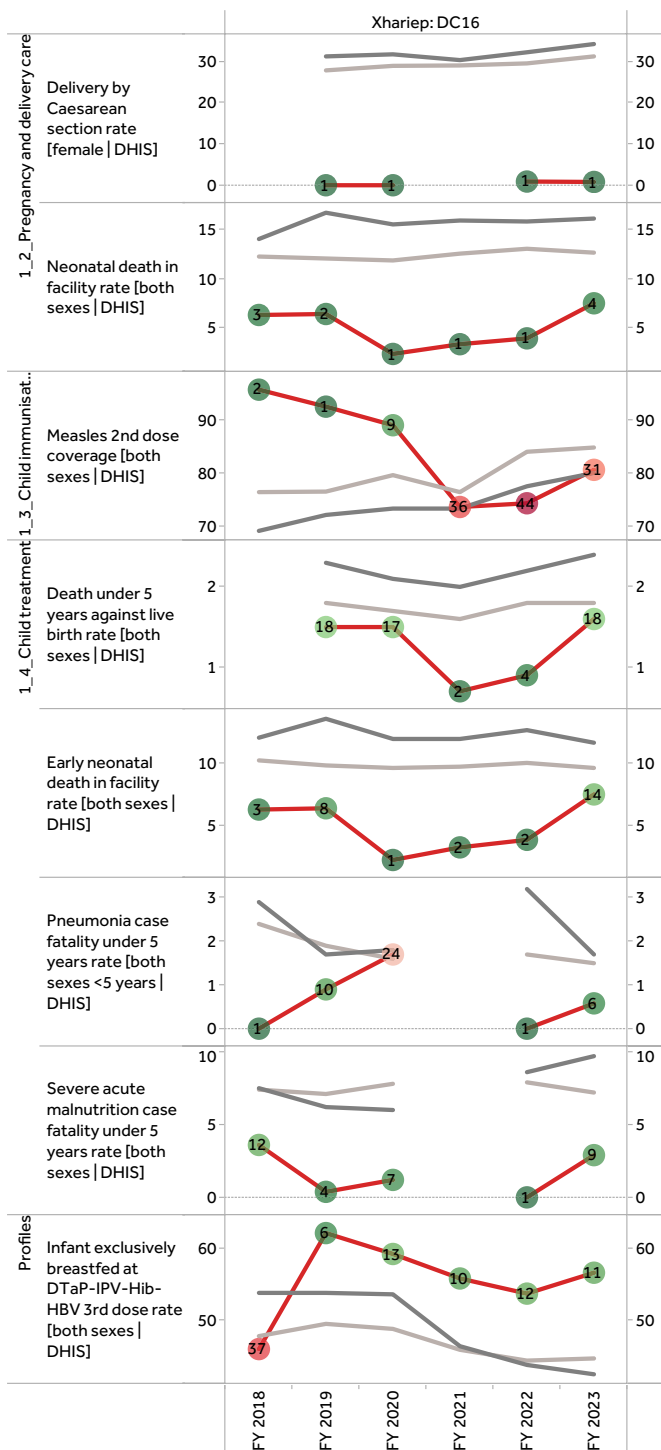


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

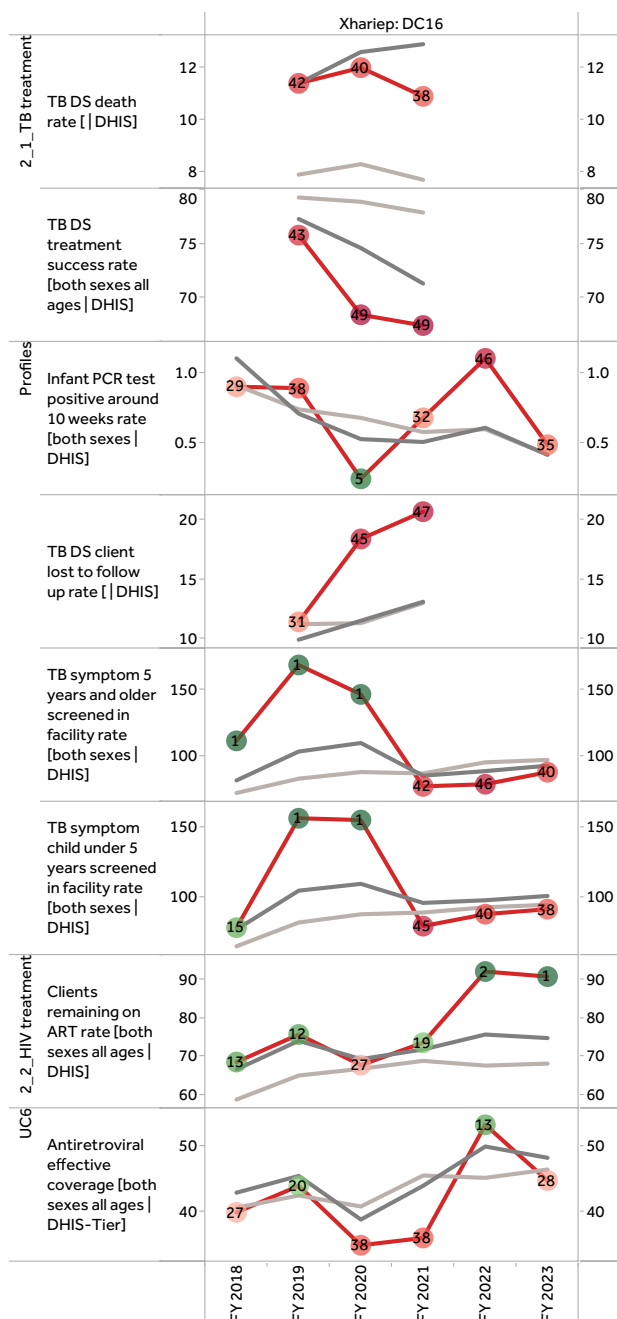
Rank
 1 51



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 44

Annual trends, 2018/19–2022/23



Measure Names

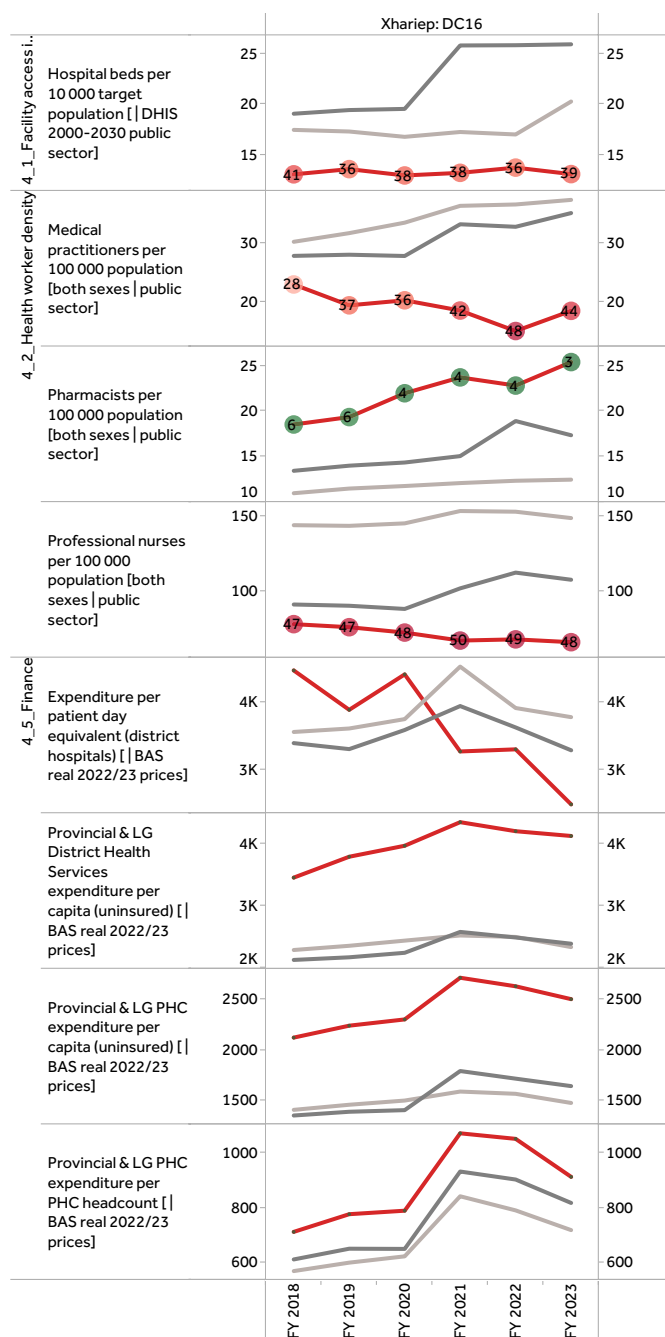
Rank

1 49

Prov av

ZA av

Ind Value



Measure Names

Rank

1 50

Prov av

ZA av

Ind Value

Lejweleputswa District Municipality (DC18)

The Lejweleputswa District Municipality³ is a Category C municipality situated in the north-western part of the Free State. The district makes up almost a third of the province, and consists of the following five local municipalities: Masilonyana, Tokologo, Tswelopele, Matjhabeng and Nala.

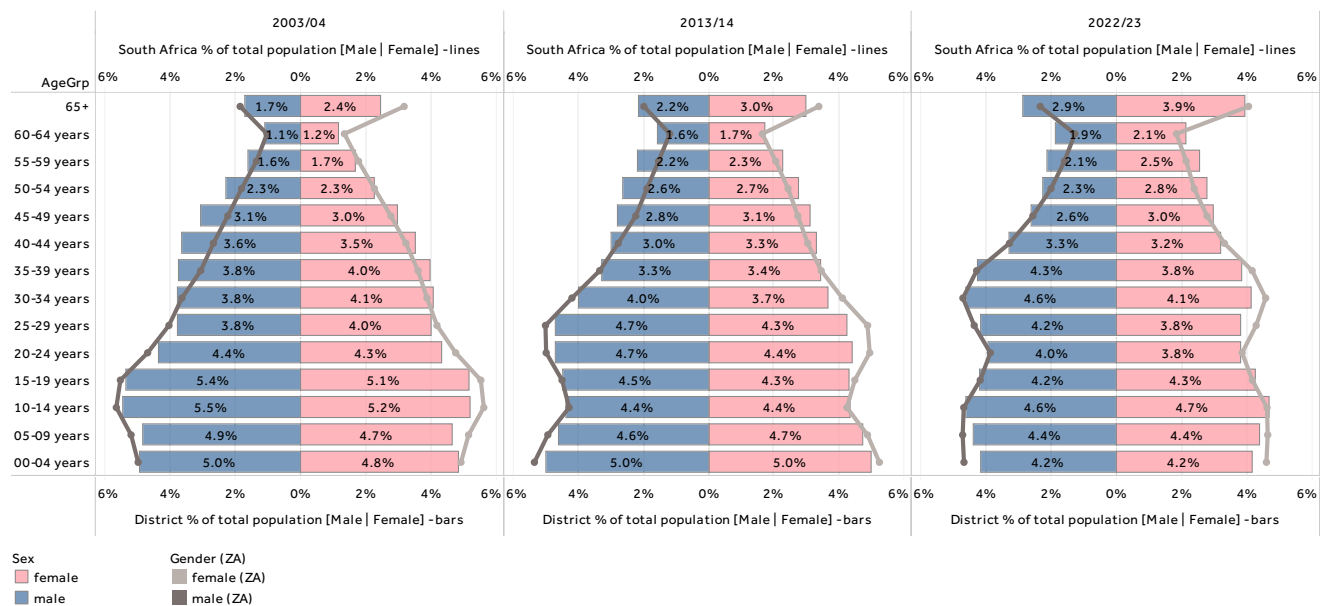
Cities/Towns: Allanridge, Boshof, Bothaville, Brandfort, Bultfontein, Dealesville, Hennenman, Hertzogville, Hoopstad, Odendaalsrus, Soutpan, Theunissen, Ventersburg, Verkeerdevlei, Virginia, Welkom, Wesselsbron, Winburg

Area: 32 287km²

Population (2022)⁴: 644 397

District percentage population by age-gender group compared to South Africa

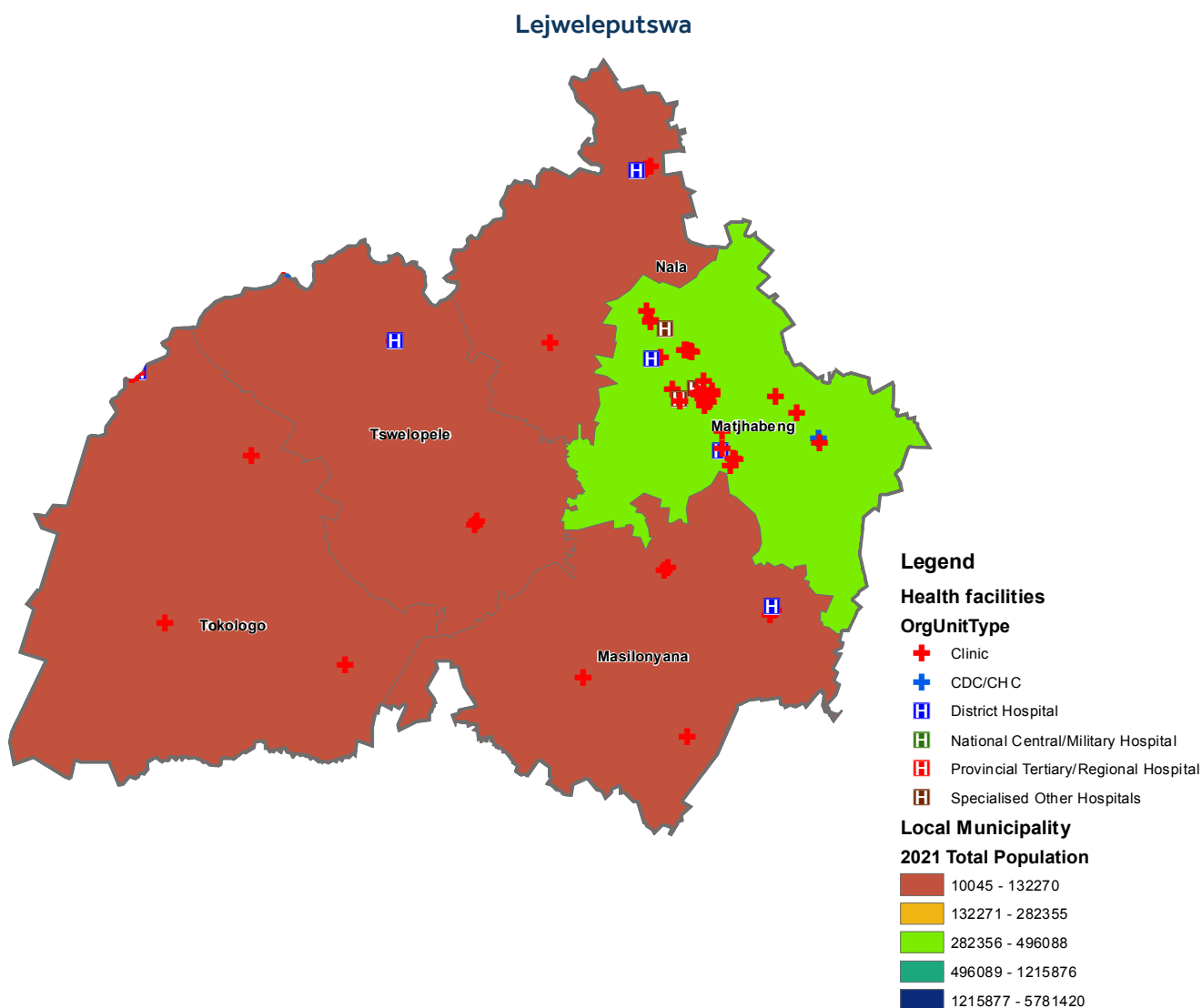
Lejweleputswa DM (DC18)



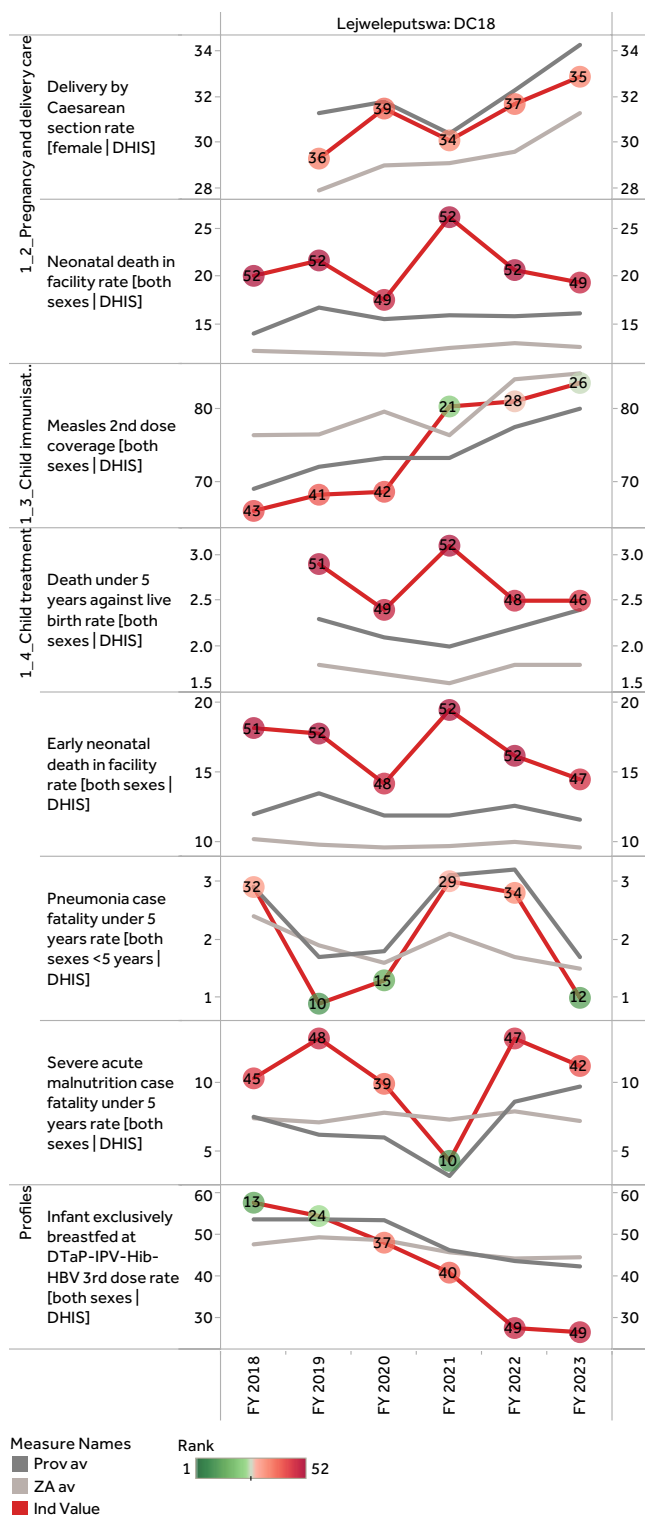
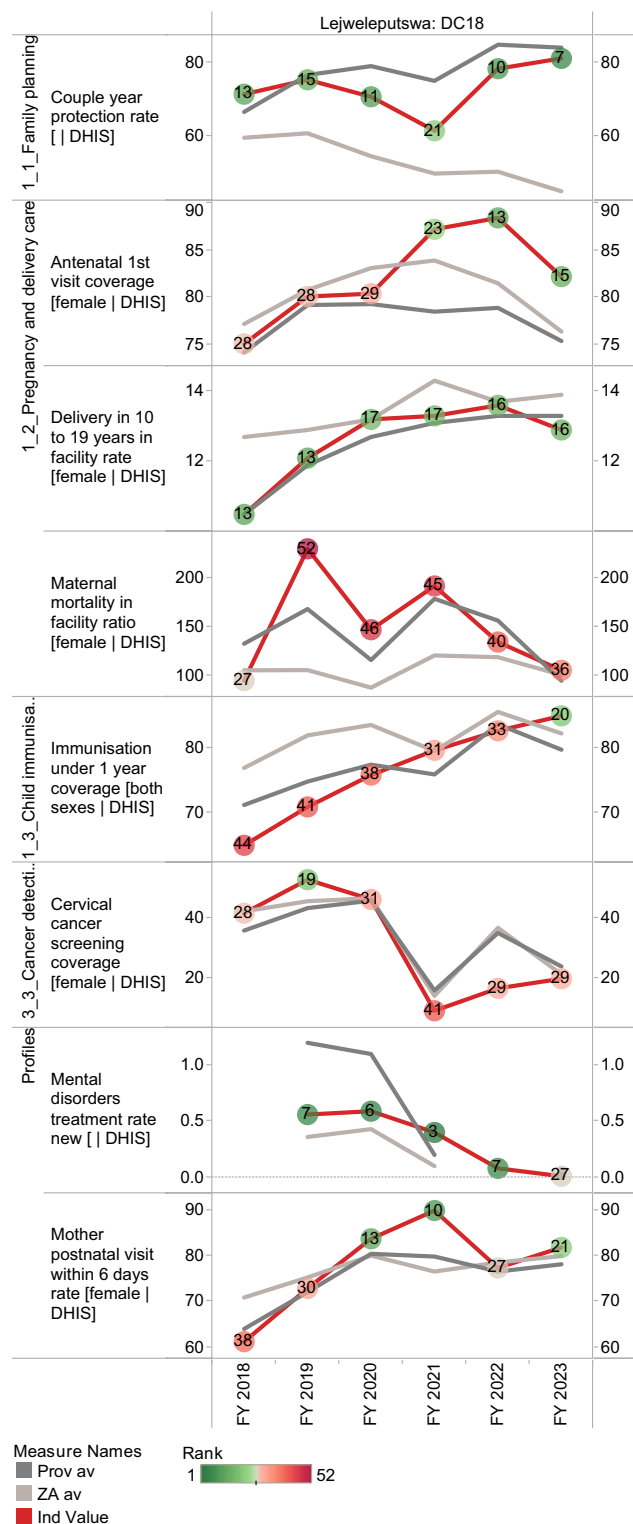
³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

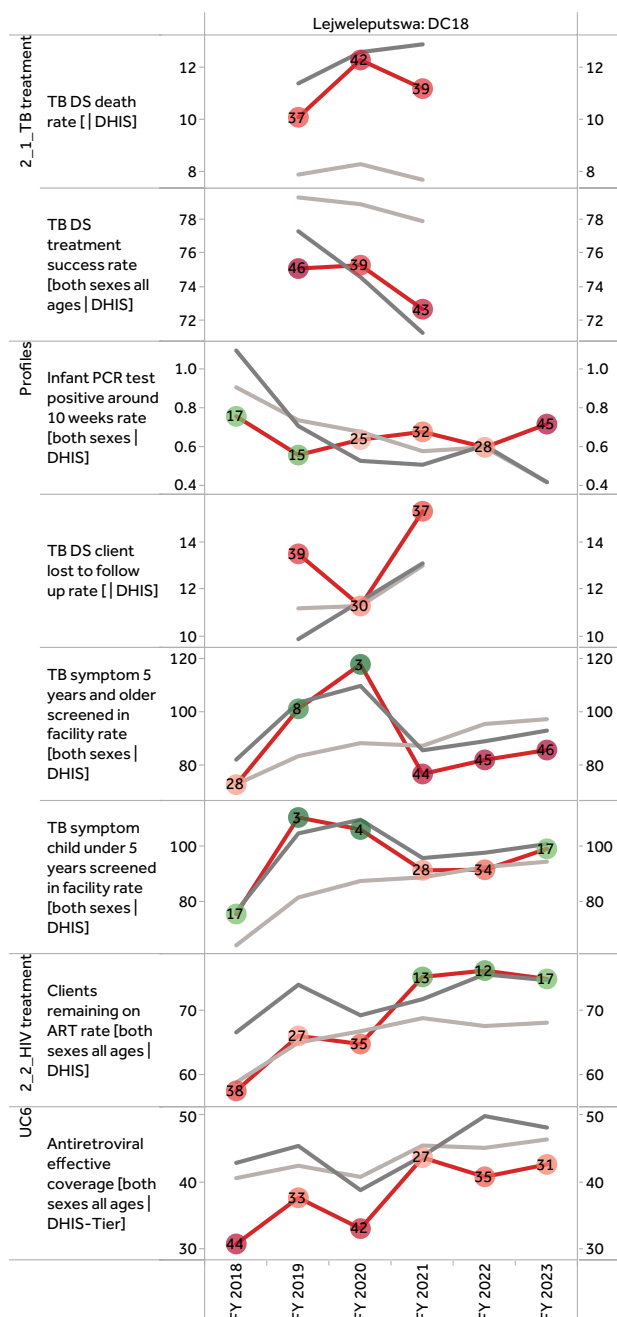
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

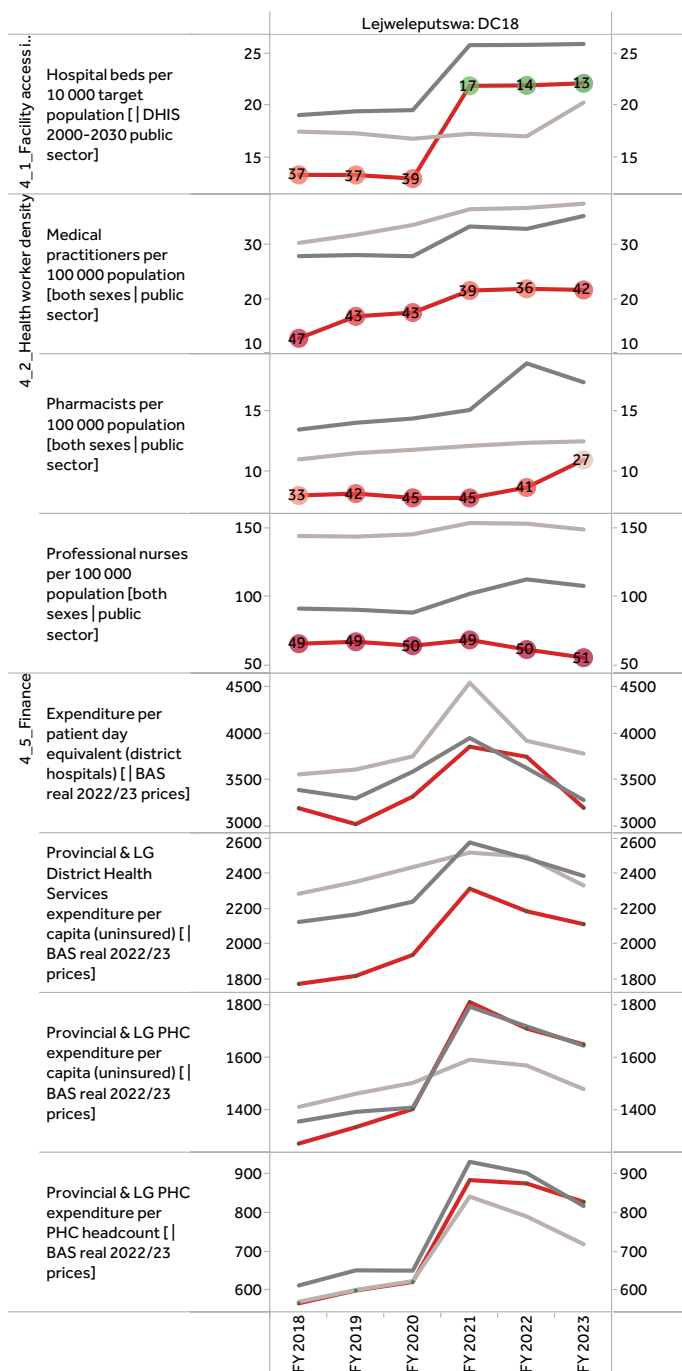


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 46



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 51

Thabo Mofutsanyana District Municipality (DC19)

The Thabo Mofutsanyana District Municipality⁵ is Category C municipality located in the eastern Free State Province, and borders on Lesotho. It comprises six local municipalities: Setsoto, Dihlabeng, Nketoana, Maluti-A-Phofung, Phumelela and Mantsopa.

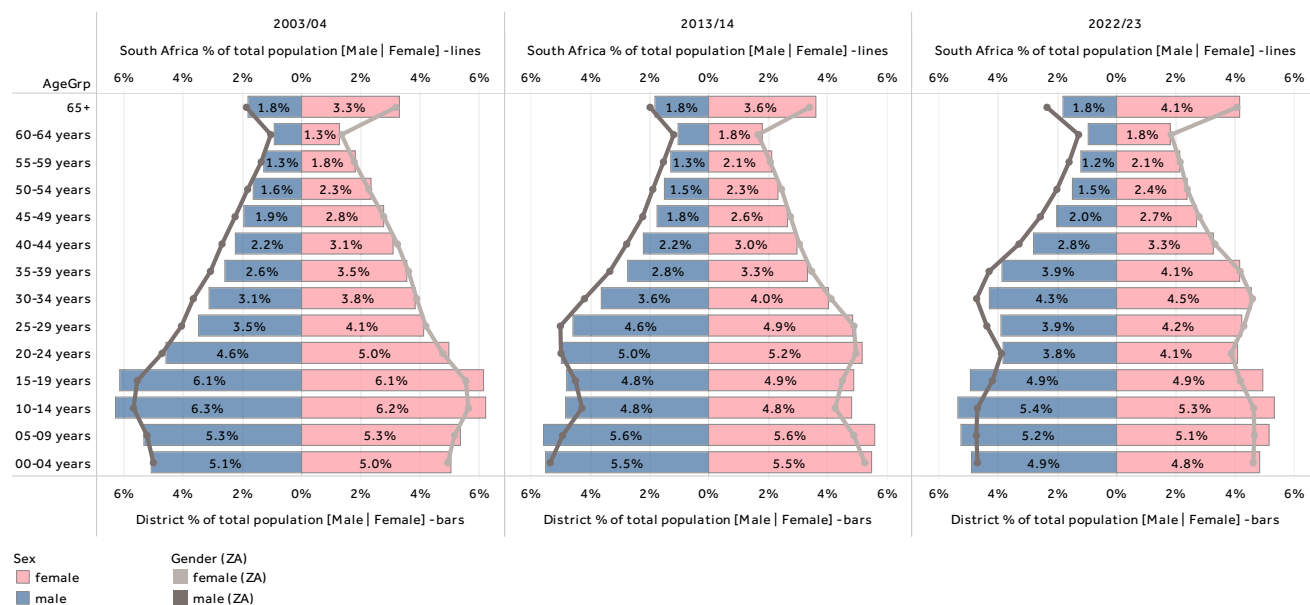
Cities/Towns: Arlington, Bethlehem, Clarens, Clocolan, Excelsior, Ficksburg, Fouriesburg, Golden Gate Highlands National Park, Harrismith, Hobhouse, Kestell, Ladybrand, Lindley, Marquard, Memel, Paul Roux, Petrus Steyn, Phuthaditjhaba, Reitz, Rosendal, Senekal, Thaba Patchoa, Tweespruit, Vrede, Warden

Area: 32 730km²

Population (2022)⁶: 757 179

District percentage population by age-gender group compared to South Africa

T Mofutsanyana DM (DC19)



⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

Thabo Mofutsanyana

Legend

Health facilities

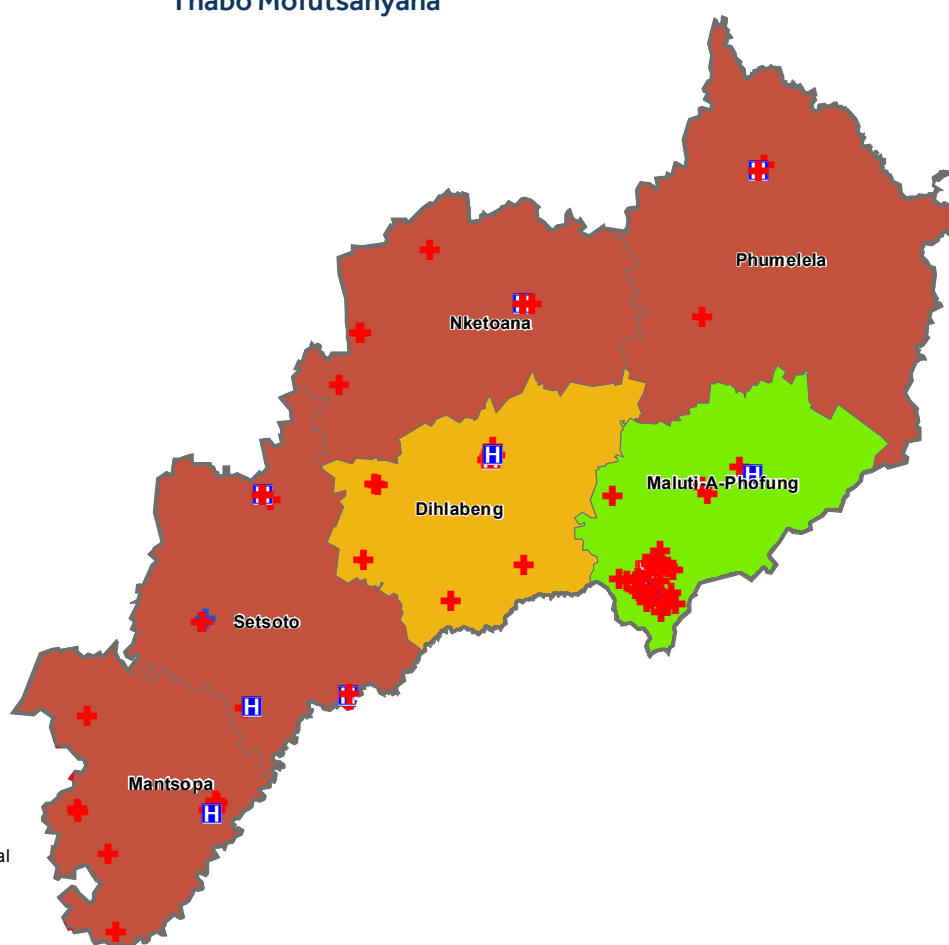
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

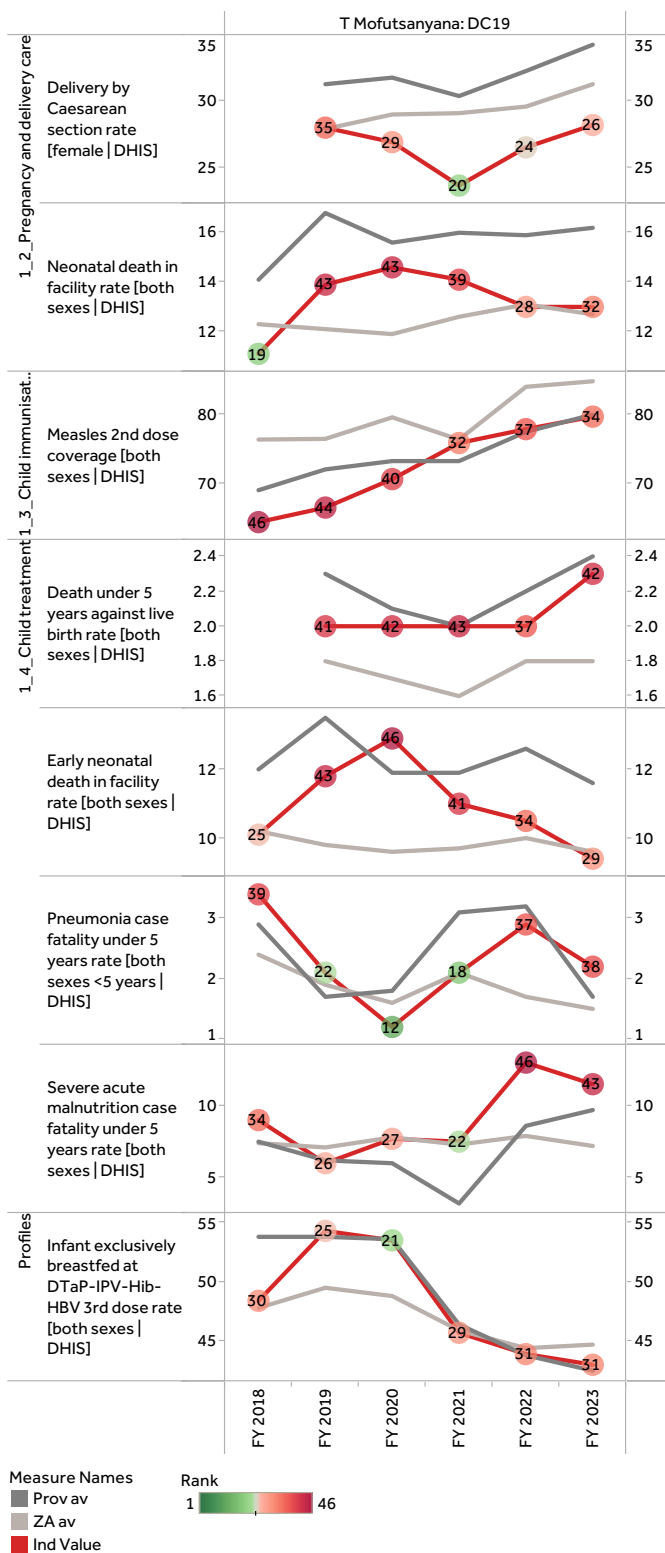
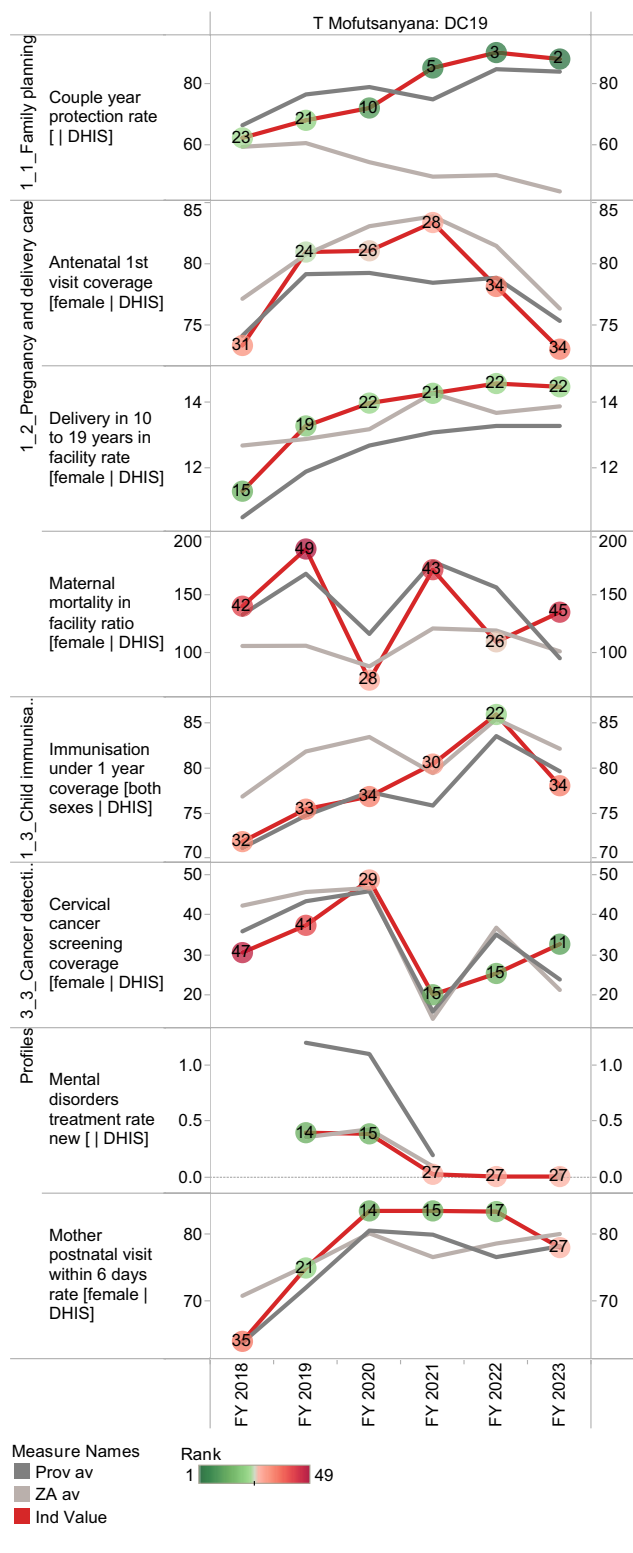
Local Municipality

2021 Total Population

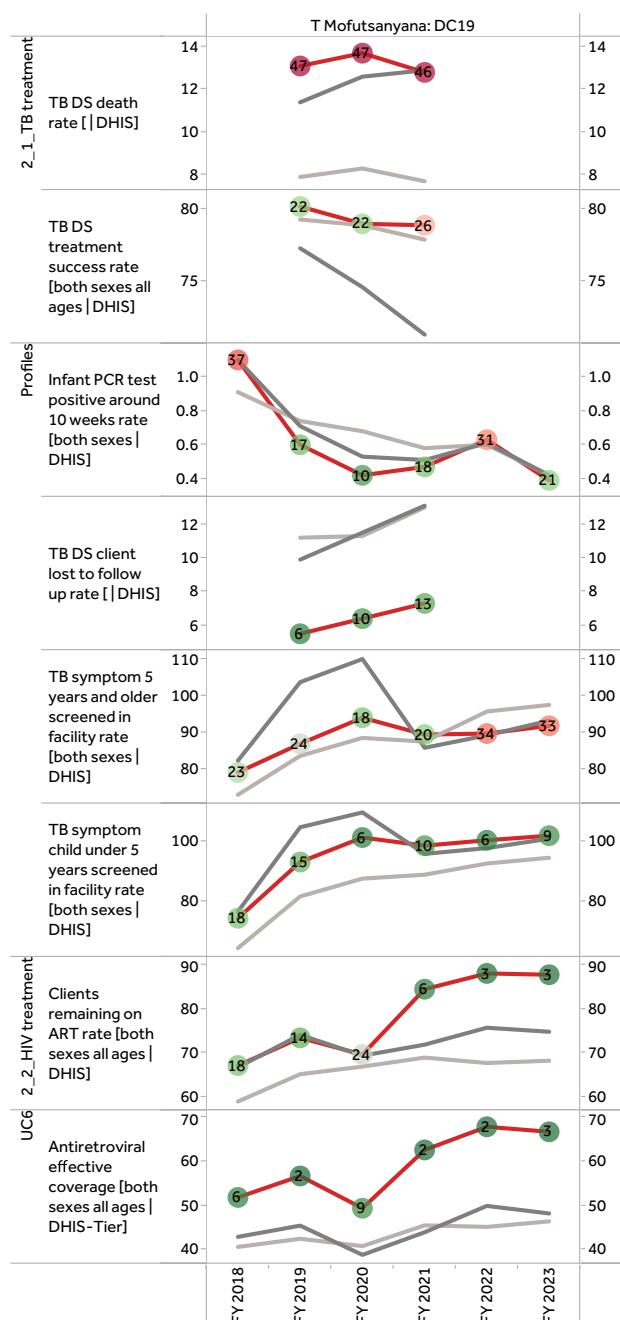
- 10045 - 132270
- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420



Annual trends, 2018/19–2022/23

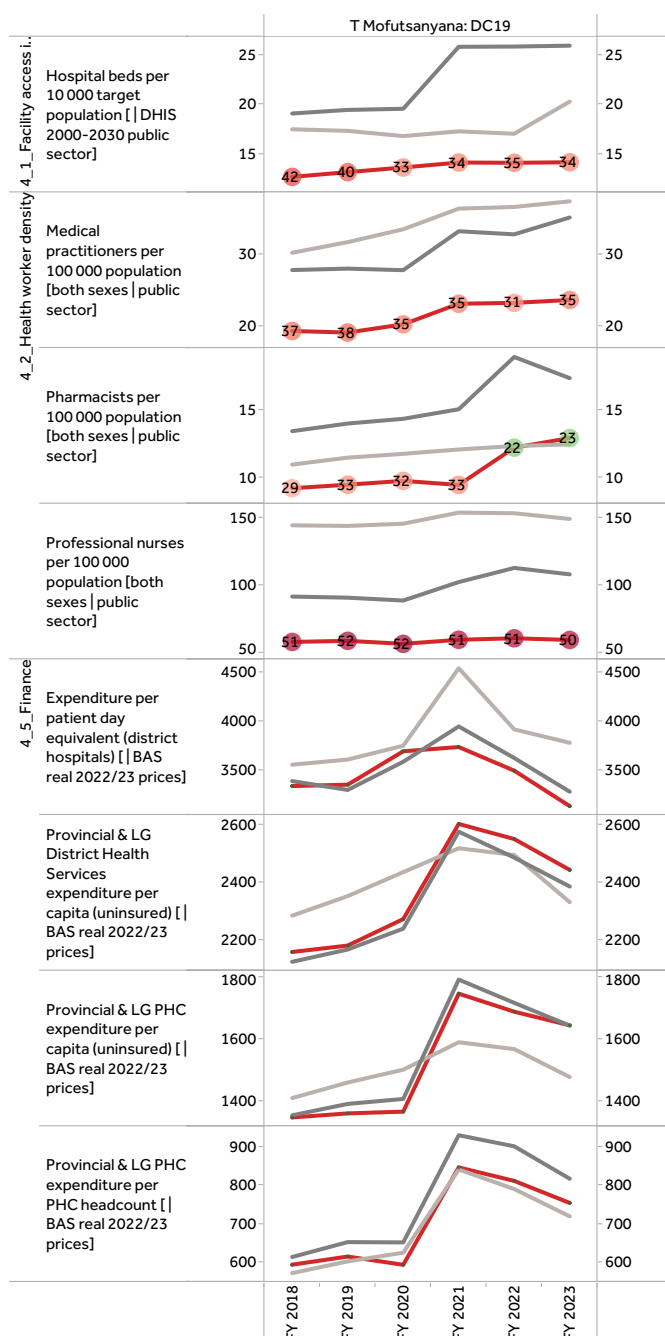


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 47



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 52

Fezile Dabi District Municipality (DC20)

The Fezile Dabi District Municipality⁷ is Category C municipality. The municipality is the smallest district in the province, making up 16% of its geographical area. It consists of four local municipalities: Mqohaka, Metsimaholo, Ngwathe and Mafube.

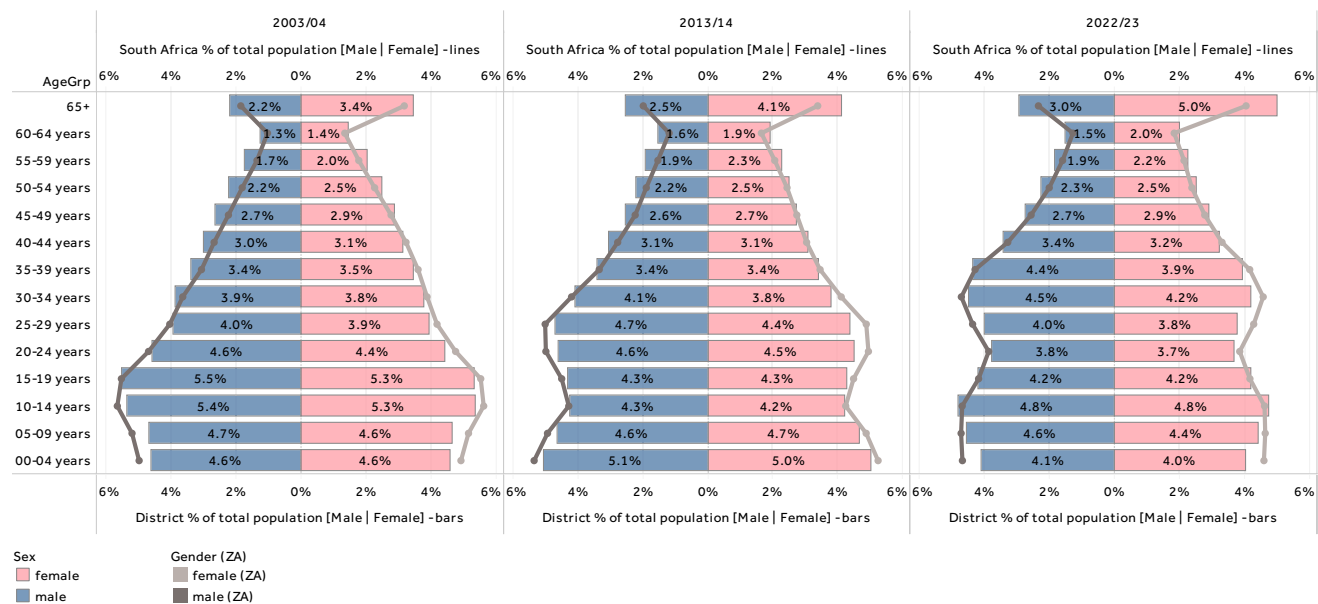
Cities/Towns: Cornelia, Deneyville, Edenville, Frankfort, Heilbron, Koppies, Kragbron, Kroonstad, Oranjeville, Parys, Renovaal, Sasolburg, Steynsrus, Tweeling, Vierfontein, Viljoenskroon, Villiers, Vredefort

Area: 20 668km²

Population (2022)⁸: 506 744

District percentage population by age-gender group compared to South Africa

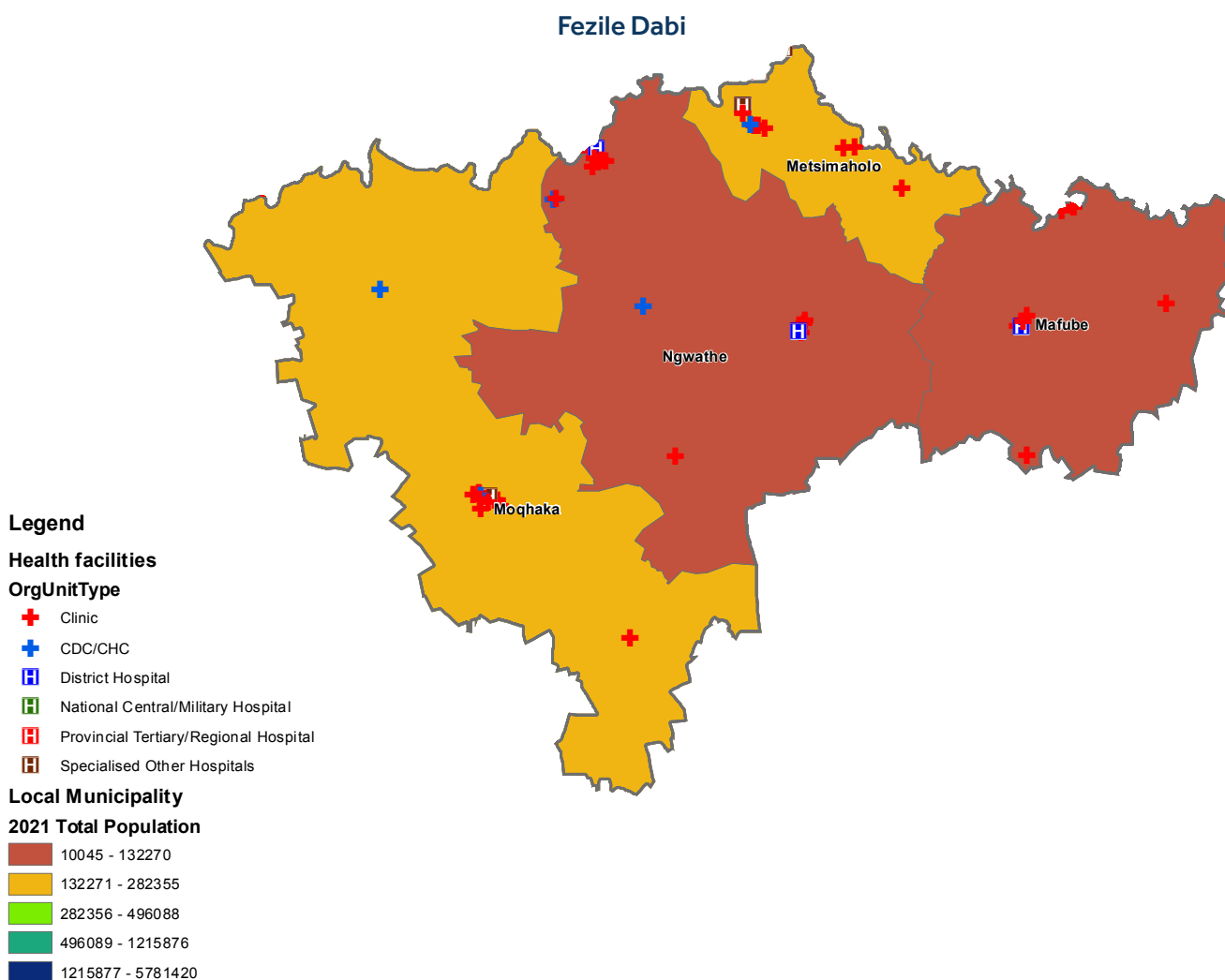
Fezile Dabi DM (DC20)



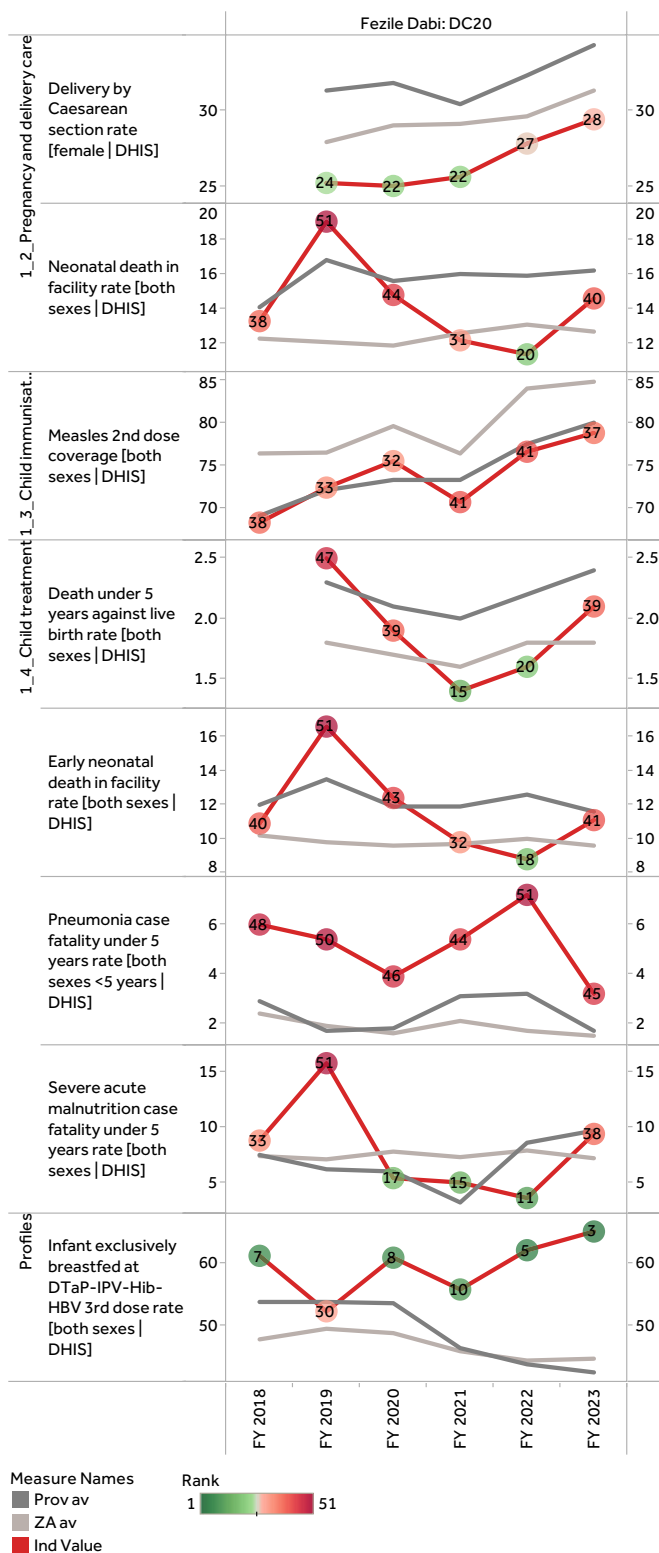
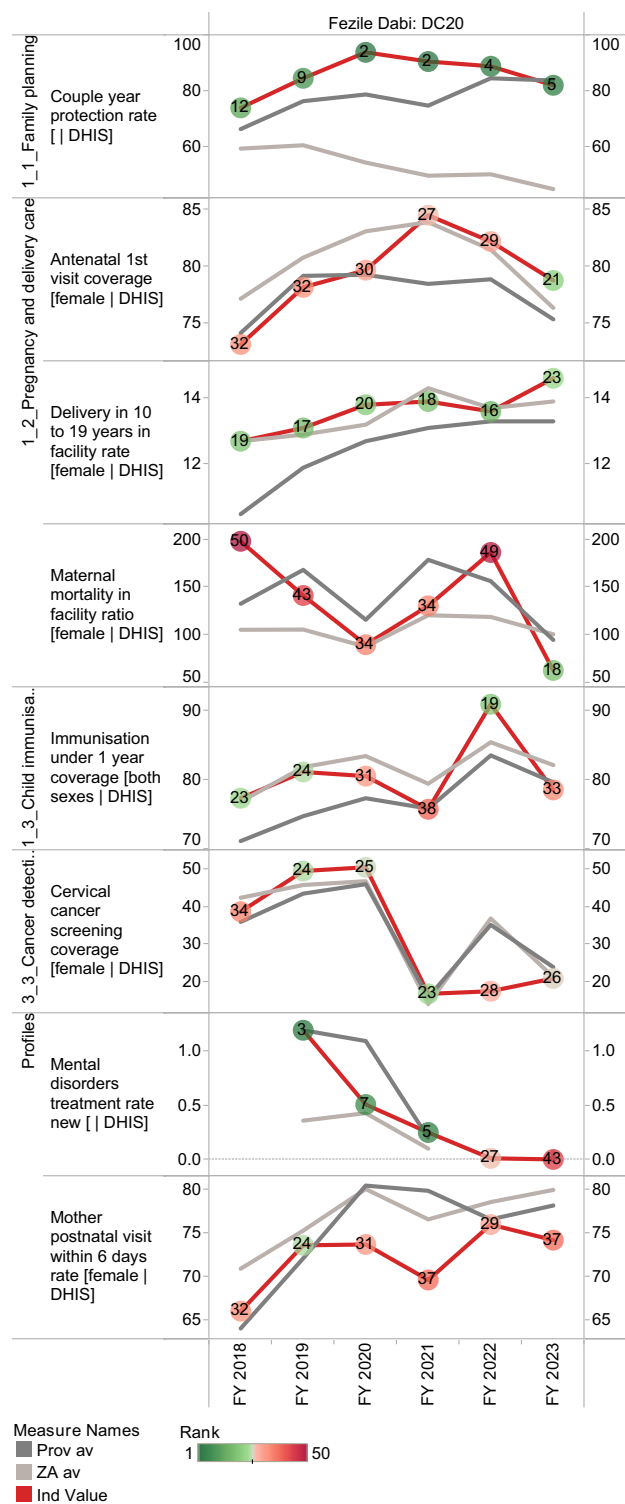
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

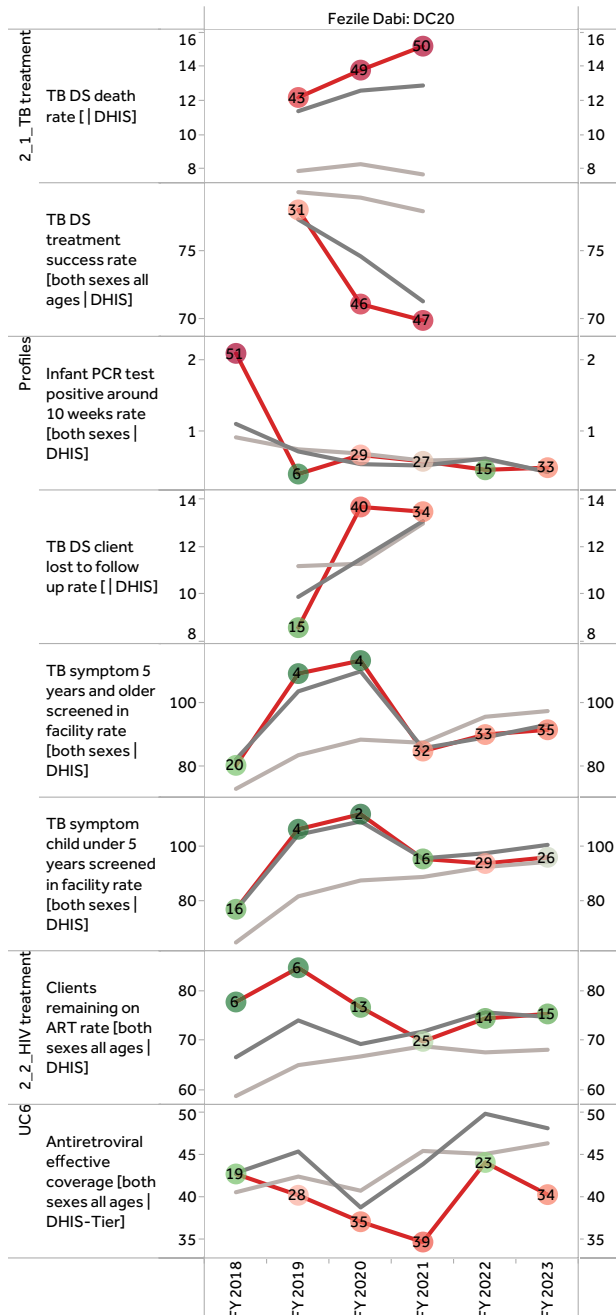
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

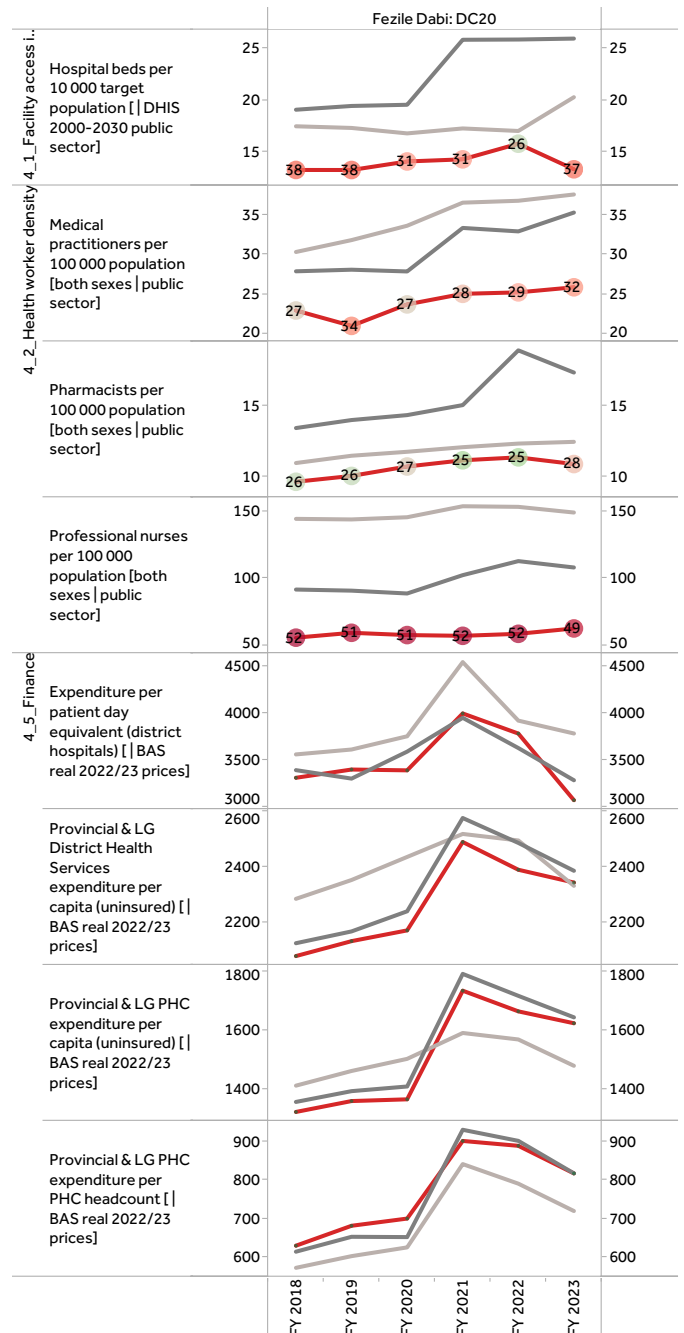


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 51



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52

Manguang Metropolitan Municipality (MAN)

The Manguang Metropolitan Municipality⁹ is a Category A municipality, and comprises four health sub-districts, namely: Bloemfontein, Botshabelo, Naledi and Thaba N'chu.

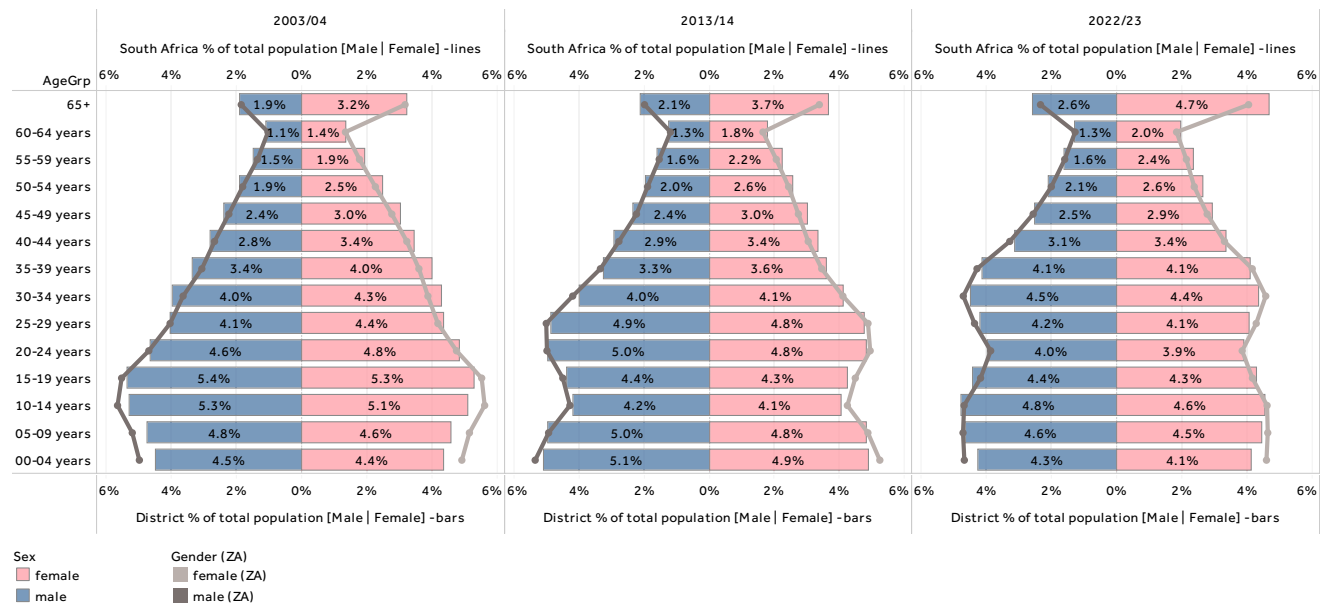
Cities/Towns: Bloemfontein, Botshabelo, Dewetsdorp, Mangaung, Soutpan, Thaba Nchu, Van Stadensrus, Wepener

Area: 9 886km²

Population (2022)¹⁰: 884 909

District percentage population by age-gender group compared to South Africa

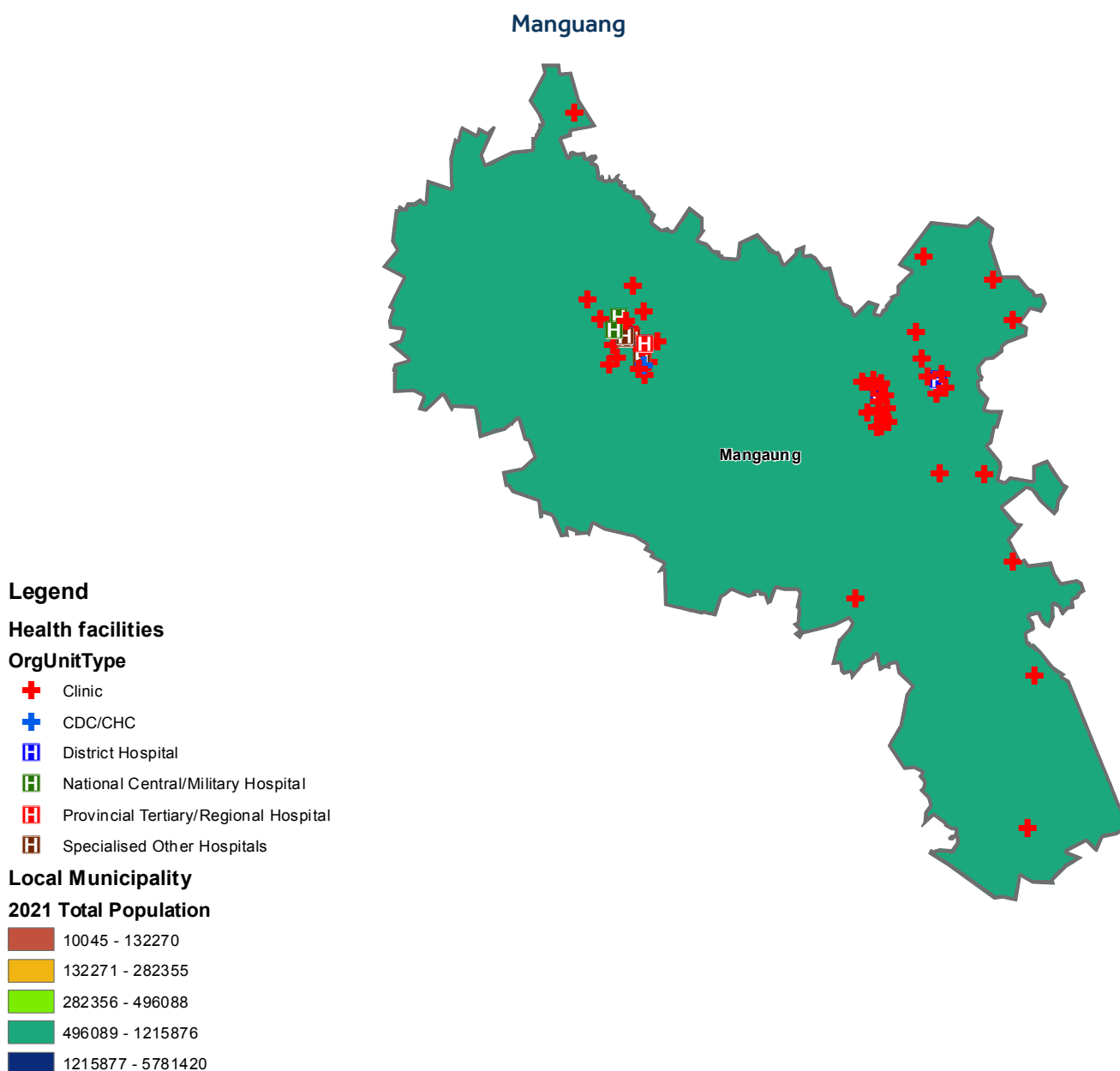
Mangaung MM (MAN)



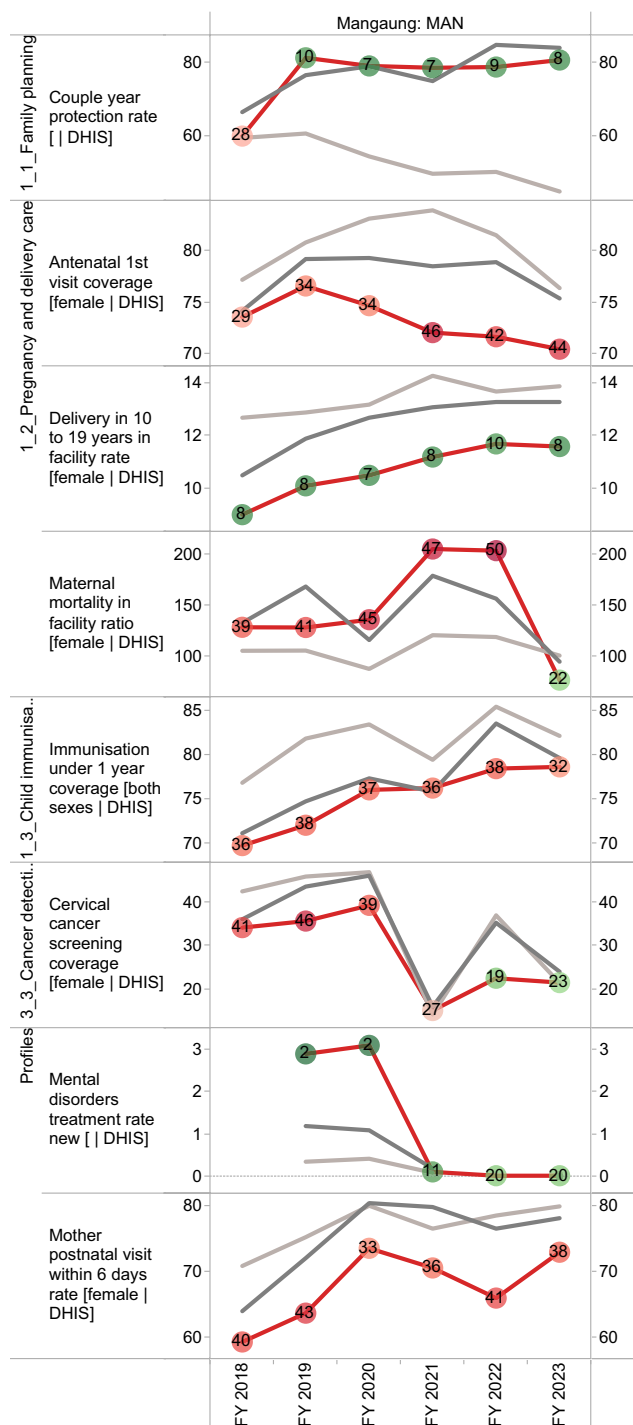
⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

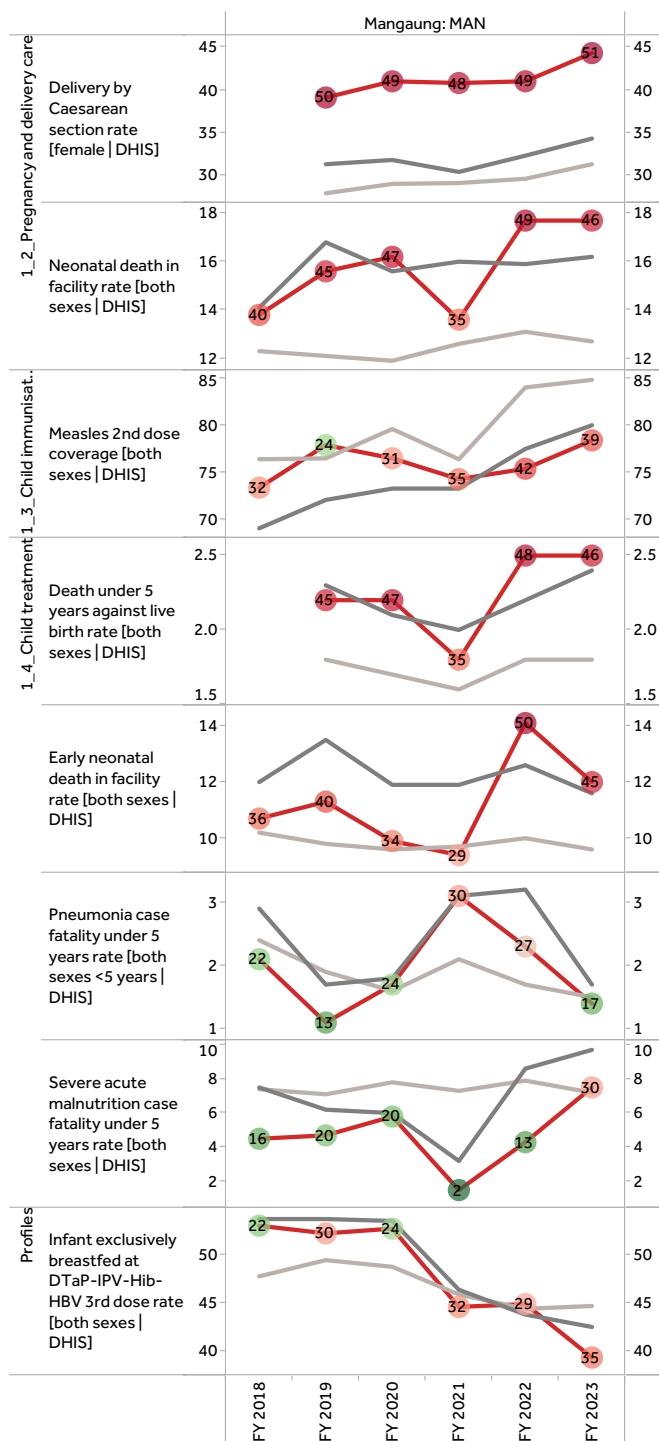


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

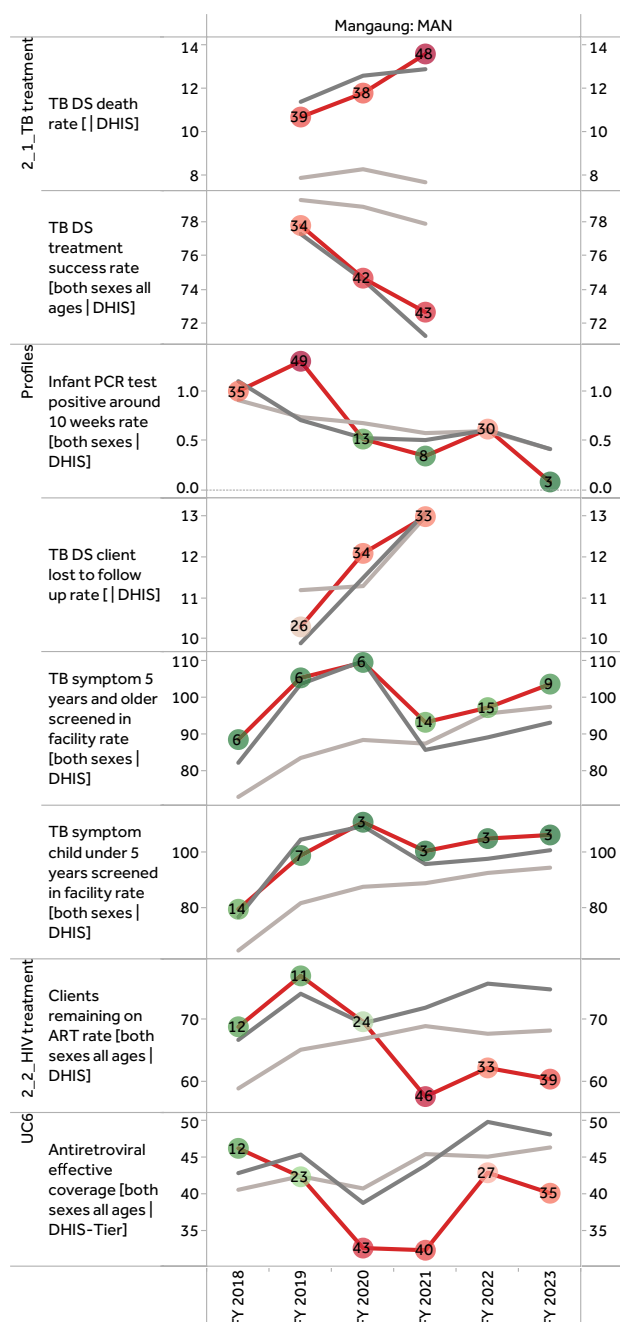
Rank
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Measure Names
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 ■ ZA av
 ■ Ind Value

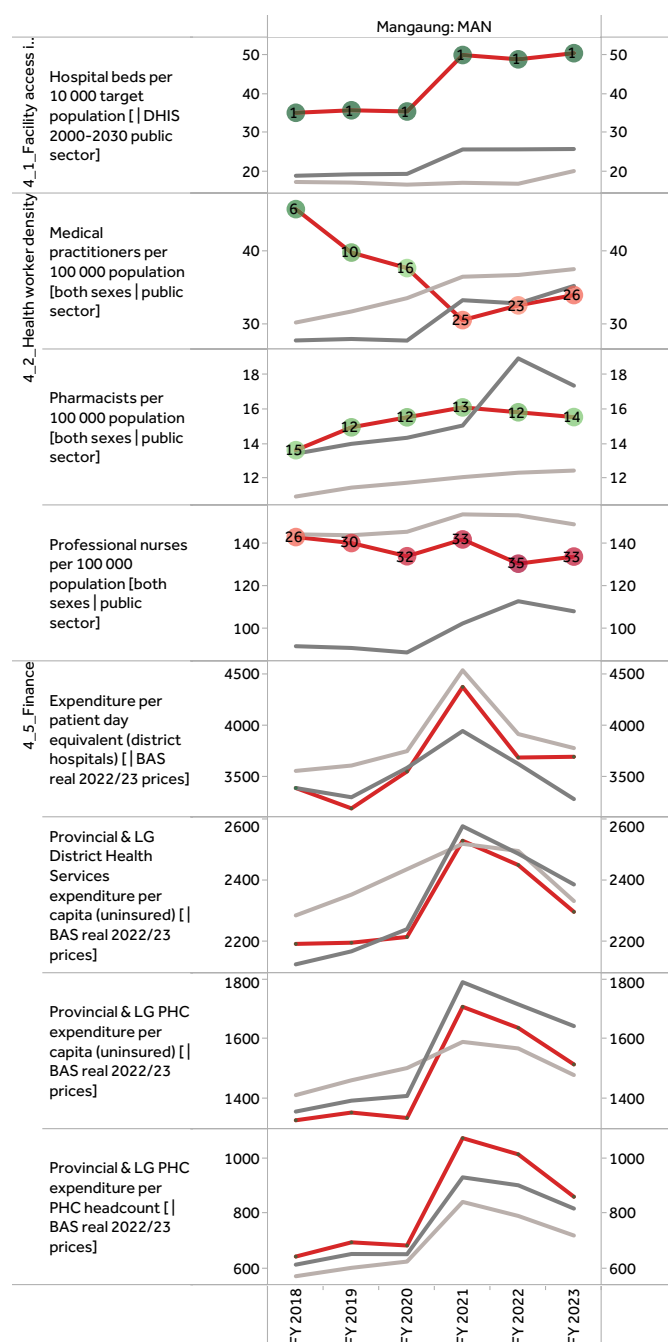
Rank
 1 51

Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 49



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 35

Gauteng Province

Sedibeng District Municipality (DC42)

The Sedibeng District Municipality¹ is a Category C municipality situated on the southern tip of the Gauteng Province and it comprises the Emfuleni, Lesedi and Midvaal Local Municipalities.

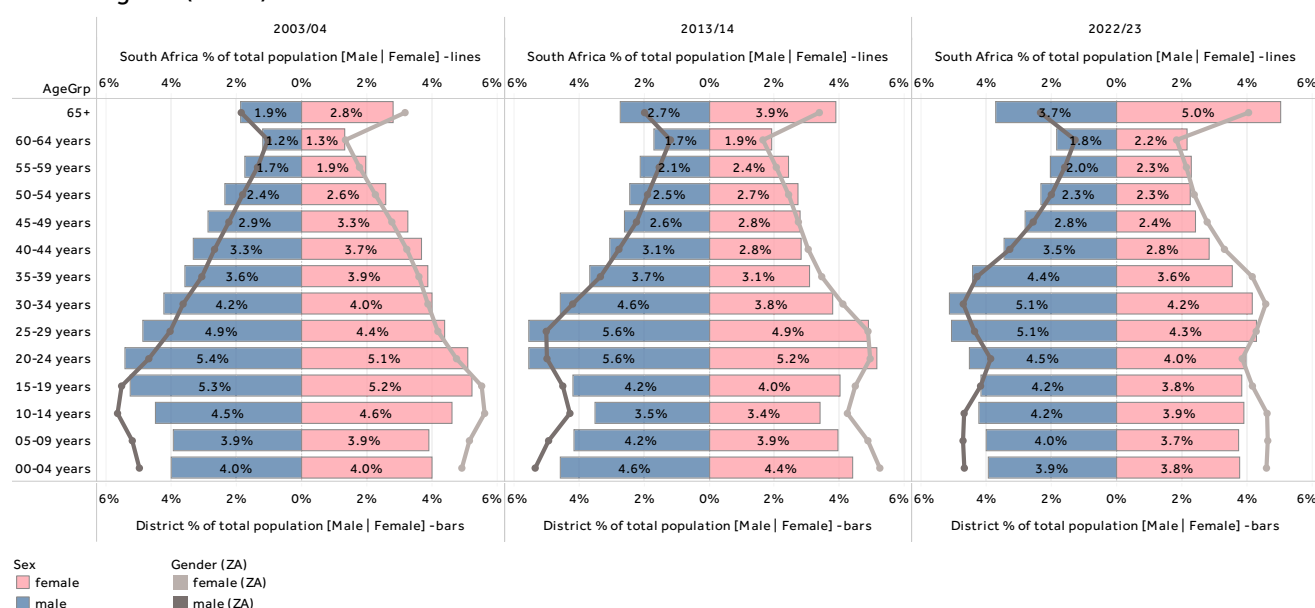
Cities/Towns: De Deur/Walkerville, Devon, Eikenhof, Evaton, Heidelberg, Meyerton, Nigel, Sebokeng, Vaal Marina, Vaal Oewer, Vanderbijlpark, Vereeniging, Vischkuil

Area: 4 173km²

Population (2022)²: 968 999

District percentage population by age-gender group compared to South Africa

Sedibeng DM (DC42)

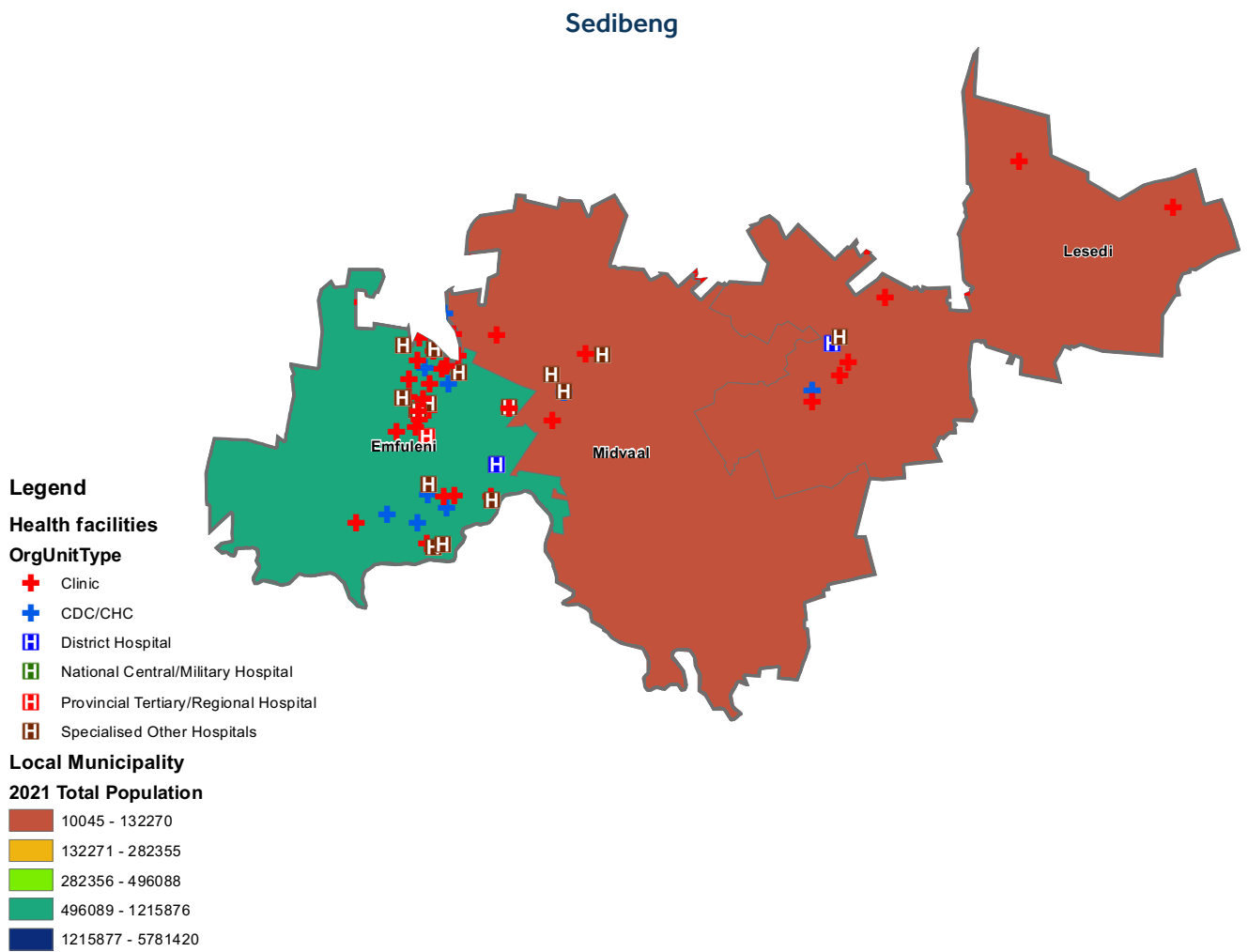


¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

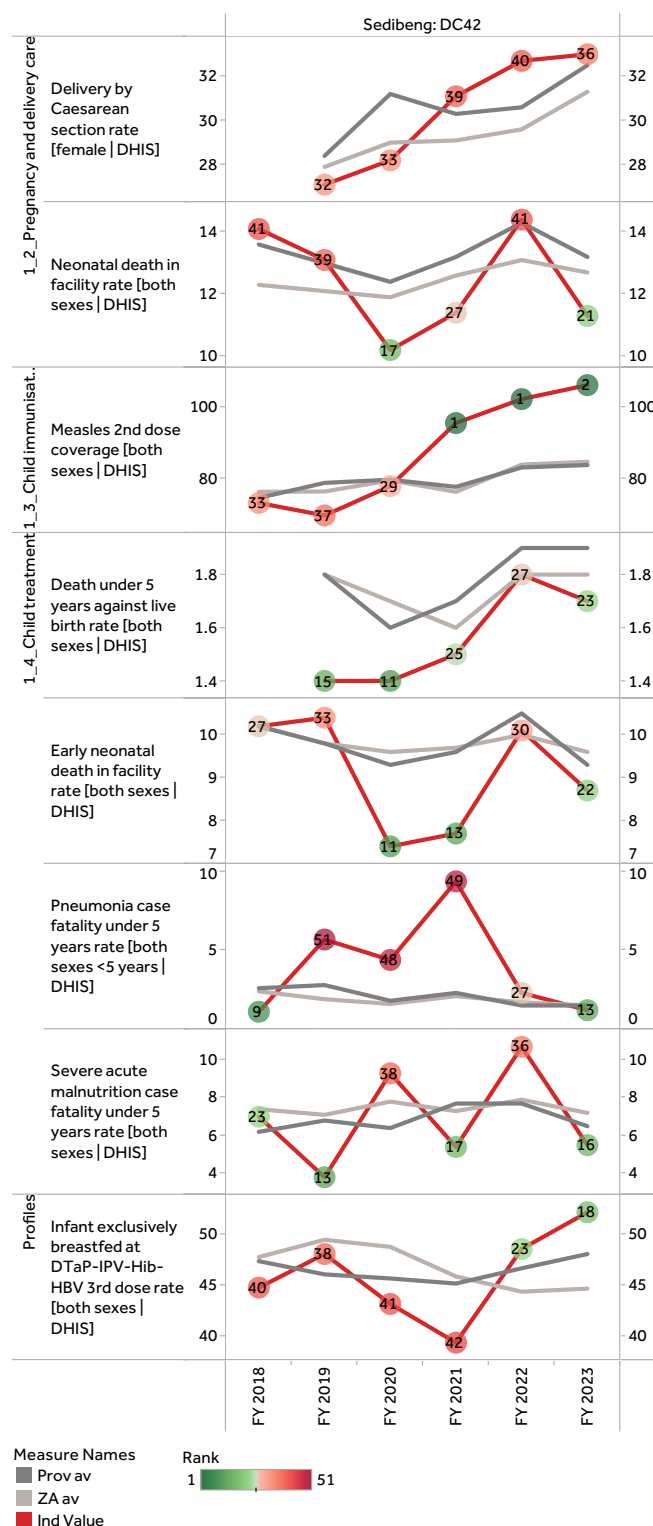
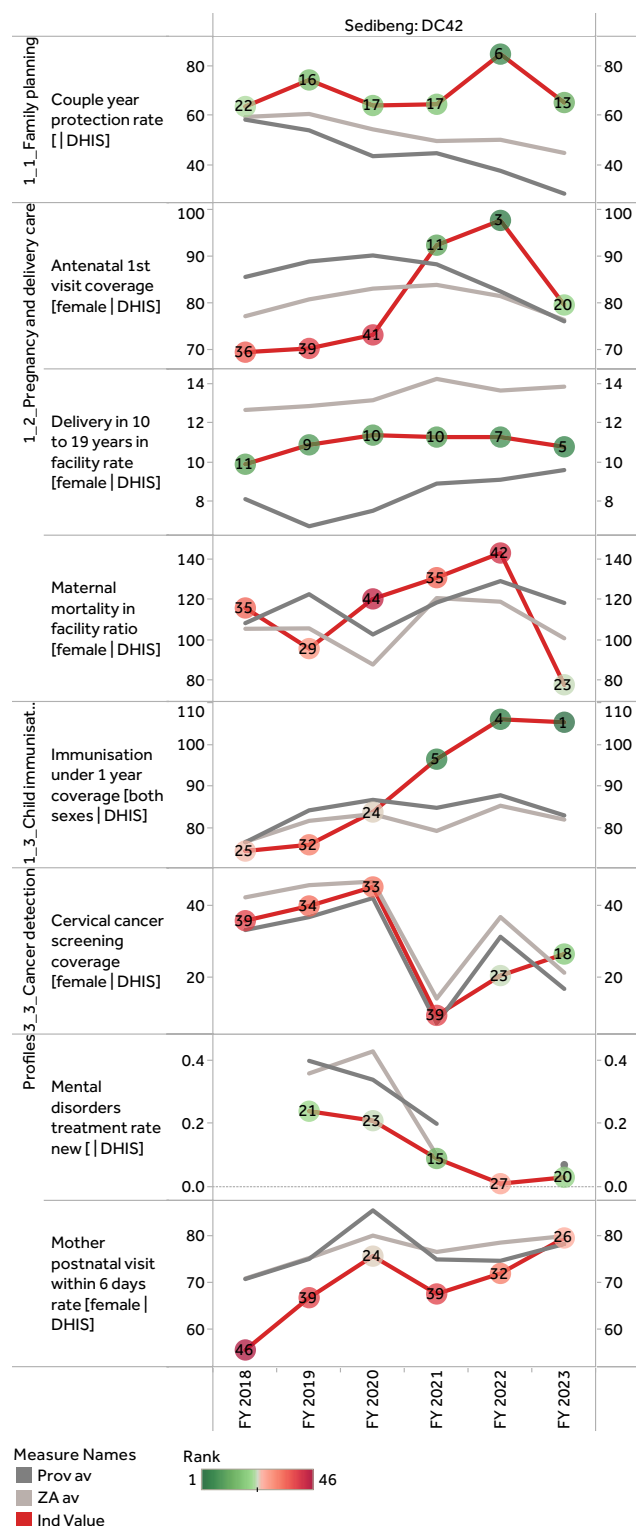
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

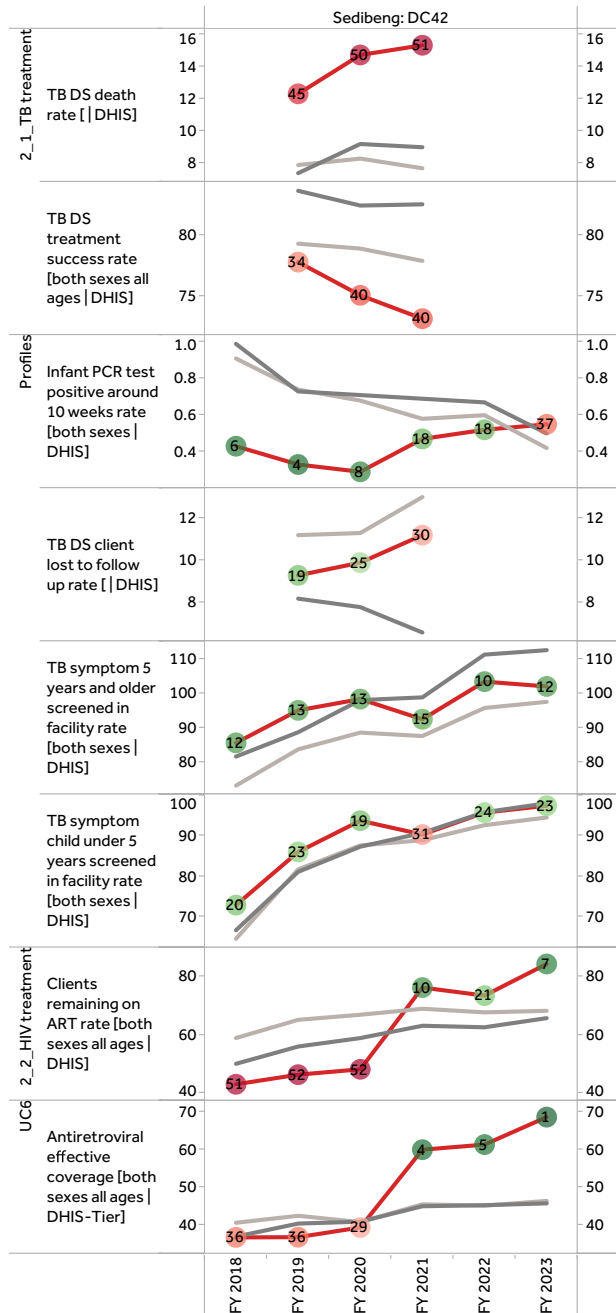
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

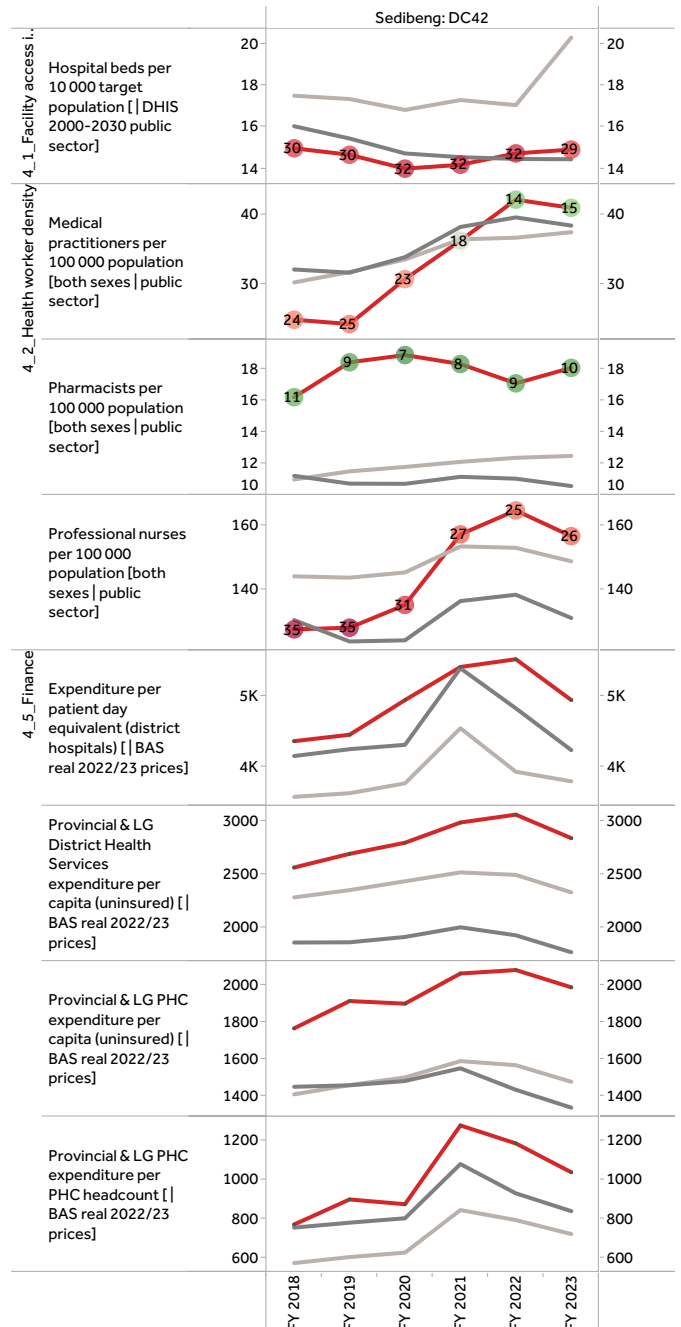


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 52



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 35

West Rand District Municipality (DC48)

The West Rand District Municipality³ is a Category C municipality located in the west of the Gauteng Province. It comprises three local municipalities: Merafong, Mogale and Rand West Cities.

