

Introduction and Overview

Background

The 2017/18 *District Health Barometer* (DHB) provides an overview of the delivery of primary health care (PHC) in the public health sector across the provinces, districts and local municipalities/sub-districts of South Africa. The *DHB* is an annual publication since 2005, and draws data from the District Health Information Software (DHIS), the Ideal Clinic Realisation and Maintenance system, Statistics South Africa (Stats SA), the National Treasury Basic Accounting System (BAS), the National Health Laboratory Service (NHLS), the national Electronic Tuberculosis (TB) Register (ETR.net) and the Electronic Drug-resistant Tuberculosis Register (EDRWeb). The publication seeks to highlight inequities in health outcomes, health-resource allocation and delivery, and to track the efficiency of health processes across all provinces and districts.

Compilation of the *DHB* is guided by a technical work group made up of managers from the National Department of Health (NDoH) and Health Systems Trust (HST). After consultation with key stakeholders and users of the *Barometer*, a decision to divide the *DHB* into two separate but complementary publications was made. This year there are two publications, namely the *DHB: District Health Profiles* and the *DHB*. The district chapter format in the *DHB: District Health Profiles* is aligned to the District Health Plan template of the NDoH for the period 2019/20 – 2021/22. The district chapters in the *DHB* contain trend graphs of the indicators included in Section A: Indicator Comparisons per programme of this publication.

The *DHB* is available at <http://www.hst.org.za>.

Methodology and data sources

Indicators used in the 2017/18 DHB

The indicators^a in this *DHB* have been selected in consultation with the NDoH and are linked to assessing progress as set out by the NDoH's Annual Performance Plan (APP), the provincial APPs and the district health plans (DHPs) of the health districts. All the indicators in this publication are categorised according to the 2017 National Indicator Data Set (NIDS);^b where applicable, the indicator names are also replicated from the NIDS.

This year, six new indicators have been added. These are:

- ◆ Delivery in 10 to 19 years in facility rate (replaced delivery in facility under 18 years rate)
- ◆ Stillbirth in facility rate
- ◆ HIV test around 18 months uptake rate
- ◆ TB symptom child under 5 years screened in facility rate
- ◆ HIV testing coverage age 19 month and older (replaced HIV testing coverage)
- ◆ Port health services compliance rate.

The following six indicators reported on in previous years have been dropped from Section A: Indicator Comparisons per programme.

- ◆ Antenatal client initiated on ART rate
- ◆ Hypertension incidence
- ◆ Diabetes mellitus incidence
- ◆ Drug-resistant TB treatment success rate
- ◆ Drug-resistant TB client loss to follow-up rate
- ◆ Drug-resistant TB client death rate.

Most of the indicators in this report, excluding the financial and tuberculosis indicators, were updated from the DHIS data files at facility level (NDoH5) for the financial years ending March, up to 2017/18, and received in June 2018.

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

b National Department of Health. 2017 National Indicator Data Set. Pretoria: National Department of Health. April 2017.

Indicators by level of care – inpatient management indicators

Some of the hospital indicators included in the *DHB* are filtered for district hospitals only, since inclusion of higher-level hospitals (which provide services to a wider catchment area) may distort assessment of availability of services at district level. These indicators are: average length of stay, bed utilisation rate, outpatient department (OPD) new client not referred rate and expenditure per patient day equivalent. However, to interpret the district-hospital values of the indicator, it may be necessary to consider the context (availability of services at other levels) within the district and province.

District health expenditure indicators

Provincial health expenditure up to 2017/18 was extracted from the National Treasury BAS database. 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 was allocated to each district in proportion to the population share of the areas involved. For example, provincial-level expenditure was allocated to each of the districts in the province.

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 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 Consumer Price Index (CPIX) (Stats SA) were used to convert expenditure for all years to real 2017/18 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.
- ◆ Medical scheme coverage based on modelled estimates provided by Daniel Shapiro of Insight Actuaries and Consultants, was used to calculate the uninsured population, together with the population time series estimates currently in DHIS for all years. Overall, the coverage level 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 time series population, since the variation in coverage between districts is more relevant than changes in coverage over time. The methodology used to develop these estimates was described in the 2016/17 *DHB*.^c
- ◆ Data population from the DHIS.

Per capita expenditure indicators use public sector expenditure divided by the uninsured population. However, the General Household Survey^d 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.

Population data

Indicators requiring population denominators 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) were developed by Stats SA for 2002–2021 (based on the best available information from Census 2016 and other sources of demographic information). These are the same population estimates currently included in the DHIS.

TB indicators

TB indicators for the most recent year based on the ETR.net and EDRWeb were provided by NDoH.

The indicator TB client initiated on treatment rate was calculated using cleaned data on TB cases notified for the numerator, divided by the number of TB tests with Mycobacterium TB detected (NHLS GeneXpert data) as reported by the TB Think Tank at NDoH.