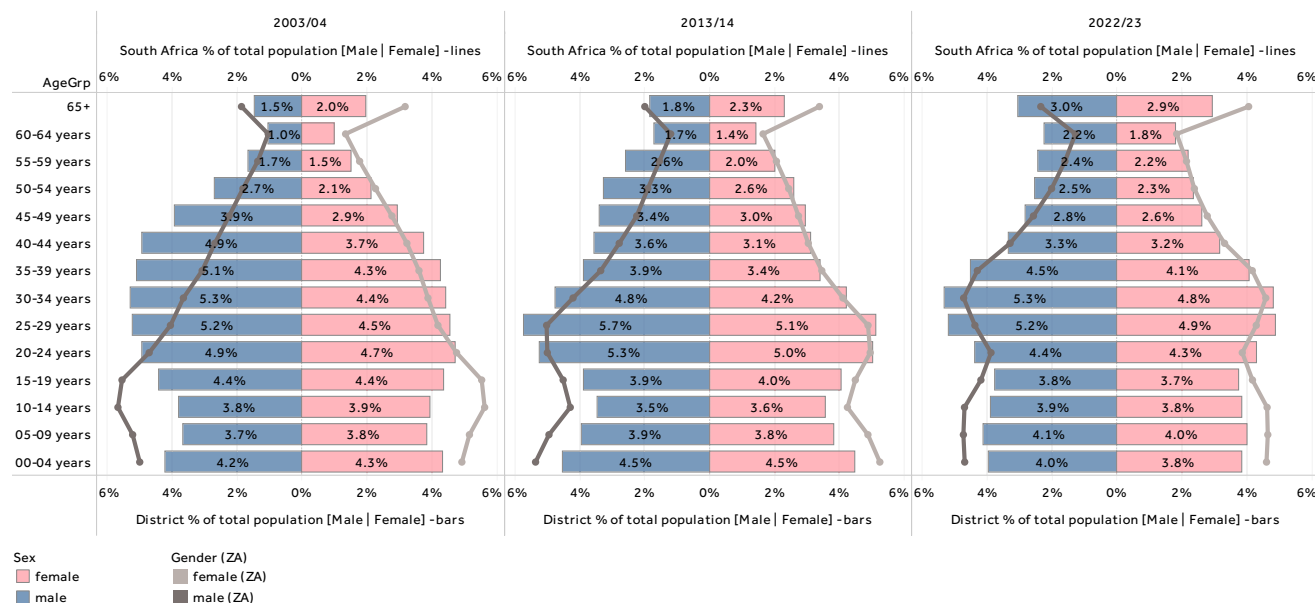
Cities/Towns: Carletonville, Fochville, Krugersdorp, Magaliesburg, Muldersdrift, Randfontein, Wedela, Westonaria

Area: 4 090km²

Population (2022)⁴: 982 752

District percentage population by age-gender group compared to South Africa

West Rand DM (DC48)



³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

West Rand

Legend

Health facilities

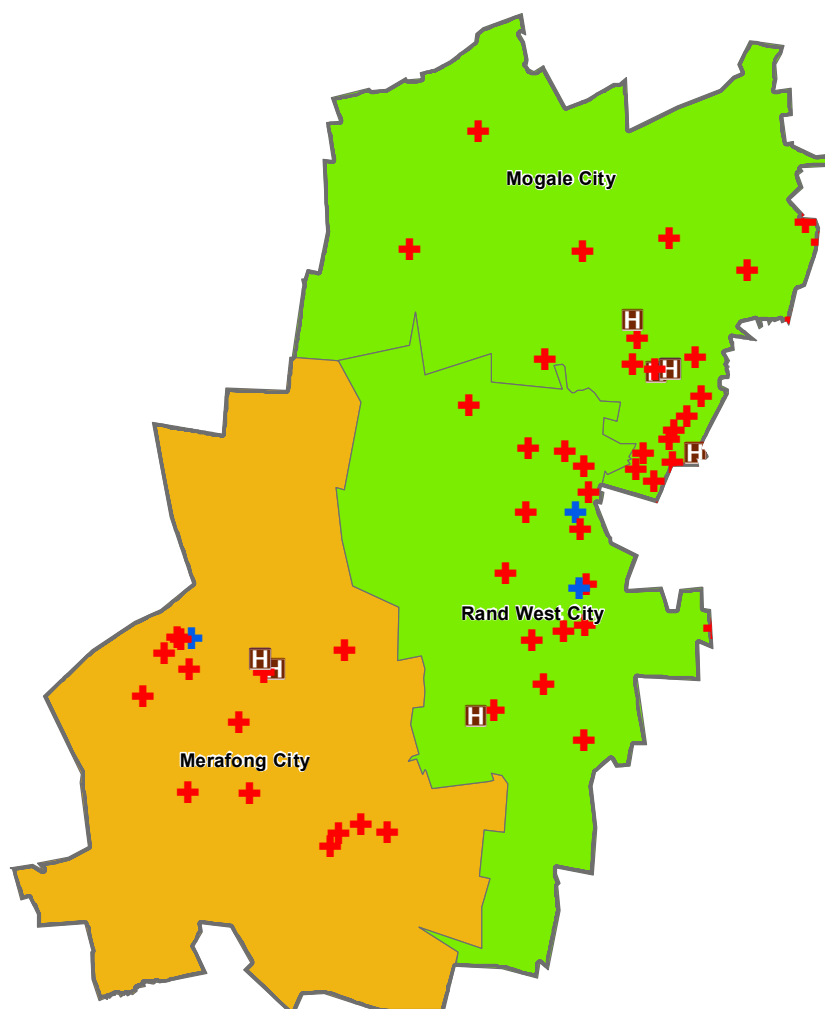
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

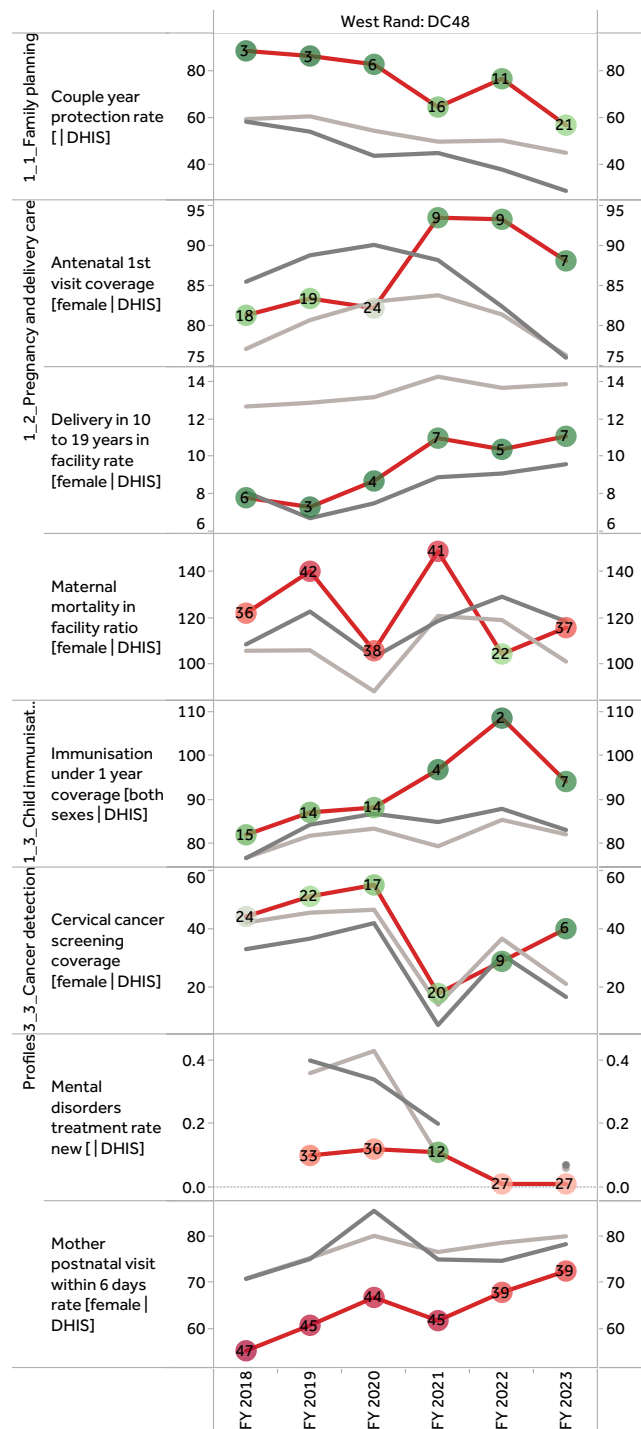
Local Municipality

2021 Total Population

- 10045 - 132270
- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420

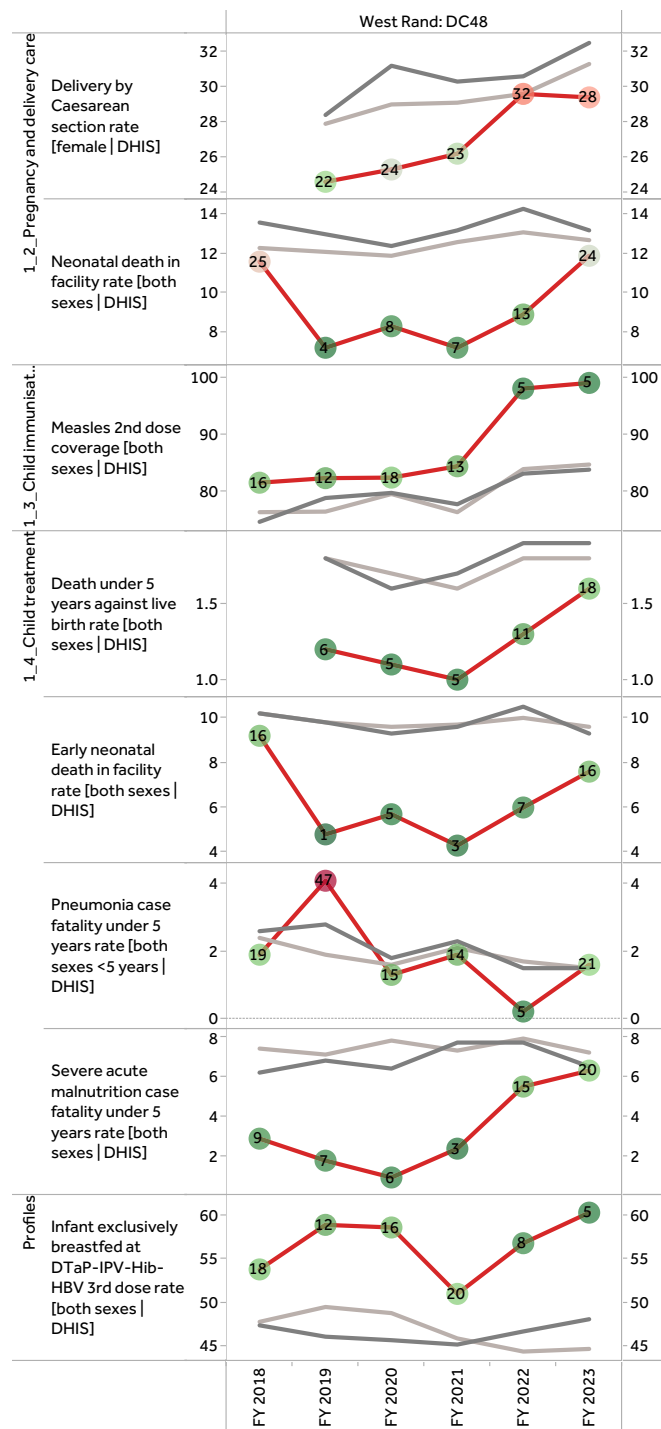


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

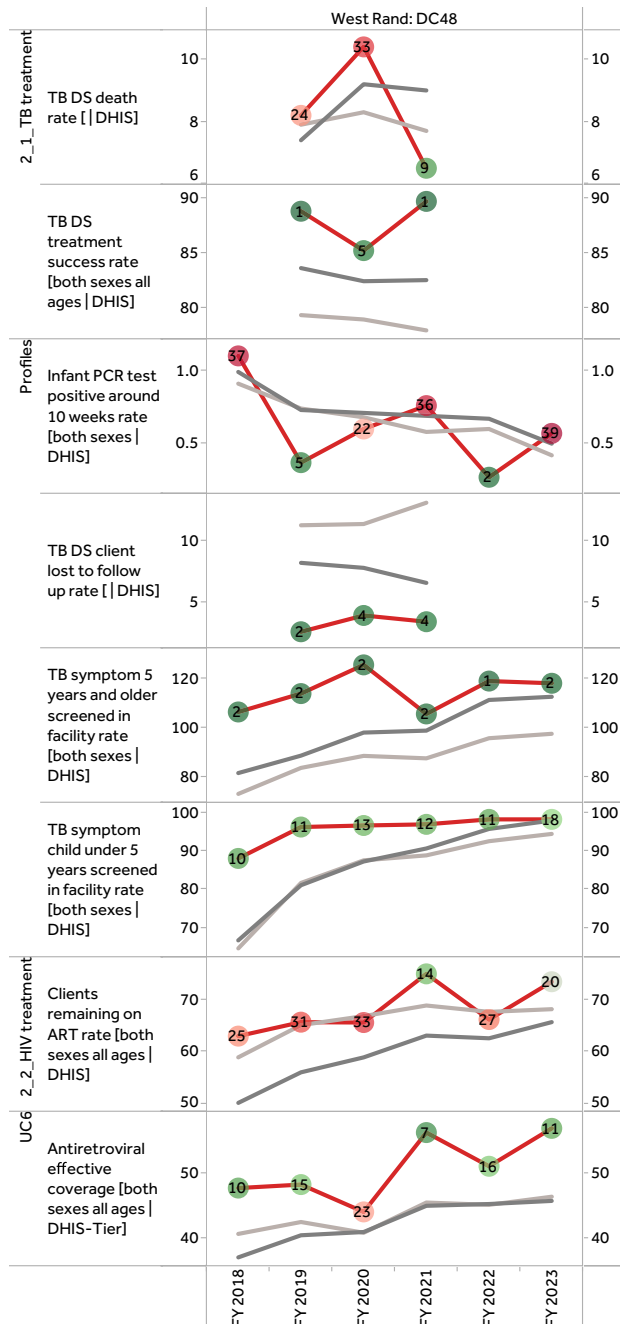
Rank
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Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 47

Annual trends, 2018/19–2022/23



Measure Names

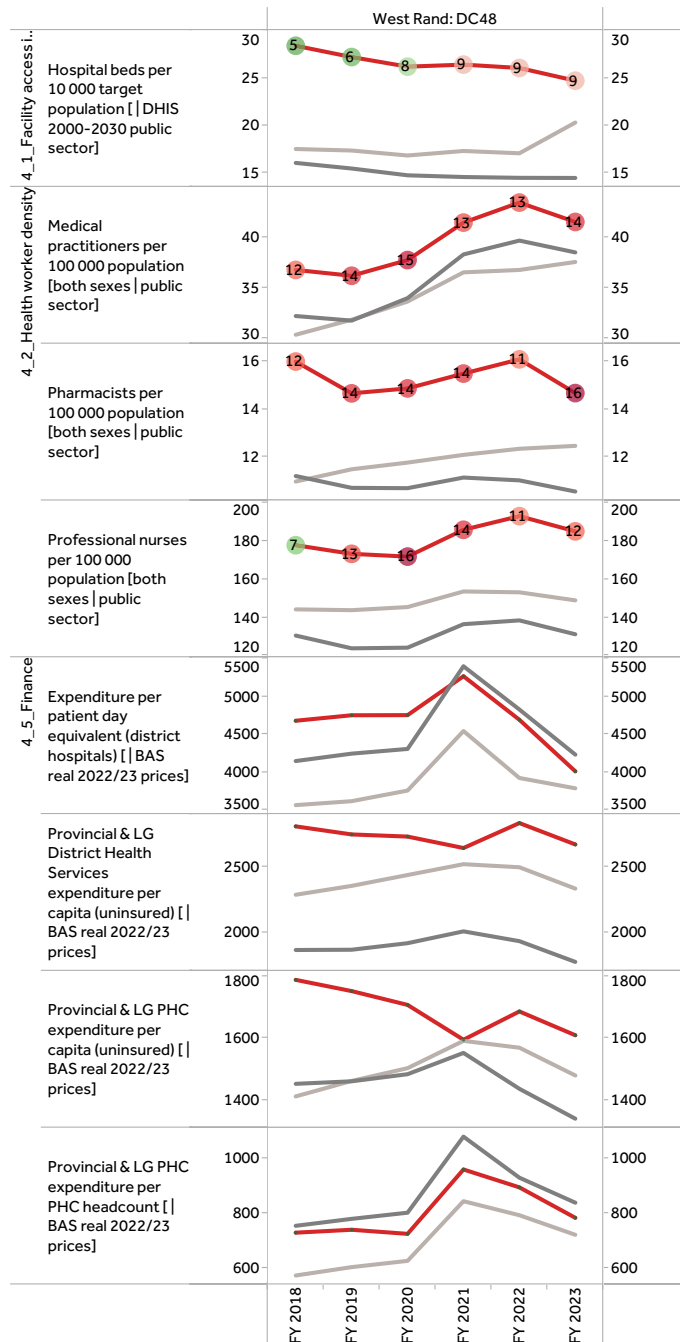
Rank

1 39

Prov av

ZA av

Ind Value



Measure Names

Rank

1 16

Prov av

ZA av

Ind Value

Ekurhuleni Metropolitan Municipality (EKU)

The City of Ekurhuleni Metropolitan Municipality⁵ Category A municipality in Gauteng Province. The former administrations of the nine towns in the former East Rand were amalgamated into the metropolitan municipality, along with the Khayalami Metropolitan Council and the Eastern Gauteng Services Council. It is one of the most densely populated areas in the province, and in the country. It comprises six health sub-districts, namely: Ekurhuleni East 1 and East 2, Ekurhuleni North 1 and North 2, and Ekurhuleni South 1 and South 2.

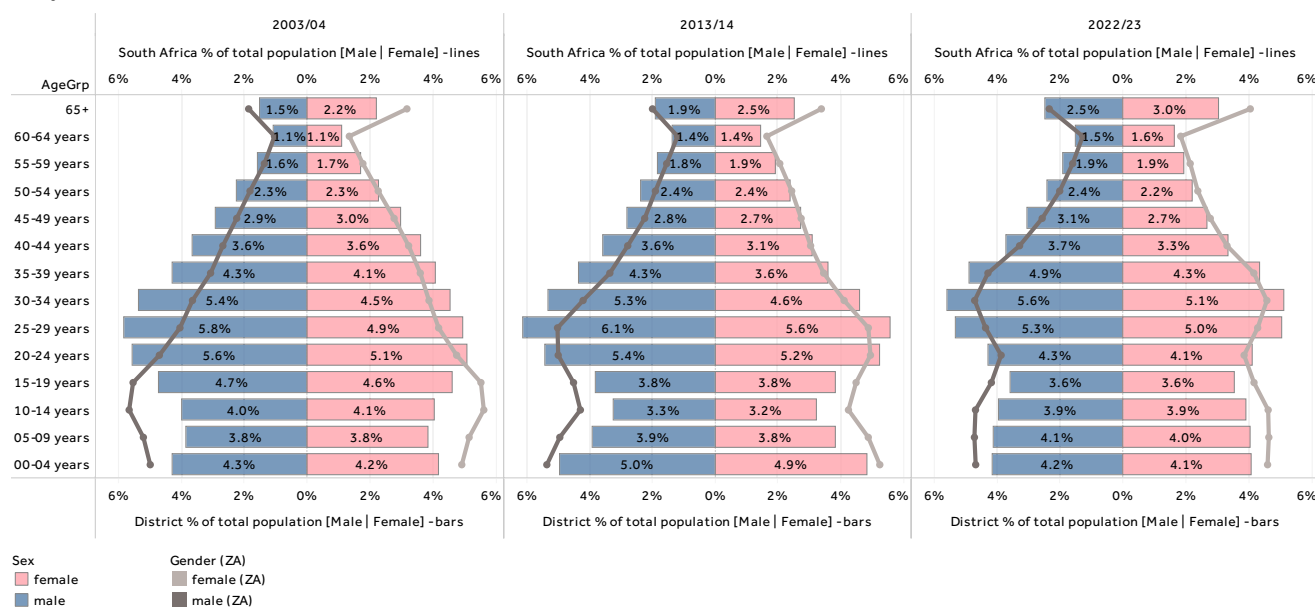
Cities/Towns: Alberton, Bedfordview, Benoni, Birchleigh, Boksburg, Brakpan, Clayville, Daveyton, Dunnottar, Edenvale, Geduld, Germiston, Katlehong, Kempton Park, Kwa-Thema, Machenzievillie, Nigel, Olifantsfontein, Springs, Tembisa, Tokoza, Vosloorus, Vorsterkroon

Area: 1 975km²

Population (2022)⁶: 4 165 110

District percentage population by age-gender group compared to South Africa

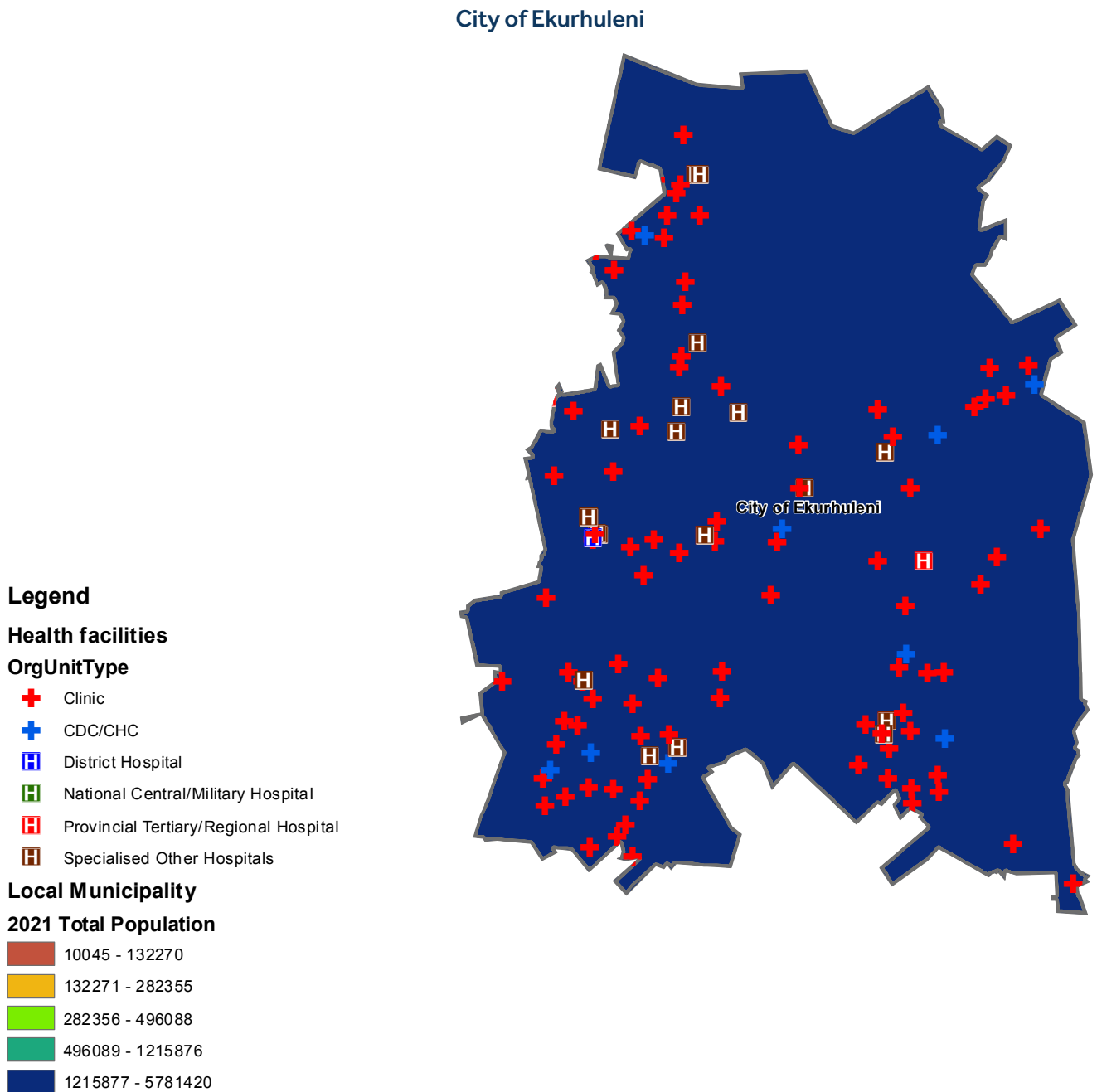
City of Ekurhuleni MM (EKU)



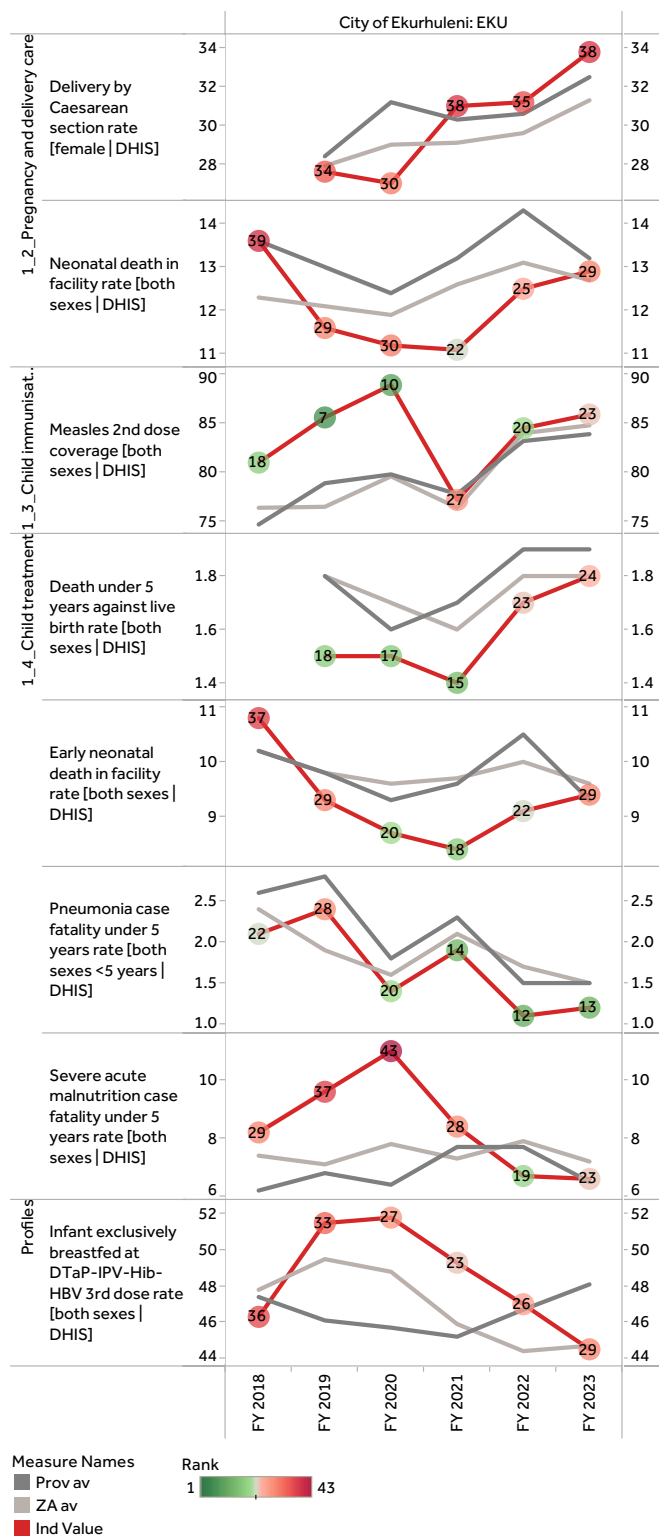
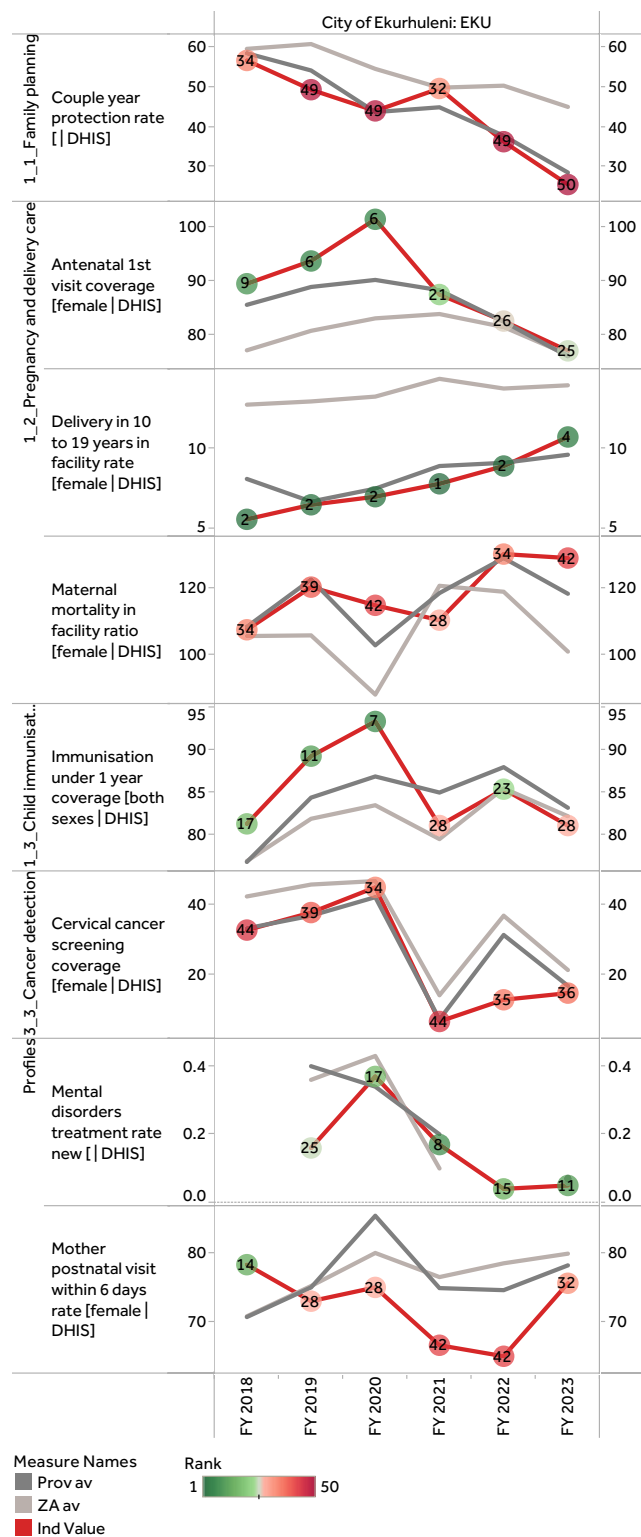
⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

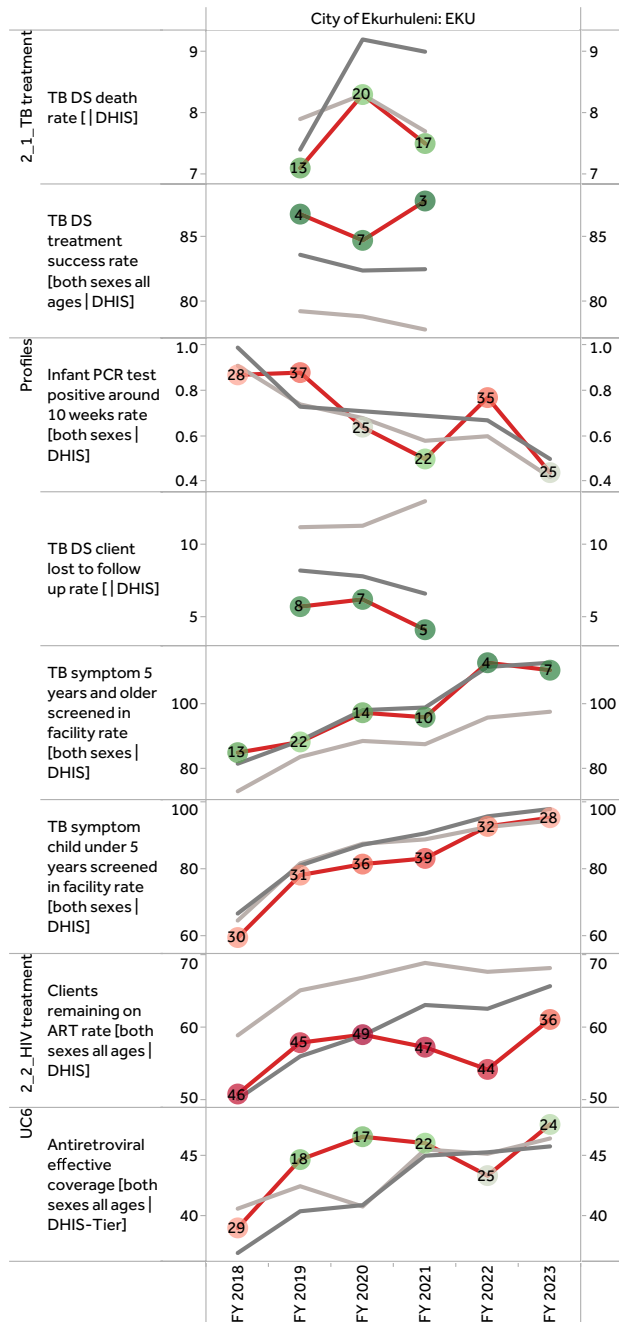
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23

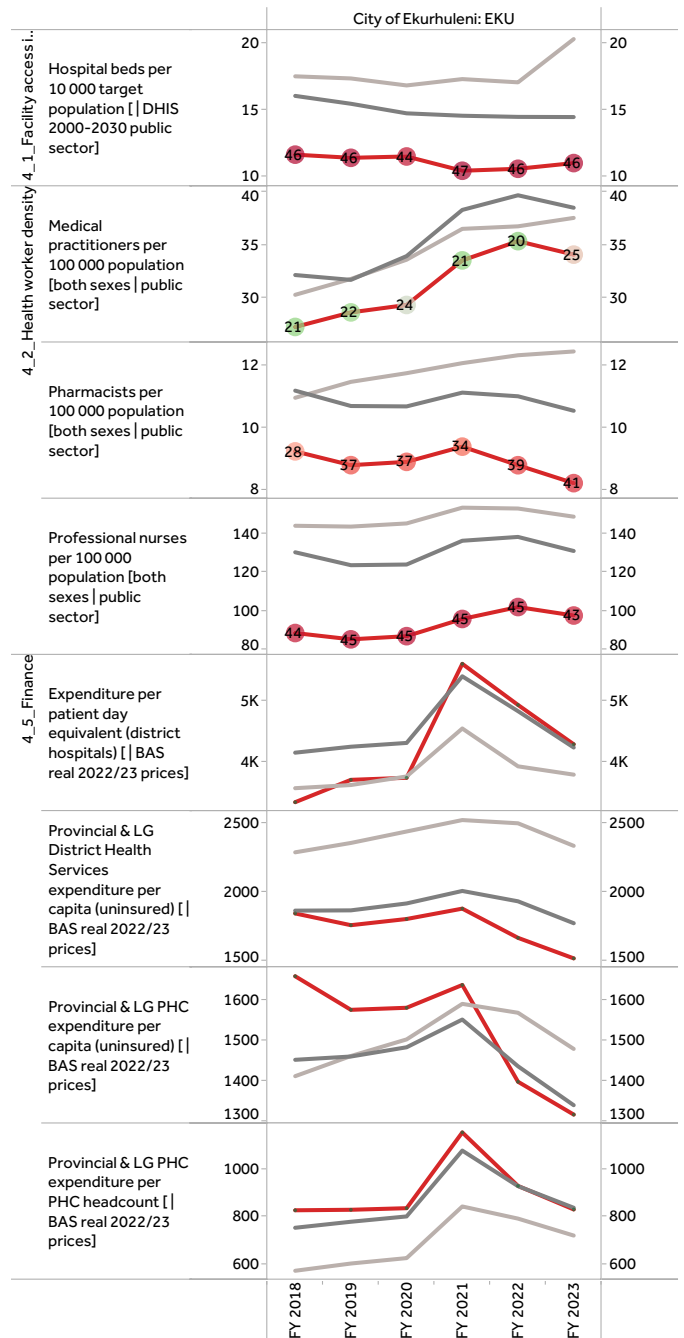


Measure Names

- Prov av
- ZA av
- Ind Value

Rank

1 49



Measure Names

- Prov av
- ZA av
- Ind Value

Rank

1 47

Johannesburg Metropolitan Municipality (DC20)

The City of Johannesburg Metropolitan Municipality⁷ is Category A municipality in Gauteng Province. Johannesburg is the most advanced commercial city in Africa and the engine-room of the South African and regional economy. It is divided into seven health sub-districts, named Johannesburg Sub-district A to Johannesburg Sub-district G.

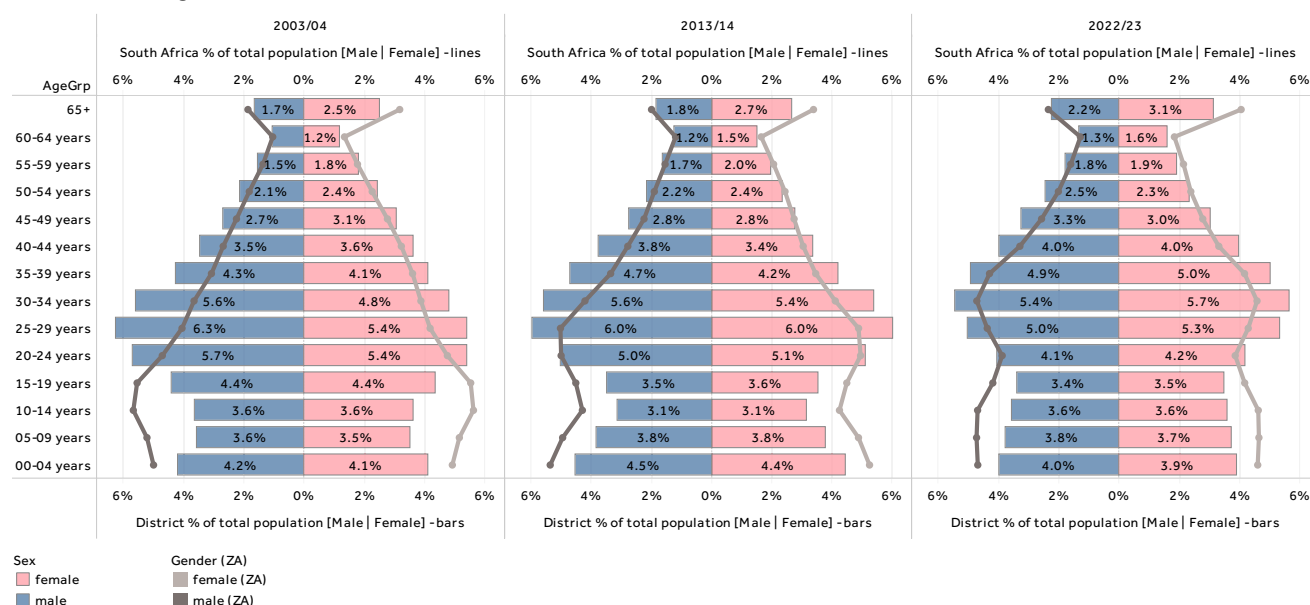
Cities/Towns: Alexandra, Diepkloof, Diepsloot, Ennerdale, Johannesburg, Johannesburg South, Lawley, Lenasia, Lenasia South, Meadowlands East, Meadowlands West, Midrand, Orange Farm, Pimville, Randburg, Roodepoort, Sandton, Soweto

Area: 1 643km²

Population (2022)⁸: 6 295 071

District percentage population by age-gender group compared to South Africa

Johannesburg MM (JHB)



⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

City of Johannesburg

Legend

Health facilities

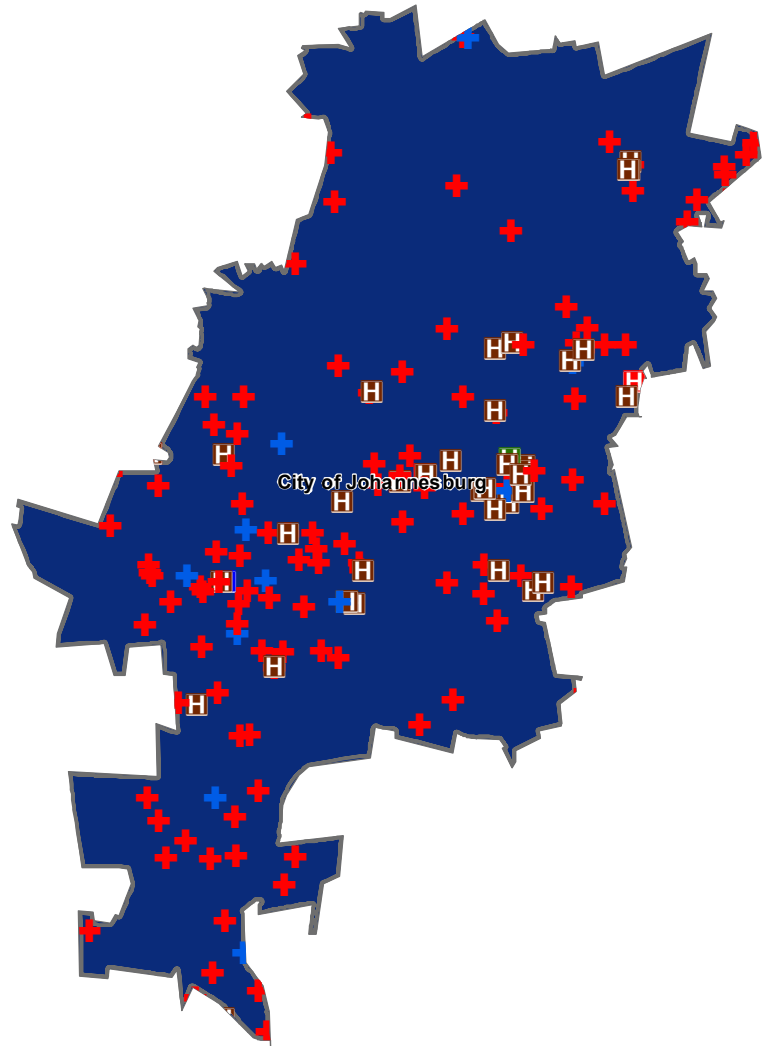
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

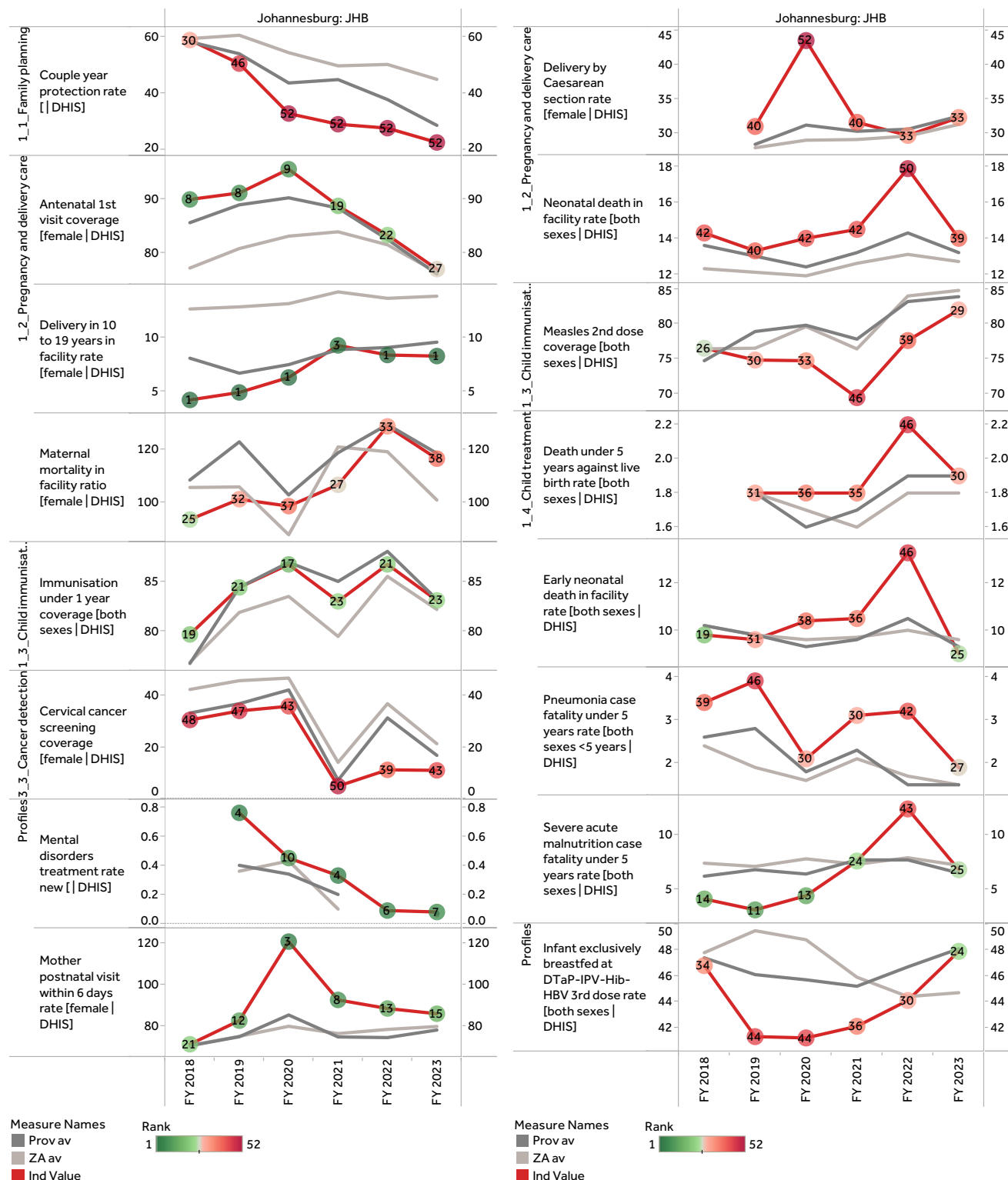
Local Municipality

2021 Total Population

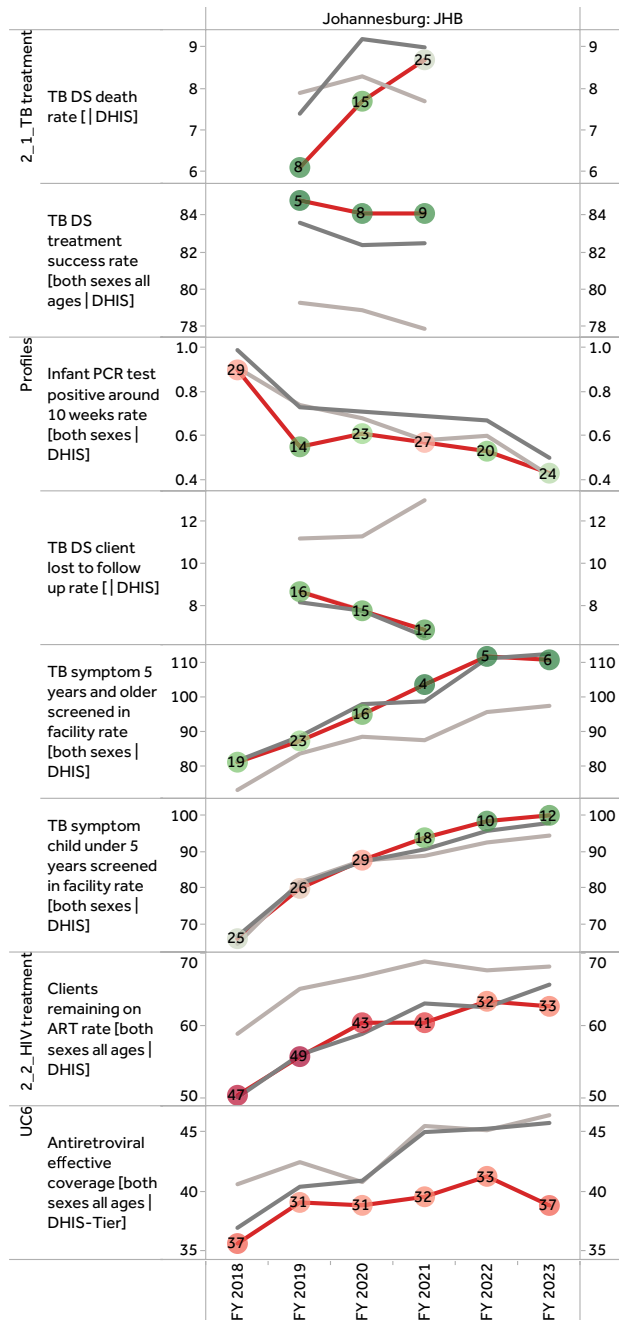
- 10045 - 132270
- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420



Annual trends, 2018/19–2022/23

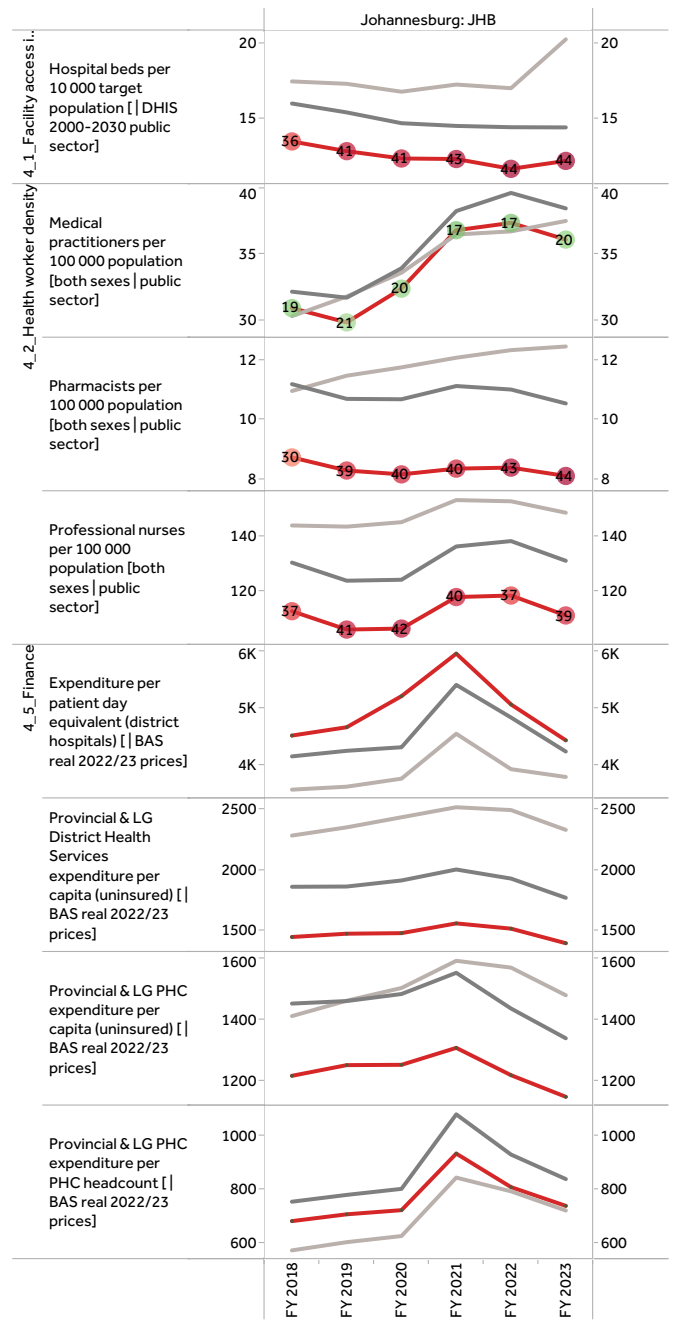


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 49



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 44

Tshwane Metropolitan Municipality (TSH)

The City of Tshwane Metropolitan Municipality⁹ is a Category A municipality situated in the Gauteng Province. Tshwane is the single-largest metropolitan municipality in the country. It comprises seven health sub-districts, named Tshwane Health Sub-district 1 to Tshwane Health Sub-district 7.

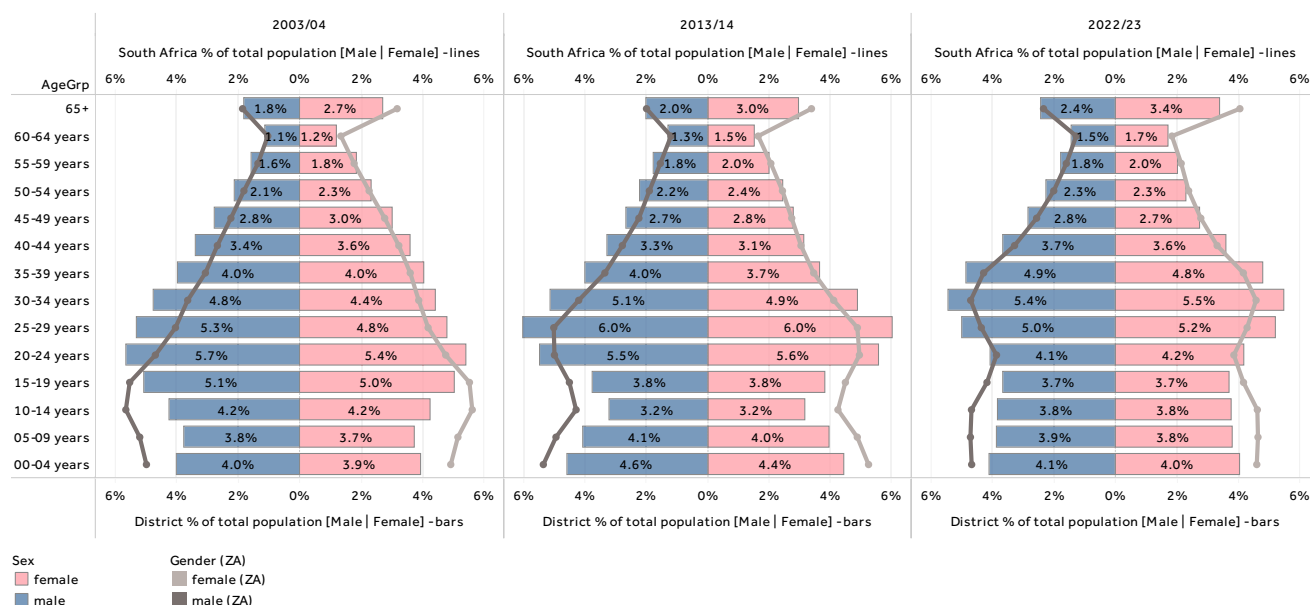
Cities/Towns: Akasia, Atteridgeville, Bronkhorstspuit, Centurion, Cullinan, Ekangala, Ga-Rankuwa, Garsfontein, Hammanskraal, Irene, Kudube, Mabopane, Mamelodi, Pretoria, Pretoria North, Rayton, Refilwe, Roodeplaat, Soshanguve, Temba, Winterveldt

Area: 6 298km²

Population (2022)¹⁰: 3 950 218

District percentage population by age-gender group compared to South Africa

Tshwane MM (TSH)



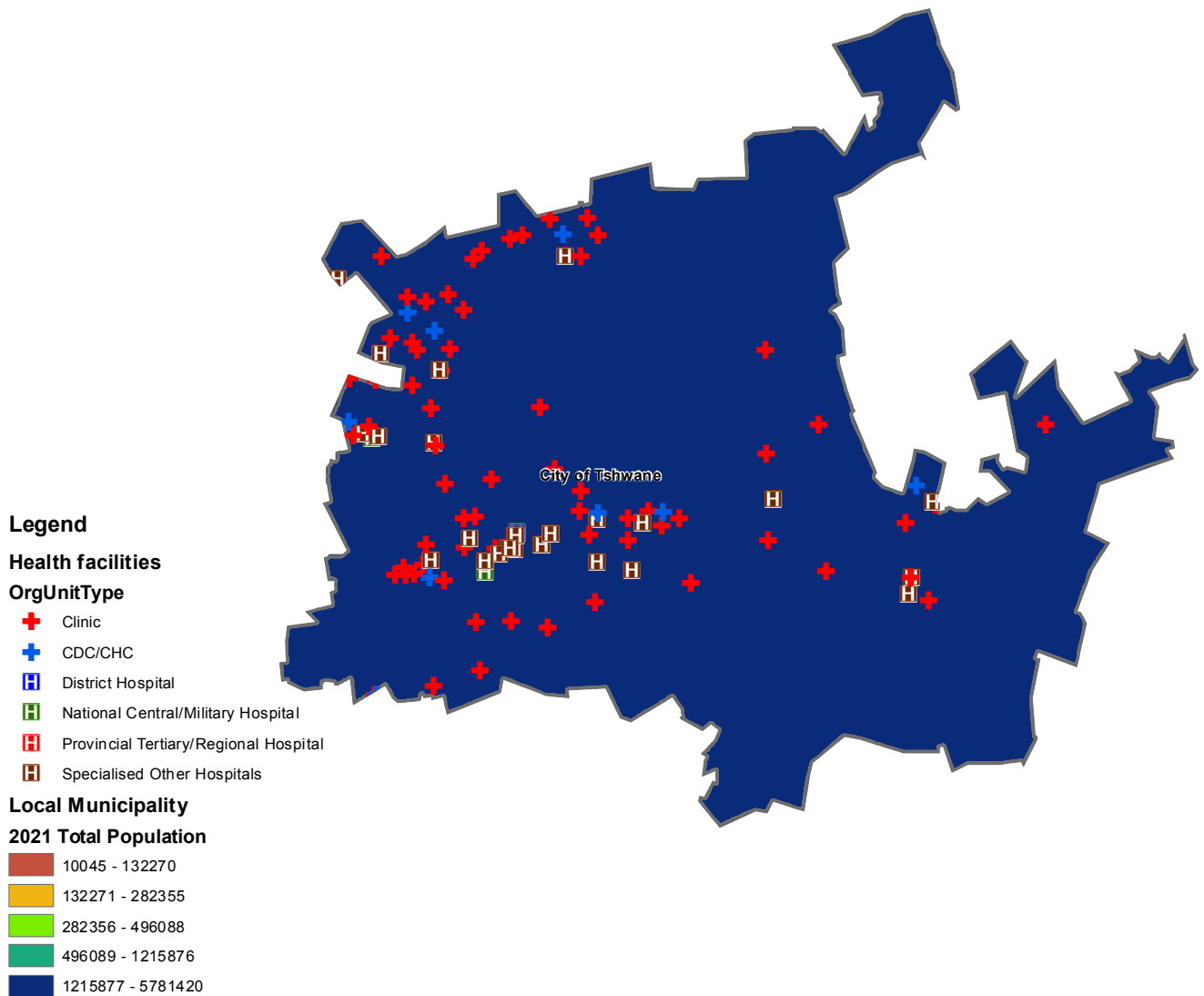
⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

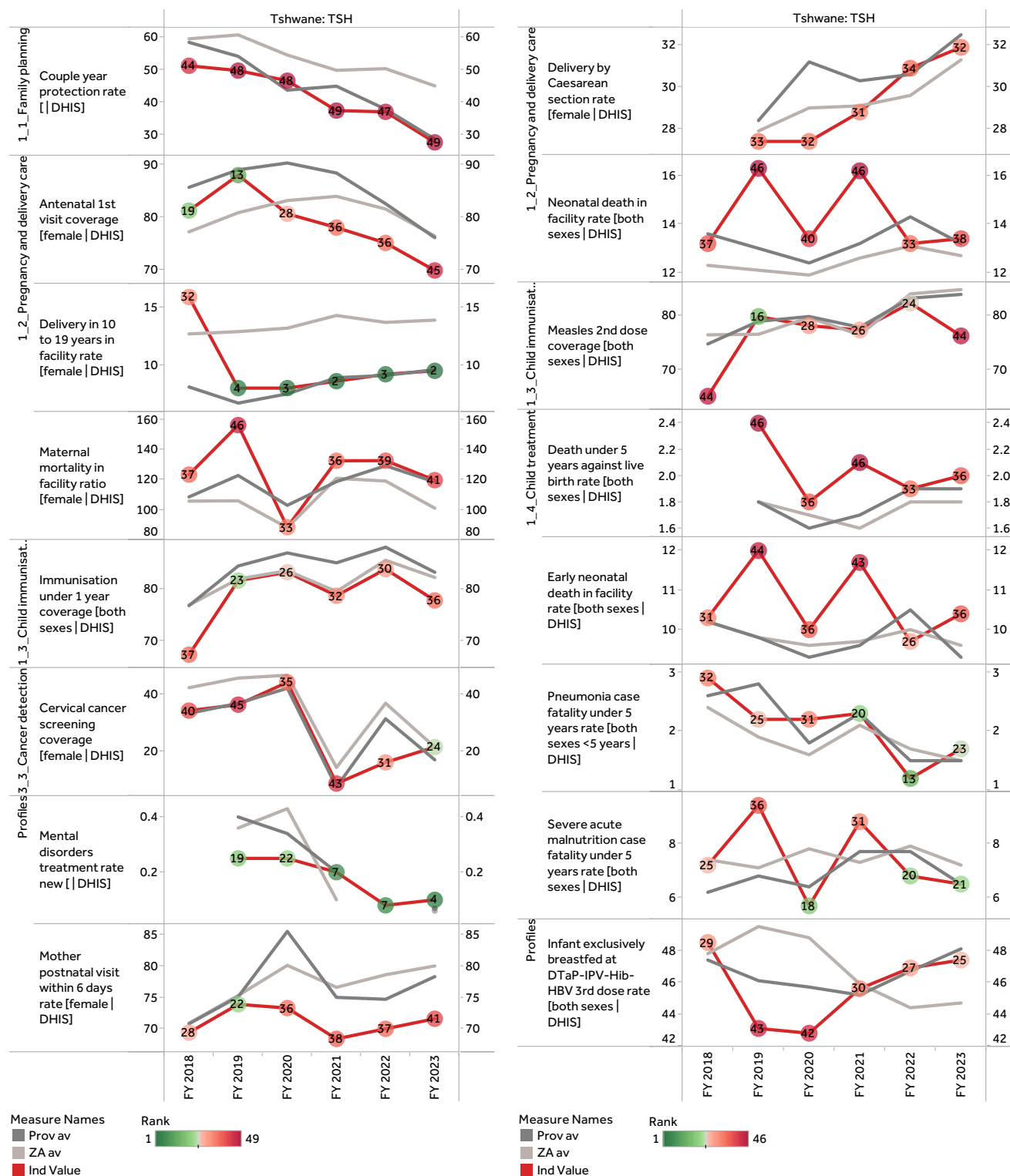
¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

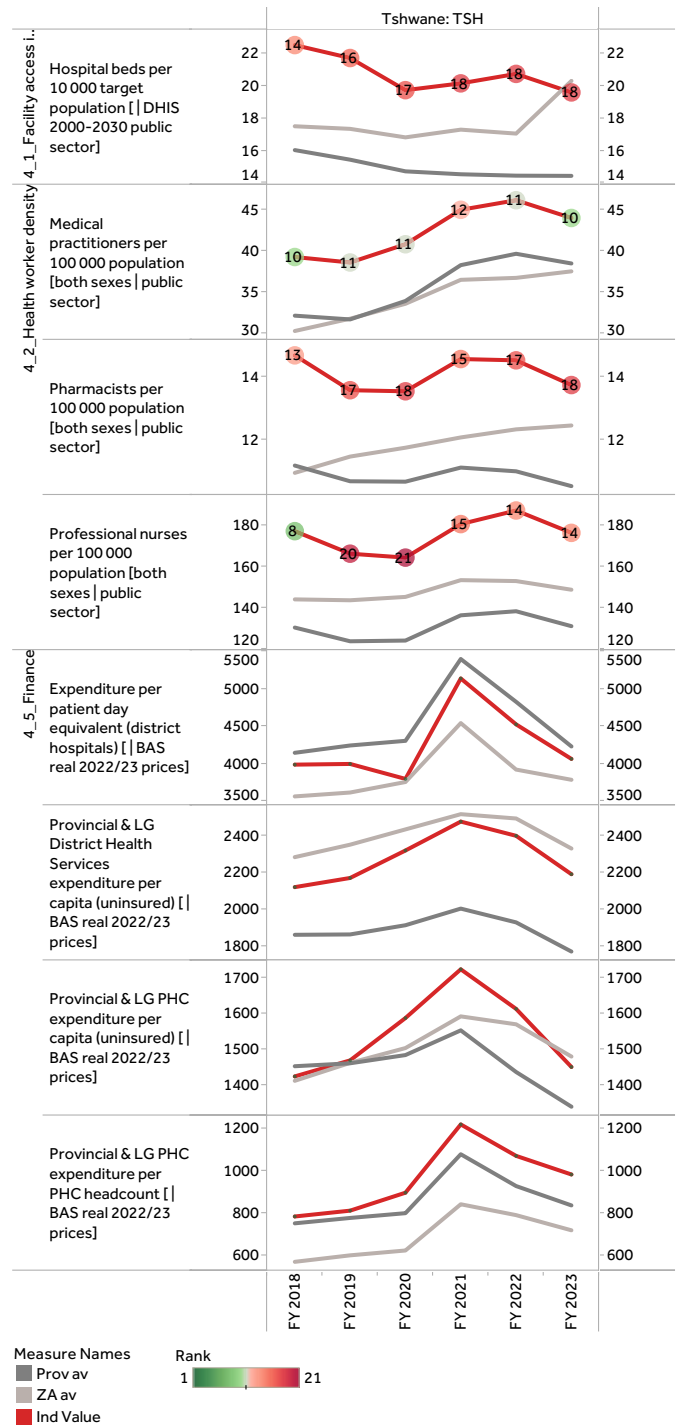
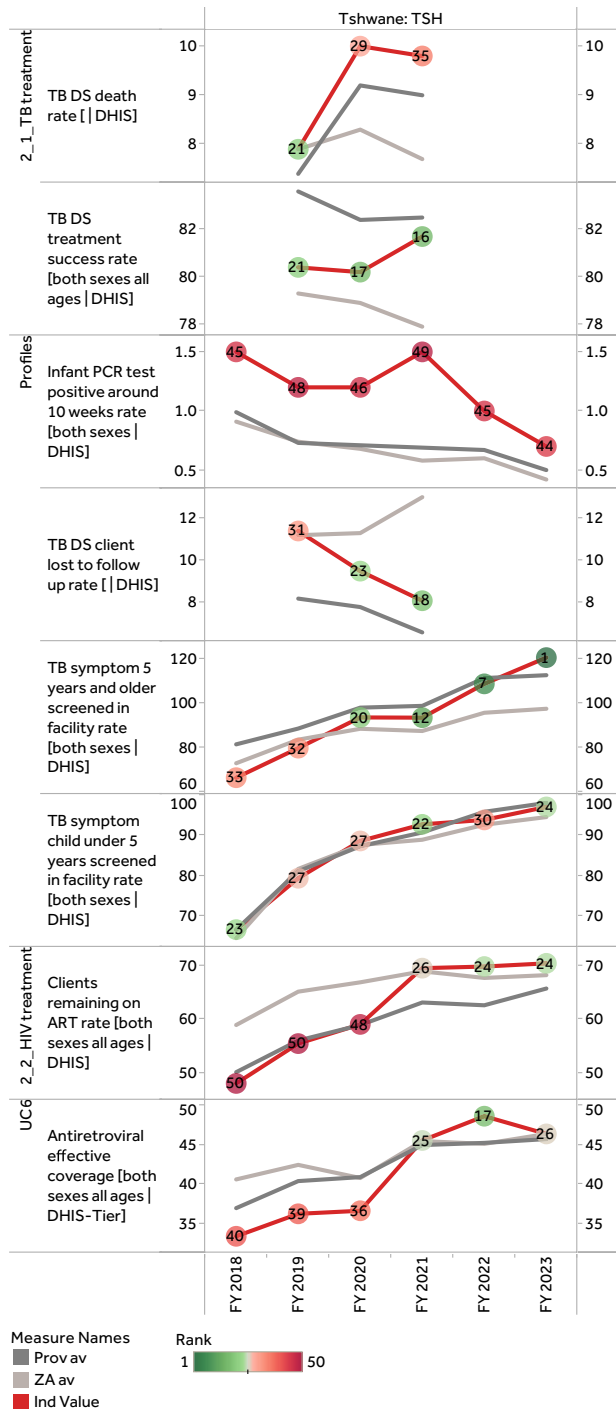
City of Tshwane



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



KwaZulu-Natal Province

Ugu District Municipality (DC21)

The Ugu District Municipality¹ is a Category C municipality in the far south of KwaZulu-Natal. The district is made up of four local municipalities: uMdoni, uMzumbe, Ray Nkonyeni and uMuziwabantu.

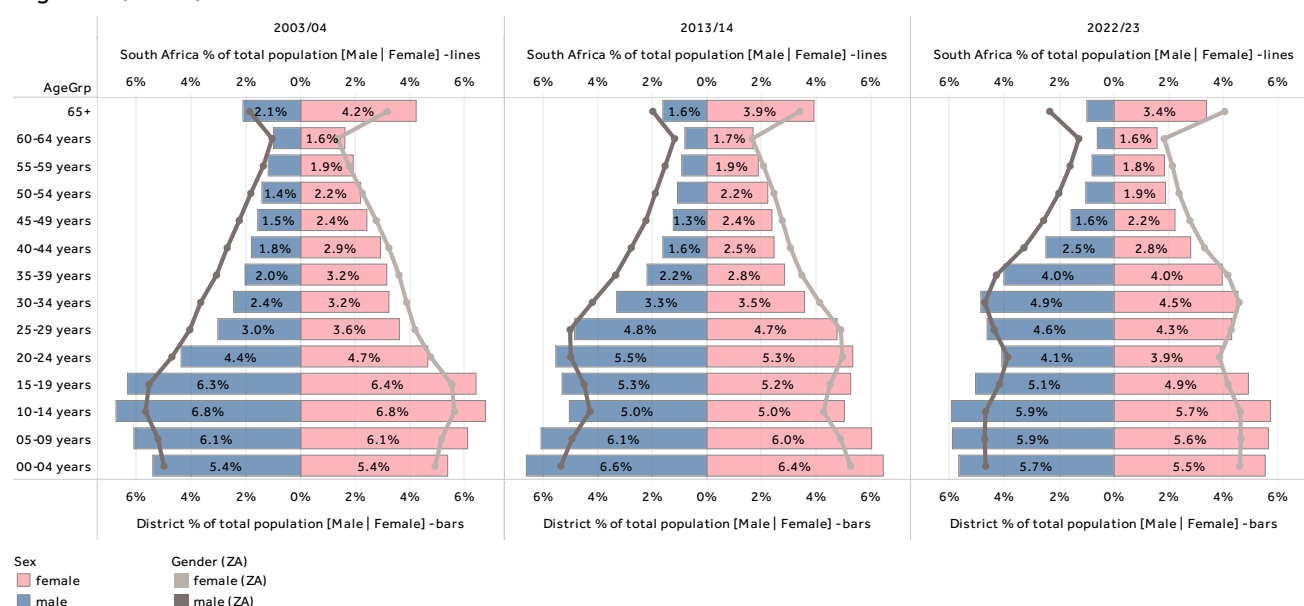
Cities/Towns: Harding, Hibberdene, Margate, Pennington, Port Edward, Port Shepstone, Scottburgh/Umzinto North, Southbroom

Area: 4 790km²

Population (2022)²: 838 644

District percentage population by age-gender group compared to South Africa

Ugu DM (DC21)

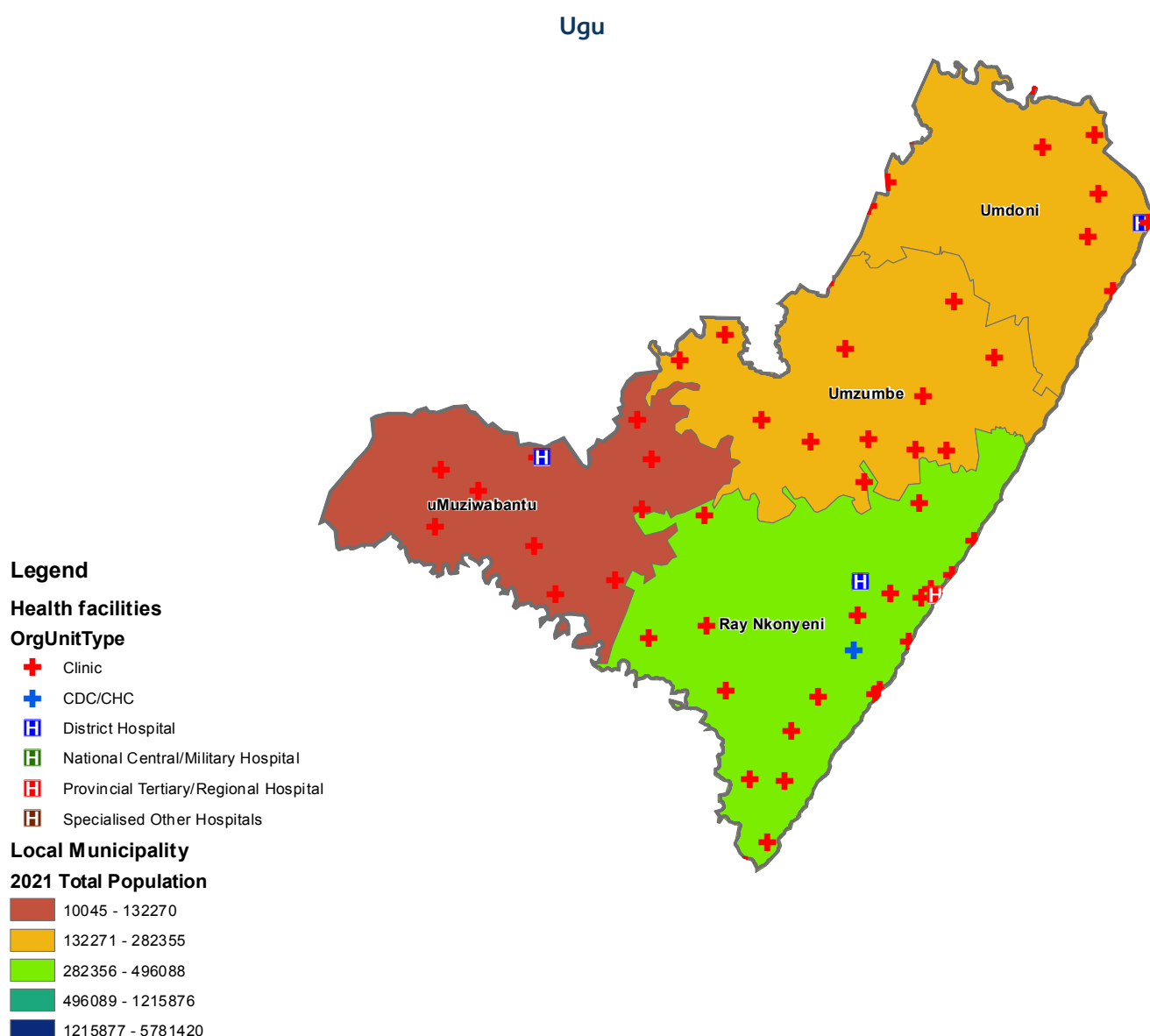


¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

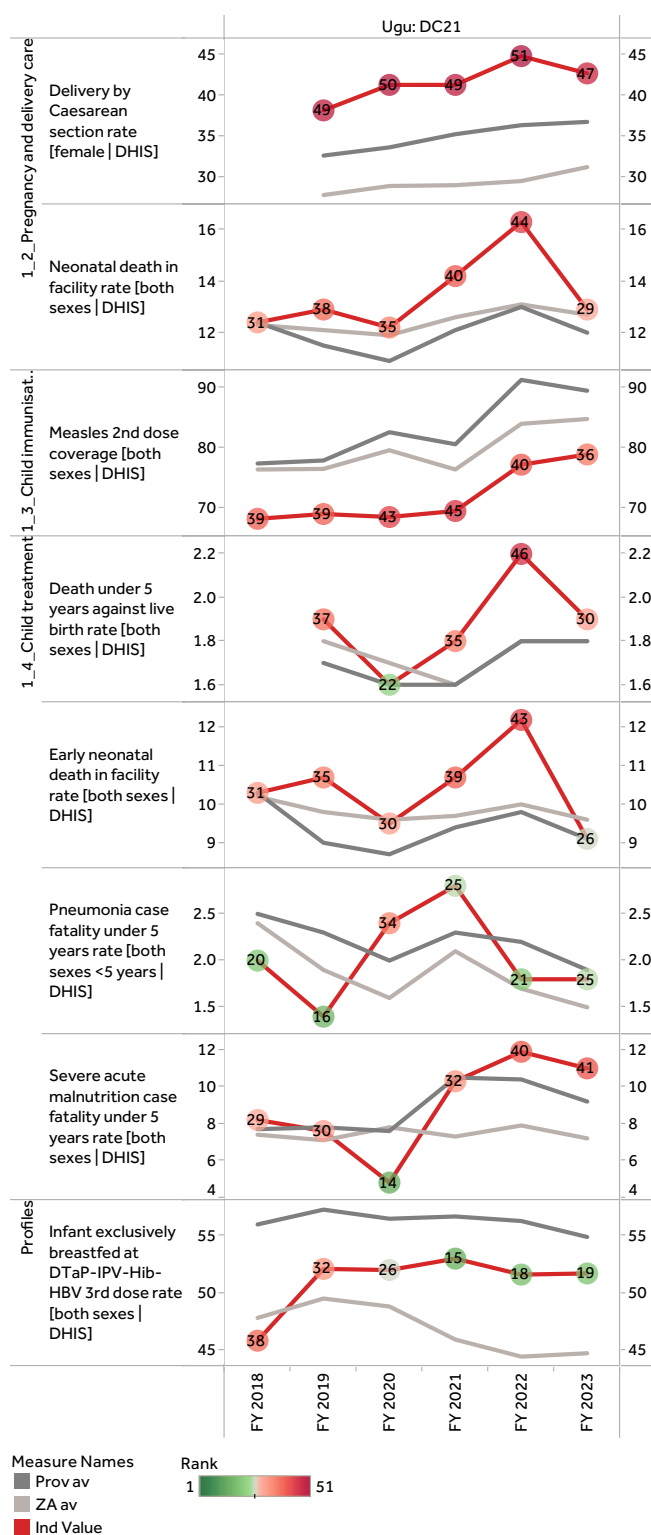
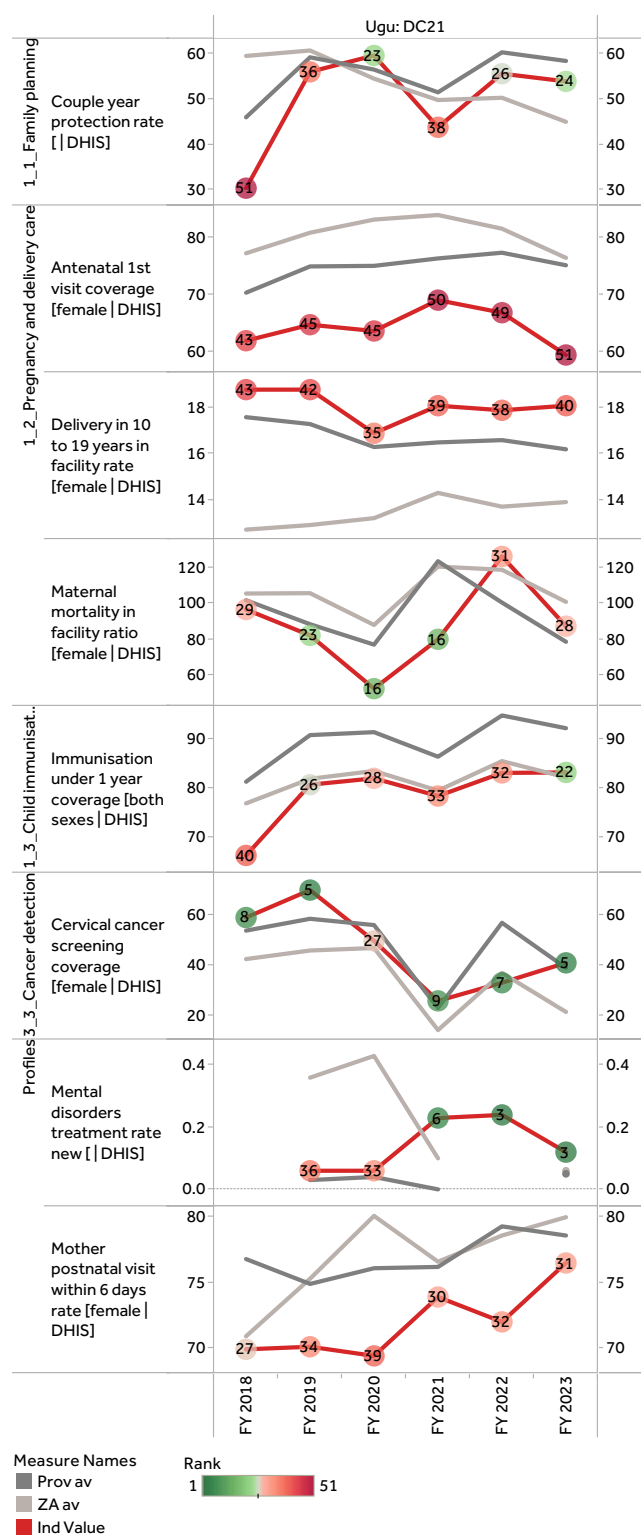
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

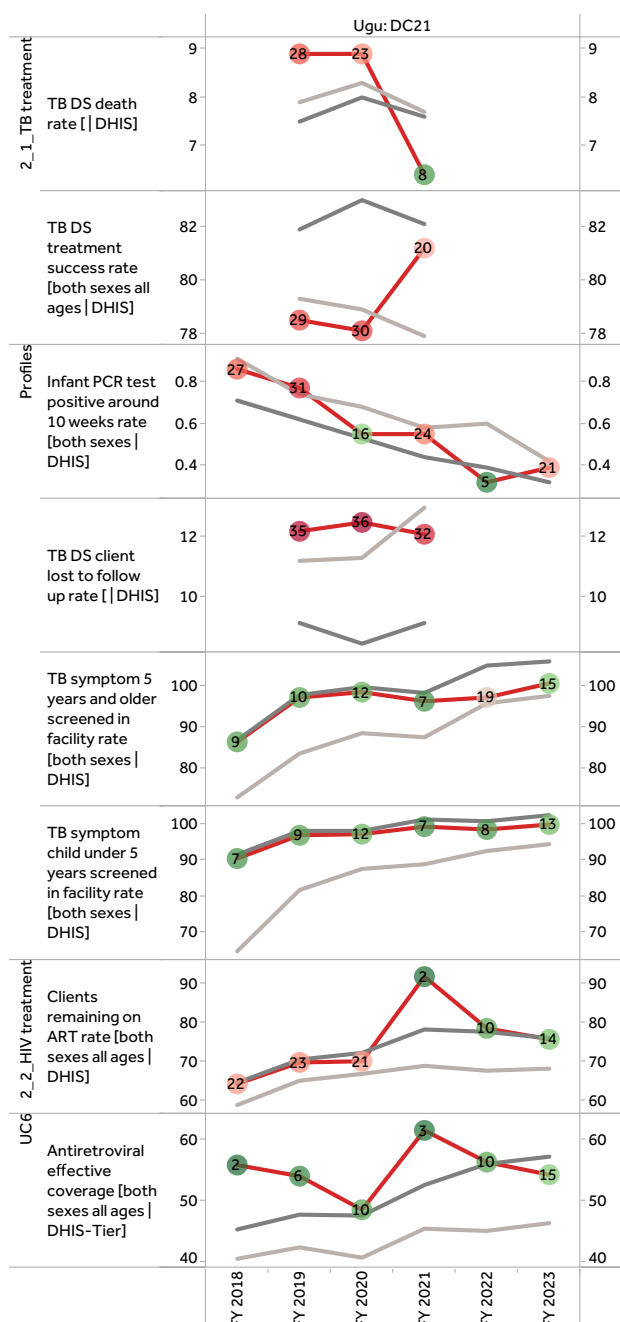
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23

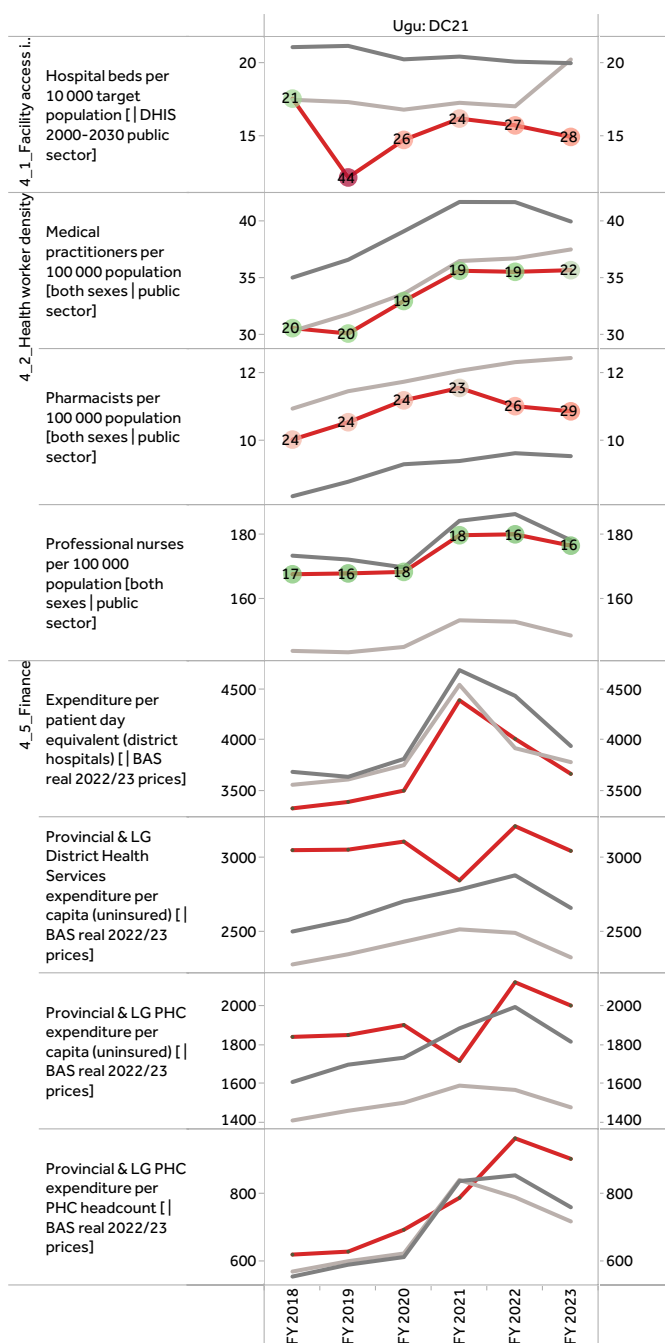


Measure Names

- Prov av
- ZA av
- Ind Value

Rank

1 36



Measure Names

- Prov av
- ZA av
- Ind Value

Rank

1 44

uMgungundlovu District Municipality (DC22)

The uMgungundlovu District Municipality³ is a Category C municipality located in the KwaZulu-Natal Midlands. The district comprises the following seven local municipalities: Impendle, Mkhambathini, Mpofana, Msunduzi, Richmond, uMngeni, and uMshwathi.

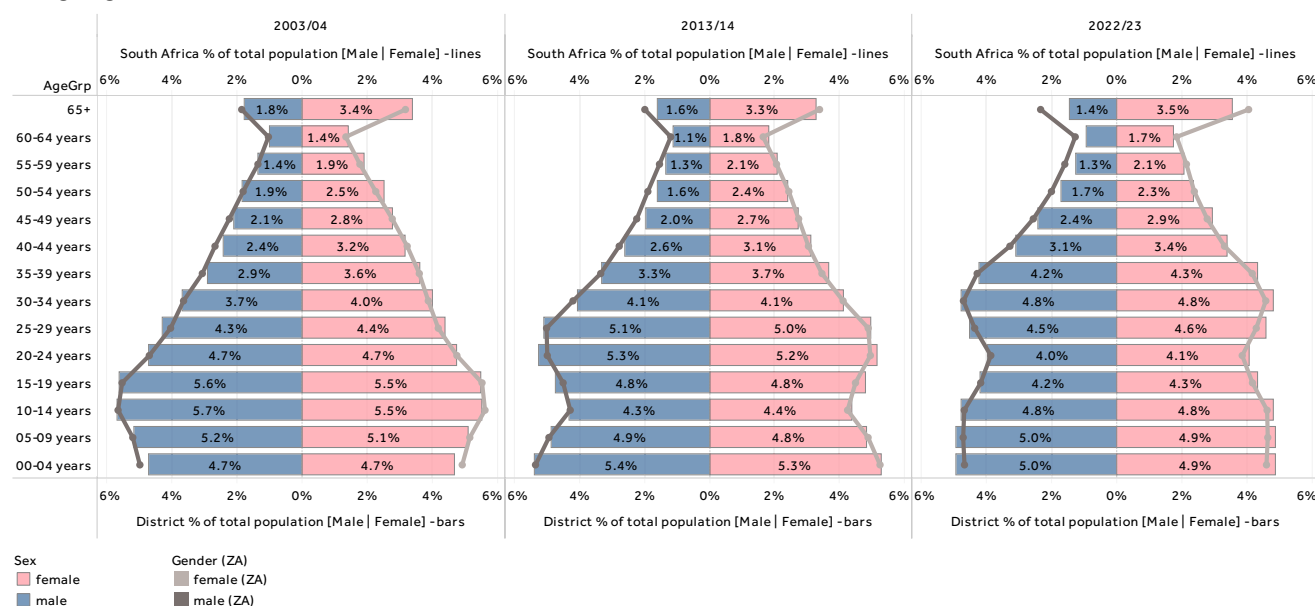
Cities/Towns: Ashburton, Camperdown, Cool Air, Dalton, Hilton, Howick, Impendle, Mooi River, New Hanover, Pietermaritzburg, Richmond, Wartburg

Area: 9 602km²

Population (2022)⁴: 1 163 351

District percentage population by age-gender group compared to South Africa

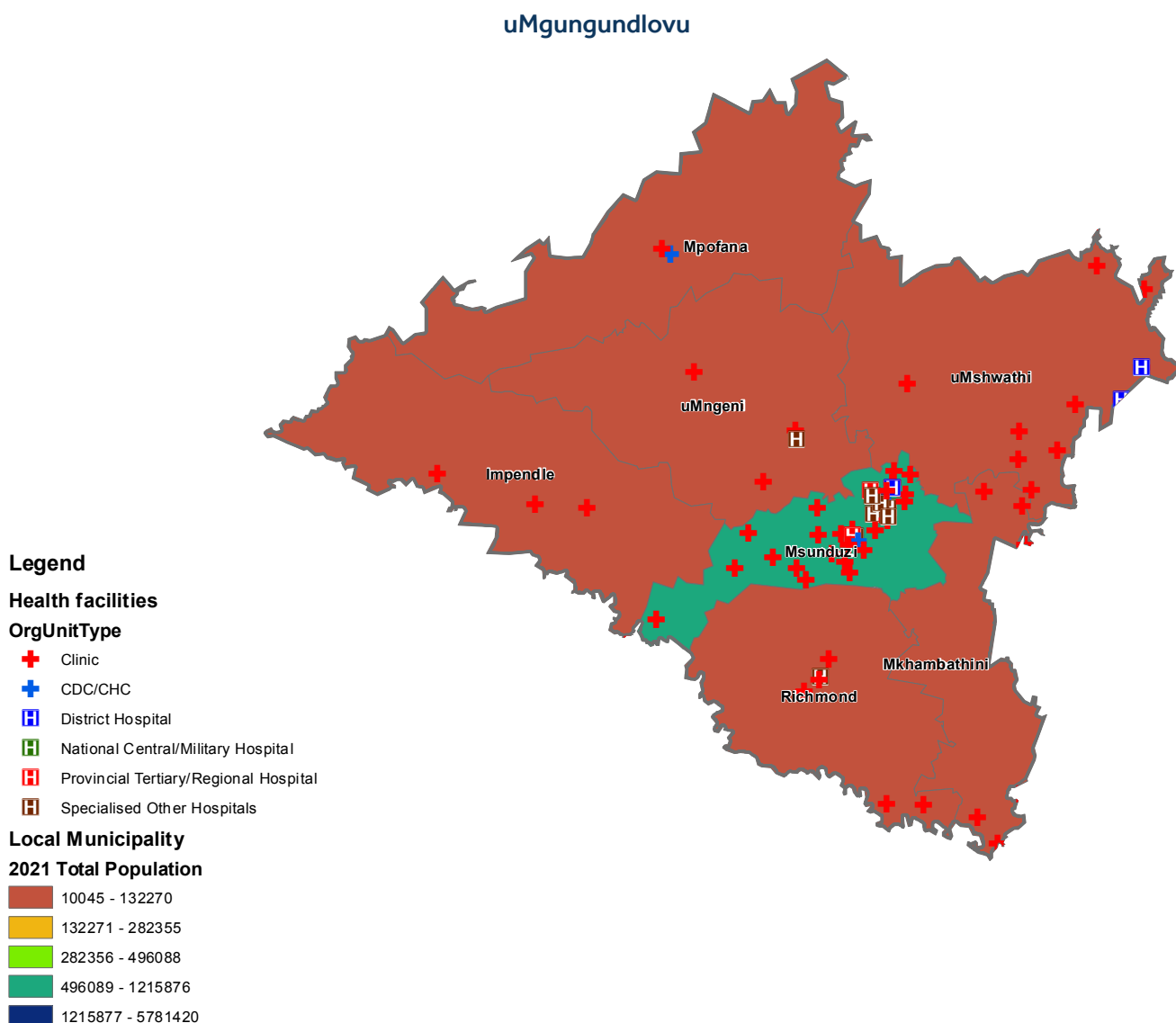
uMgungundlovu DM (DC22)



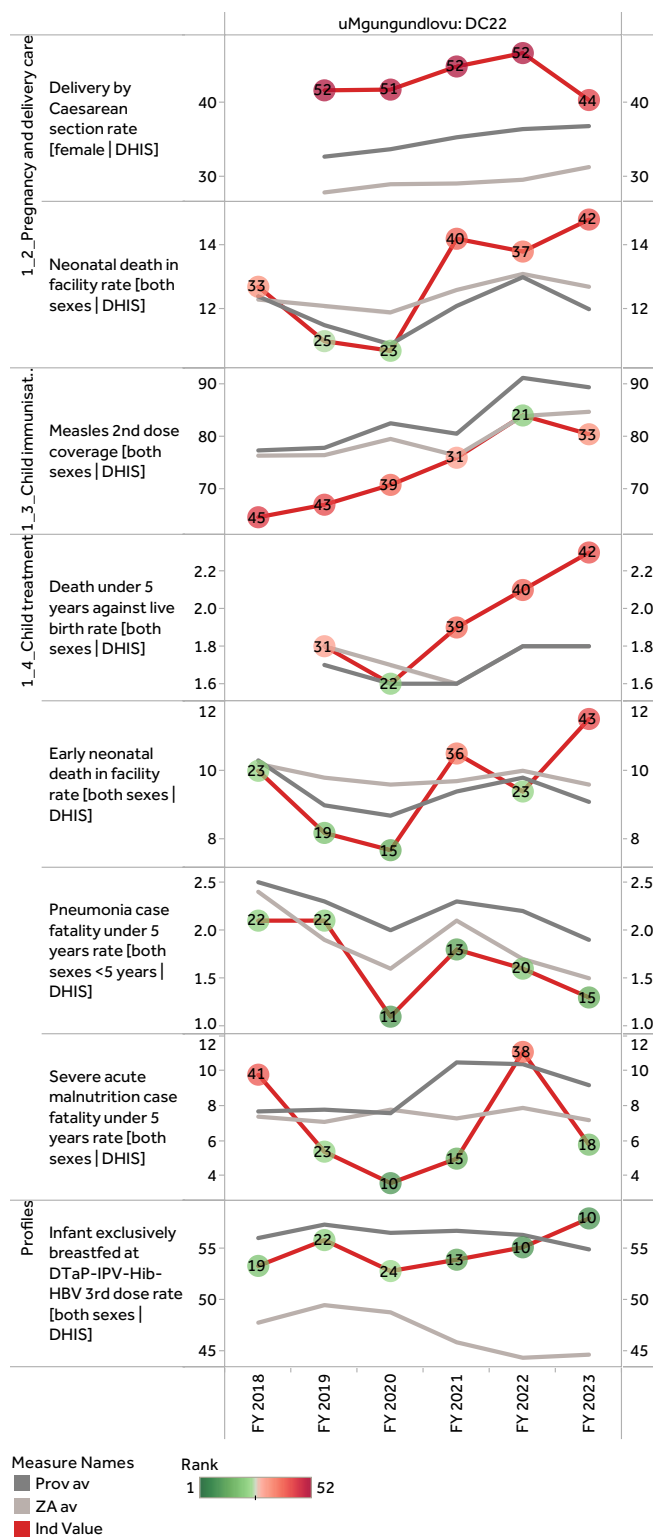
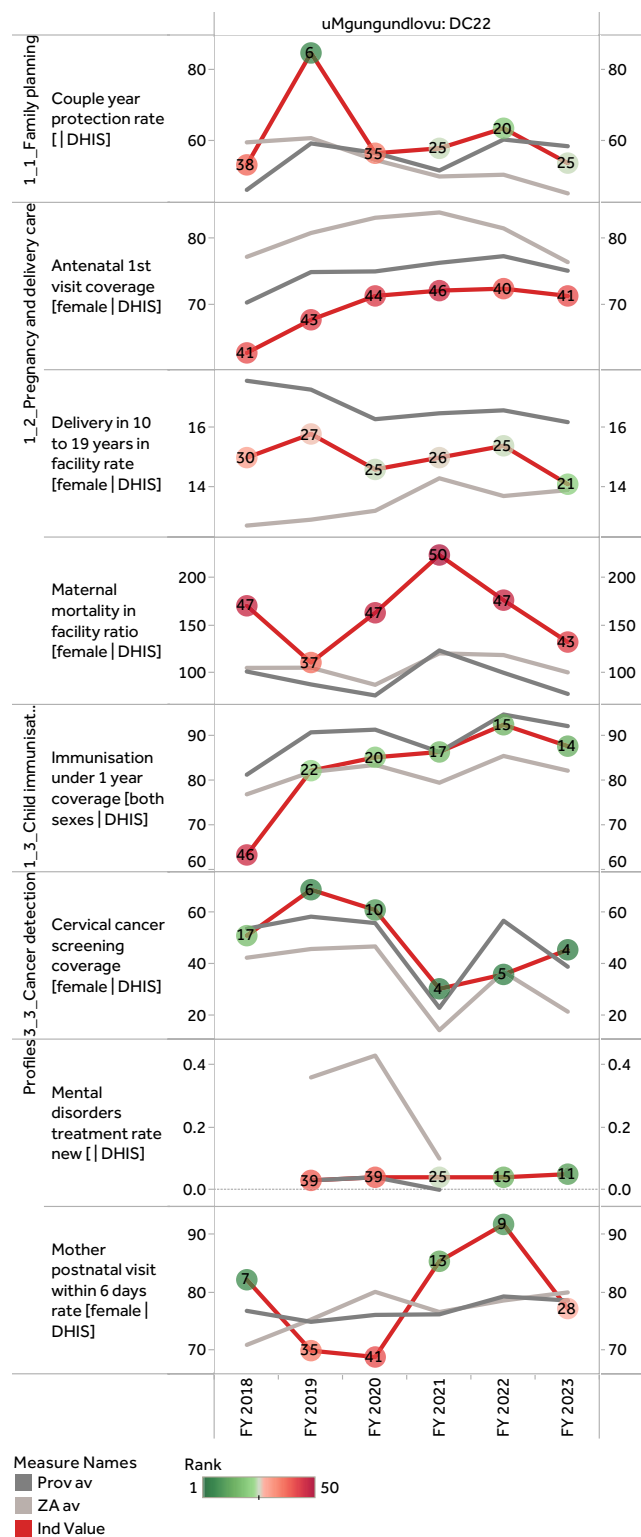
³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

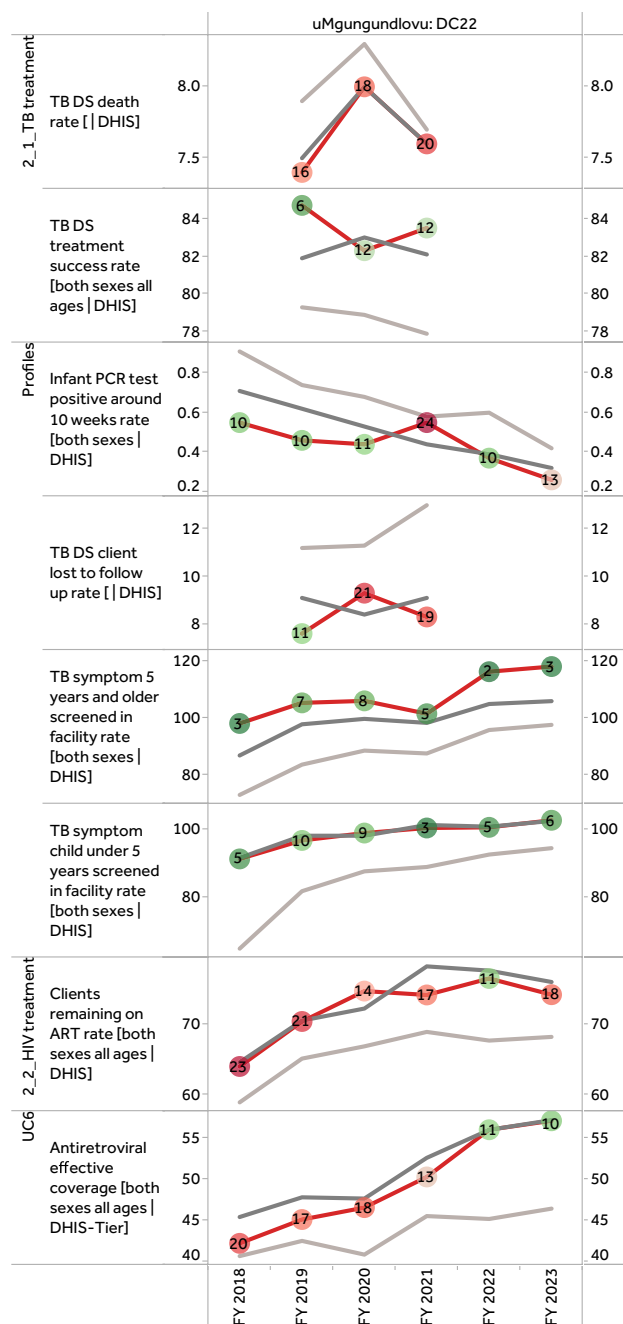
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

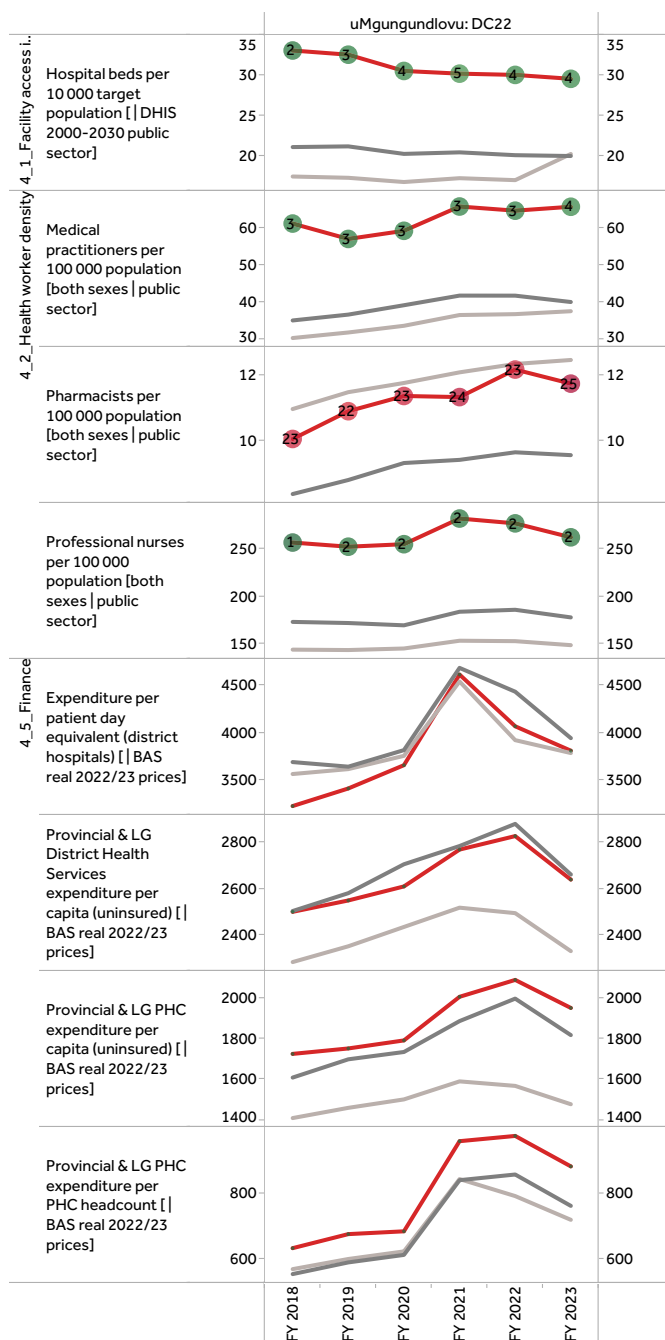


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 24



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 25

uThukela District Municipality (DC23)

The uThukela District Municipality⁵ is a Category C municipality and is located on the western boundary of the KwaZulu-Natal Province. It consists of three local municipalities: Okhahlamba, Alfred Duma and Inkosi Langalibalele.

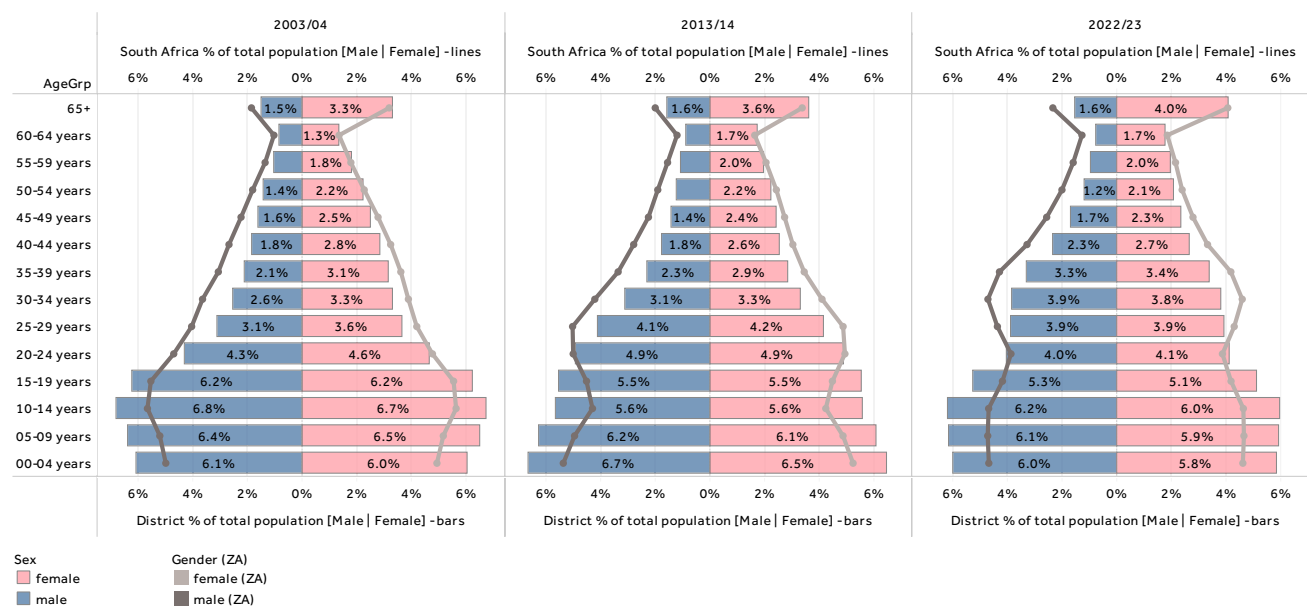
Cities/Towns: Bergville, Cathkin Park, Colenso, Estcourt, Ladysmith, Van Reenen, Weenen, Winterton

Area: 11 134km²

Population (2022)⁶: 711 516

District percentage population by age-gender group compared to South Africa

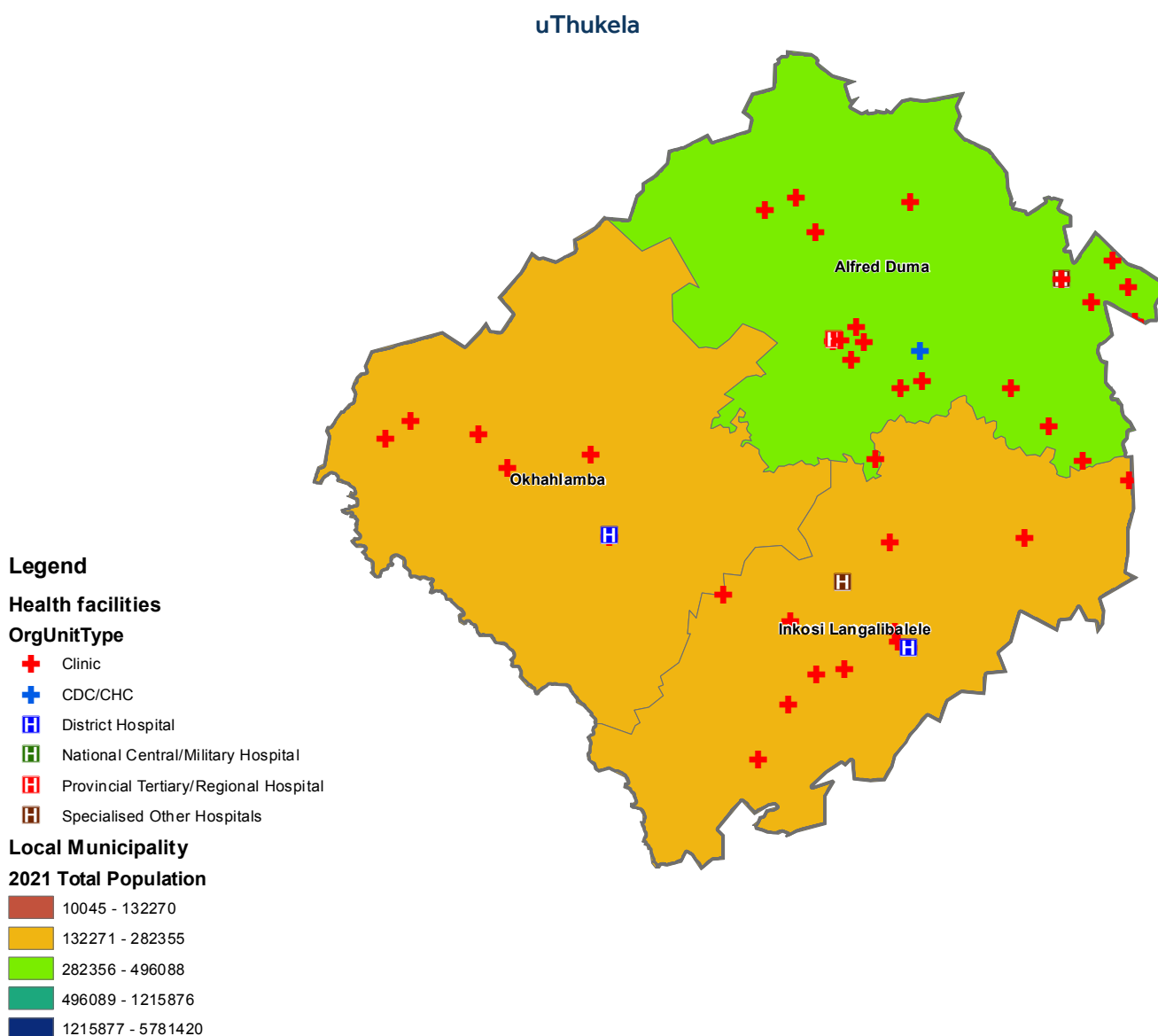
uThukela DM (DC23)



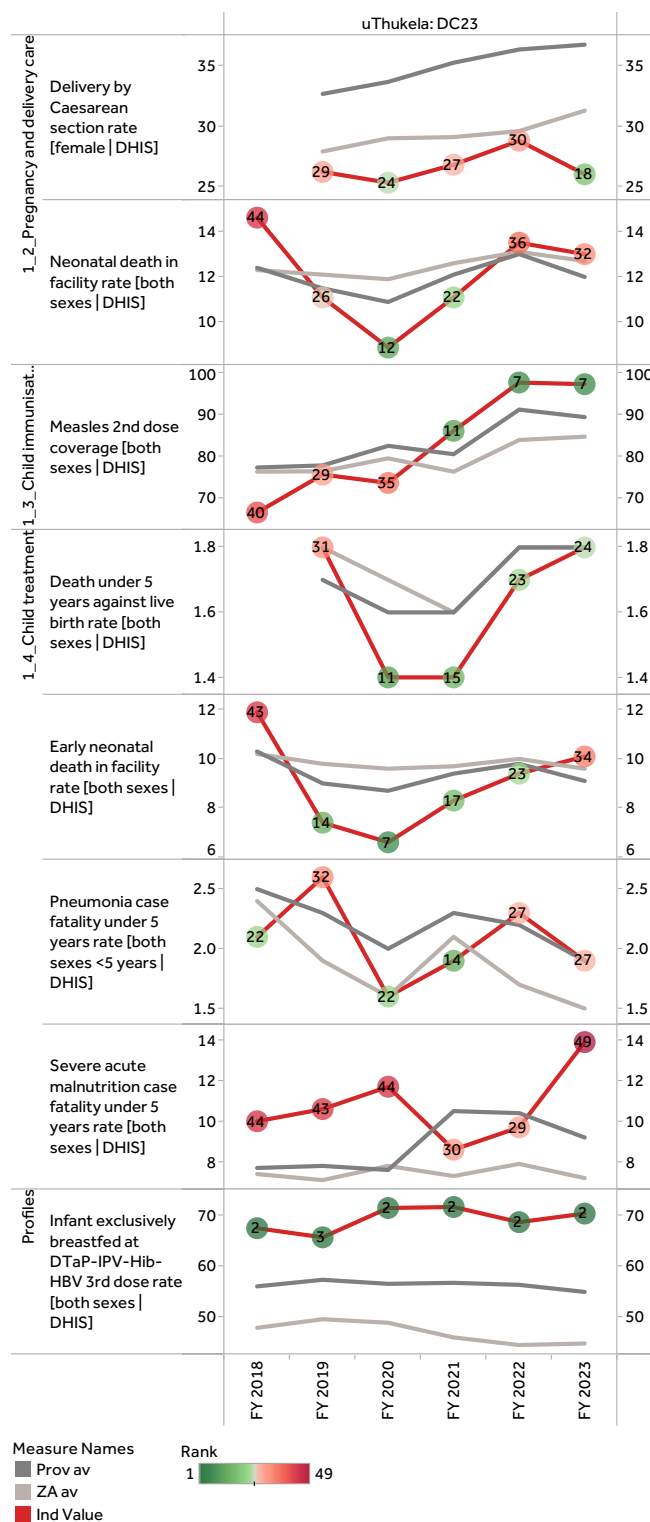
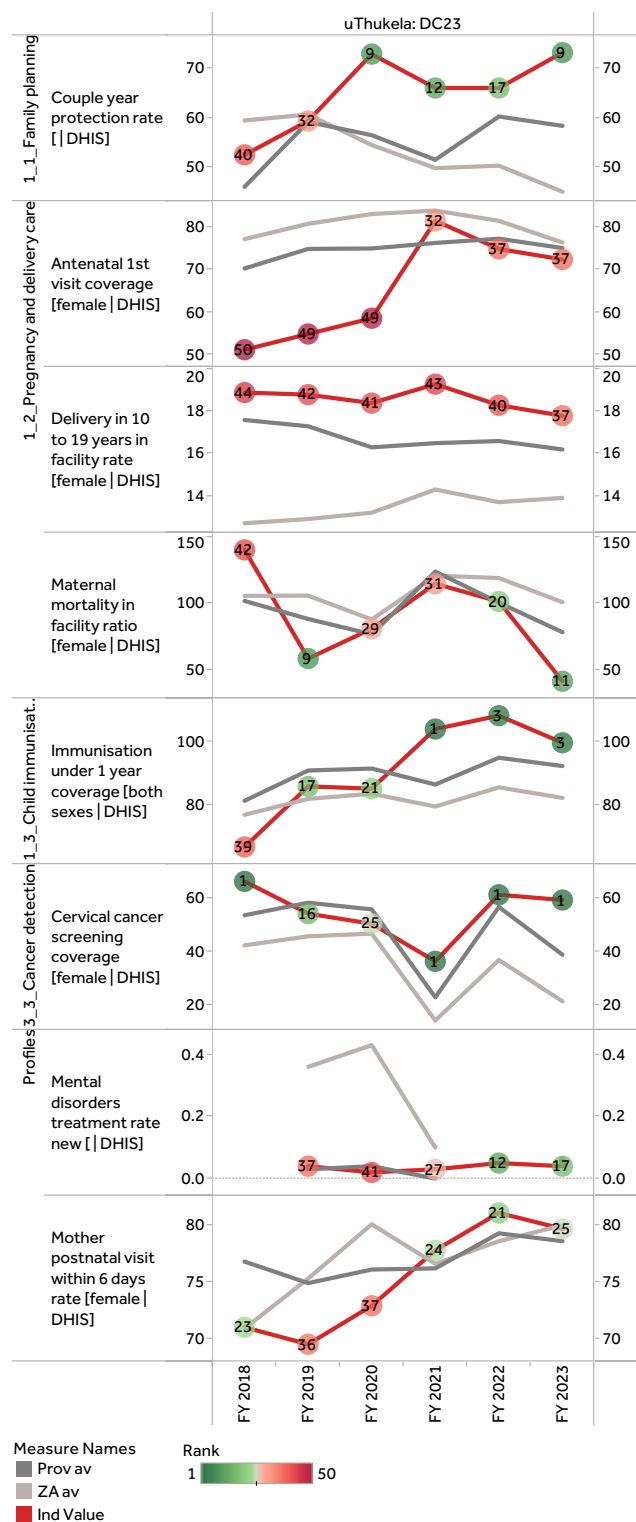
⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

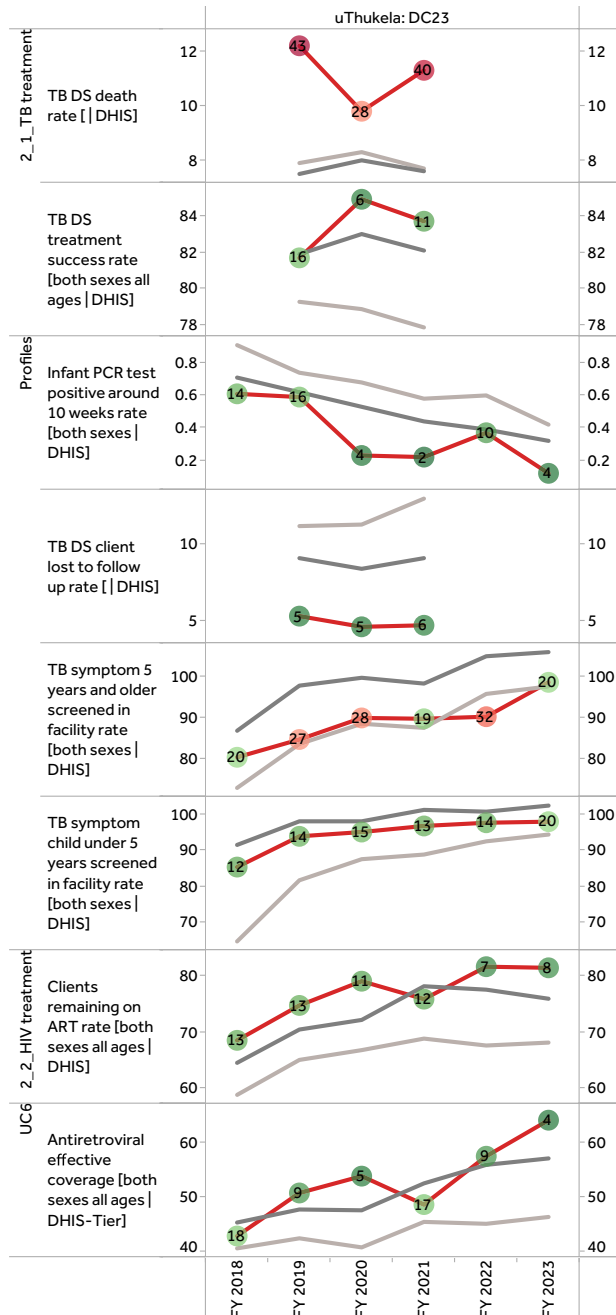
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

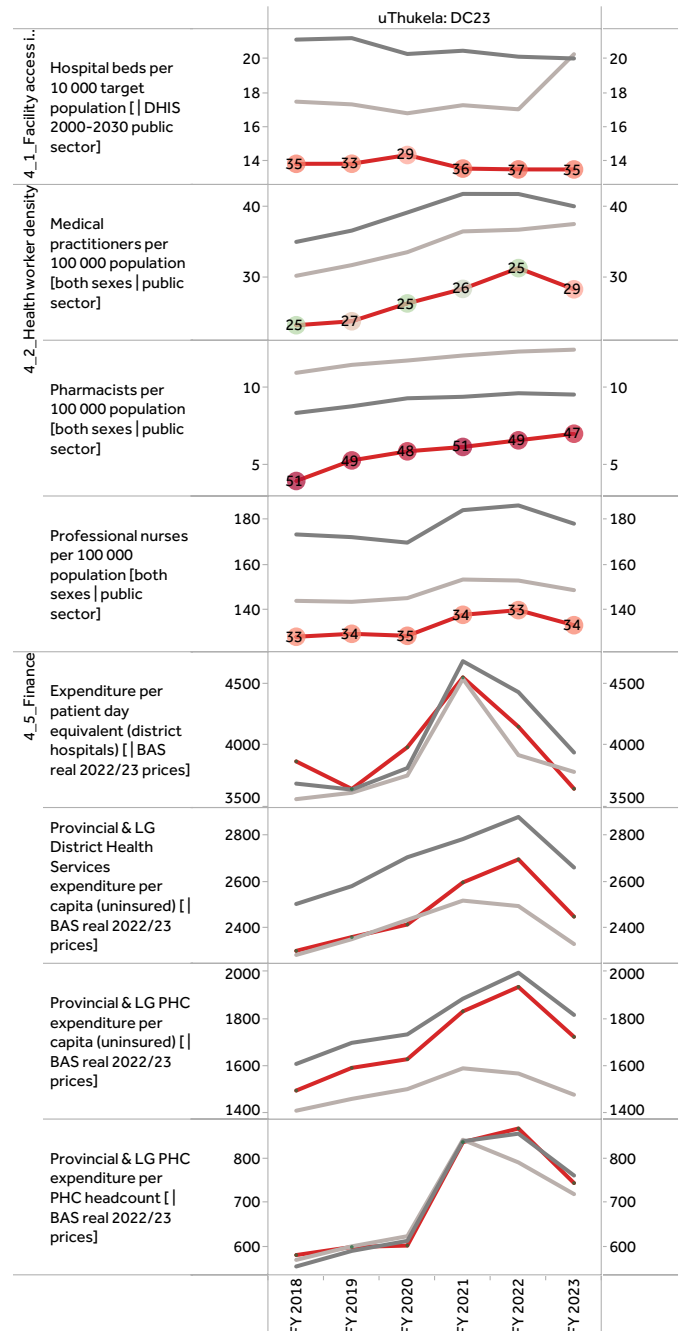


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 43



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 51

uMzinyathi District Municipality (DC24)

The uMzinyathi District Municipality⁷ is a Category C municipality located in the north and central areas of the KwaZulu-Natal Province. The district consists of four local municipalities: Endumeni, Nquthu, Msinga and Umvoti.

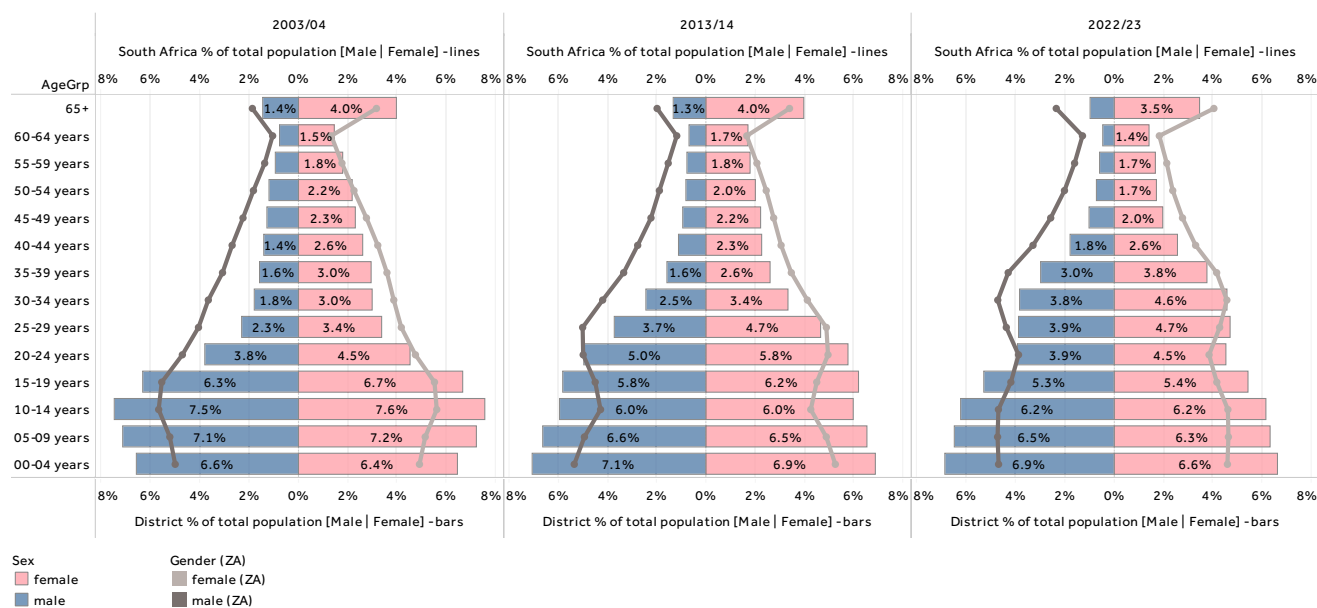
Cities/Towns: Dundee, Glencoe, Greytown, Kranskop, Nquthu, Pomeroy

Area: 8 652km²

Population (2022)⁸: 575 759

District percentage population by age-gender group compared to South Africa

uMzinyathi DM (DC24)

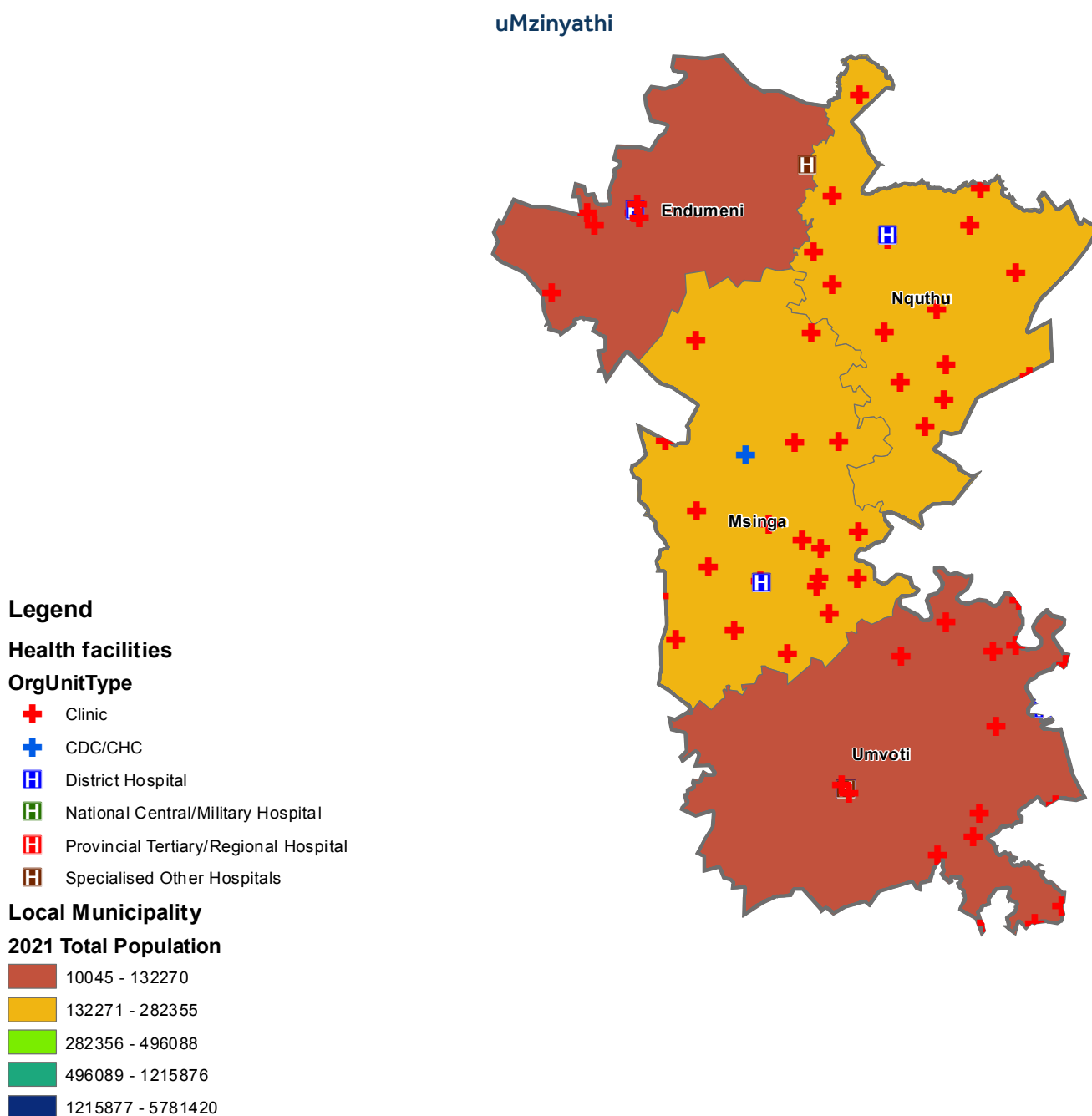


⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

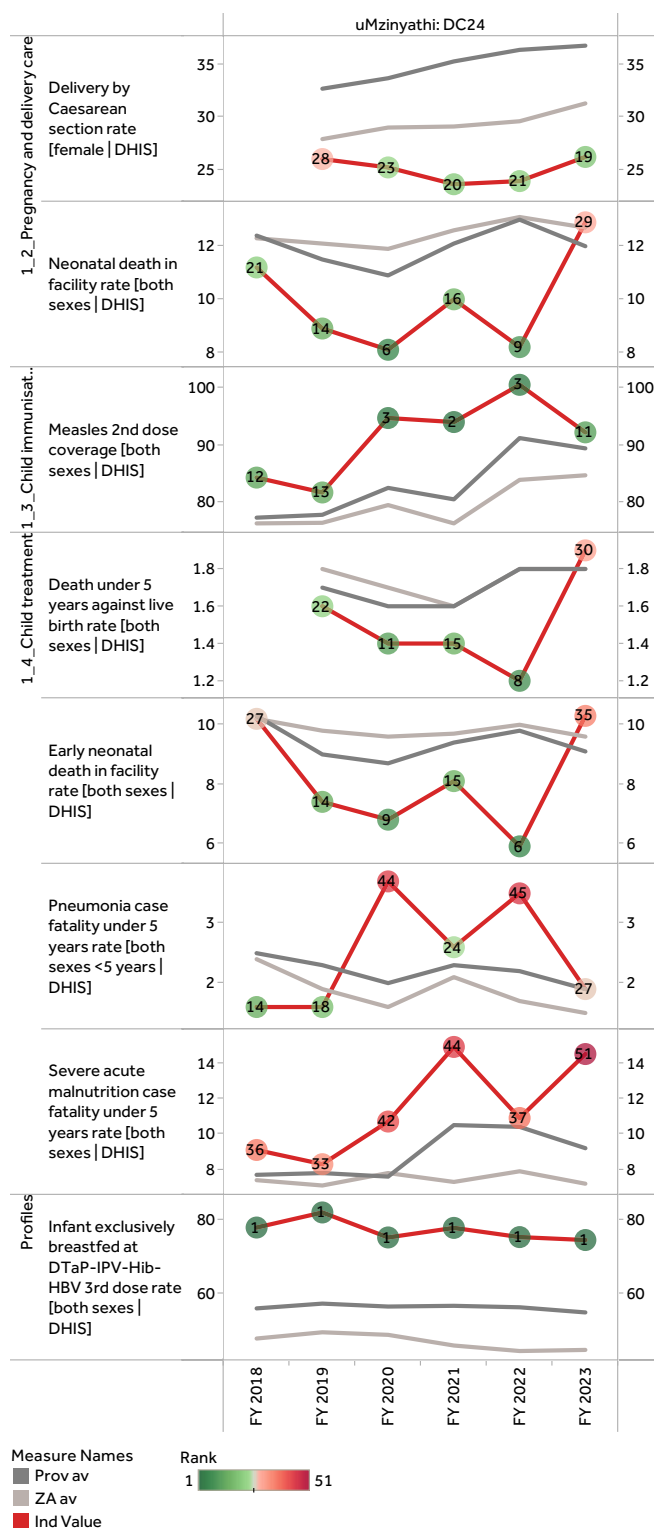
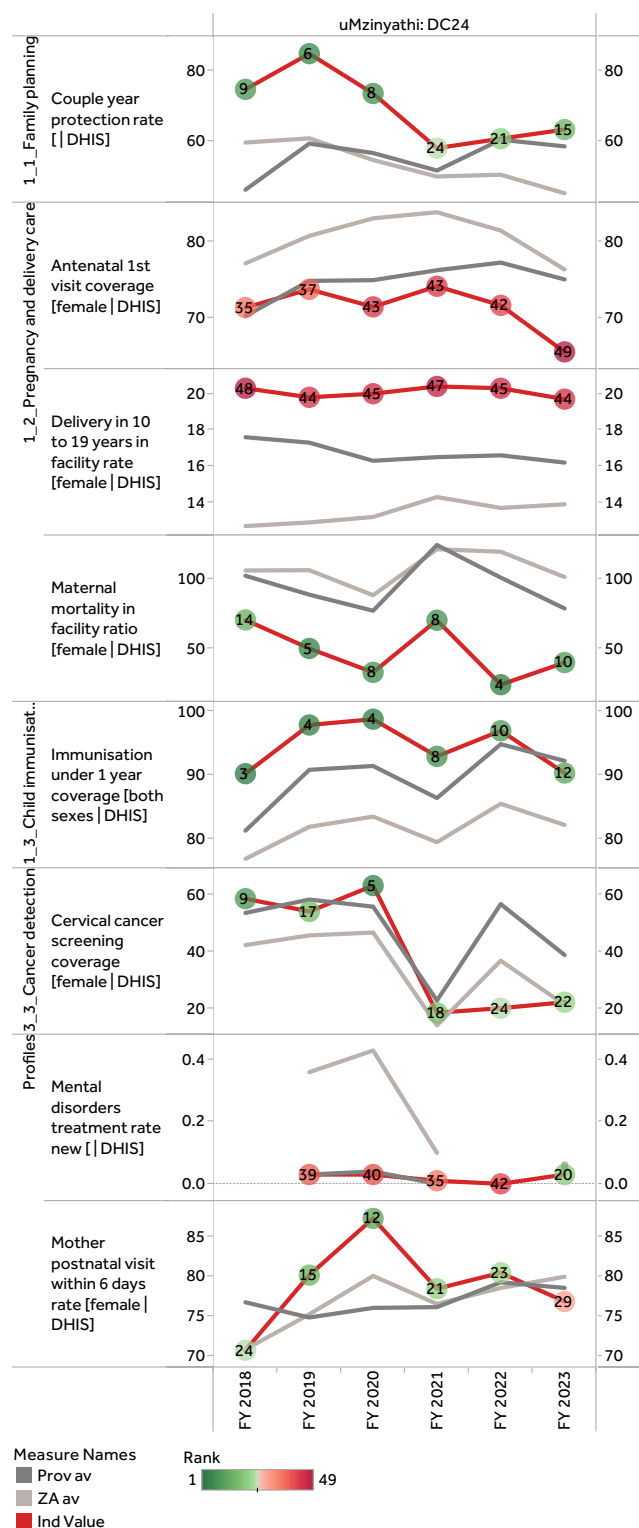
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

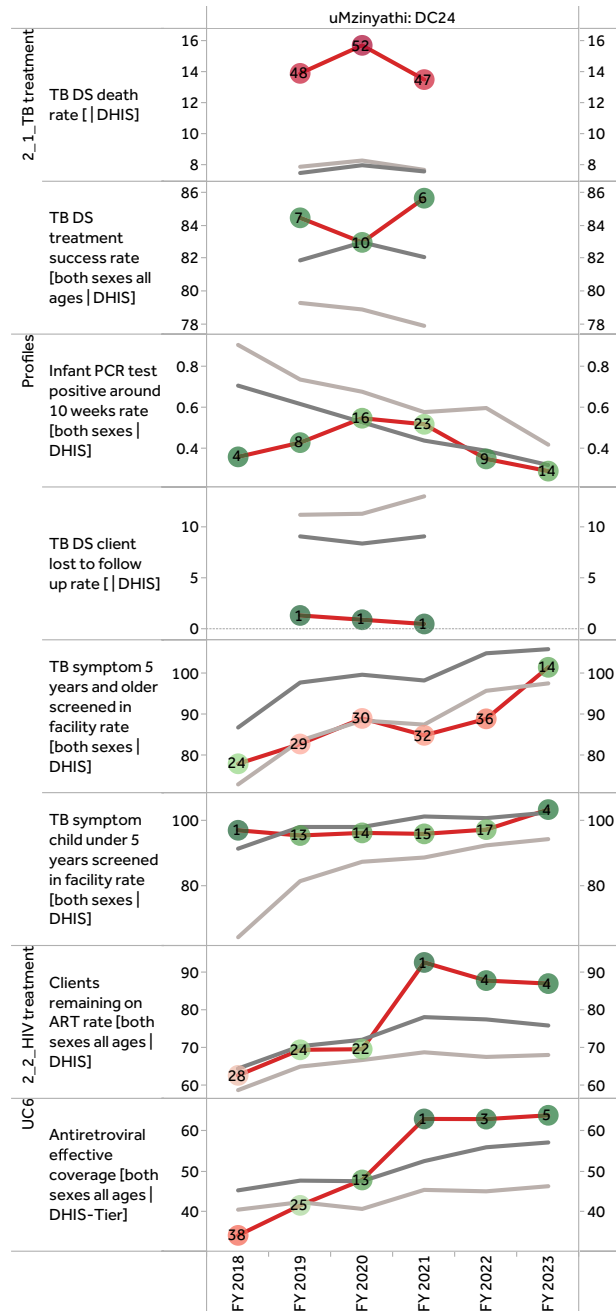
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23

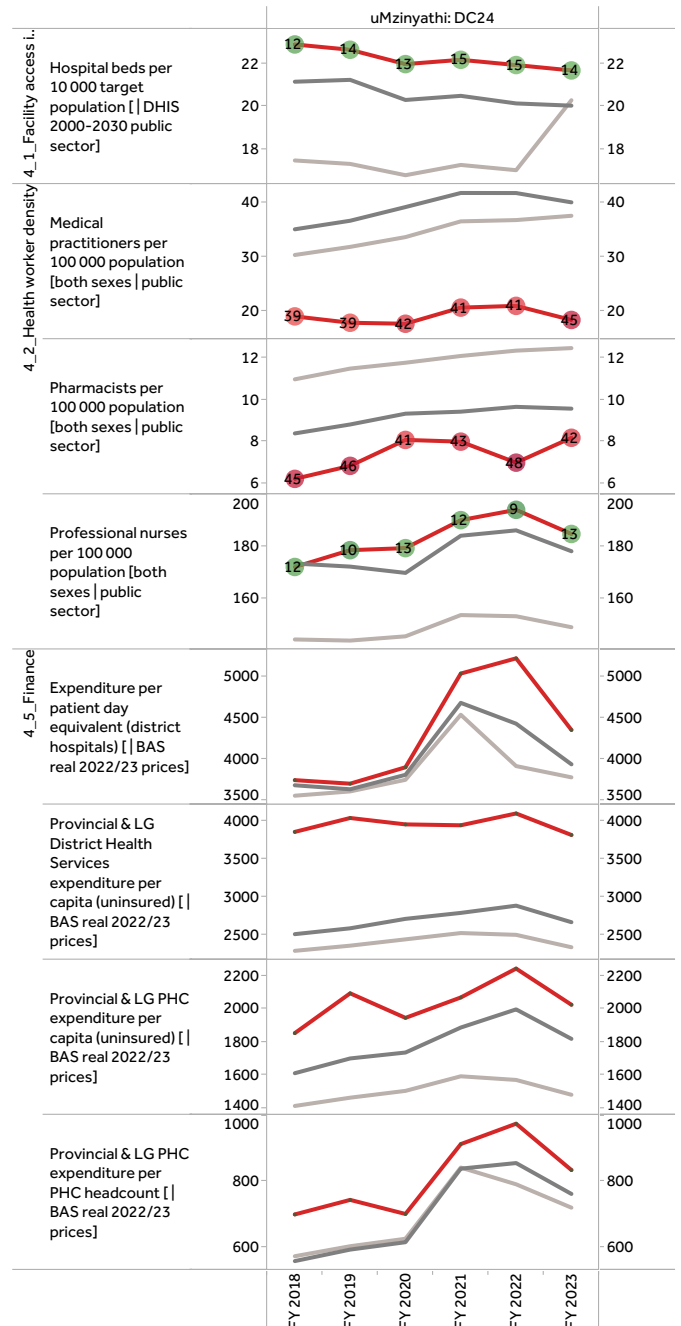


Measure Names

Prov av
ZA av
Ind Value

Rank

1 52



Measure Names

Prov av
ZA av
Ind Value

Rank

1 48

Amajuba District Municipality (DC25)

The Amajuba District Municipality⁹ is a Category C municipality located in the north-western corner of KwaZulu-Natal. It is one of the smallest districts in the province, making up only 8% of its geographical area. The district comprises three local municipalities: Newcastle, eMadlangeni and Dannhauser.

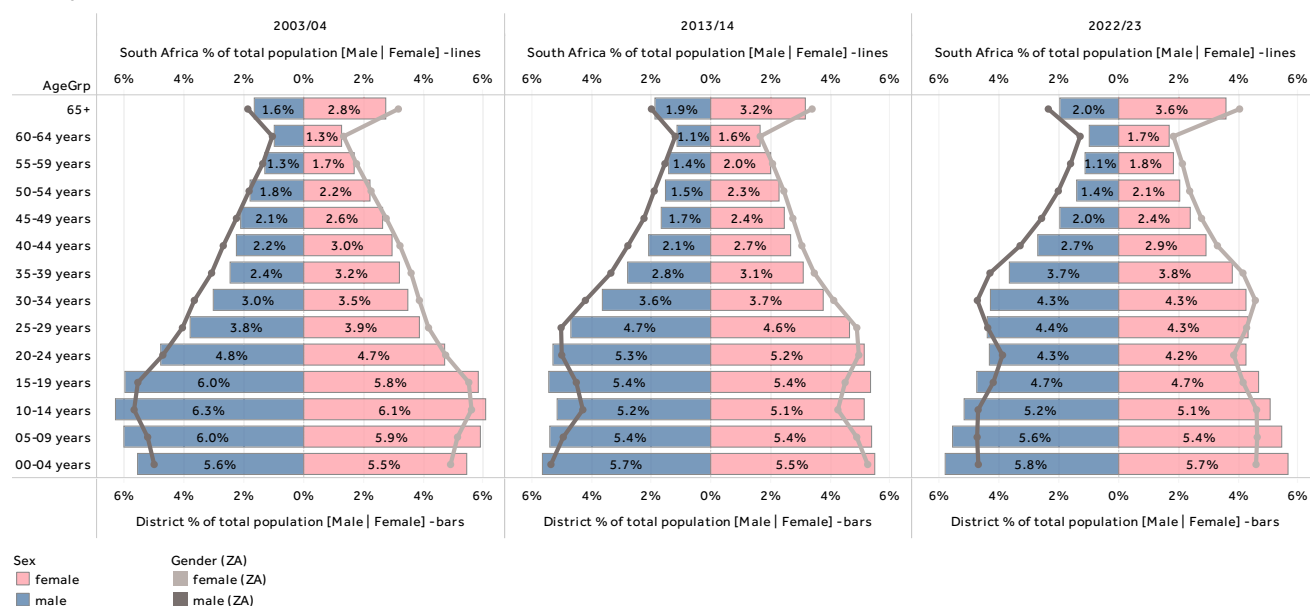
Cities/Towns: Charlestown, Dannhauser, Hattingspruit, Newcastle, Utrecht

Area: 7 102km²

Population (2022)¹⁰: 577 873

District percentage population by age-gender group compared to South Africa

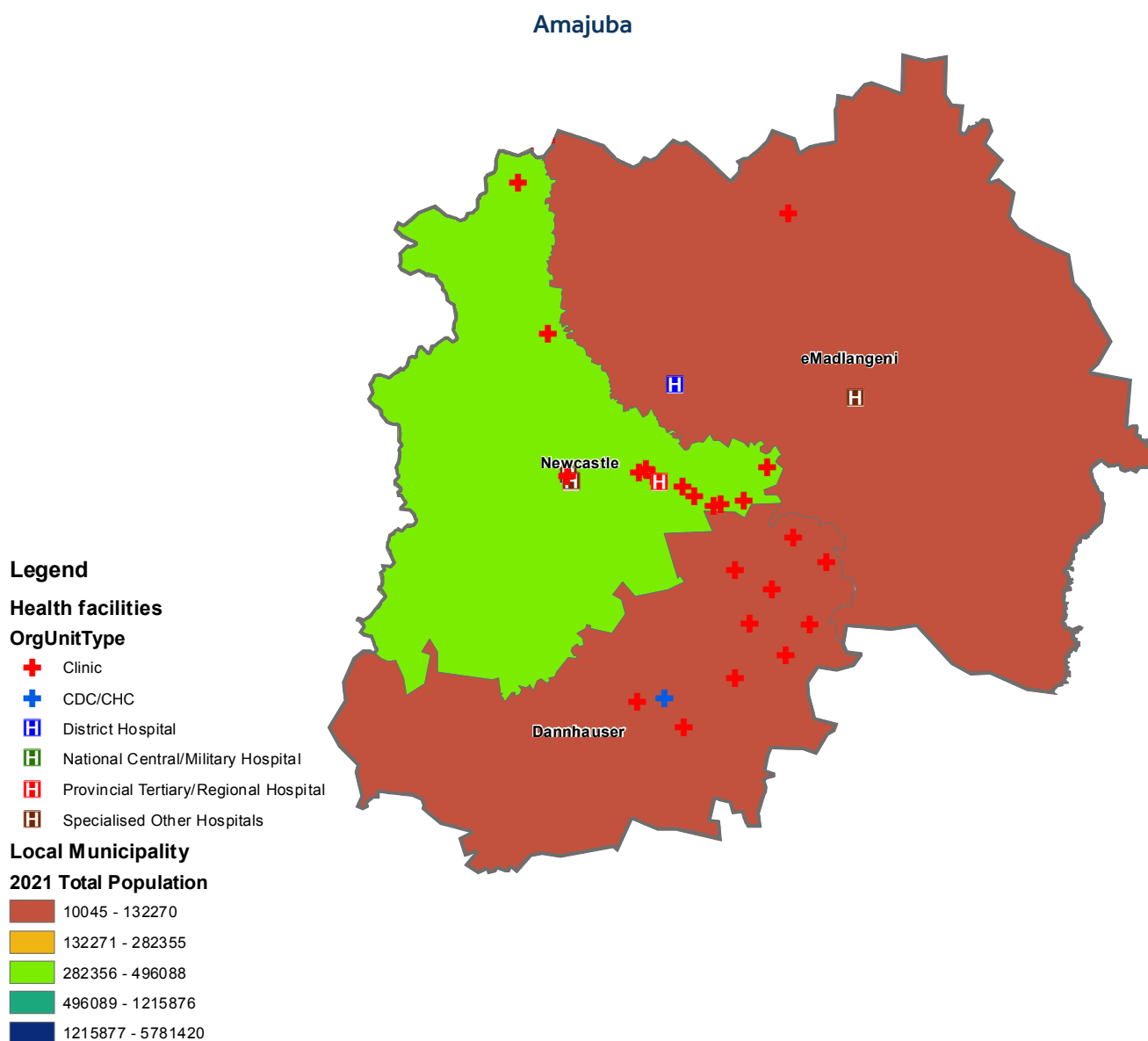
Amajuba DM (DC25)



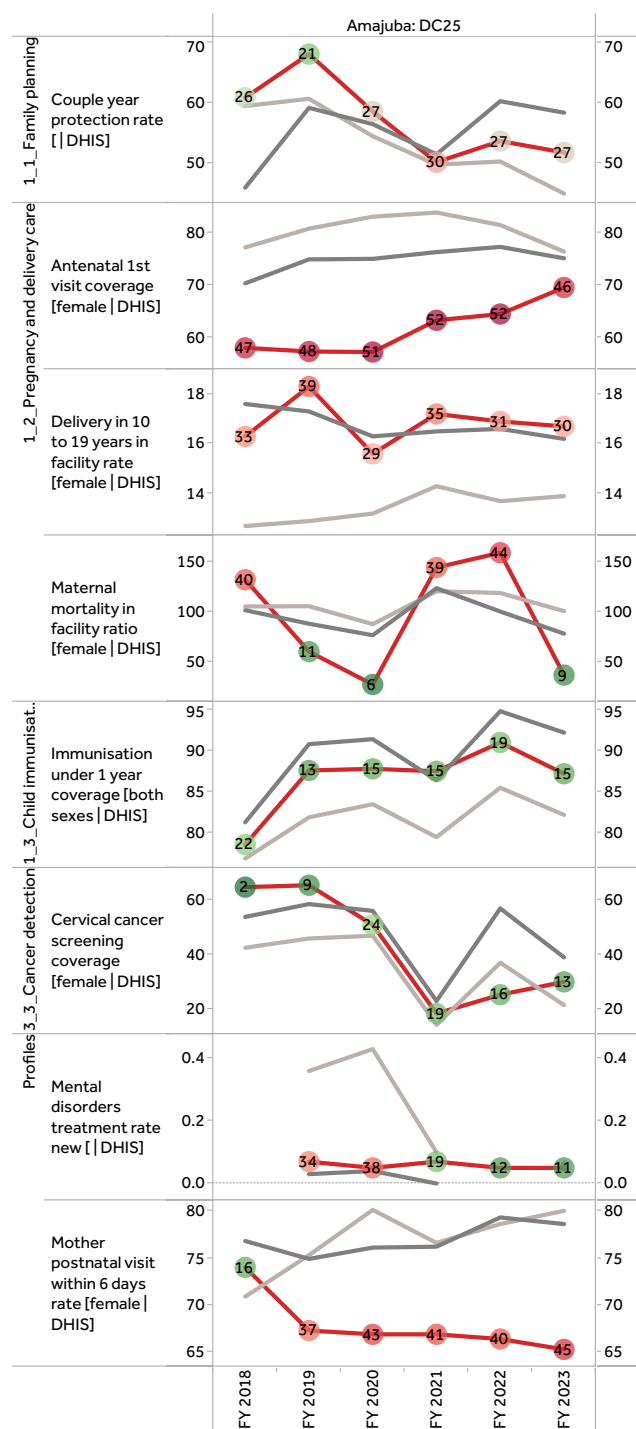
⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Measure Names

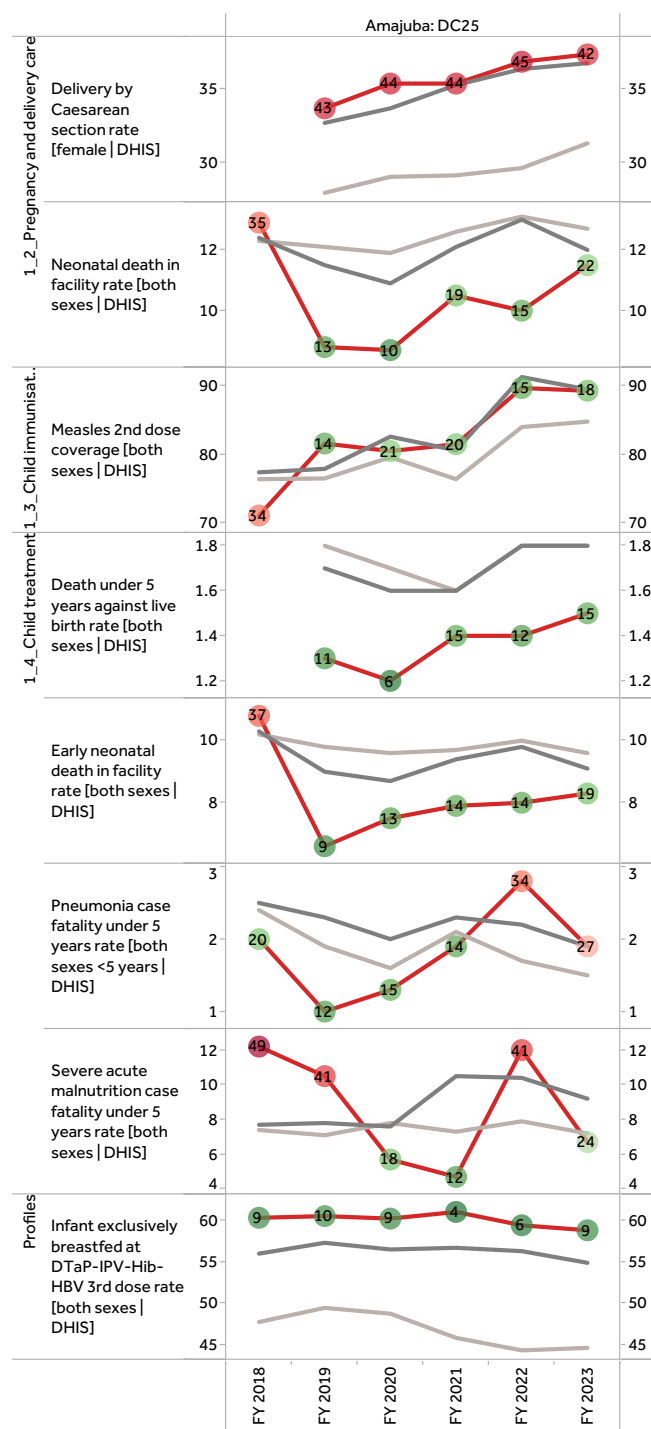
Rank

1 52

Prov av

ZA av

Ind Value



Measure Names

Rank

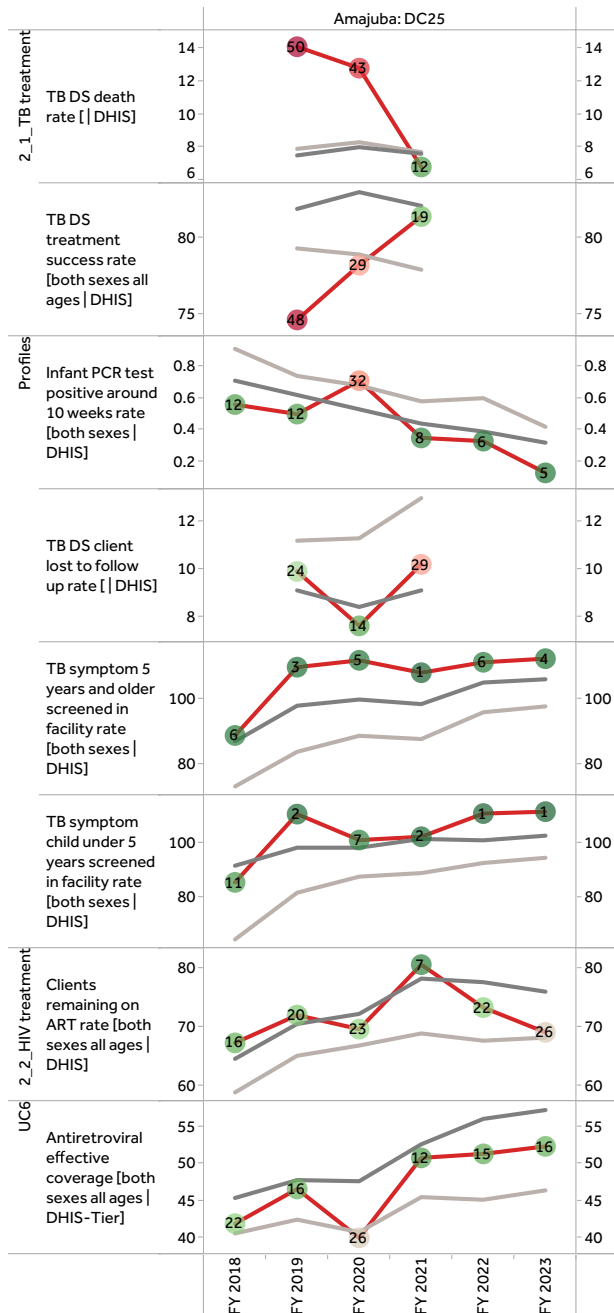
1 49

Prov av

ZA av

Ind Value

Annual trends, 2018/19–2022/23



Measure Names

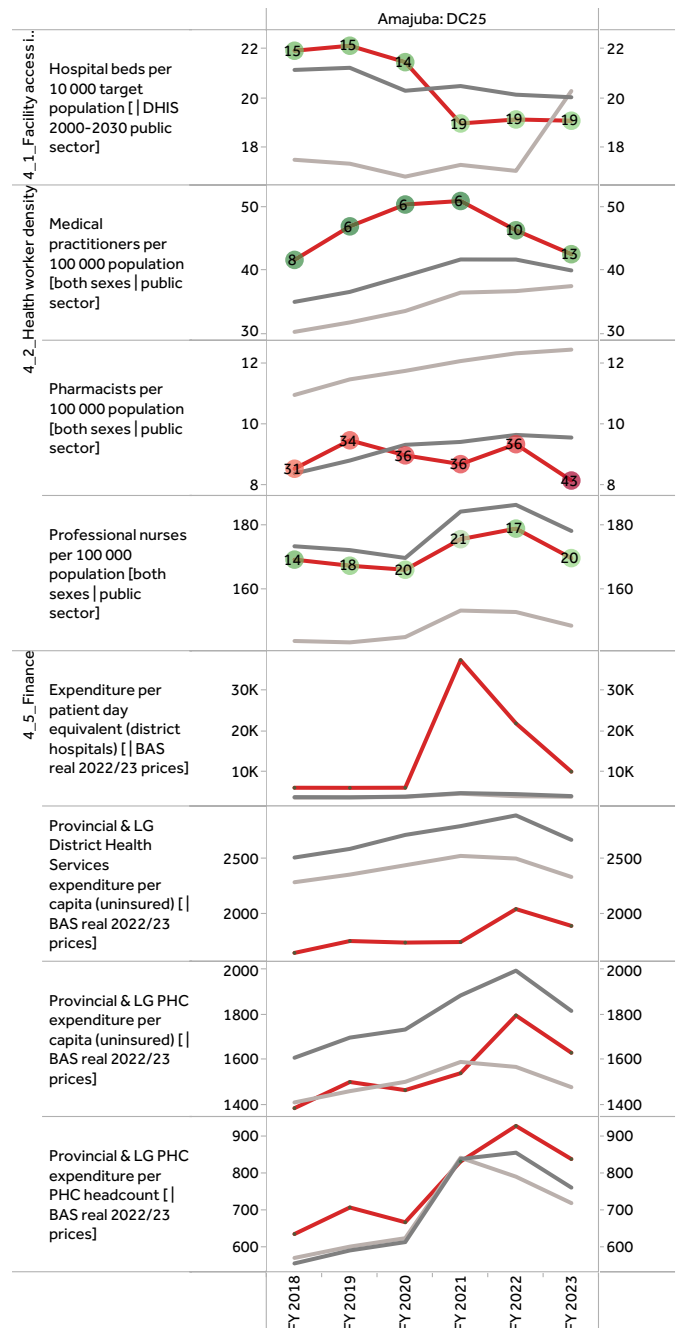
Prov av

ZA av

Ind Value

Rank

1 50



Measure Names

Prov av

ZA av

Ind Value

Rank

1 43

Zululand District Municipality (DC26)

The Zululand District Municipality¹¹ is a Category C municipality in the north-eastern part of KwaZulu-Natal. It is the largest district in the province, making up 16% of its geographical area. It comprises five local municipalities: Ulundi, Nongoma, uPhongolo, eDumbe and AbaQulusi.

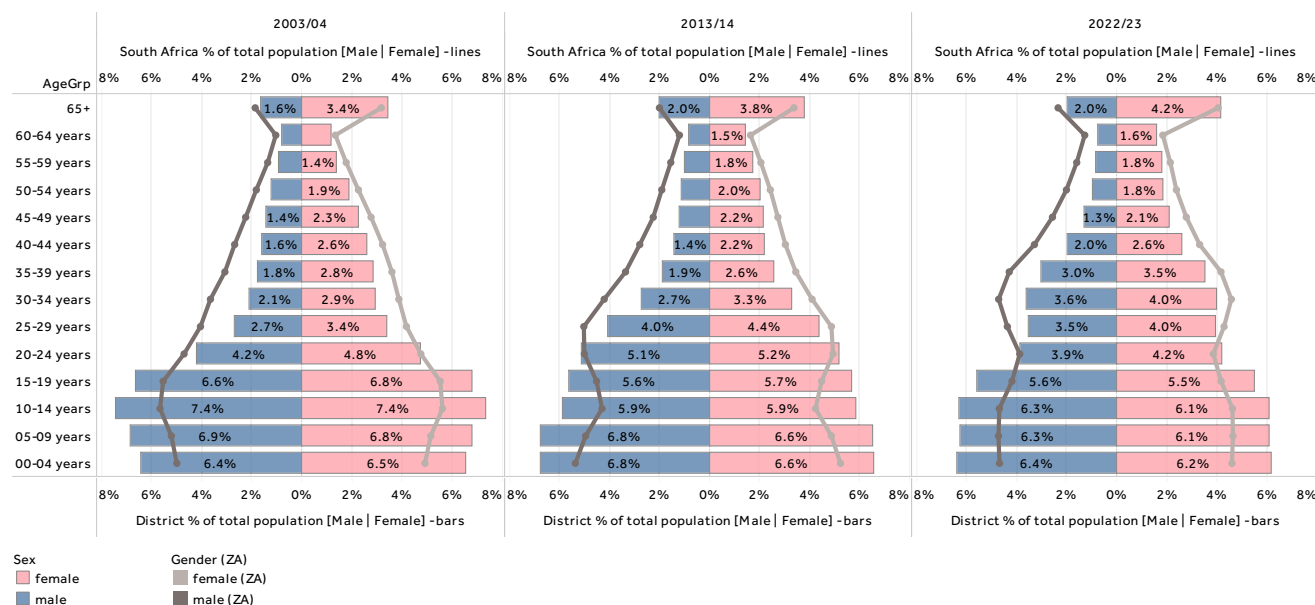
Cities/Towns: Louwsburg, Nongoma, Paulpietersburg, Pongola, Ulundi, Vryheid

Area: 14 800km²

Population (2022)¹²: 872 129

District percentage population by age-gender group compared to South Africa

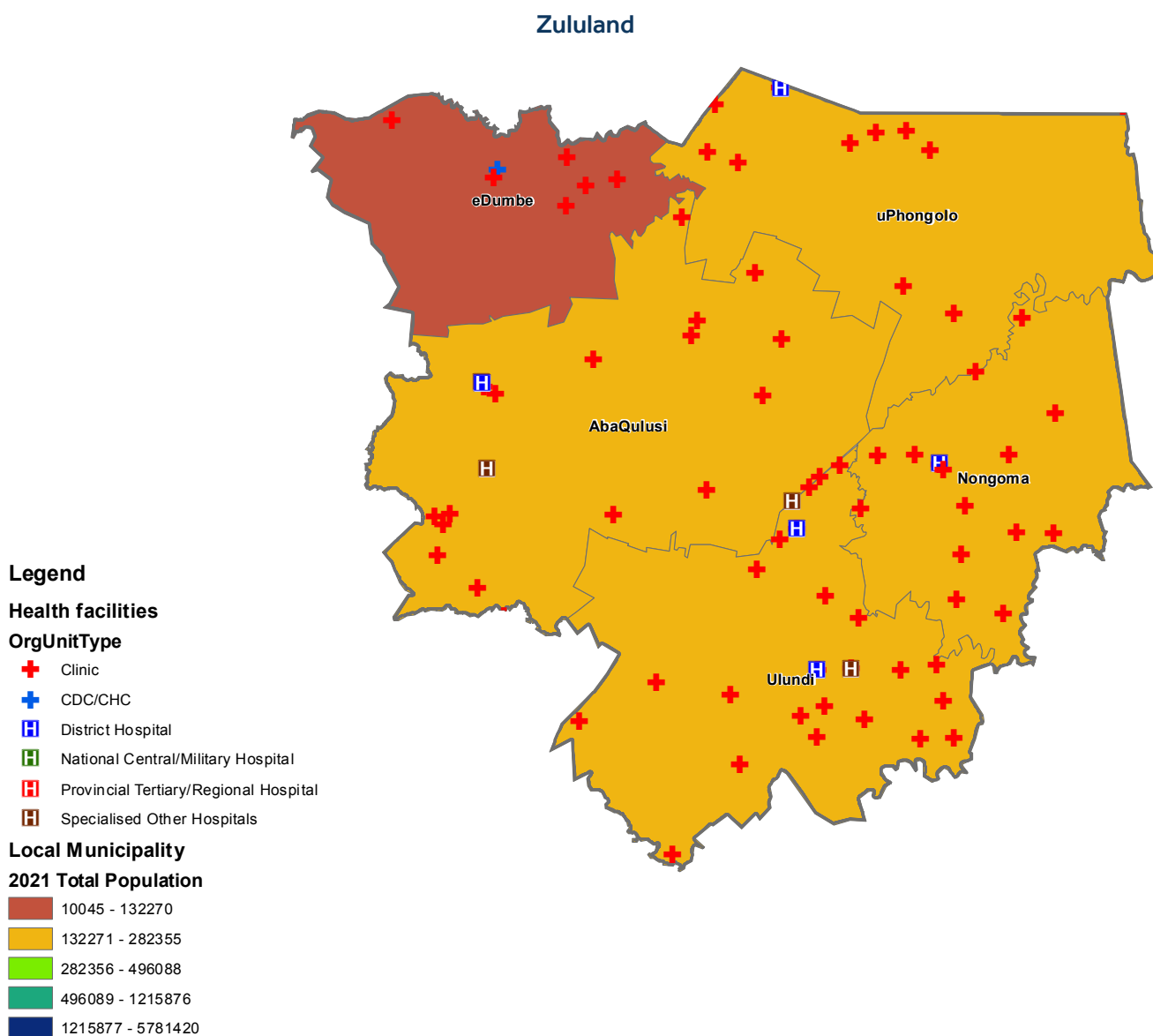
Zululand DM (DC26)



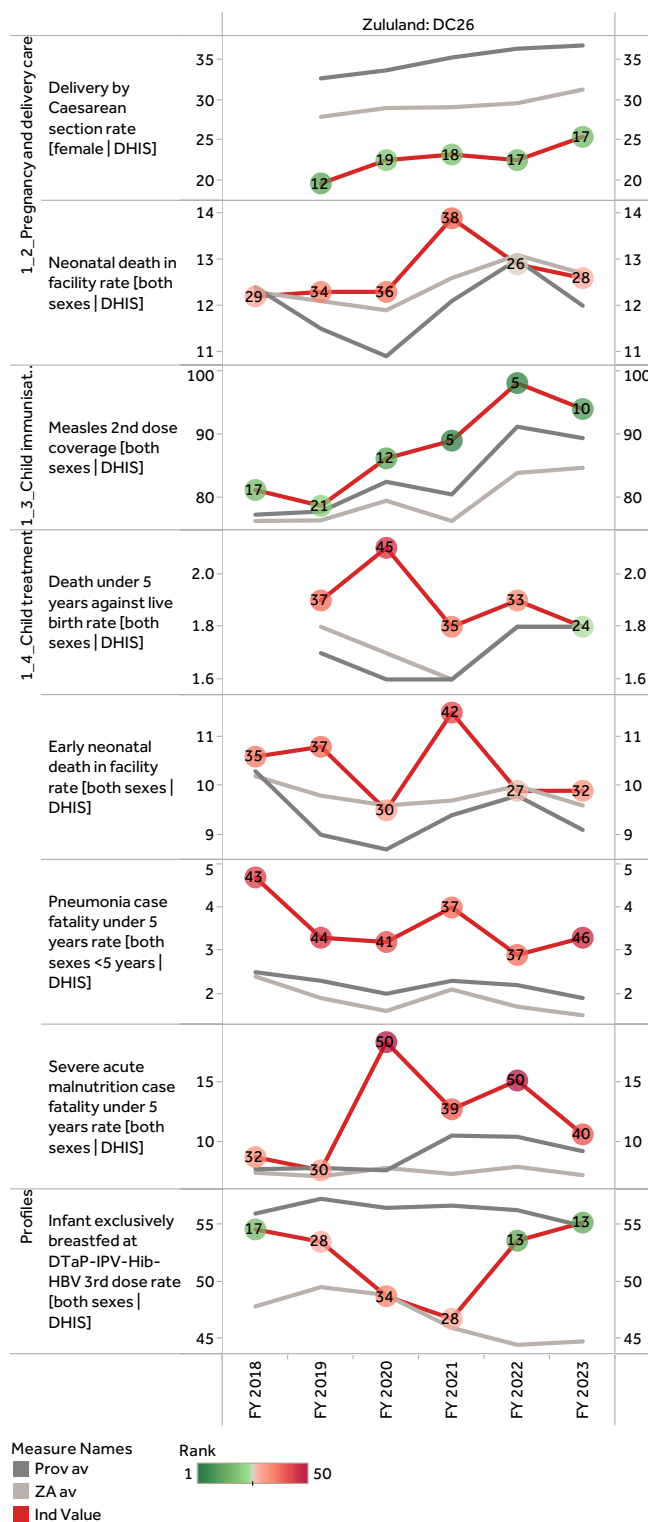
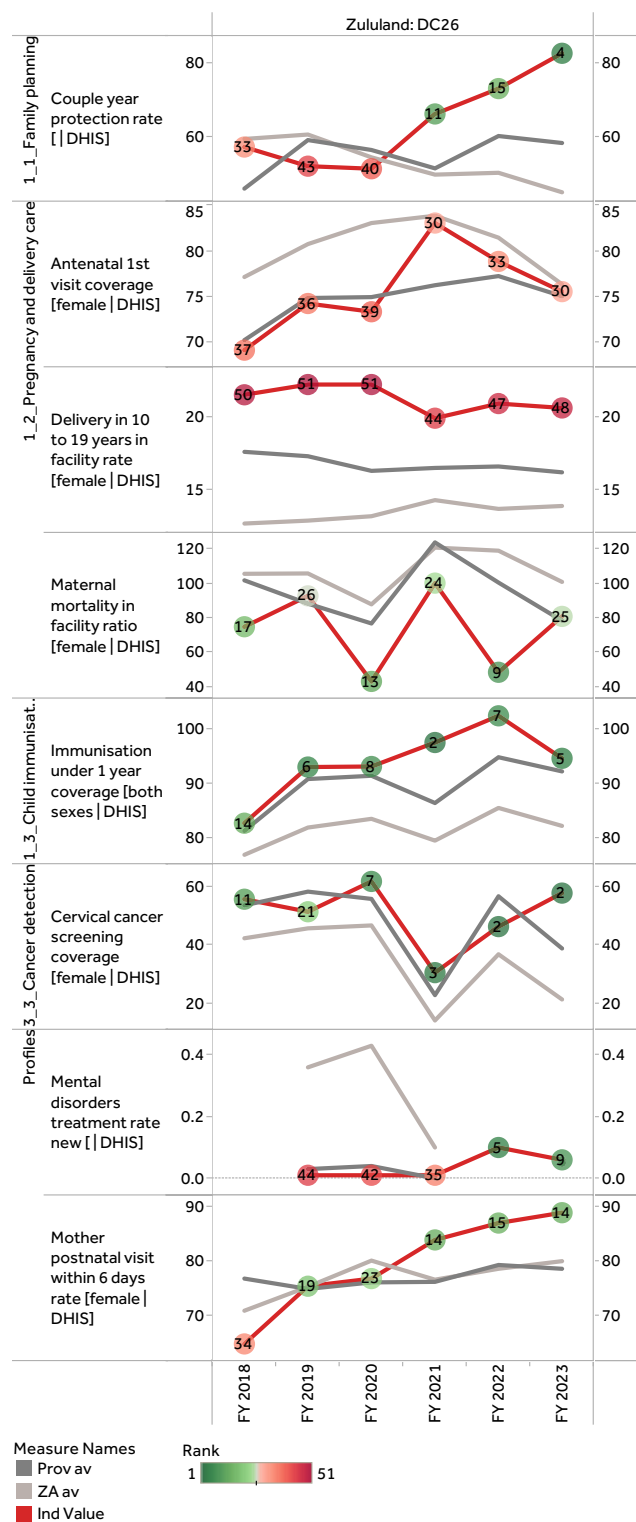
¹¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹²Mid-year Population Estimates 2022, Stats SA.

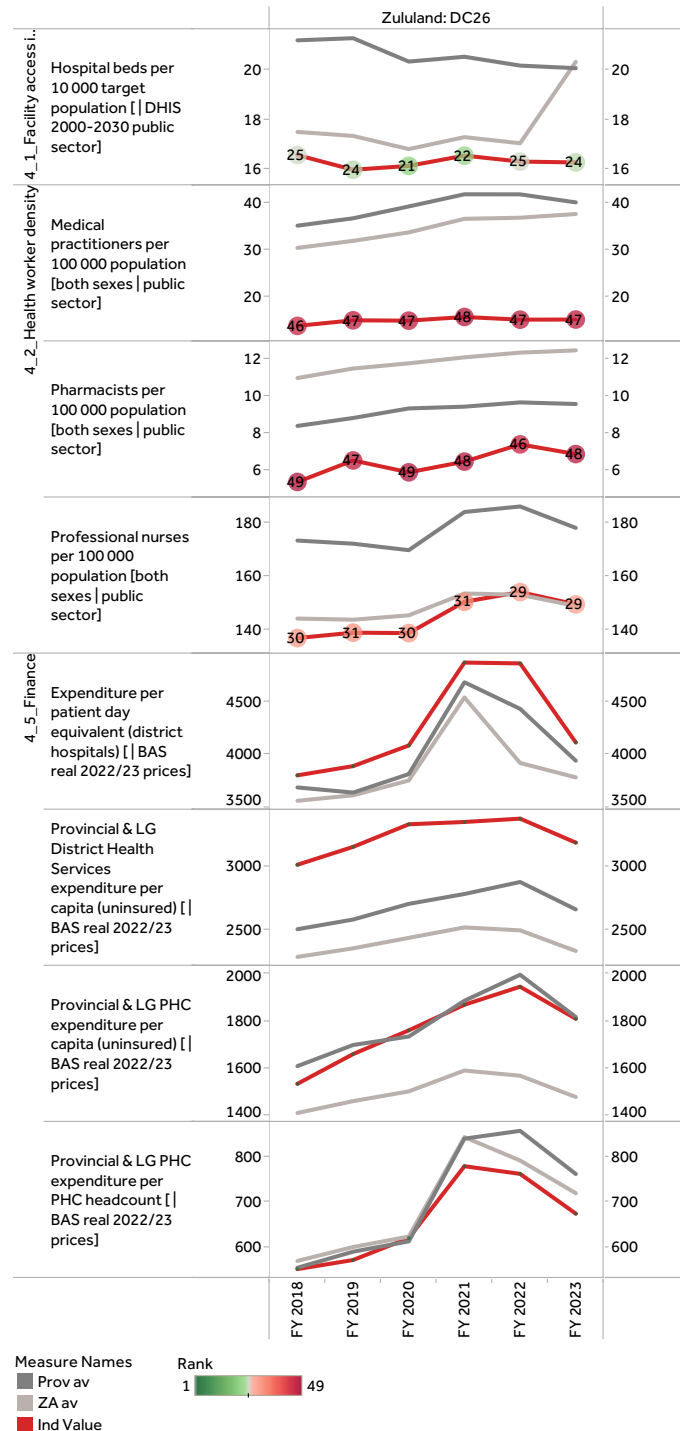
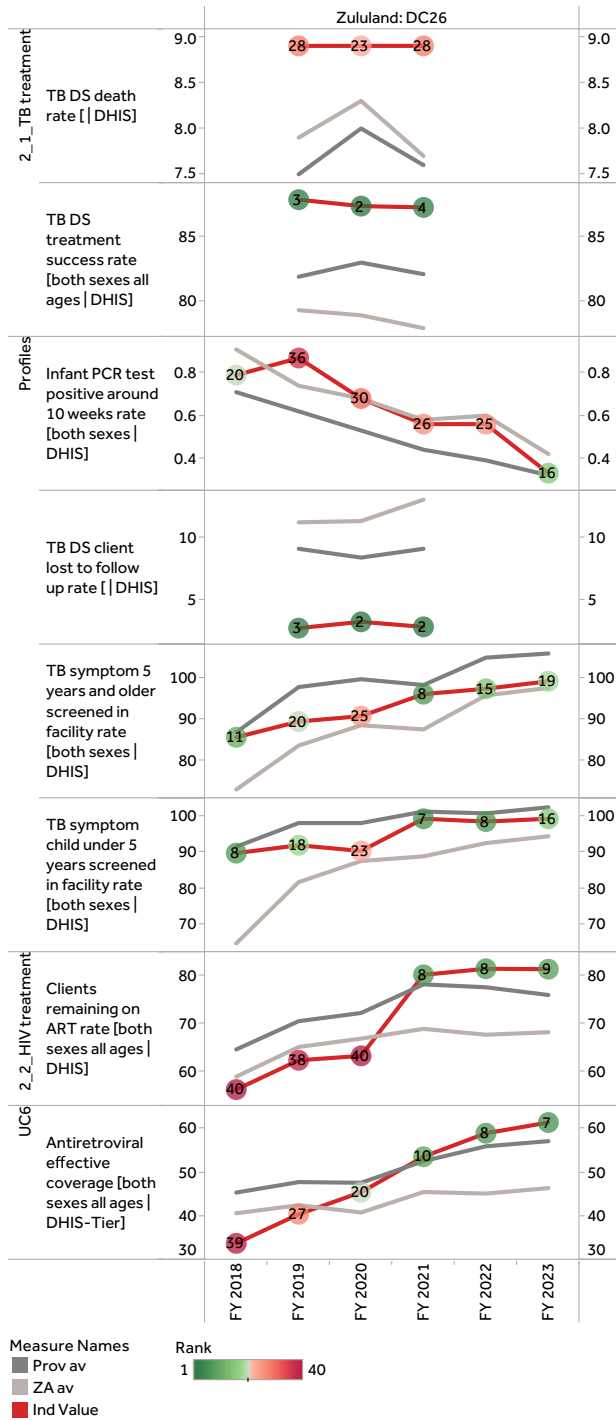
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



uMkhanyakude District Municipality (DC27)

The uMkhanyakude District Municipality¹³ is a Category C municipality located along the coast in the far north of the KwaZulu-Natal Province. It shares its borders with Swaziland and Mozambique, and consists of the following four local municipalities: uMhlabuyalingana, Jozini, Big 5 Hlabisa and Mtubatuba.

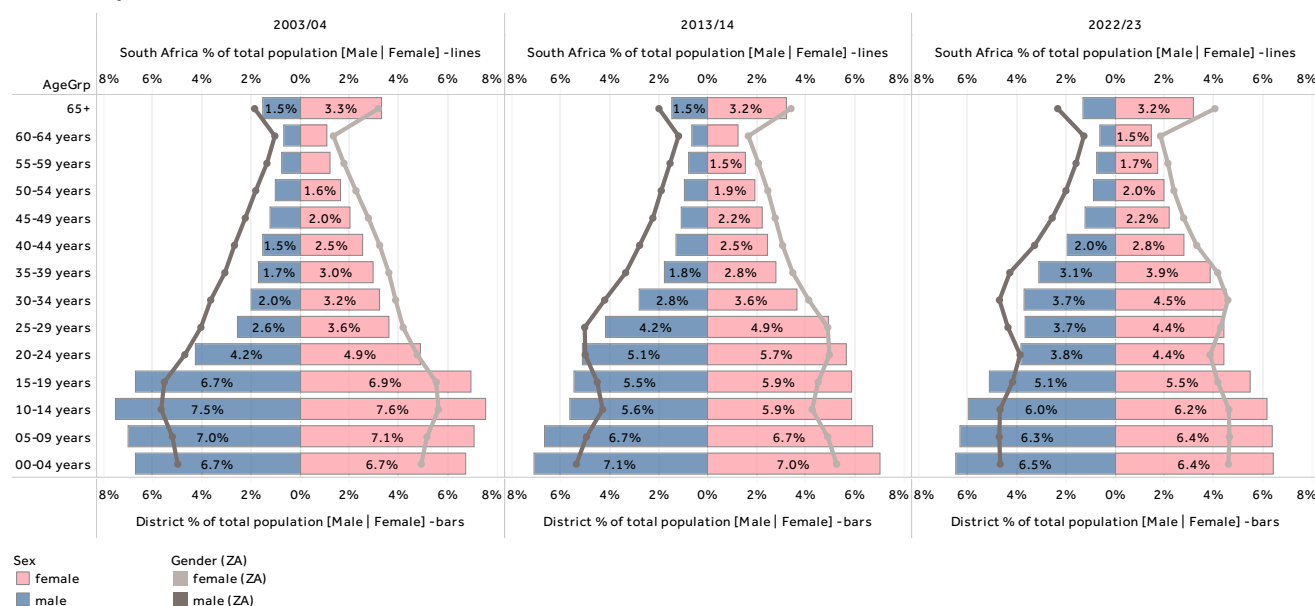
Cities/Towns: Hlabisa, Hluhluwe, Ingwavuma, Jozini, Mbazwana, Mkuze, Mtubatuba, St Lucia

Area: 13 855km²

Population (2022)¹⁴: 685 593

District percentage population by age-gender group compared to South Africa

uMkhanyakude DM (DC27)



¹³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁴Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

uMkhanyakude

Legend

Health facilities

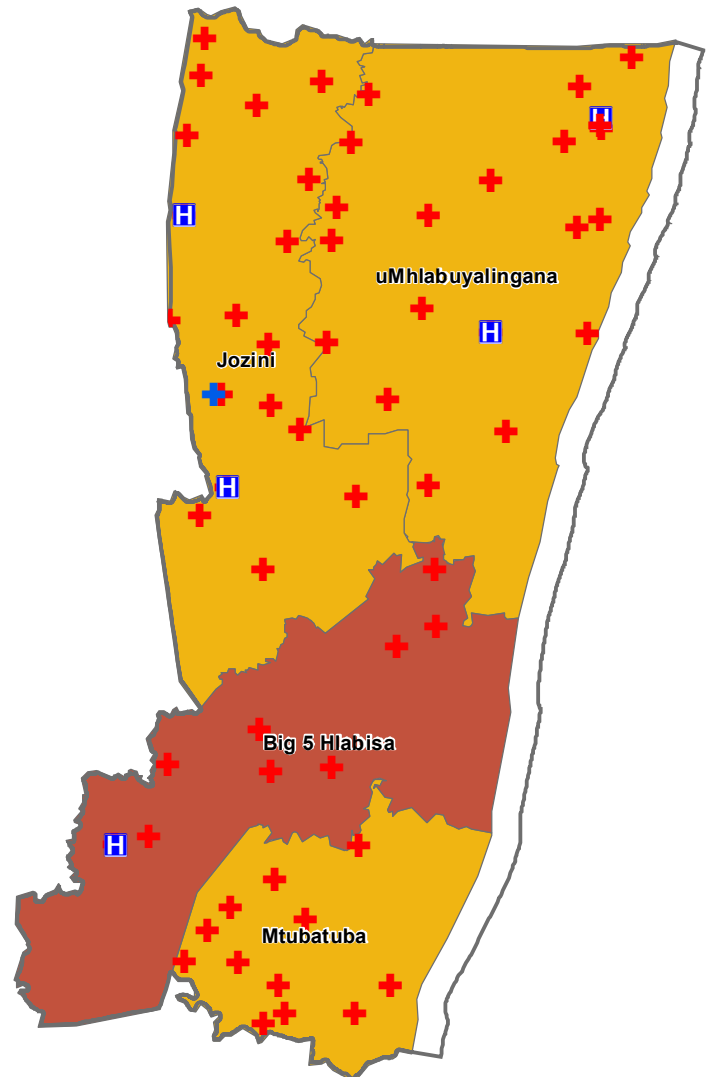
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

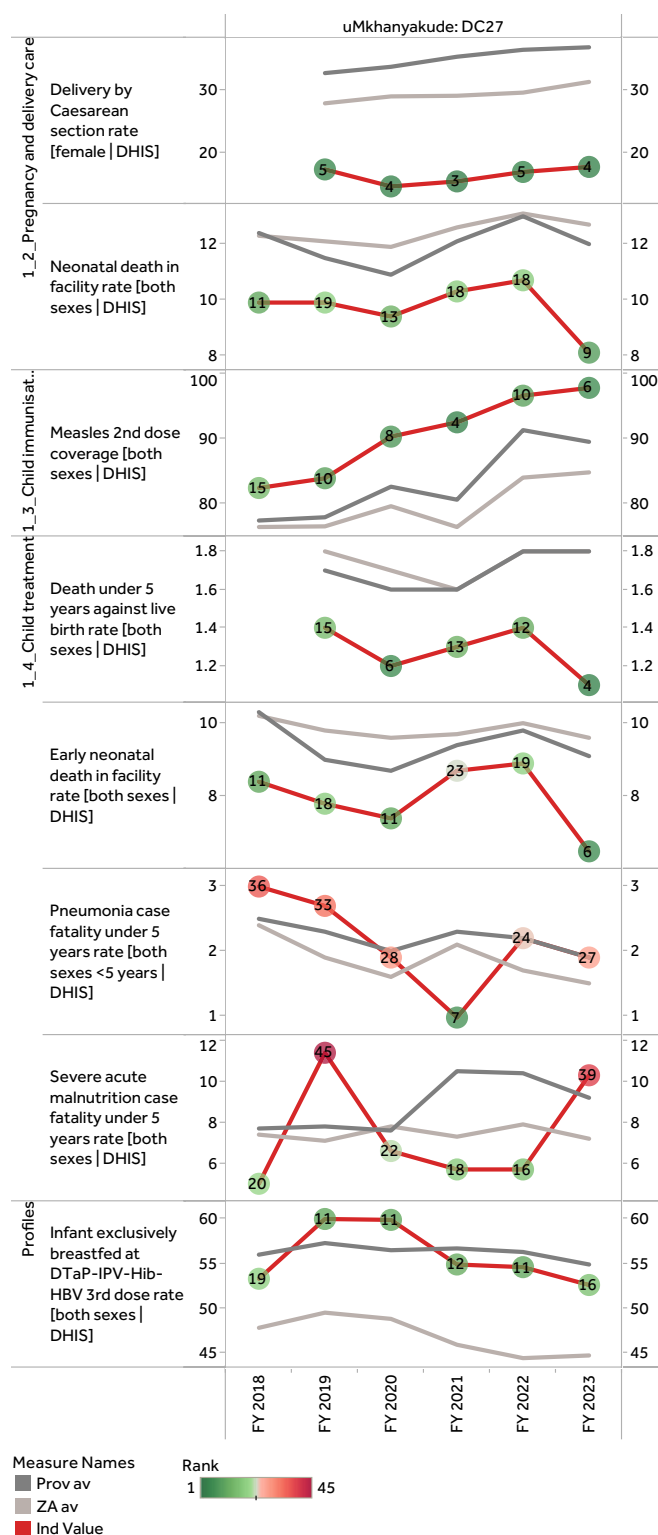
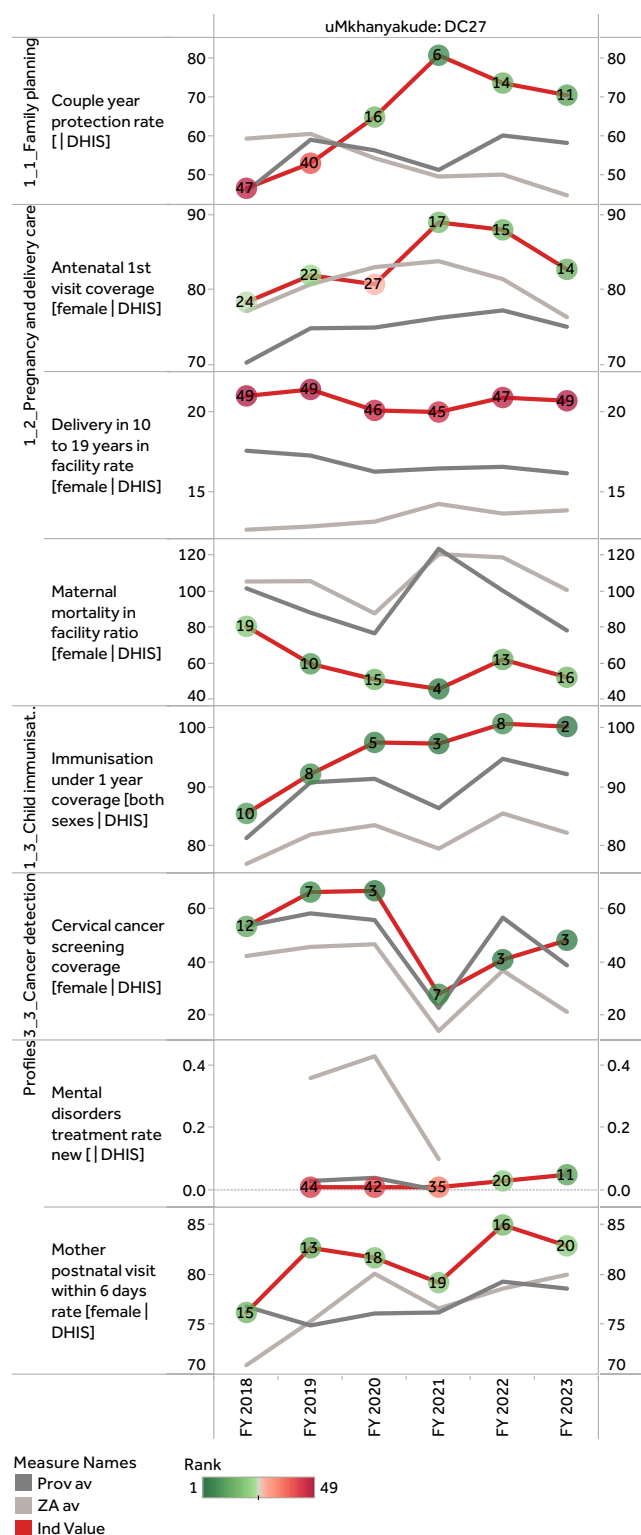
Local Municipality

2021 Total Population

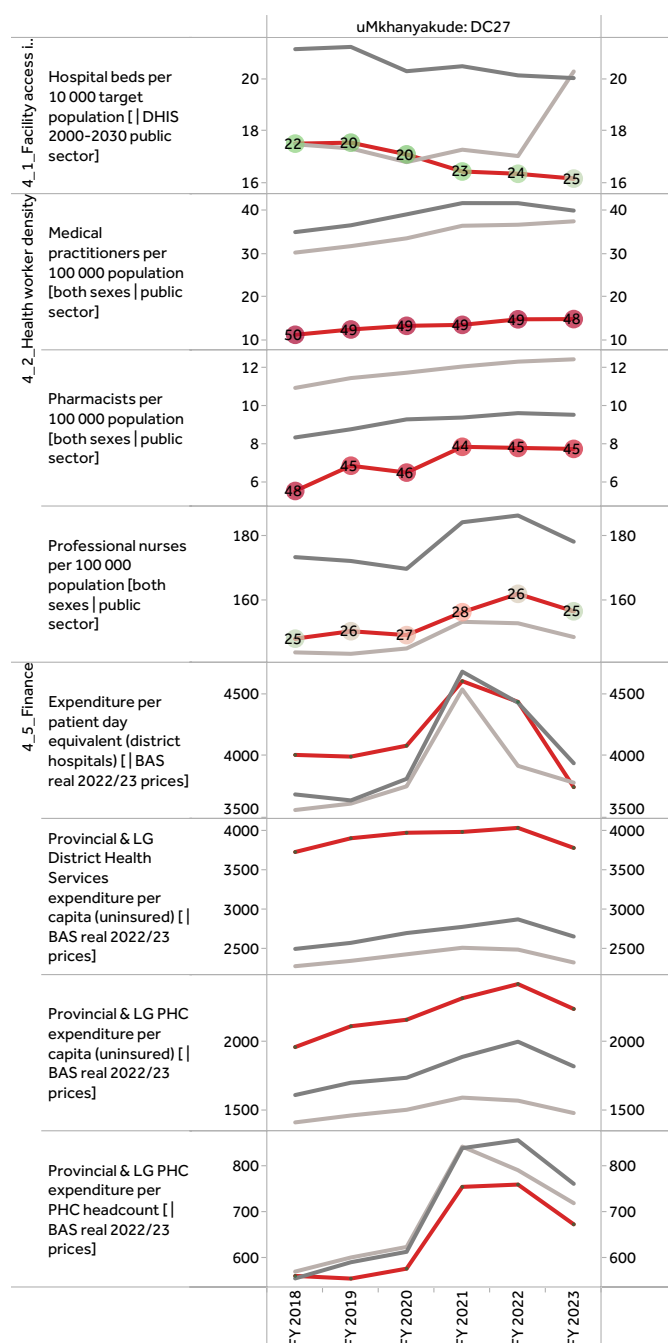
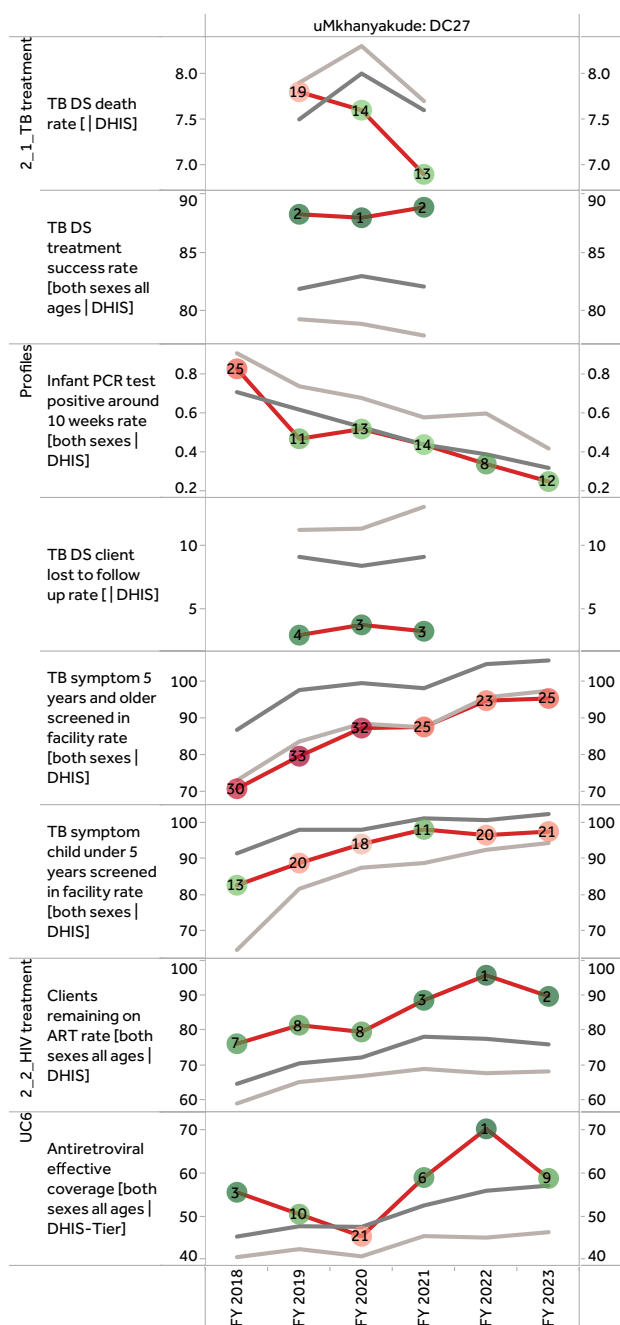
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- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



King Cetshwayo District Municipality (DC28)

The King Cetshwayo District Municipality¹⁵ is a Category C municipality and is located in the north-eastern region of the KwaZulu-Natal Province. The district is home to five local municipalities: City of uMhlathuze, uMlalazi, Mthonjaneni, Nkandla and uMfolozi.