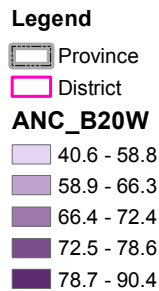
c Massyn N, Padarath A, Peer N, Day C, editors. District Health Barometer 2016/17. Durban: Health Systems Trust; 2017.

d Statistics South Africa. General Household Survey. Statistics South Africa. 2015.

Indicator maps

ArcMap 10.6 was used to generate the thematic or choropleth maps of indicator values by district and sub-district. Most of the maps were created using 'natural breaks',^e 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.

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 database cover the 12 months from April to March, which is the financial year of the NDoH. Indicators for financial years are annotated as 2017/18 or FY 2018. The TB data from ETR.net and EDRWeb cover a calendar year. Data from the Stats SA surveys correspond with the period of the survey. 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 average length of stay and expenditure, 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), descending (high values are best, for example immunisation coverage), or central (neither low nor high values are good and the optimal values are approximately central, approximated by the South African average for the indicator, for example inpatient bed utilisation rate).

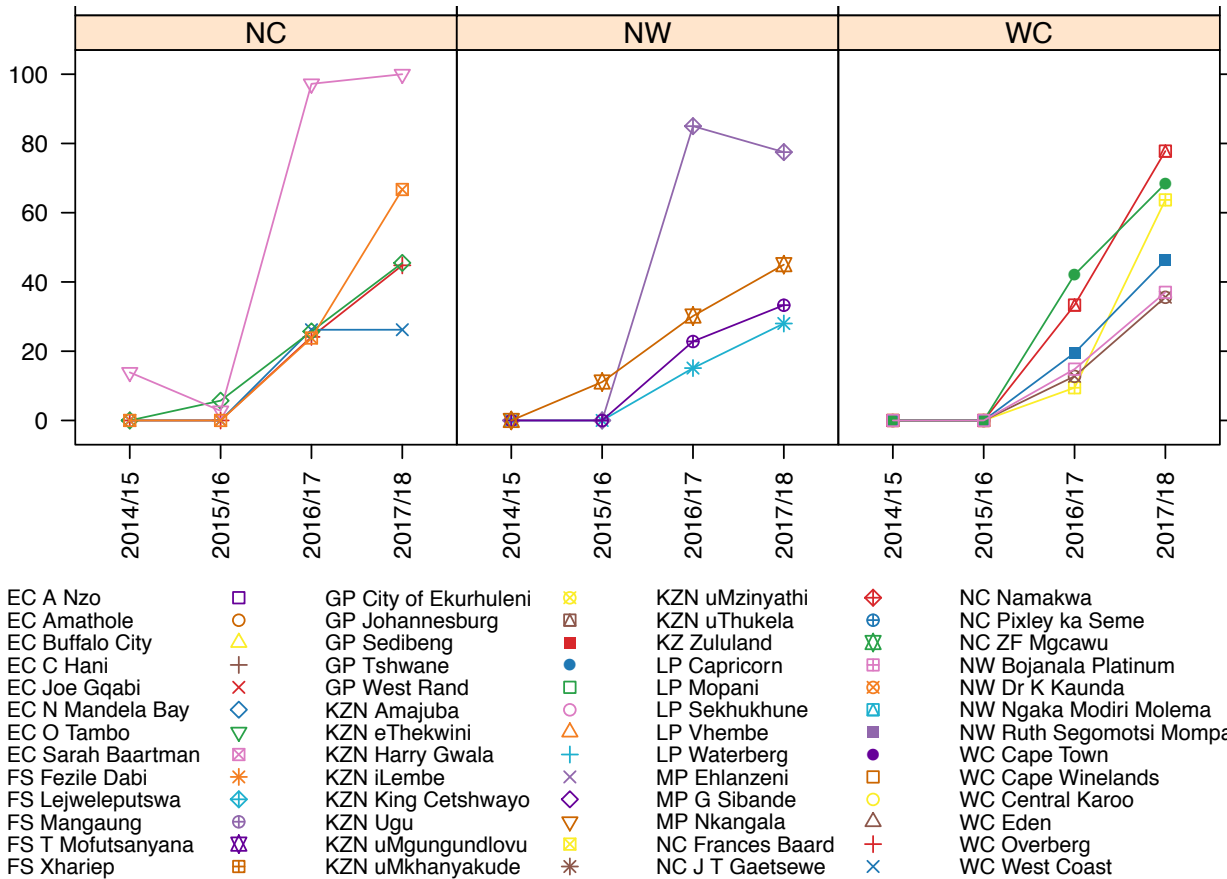
In the *DHB* data file and in the district chapters, the indicator ranks for all districts are coloured from green to orange to red. It must be noted that this is only a crude indication of performance and is based on the position of a district *relative* to the other 51 districts and not based on a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

^e This 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 2: Example of annual indicator trends over a number of years across districts and provinces



In section B of the report, composite graphs show annual trends and ranking for all districts for all the indicators included in Section A: Indicator Comparisons per programme of the *DHB*. 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