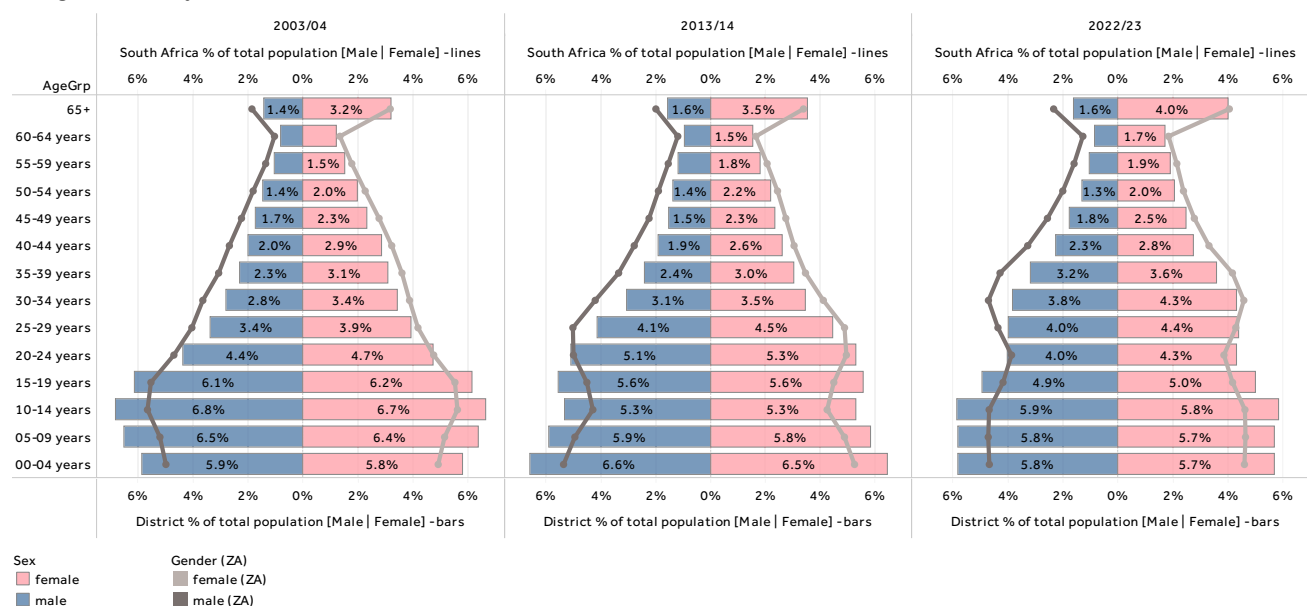
Cities/Towns: Empangeni, Eshowe, KwaGingindlovu, KwaMbonambi, Melmoth, Mtunzini, Nkandla, Ntambanana, Richards Bay

Area: 8 214km²

Population (2022)¹⁶: 975 005

District percentage population by age-gender group compared to South Africa

King Cetshwayo DM (DC28)



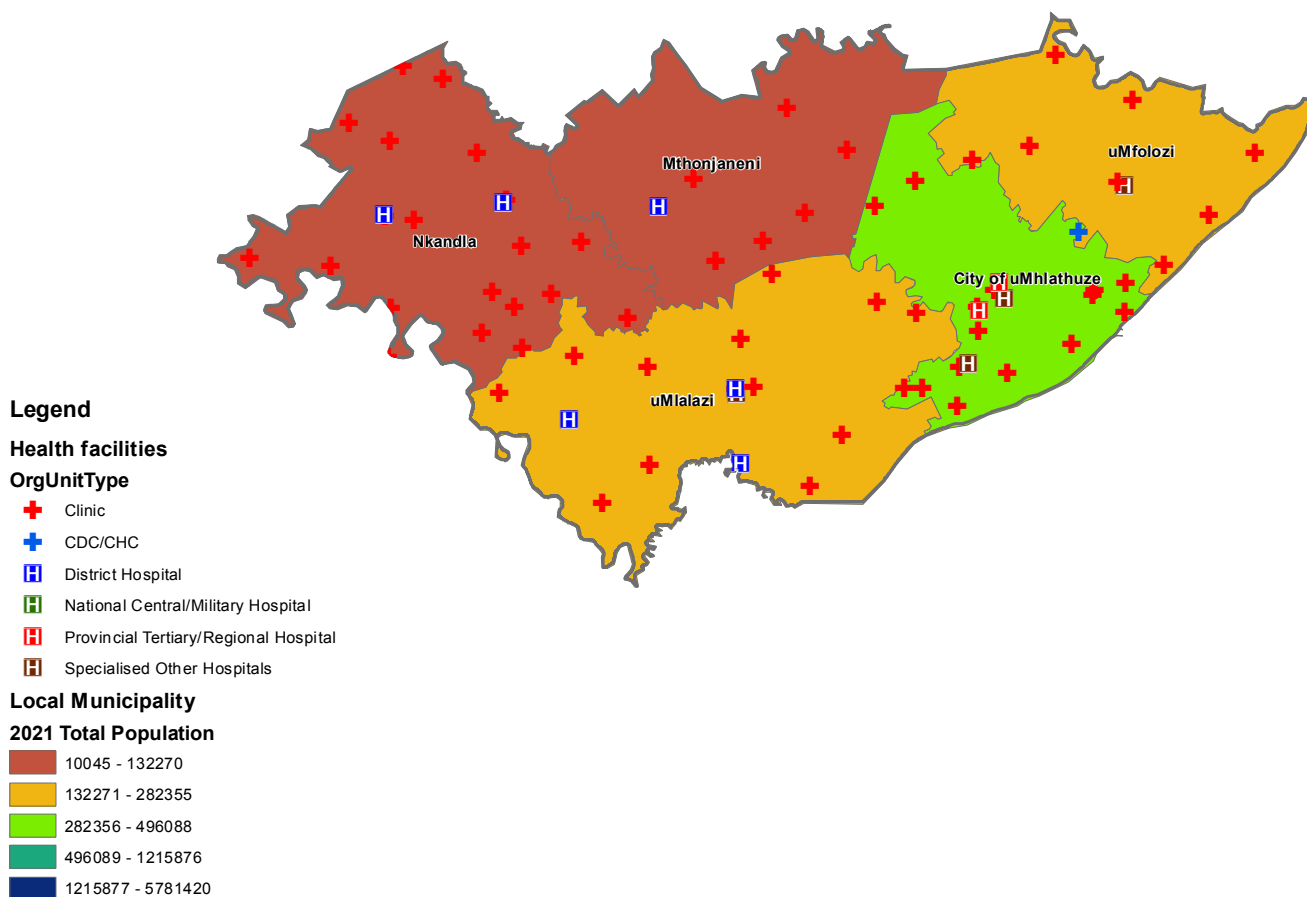
¹⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

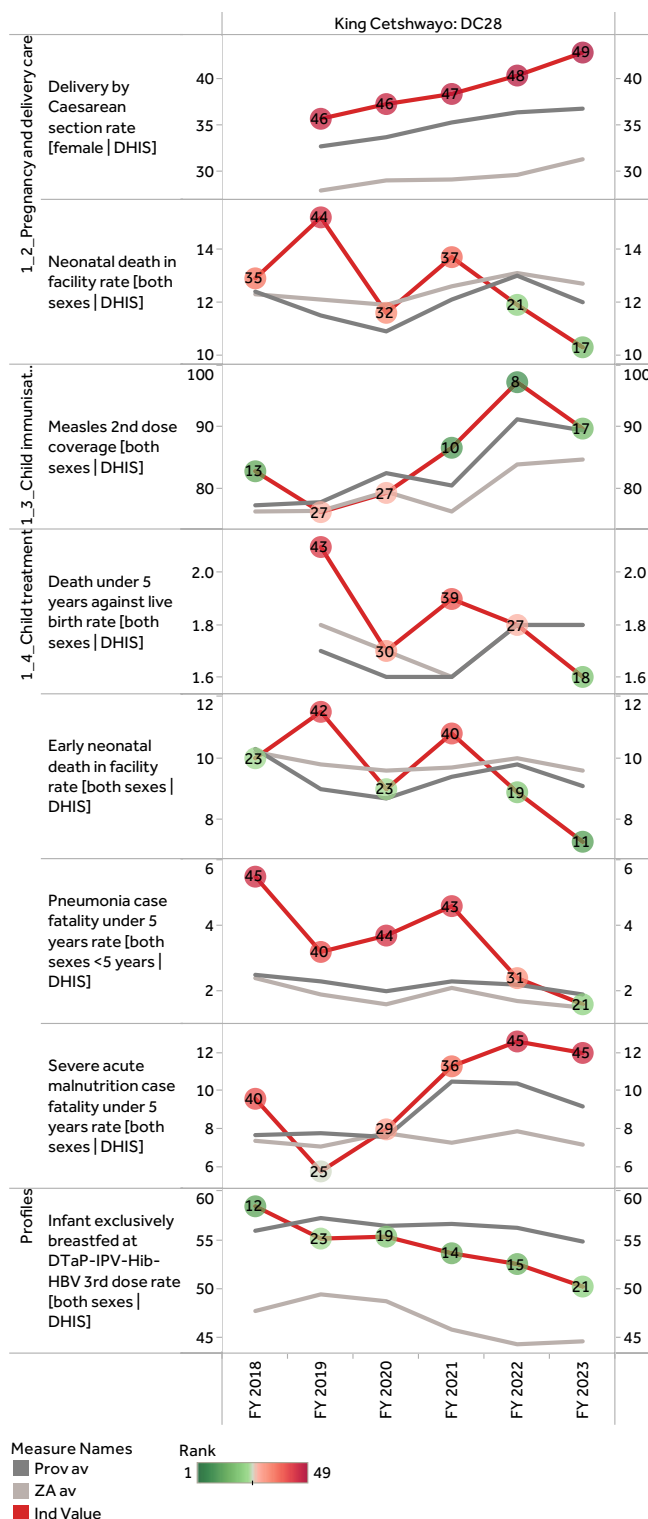
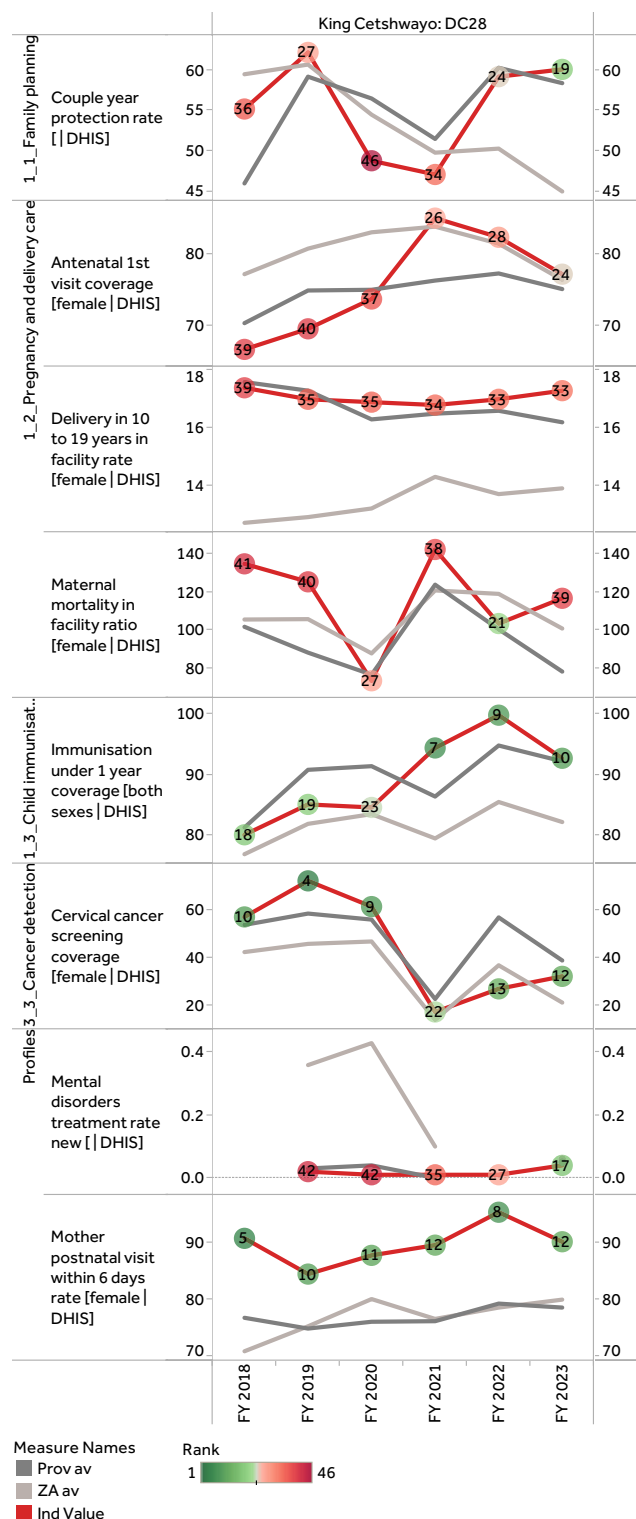
¹⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

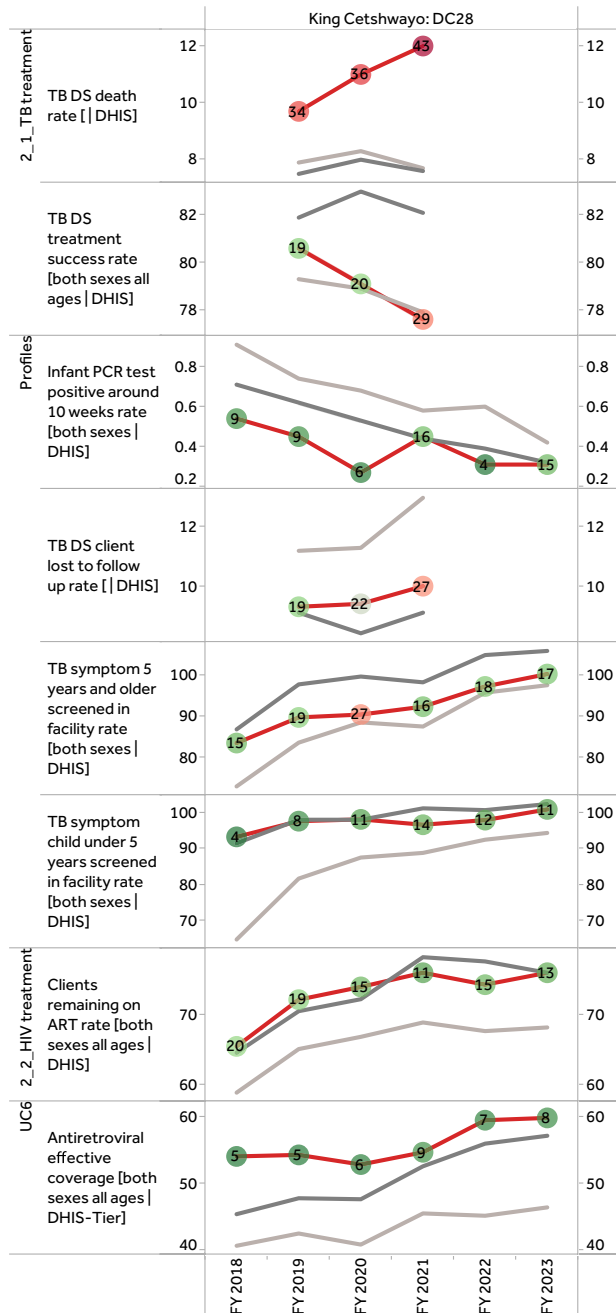
King Cetshwayo



Annual trends, 2018/19–2022/23

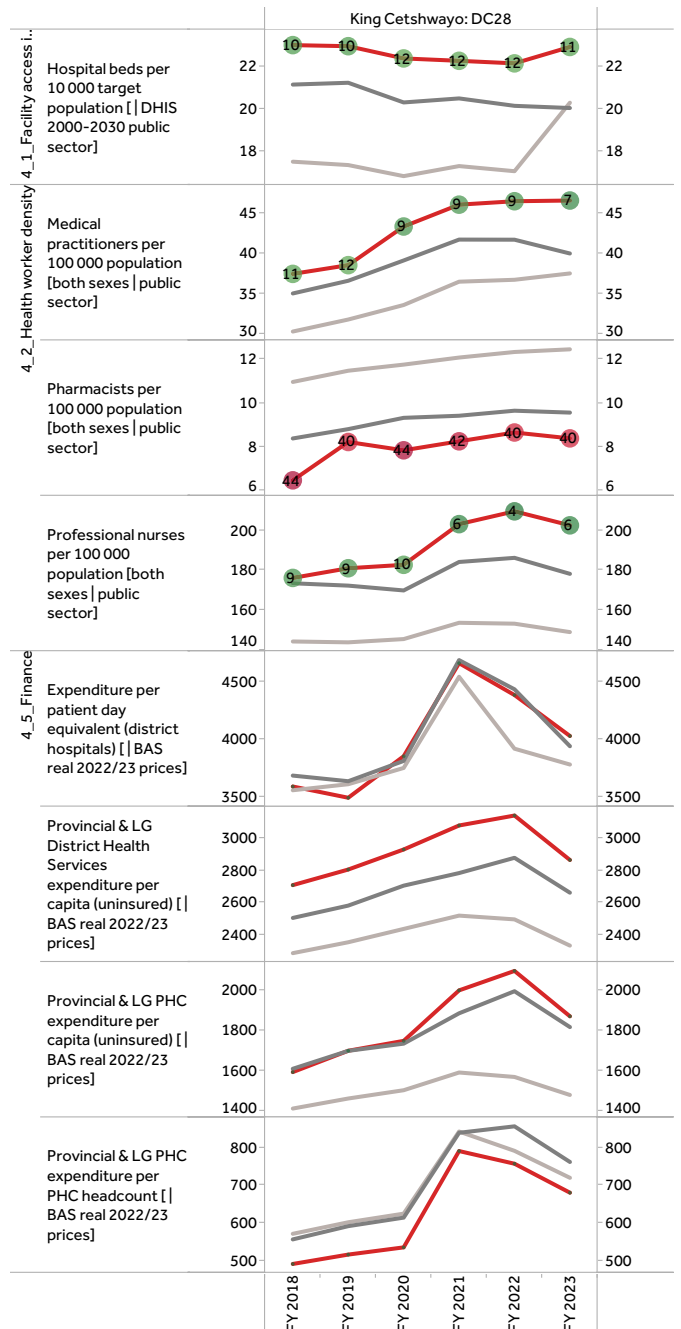


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 43



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 44

iLembe District Municipality (DC29)

The iLembe District Municipality¹⁷ is a Category C municipality situated on the east coast of KwaZulu-Natal. It is the smallest of the province's district municipalities, making up a mere 3% of its geographical area. iLembe consists of four local municipalities located between Durban and Richards Bay: Mandeni, KwaDukuza, Maphumulo and Ndwedwe.

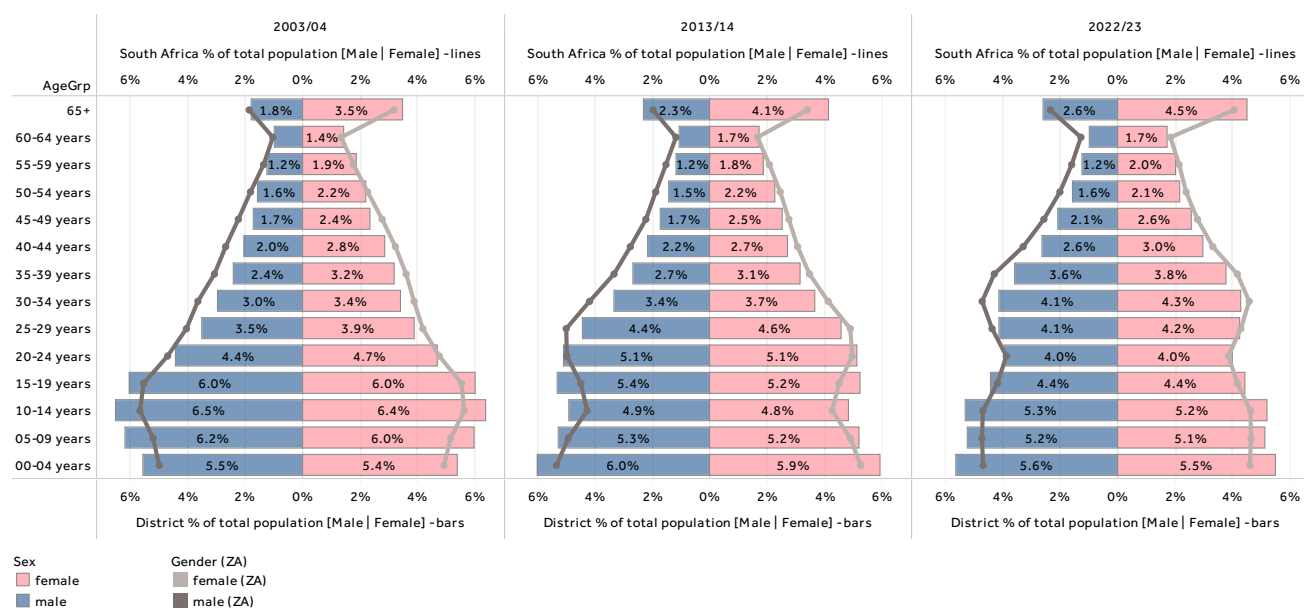
Cities/Towns: Dolphin Coast/Ballito, Isithebe, KwaDukuza, Mandeni, Ndwedwe, Nkwazi/Zinkwazi Beach

Area: 3 270km²

Population (2022)¹⁸: 696 590

District percentage population by age-gender group compared to South Africa

iLembe DM (DC29)



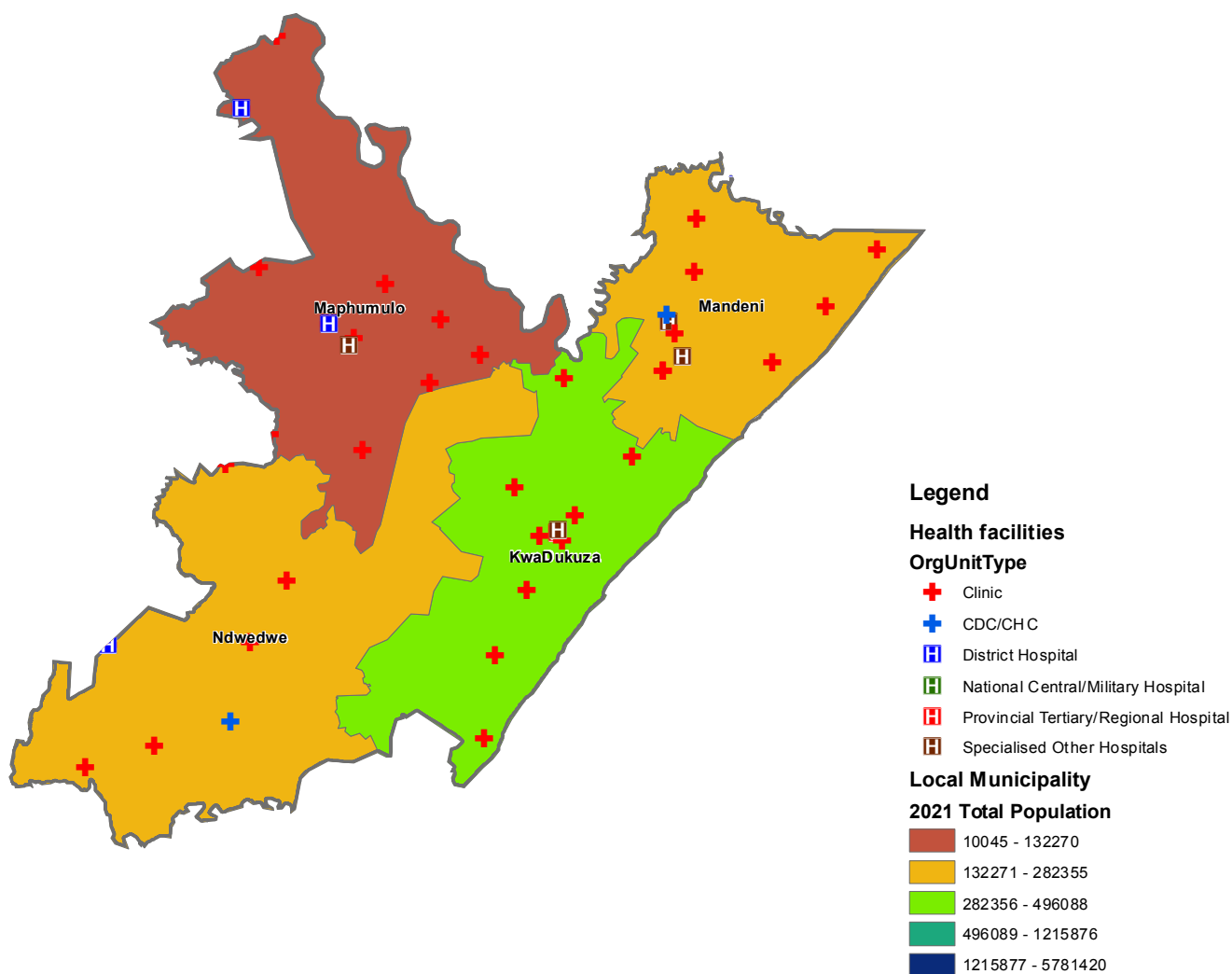
¹⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

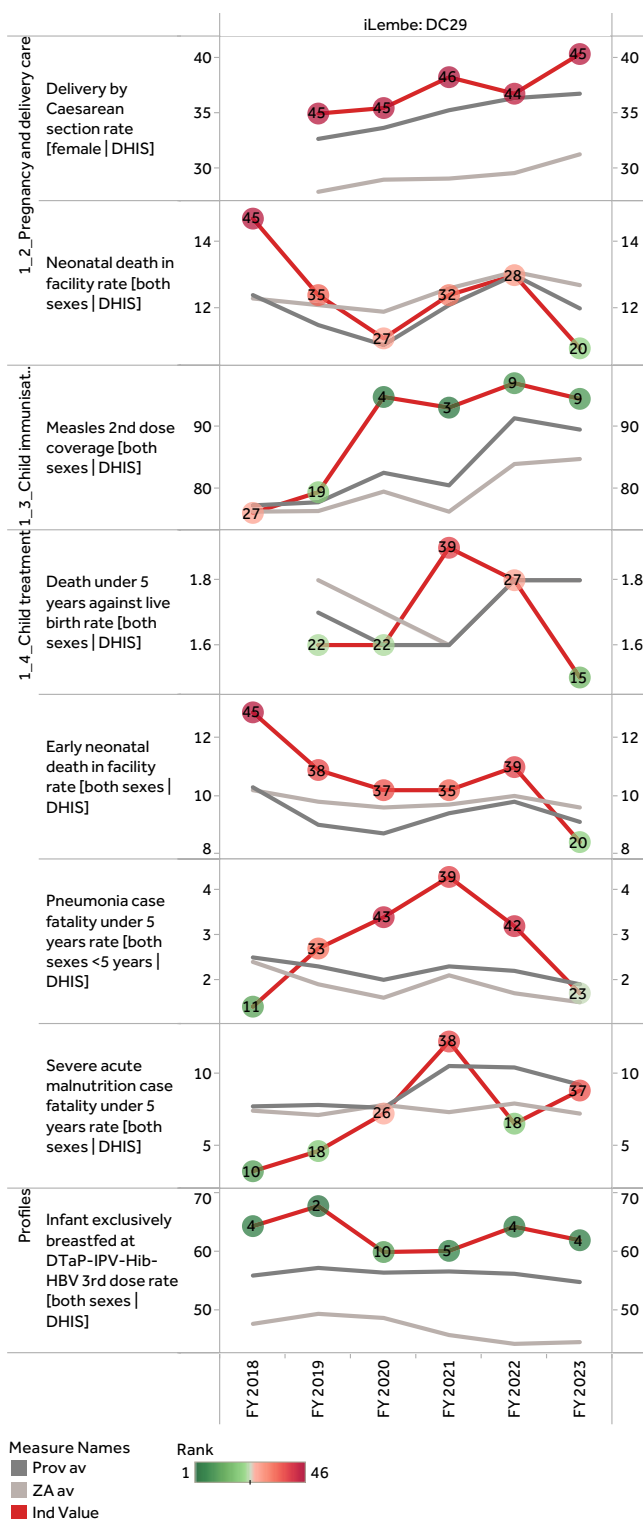
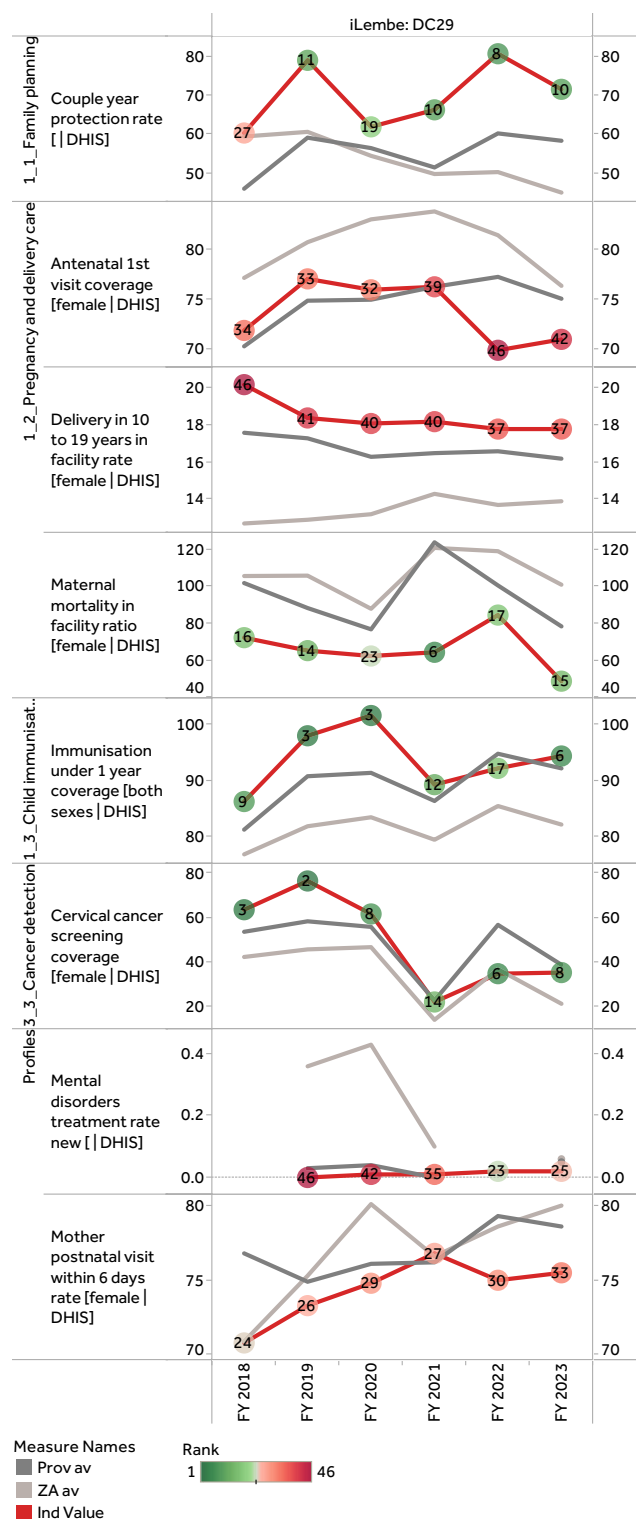
¹⁸Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

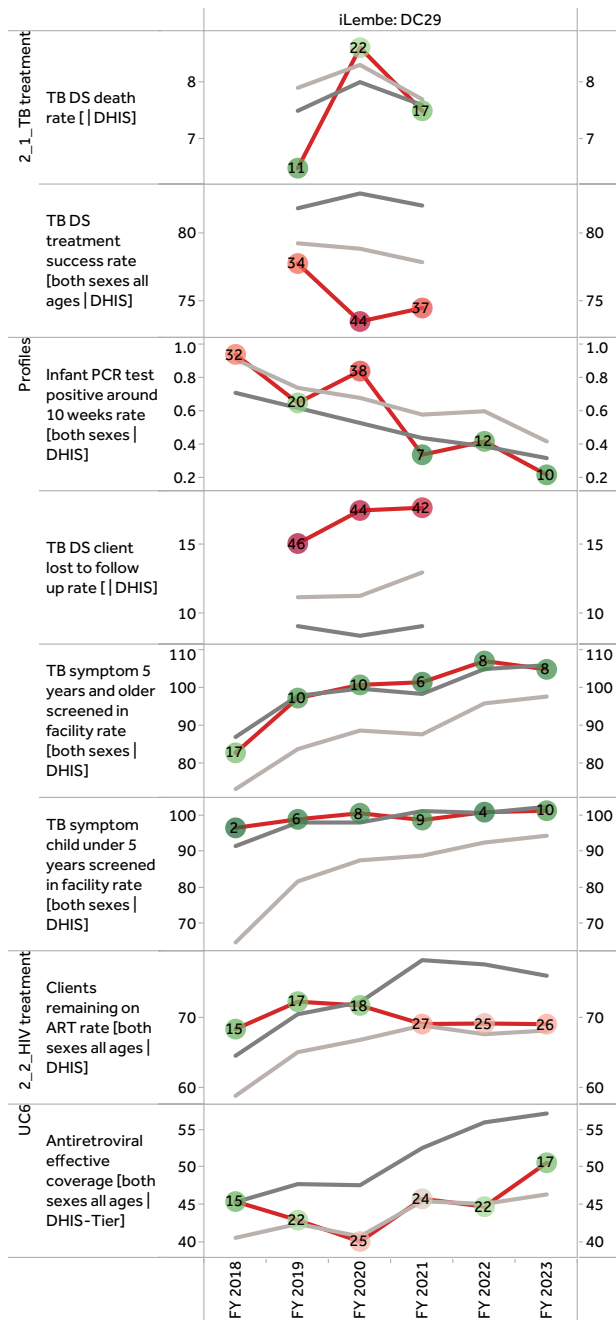
iLembe



Annual trends, 2018/19–2022/23

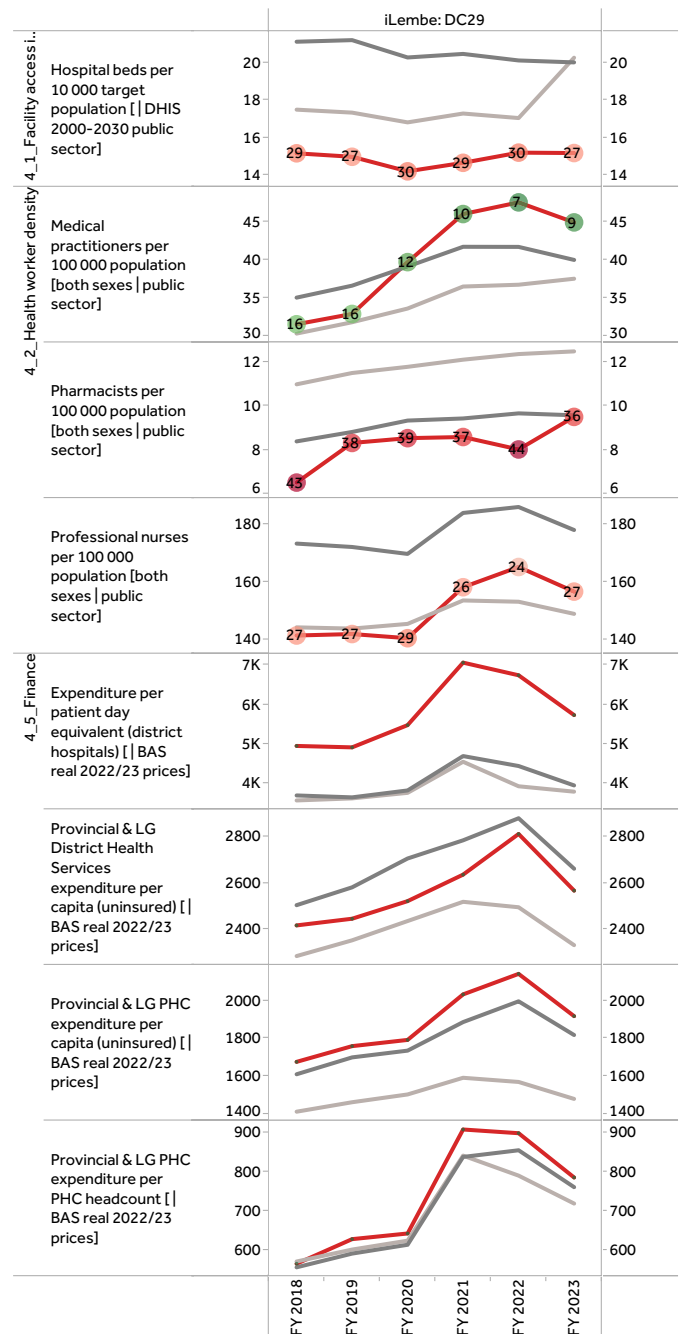


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 46



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 44

Harry Gwala District Municipality (DC43)

The Harry Gwala District Municipality¹⁹ is a Category C municipality situated south of KwaZulu-Natal, bordering Lesotho. The district comprises four local municipalities: Dr Nkosazana Dlamini Zuma, uMzimkhulu, Greater Kokstad and Ubuhlebezwe.

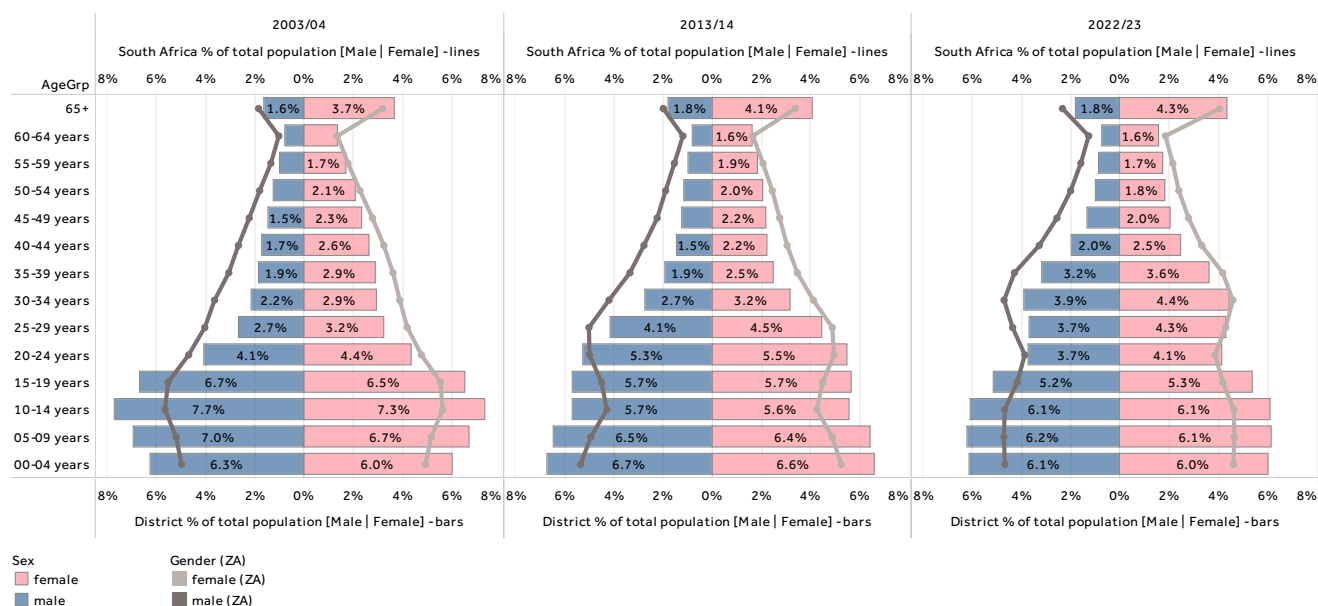
Cities/Towns: Creighton, Himeville, Ixopo, Kokstad, Underberg, uMzimkhulu

Area: 10 388km²

Population (2022)²⁰: 513 778

District percentage population by age-gender group compared to South Africa

Harry Gwala DM (DC43)

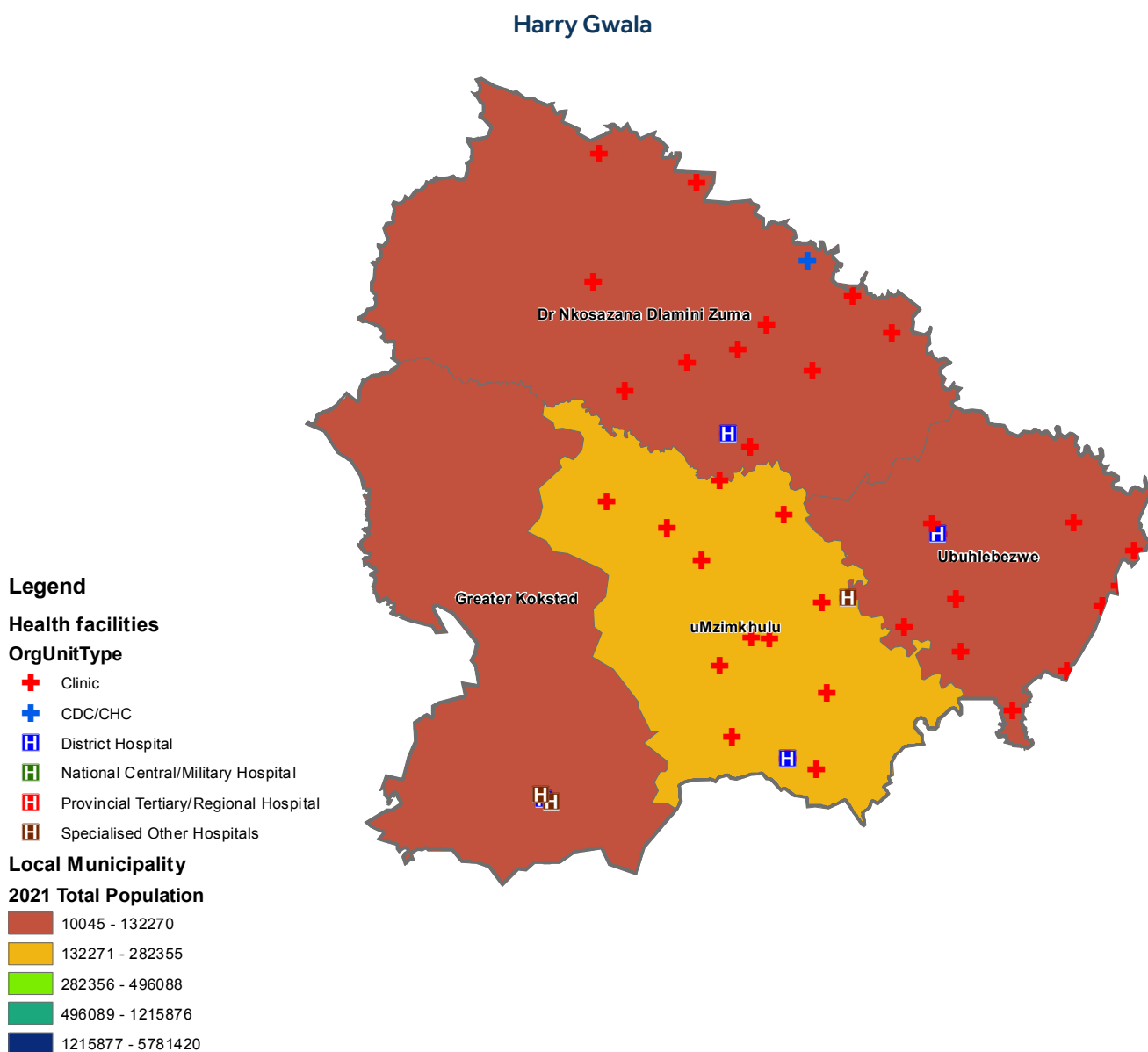


¹⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

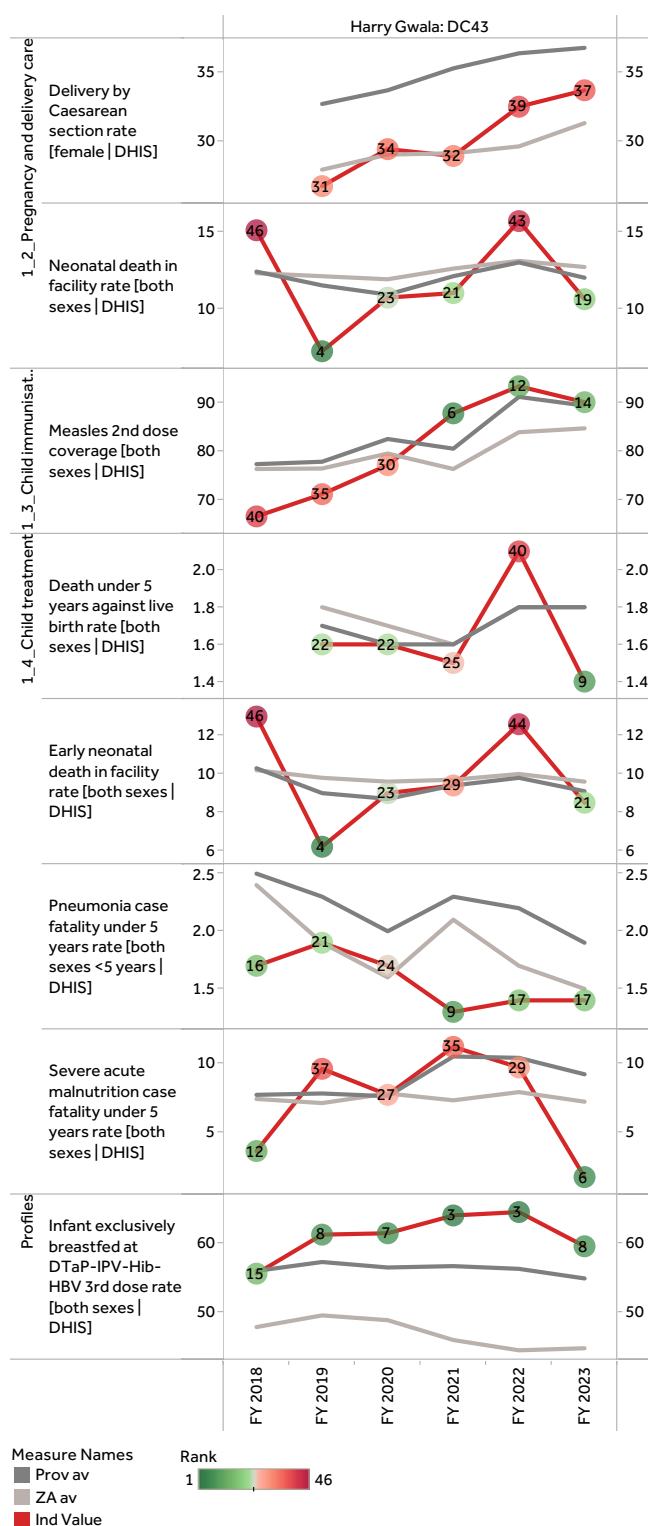
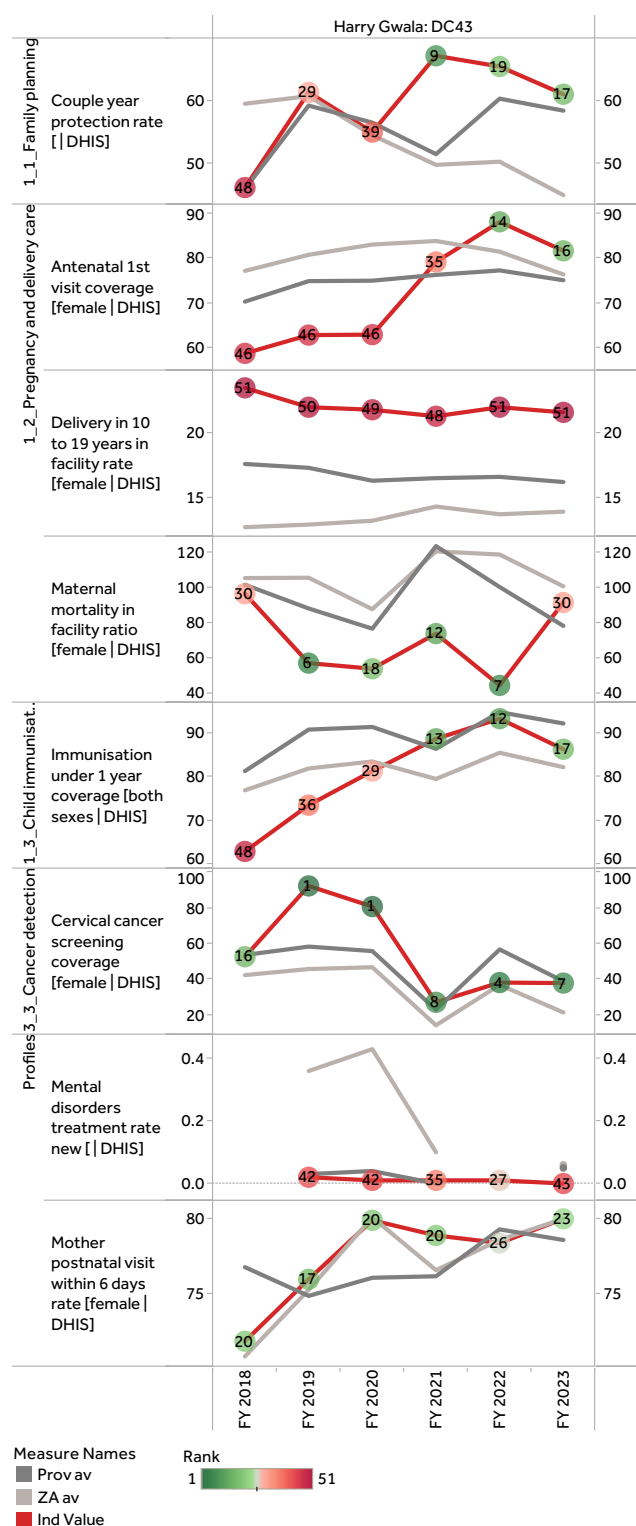
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²⁰Mid-year Population Estimates 2022, Stats SA.

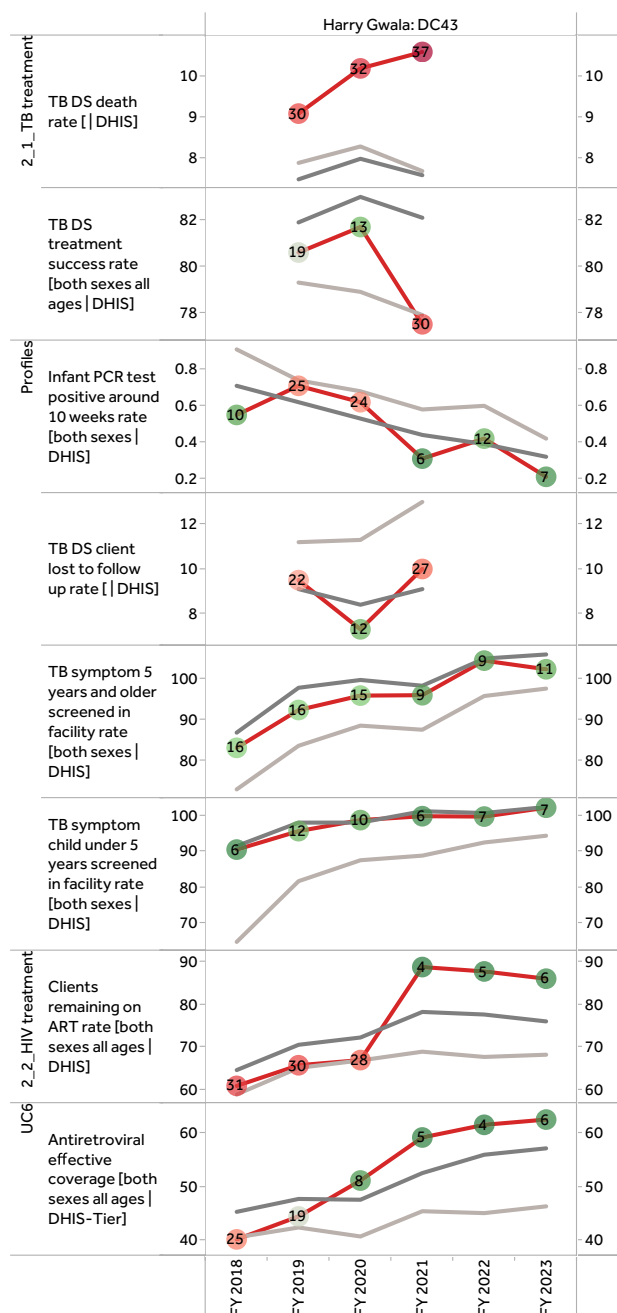
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



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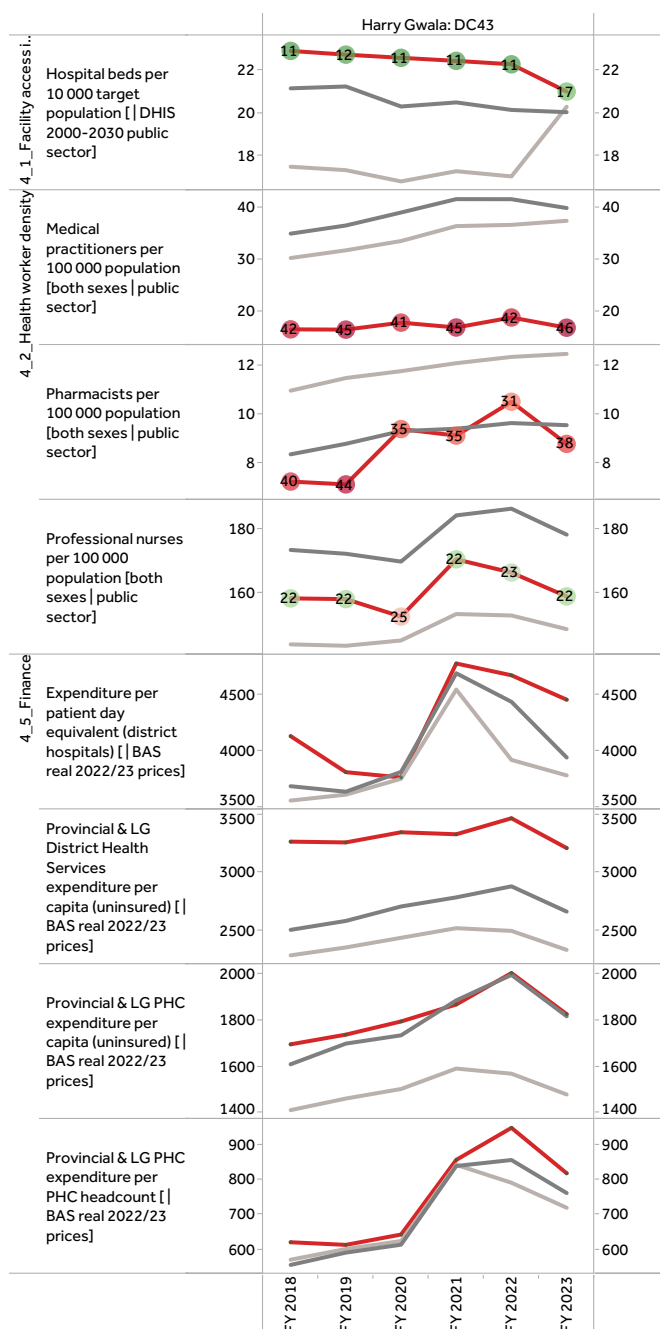
Prov av

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Rank

1 37



Measure Names

Prov av

ZA av

Ind Value

Rank

1 46

eThekweni Metropolitan Municipality (ETH)

The eThekweni Metropolitan Municipality²¹ is a Category A municipality located in KwaZulu-Natal. eThekweni is the third largest city in the country and its land area is comparatively larger than that of other South African cities.

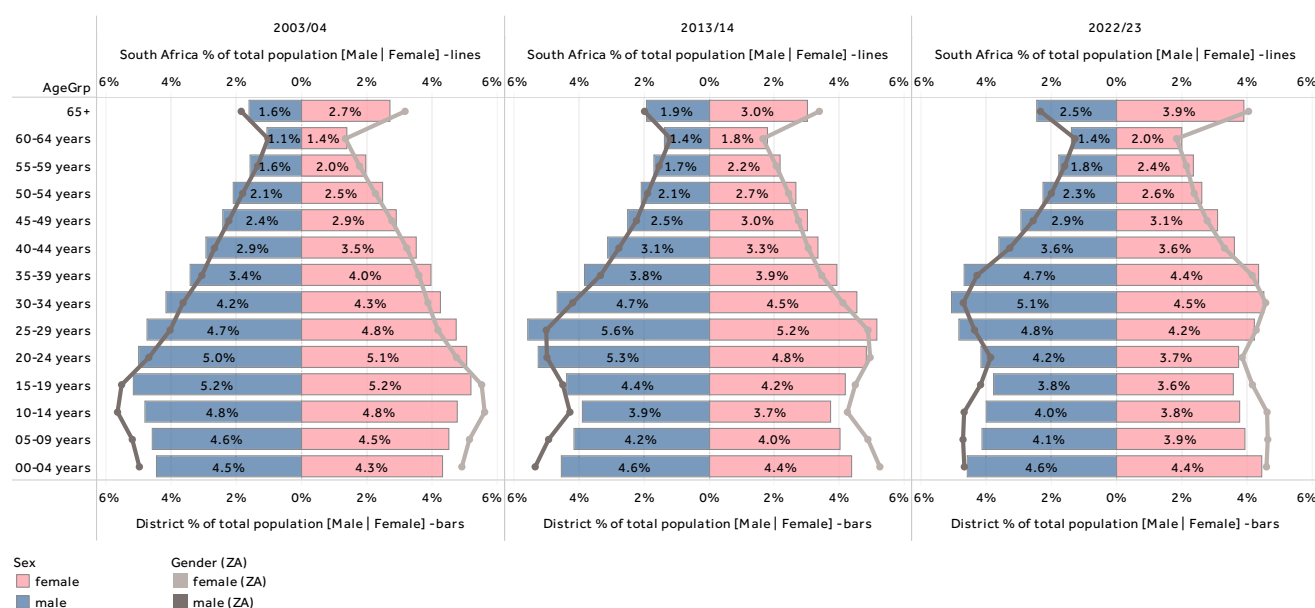
Cities/Towns: Amalanga, Amanzimtoti, Amaotana, Berea, Blackburn, Bluff, Cato Ridge, Cele/Vumengazi, Chatsworth, Cibane, Clermont, Clifton Canyon, Craigieburn, Dassenhoek, Desainager, Durban, Durban International Airport, Durban North, Durban South, Emalangen, Embo/Nksa Isimahla, Emona, Ethekeeni, Everton, Ezembeni, Folweni, Gcumisa, Genazzano, Gillitts, Glenashley, Golokodo-Ensimbini, Hambanathi, Hammarsdale, Hillcrest, Ilanga, Ilfracombe, Illovo North, Illovo South, Inanda, Inchanga, Iqadi, Isipingo, Isipingo Beach, Kingsburgh, Klaarwater, Kloof, KwaDabeka, KwaMashu, KwaNdengezi, La Mercy, Lotus Park, Luganda, Luthuli/Umnini Trust, Magabeni, Malagazi, Mangangeni/Vumazonke, Maphephetha, Mariannhill, Mawotana, Mawothi, Molweni, Mount Edgecombe, Mount Moreland, Mpolo, Mpumalanga, New Germany, Newlands East, Newlands West, Ngcolosi, Ngqungqulu, Ntuzuma, Oceans, Outer West Durban, Phoenix, Pinetown, Prospecton, Qadi, Qiniselani Manyuswa, Queensburgh, Redcliffe, Roseneath, Sapref, Shallcross, Sobonakhona, Thoyana, Tongaat, Tongaat Beach, Tselimnyama, Umgogintwini, Umbumbulu, Umdloti, Umgababa, Umhlanga, Umkomaas, Umlazi, Verulam, Waterfall, Westbrook, Westville, Ximba

Area: 2 556km²

Population (2022)²²: 4 072 927

District percentage population by age-gender group compared to South Africa

eThekweni MM (ETH)

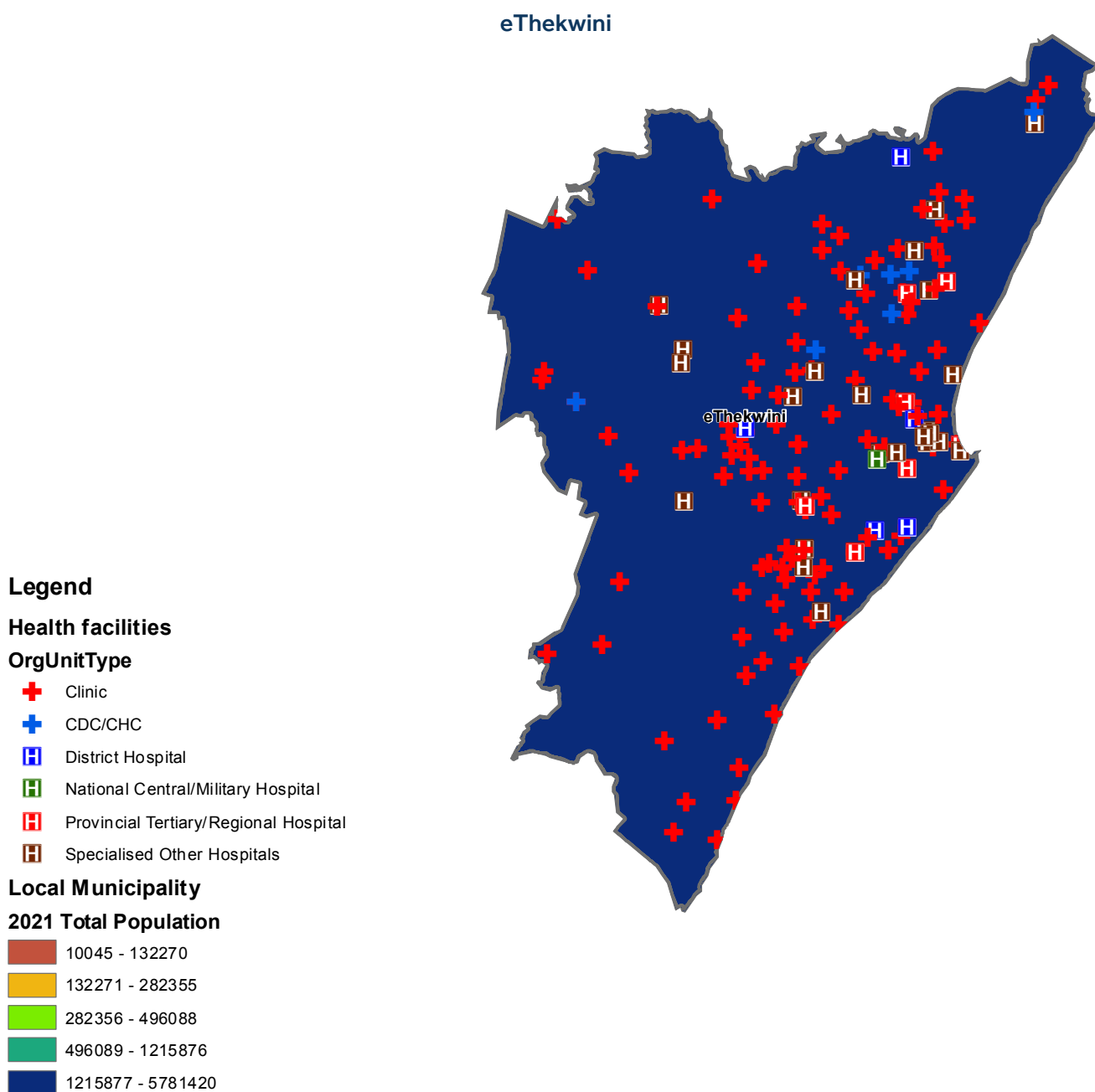


²¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

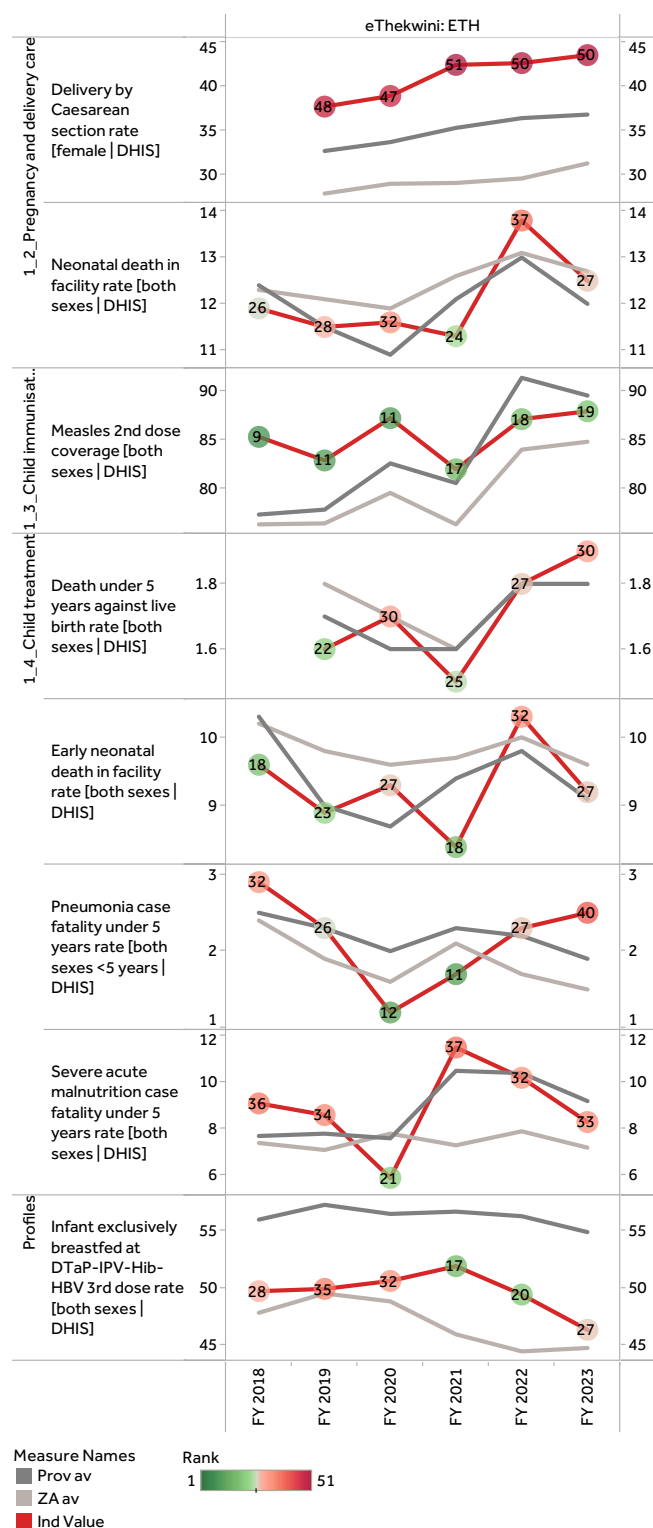
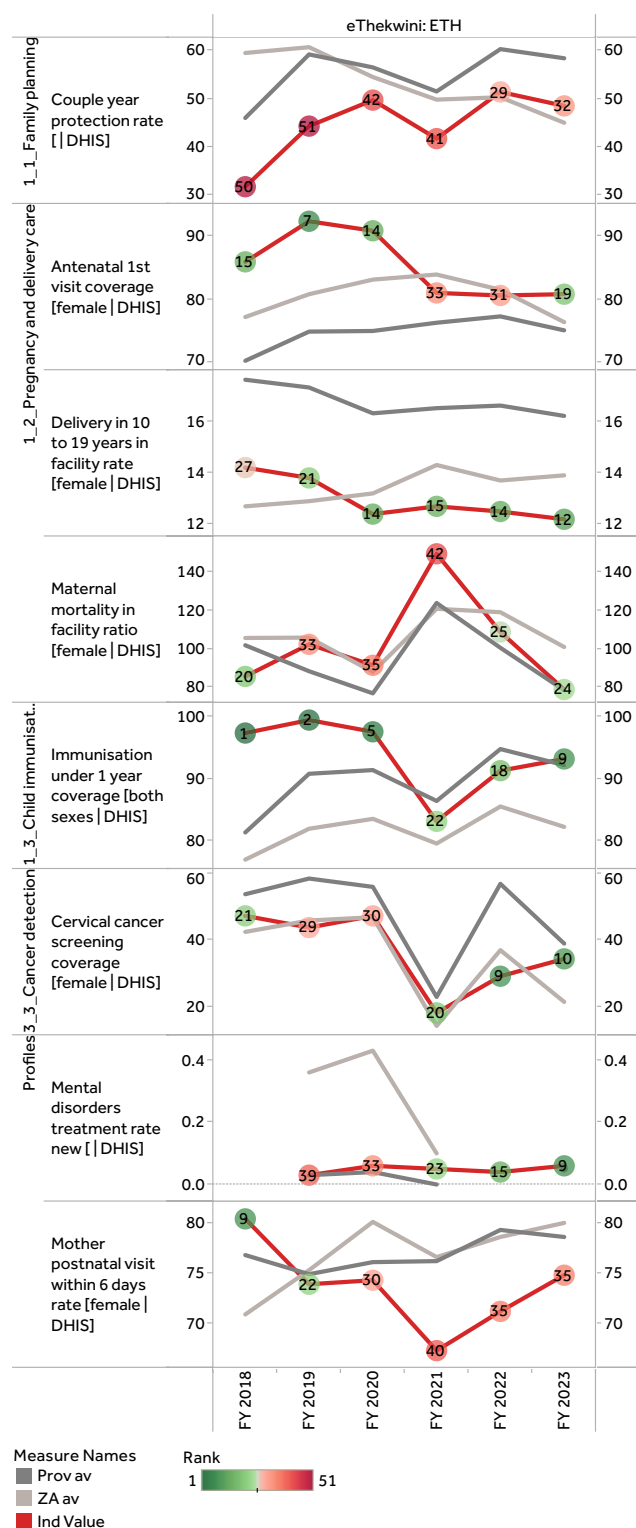
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²²Mid-year Population Estimates 2022, Stats SA.

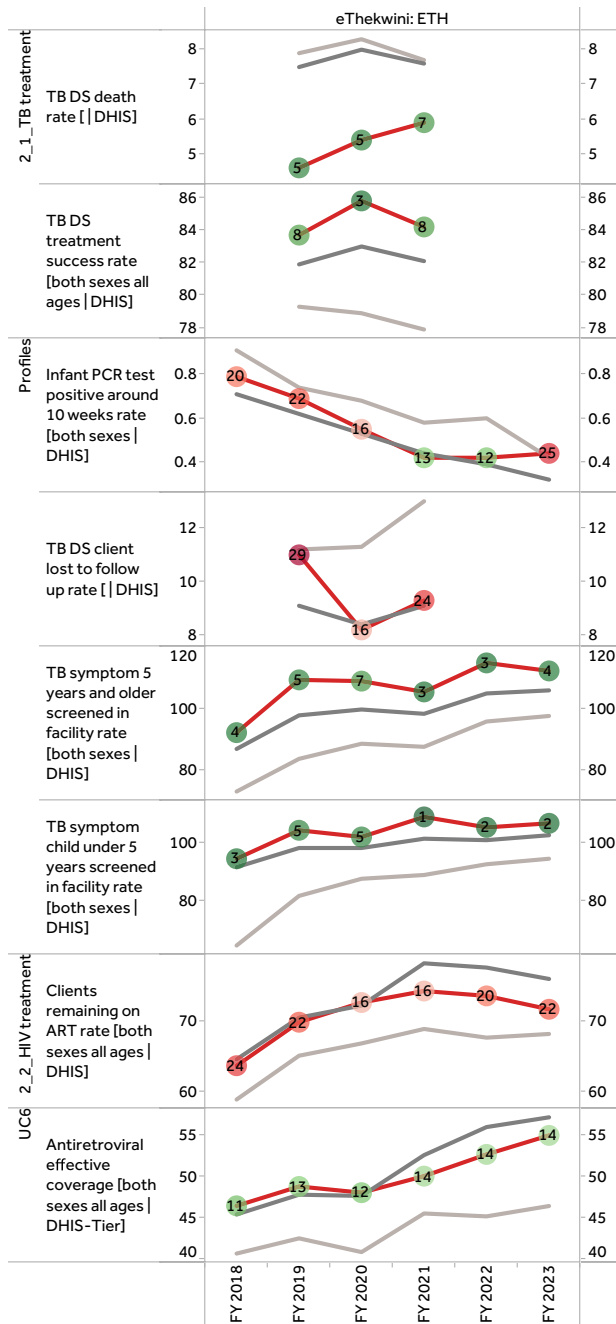
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

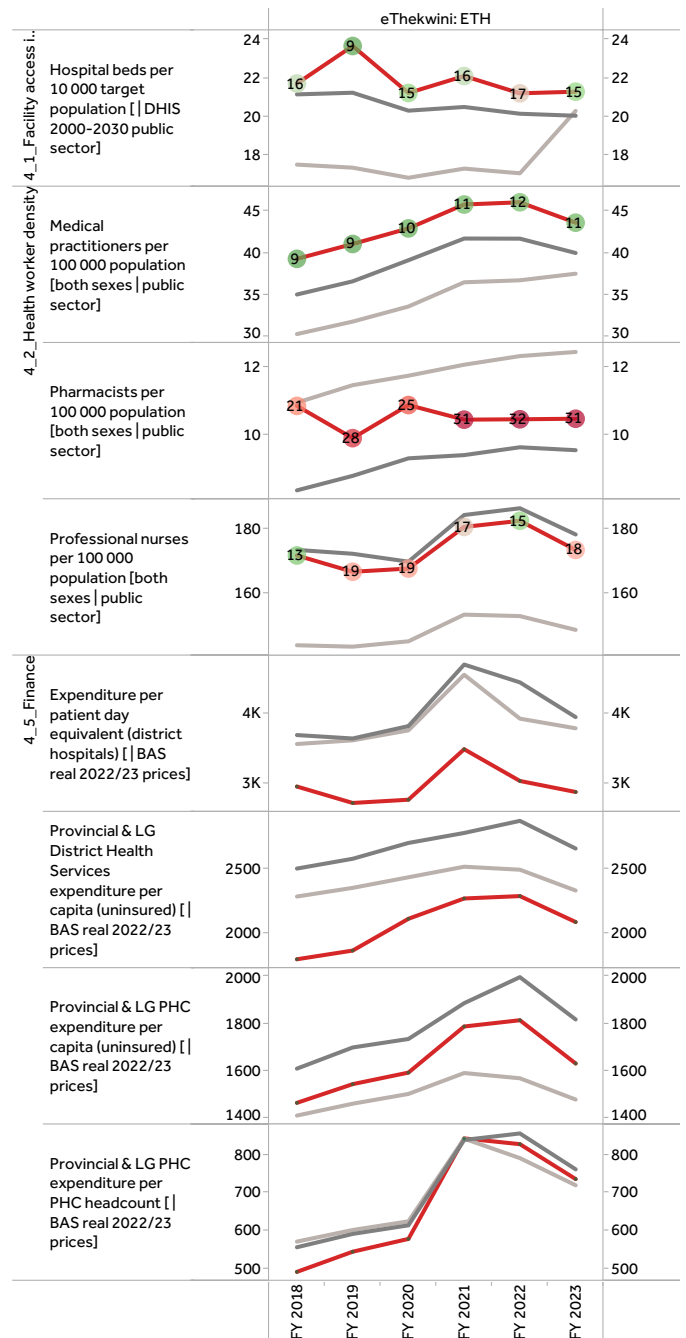
Rank

1 29

Prov av

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Measure Names

Rank

1 32

Prov av

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Limpopo Province

Mopani District Municipality (DC33)

The Mopani District Municipality¹ is a Category C municipality located within the north-eastern quadrant of the Limpopo Province. It is bordered in the north by Zimbabwe and in the east by Mozambique. The district consists of five local municipalities: Ba-Phalaborwa, Greater Giyani, Greater Letaba, Greater Tzaneen and Maruleng.

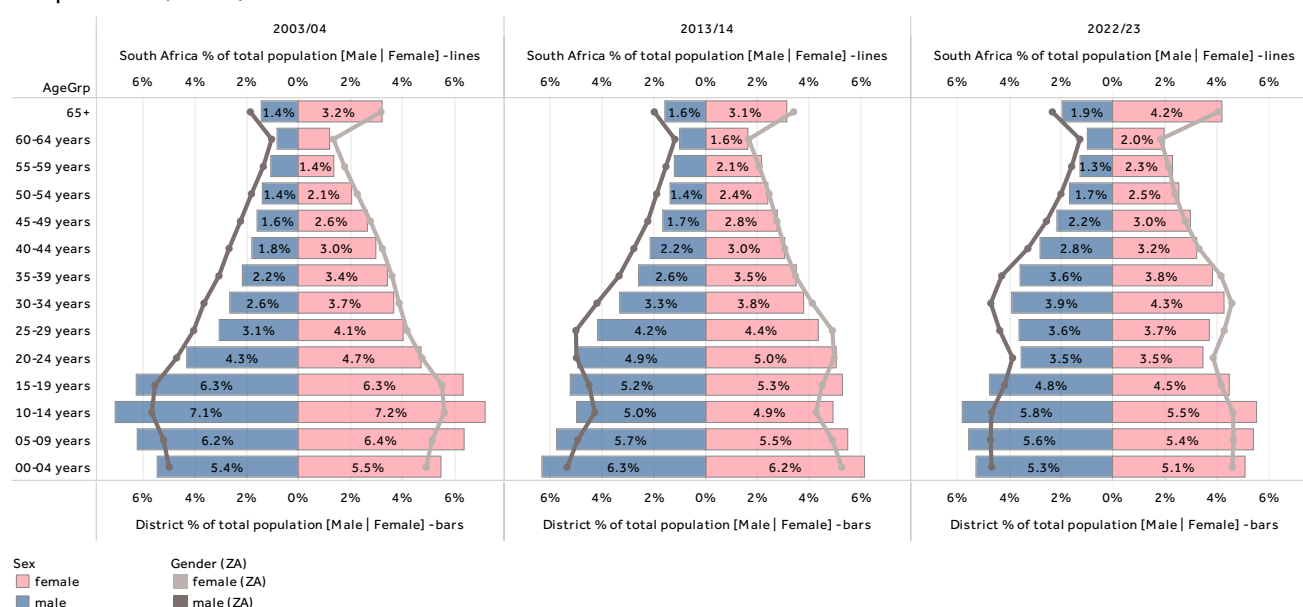
Cities/Towns: Giyani, Gravelotte, Haenertsburg, Hoedspruit, Leydsdorp, Modjadiskloof, Tzaneen

Area: 20 012km²

Population (2022)²: 1 234 475

District percentage population by age-gender group compared to South Africa

Mopani DM (DC33)

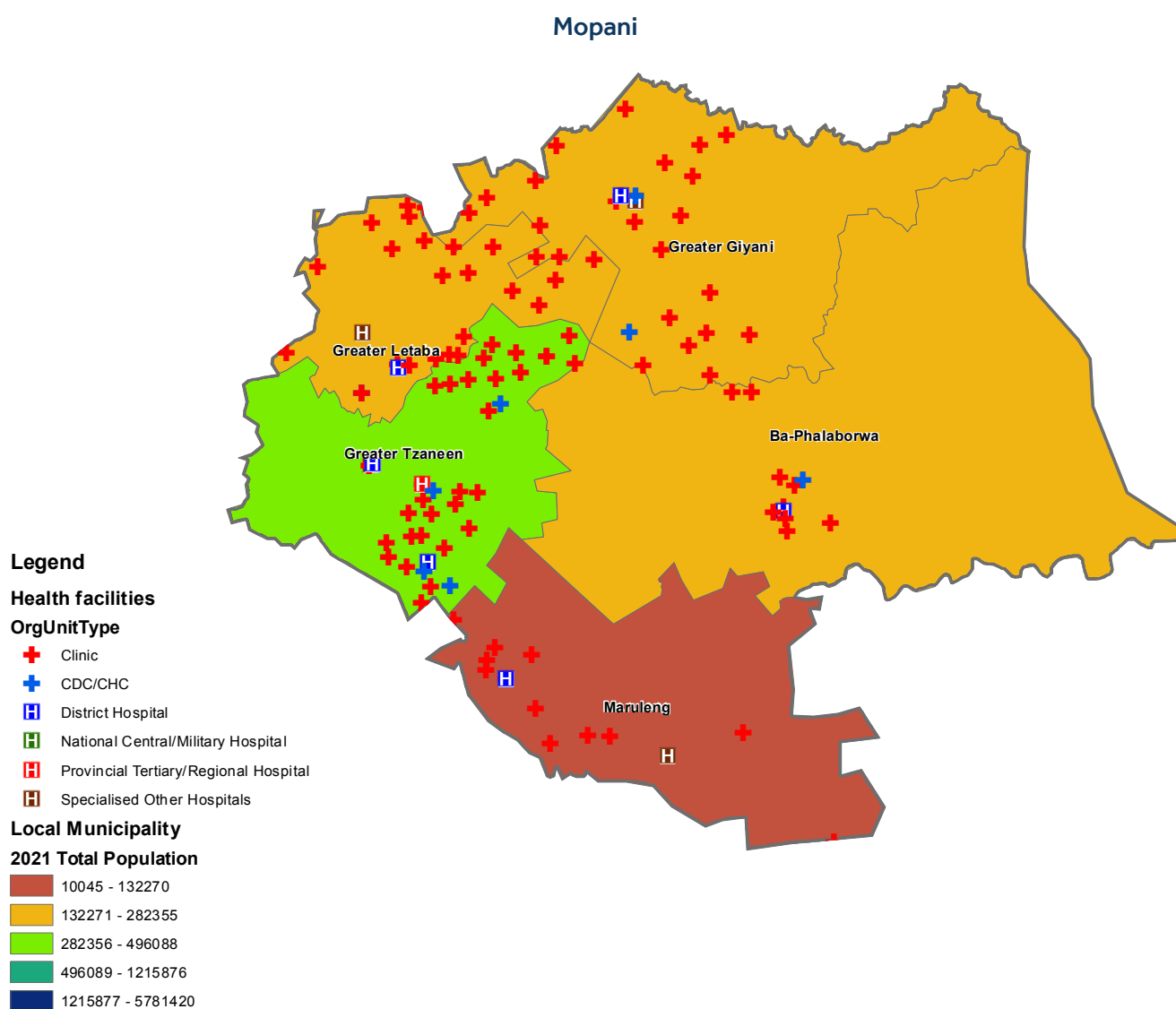


¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

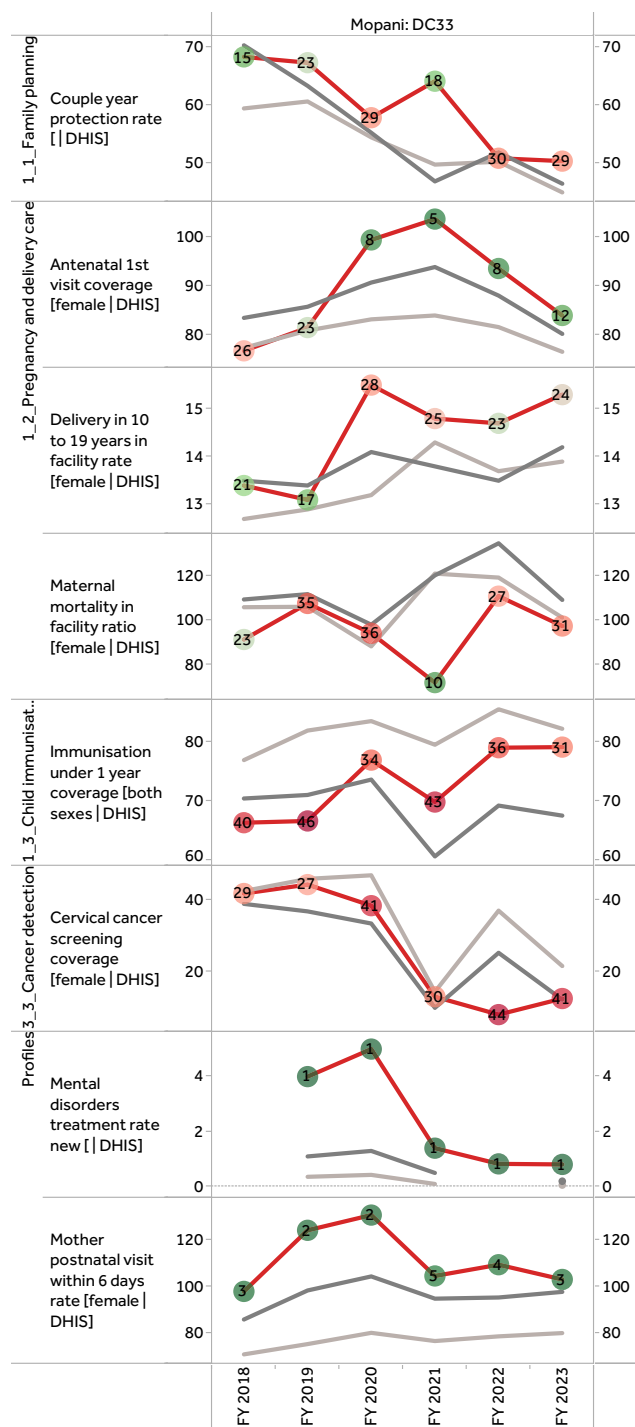
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²Mid-year Population Estimates 2022, Stats SA.

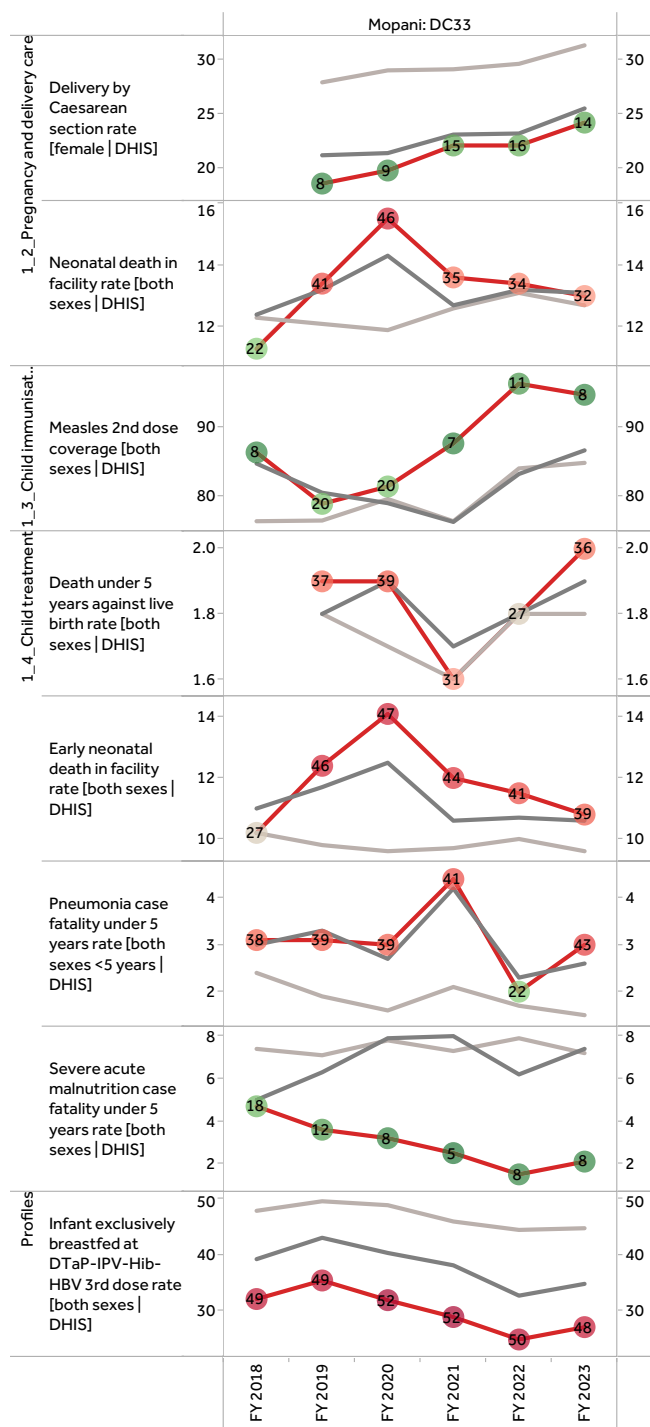
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

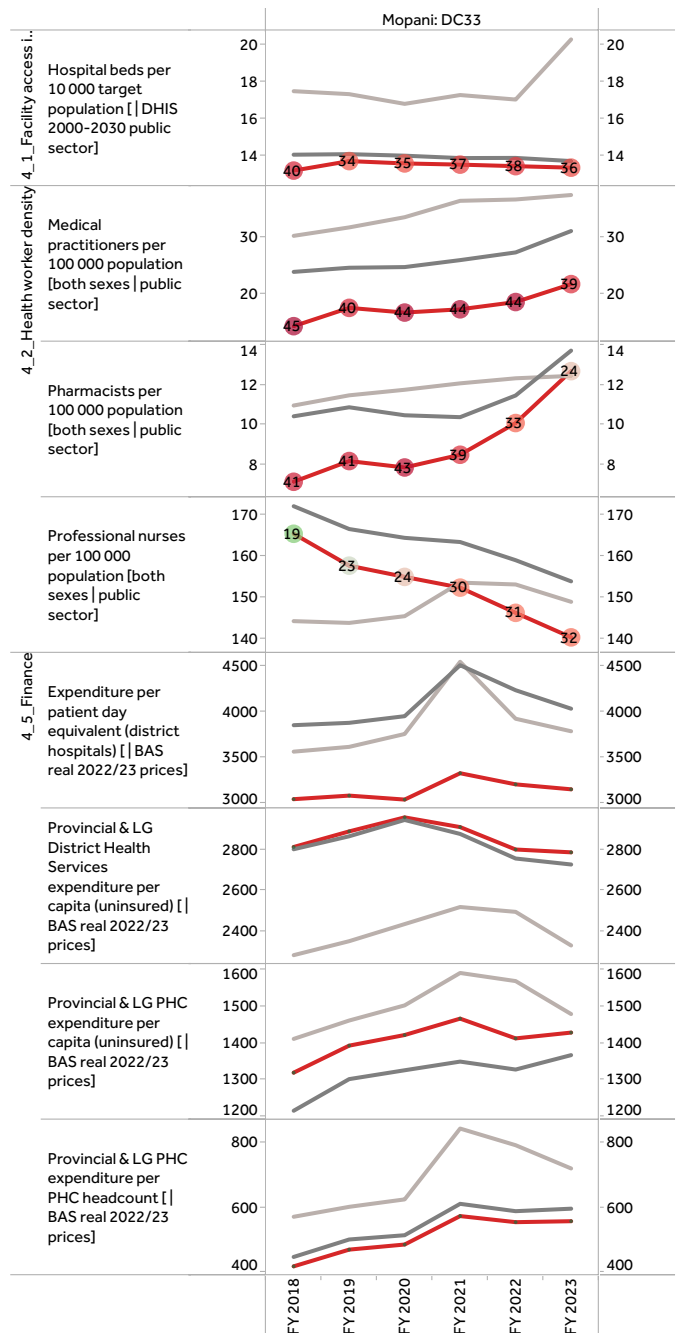
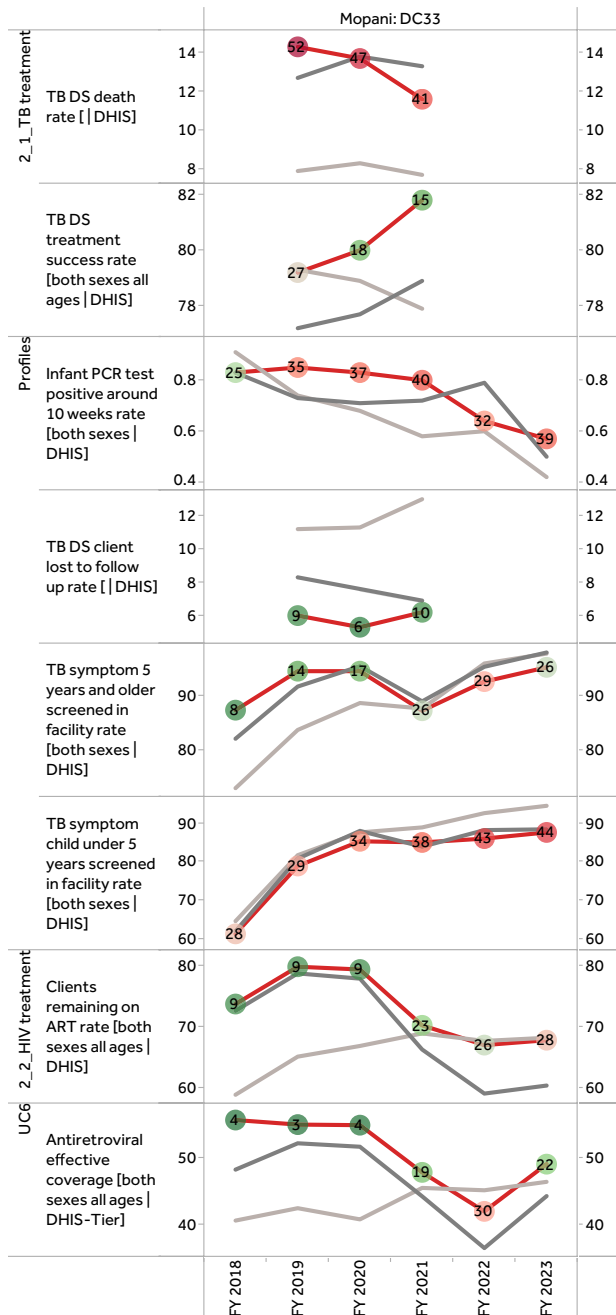


Measure Names
 Rank
 1 46
 Prov av
 ZA av
 Ind Value



Measure Names
 Rank
 1 52
 Prov av
 ZA av
 Ind Value

Annual trends, 2018/19–2022/23



Vhembe District Municipality (DC34)

The Vhembe District Municipality³ is a Category C municipality located in the northern part of the Limpopo Province. It shares borders with Zimbabwe and Botswana in the north-west and Mozambique in the south-east through the Kruger National Park. It comprises four local municipalities: Musina, Thulamela, Makhado and Collins Chabane.

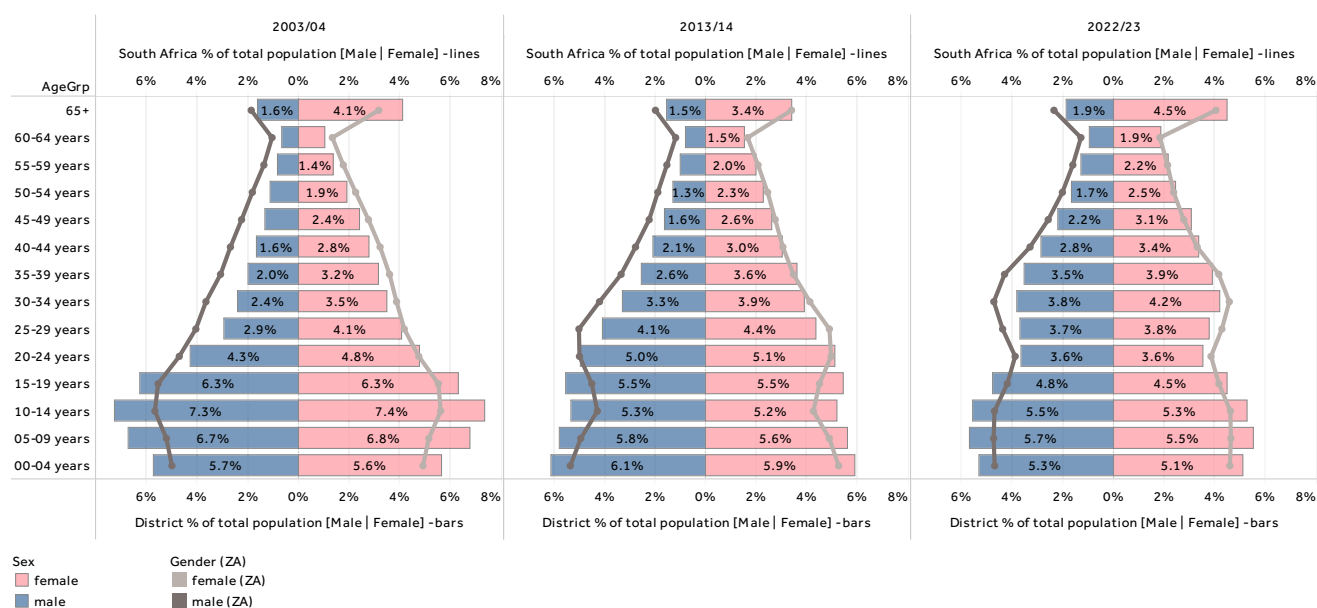
Cities/Towns: Makhado, Malamulele, Musina, Thohoyandou

Area: 25 597km²

Population (2022)⁴: 1 501 252

District percentage population by age-gender group compared to South Africa

Vhembe DM (DC34)

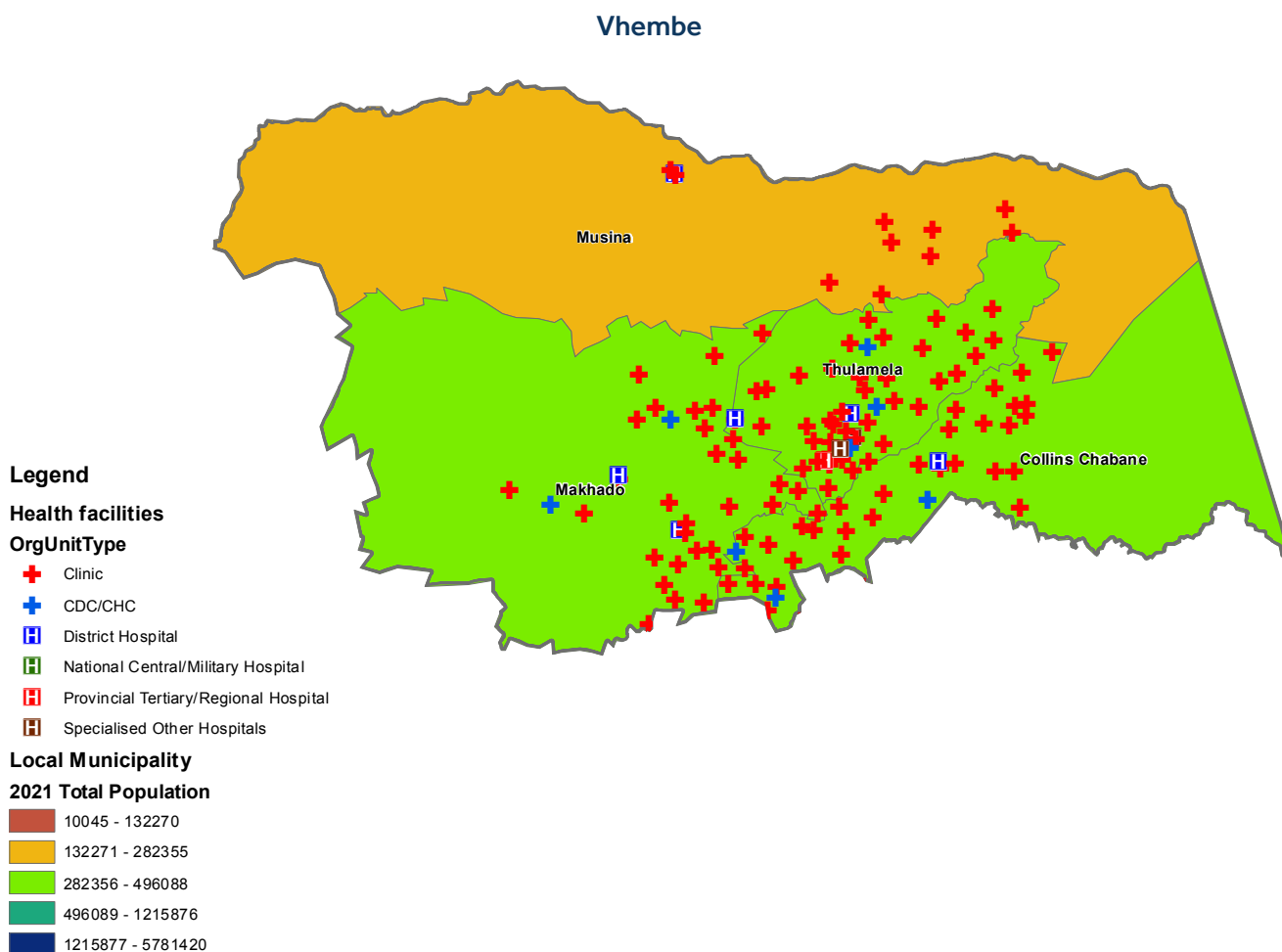


³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

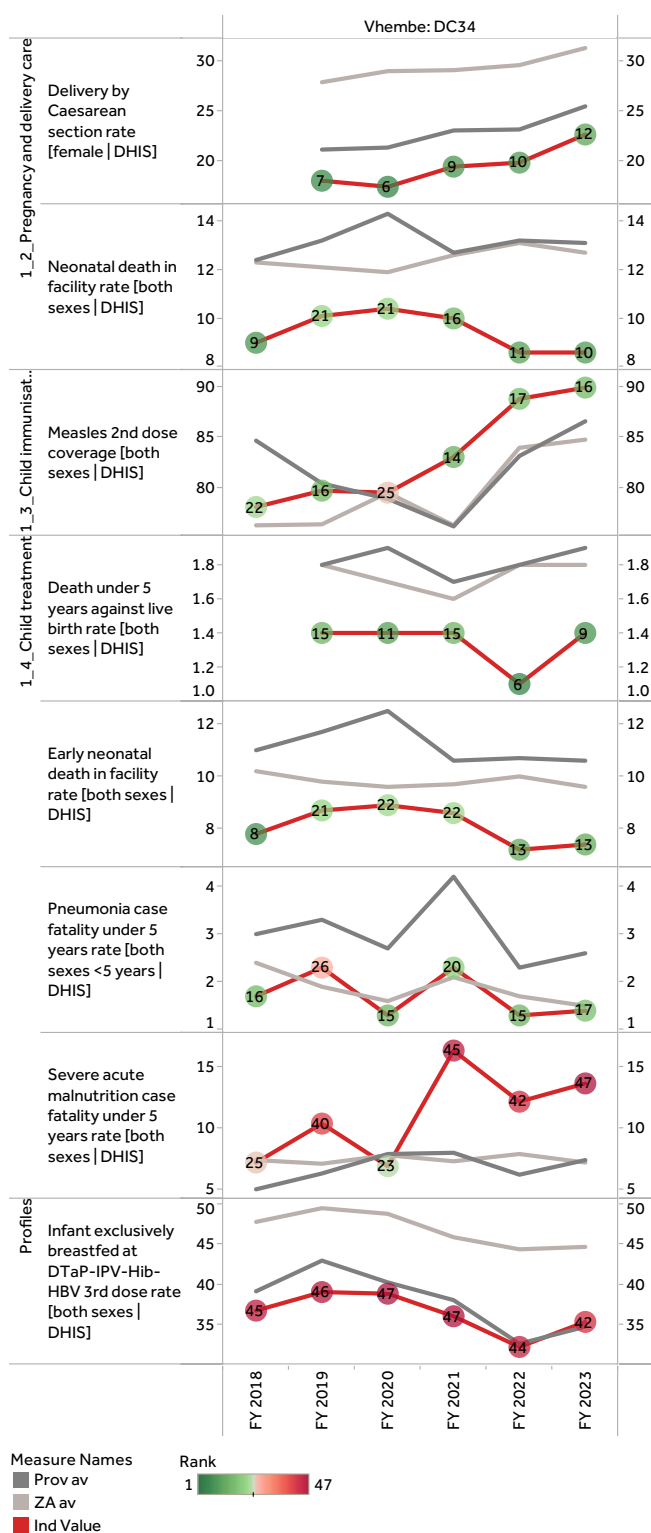
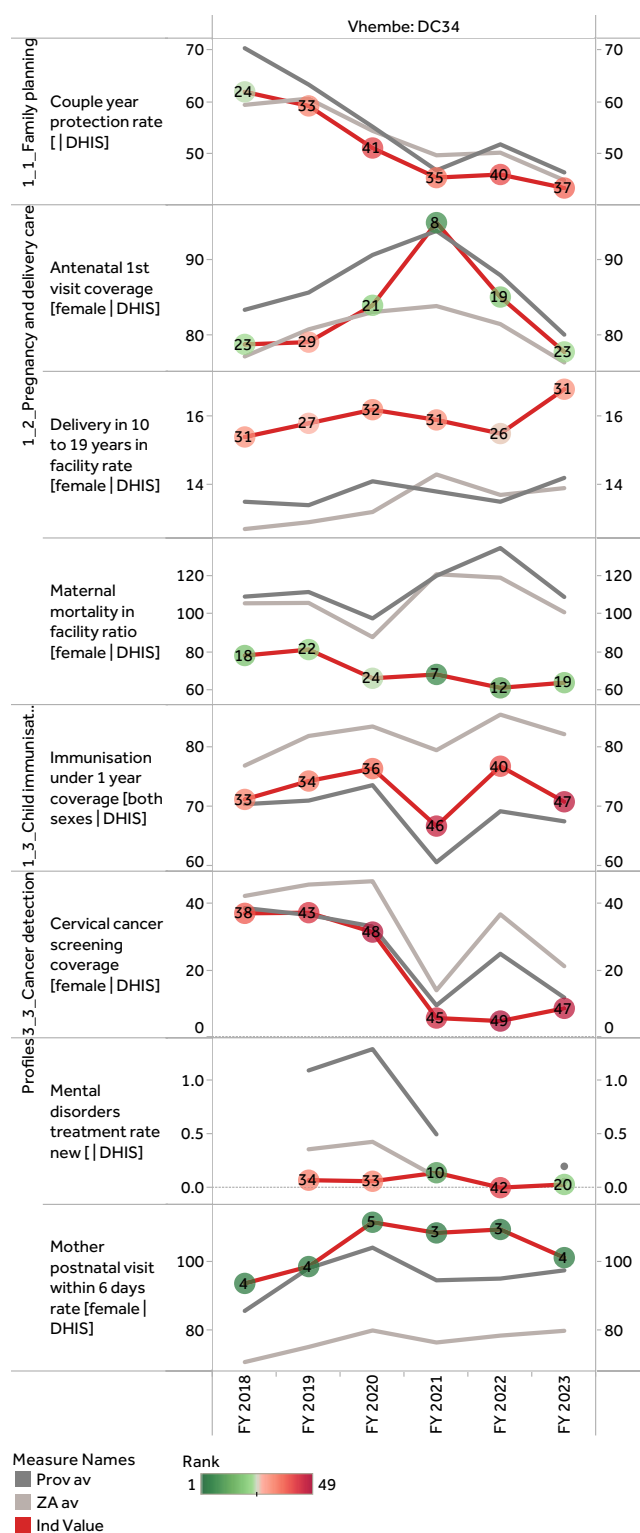
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⁴Mid-year Population Estimates 2022, Stats SA.

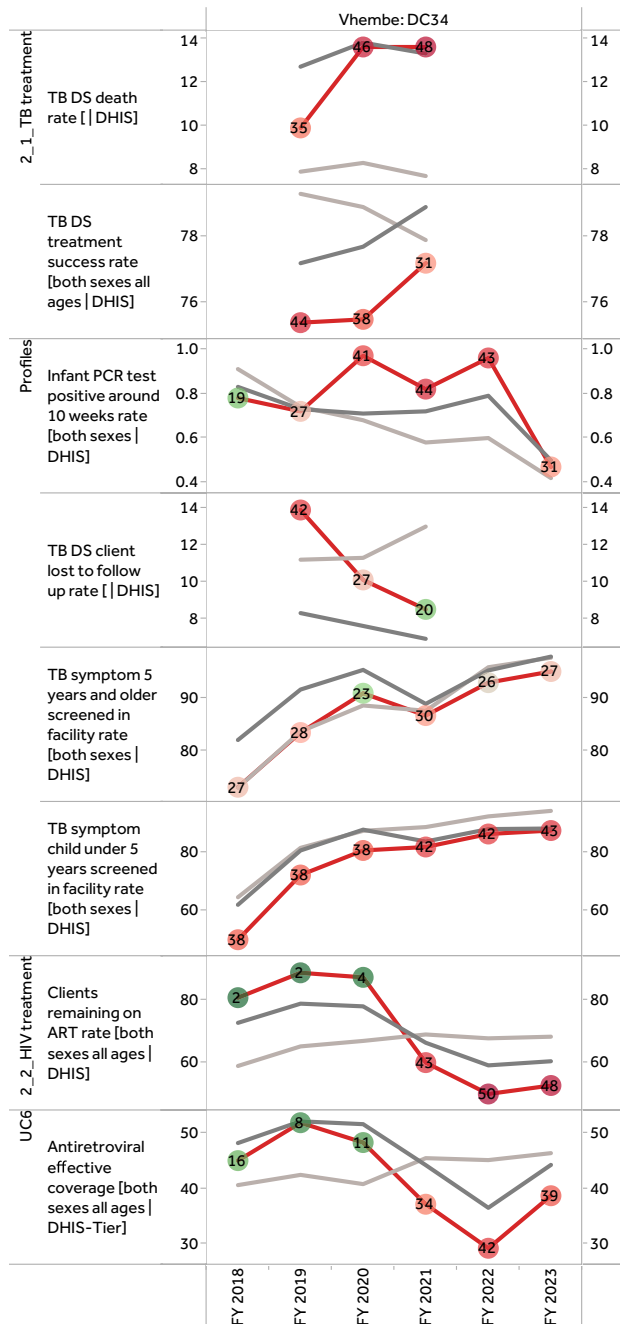
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

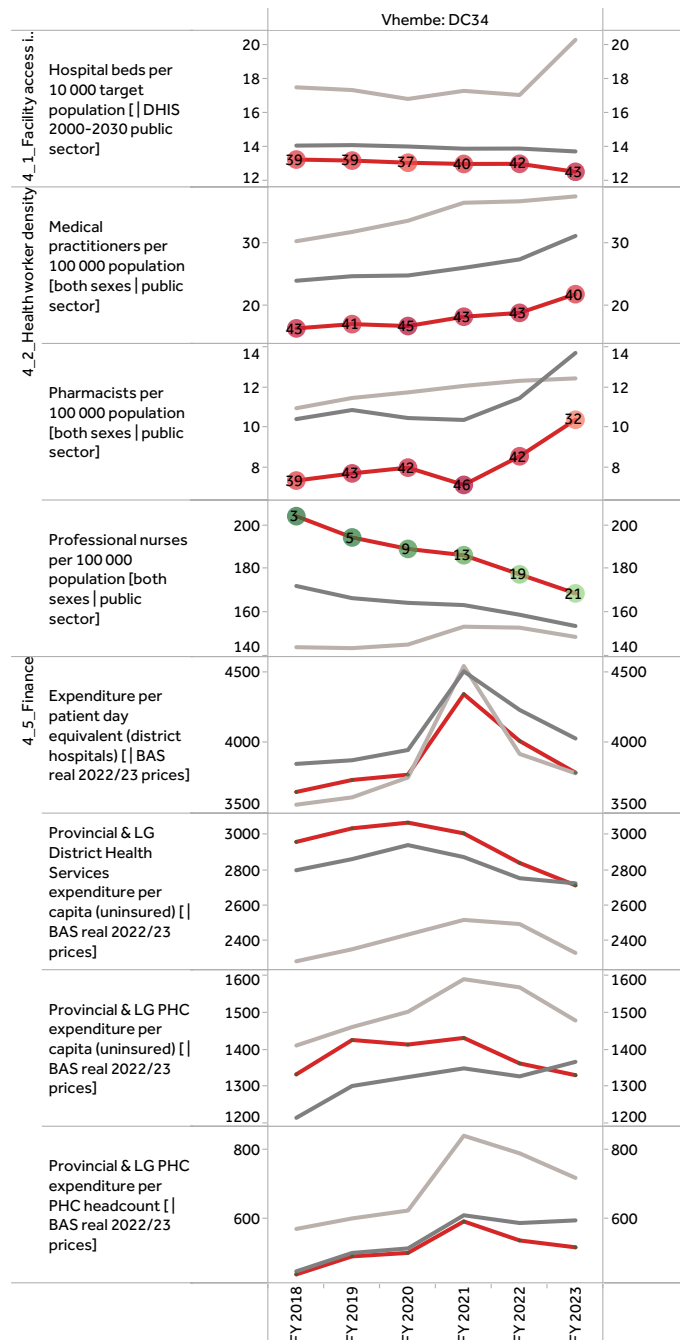
Rank

1 50

Prov av

ZA av

Ind Value



Measure Names

Rank

1 46

Prov av

ZA av

Ind Value

Capricorn District Municipality (EKU)

The Capricorn District Municipality⁵ is a Category C municipality situated in the Limpopo Province. It forms a gateway to Botswana, Zimbabwe and Mozambique, and consists of the following four local municipalities: Blouberg, Lepelle-Nkumpi, Molemole and Polokwane.

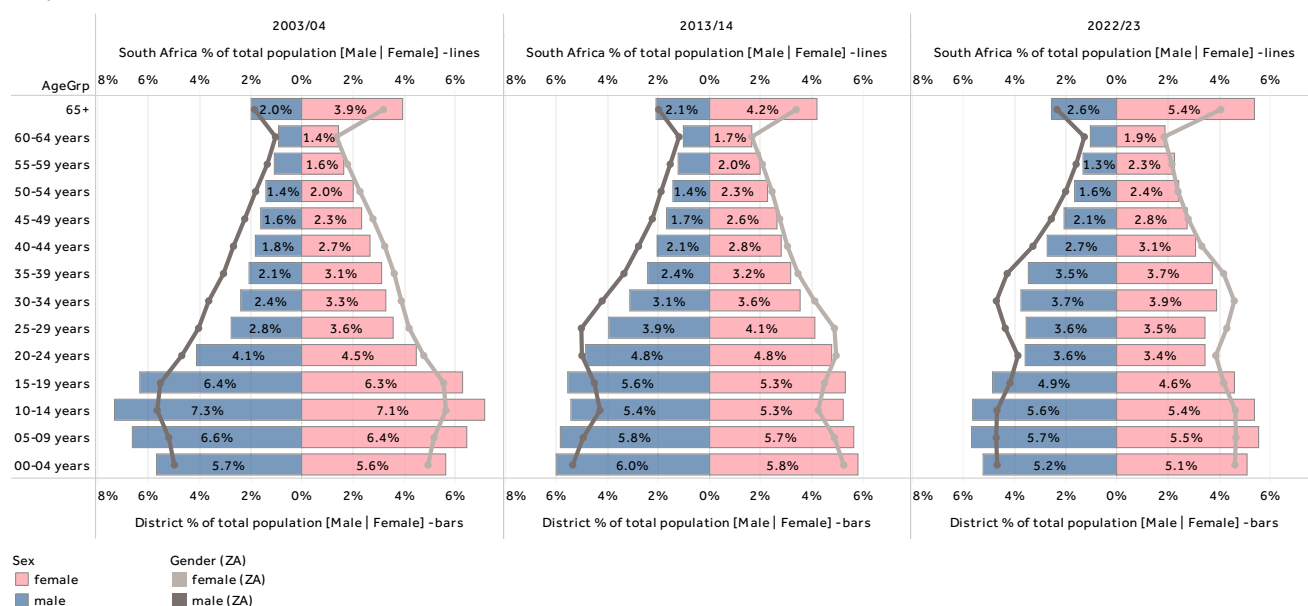
Cities/Towns: Alldays, Dendron, Morebeng (Soekmekaar), Polokwane, Senwabarwana (Bochum), Zebediela

Area: 21 706km²

Population (2022)⁶: 1 357 667

District percentage population by age-gender group compared to South Africa

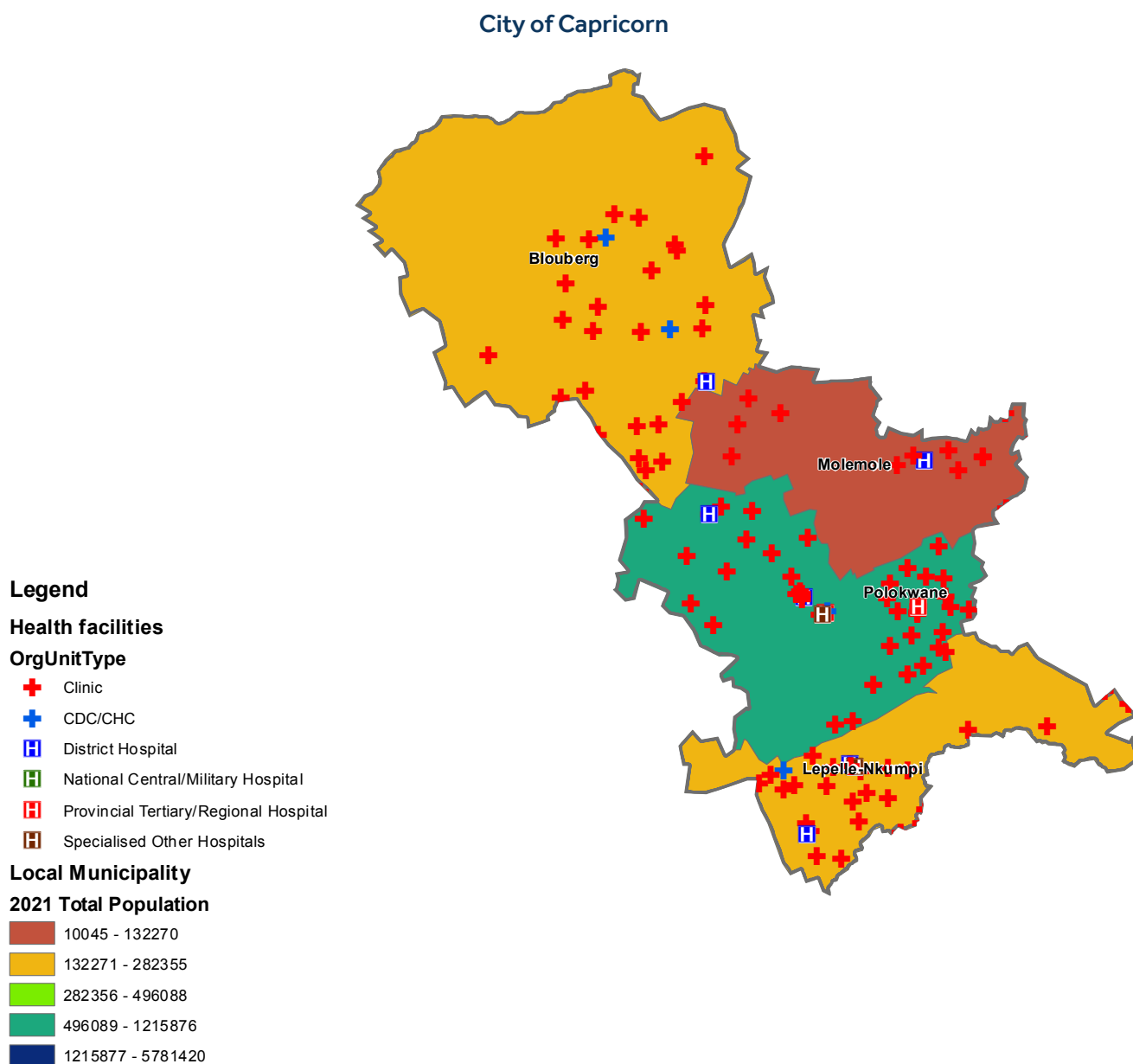
Capricorn DM (DC35)



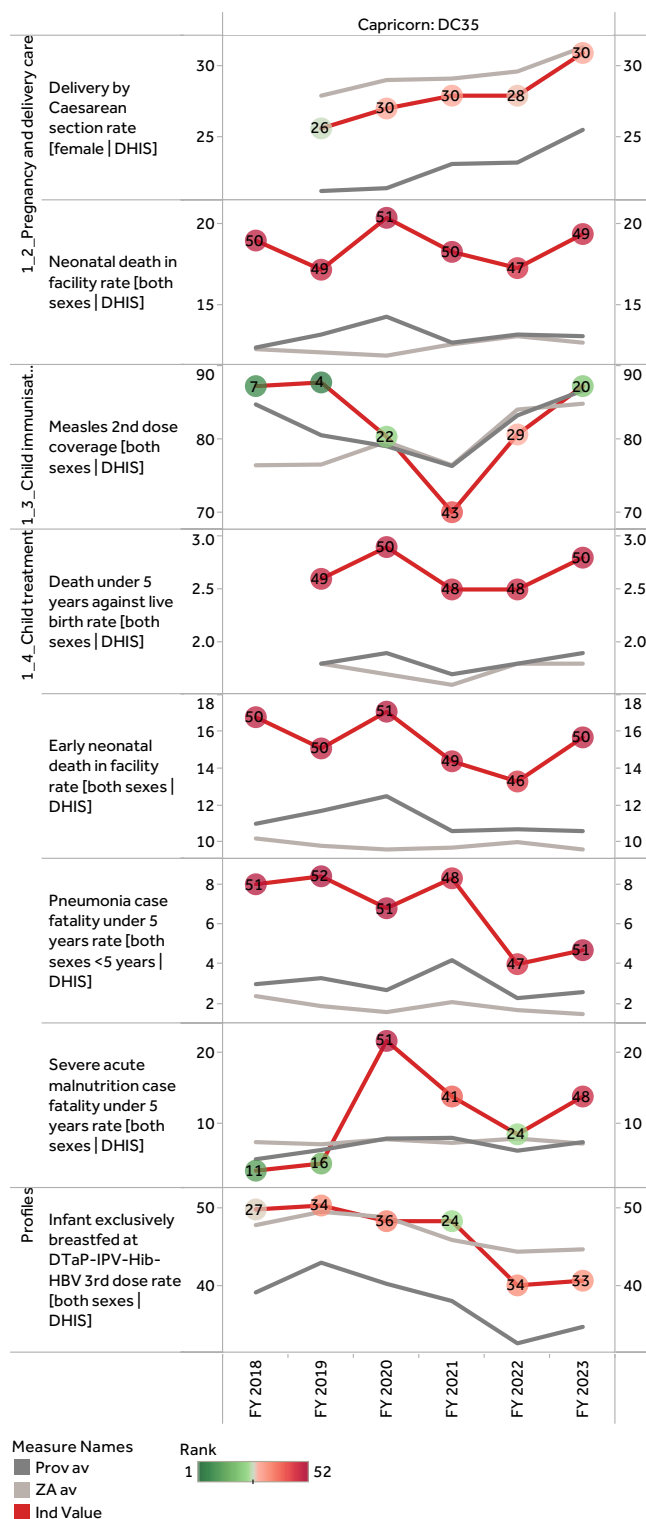
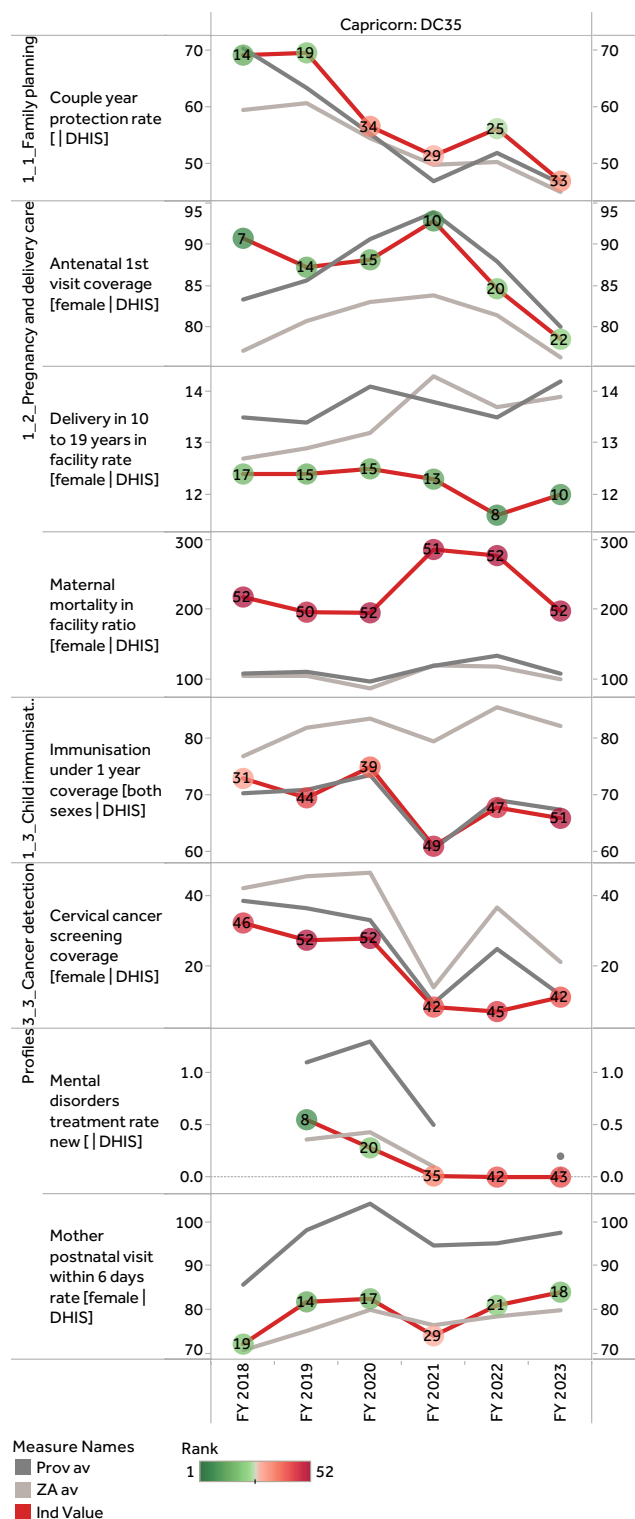
⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

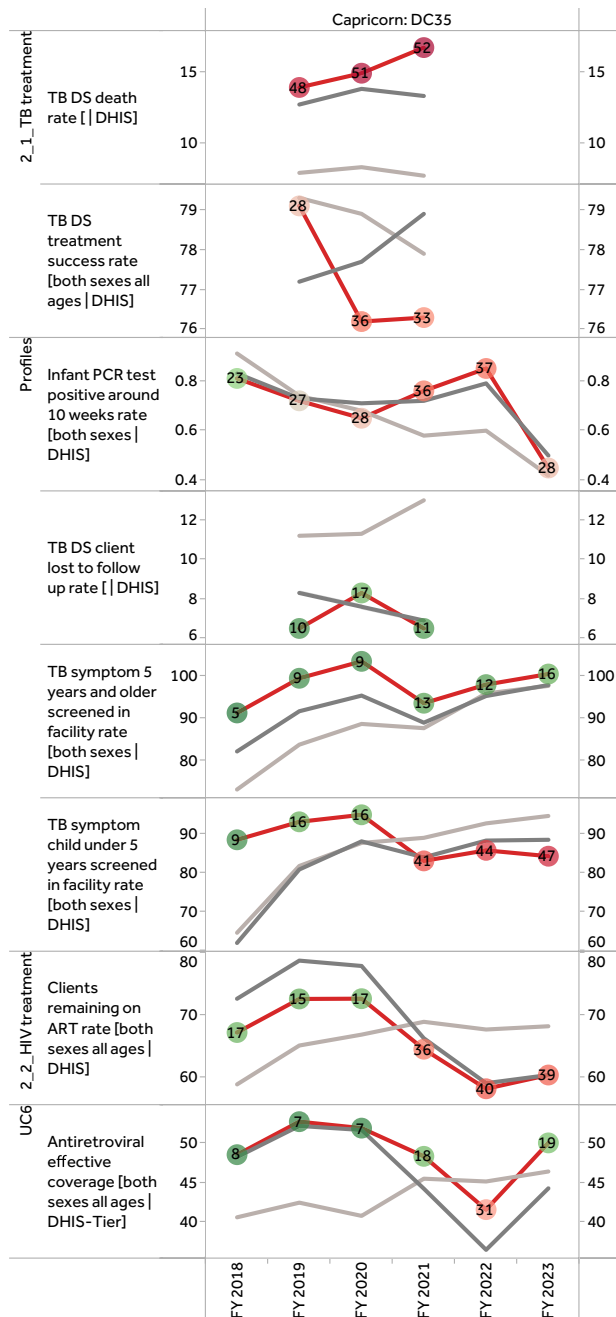
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

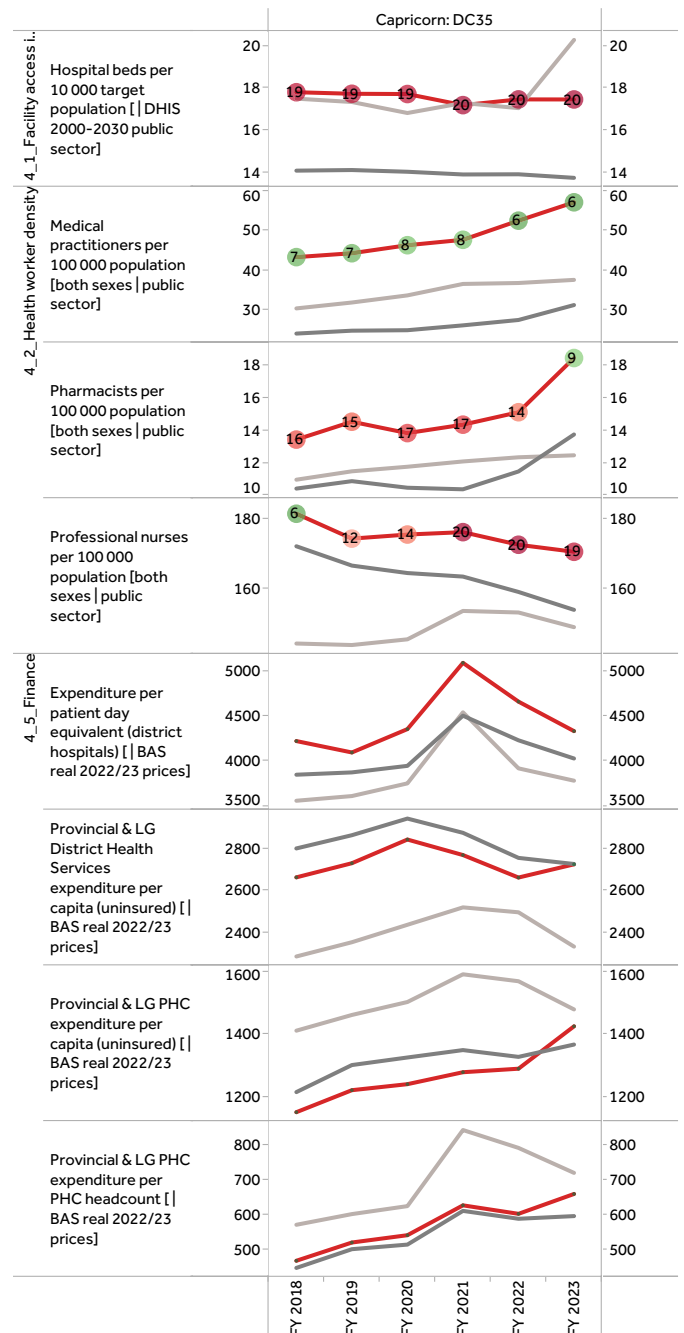


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 20

Waterberg District Municipality (DC36)

The Waterberg District Municipality⁷ is a Category C municipality located in the western part of the Limpopo Province. It shares its five border-control points with Botswana, and comprises five local municipalities: Bela-Bela, Lephalale, Modimolle-Mookgophong, Mogalakwena and Thabazimbi.

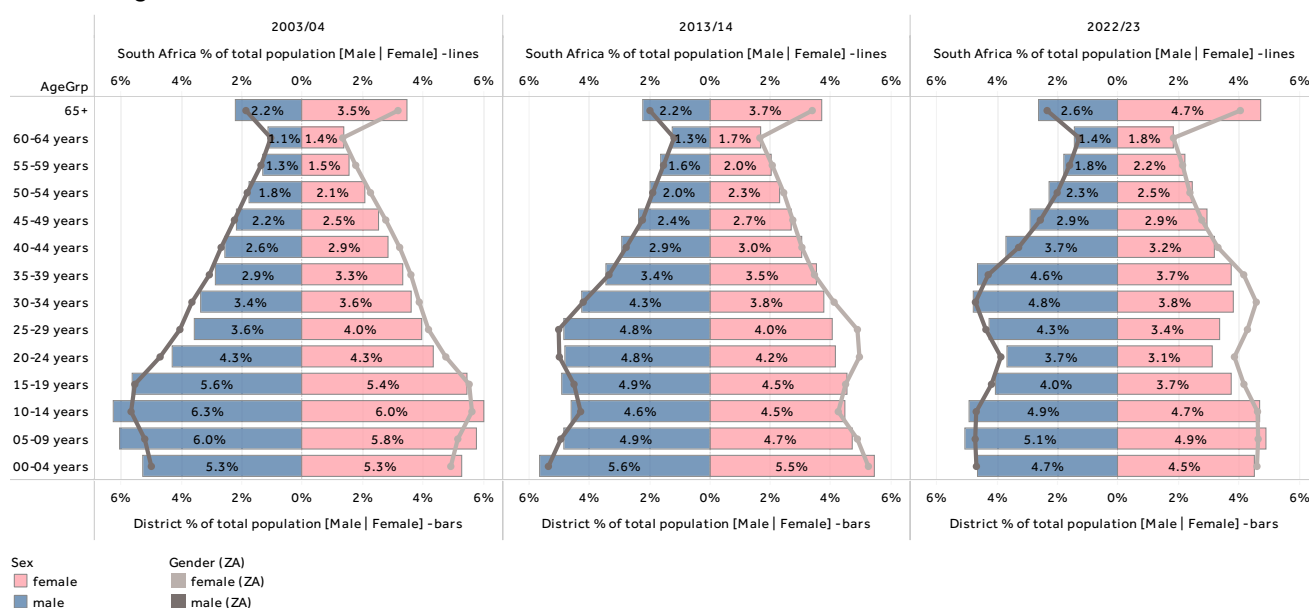
Cities/Towns: Amandelbult Mine Town, Bela-Bela, Lephalale, Modimolle, Mokopane (Potgietersrus), Mookgophong (Naboomspruit), Pienaarsrivier, Thabazimbi, Vaalwater

Area: 44 914km²

Population (2022)⁸: 781 265

District percentage population by age-gender group compared to South Africa

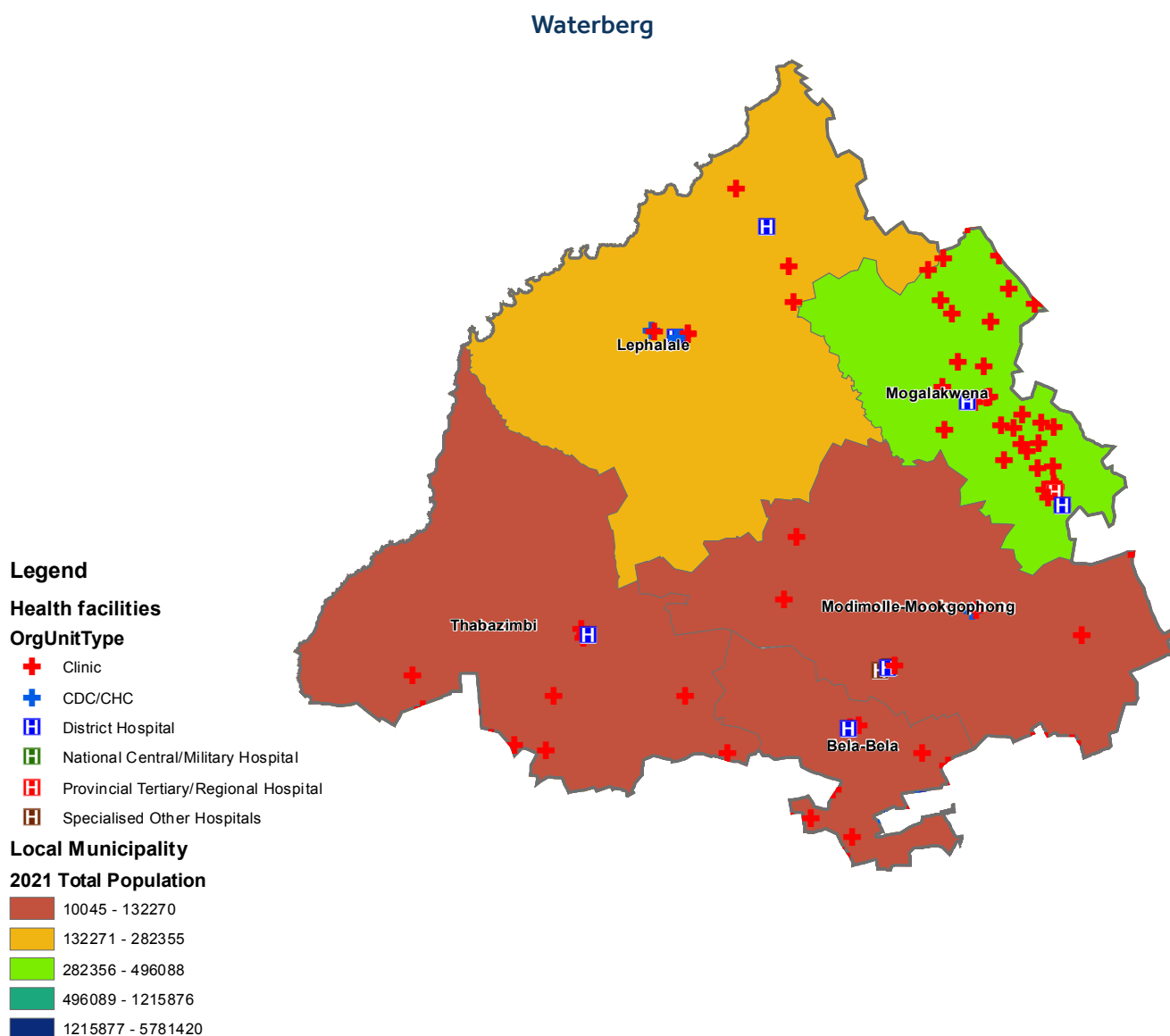
Waterberg DM (DC36)



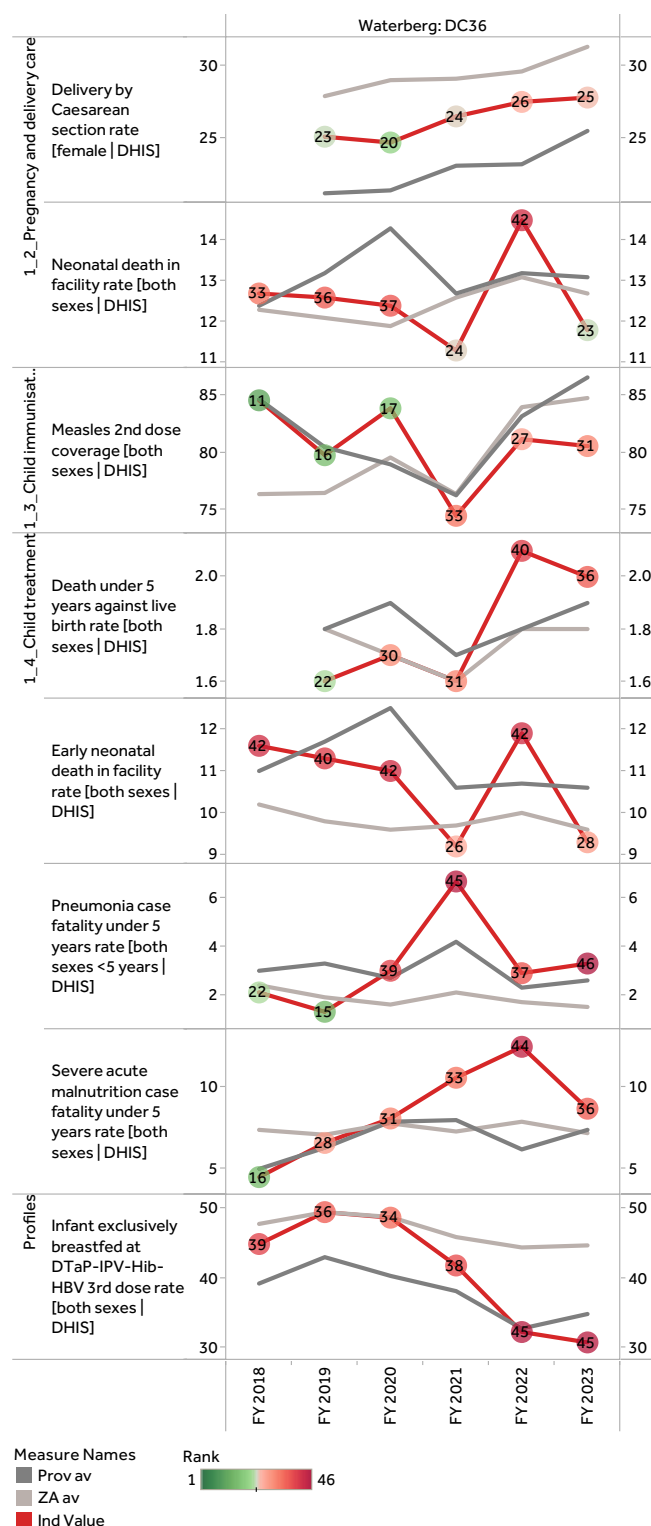
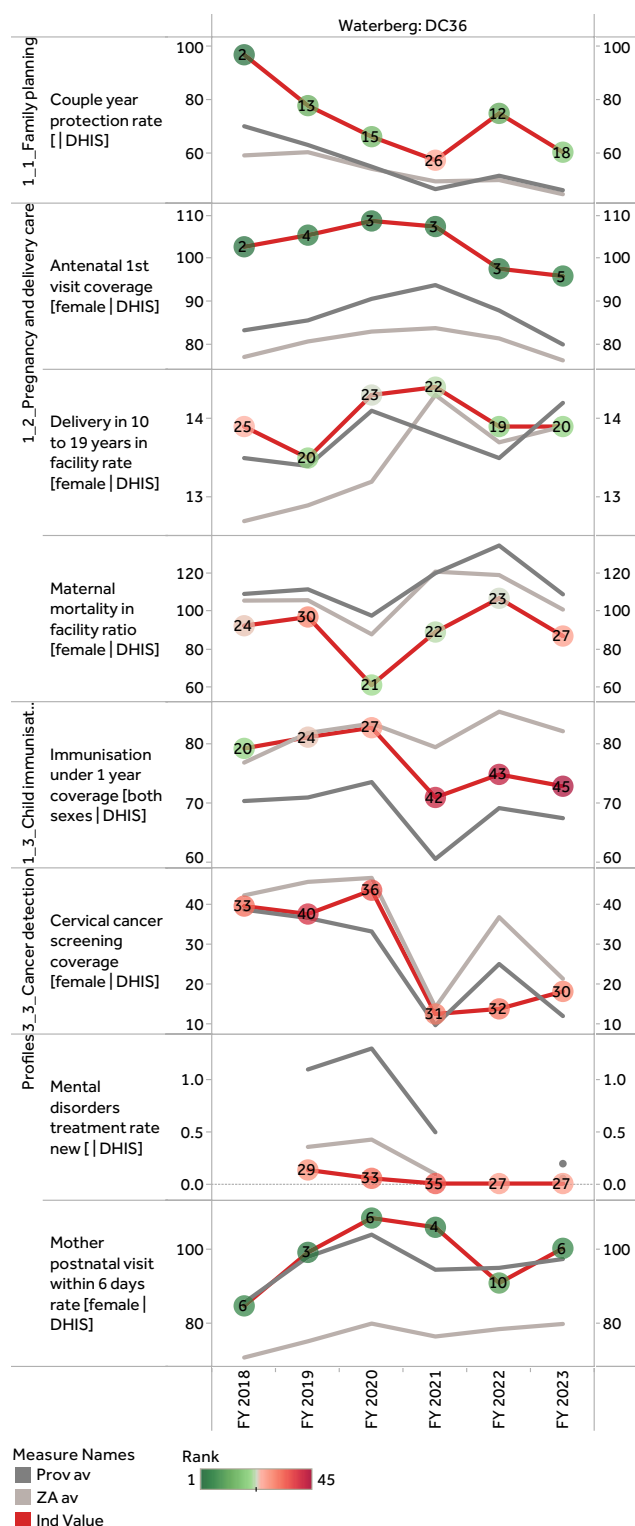
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

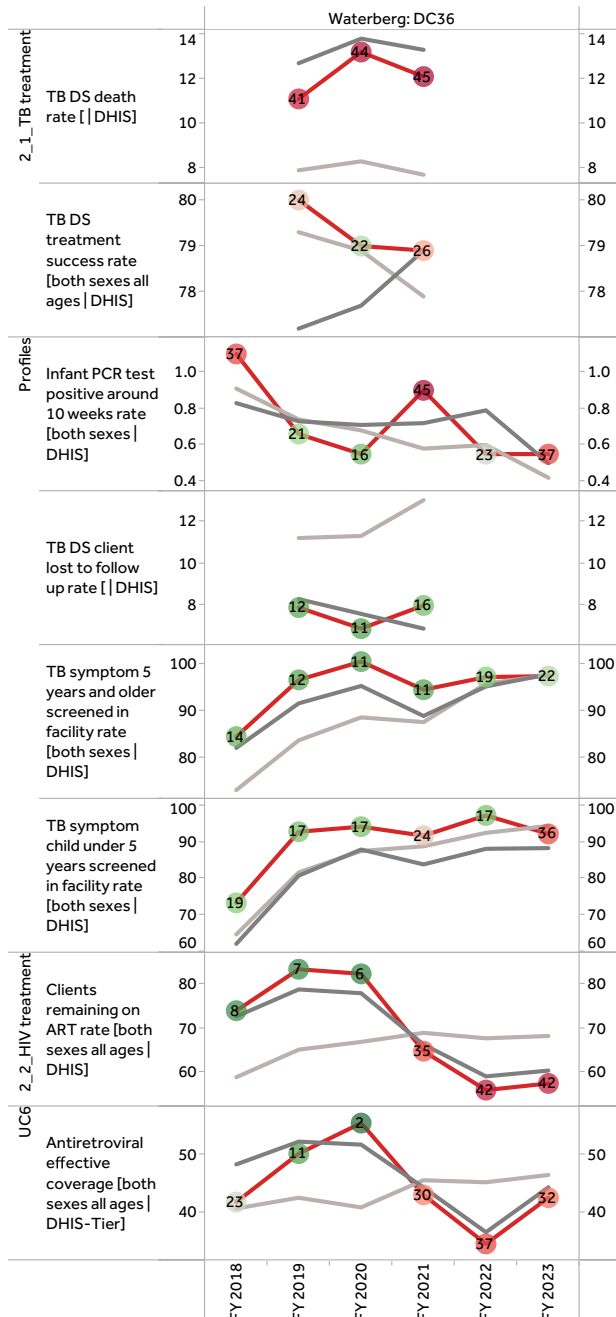
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

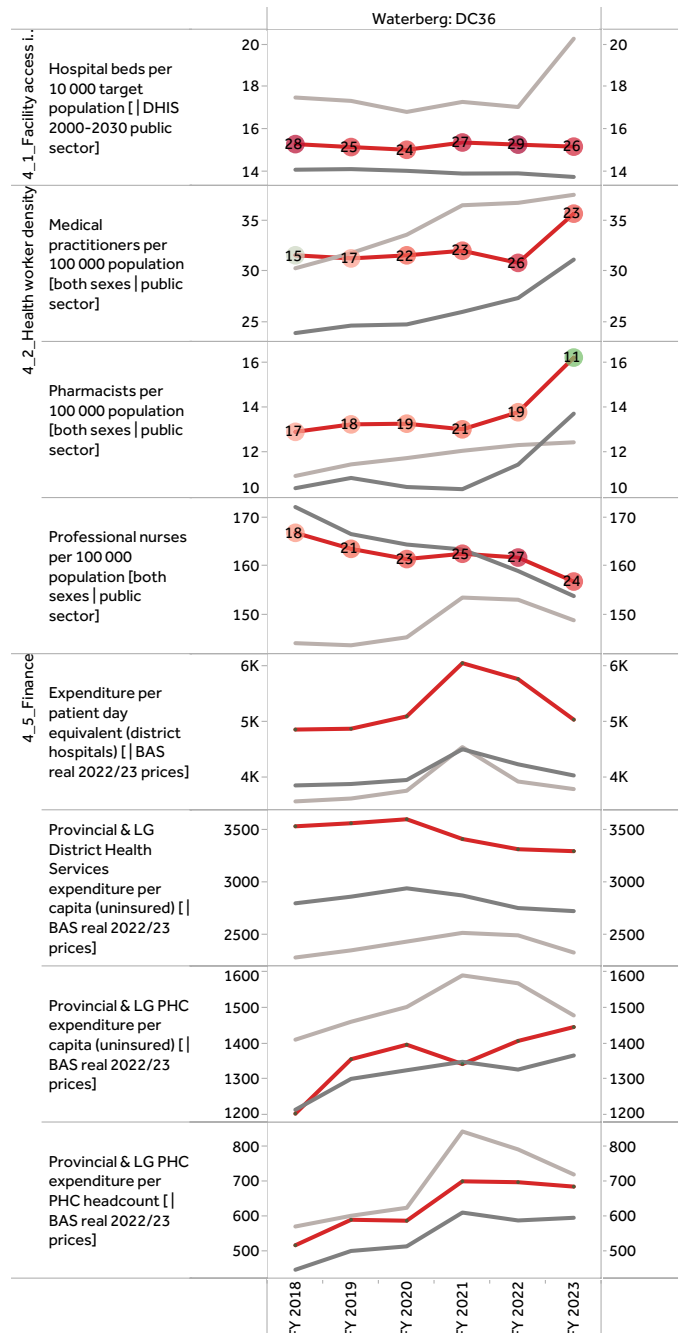


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 45



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 29

Sekhukhune District Municipality (DC47)

The Sekhukhune District Municipality⁹ is a Category C municipality located in the Limpopo Province, the northernmost part of South Africa. The district is the smallest in the province, making up 11% of its geographical area. It comprises four local municipalities: Elias Motsoaledi, Ephraim Mogale, Makhuduthamaga and Fetakgomo – Greater Tubatse.

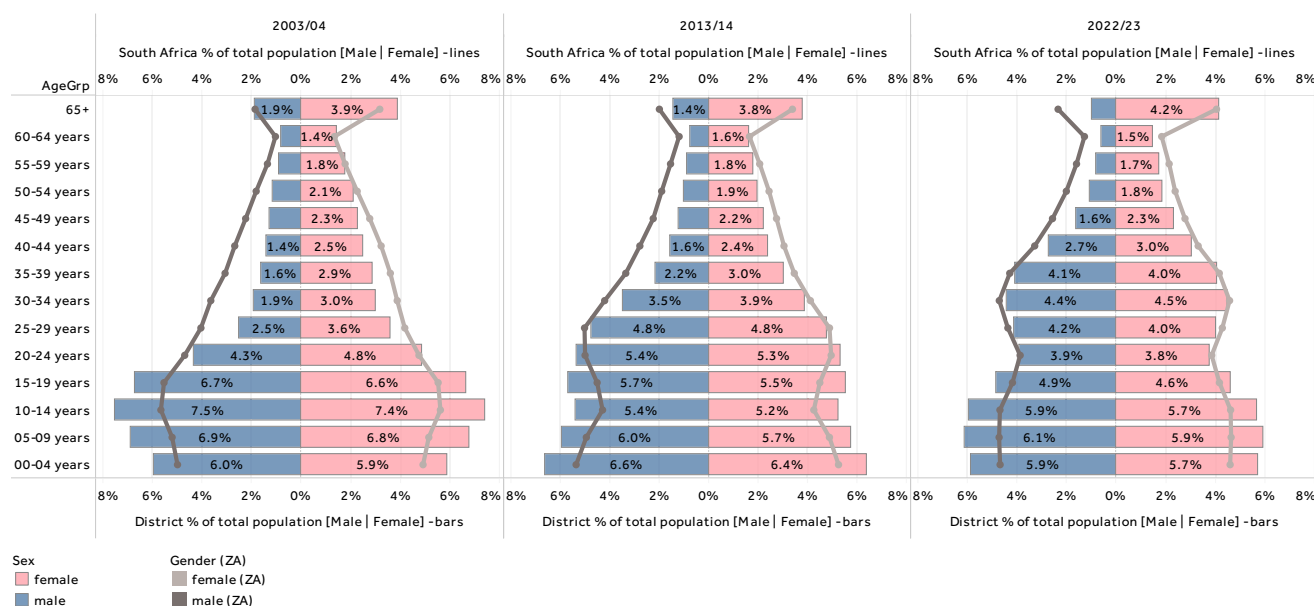
Cities/Towns: Burgersfort, Groblersdal, Marble Hall, Ohrigstad, Roosenekal, Schuinsdraai Nature Reserve, Steelpoort

Area: 13 527km²

Population (2022)¹⁰: 1 249 787

District percentage population by age-gender group compared to South Africa

Sekhukhune DM (DC47)

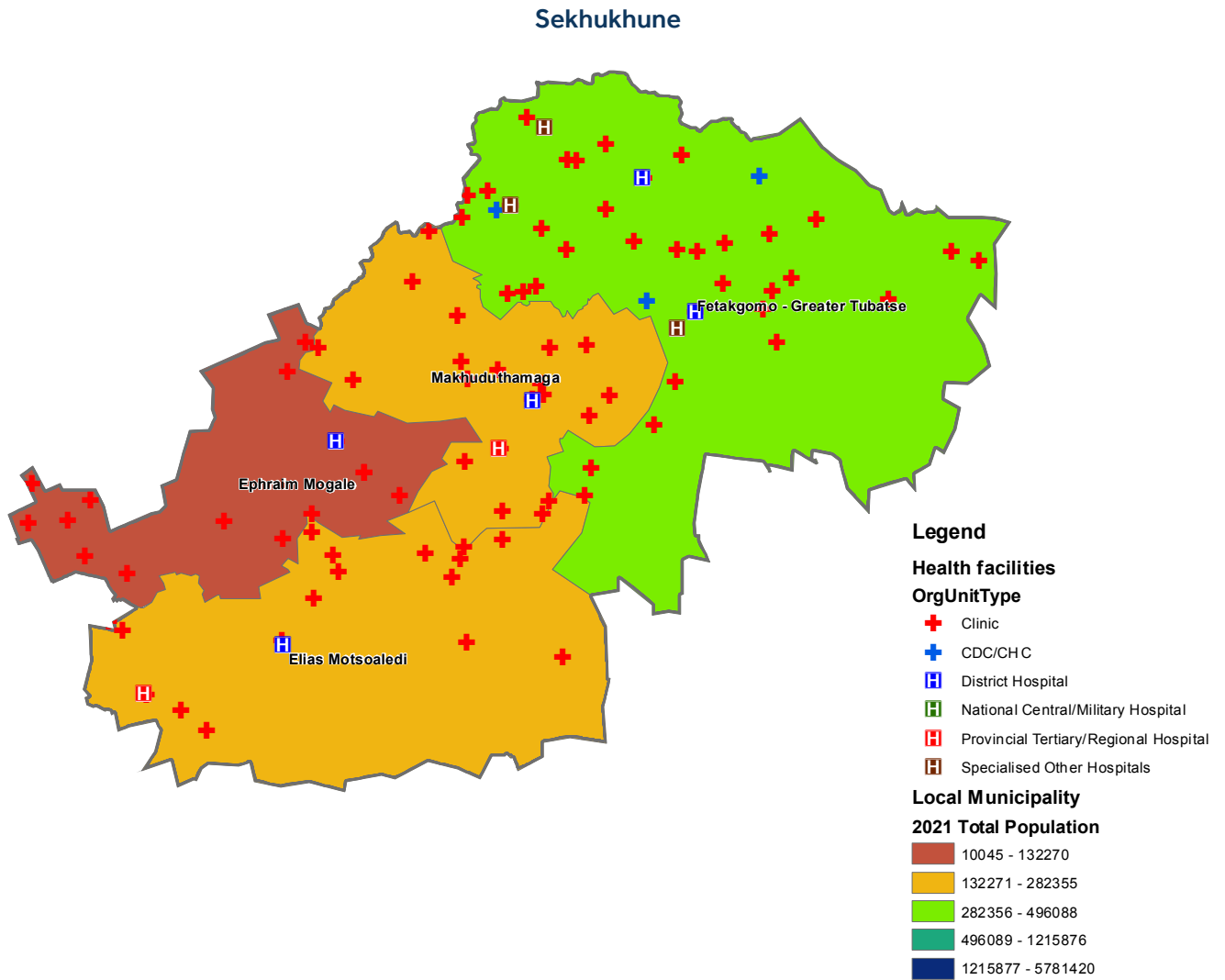


⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

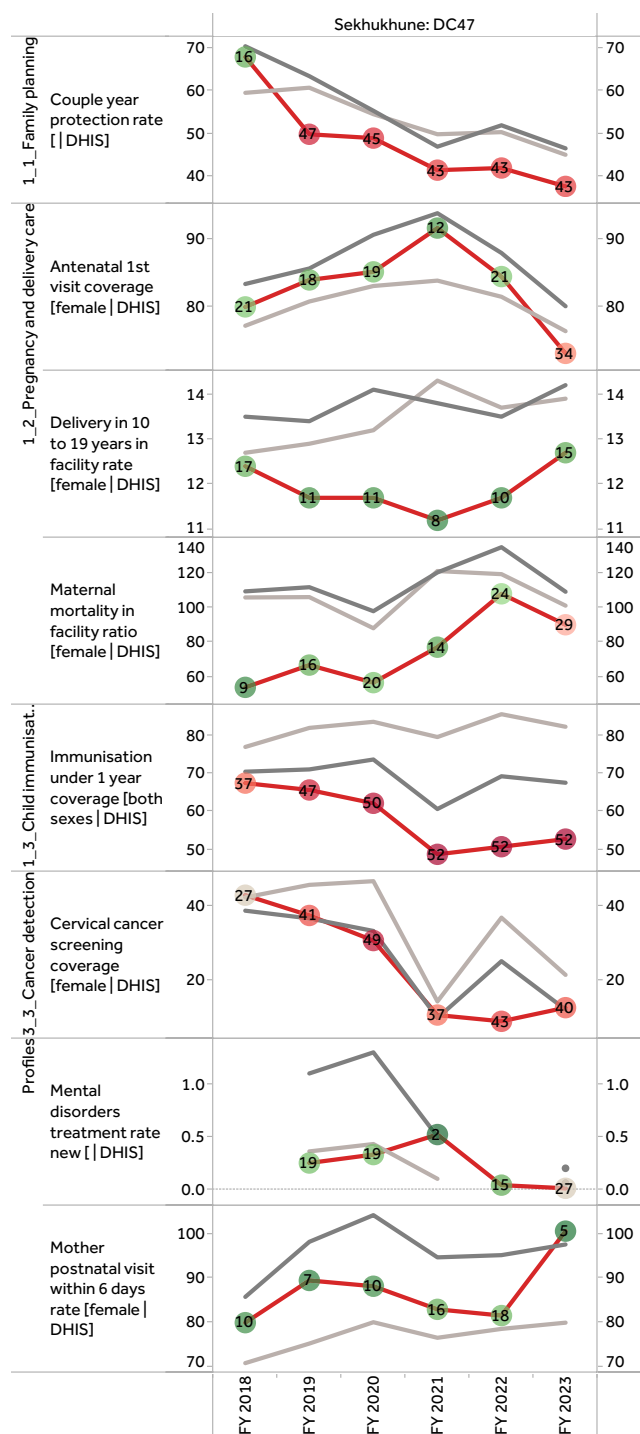
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



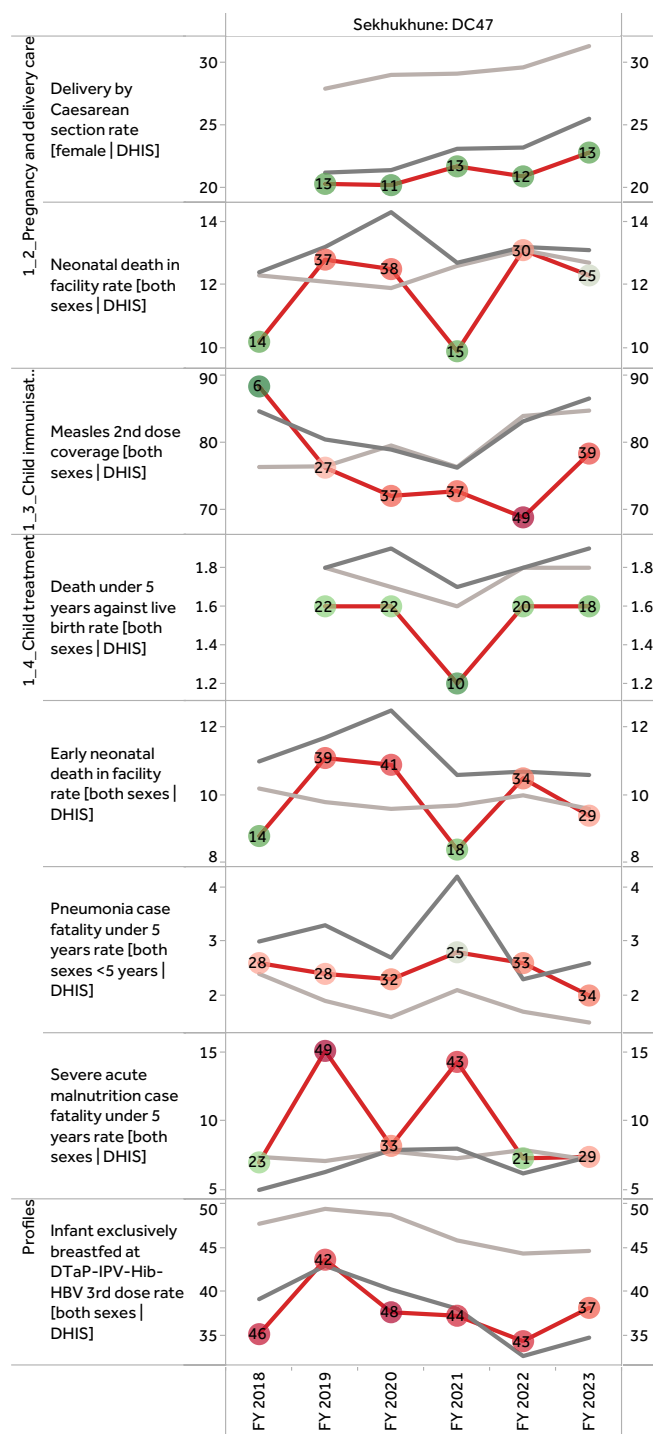
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Rank 1 52

Prov av

ZA av

Ind Value



Measure Names

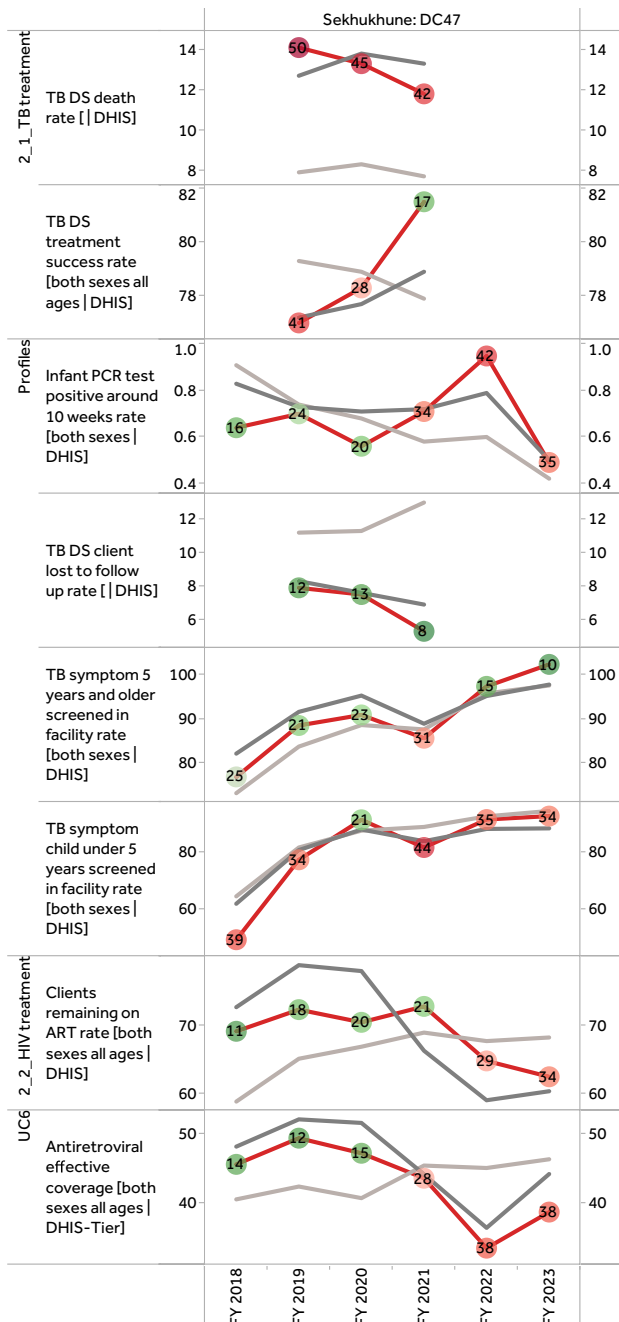
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ZA av

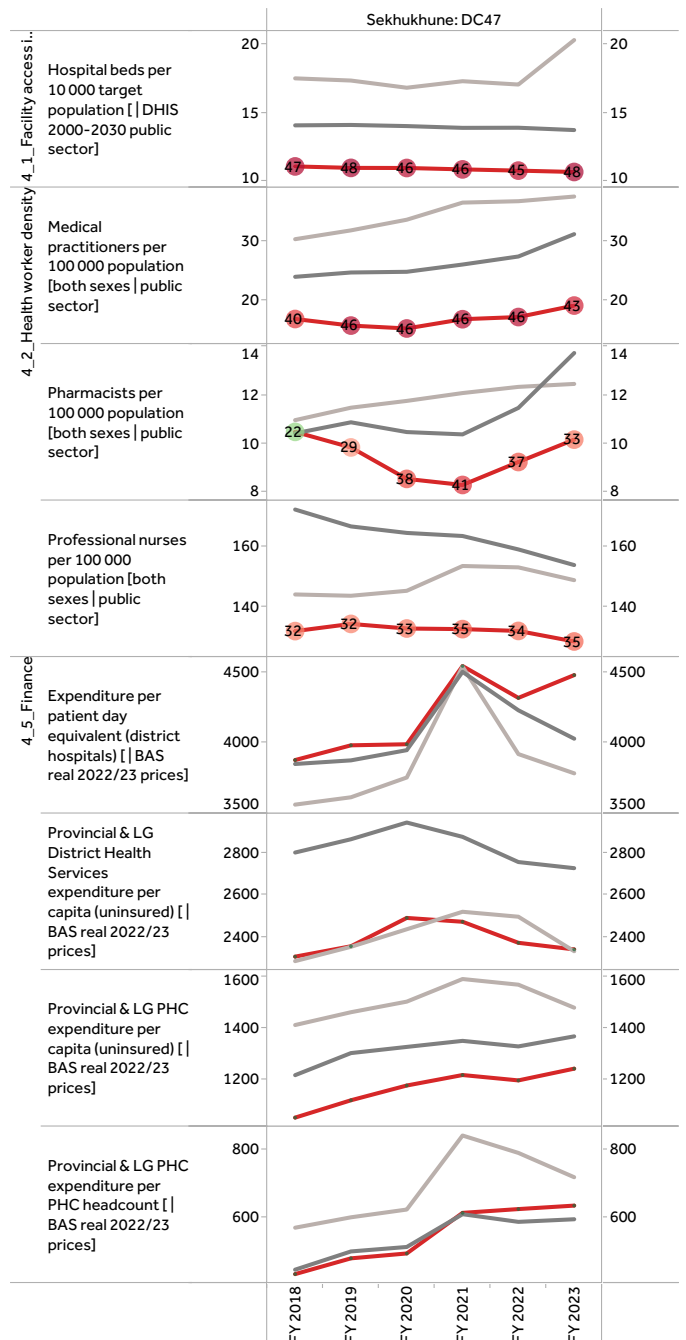
Ind Value

Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 50



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 48

Mpumalanga Province

Gert Sibande District Municipality (DC30)

The Gert Sibande District Municipality¹ is Category C municipality located in the Mpumalanga Province and borders eSwatini. It comprises seven local municipalities: Govan Mbeki, Chief Albert Luthuli, Msukaligwa, Dipaleseng, Mkhondo, Lekwa and Dr Pixley Ka Seme.

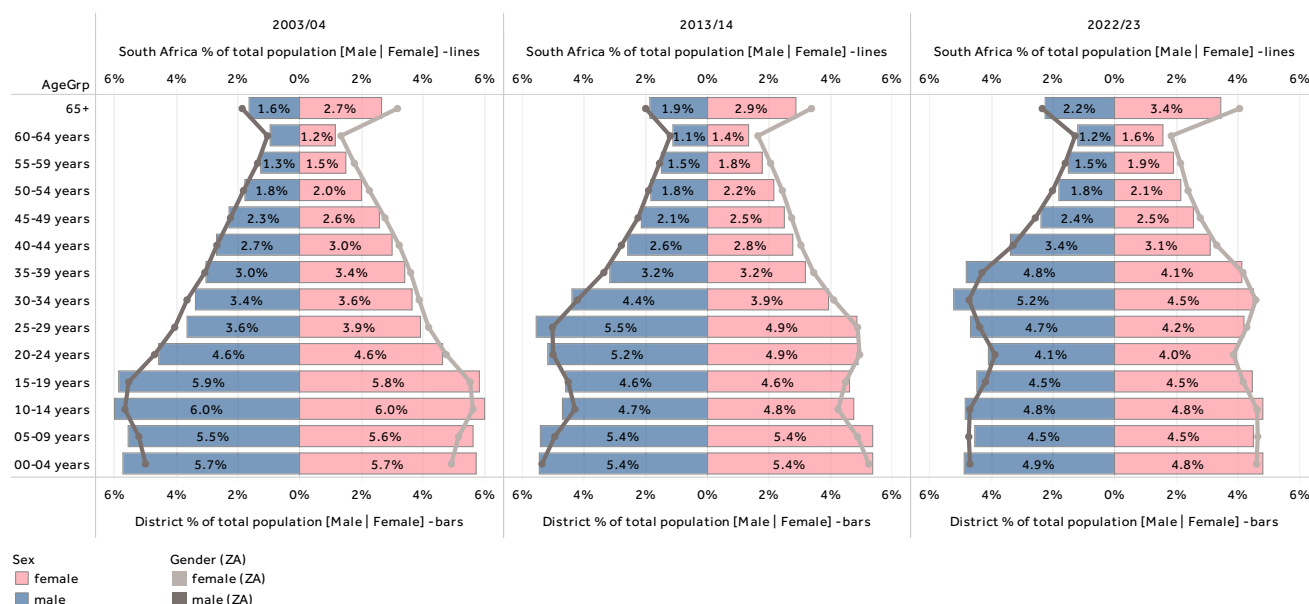
Cities/Towns: Amersfoort, Amsterdam, Balfour, Bethal, Breyten, Carolina, Charl Cilliers, Chrissiesmeer, Davel, Ekulindeni, Embalenhle, Empuluzi, Ermelo, Evander, Greylingstad, Grootvlei, Kinross, Leandra, Lothair, Morgenzon, Perdekop, Secunda, Standerton, Trichardt, Volksrust, Wakkerstroom, eManzana, eMkhondo (Piet Retief)

Area: 31 840km²

Population (2022)²: 1 283 719

District percentage population by age-gender group compared to South Africa

G Sibande DM (DC30)

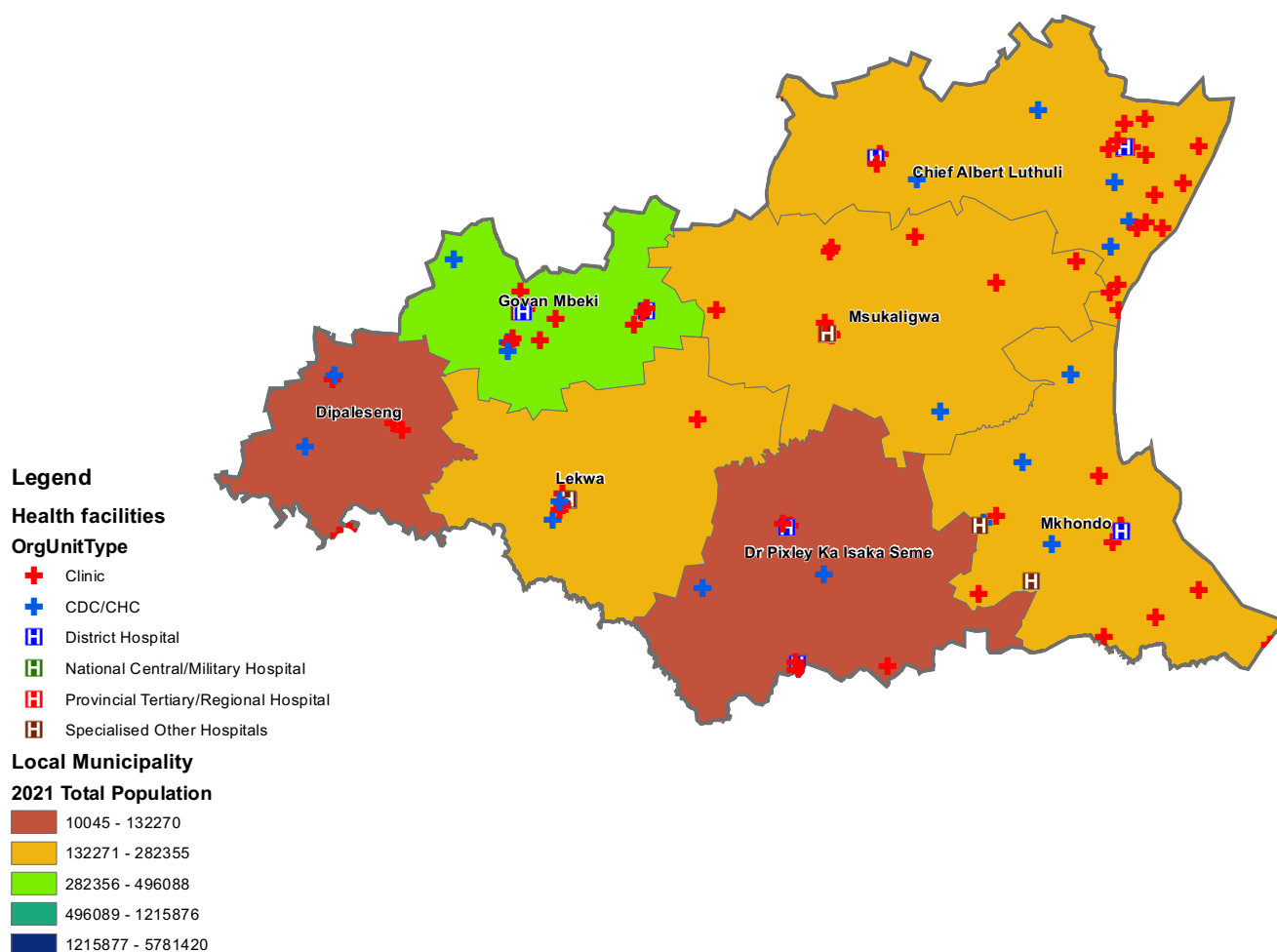


¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

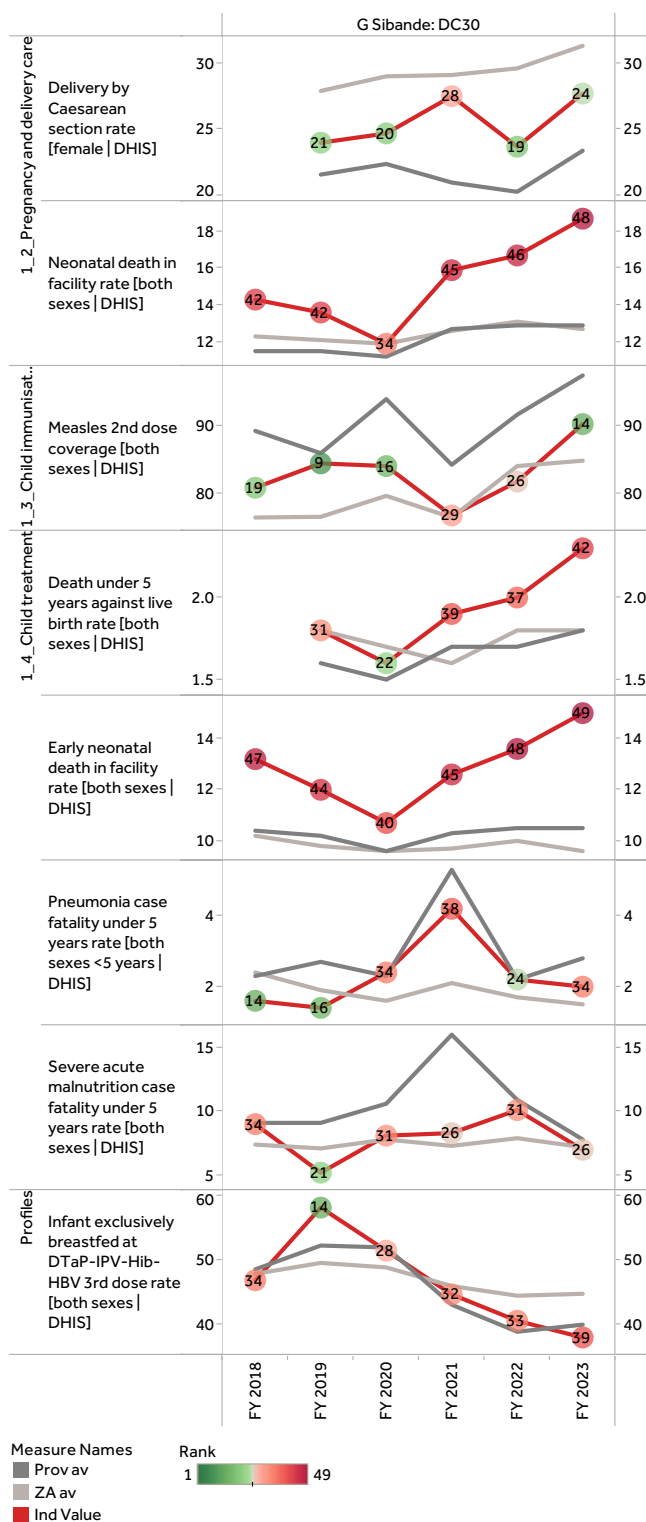
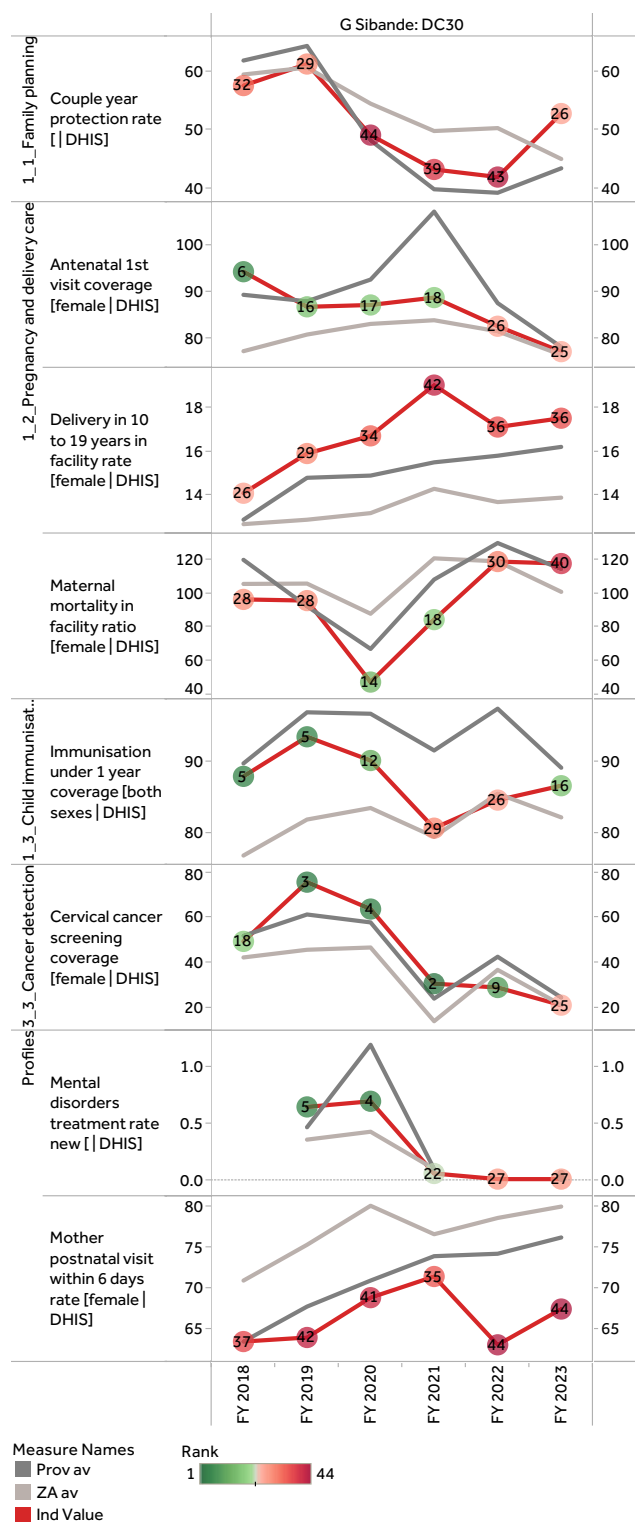
²Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

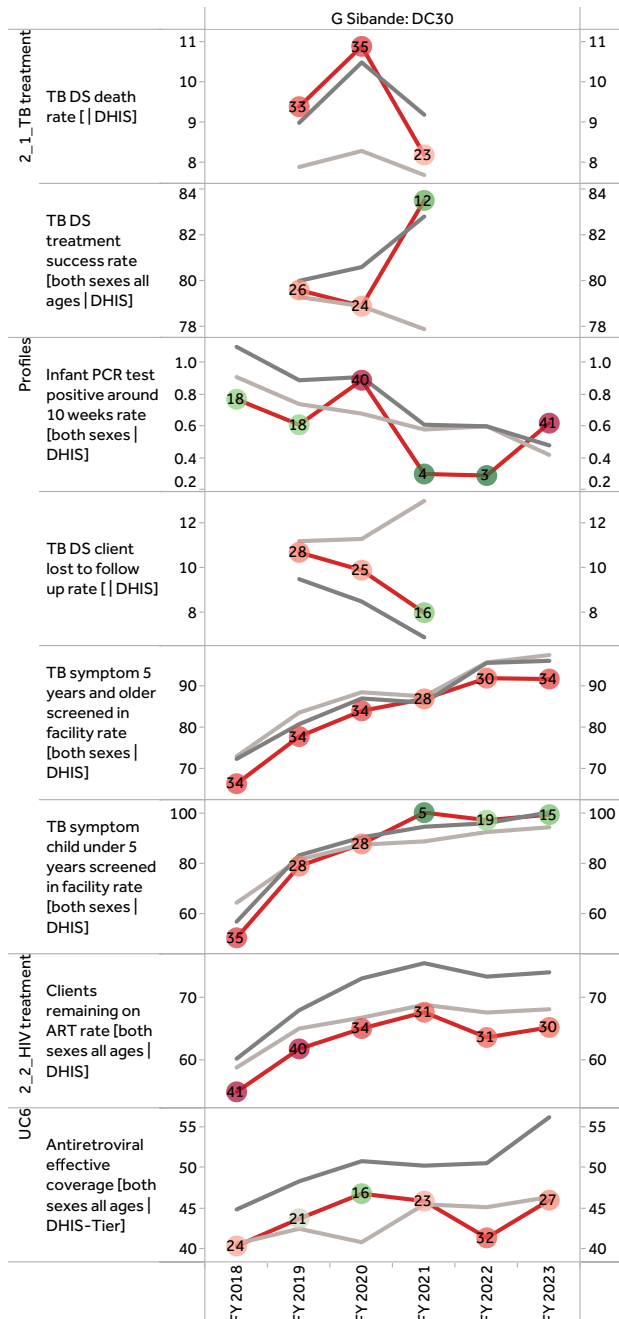
Gert Sibande



Annual trends, 2018/19–2022/23

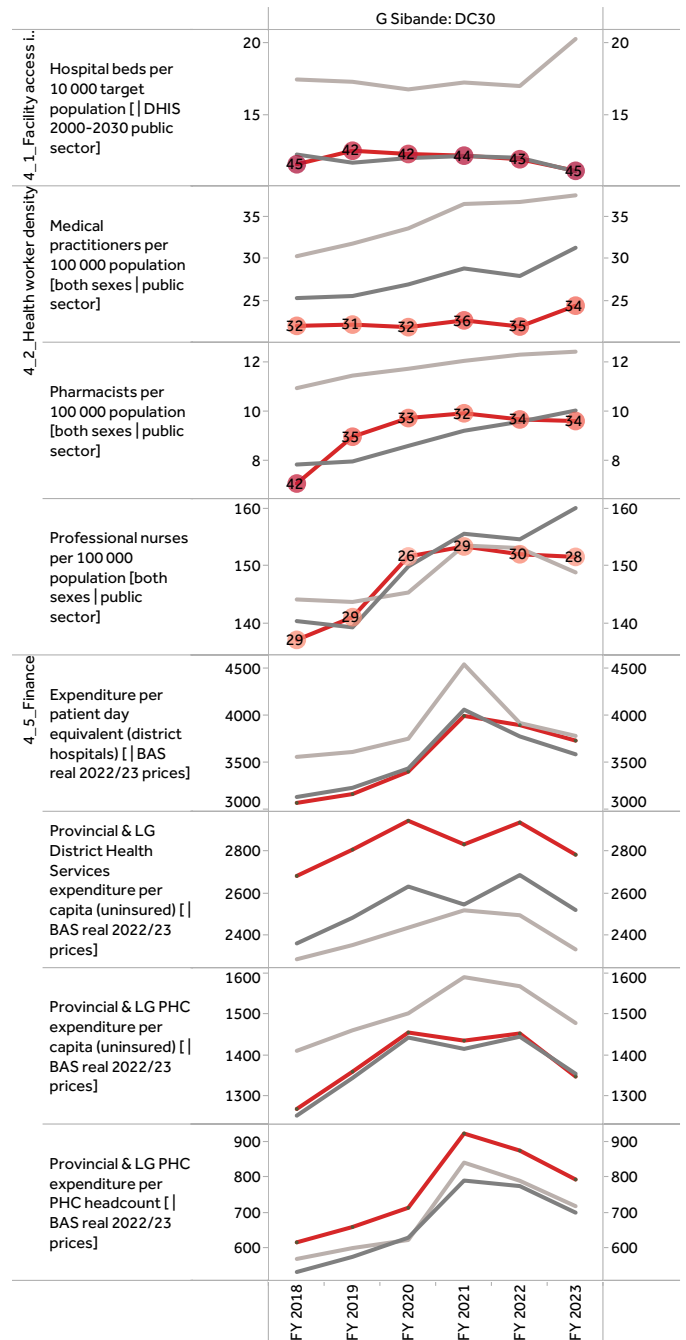


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 41



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 45

Nkangala District Municipality (DC31)

The Nkangala District Municipality³ is a Category C municipality in the Mpumalanga Province. It is the smallest district of the three in the province, and consists of six local municipalities: Victor Khanye, Emalahleni, Steve Tshwete, Emakhazeni, Thembisile Hani, and Dr JS Moroka.

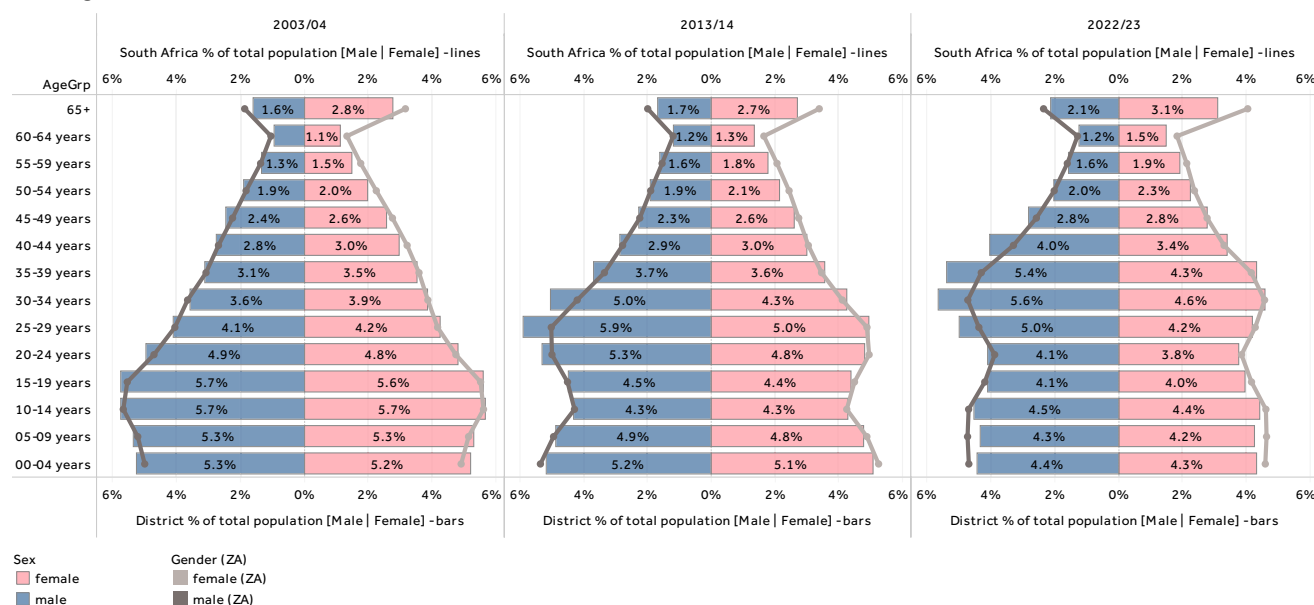
Cities/Towns: Delmas, Dullstroom, Emgwenya (Waterval Boven), Hendrina, Kriel, KwaMhlanga, Mdala Nature Reserve, Middelburg, Ogies, Phola, Pullens Hope, Rietkuil, eMakhazeni, eMalahleni, eNtokozweni (Machadodorp)

Area: 16 758km²

Population (2022)⁴: 1 677 408

District percentage population by age-gender group compared to South Africa

Nkangala DM (DC31)

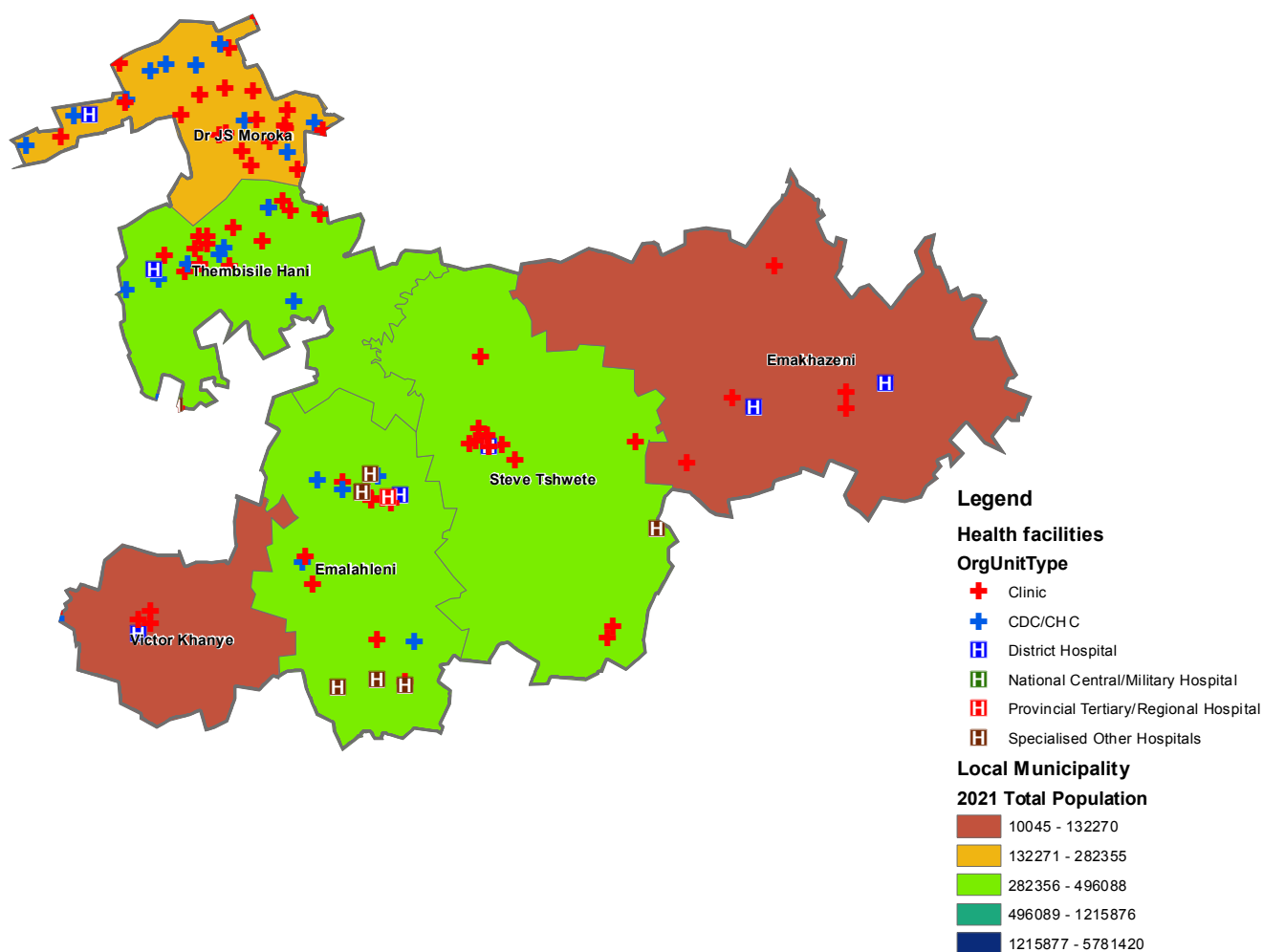


³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

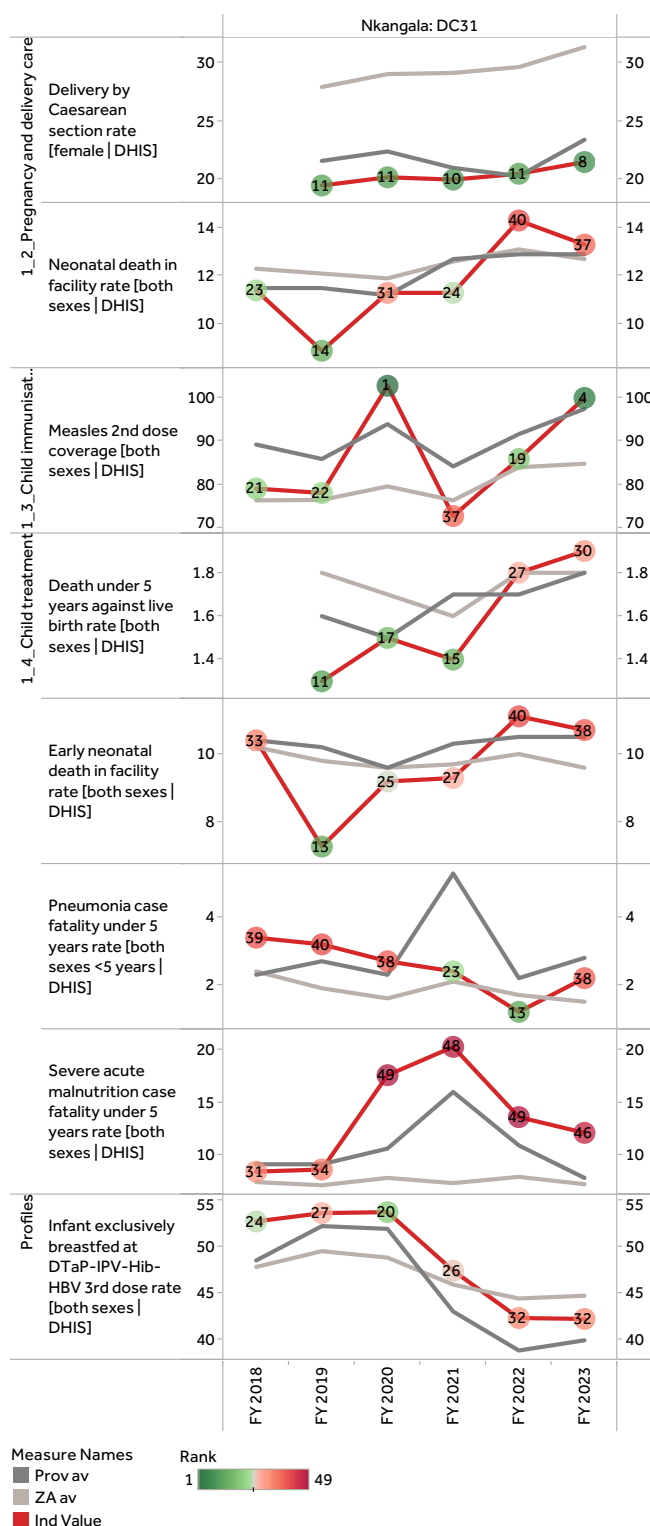
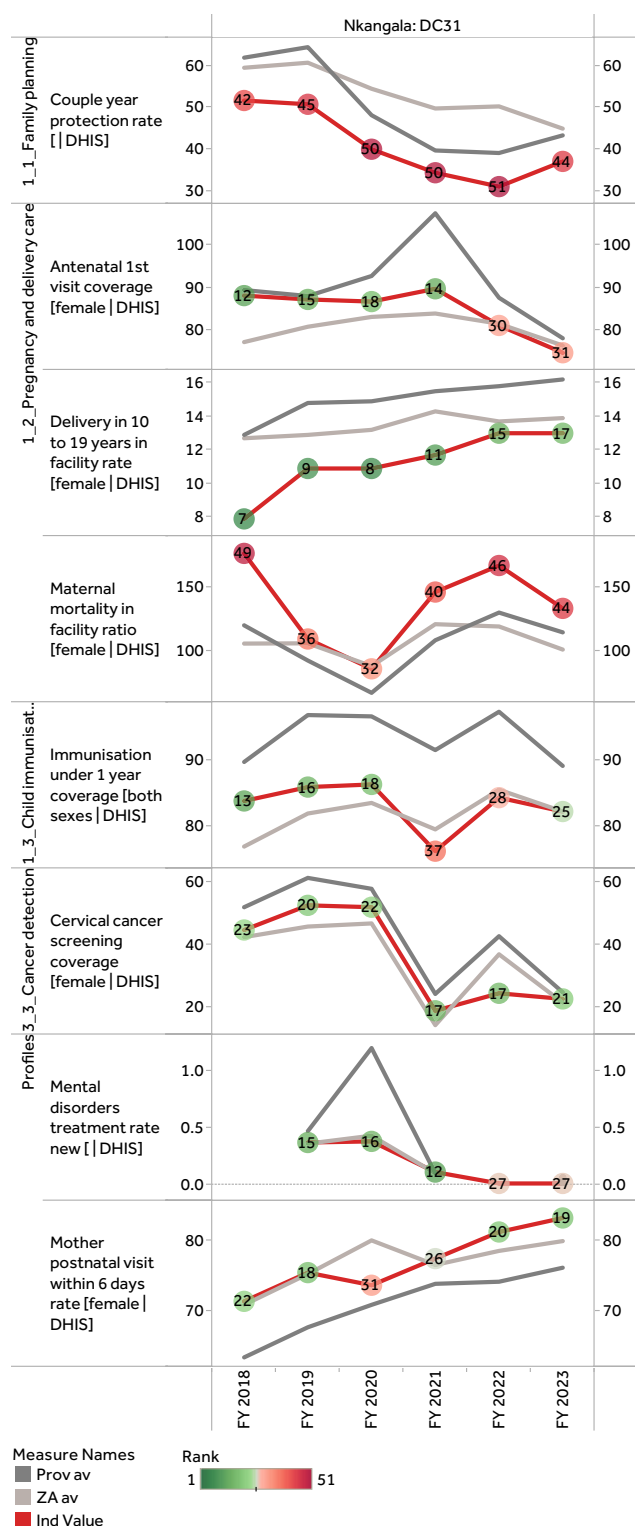
⁴Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

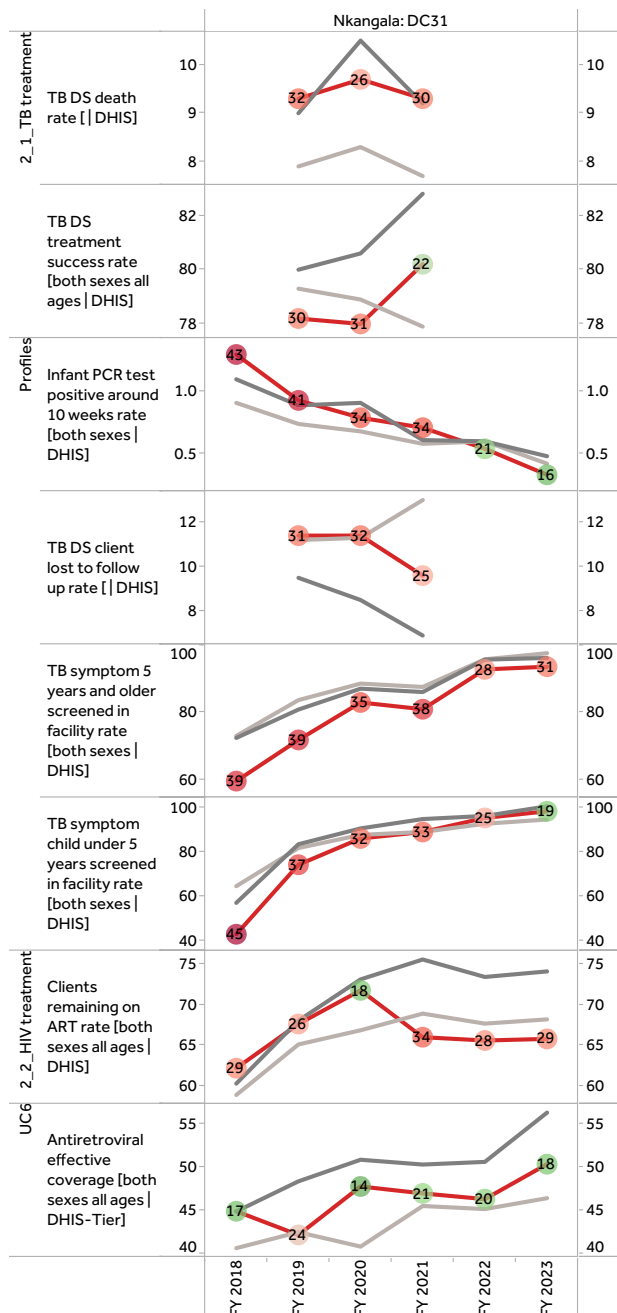
Nkangala



Annual trends, 2018/19–2022/23

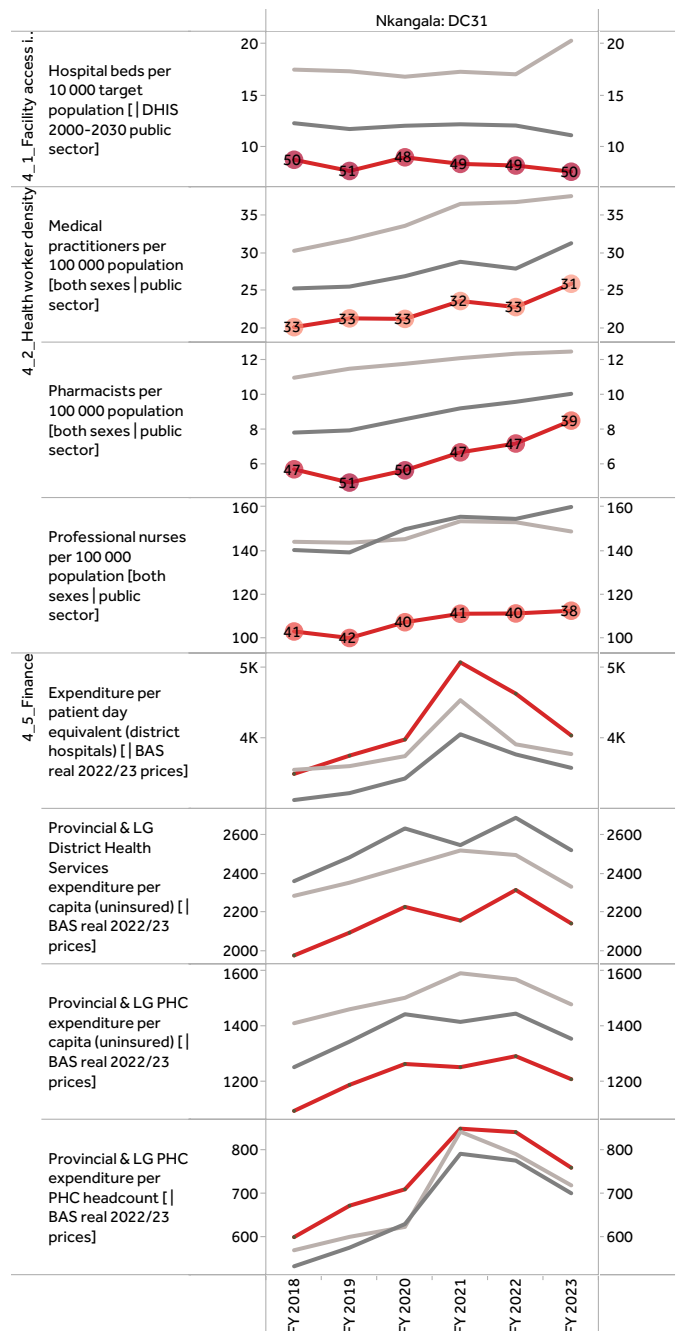


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 45



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 51

Ehlanzeni District Municipality (DC32)

The Ehlanzeni District Municipality⁵ is a Category C municipality situated in the north-east of the Mpumalanga Province. The district comprises four local municipalities: Bushbuckridge, City of Mbombela, Nkomazi and Thaba Chweu.

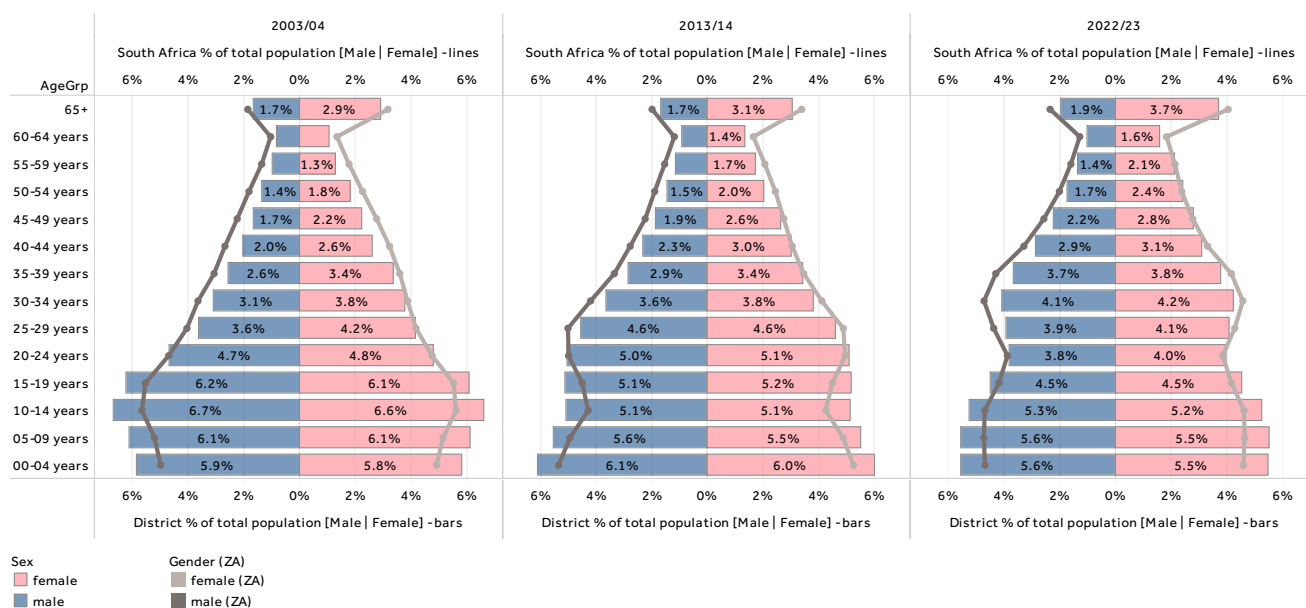
Cities/Towns: Barberton, Emoyeni, Entokozweni, Graskop, Hazyview, Kaapschehoop, Kabokweni, Kanyamazane, Komatipoort, Luphisi, Lydenburg, Malalane, Marloth Park, Mashishing, Matsulu, Mbombela, Mpakeni, Msogwaba, Ngodwana, Pilgrim's Rest, Sabie, Sabie Park, Skukuza, Tkwane, White River

Area: 27 895km²

Population (2022)⁶: 1 853 931

District percentage population by age-gender group compared to South Africa

Ehlanzeni DM (DC32)



⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

Ehlanzeni

Legend

Health facilities

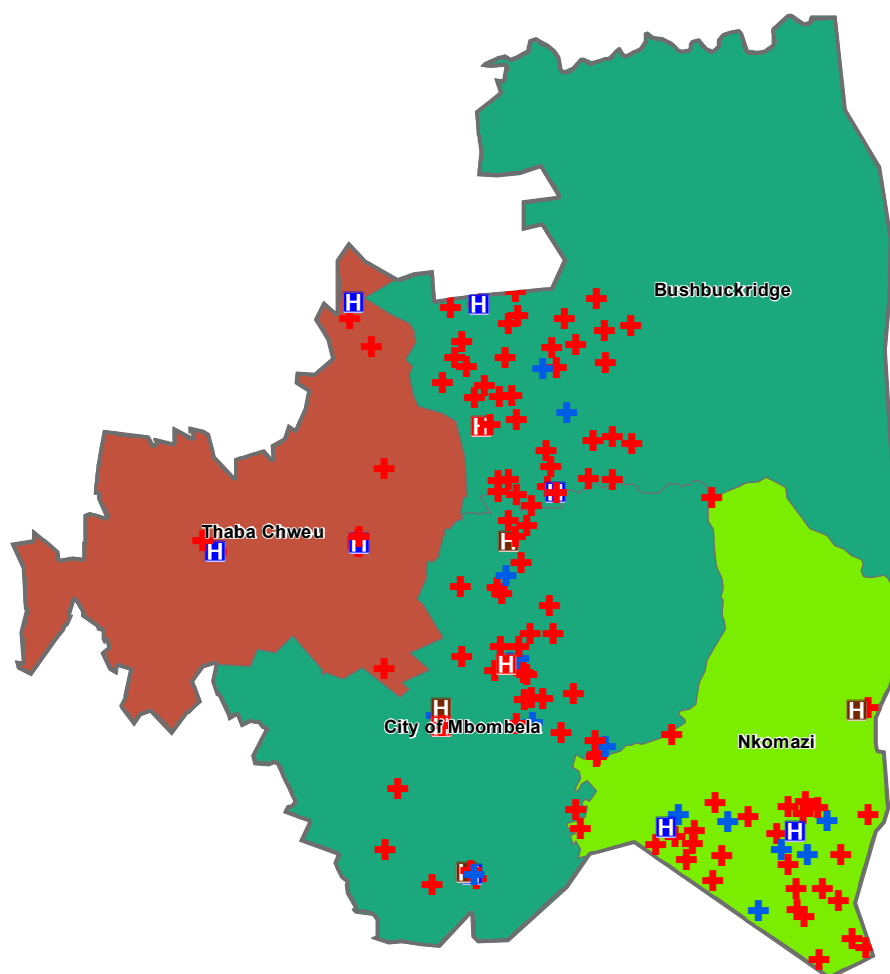
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

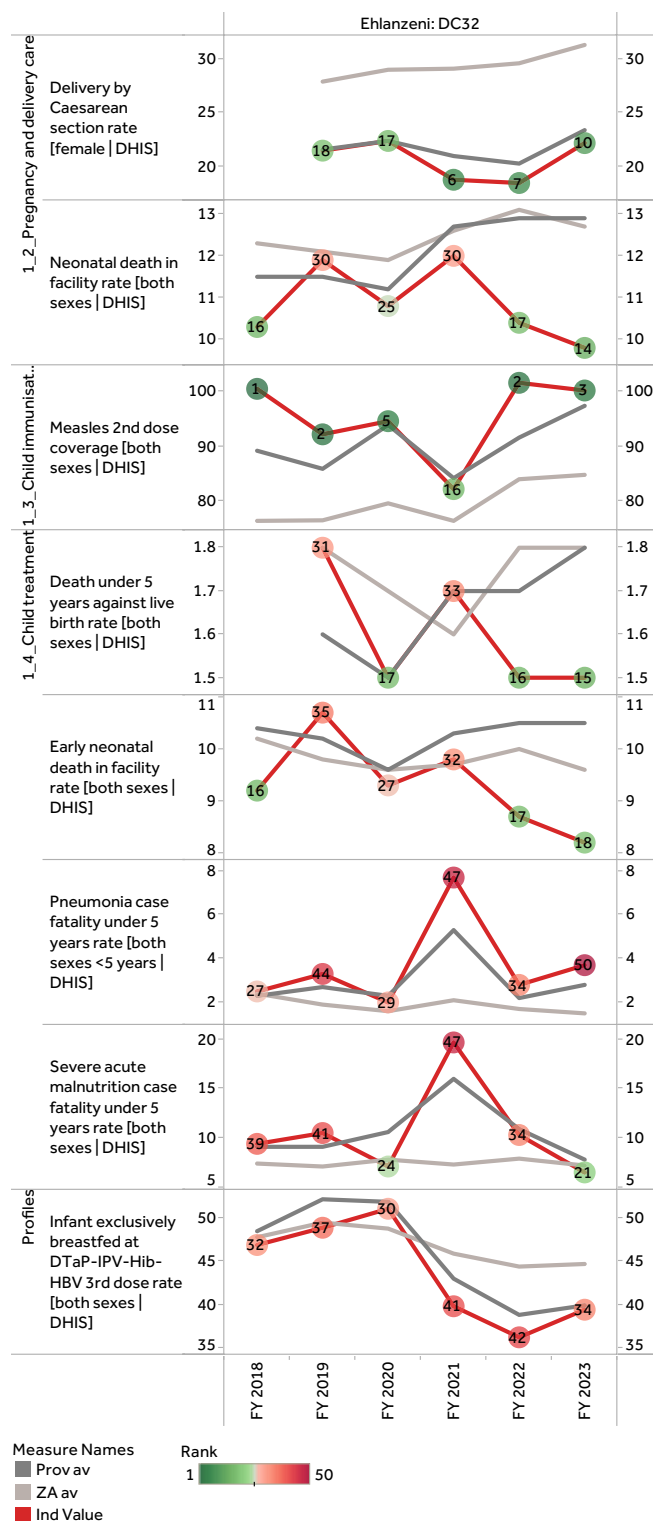
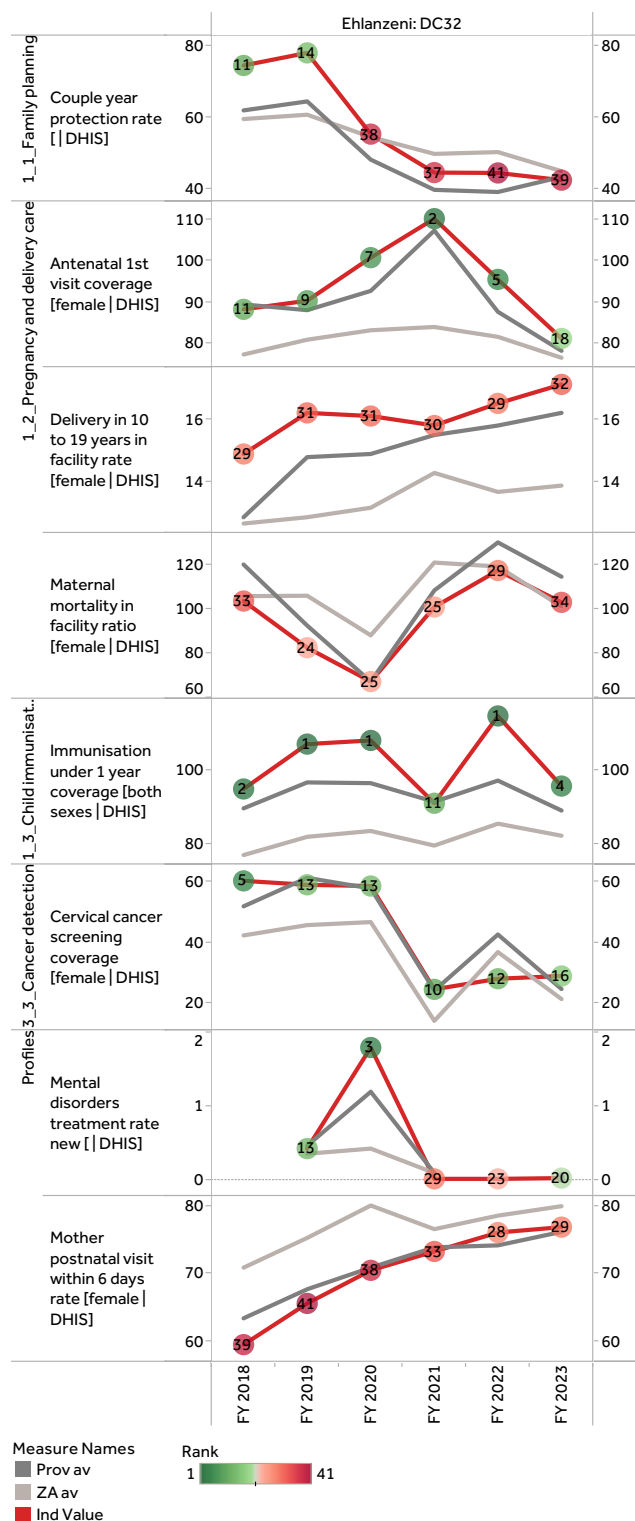
Local Municipality

2021 Total Population

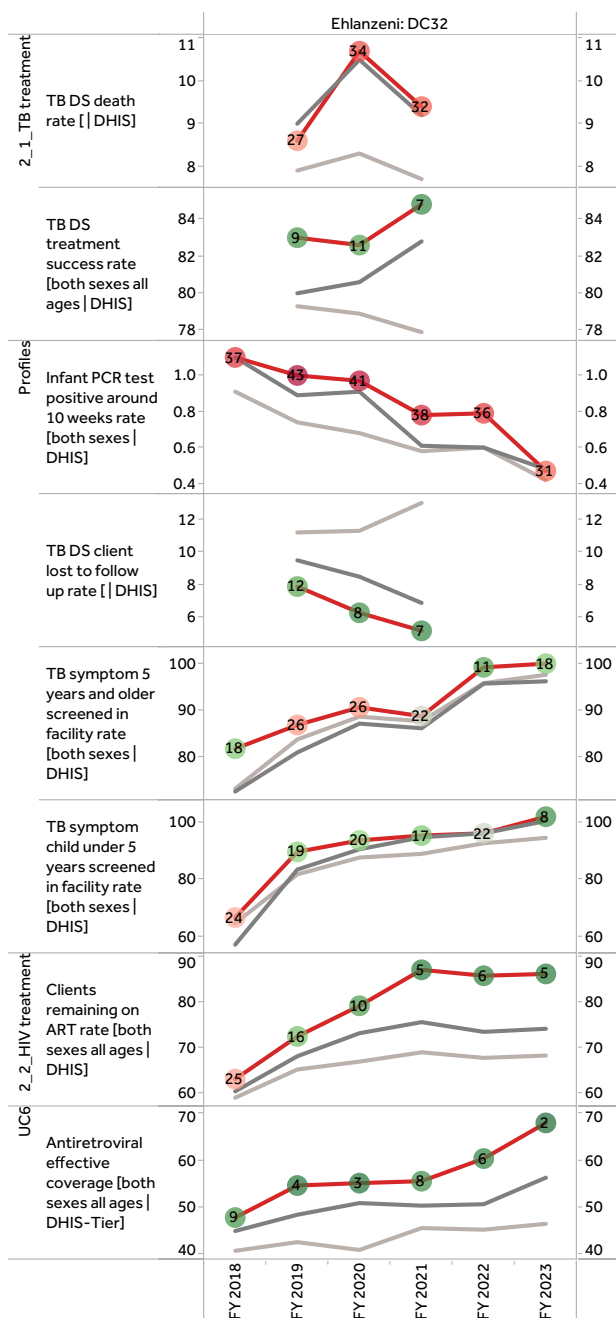
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- 1215877 - 5781420



Annual trends, 2018/19–2022/23

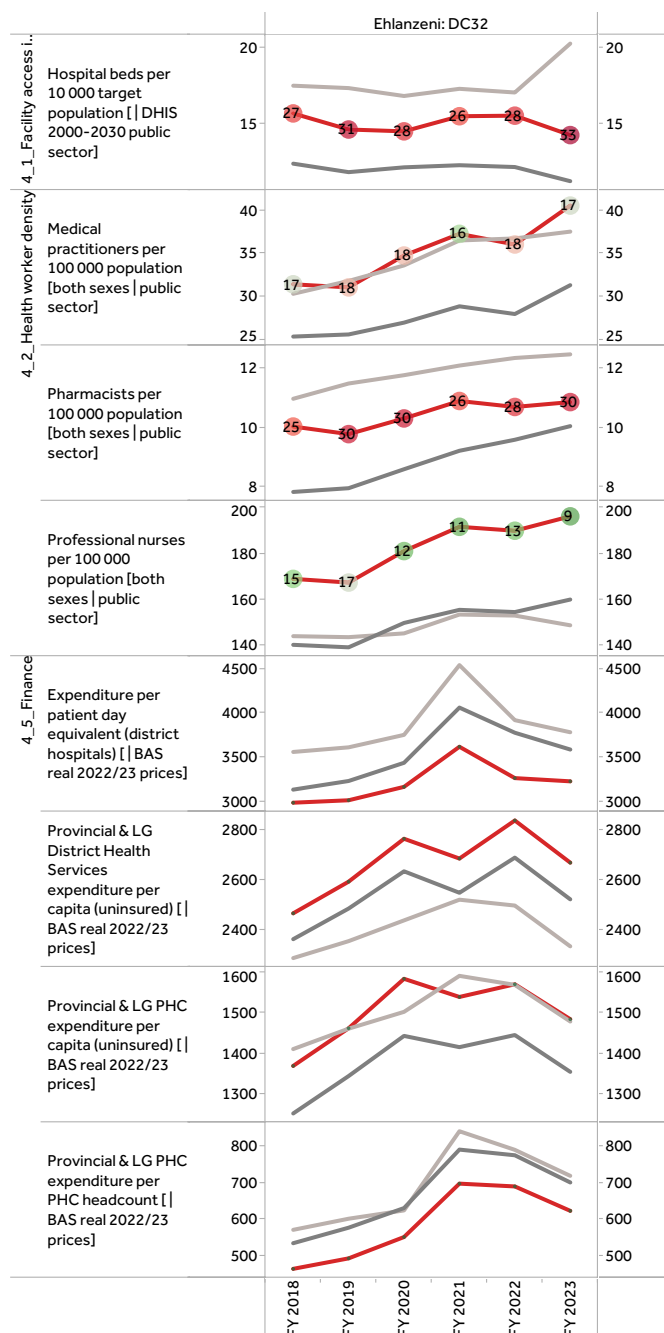


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 43



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 33

Northern Cape Province

John Taolo Gaetsewe District Municipality (DC45)

The John Taolo Gaetsewe District Municipality¹ is a Category C municipality located in the north of the Northern Cape Province, bordering Botswana in the west. It comprises the three local municipalities of Gamagara, Ga-Segonyana and Joe Morolong.

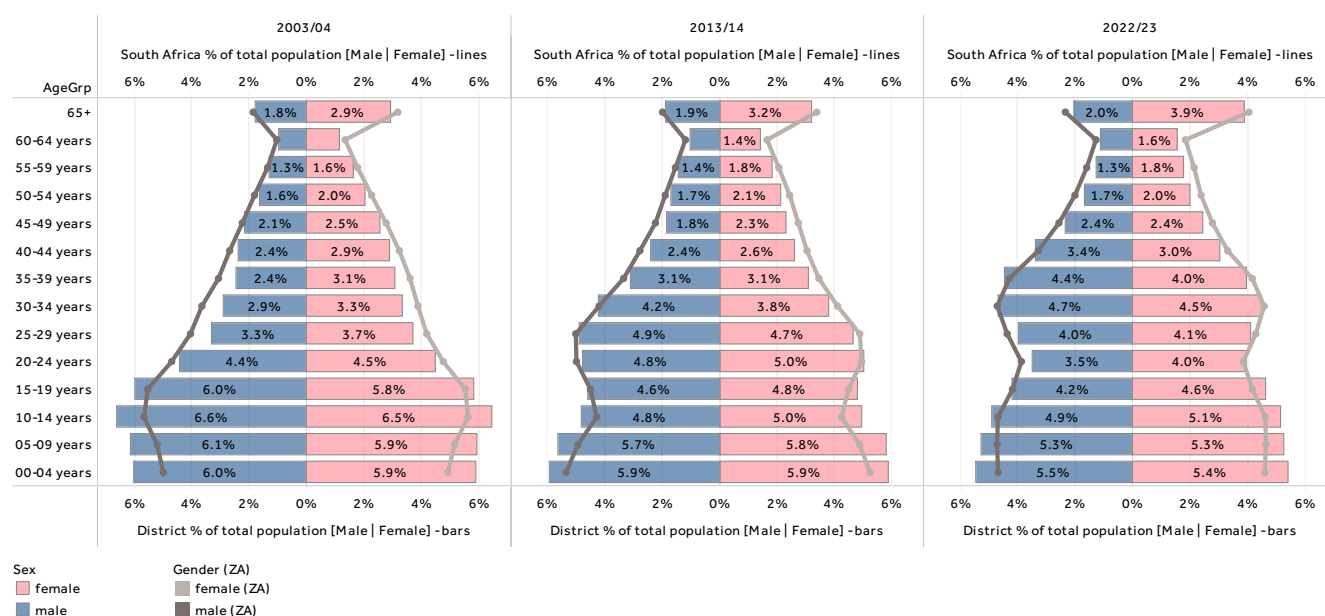
Cities/Towns: Bankhara-Bodulong, Deben, Hotazel, Kathu, Kuruman, Mothibistad, Olifantshoek, Santoy, Van Zylsrus

Area: 27 323km²

Population (2022)²: 279 070

District percentage population by age-gender group compared to South Africa

JT Gaetsewe DM (DC45)

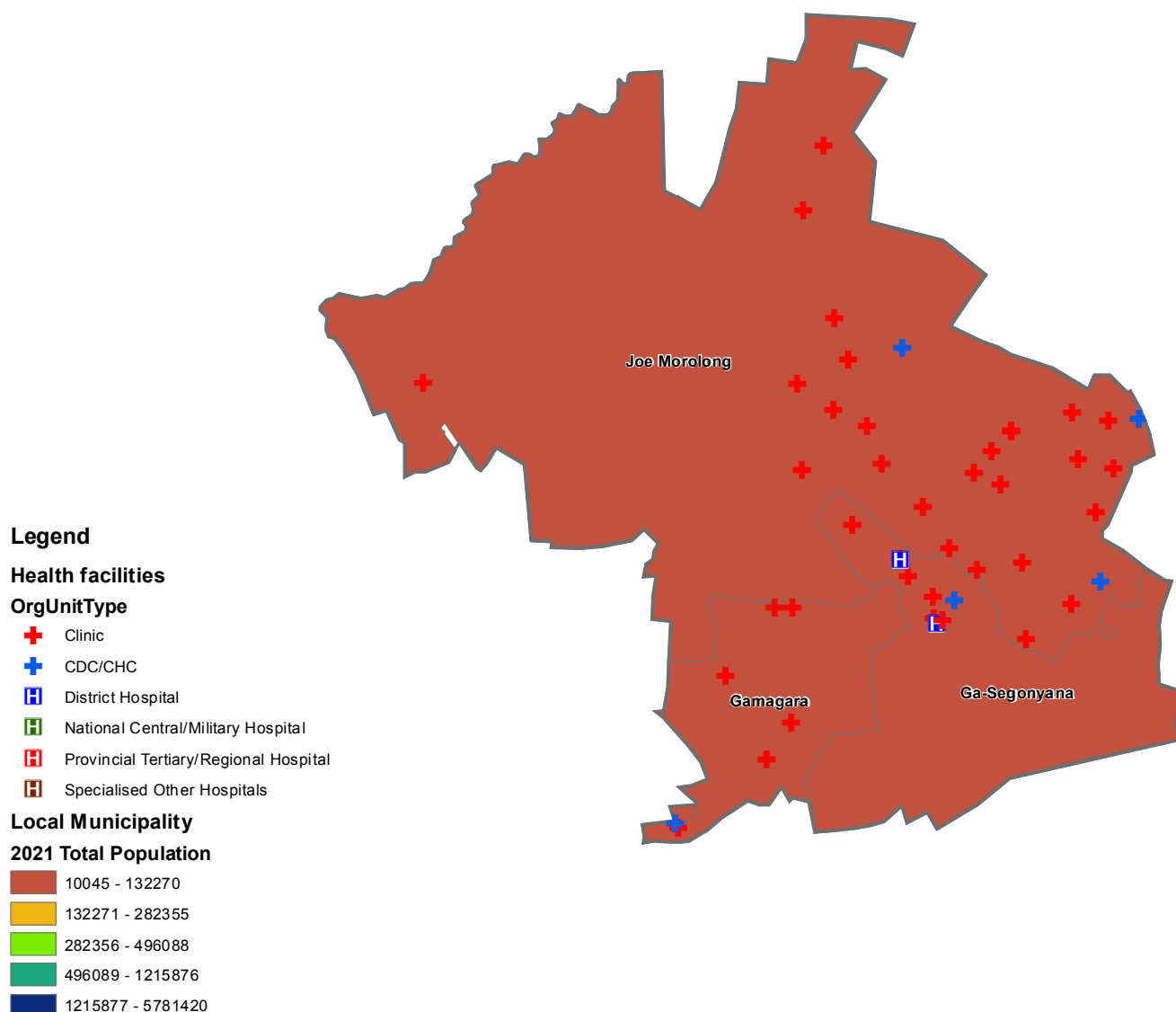


¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

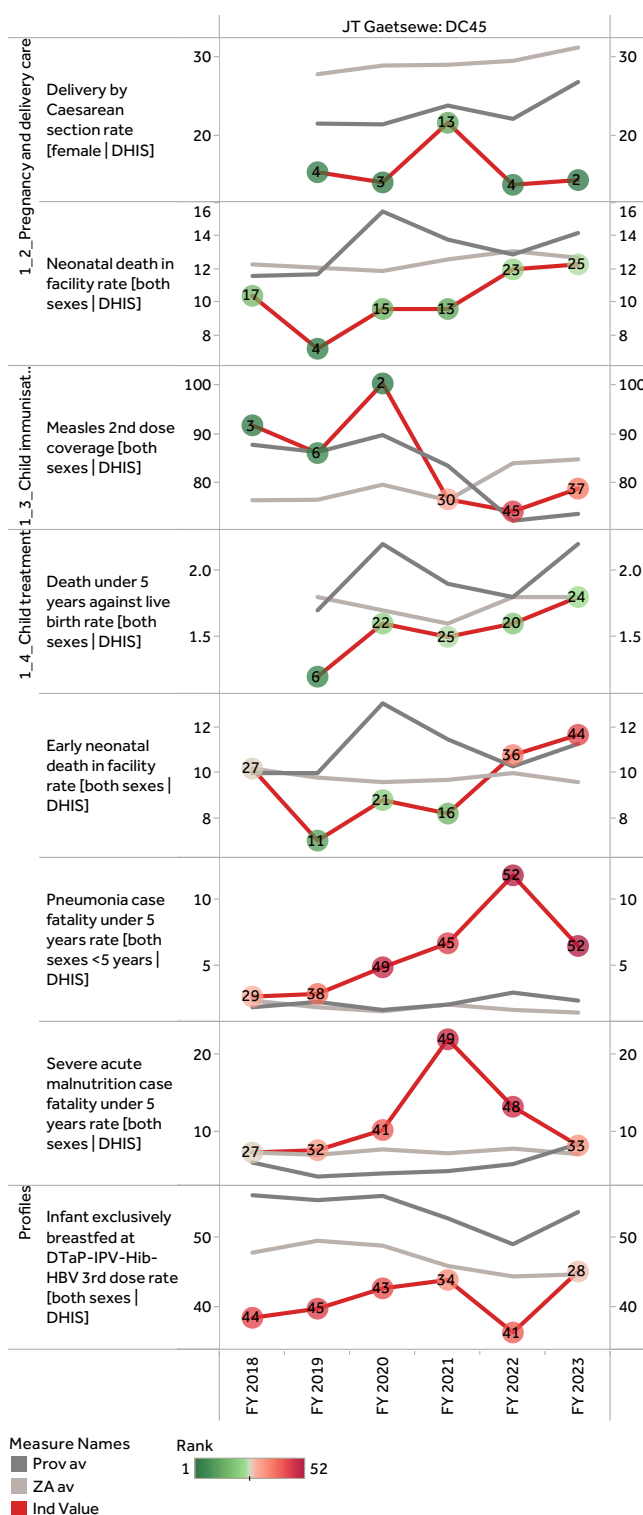
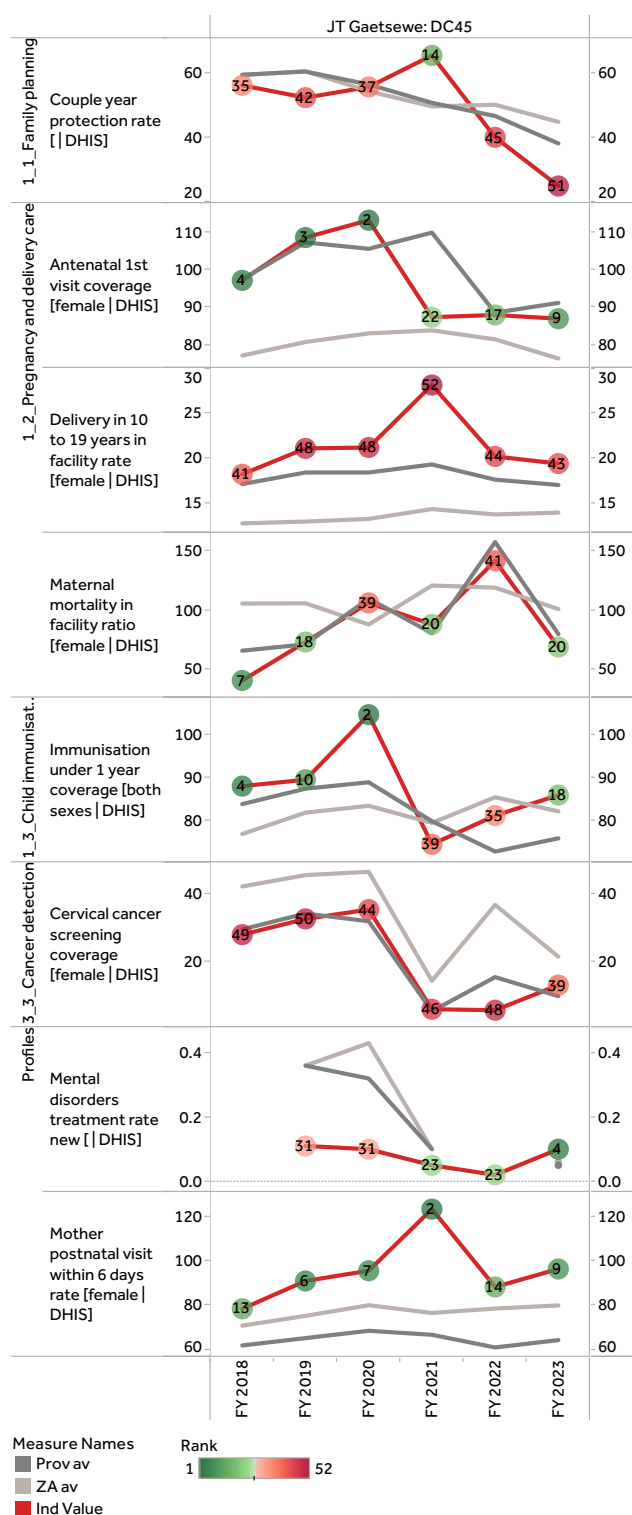
²Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

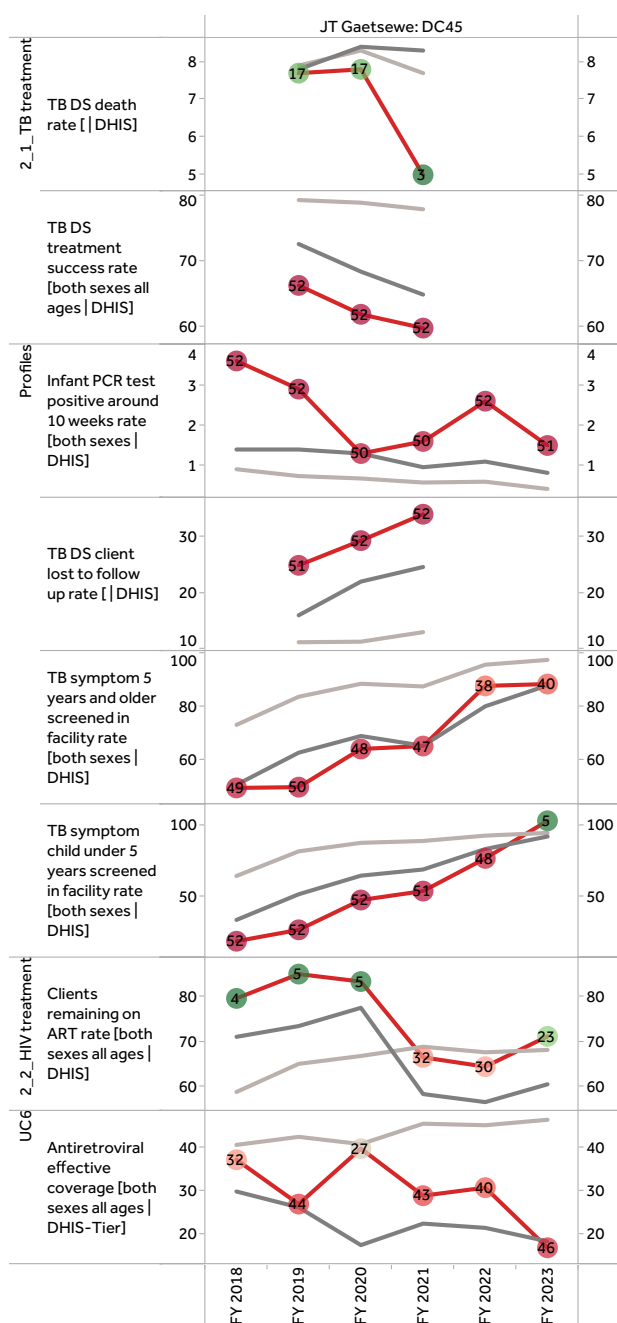
John Taolo Gaetsewe



Annual trends, 2018/19–2022/23

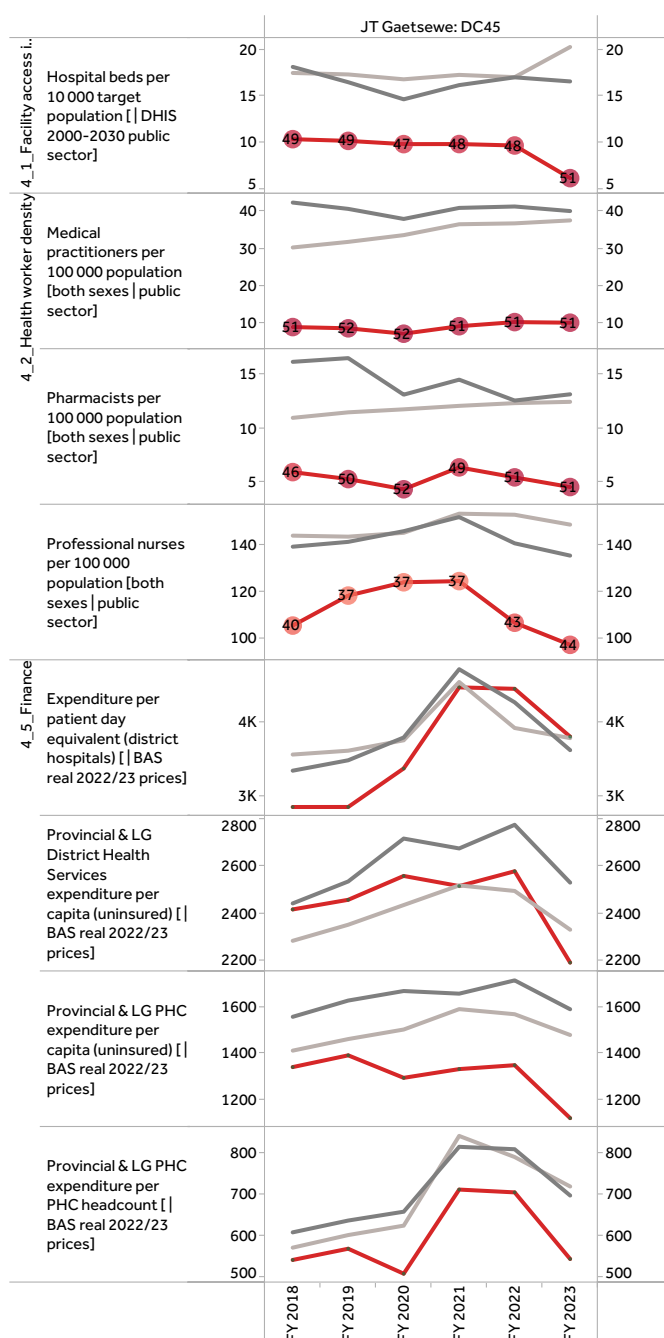


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52

Namakwa District Municipality (DC6)

The Namakwa District Municipality³ is a Category C municipality located in the Northern Cape Province. It is bordered by the Republic of Namibia in the north and is the largest district in the province, making up over a third of its geographical area. It comprises six local municipalities: Nama Khoi, Hantam, Khai-Ma, Kamiesberg, Karoo Hoogland and Richtersveld.

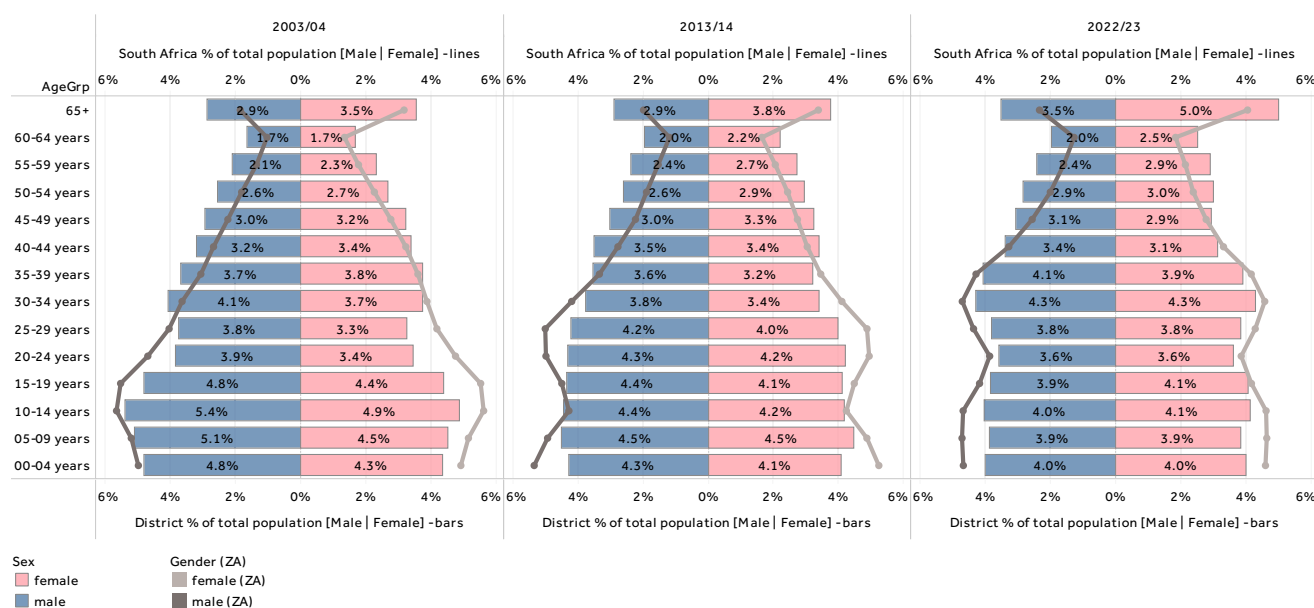
Cities/Towns: Aggeneys, Alexander Bay, Brandvlei, Bulletrap, Calvinia, Carolusberg, Concordia, Eksteensfontein, Frasersburg, Garies, Hondeklip Bay, Kamieskroon, Kleinsee, Koningnaas, Komaggas, Kuboes, Leliefontein/Kamiesberg, Loeriesfontein, Middelpos, Nababeep, Nieuwoudtville, O'Kiep, Onderste Doorns, Pella, Pofadder, Port Nolloth, Richtersveld, Sanddrift, Springbok, Steinkopf, Sutherland, Williston

Area: 126 836km²

Population (2022)⁴: 114 242

District percentage population by age-gender group compared to South Africa

Namakwa DM (DC6)

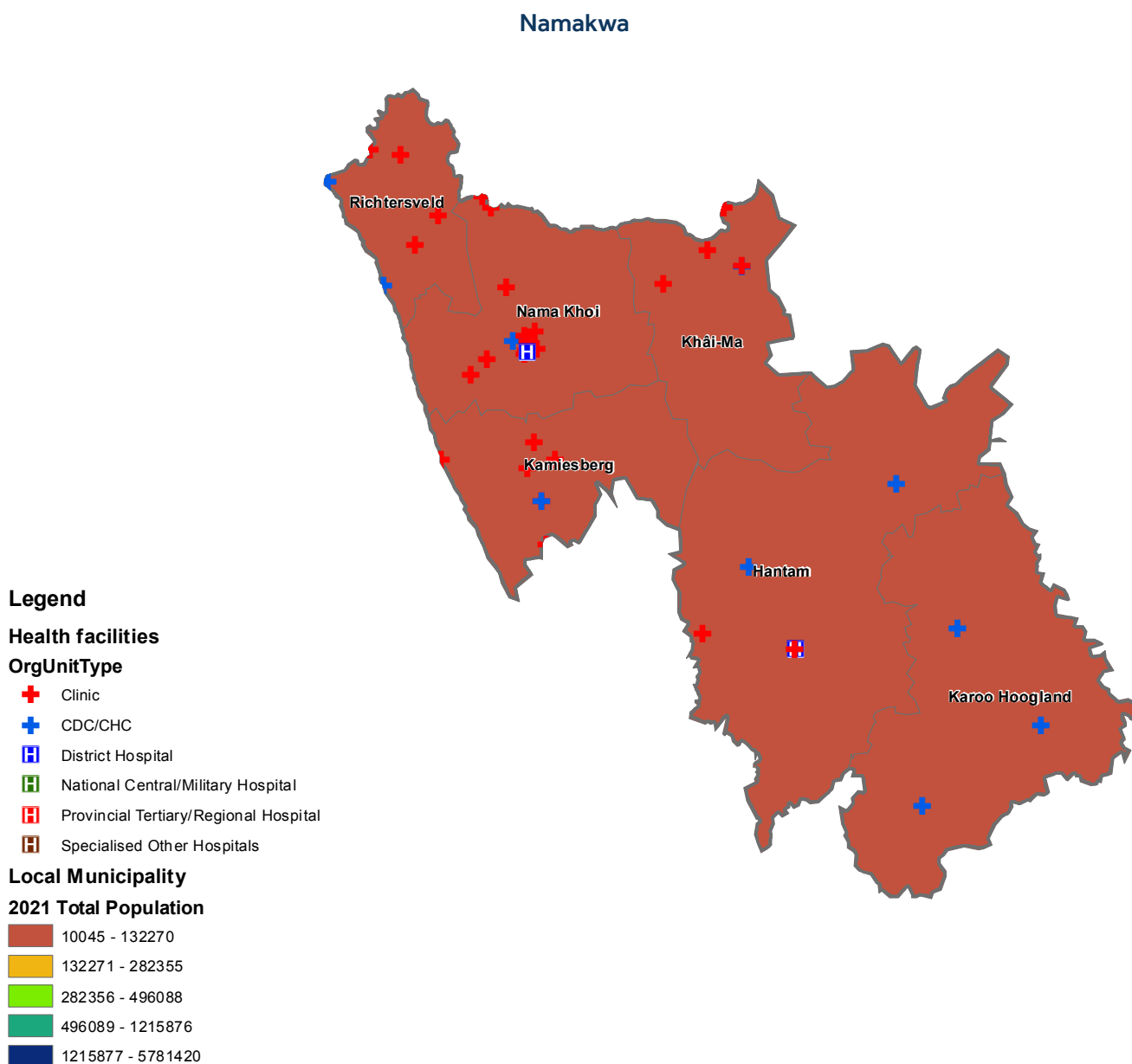


³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

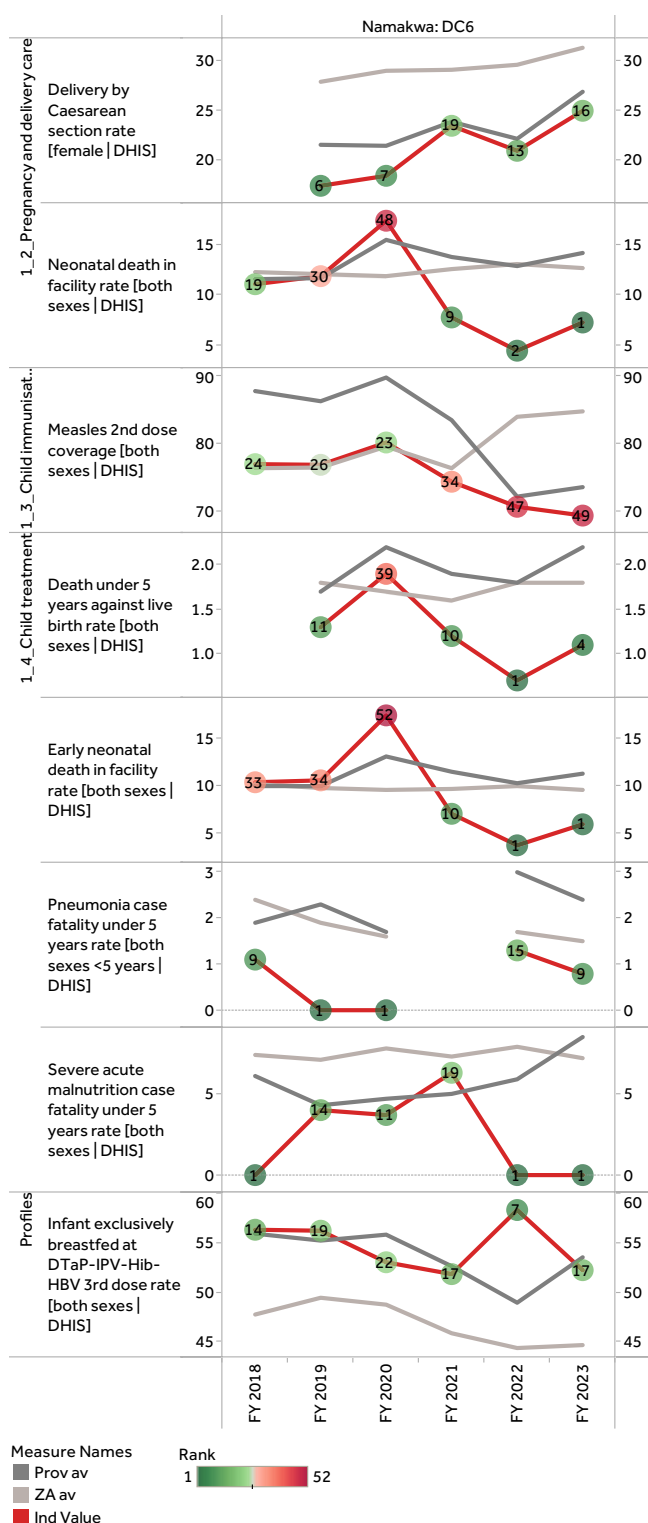
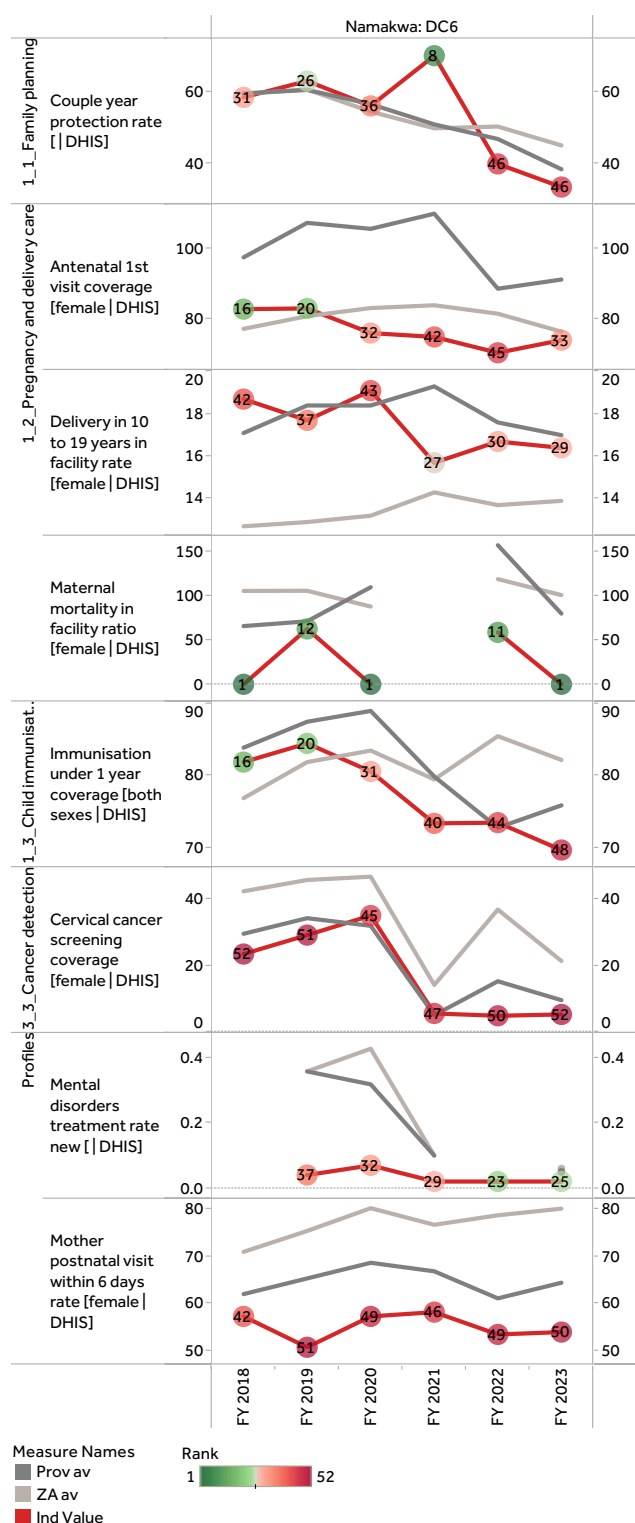
Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

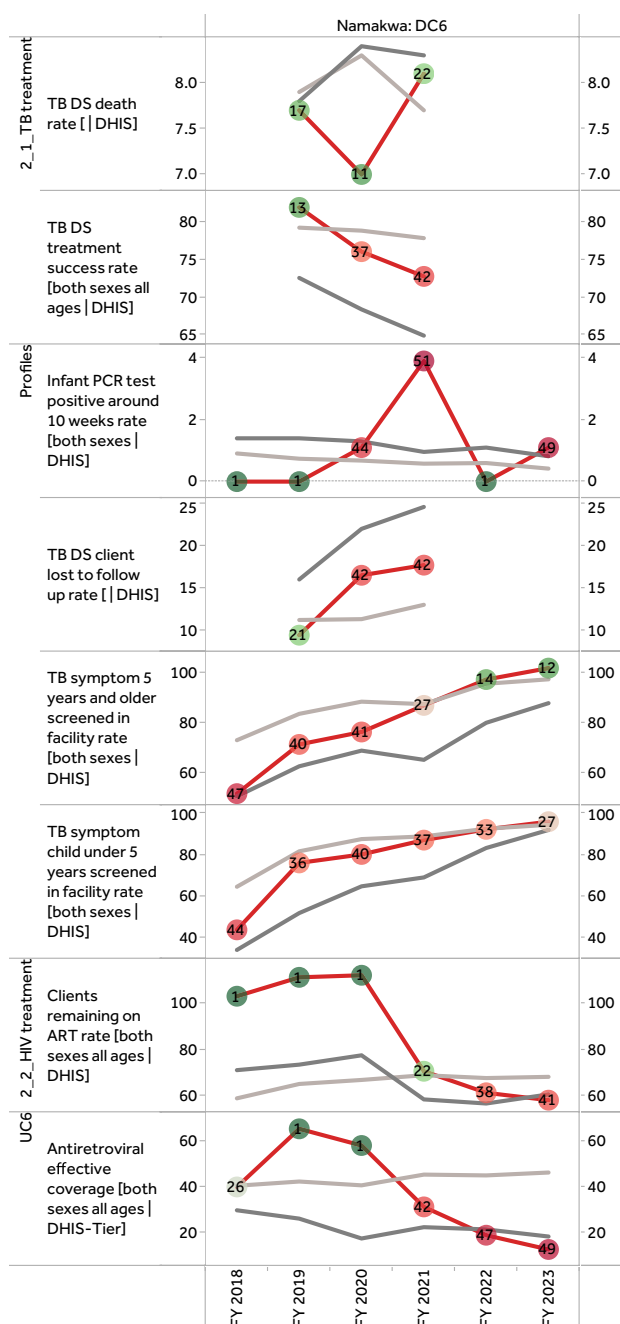
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23

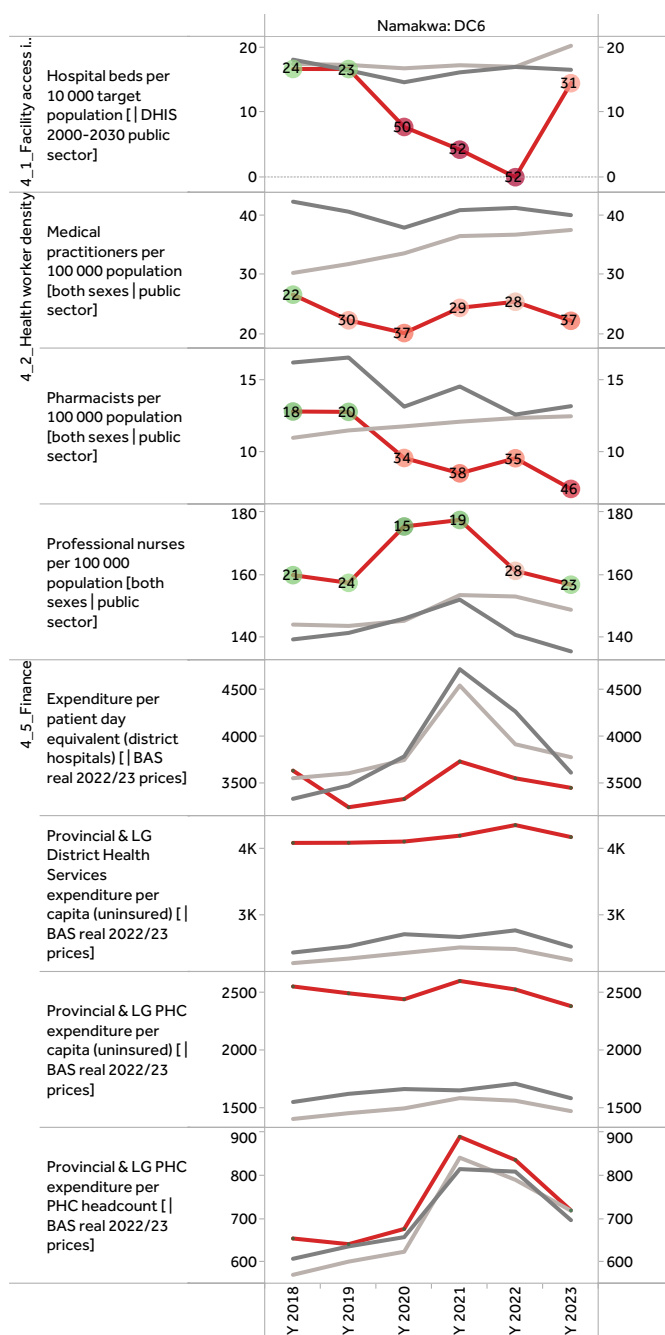


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 51



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52

Pixley Ka Seme District Municipality (DC7)

The Pixley Ka Seme District Municipality⁵ is a Category C municipality situated in the south-east of the Northern Cape Province. The district consists of eight local municipalities: Ubuntu, Umsobomvu, Emthanjeni, Kareeberg, Renosterberg, Thembelihle, Siyathemba and Siyancuma.

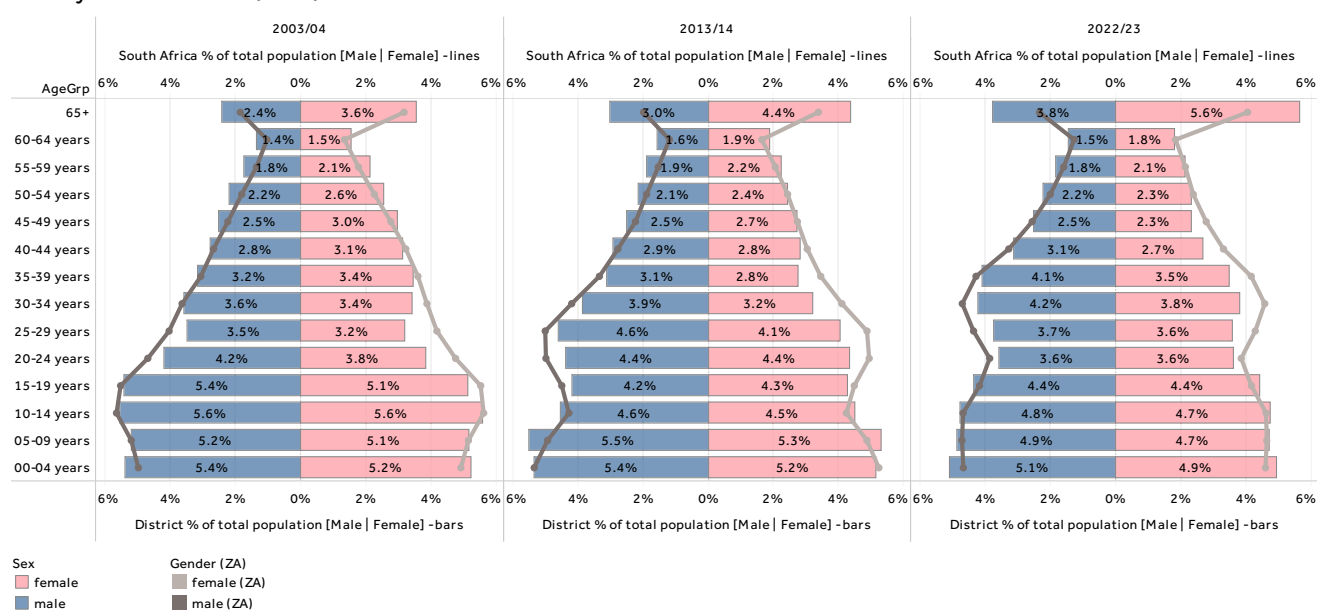
Cities/Towns: Britstown, Campbell, Carnarvon, Colesberg, Copperton, De Aar, Douglas, Griekwastad, Hanover, Hopetown, Hutchinson, Loxton, Marydale, Niekerkshoop, Norvalspont, Noupoot, Petrusville, Philipstown, Prieska, Richmond, Schmidtsdrif, Strydenburg, Van der Kloof, Vanwyksvlei, Victoria West, Vosburg

Area: 103 222km²

Population (2022)⁶: 209 913

District percentage population by age-gender group compared to South Africa

Pixley Ka Seme DM (DC7)

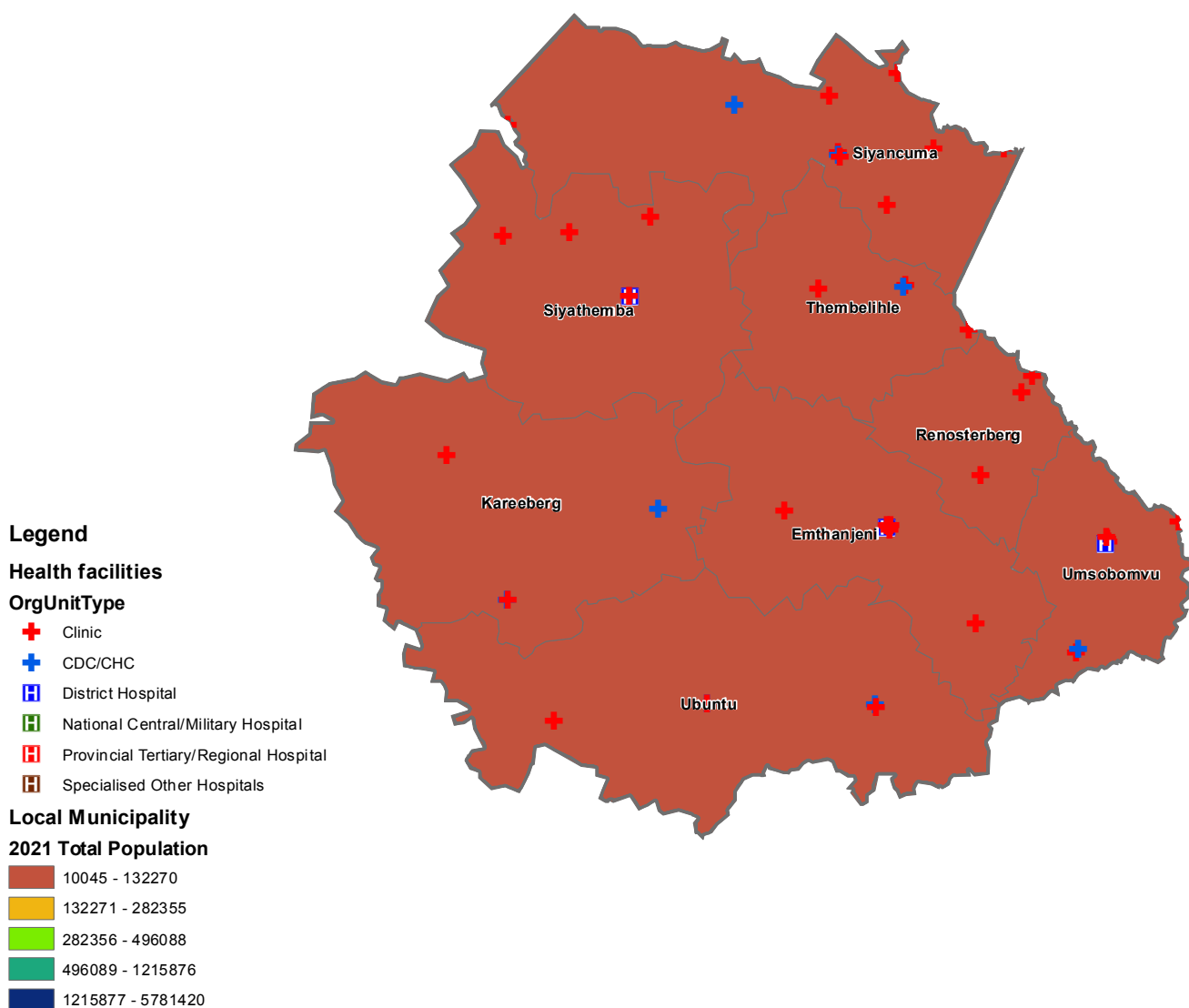


⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

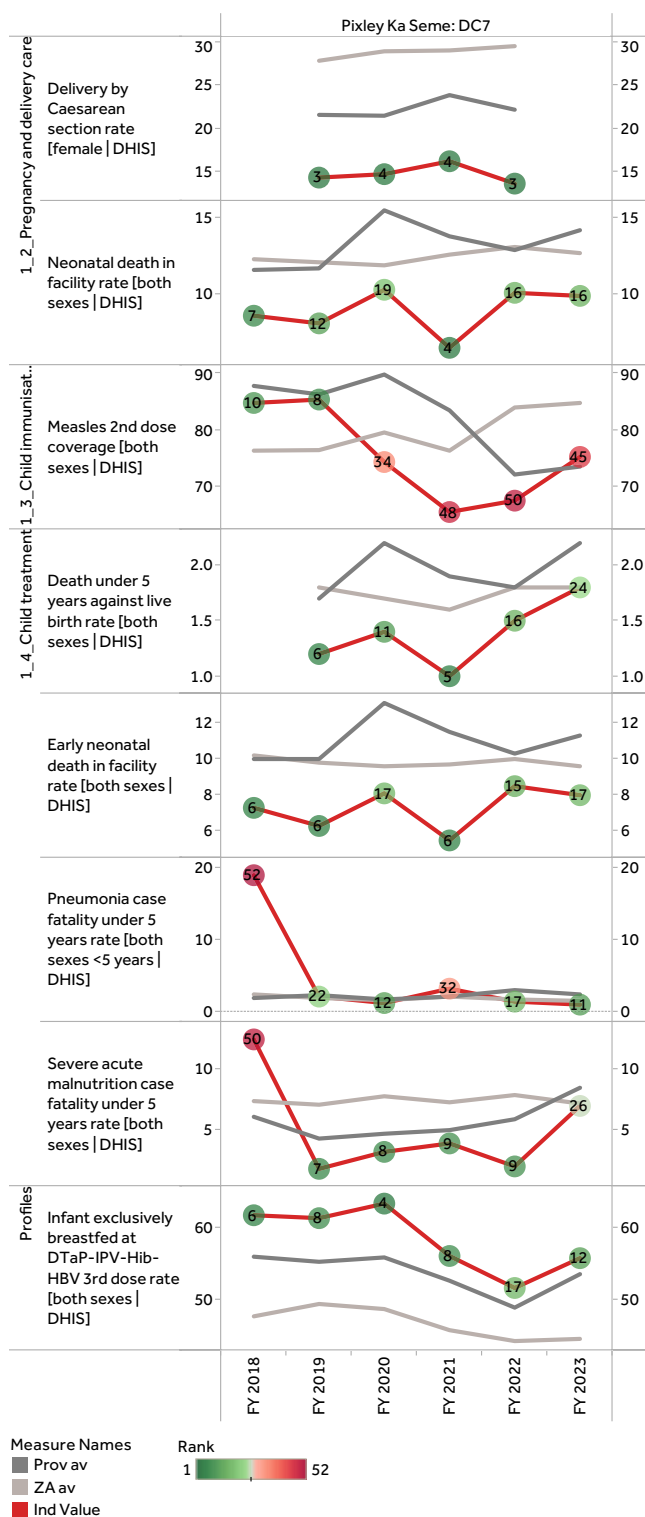
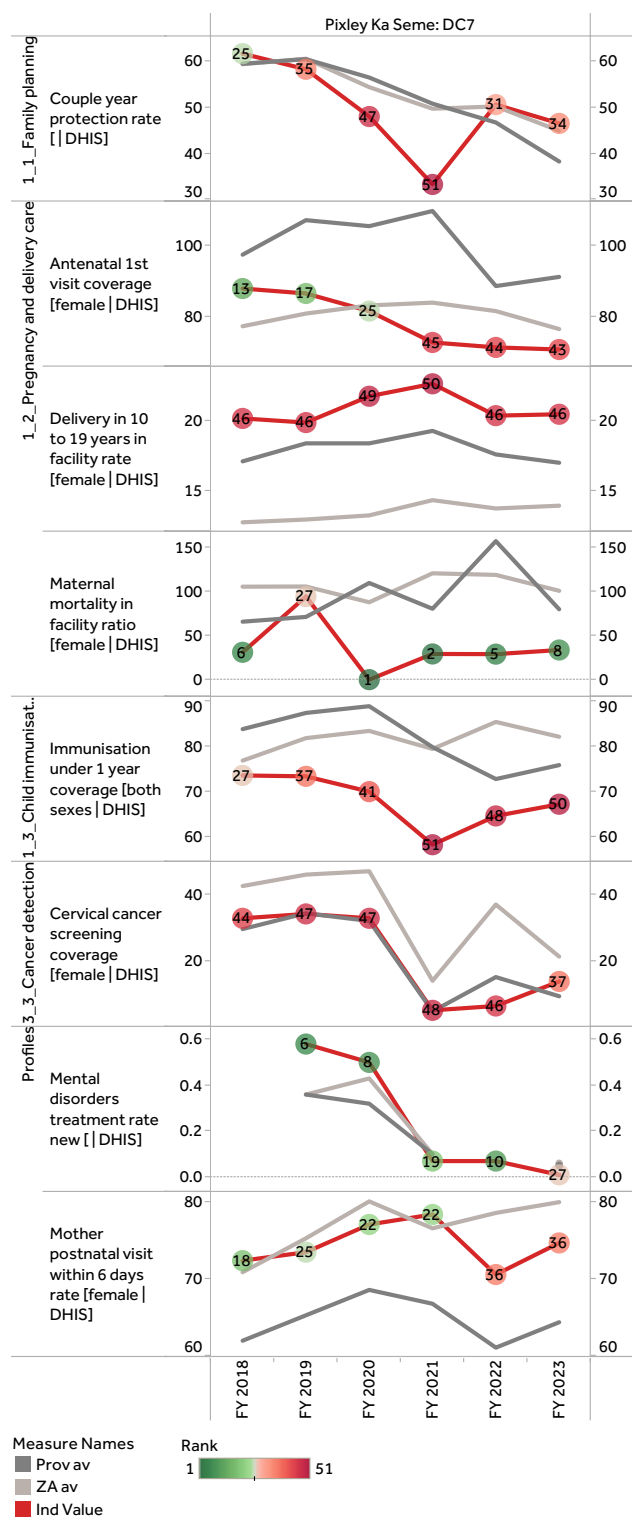
⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

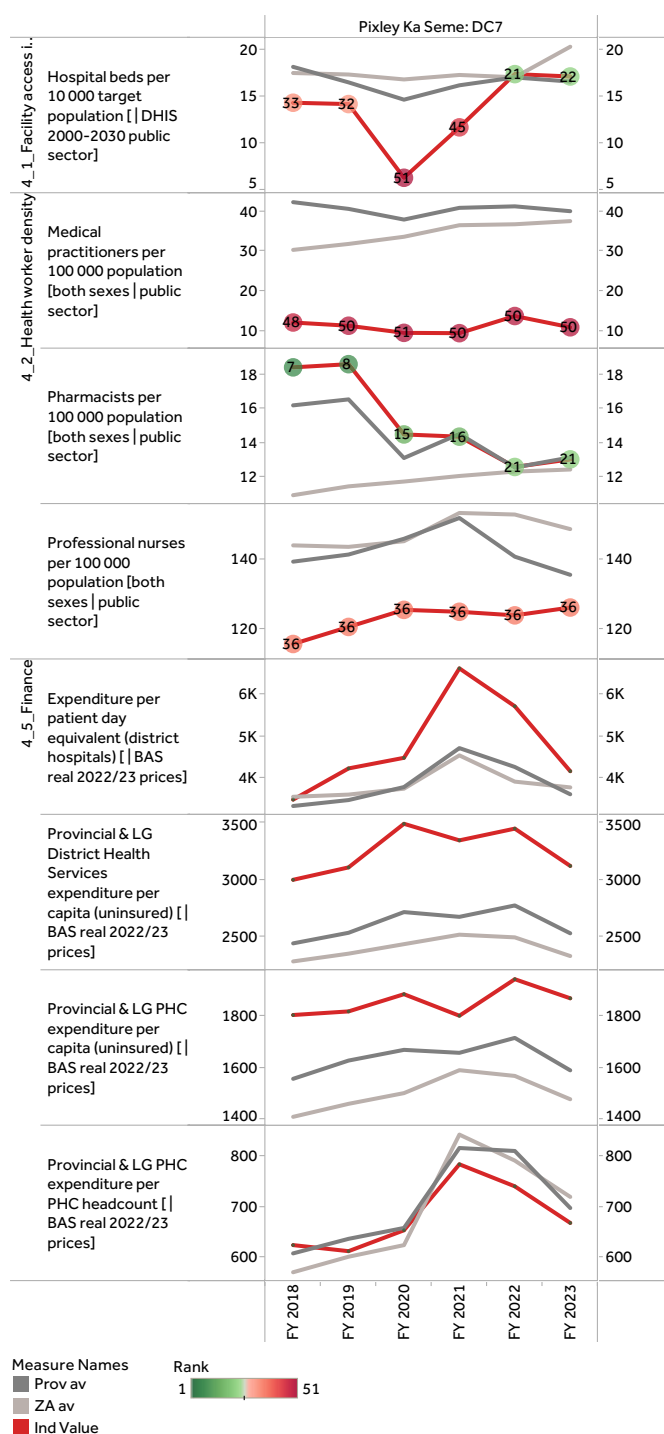
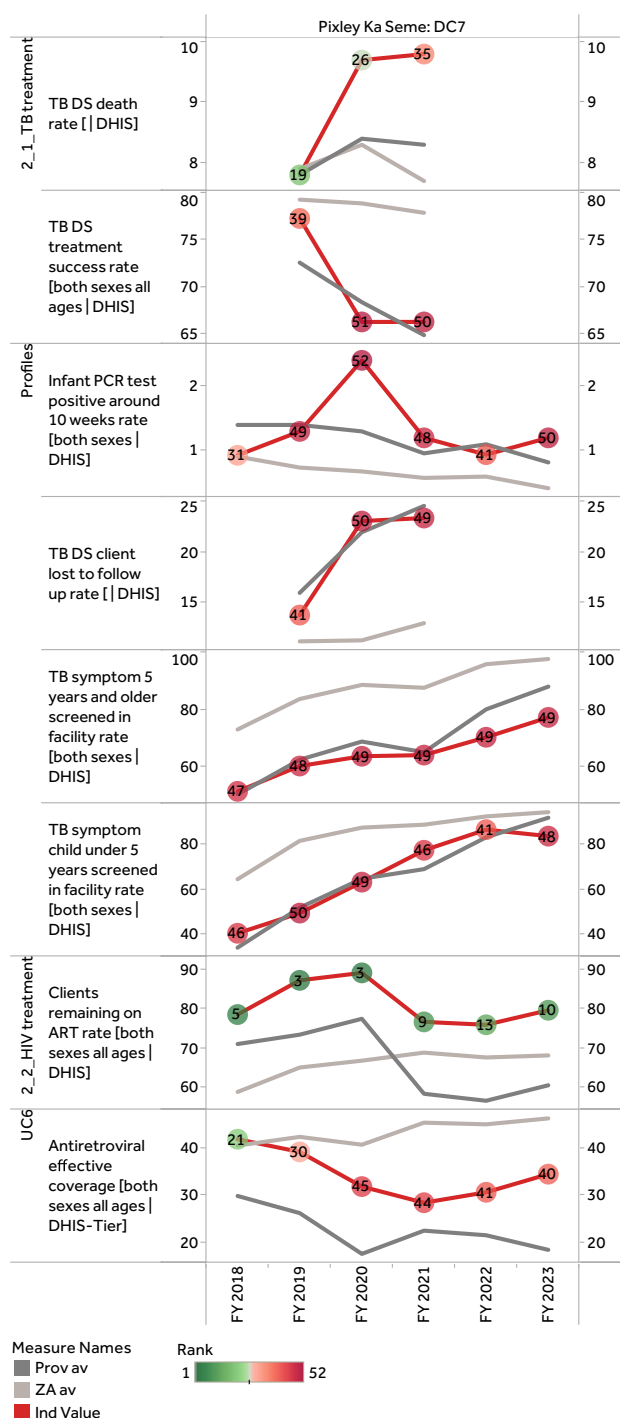
Pixley ka Seme



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Zwelentlanga Fatman Mgcawu District Municipality (DC8)

The Zwelentlanga Fatman Mgcawu District Municipality⁷ is a Category C municipality forming the mid-northern section of the Northern Cape Province, bordering Botswana in the north and Namibia in the west. This district comprises five local municipalities: Dawid Kruiper, Kail/Garib, Tsantsabane, !Kheis and Kgatelopele. Upington is the district municipal capital, where the municipal government is located.

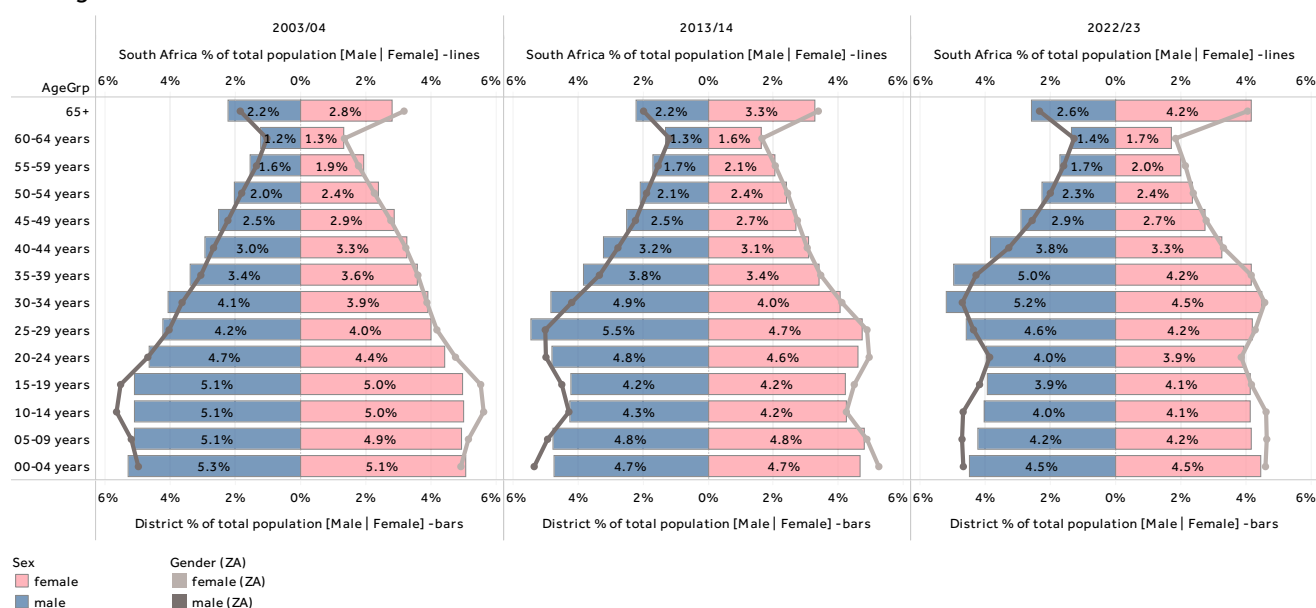
Cities/Towns: Beeshoek, Brandboom, Danielskuil, Eksteenskuil, Groblershoop, Kakamas, Keimoes, Kenhardt, Lime Acres, Mier, Postmasburg, Rietfontein, Upington

Area: 102 504km²

Population (2022)⁸: 286 399

District percentage population by age-gender group compared to South Africa

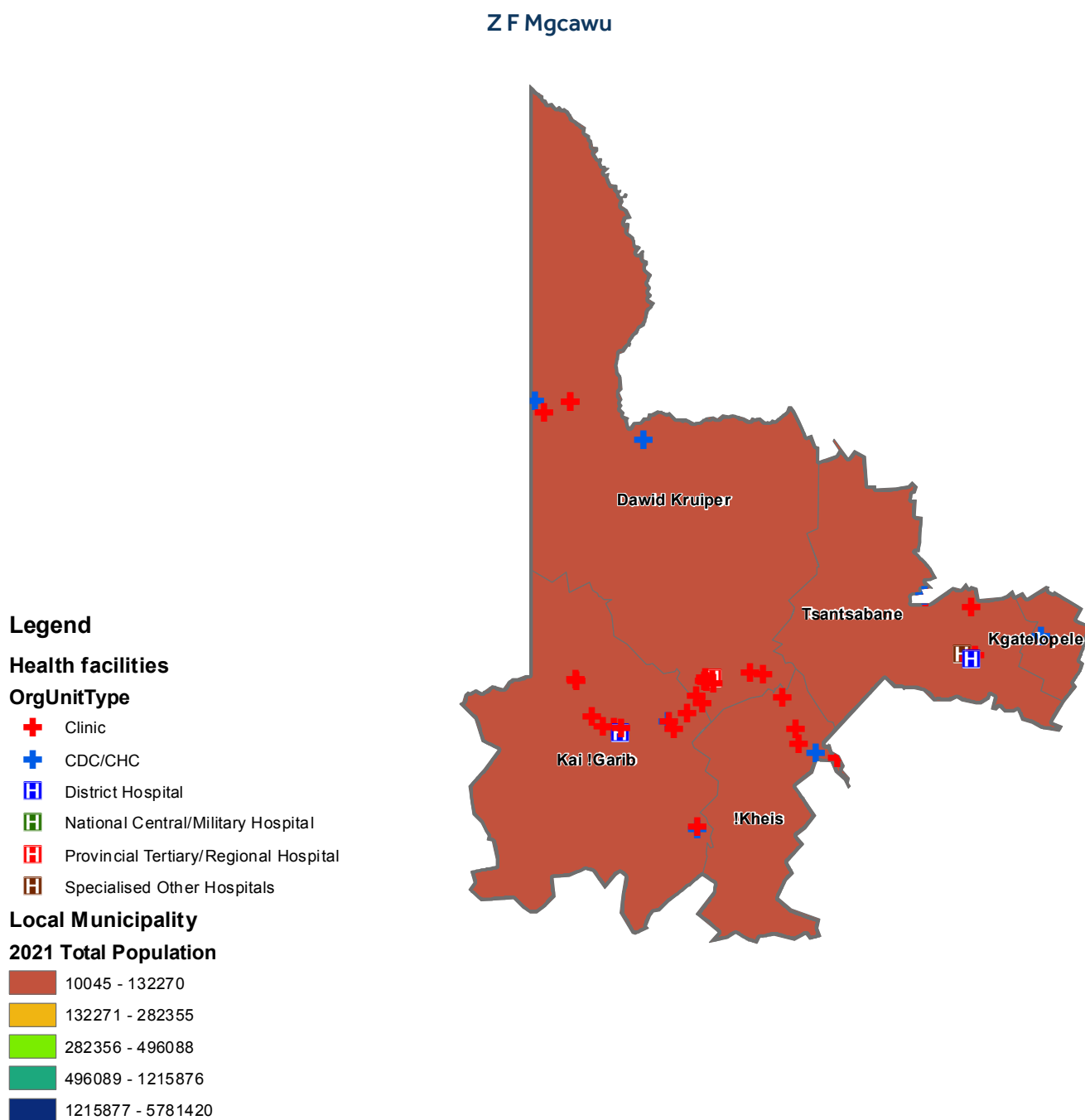
ZF Mgcawu DM (DC8)



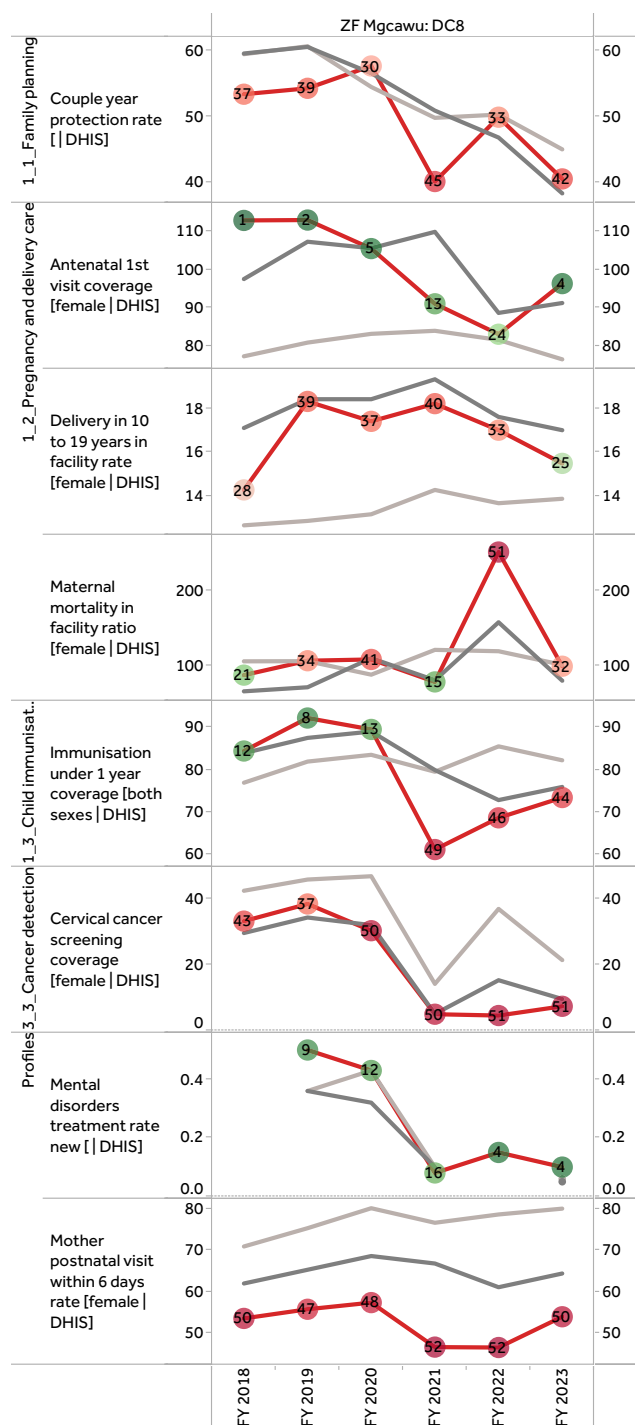
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁸Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

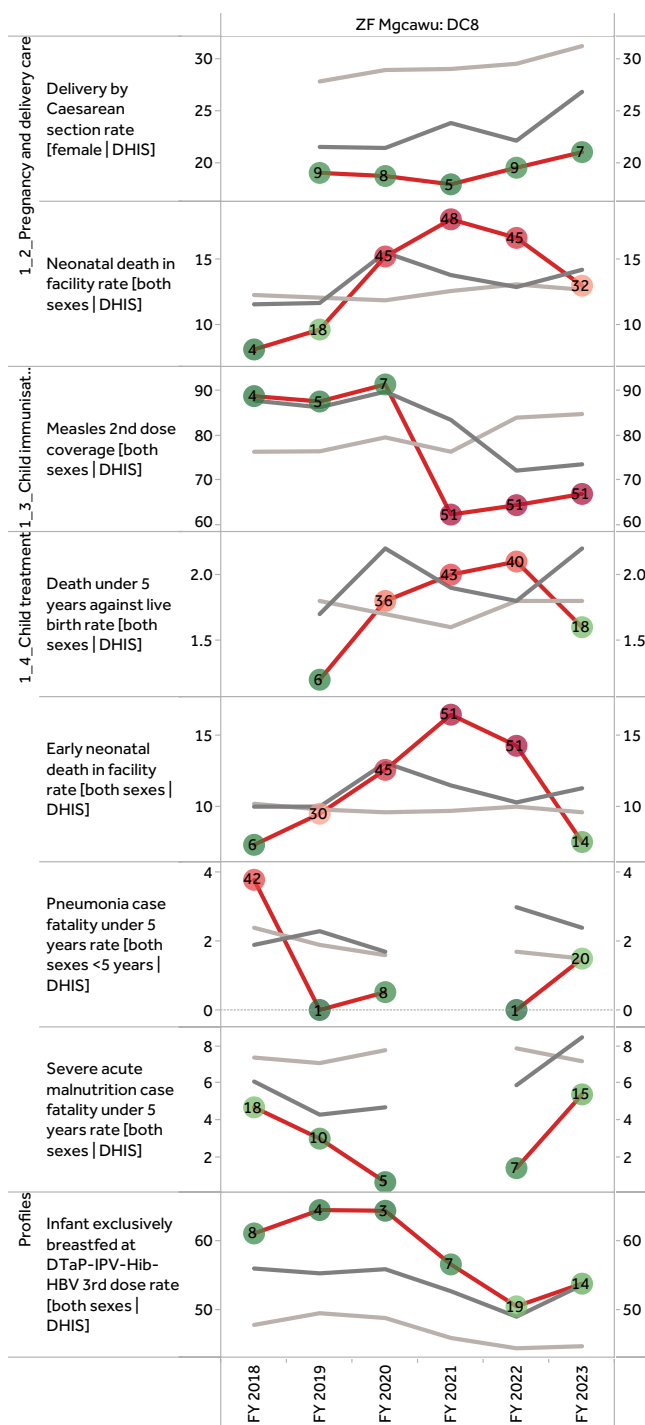


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

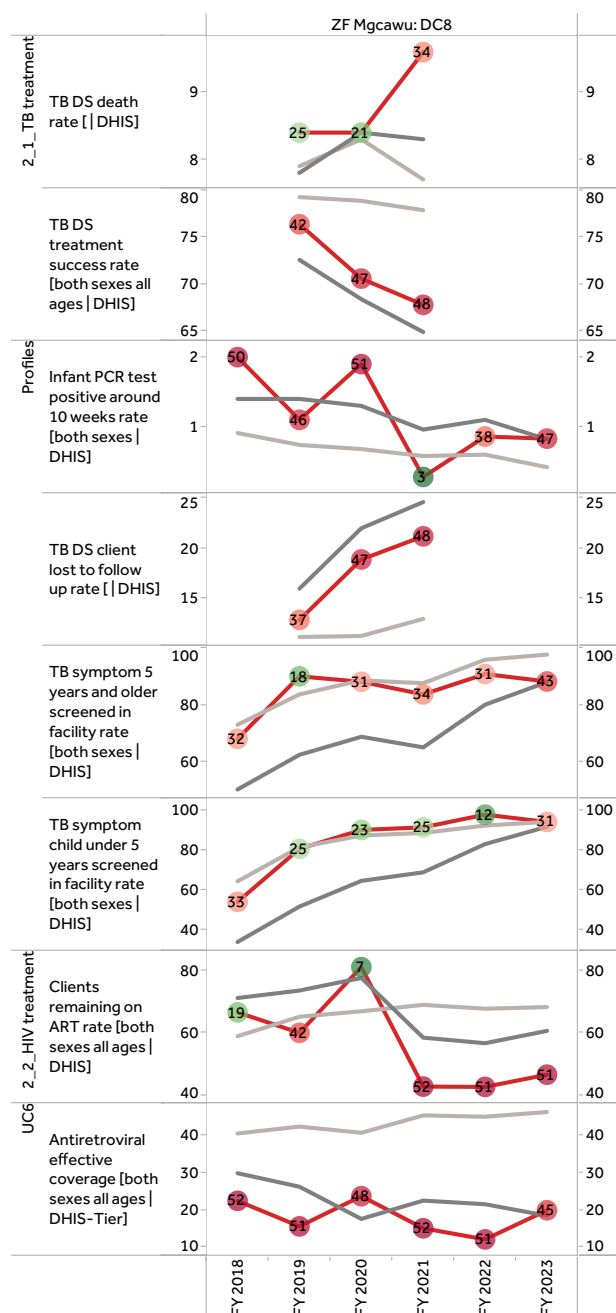
Rank
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Measure Names
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 ZA av
 Ind Value

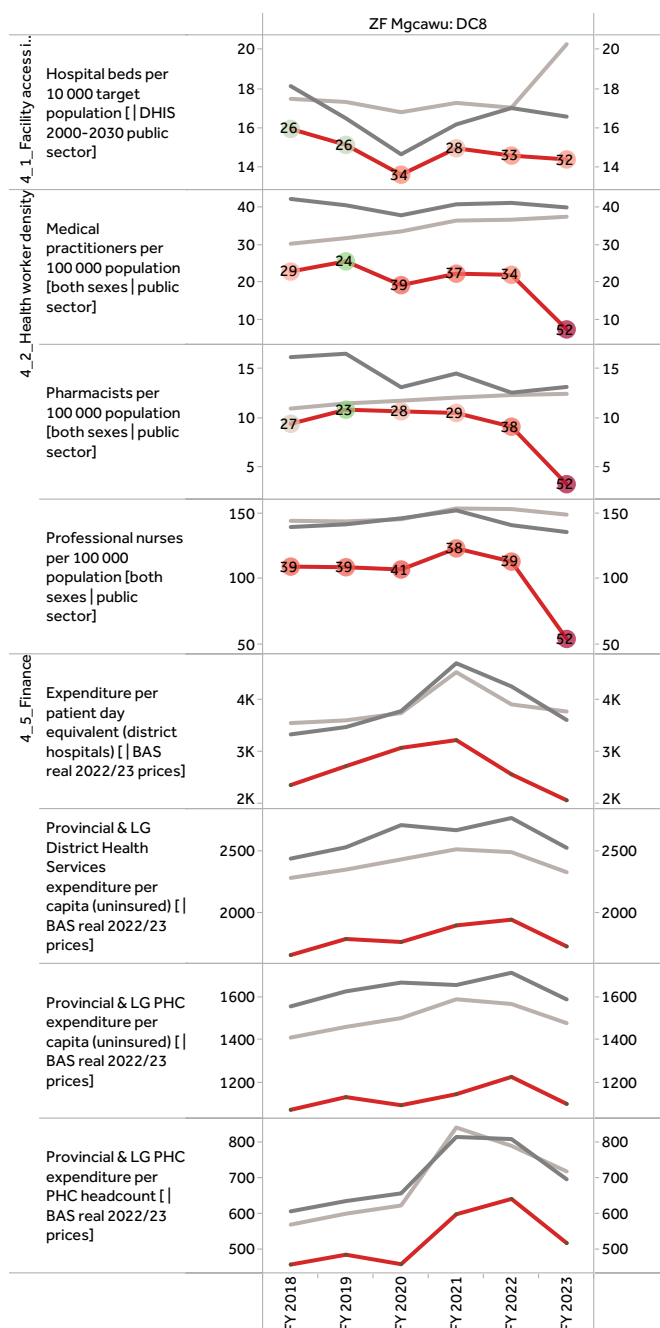
Rank
 1 51

Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 52



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 52

Frances Baard District Municipality (DC9)

The Frances Baard District Municipality⁹ is a Category C municipality located in the far eastern portion of the Northern Cape Province. The municipality is the smallest district in the Northern Cape, making up only 3% of its geographical area. It comprises the four local municipalities of Dikgatlong, Magareng, Phokwane and Sol Plaatje.

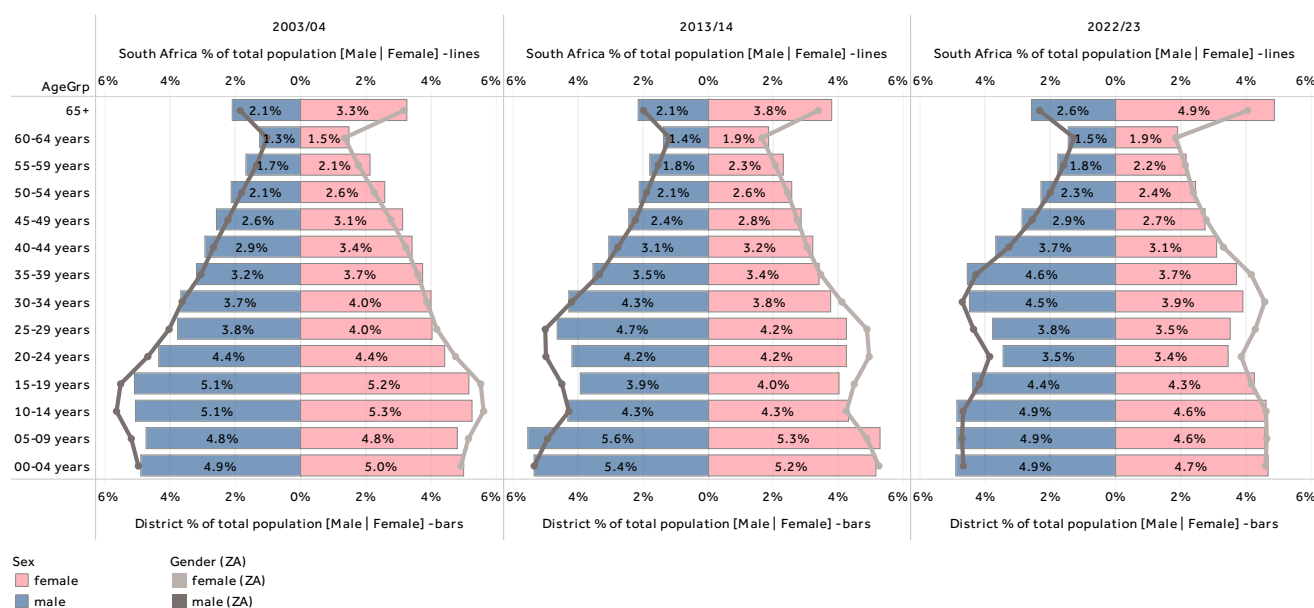
Cities/Towns: Barkly West, Delportshoop, Hartswater, Jan Kempdorp, Kimberley, Pampierstat, Ritchie, Warrenton, Windsorton

Area: 13 002km²

Population (2022)¹⁰: 412 182

District percentage population by age-gender group compared to South Africa

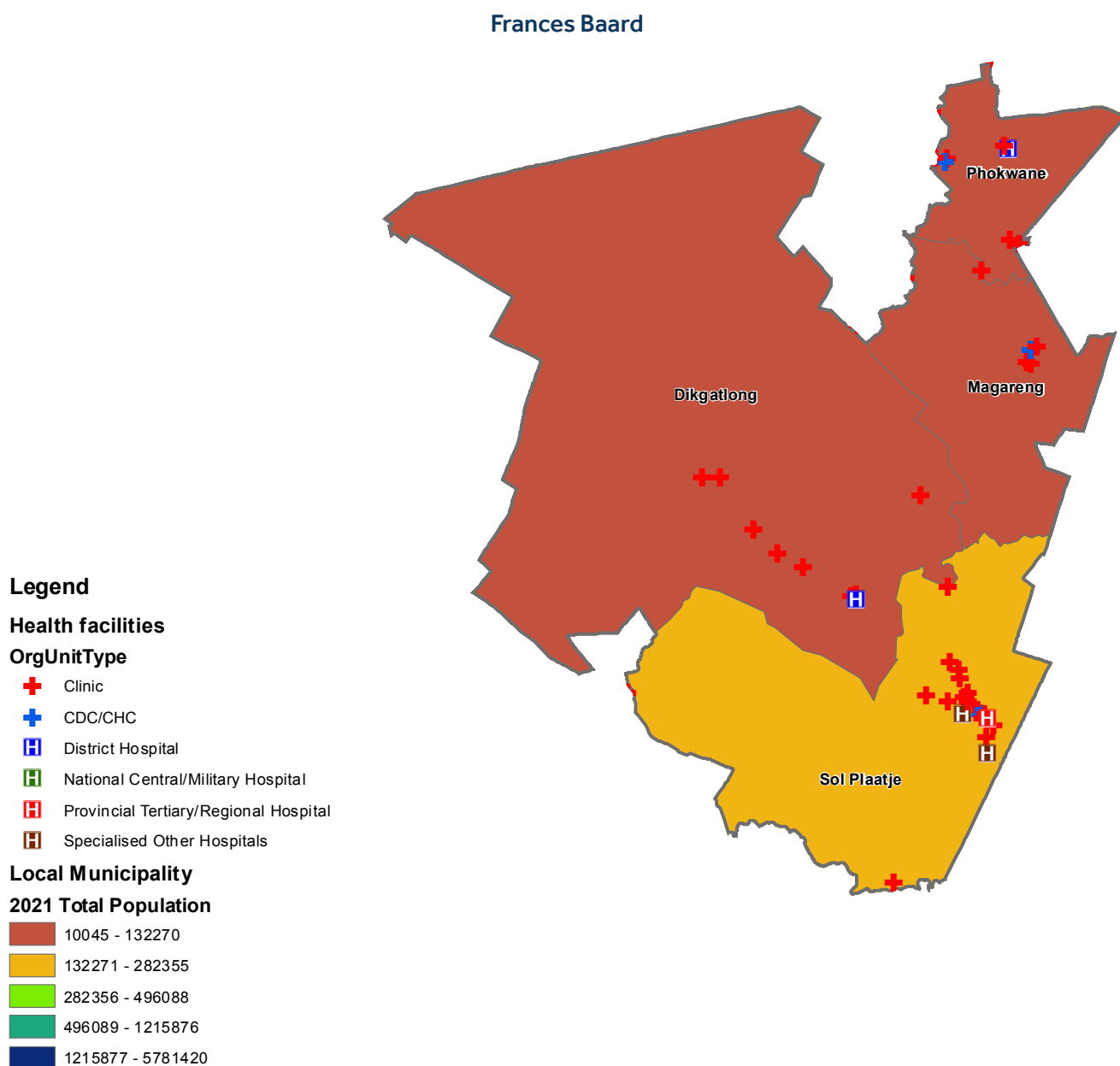
Frances Baard DM (DC9)



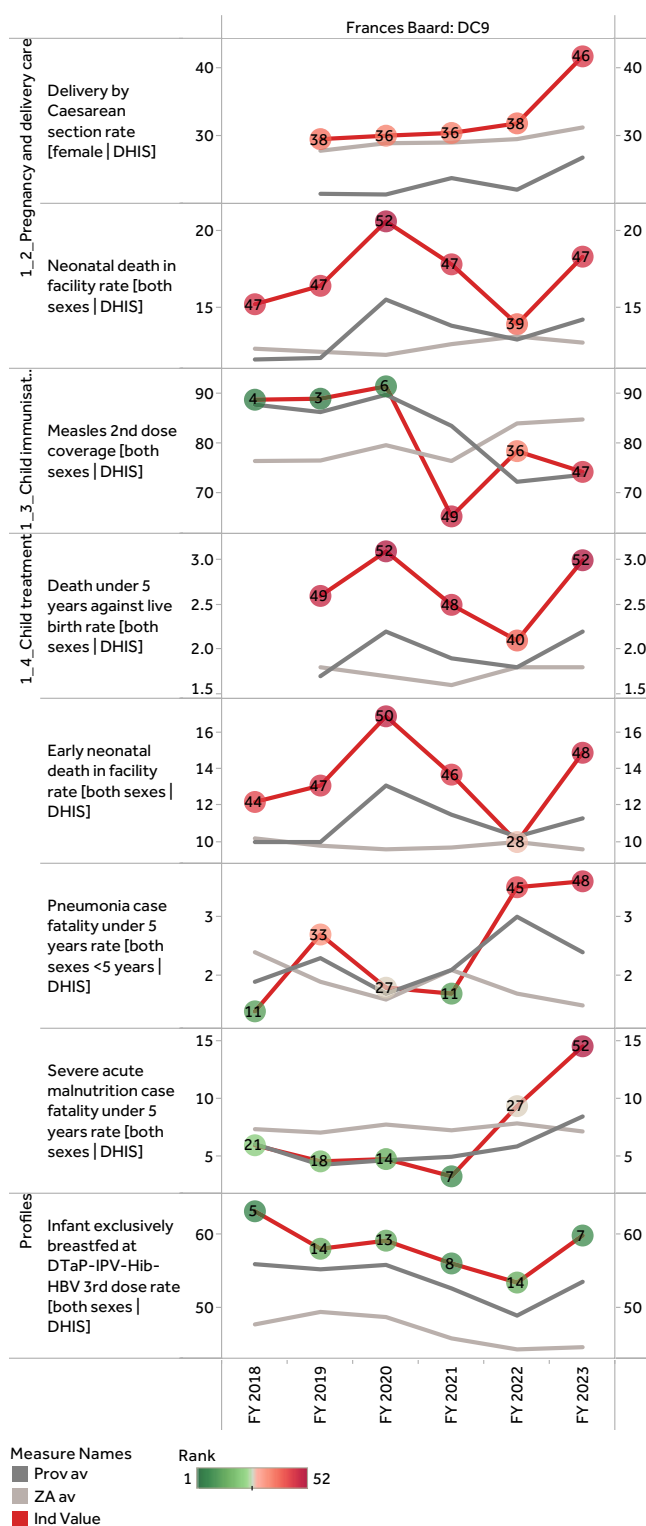
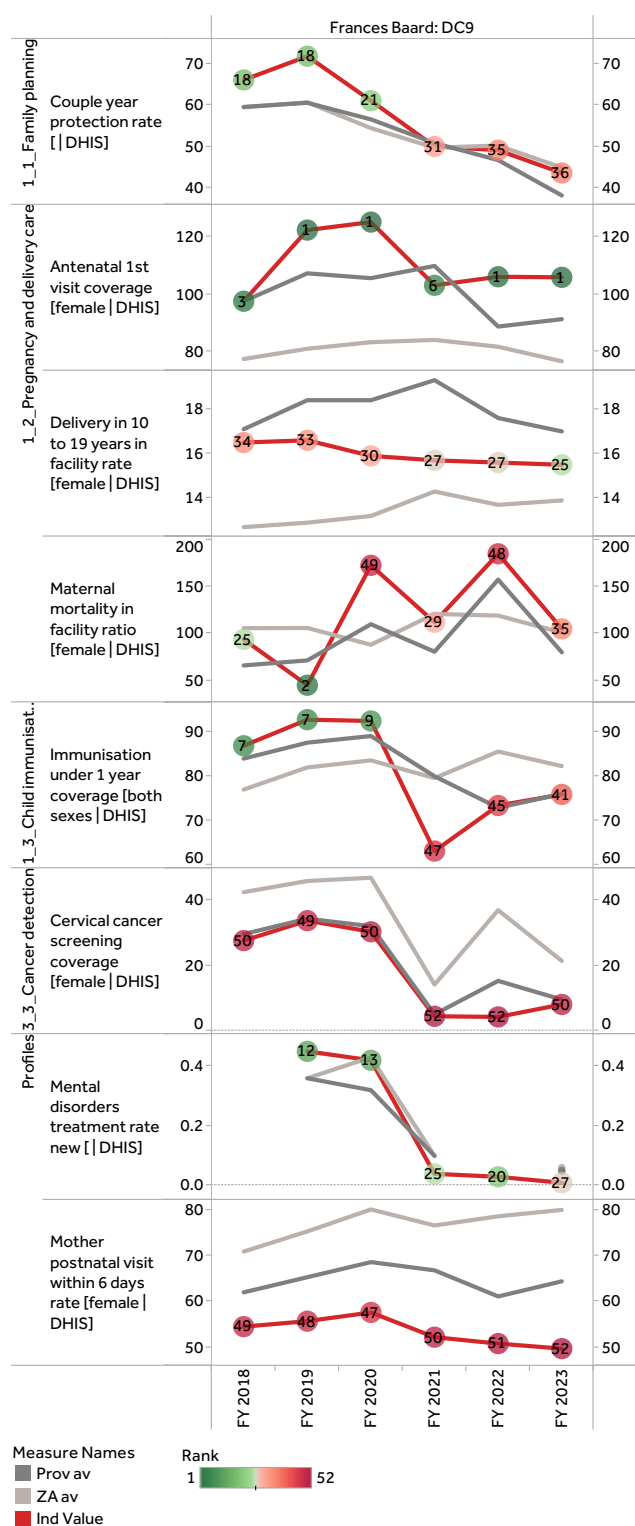
⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹⁰Mid-year Population Estimates 2022, Stats SA.

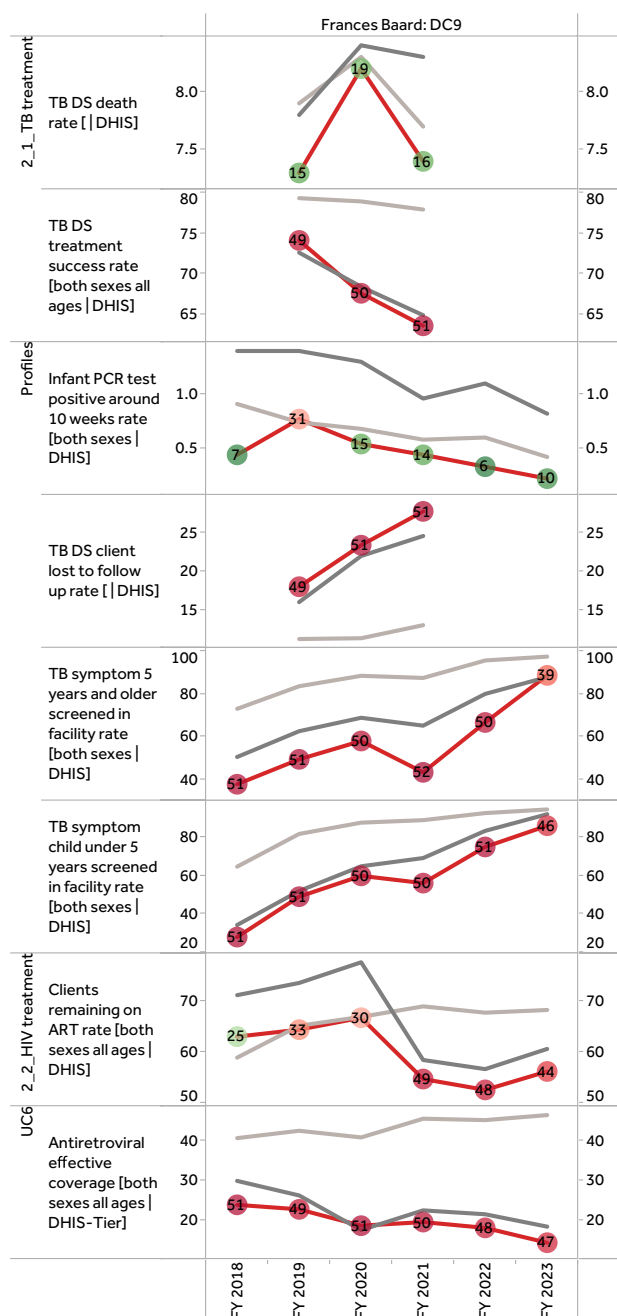
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

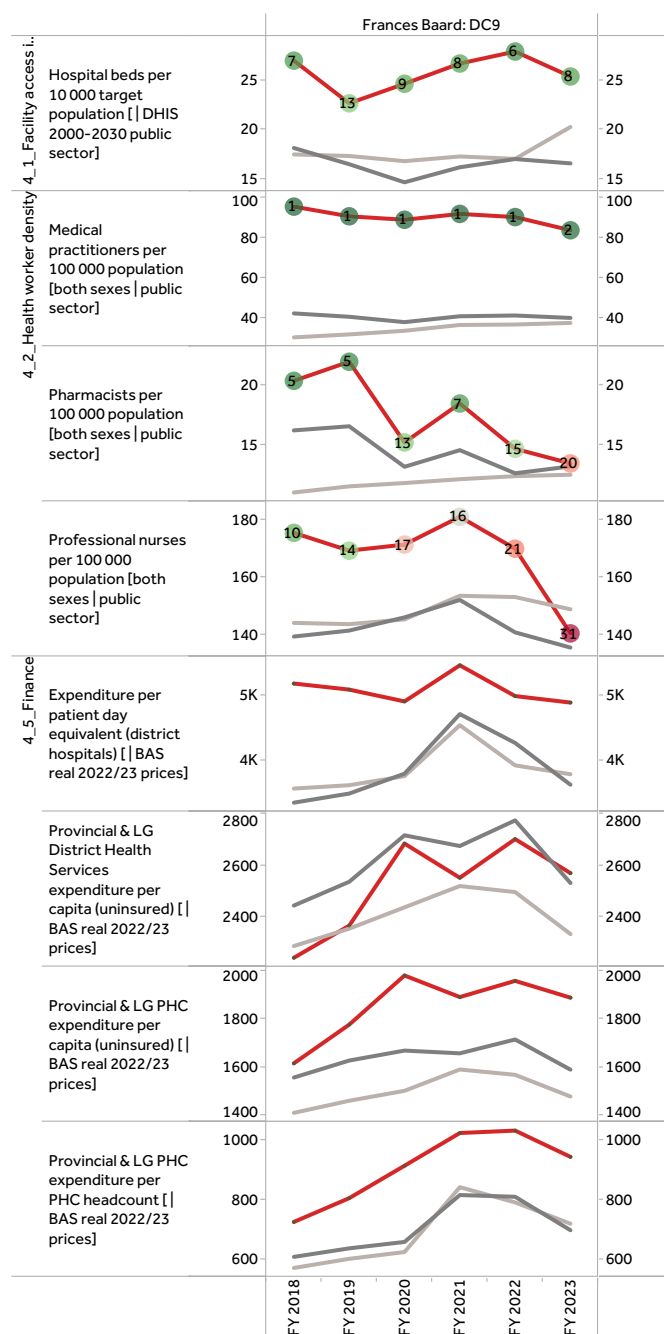
Rank

1 52

Prov av

ZA av

Ind Value



Measure Names

Rank

1 31

Prov av

ZA av

Ind Value

North West Province

Bojanala Platinum District Municipality (DC37)

The Bojanala Platinum District Municipality¹ is Category C municipality situated in the North West Province. It comprises five local municipalities: Kgetlengrivier, Madibeng, Moses Kotane, Moretele and Rustenburg.

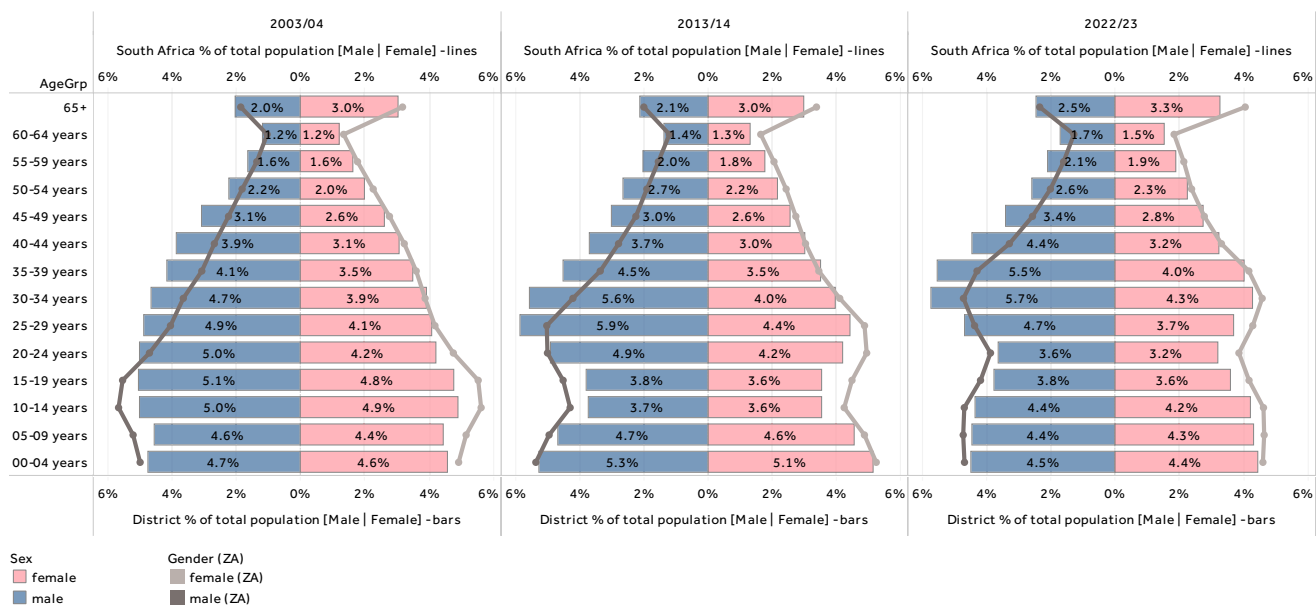
Cities/Towns: Brits, Derby, Hartbeesfontein-A, Hartbeespoort, Koster, Madikwe, Marikana, Mooi-nooi, Phatsima, Rustenburg, Swartruggens, Tlhabane

Area: 18 333km²

Population (2022)²: 2 015 765

District percentage population by age-gender group compared to South Africa

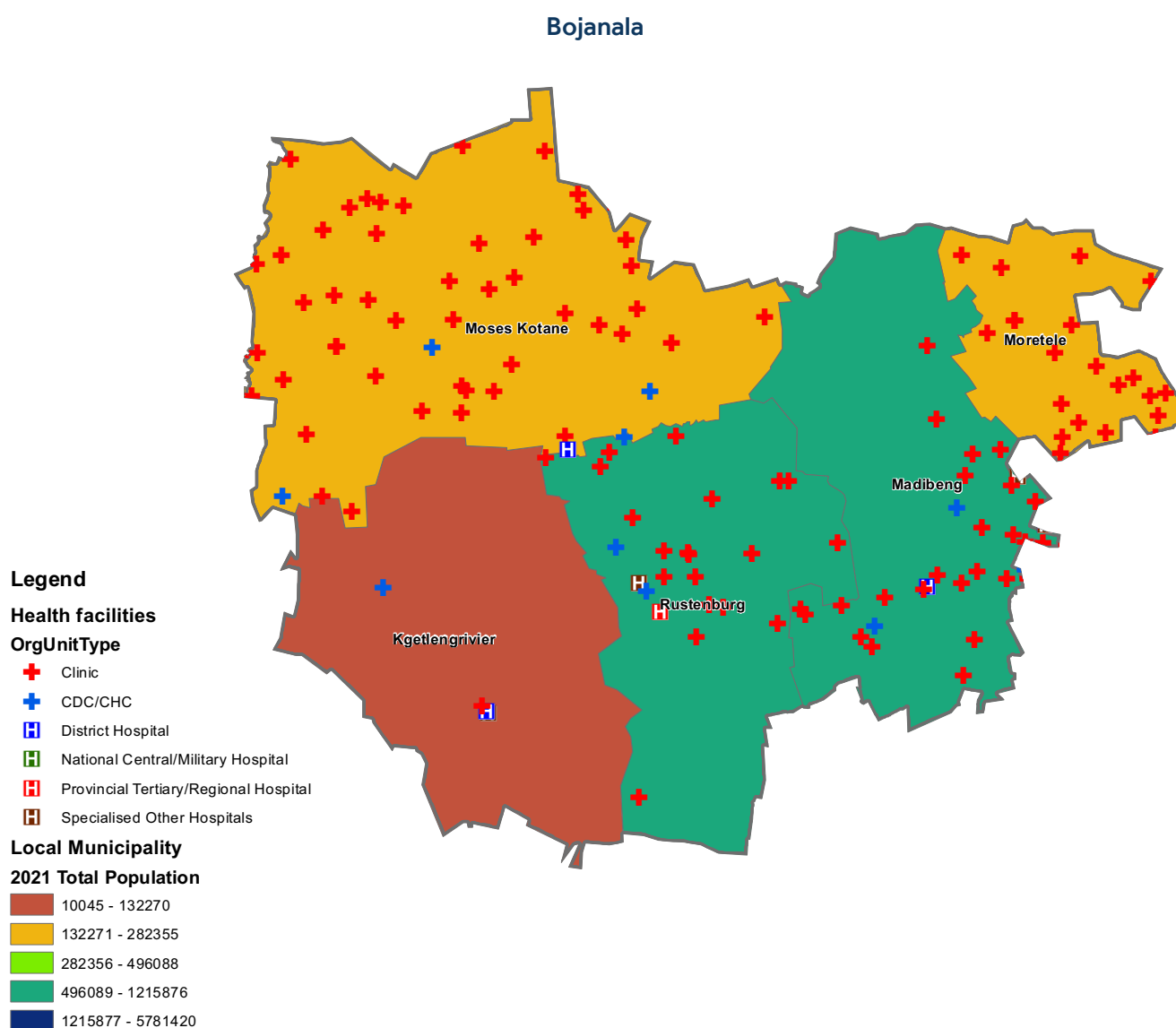
Bojanala Platinum DM (DC37)



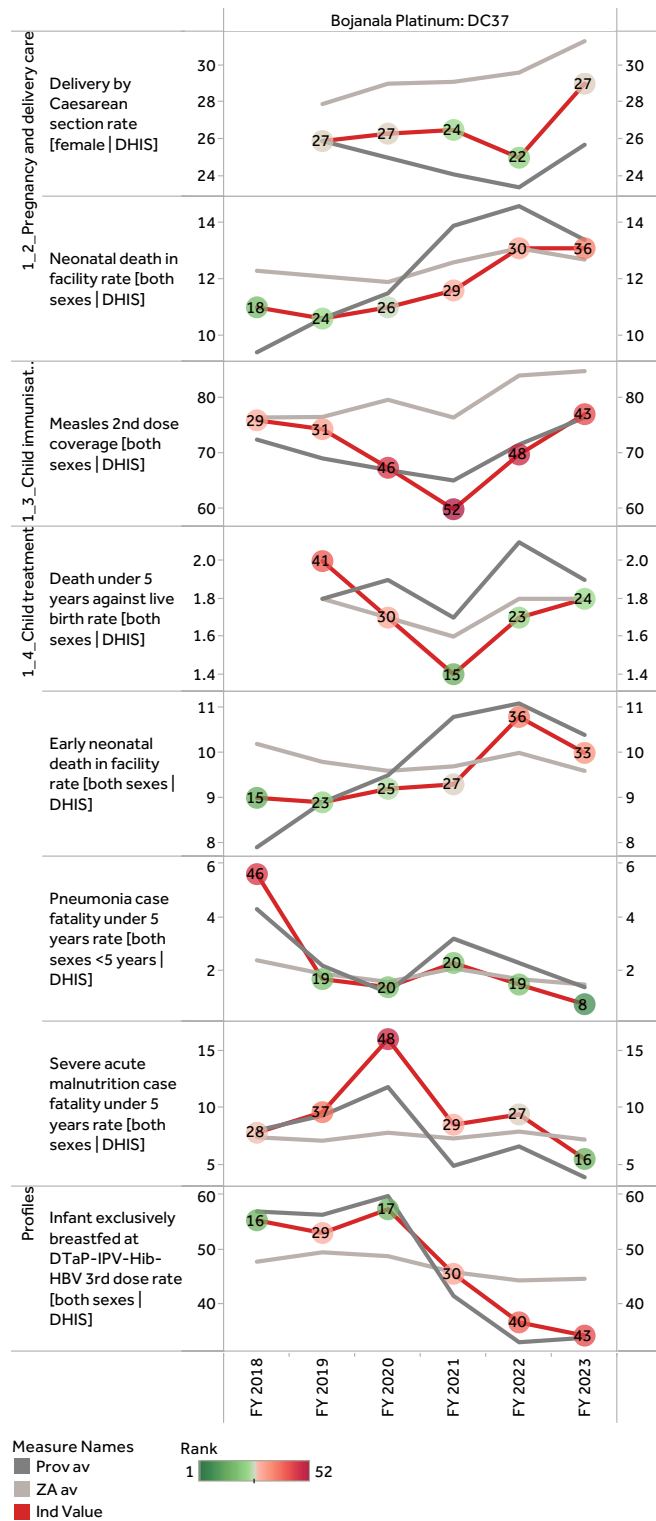
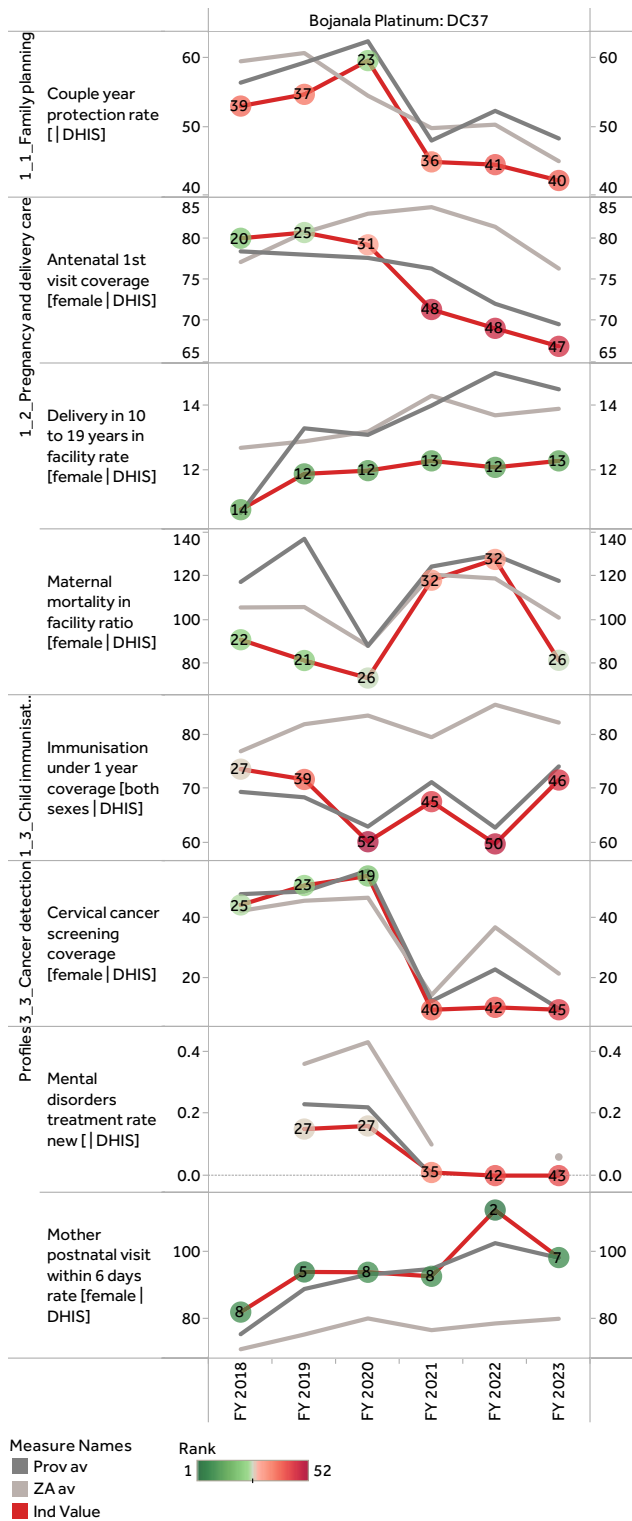
¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

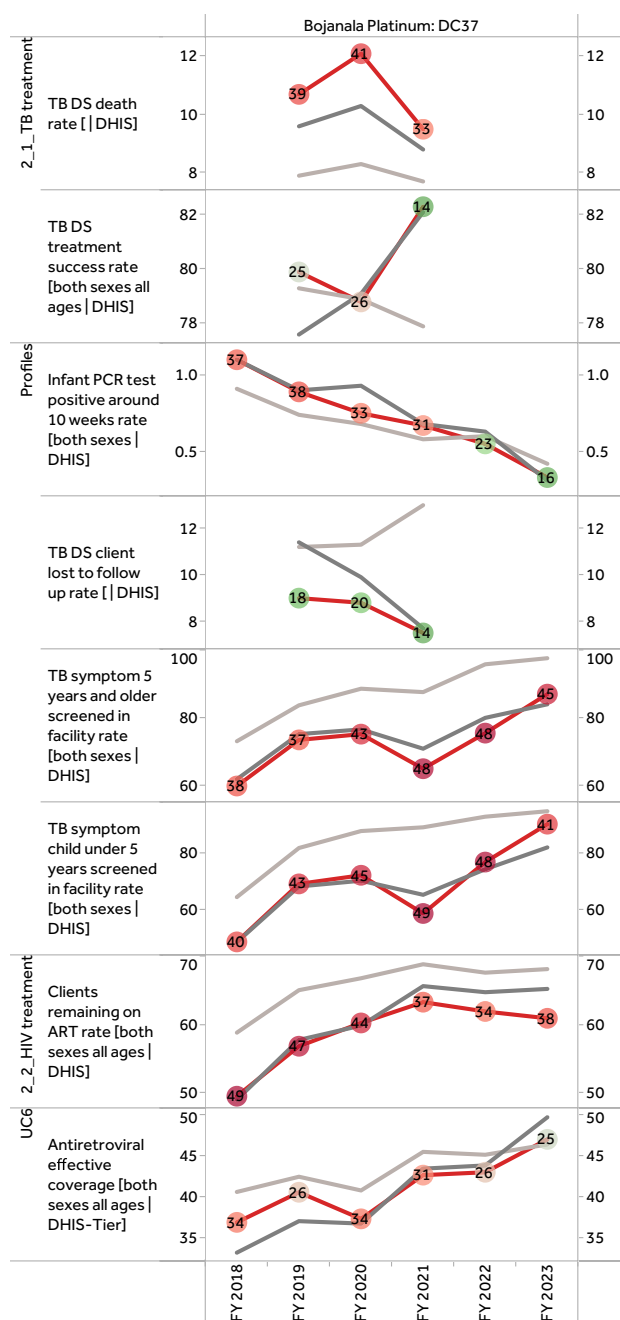
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

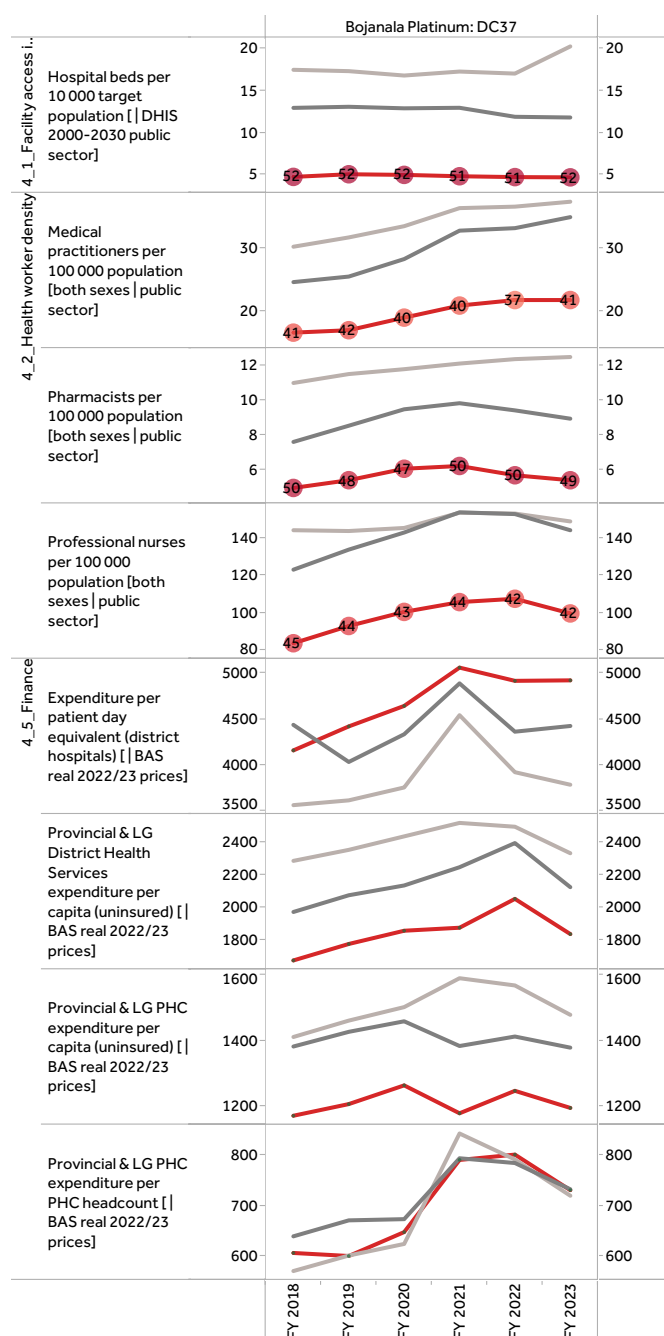
Rank

1 49

Prov av

ZA av

Ind Value



Measure Names

Rank

1 52

Prov av

ZA av

Ind Value

Ngaka Modiri Molema District Municipality (DC38)

The Ngaka Modiri Molema District Municipality³ is a Category C municipality in the North West Province and borders Botswana. It consists of five local municipalities: Mahikeng, Ratlou, Ramotshere Moiloa, Ditsobotla and Tswaing.

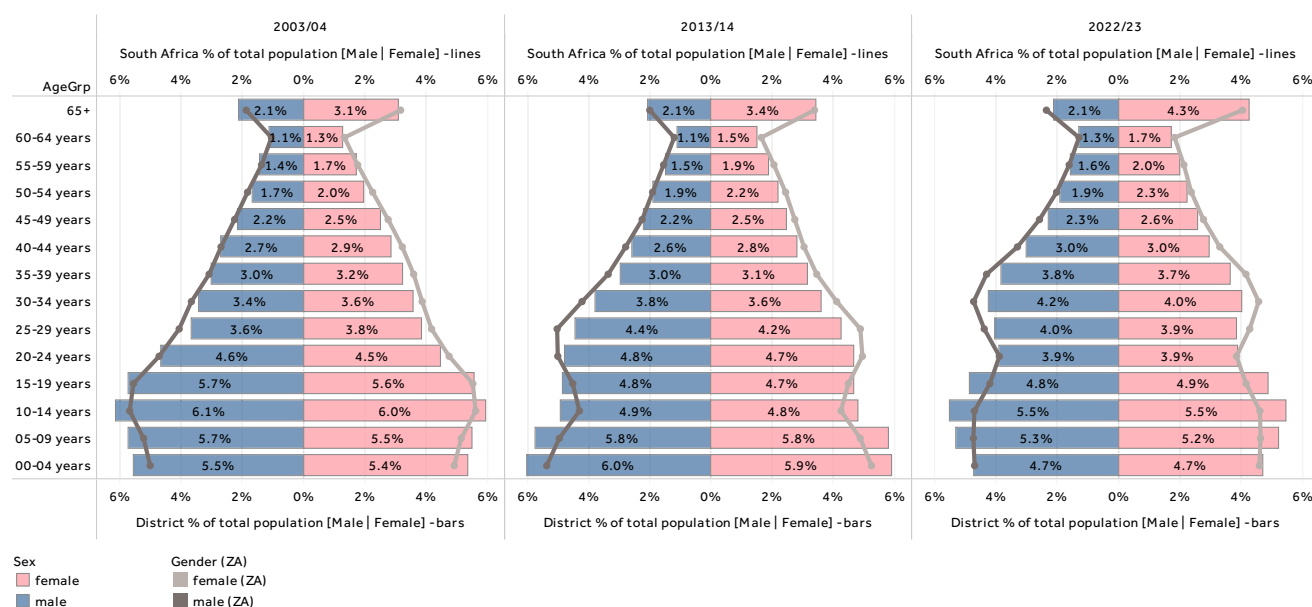
Cities/Towns: Biesiesvlei, Coligny, Delareyville, Disaneng, Groot Marico, Kraaipan, Lichtenburg, Madibogo, Mahikeng, Mmabatho, Ottosdal, Ottoshoop, Sannieshof, Setlagole, Zeerust

Area: 28 125km²

Population (2022)⁴: 916 394

District percentage population by age-gender group compared to South Africa

NM Molema DM (DC38)

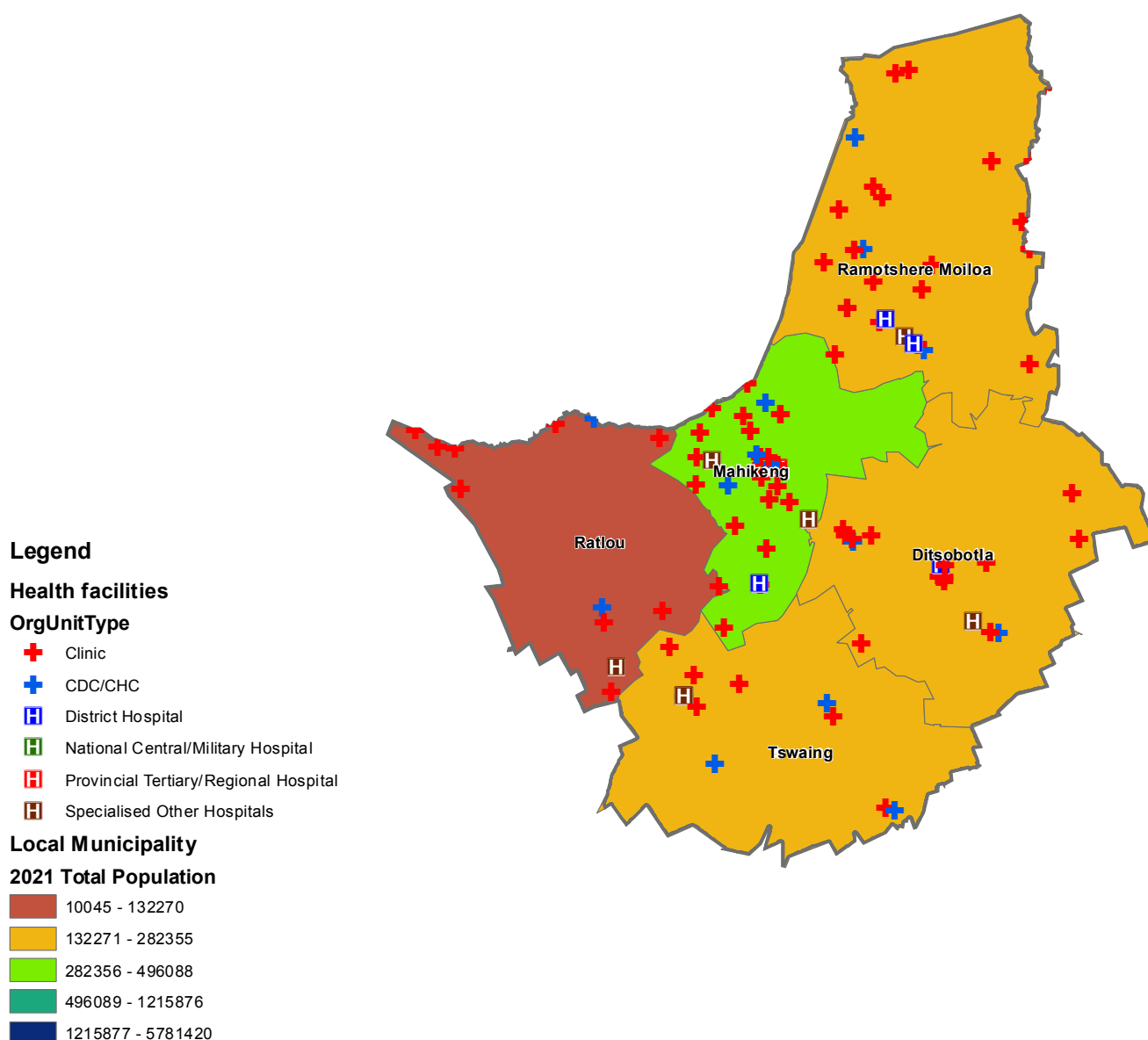


³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

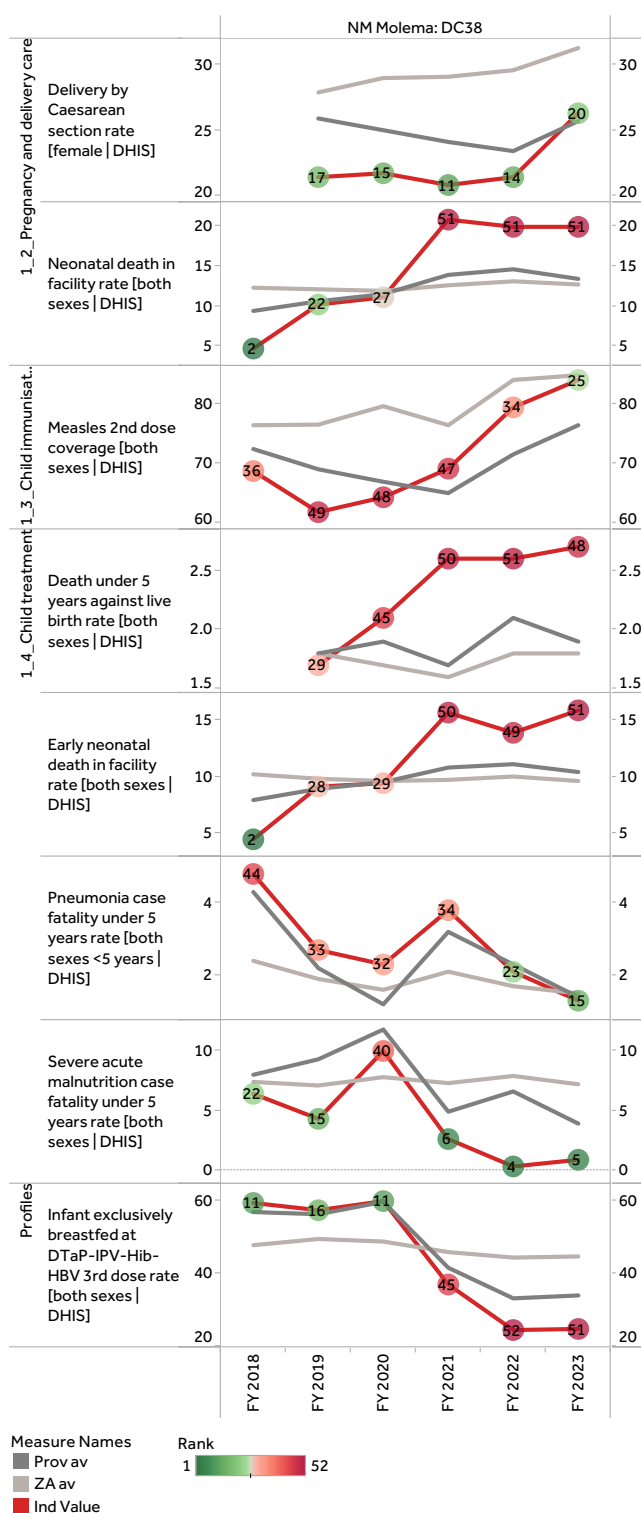
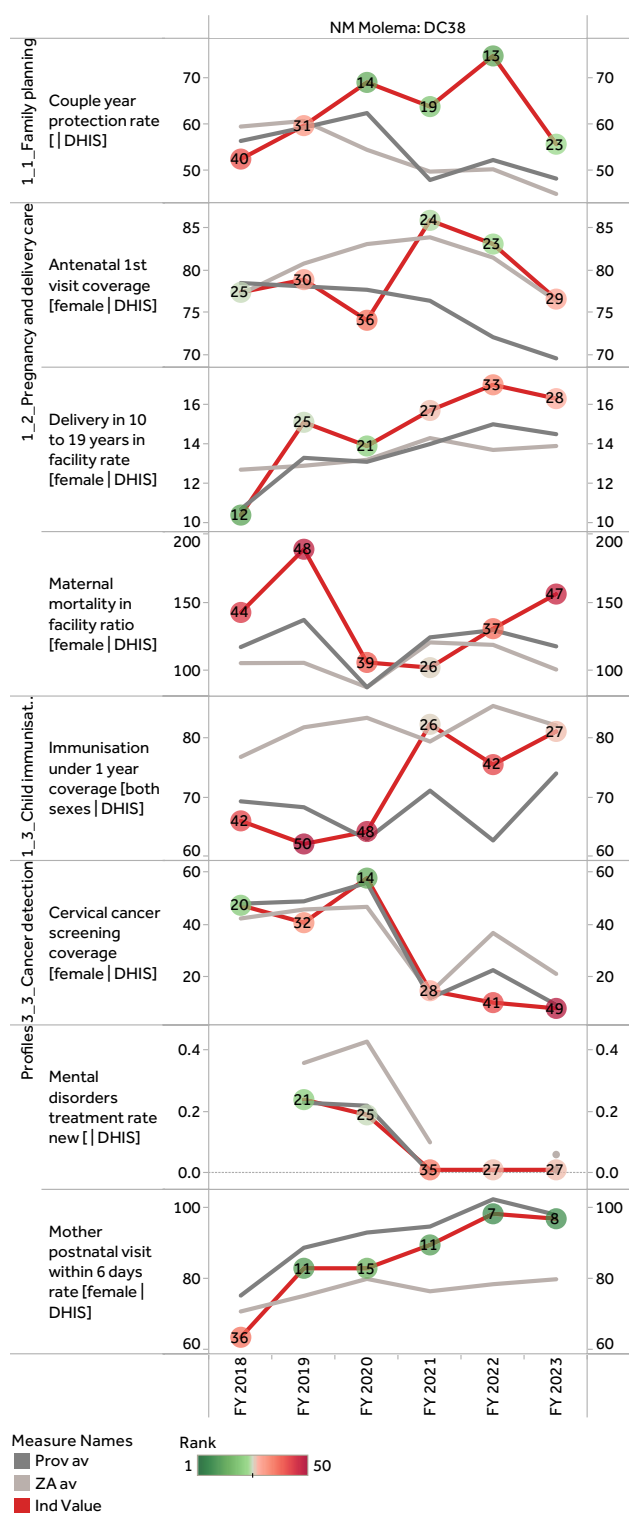
⁴Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

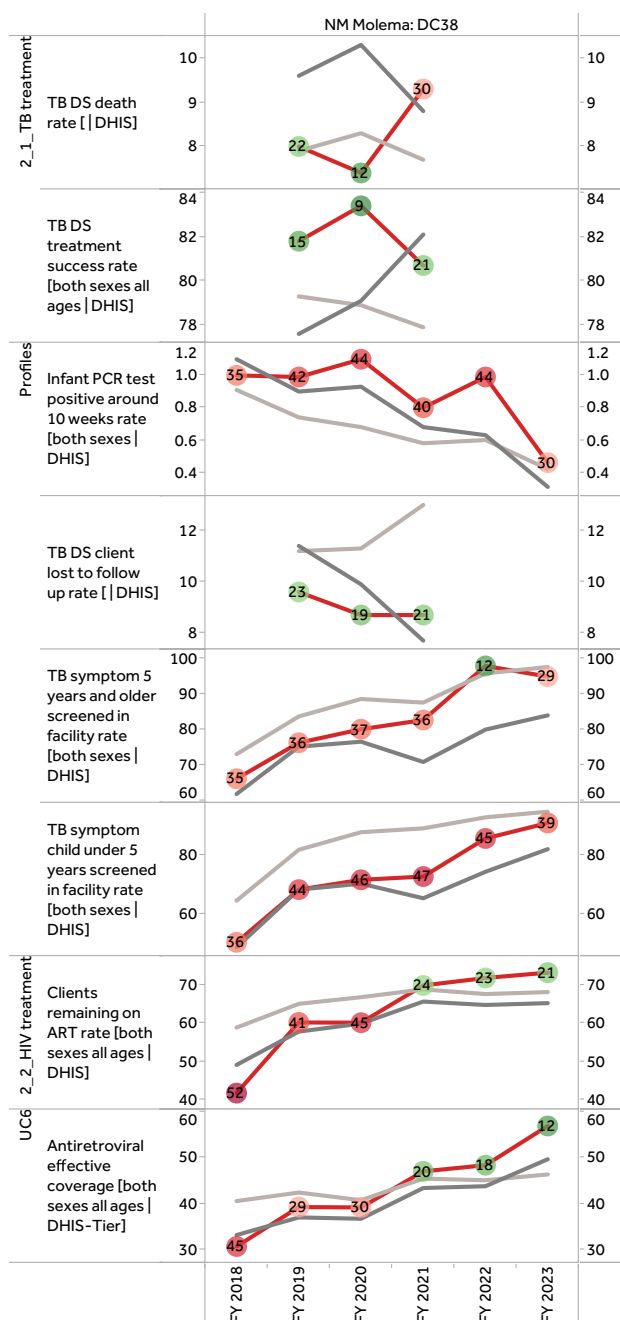
Ngaka Modiri Molema



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

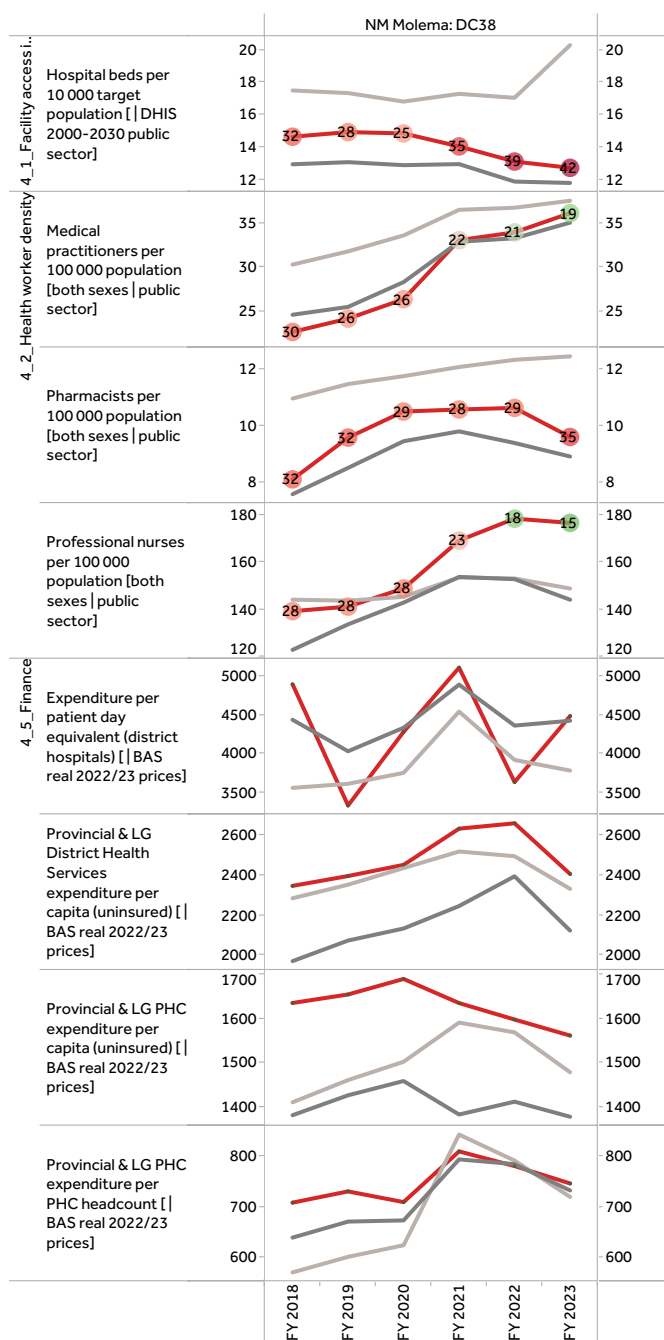
Prov av

ZA av

Ind Value

Rank

1 52



Measure Names

Prov av

ZA av

Ind Value

Rank

1 42

Dr Ruth Segomotsi Mompoti District Municipality (DC39)

The Dr Ruth Segomotsi Mompoti District Municipality⁵ is a Category C municipality located in the North West Province. It is the largest district in the province, making up almost half of its geographical area. The district comprises five local municipalities: Naledi, Greater Taung, Kagisano-Molopo, Mamusa and Lekwa-Teemane.

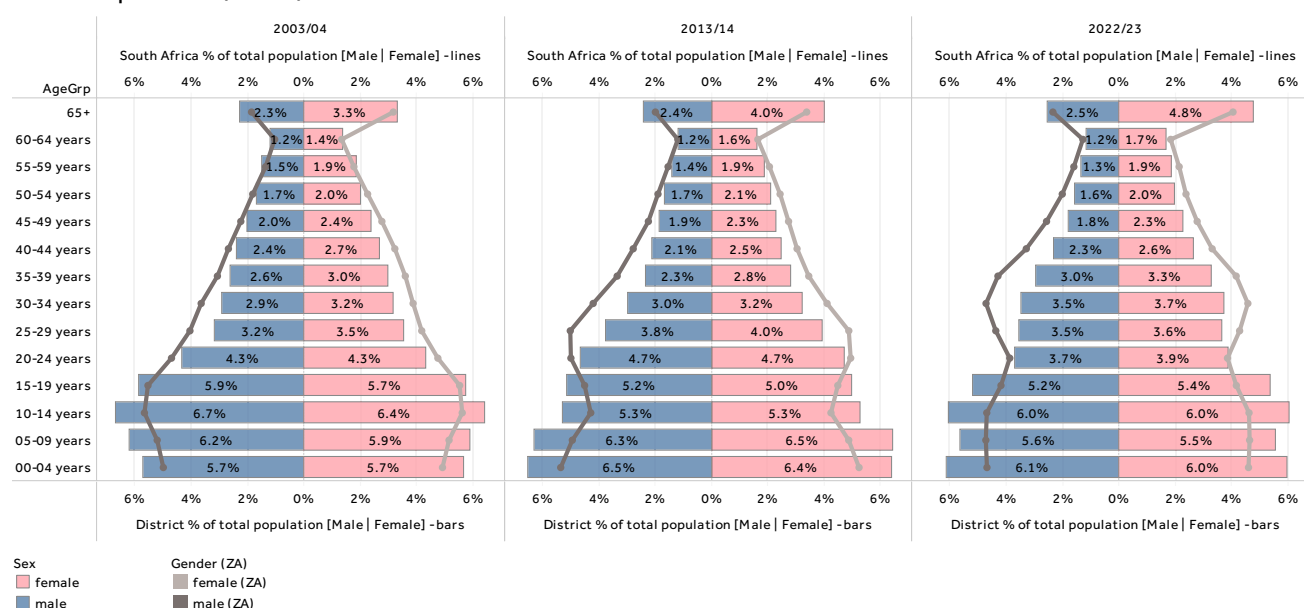
Cities/Towns: Amalia, Bloemhof, Christiana, Piet Plessis, Pomfret, Pudimoe, Reivilo, Schweizer-Reneke, Stella, Taung, Vryburg

Area: 43 753km²

Population (2022)⁶: 475 637

District percentage population by age-gender group compared to South Africa

RS Mompoti DM (DC39)

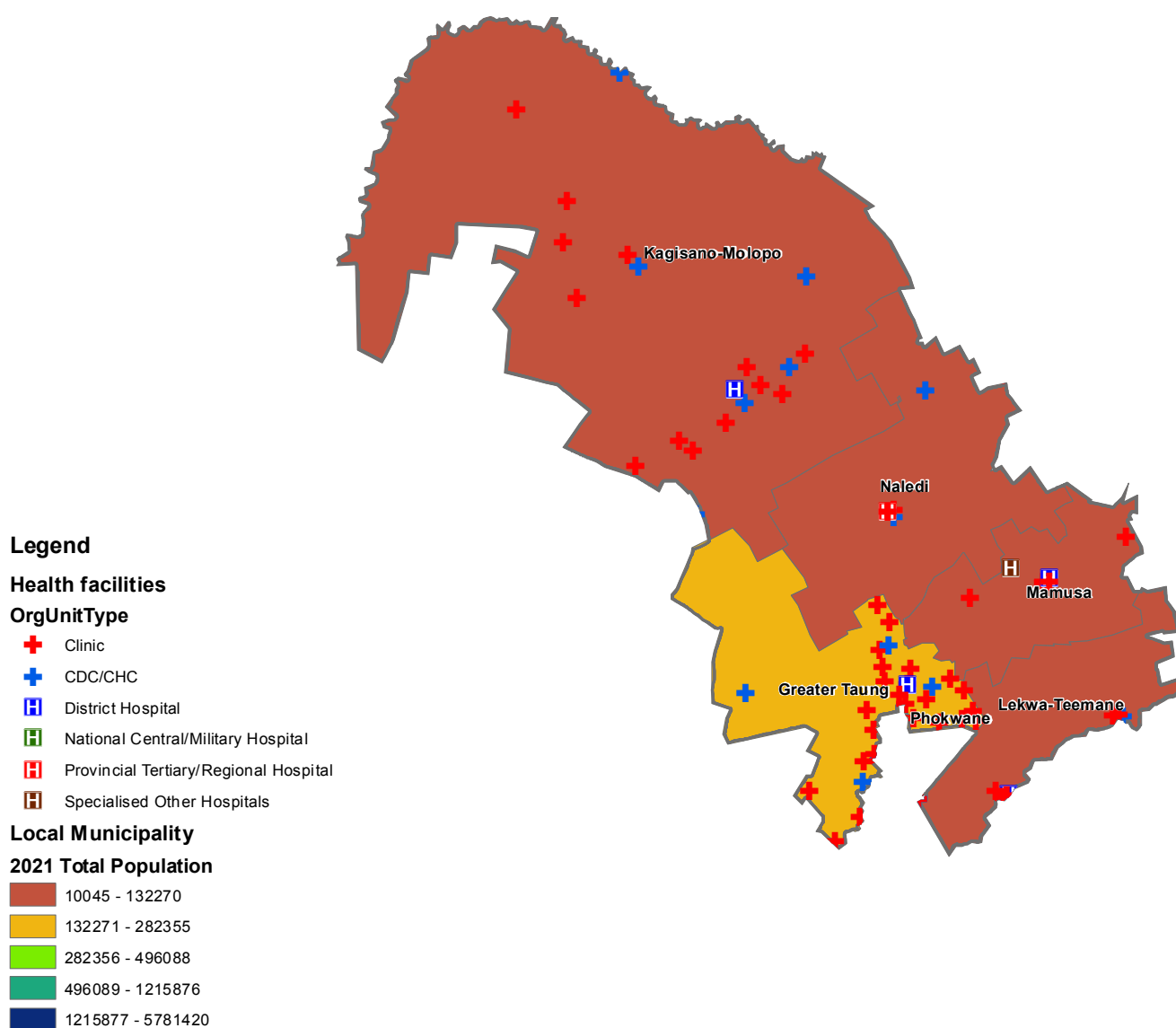


⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

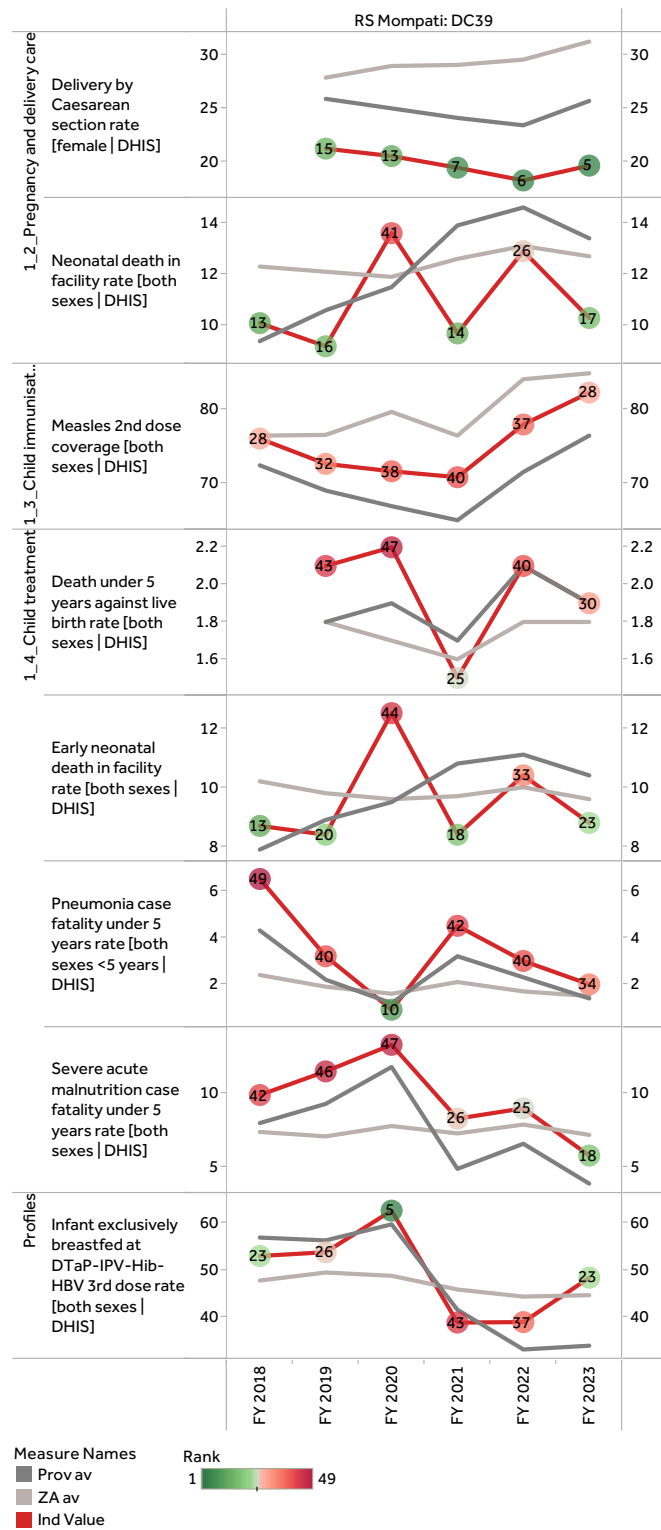
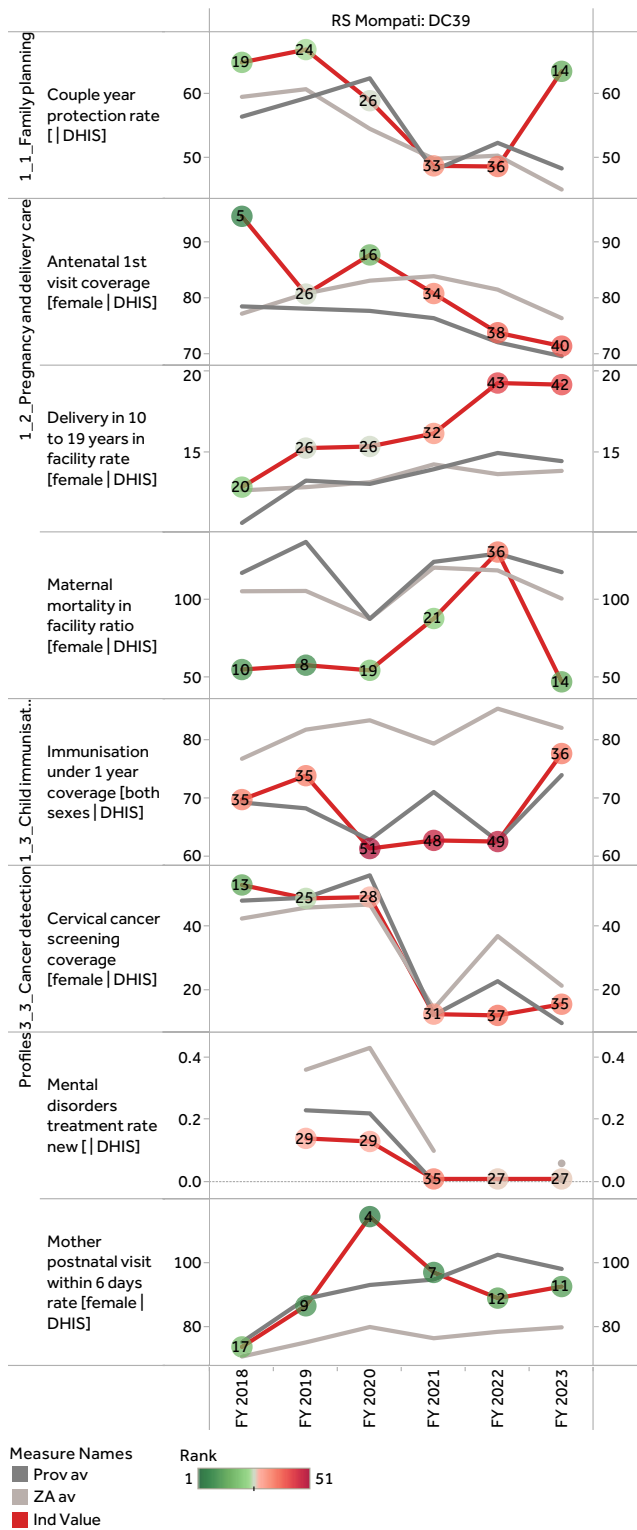
⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

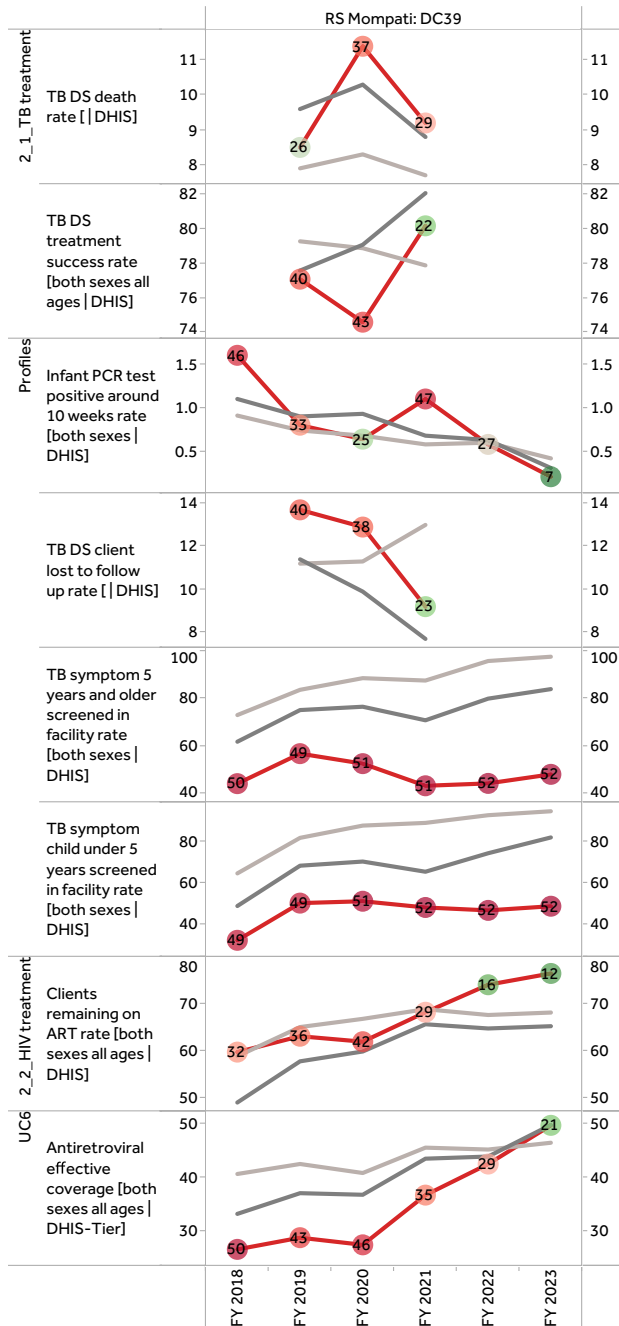
Dr Ruth Segomotsi Mompati



Annual trends, 2018/19–2022/23

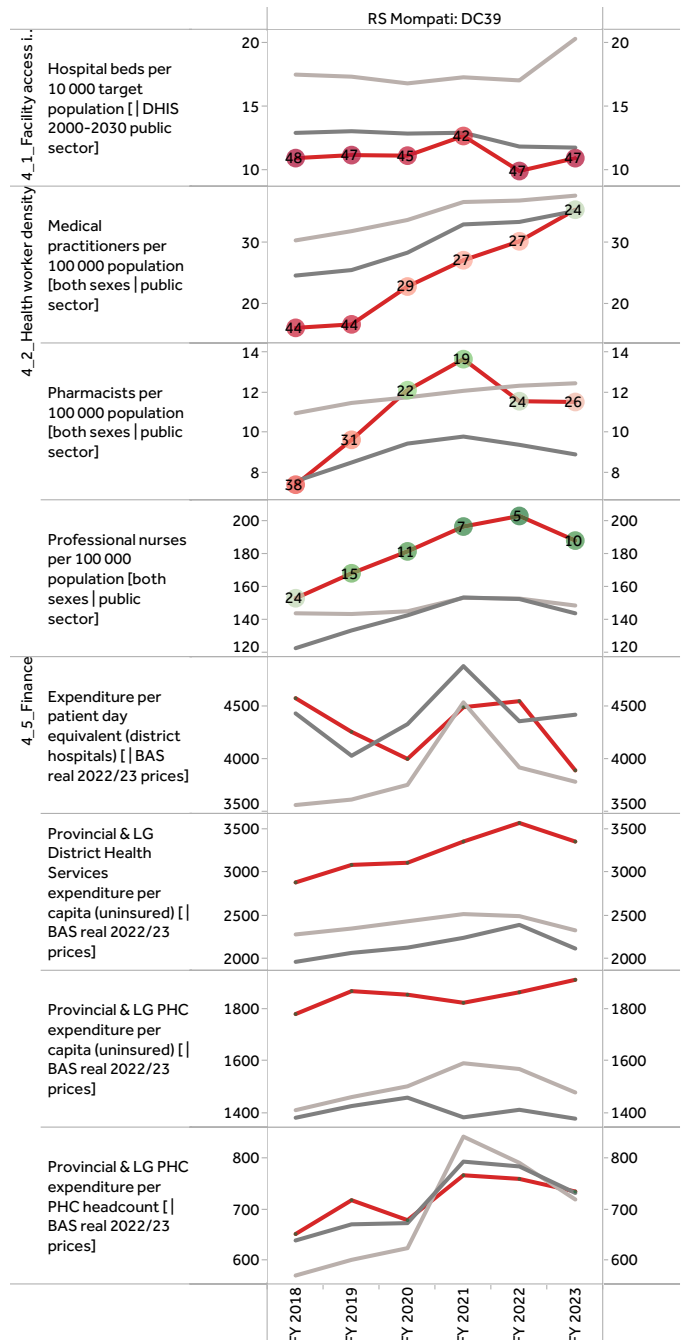


Annual trends, 2018/19–2022/23



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 52



Measure Names
 ■ Prov av
 ■ ZA av
 ■ Ind Value

Rank
 1 48

Dr Kenneth Kaunda District Municipality (DC40)

The Dr Kenneth Kaunda District Municipality⁷ is a Category C municipality in the North West Province. It is the smallest district in the province, making up 14% of its geographical area. The district consists of three local municipalities: JB Marks, City of Matlosana and Maquassi Hills.

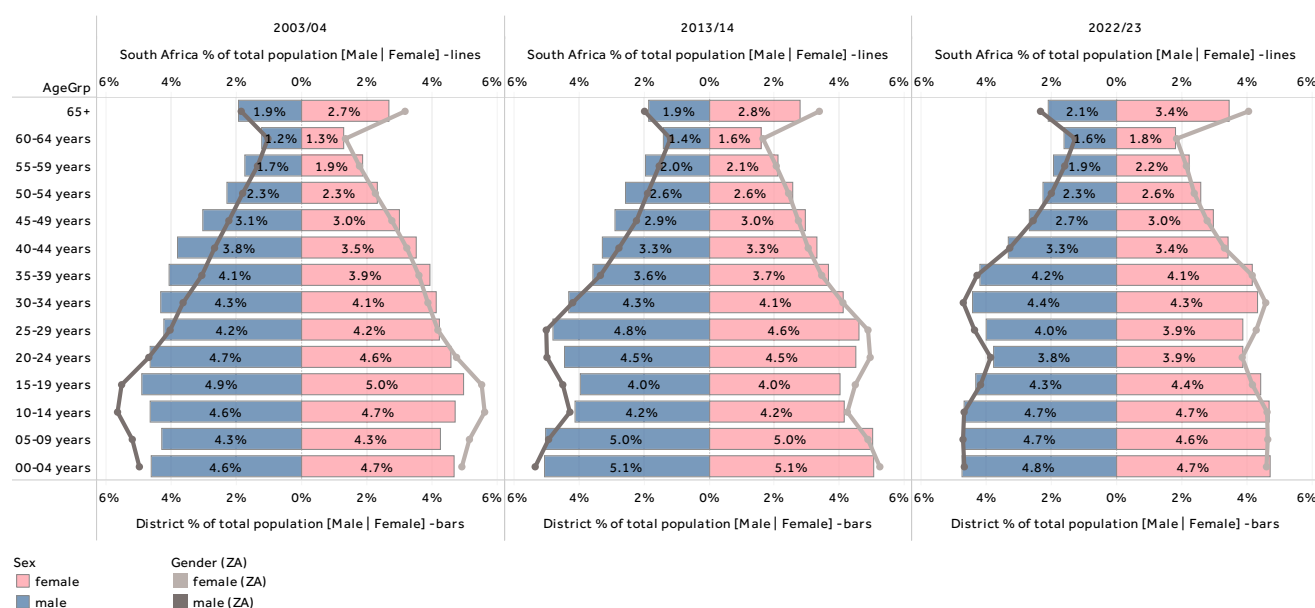
Cities/Towns: Hartbeesfontein, Klerksdorp, Leeudoringstad, Makwassie, Orkney, Potchefstroom, Stilfontein, Ventersdorp, Witpoort, Wolmaransstad

Area: 14 671 km²

Population (2022)⁸: 832 482

District percentage population by age-gender group compared to South Africa

Dr K Kaunda DM (DC40)



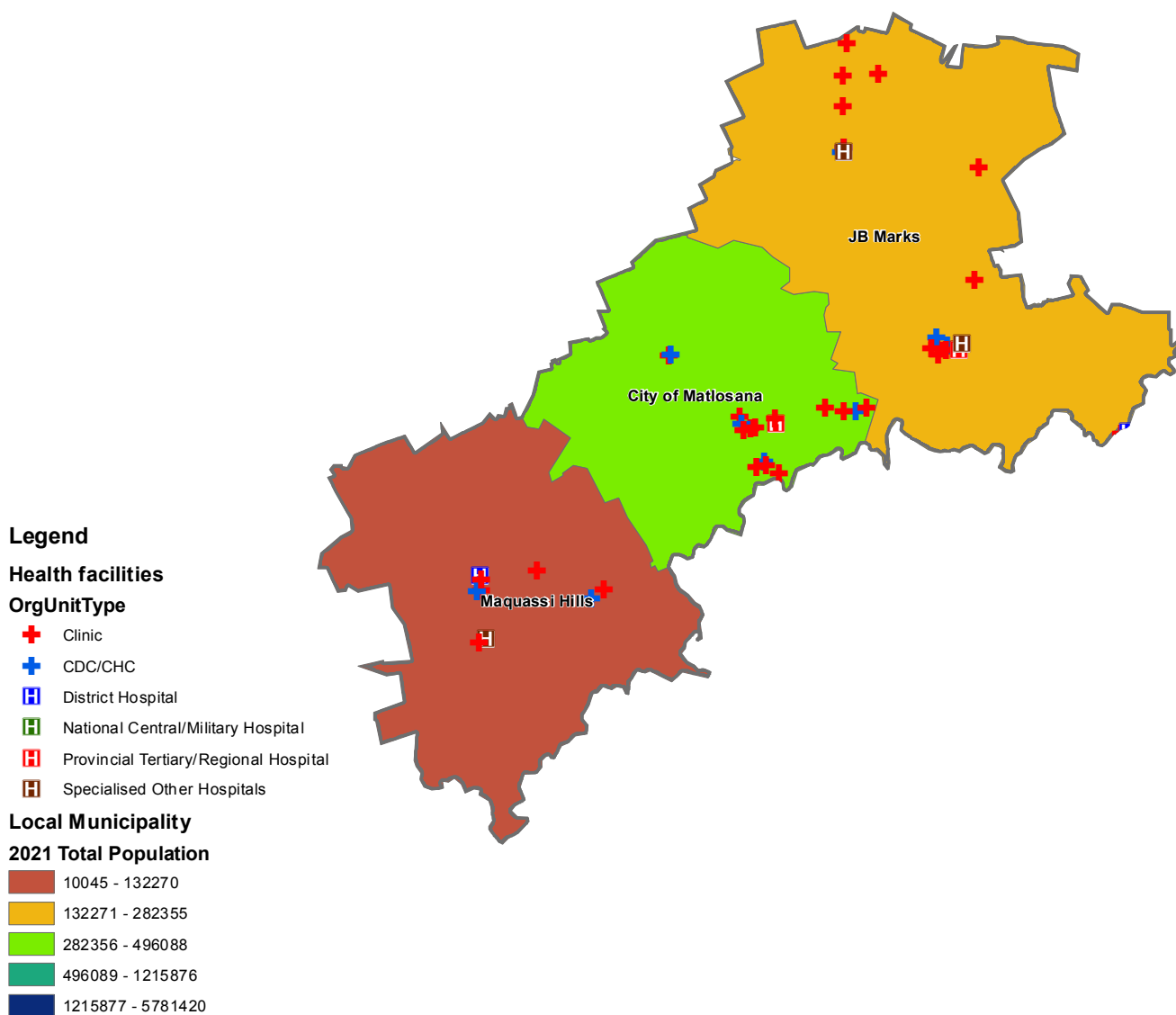
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

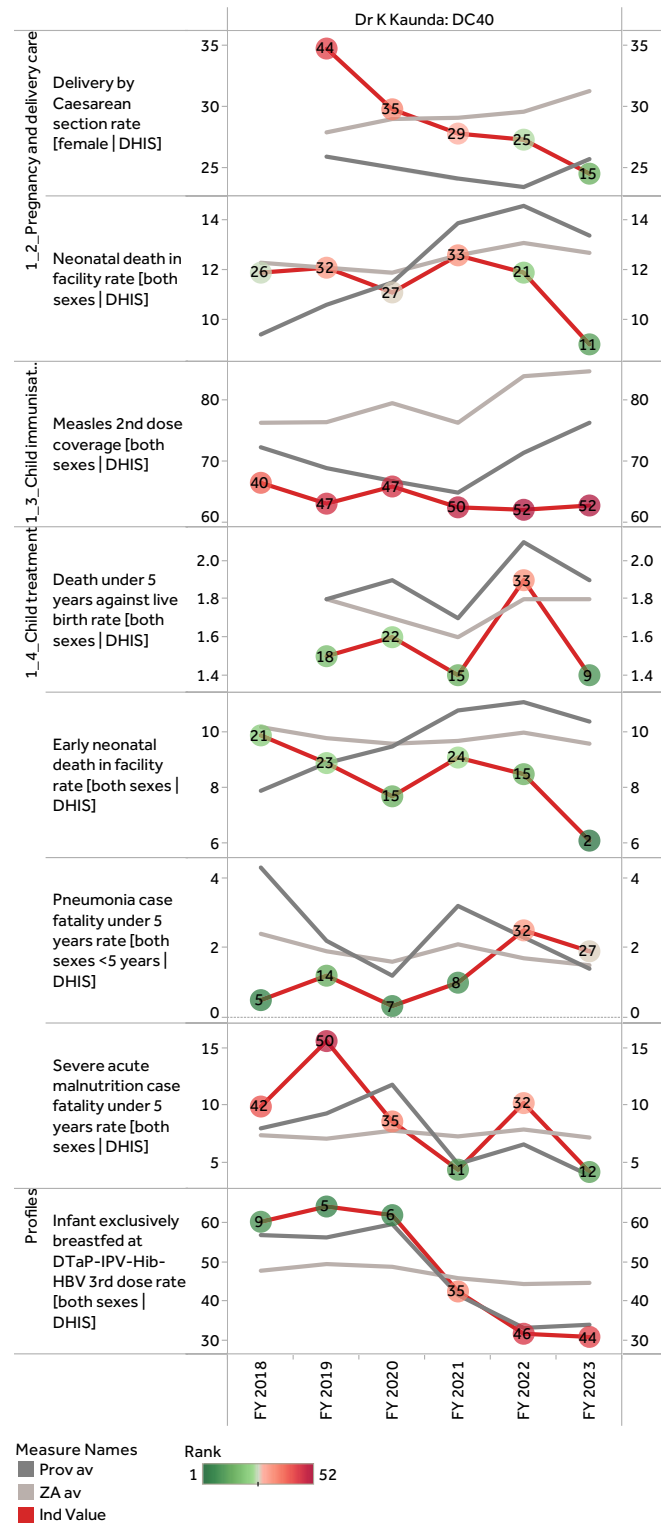
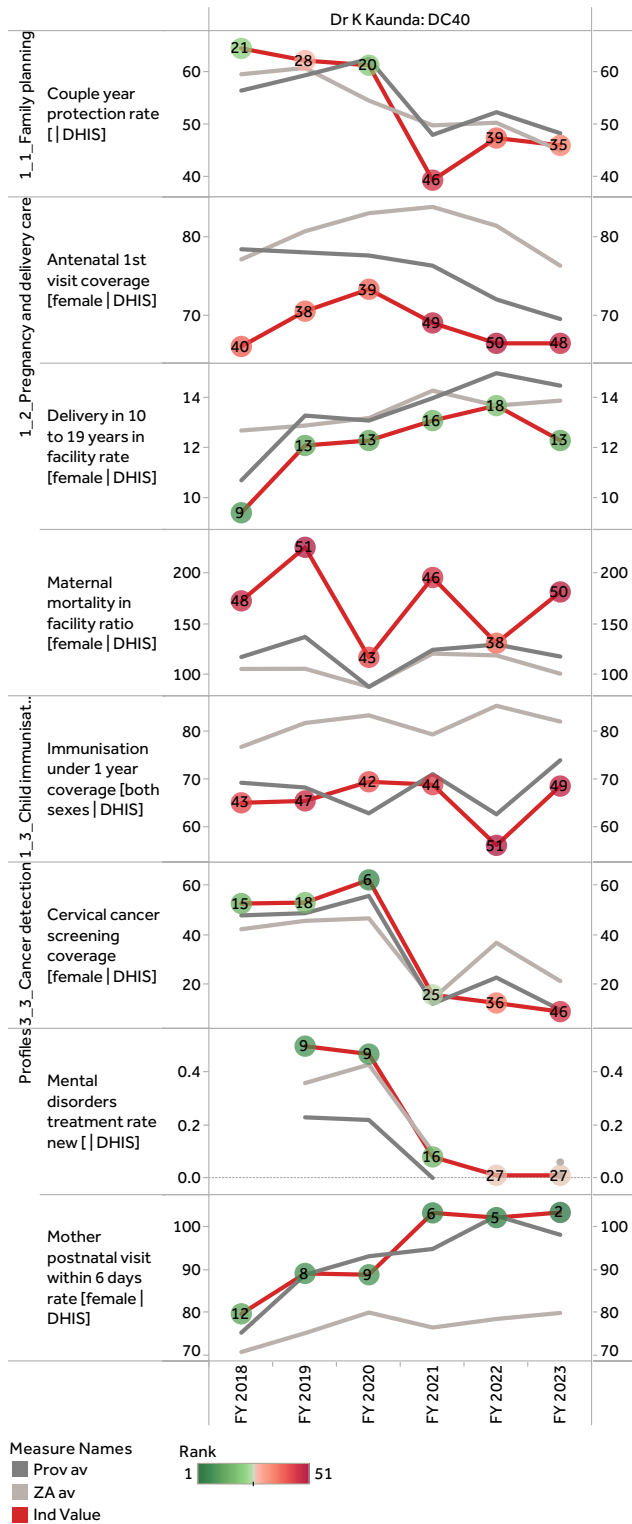
⁸Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

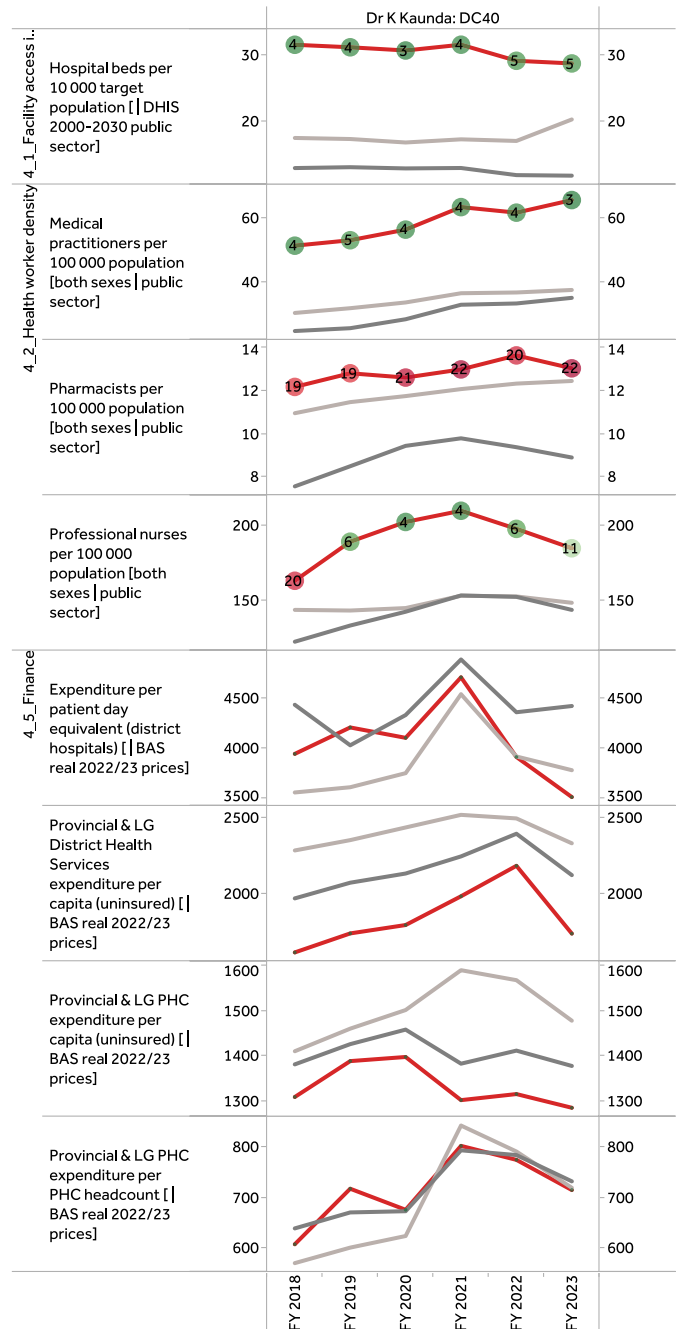
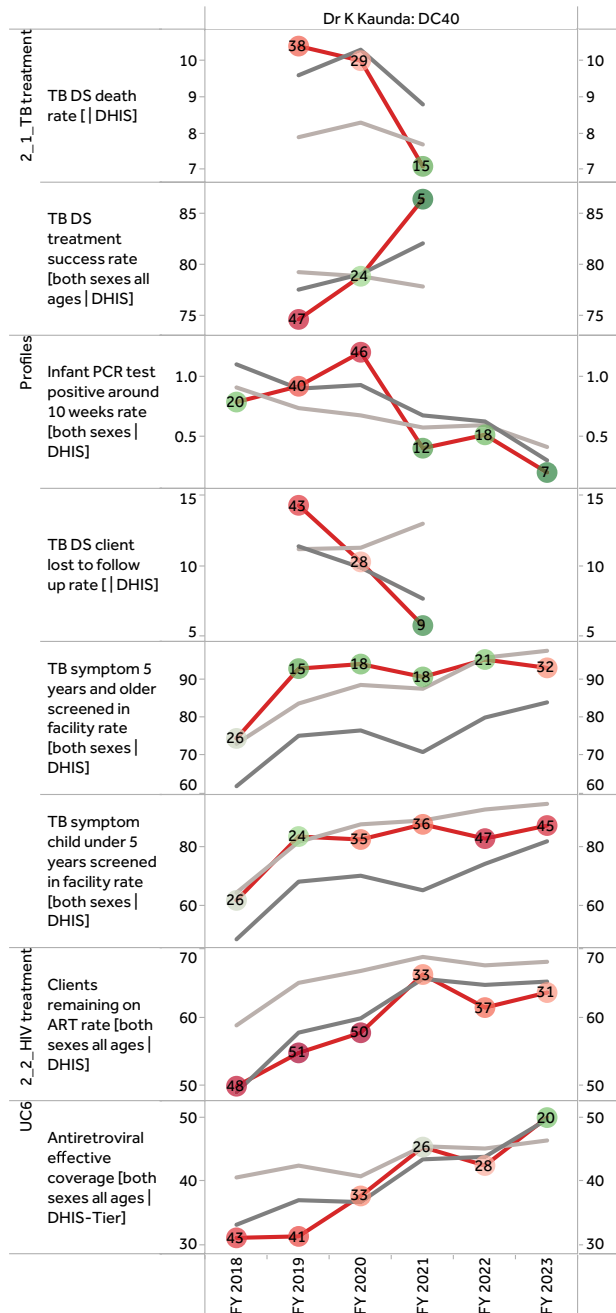
Dr Kenneth Kaunda



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Western Cape Province

Cape Town Metropolitan Municipality (CPT)

The City of Cape Town Metropolitan municipality is situated on the southern peninsula of the Western Cape Province.¹ The City of Cape Town Metropolitan Municipality incorporates eight health sub-districts, namely: Cape Town Eastern, Cape Town Northern, Cape Town Southern, Cape Town Western, Khayelitsha, Klipfontein, Mitchell's Plain and Tygerberg.

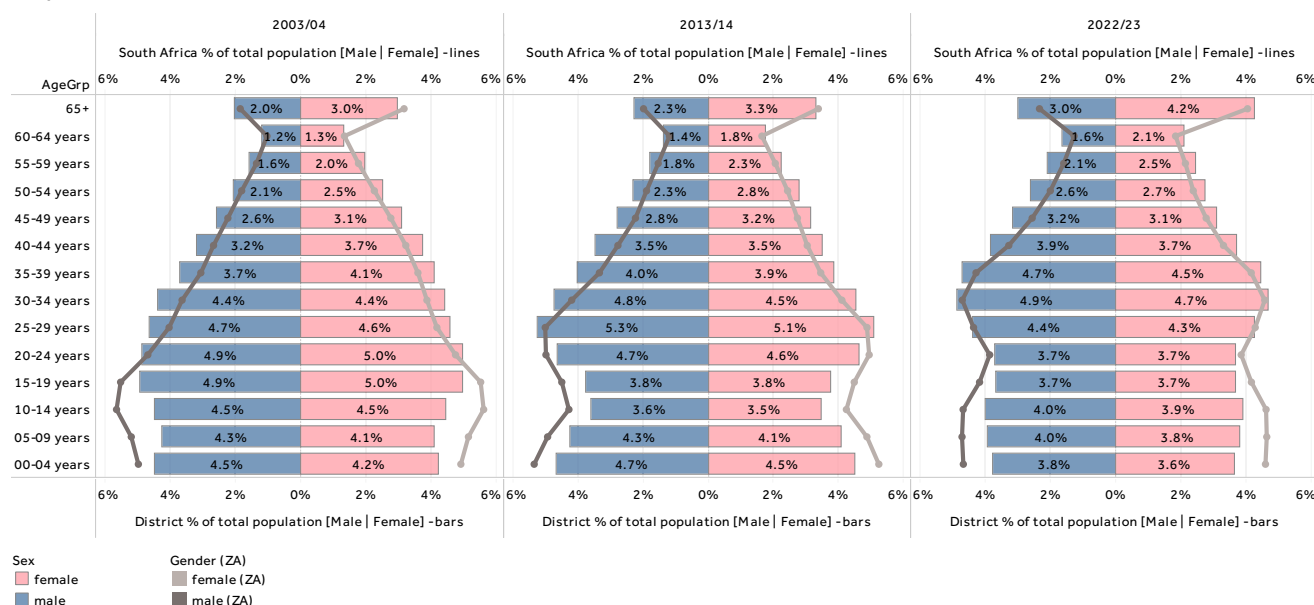
Cities/Towns: Athlone, Atlantis, Belhar, Bellville, Blackheath, Blouberg, Blue Downs, Brackenfell, Cape Point, Cape Town, Delft, Durbanville, Elsies Rivier, Fish Hoek, Goodwood, Gordon's Bay, Grassy Park, Guguletu, Hout Bay, Khayelitsha, Kommetjie, Kraaifontein, Kuils River, Langa, Macassar, Matroosfontein, Melkbosstrand, Milnerton, Mitchells Plain, Muizenberg, Noordhoek, Nyanga, Parow, Philadelphia, Philippi, Robben Island, Scarborough, Simon's Town, Sir Lowry's Pass, Somerset West, Southern Suburbs, Strand, Table View

Area: 2 441km²

Population (2022)²: 4 776 515

District percentage population by age-gender group compared to South Africa

Cape Town MM (CPT)



¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

²Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

City of Cape Town

Legend

Health facilities

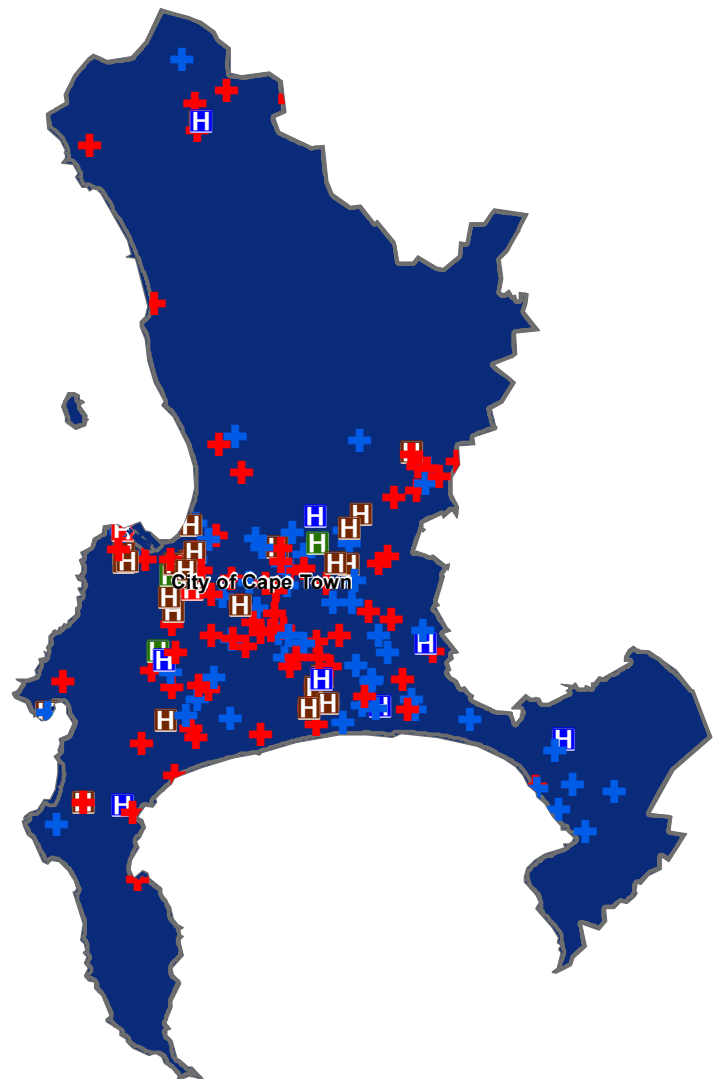
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

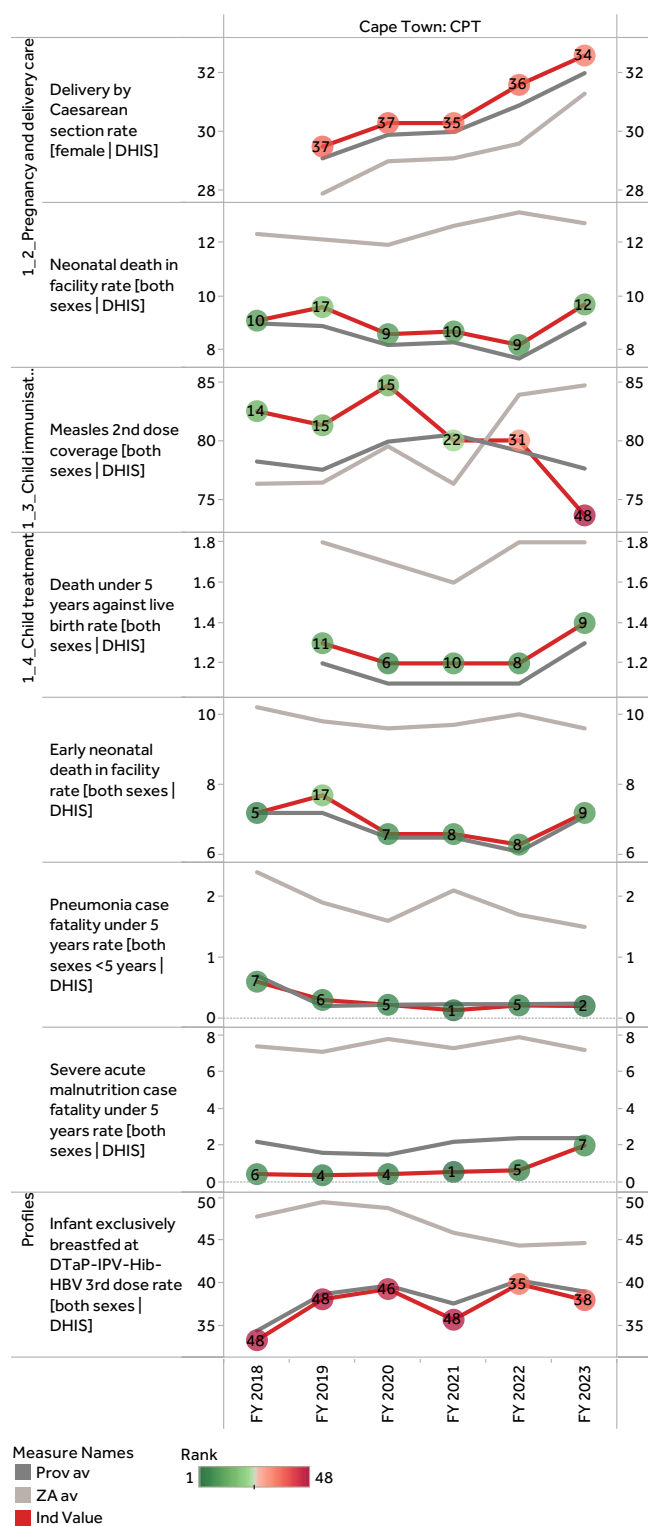
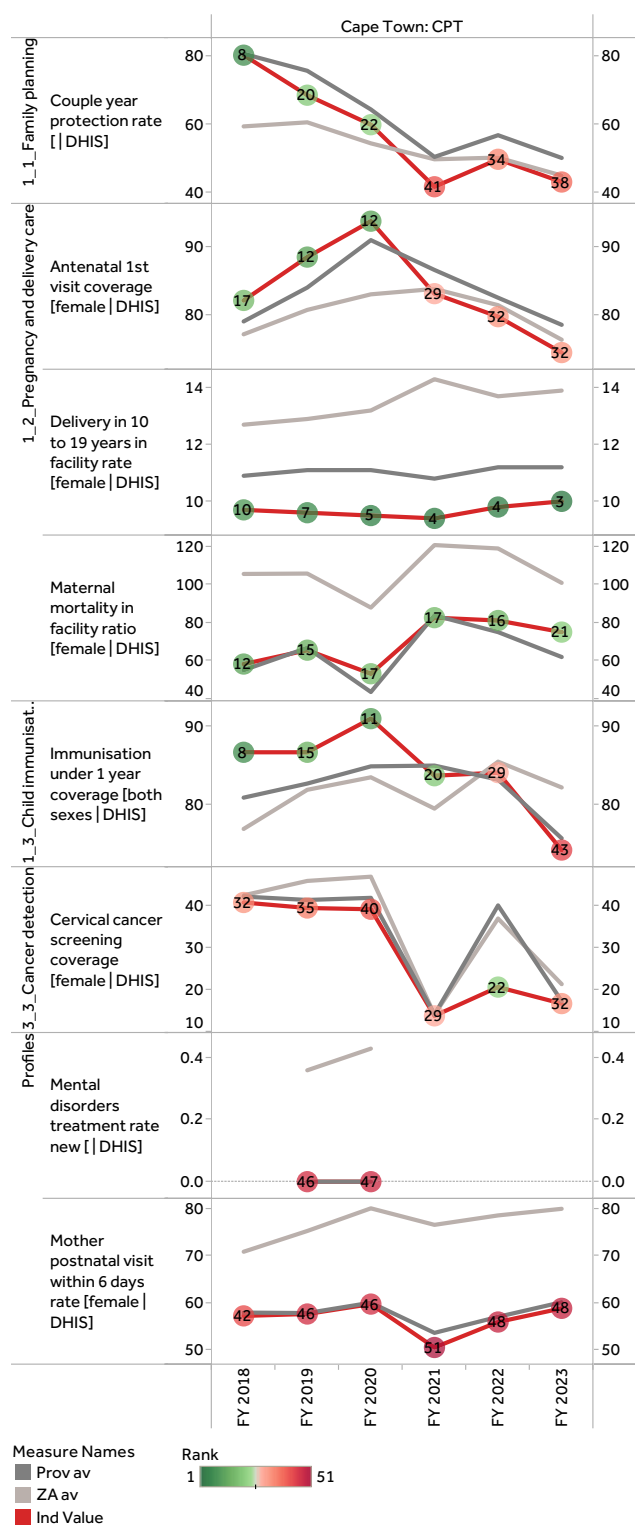
Local Municipality

2021 Total Population

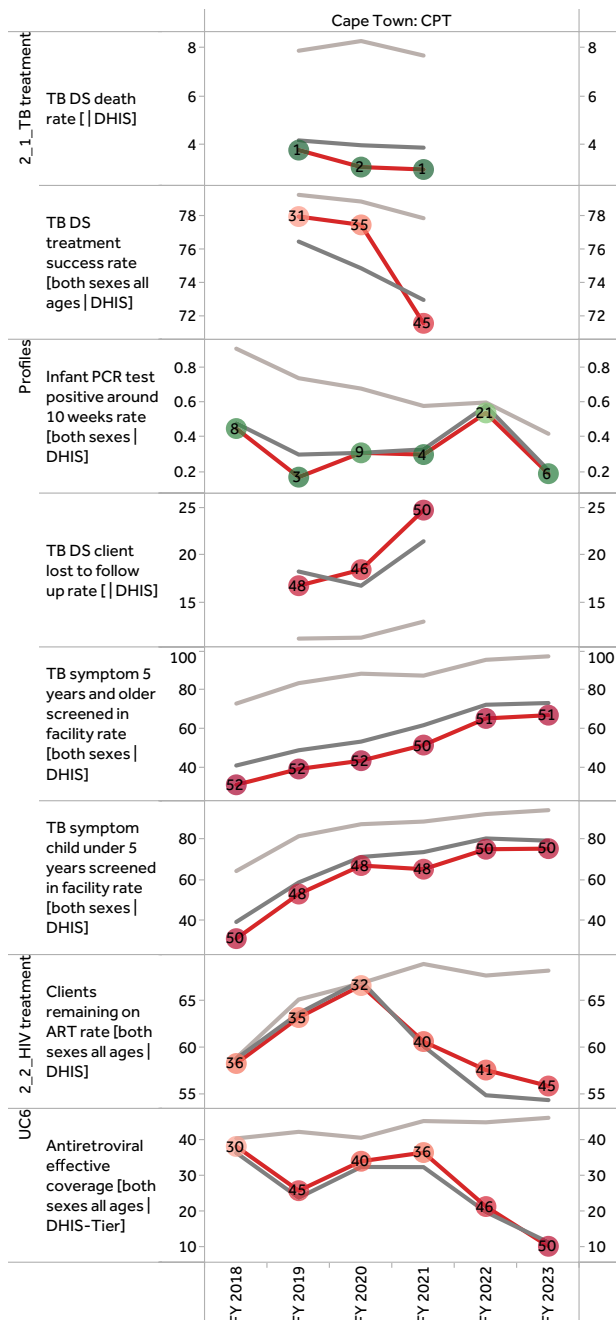
- 10045 - 132270
- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420



Annual trends, 2018/19–2022/23

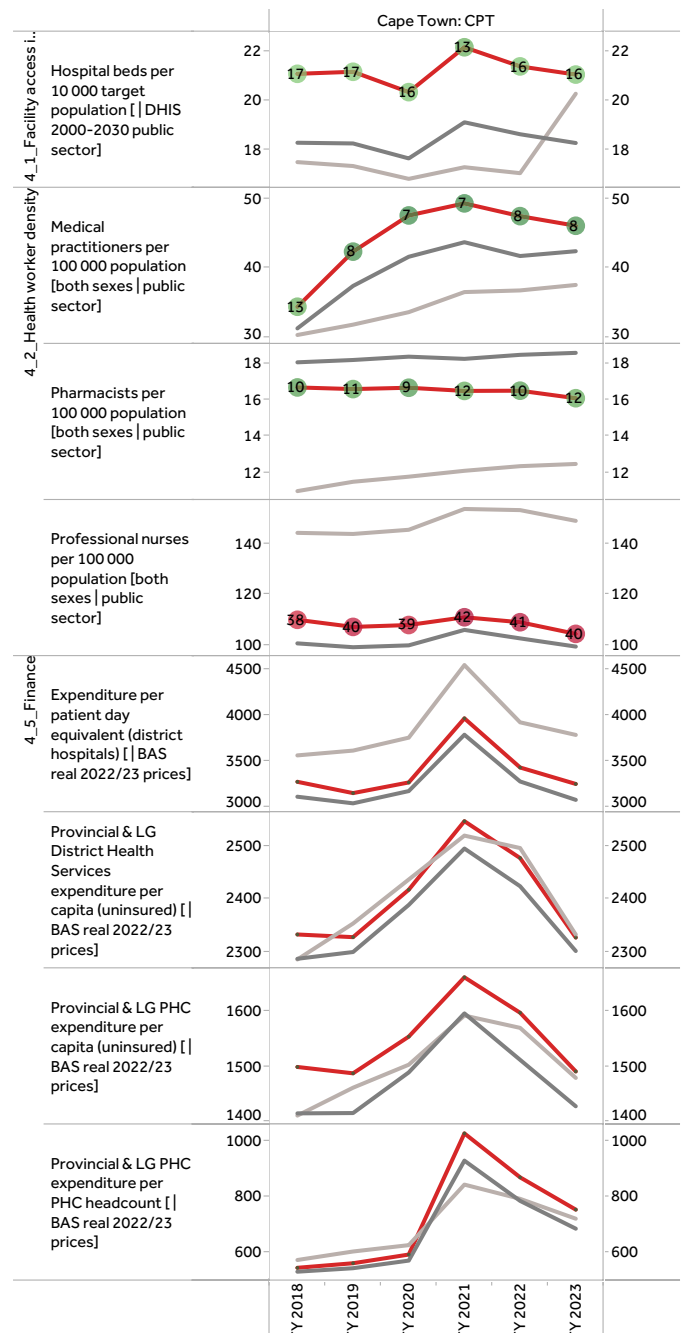


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 52



Measure Names
 Prov av
 ZA av
 Ind Value

Rank
 1 42

West Coast District Municipality (DC1)

The West Coast District Municipality³ is a Category C municipality located in the Western Cape Province. It comprises five local municipalities: Swartland, Berggrivier, Matzikama, Cederberg, and Saldanha Bay.

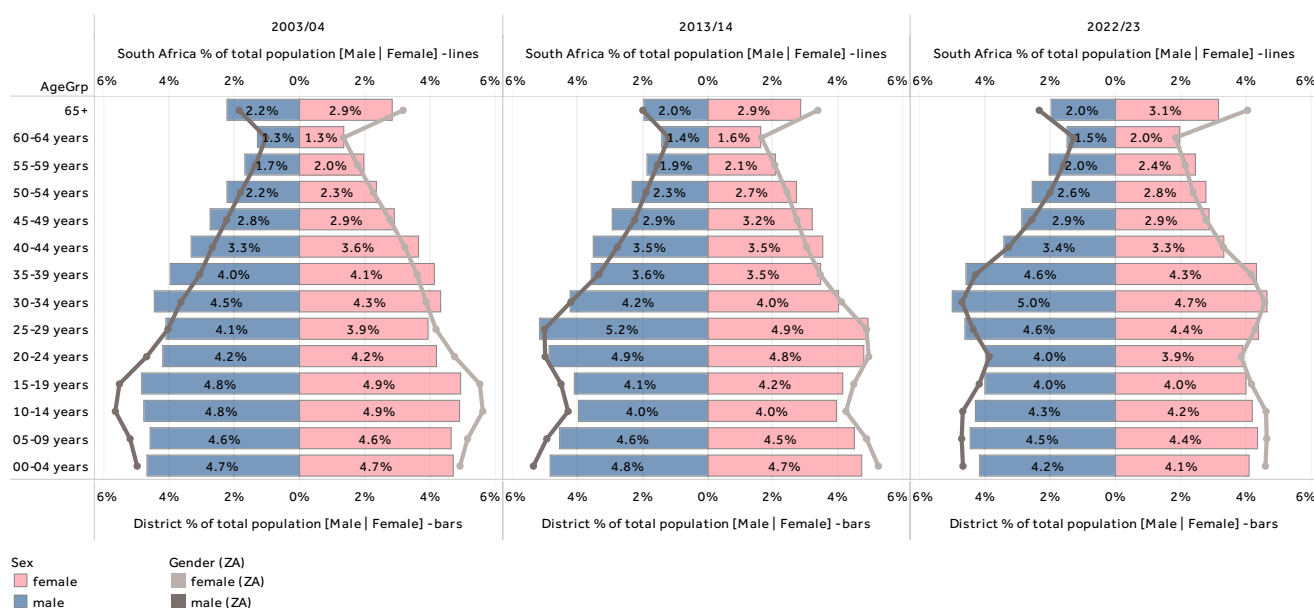
Cities/Towns: Abbottsdale, Aurora, Bitterfontein, Chatsworth, Citrusdal, Clanwilliam, Darling, Doring Bay, Ebenhaezer, Eendekuil, Elands Bay, Graafwater, Grotto Bay, Hopefield, Jacobs Bay, Kalbaskraal, Klawer, Kliprand, Koekena, Koringberg, Lamberts Bay, Langebaan, Leipoldtville, Lutzville, Malmesbury, Molsvlei, Moorreesburg, Nuwerus, Paternoster, Piketberg, Porterville, Putsekloof, Redelinghuys, Riebeeck Kasteel, Riebeeck West, Rietpoort, Riverlands, Saldanha, St Helena Bay, Stofkraal, Strandfontein, Vanrhynsdorp, Velddrif, Vredenburg, Vredendal, Wupperthal, Yzerfontein

Area: 31 118km²

Population (2022)⁴: 478 985

District percentage population by age-gender group compared to South Africa

West Coast DM (DC1)



³The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁴Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

West Coast

Legend

Health facilities

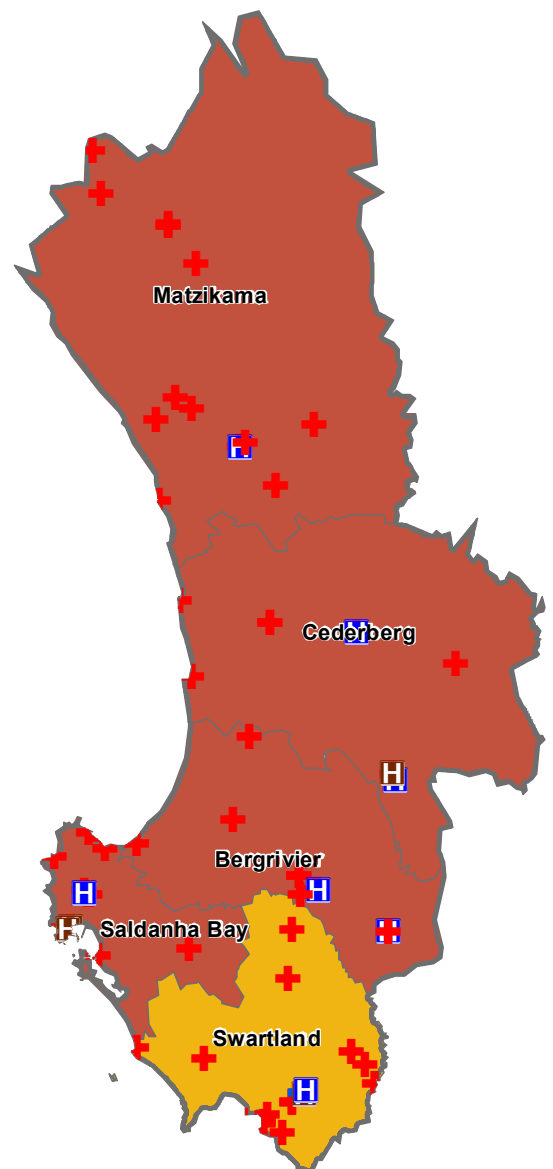
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

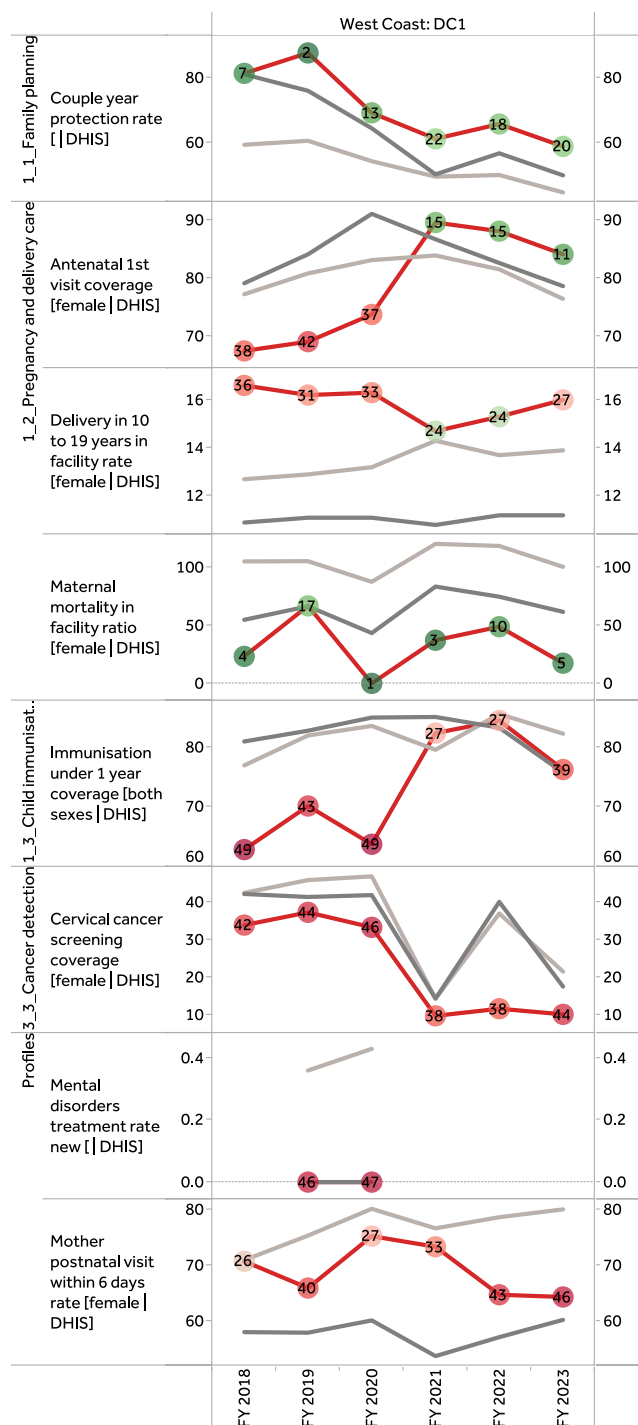
Local Municipality

2021 Total Population

- 10045 - 132270
- 132271 - 282355
- 282356 - 496088
- 496089 - 1215876
- 1215877 - 5781420



Annual trends, 2018/19–2022/23



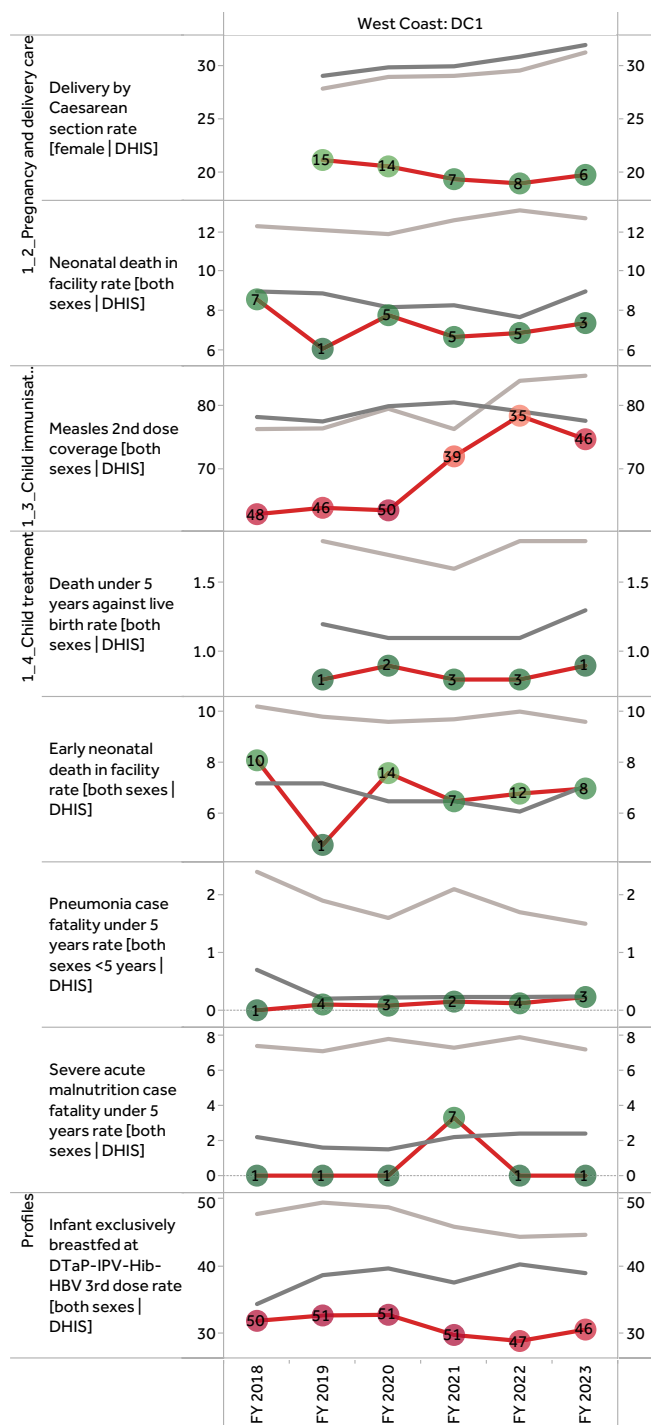
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ZA av

Ind Value



Measure Names

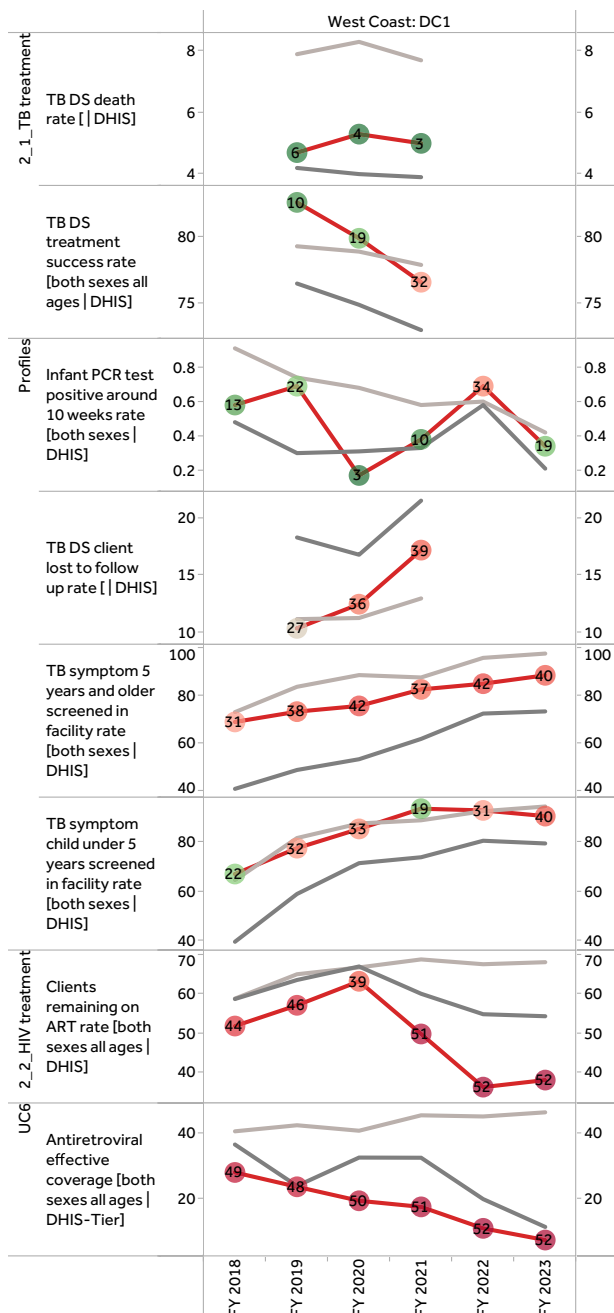
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Ind Value

Annual trends, 2018/19–2022/23



Measure Names

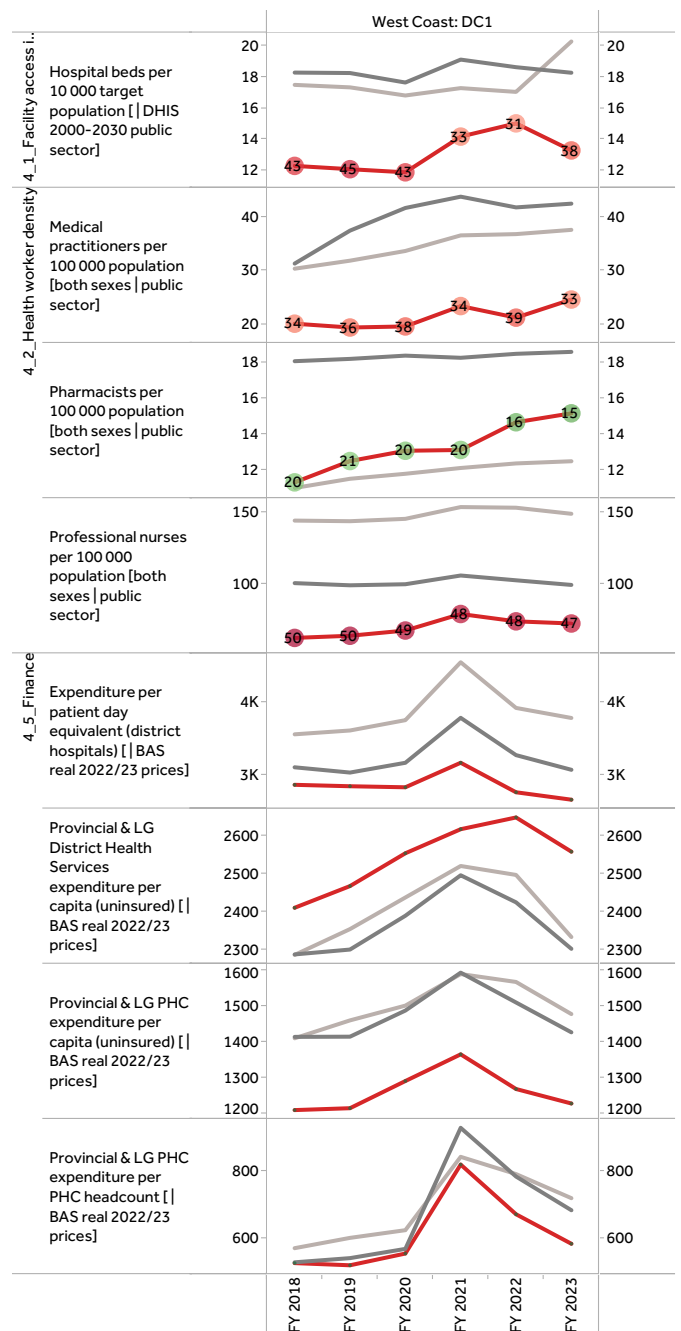
Rank

1 52

Prov av

ZA av

Ind Value



Measure Names

Rank

1 50

Prov av

ZA av

Ind Value

Cape Winelands District Municipality (DC2)

The Cape Winelands District Municipality⁵ is a Category C municipality situated in the Western Cape Province. The district consists of five local municipalities, namely: Drakenstein, Stellenbosch, Witzenberg, Breede Valley and Langeberg.

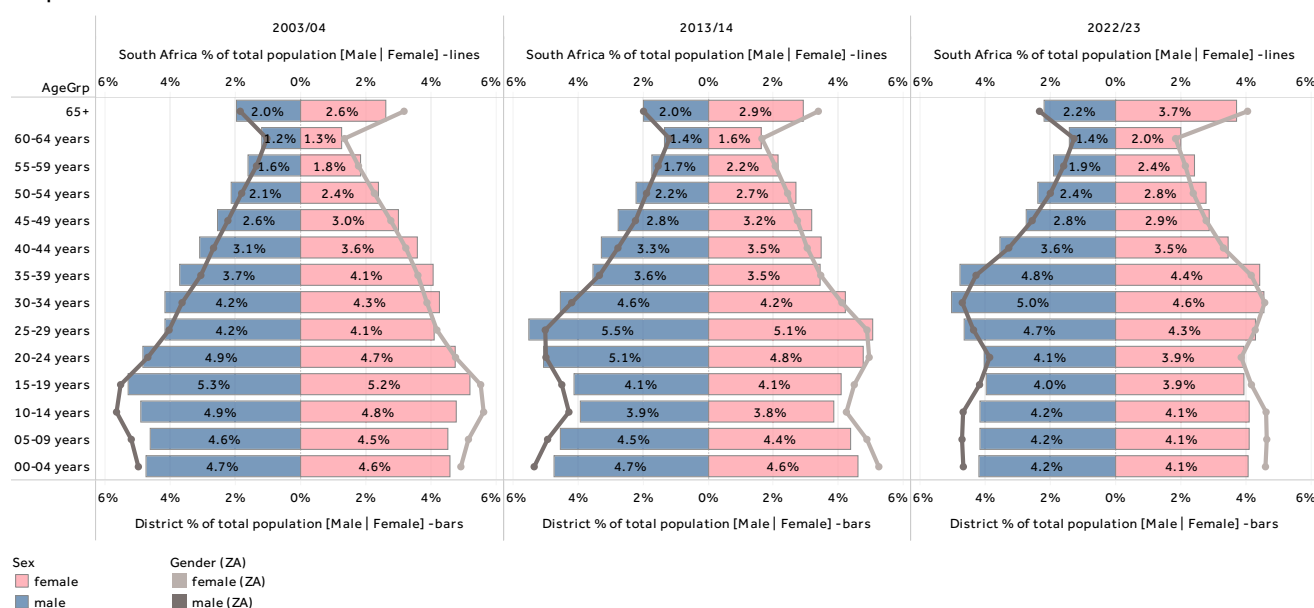
Cities/Towns: Ashton, Bonnievale, Ceres, De Doorns, Franschhoek, Gouda, Klapmuts, McGregor, Montagu, Op-Die-Berg, Paarl, Pniel, Prince Alfred Hamlet, Rawsonville, Robertson, Saron, Stellenbosch, Stellenbosch Farms, Touws River, Tulbagh, Wellington, Wolseley, Worcester

Area: 21 478km²

Population (2022)⁶: 974 759

District percentage population by age-gender group compared to South Africa

Cape Winelands DM (DC2)



⁵The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

⁶Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

Cape Winelands

Legend

Health facilities

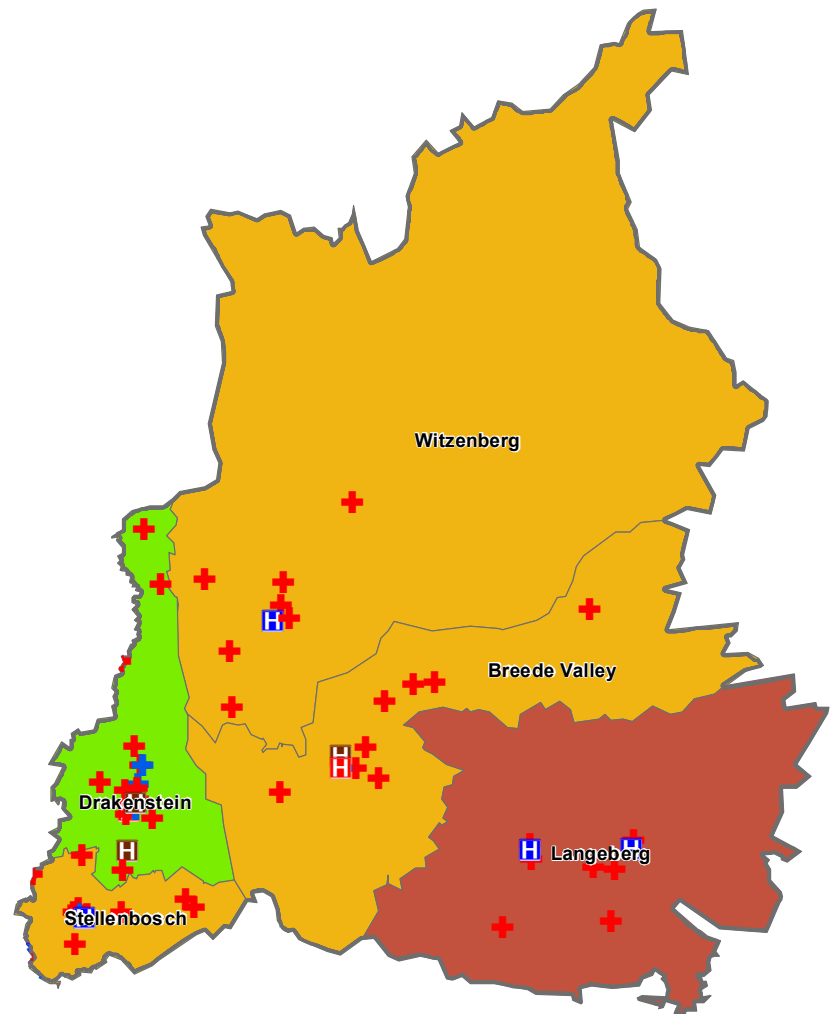
OrgUnitType

- + Clinic
- + CDC/CHC
- H District Hospital
- H National Central/Military Hospital
- H Provincial Tertiary/Regional Hospital
- H Specialised Other Hospitals

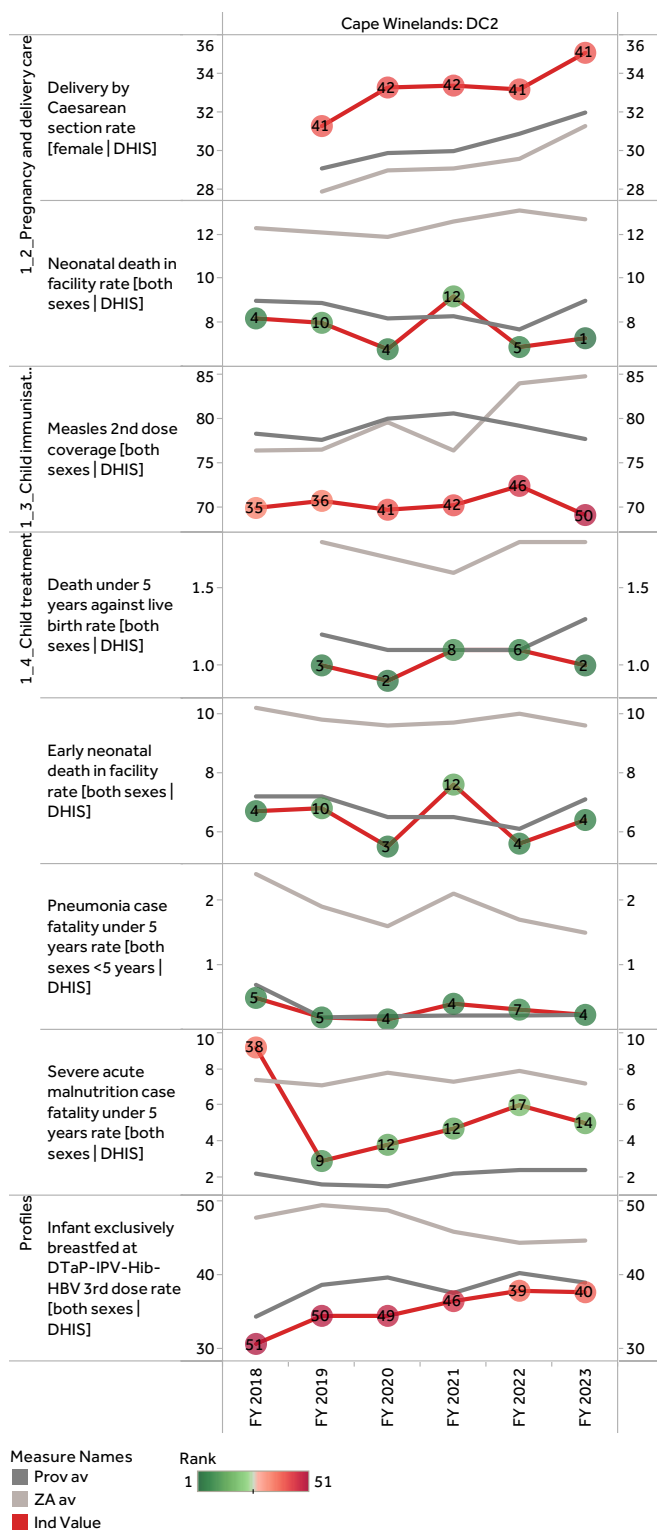
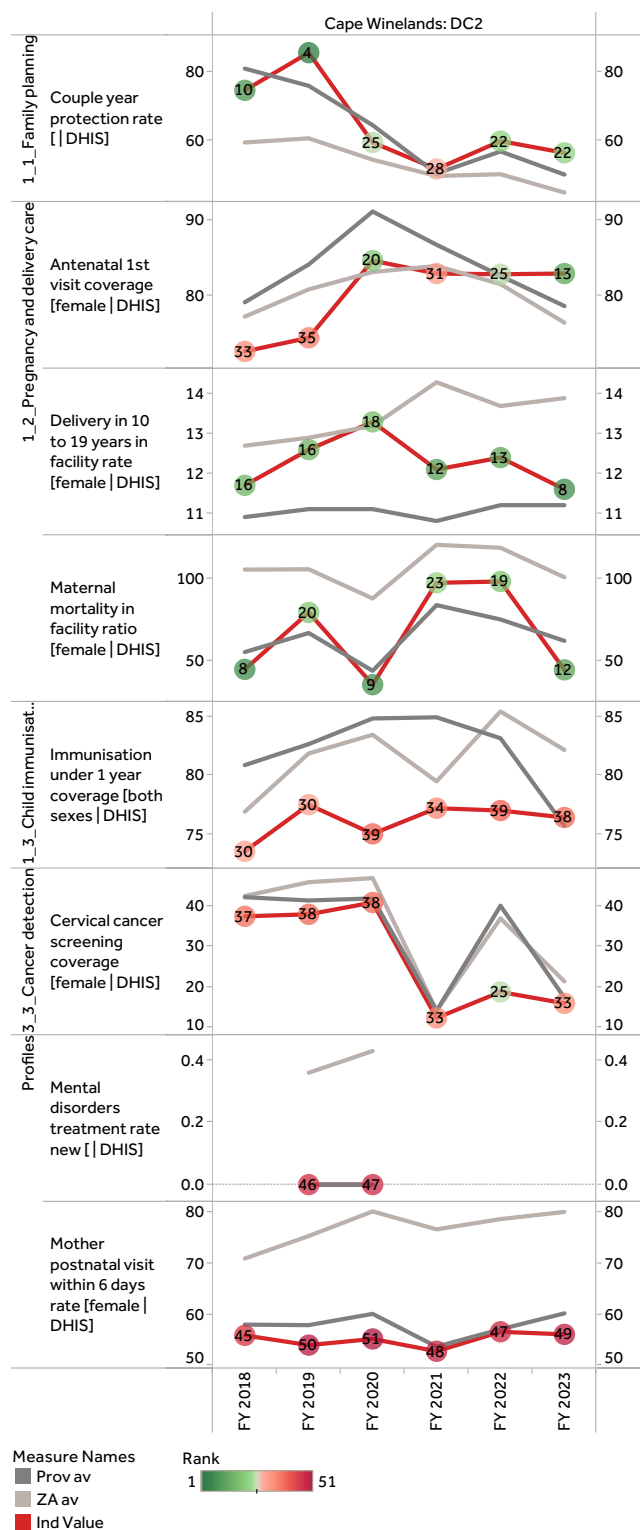
Local Municipality

2021 Total Population

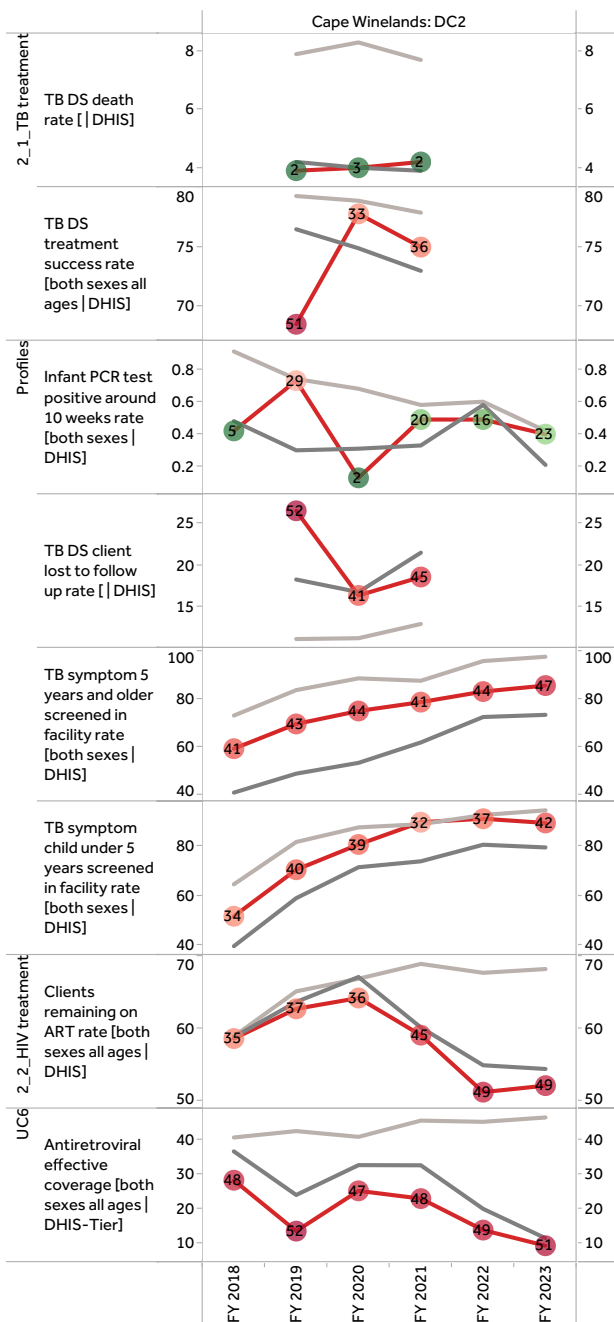
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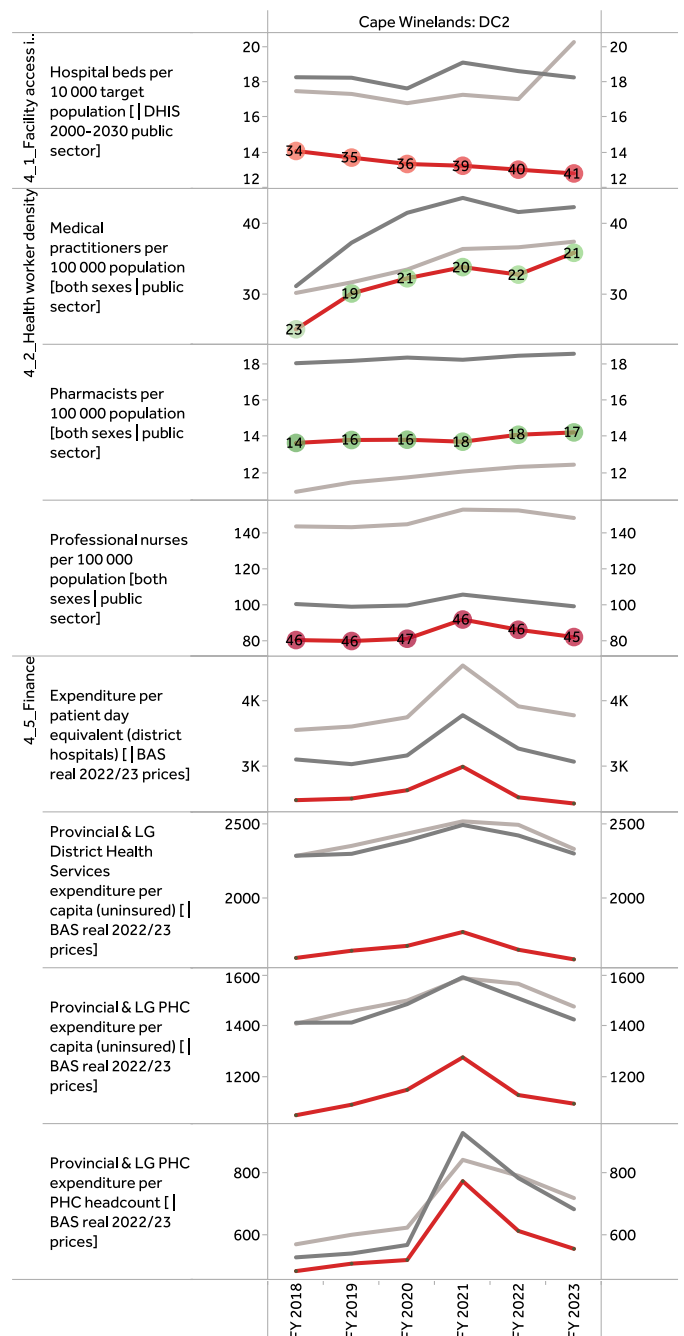
Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names
 Rank
 1 52
 Prov av
 ZA av
 Ind Value



Measure Names
 Rank
 1 47
 Prov av
 ZA av
 Ind Value

Overberg District Municipality (DC3)

The Overberg District Municipality⁷ is a Category C municipality situated in the Western Cape Province. The municipality is the smallest district in the province, making up only 9% of its geographical area. The following local municipalities form the Overberg District: Theewaterskloof, Swellendam, Overstrand and Cape Agulhas.

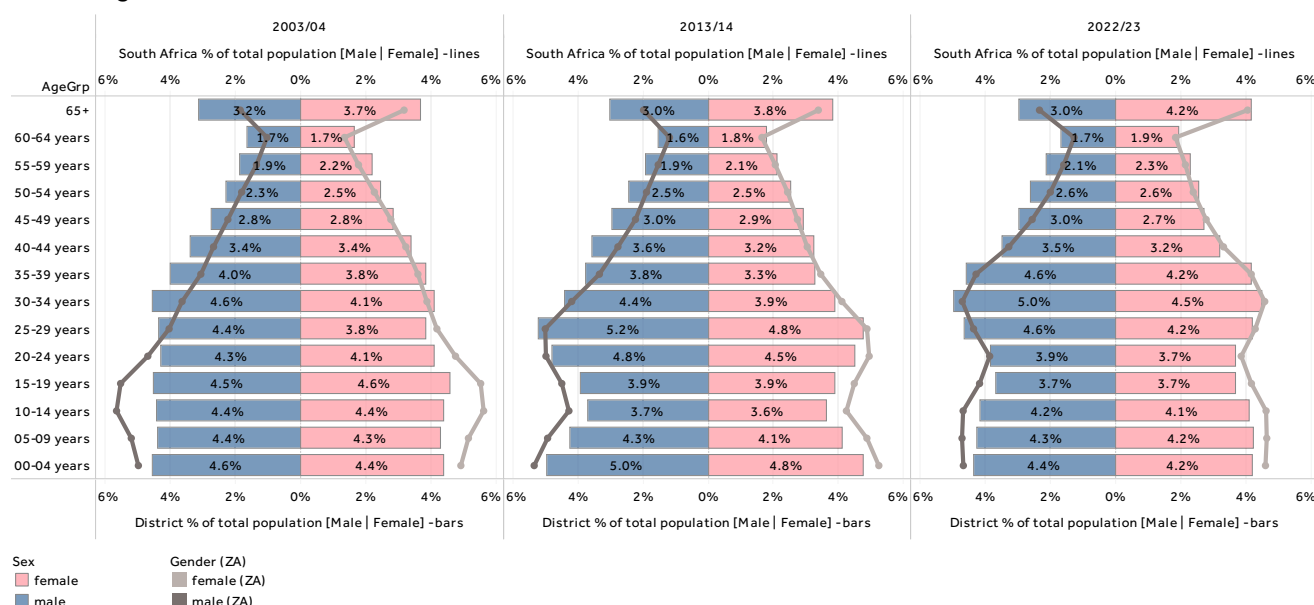
Cities/Towns: Agulhas, Arniston, Barrydale, Betty's Bay, Birkenhead, Bot River, Bredasdorp, Buffeljagsrivier, Caledon/Myddleton, De Kelders, Elim, Fishershaven, Franskraal, Gans Bay, Genadendal, Grabouw, Greyton, Hawston, Hermanus, Infanta, Kleinmond, Klipdale, Malagas, Napier, Onrus, Pearly Beach, Pringle Bay, Proteem, Riviersonderend, Rooi-Els, Sand Bay, Stanford, Struis Bay, Suiderstrand, Suurbraak, Swellendam, Theewaterskloof, Van Dyks Bay, Vermont, Villiersdorp

Area: 12 241km²

Population (2022)⁸: 310 662

District percentage population by age-gender group compared to South Africa

Overberg DM (DC3)



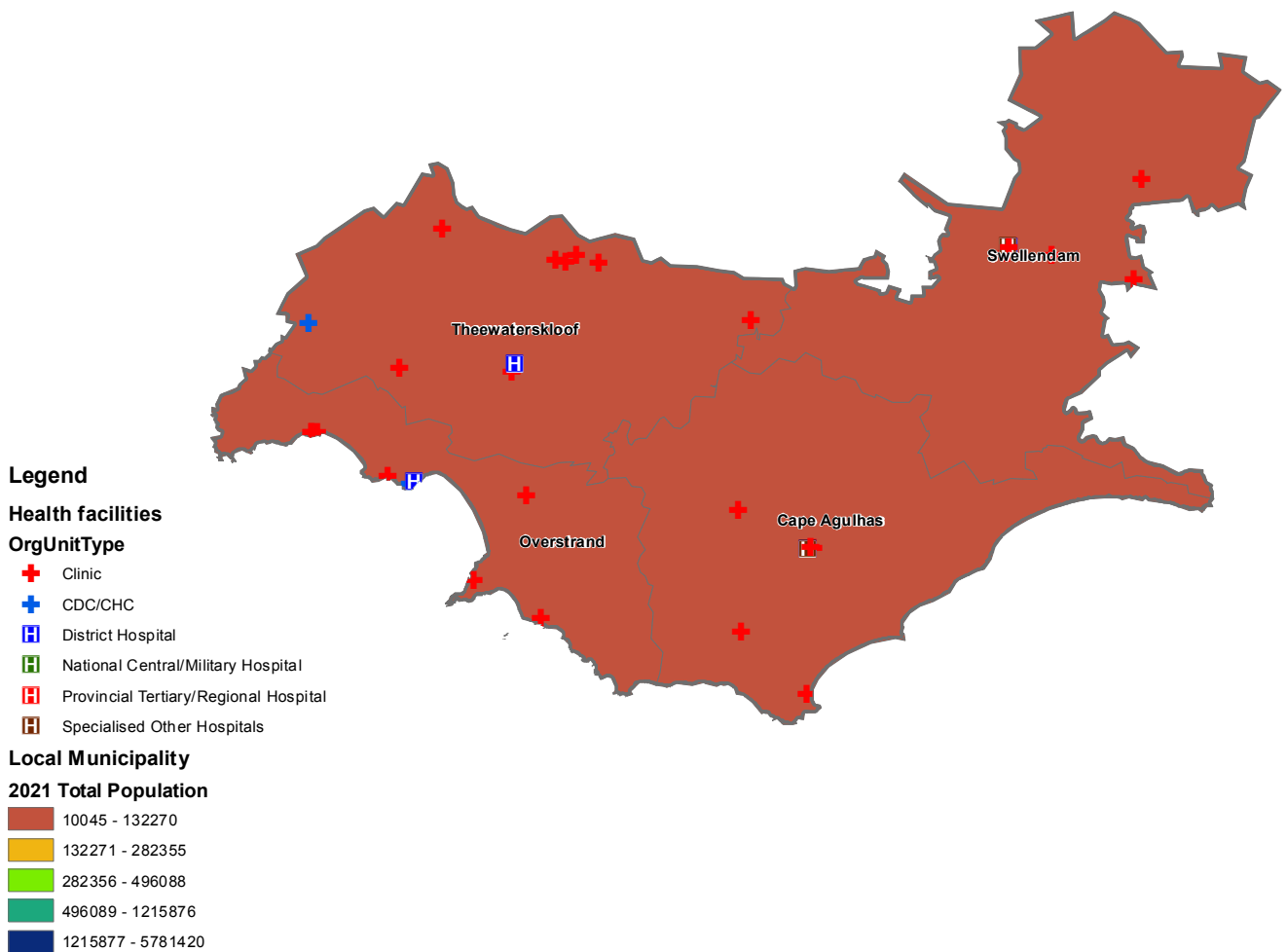
⁷The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition.

Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

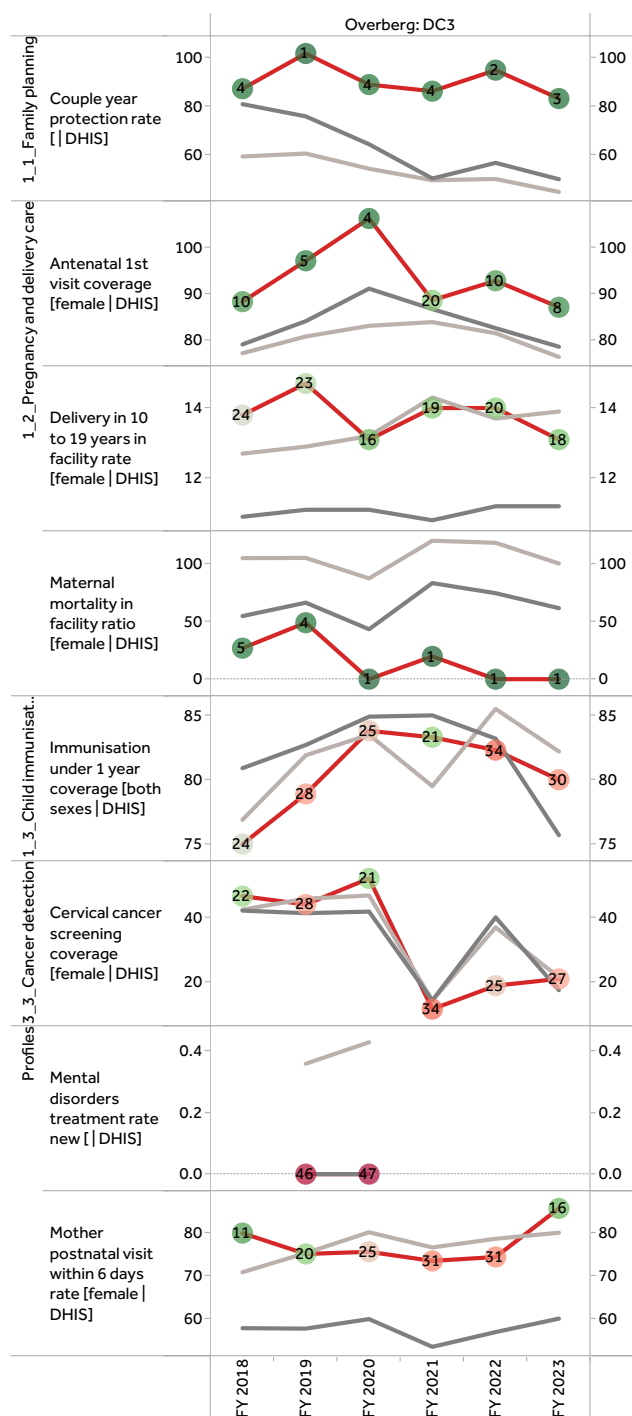
⁸Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

Overberg



Annual trends, 2018/19–2022/23



Measure Names

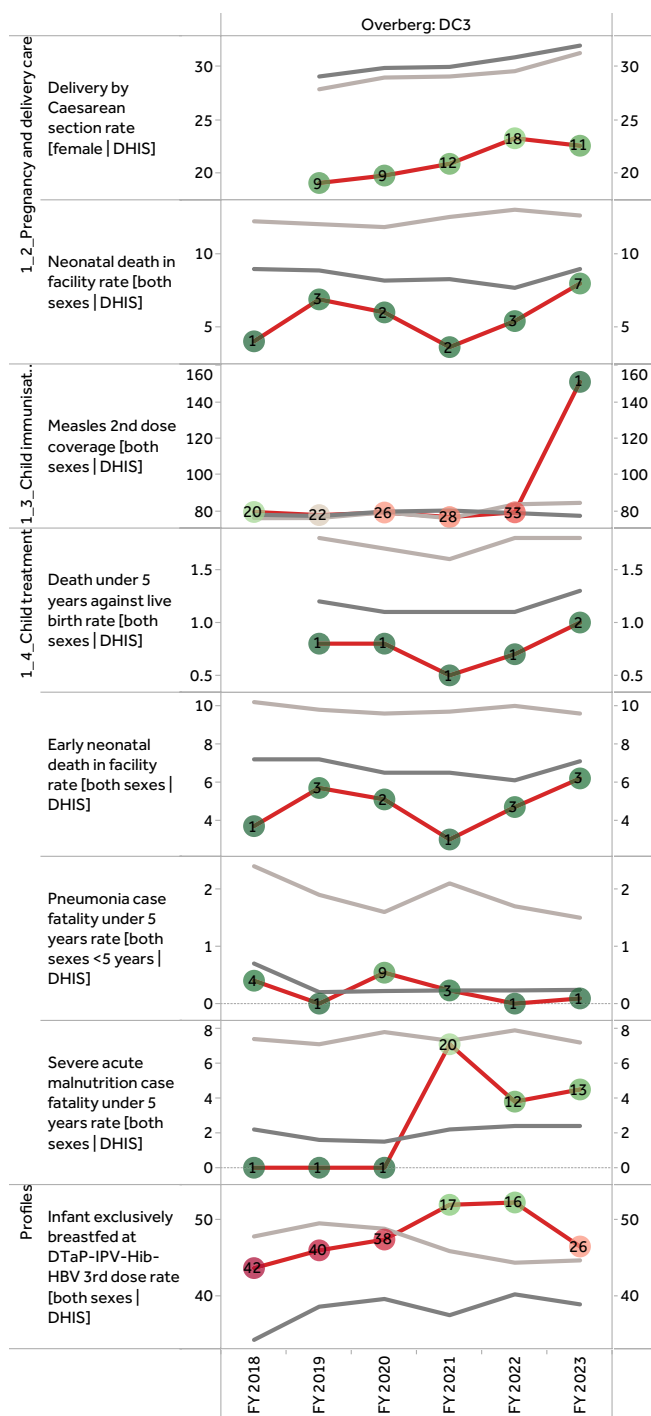
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Prov av

ZA av

Ind Value



Measure Names

Rank

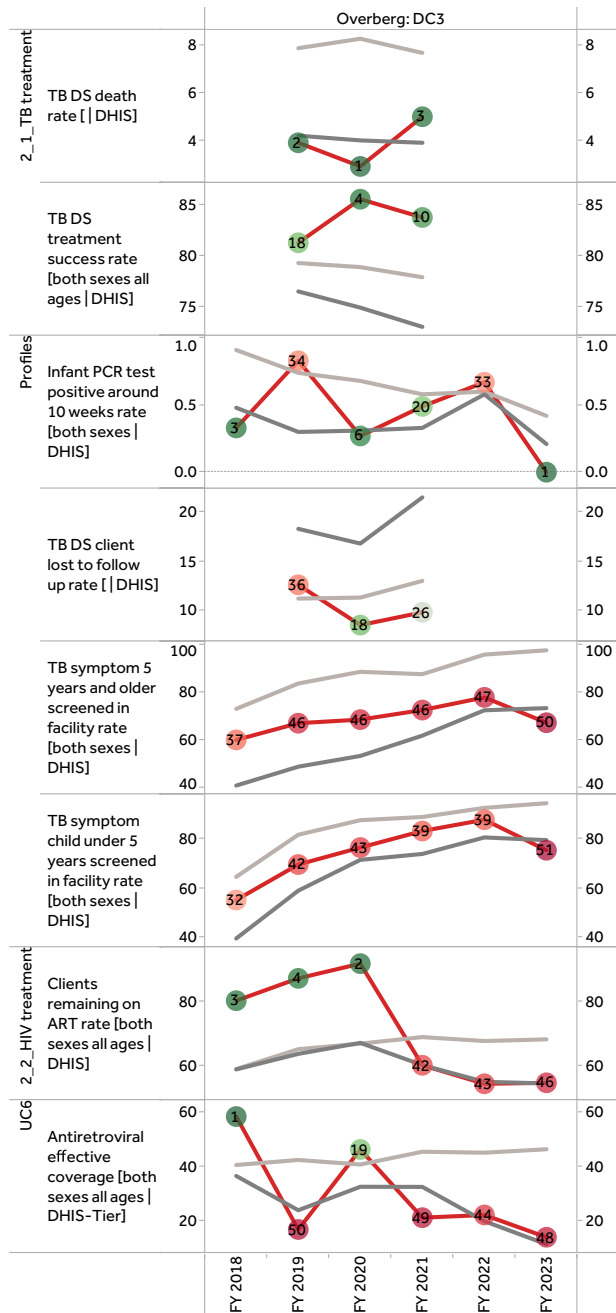
1 42

Prov av

ZA av

Ind Value

Annual trends, 2018/19–2022/23



Measure Names

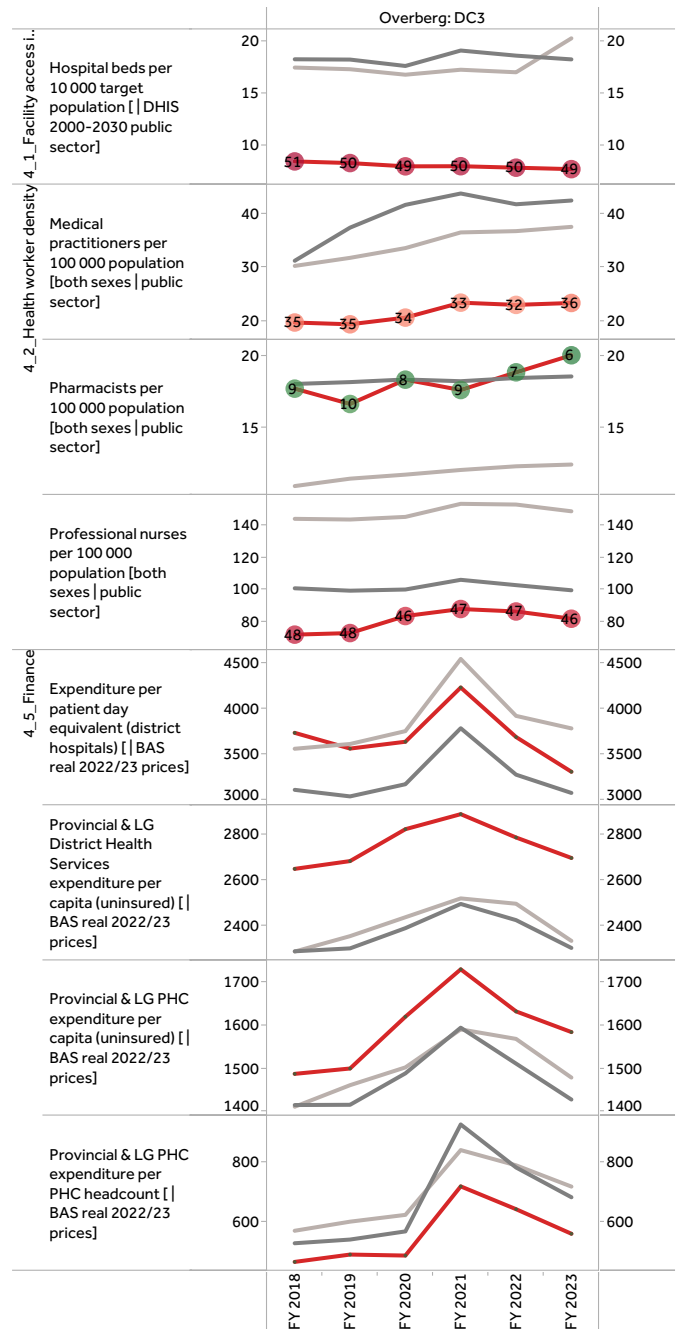
Rank

1 51

Prov av

ZA av

Ind Value



Measure Names

Rank

1 51

Prov av

ZA av

Ind Value

Garden Route District Municipality (DC4)

The Garden Route District Municipality⁹ (previously known as Eden District Municipality) is a Category C municipality situated in the Western Cape Province. The district comprises seven local municipalities: George, Mossel Bay, Knysna, Bitou, Oudtshoorn, Hessequa and Kannaland.

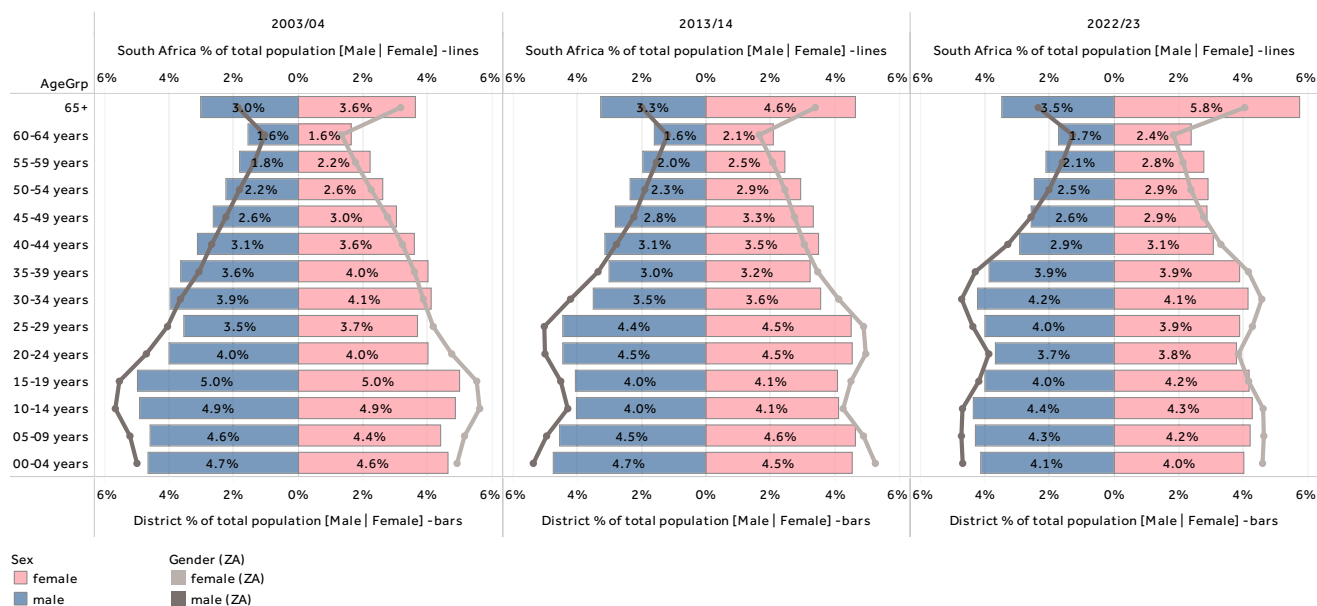
Cities/Towns: Albertinia, Boggoms Bay, Brandwag, Brenton, Brenton-on-Sea, Buffels Bay, Calitzdorp, De Rust, Dysselsdorp, Friemersheim, George, Gouritz, Great Brak River, Haarlem, Heidelberg, Herbertsdale, Herolds Bay, Jongensfontein, Keurboomstrand, Knoetzie, Knysna, Krantshoek, Kurland, Kwanokuthula, Ladismith, Mossel Bay, Nature's Valley, Oudtshoorn, Plettenberg Bay, Rheenendal, Riversdale, Sedgfield, Slangrivier, Still Bay, Uniondale, Vanwyksdorp, Victoria Bay, Vleesbaai, Wilderness, Witsand, Wittedrift, Zoar

Area: 23 331km²

Population (2022)¹⁰: 628 206

District percentage population by age-gender group compared to South Africa

Garden Route DM (DC4)

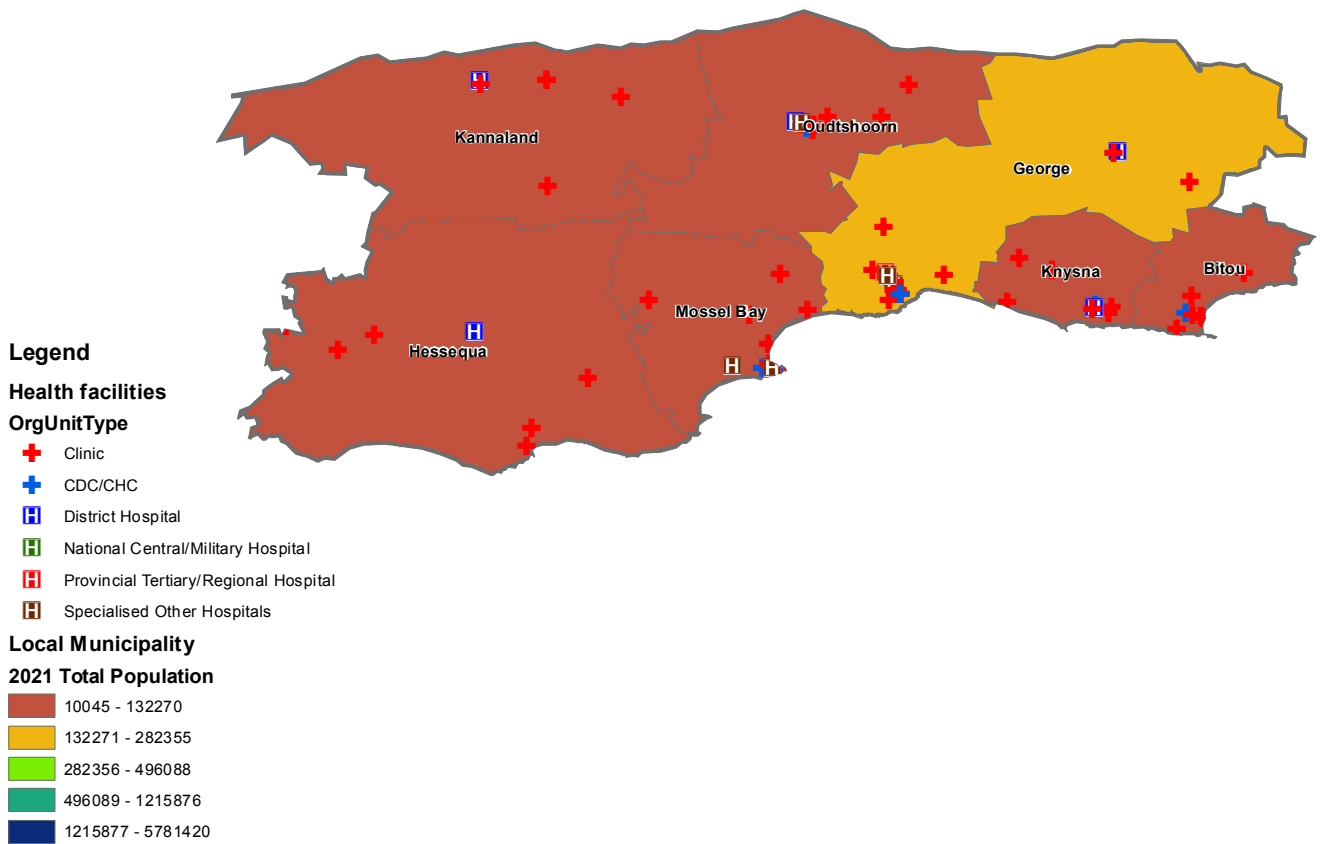


⁹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

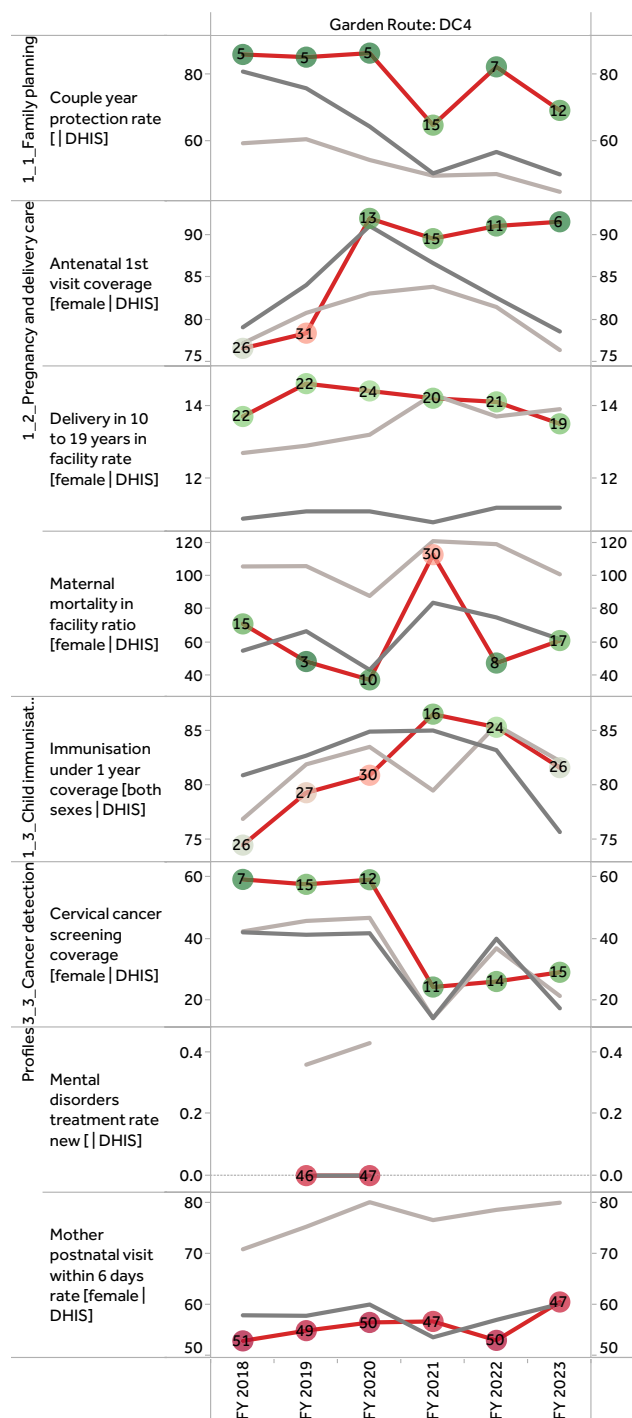
¹⁰Mid-year Population Estimates 2022, Stats SA.

Population distribution, Local municipality boundaries and health facility locations

Garden Route

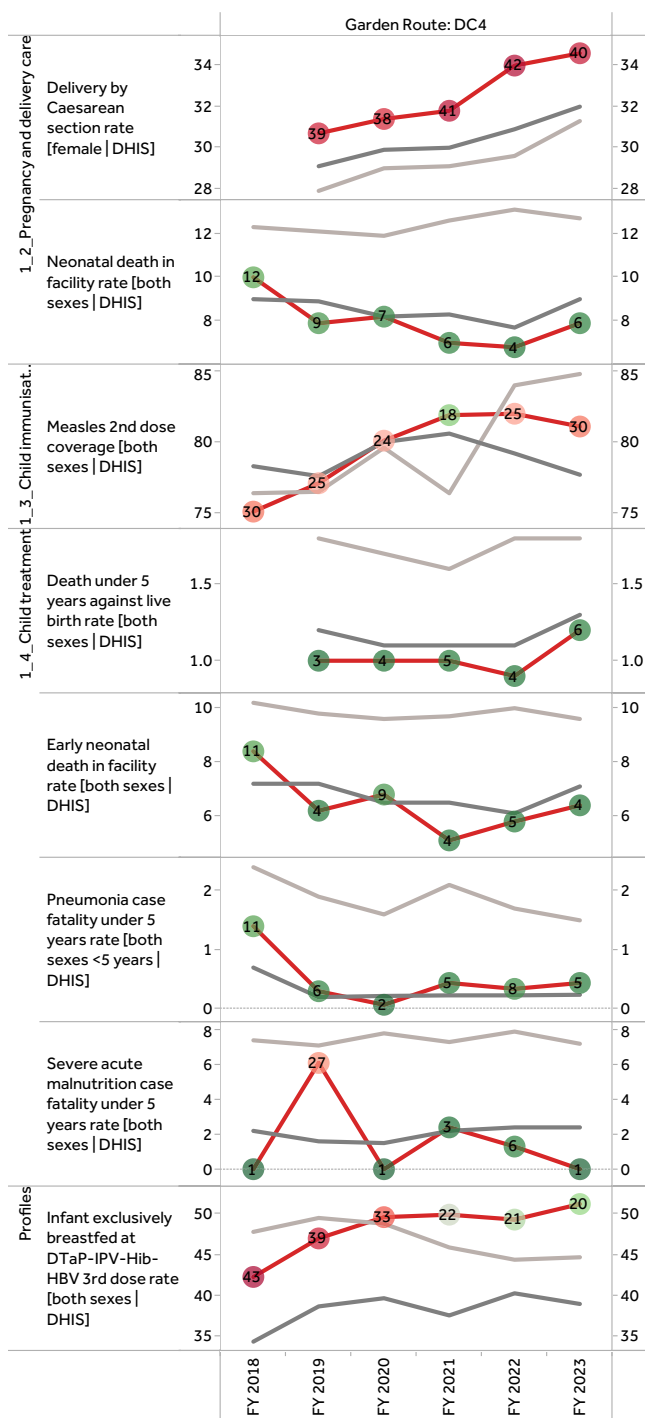


Annual trends, 2018/19–2022/23



Measure Names
 Prov av
 ZA av
 Ind Value

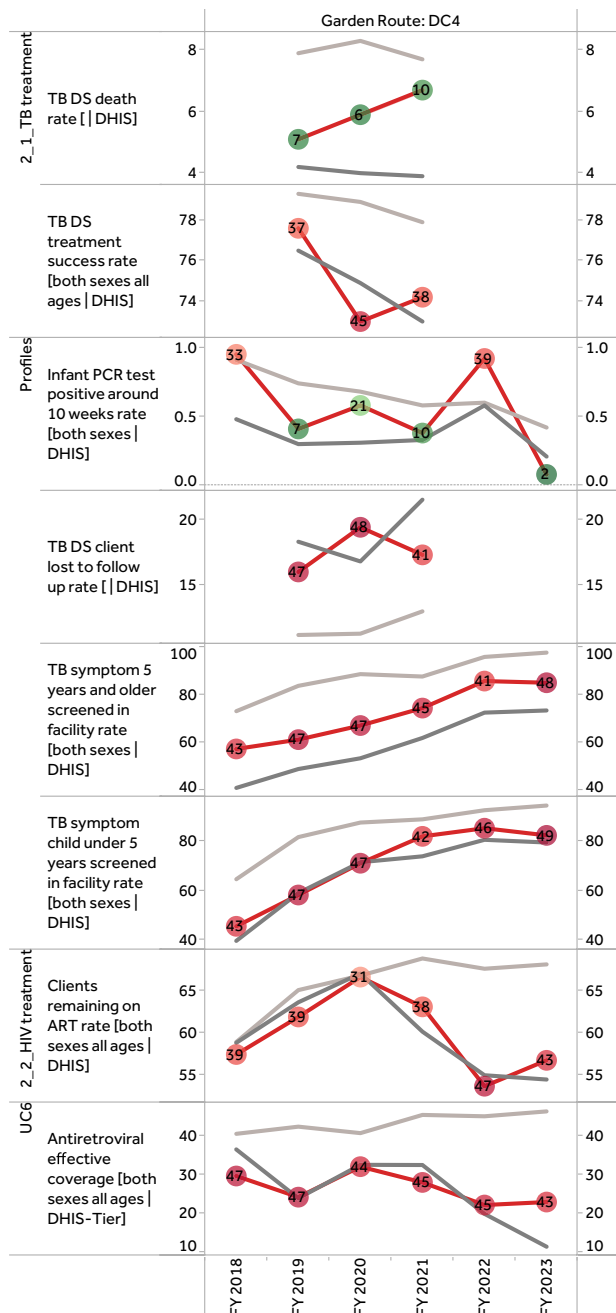
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Measure Names
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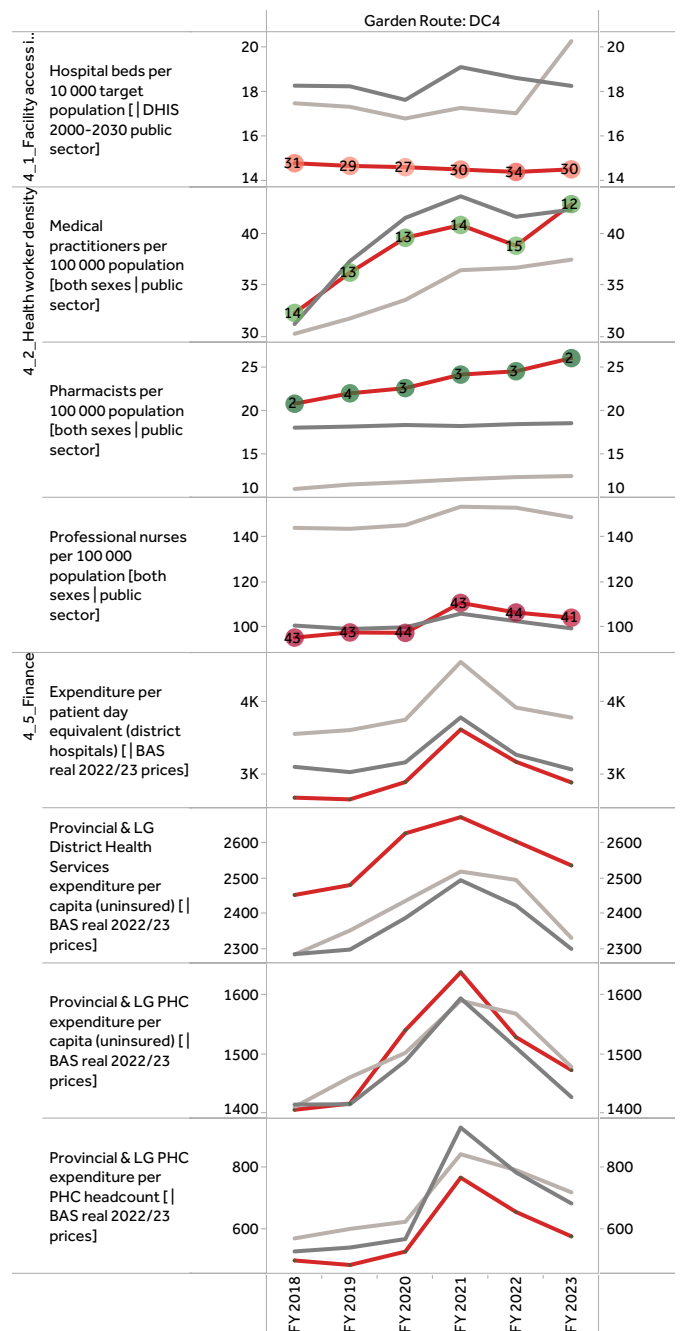
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Annual trends, 2018/19–2022/23



Measure Names
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Measure Names
 Prov av
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Rank
 1 44

Central Karoo District Municipality (DC5)

The Central Karoo District Municipality¹¹ is a Category C municipality located in the Western Cape Province. Central Karoo is the largest district in the province, making up a third of its geographical area, and comprises three local municipalities: Laingsburg, Prince Albert and Beaufort West.

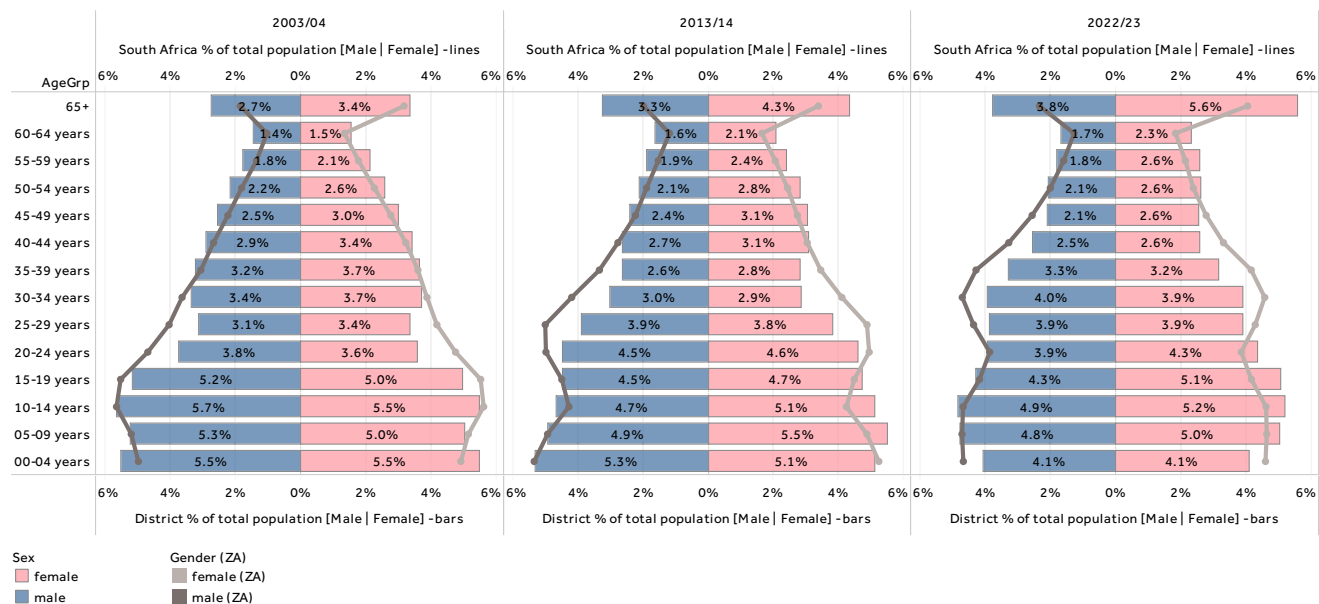
Cities/Towns: Beaufort West, Klaarstroom, Laingsburg, Leeu Gamka, Matjiesfontein, Merweville, Murraysburg, Nelspoort, Prince Albert, Welgemoed

Area: 38 854km²

Population (2022)¹²: 74 435

District percentage population by age-gender group compared to South Africa

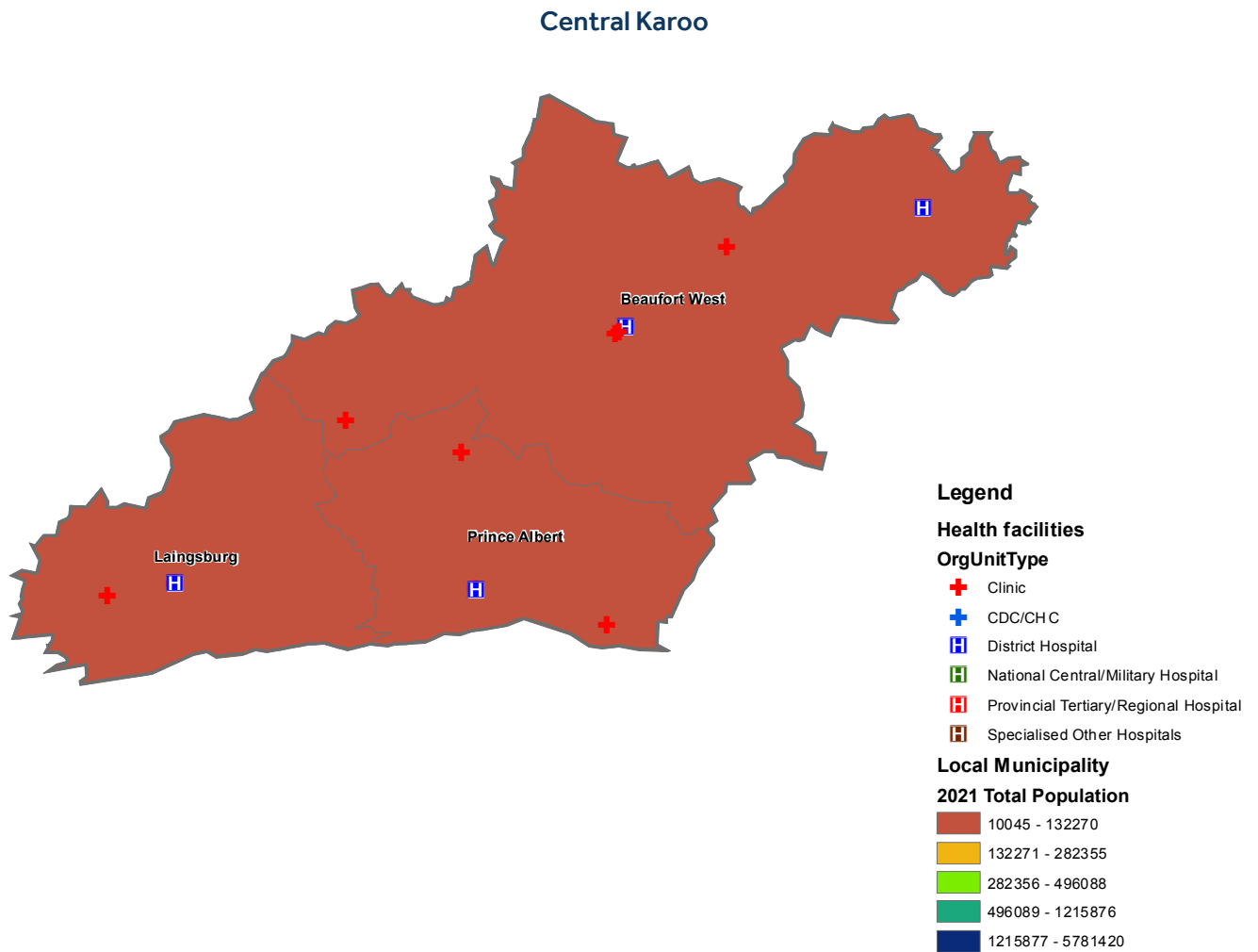
Central Karoo DM (DC5)



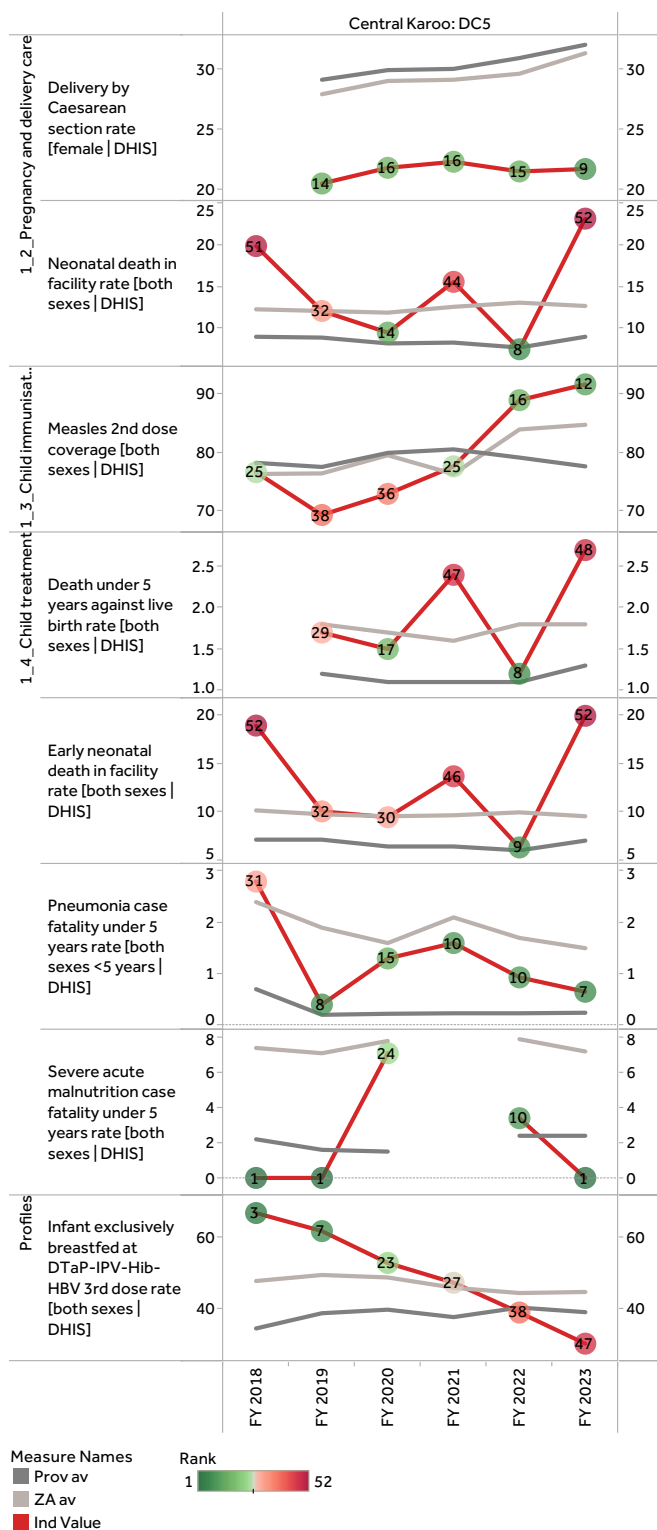
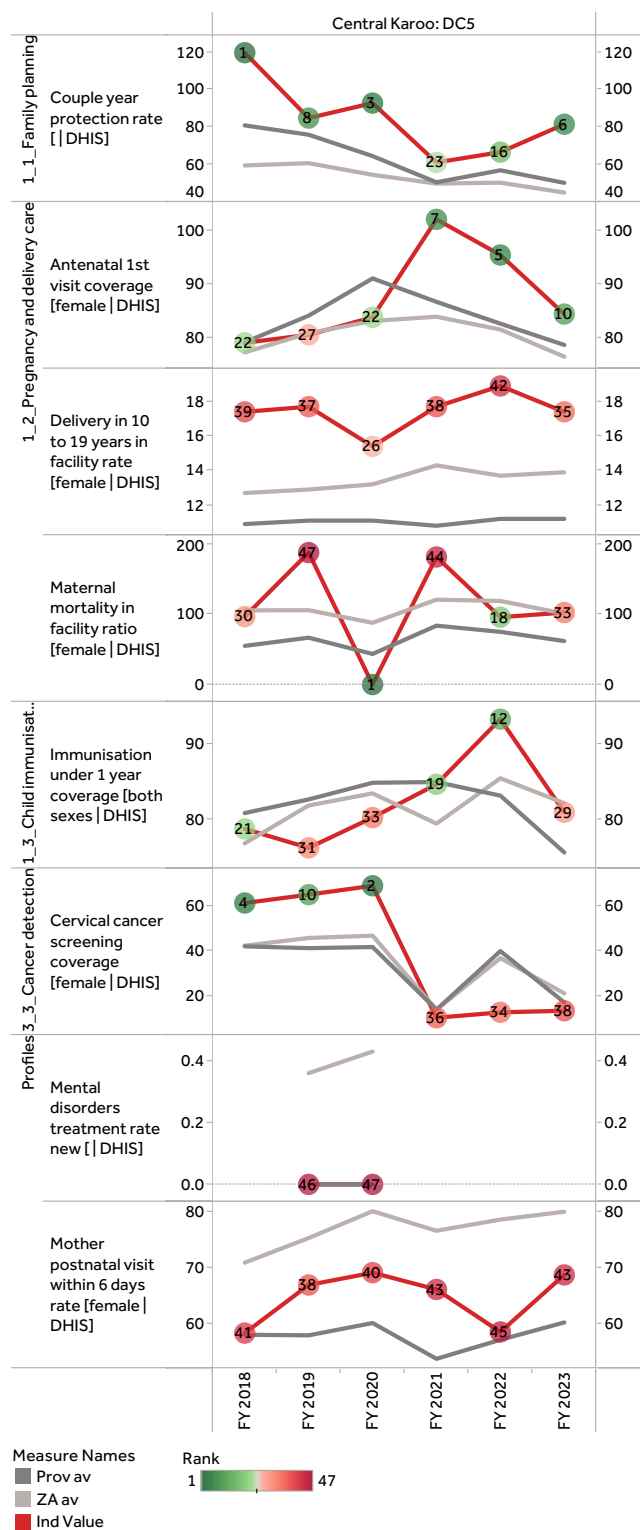
¹¹The Local Government Handbook South Africa 2022. A complete guide to municipalities in South Africa. Twelfth Edition. Accessible at: https://issuu.com/yesmedia/docs/localgovernmenthandbook_southafrica2022/1

¹²Mid-year Population Estimates 2022, Stats SA.

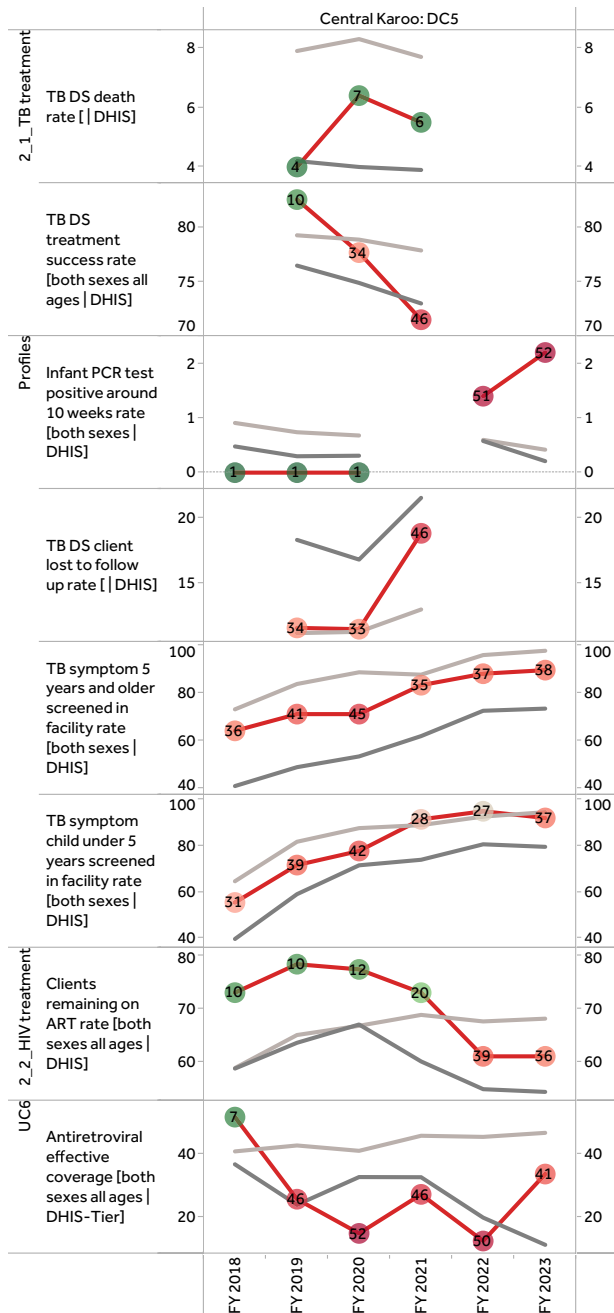
Population distribution, Local municipality boundaries and health facility locations



Annual trends, 2018/19–2022/23



Annual trends, 2018/19–2022/23



Measure Names

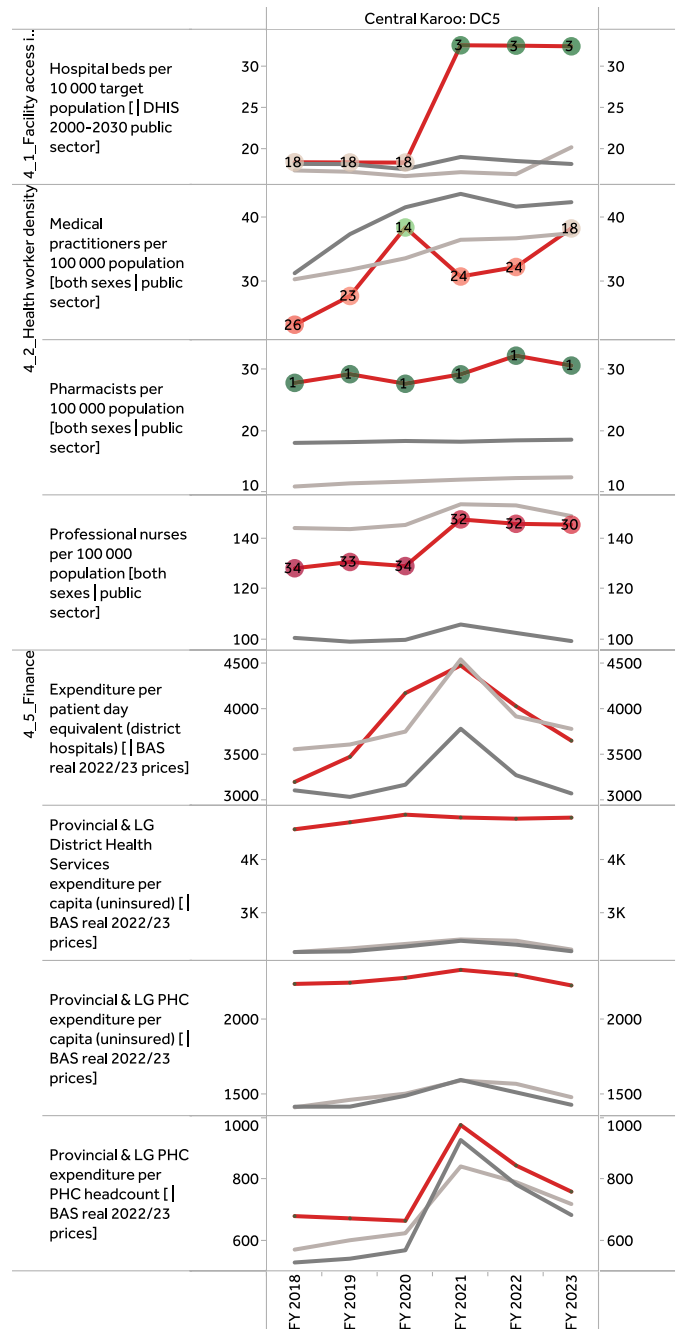
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Rank

1 52



Measure Names

Prov av

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Ind Value

Rank

1 34

Definitions and sources (abbreviations given in footnote)

Group	Indicator	Description	Numerator	Denominator	Source
Deprivation	South African Index of Multiple Deprivation Rank (1 = most deprived)	Ranking for composite index of deprivation. Indicators cover the following domains: income and material deprivation, employment deprivation, education deprivation, and living environment deprivation			Southern African Social Policy Research Institute (SASPRI), based on data from Stats SA Census 2011
Maternal, neonatal and child health	Antenatal 1st visit coverage	The proportion of potential antenatal clients coming for at least one (booking) antenatal visit. The census number of children under one year factorised by 1.15 is used as a proxy denominator – the extra 0.15 (15%) is a rough estimate to cater for late miscarriages (~10 to 26 w), stillbirths (after 26 weeks' gestation) and infant mortality. Pregnant women are regarded as potential antenatal clients from around 10 weeks' gestation, i.e. spontaneous abortions before that as well as ToP cases are excluded	Antenatal 1st visit – total	Estimated pregnant women ~10 weeks' gestation	webDHIS
	Delivery in 10–19 years in facility rate	Deliveries where the mother is 10–19 years old and such delivery is conducted by a trained healthcare worker in a health facility	Deliveries among women aged 10–19 years	Number of deliveries – total	webDHIS
	Maternal mortality in facility ratio	Women who died in hospital as a result of childbearing, during pregnancy or within 42 days of delivery or termination of pregnancy, per 100 000 live births in facility	Maternal deaths in facility	Live births in facility	webDHIS
	Early neonatal death in facility rate	Early neonatal deaths per 1000 infants who were born alive in health facilities.	Death in facility 0–6 days	Live births in facility	webDHIS
	Neonatal death in facility rate	Infants 0–28 days who died during their stay in the facility as a proportion of live births in facility	Neonatal 0–28 days death in facility	Live births in facility	webDHIS
	Child under 5 years pneumonia case fatality rate	Proportion of children under 5 years admitted with pneumonia who died	Child under 5 years pneumonia death	Child under 5 years pneumonia admitted	webDHIS
	Death under 5 years against live birth rate	Children under 5 years who died during their stay in the facility as a proportion of all live births	Death in facility under 5 years total	Live births in facility	webDHIS
	Immunisation coverage under 1 year	Percentage of all children in the target area under 1 year who complete their primary course of immunisation. A primary course comprises BCG, OPV 1, DTaP-IVP-Hib-HBV 1, 2 and 3, PCV 1, 2 and 3, RV 1 and 2 and measles 1	Children fully immunised under 1 year	Target population under 1 year	webDHIS
	Measles 2nd dose coverage	Children 1 year (12 months) who received measles 2nd dose, as a proportion of the 1 year population.	Measles 2nd dose	Target population 1 year	webDHIS

Group	Indicator	Description	Numerator	Denominator	Source
Women's health	Couple year protection rate	Women protected against pregnancy by using modern contraceptive methods, including sterilisations, as proportion of female population 15–49 year. Contraceptive years are the total of (Oral pill cycles / 15) + (Medroxyprogesterone injection / 4) + (Norethisterone enanthate injection / 6) + (IUCD x 4.5) + (Sub-dermal implant x 2.5) + Male condoms distributed / 120) + (Female condoms distributed / 120) + (Male sterilisation x 10) + (Female sterilisation x 10)	Contraceptive years dispensed (including sterilisations)	Female target population 15–44 years	webDHIS
Tuberculosis	TB symptom child under 5 years screened in facility rate	Children under 5 years screened for TB symptoms as a proportion of PHC headcount under 5 years	Child under 5 years screened for TB symptoms	PHC headcount under 5 years	webDHIS
	TB symptom 5 years and older screened in facility rate	Clients 5 years and older screened for TB symptoms as a proportion of PHC headcount 5 years and older	Client 5 years and older screened for TB symptoms	PHC headcount 5 years and older	webDHIS
	TB drug-susceptible successful treatment rate	Proportion TB clients (ALL types of TB) cured plus those who completed treatment	TB client cured OR completed treatment	TB client initiated on treatment	webDHIS
	TB drug-susceptible client loss to follow-up rate	TB clients who started drug-susceptible tuberculosis treatment and who subsequently became loss to follow-up as a proportion of all those in the treatment outcome cohort	All drug-susceptible TB loss to follow-up	All drug-susceptible TB patients in treatment outcome cohort	webDHIS
	TB drug-susceptible death rate	TB clients who started drug-susceptible tuberculosis treatment and who subsequently died as a proportion of all those in the treatment outcome cohort	All drug-susceptible TB client died	All drug-susceptible TB patients in treatment outcome cohort	webDHIS
	TB multidrug-resistant treatment success rate	TB-MDR client successfully completing treatment as a proportion of TB-MDR confirmed clients started on treatment	TB-MDR client successfully complete treatment	TB-MDR confirmed client start on treatment	webDHIS
HIV	TB-XDR treatment success rate	TB-XDR clients successfully completing treatment as a proportion of TB-XDR confirmed clients started on treatment	TB-XDR client successfully complete treatment	TB-XDR confirmed client start on treatment	webDHIS
	Clients remaining on ART rate	Percentage of estimated people living with HIV who remain on ART	Total clients remaining on ART at end of the month	Estimated number of people living with HIV	webDHIS
	Adult with viral load suppressed rate 12 months	Proportion of adult ART clients with viral load suppressed at 12 months	ART client viral load under 400 cps/mL at 12 months	ART viral load done	webDHIS
	Child with viral load suppressed rate 12 months	Proportion of ART clients with viral load suppressed at different time intervals. This indicates the population level immunological impact of clients on ART.	ART Child Viral Load Suppressed (VLS)	ART Child client viral load done (VLD)	webDHIS
	ART client viral load suppressed rate (VLS)	ART viral load suppressed - total as a proportion of ART viral load done - total	ART viral load suppressed - total	ART viral load done - total	webDHIS

Group	Indicator	Description	Numerator	Denominator	Source
Non-communicable diseases	Cervical cancer screening coverage	Cervical smears in women 30 years and older as a proportion of the female population 30 years and older. 80% of these women should be screened for cervical cancer every 10 years and 20% must be screened every 3 years	Cervical cancer screening in non- HIV woman 30 years and older + cervical cancer screening in women 20 years and older	80% women aged 30-59yrs / 10 + 20% women aged 20-59yrs / 3	webDHIS
PHC management	PHC utilisation rate	The rate at which PHC services are utilised by clients of all ages in the catchment population, represented as the average number of PHC visits per client per year in the target population. The denominator is usually Census-derived population	Total PHC headcount	Total population	webDHIS
Inpatient management	Average length of stay	Average number of patient days that an admitted patient spends in hospital before separation	Inpatient days + 1/2 day patients	Separations = Discharges (including day patients) + Deaths + Transfers out	webDHIS
	Inpatient bed utilisation rate	Inpatient bed days used as proportion of maximum Inpatient bed days (inpatient beds x days in period) available	Total patient days = (Inpatient days + 1/2 day patients) x 100	Total usable bed days = (Inpatient beds – total) x 30.42	webDHIS
	Patient day equivalent	Weighted data element as proxy for estimating resources for all types of patients in terms of inpatient days	The sum of inpatient days total x 1, day patient total x 0.5, and OPD/emergency total headcount x 0.3333333	-	webDHIS
	Inpatient crude death rate	Proportion of admitted patients/separations who died during hospital stay	Inpatient deaths – total	Separations = Discharges (including day patients) + Deaths + Transfers out	webDHIS
	Hospital beds per 10 000 target population	Number of inpatient beds per 10 000 target population. For public sector beds, the uninsured population is used as the target	Inpatient beds	Uninsured population (total population less medical scheme coverage x population)	webDHIS

Group	Indicator	Description	Numerator	Denominator	Source
Finance	Provincial and Local Government expenditure on District Health Services per capita (uninsured)	Total amount spent on DHS per person without medical scheme coverage	Provincial expenditure on DHS (excluding 2.8 Coroner) plus net LG expenditure on PHC	Uninsured population (total population less medical scheme coverage x population)	Calculated from BAS, Treasury data on LG expenditure, webDHS population and GHS modelled for medical scheme coverage
	Provincial PHC expenditure per capita (uninsured)	Total amount spent on non-hospital PHC health services per person without medical scheme coverage	Provincial expenditure on PR2.2-2.7 of DHS + net LG expenditure	Uninsured population (total population less medical scheme coverage x population)	Calculated from BAS, Treasury data on LG expenditure, webDHS population and GHS modelled for medical scheme coverage
	Provincial expenditure per PHC headcount	Total amount spent on non-hospital PHC health services per headcount	Provincial expenditure on PR2.2-2.7 of DHS + net LG expenditure	Total PHC headcount	BAS, webDHS
Human resources	Expenditure per Patient Day Equivalent	Average cost per patient per day seen in a hospital (expressed as Rand per PDE)	Total expenditure on health per hospital	PDE total	BAS, webDHS
	Medical practitioners per 100 000 uninsured population	Ratio of the number of medical practitioners (Doctors) to the population (per 100 000). Note that the measure of the number of personnel may differ for the public and private sectors, and that the population may be adjusted to be the population assumed to be dependent on that sector	Medical practitioners registered to practice, total number	Uninsured population (total population less medical scheme coverage x population)	Calculated from PERSAL, webDHS population and GHS modelled estimates of medical scheme coverage
	Professional nurses per 100 000 uninsured population	Ratio of the number of Professional Nurses to the population (per 100 000). Note that the measure of the number of personnel may differ for the public and private sectors, and that the population may be adjusted to be the population assumed to be dependent on that sector	Professional Nurses registered to practice, total number	Uninsured population (total population less medical scheme coverage x population)	Calculated from PERSAL, webDHS population and GHS modelled estimates of medical scheme coverage
	Pharmacists per 100 000 uninsured population	Ratio of the number of Pharmacists to the population (per 100 000). Note that the measure of the number of personnel may differ for the public and private sectors, and that the population may be adjusted to be the population assumed to be dependent on that sector	Pharmacists registered to practice, total number	Uninsured population (total population less medical scheme coverage x population)	Calculated from PERSAL, webDHS population and GHS modelled estimates of medical scheme coverage
Extra	Medical aid coverage	Percentage of population who have medical scheme insurance	Total population	TB-XDR confirmed client start on treatment	GHS modelled estimates of medical scheme coverage

ART = antiretroviral treatment; BAS = National Treasury Basic Accounting System; BCG = bacille Calmette-Guerin; BP = blood pressure; CDC = Community Day Centre; CHC = Community Health Centre; DHIS = District Health Information System; DHS = District Health Services; DTaP-IVP-Hib-HBV = Diphtheria, Tetanus, Inactivated Polio Vaccine, Haemophilus Influenza B, Hepatitis Vaccine; GHS = General Household Survey; HIV = Human Immunodeficiency Virus; LG = Local Government; MDR = multidrug-resistant; NCDs = non-communicable diseases; NDoH = National Department of Health; OPD = outpatient department; OPV = oral polio vaccine; PCR = polymerase chain reaction; PCV = pneumococcal conjugate vaccine; PDE = patient day equivalent; PHC = Primary Health Care; PR = programme; RV = Rotavirus vaccine;; Stats SA = Statistics South Africa; TB = tuberculosis; ToP = termination of pregnancy; XDR = extremely drug-resistant;



**HEALTH
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Tel: +27 (0)31 266 9090

Fax: +27 (0)31 266 9199

Email: hst@hst.org.za

Web: <http://www.hst.org.za>