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Finance (chapter of the District Health Baromoter)

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CLUSTER: HEALTH

NATIONAL TREASURY

Finance

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Executive summary – please add, you could copy the summary and recommendations here summarise them a bit

The only gap I see in the analysis, and I don't know if its possible to full, is to show the COE in the unit costs that are estimated…. Is this possible? Because that should reveal a lot.

I would like a table or two tables that summarise the entire report, but I am not sure whether that is possible… see below

Would the following tables capture the data analysed? or are the findings to varied that it doesn't make sense to aggregate at the provincial levels?

	District Health Services		**Primary Health Care**			
	DHS Per Capita	Average growth	Expenditure per capita	ANC 1st vist	iMMR	ART suppression
Eastern Cape						
Free State						
Gauteng						
KwaZulu Natal						
Limpopo Province						
Mpumalanga						
North West						
Northern Cape						
Western Cape						
Provincial Average						

	District Hospitals				
	Expenditure per PDE	Average Growth	BUR	ALOS	Inpatient Death
Eastern Cape					
Free State					
Gauteng					
KwaZulu Natal					
Limpopo Province					
Mpumalanga					
North West					
Northern Cape					
Western Cape					
Provincial Average					

If it doesn't make sense providing numbers – is there a narrative you could ad to these tables that captures the findings e.g.

- Expenditure per PDE:
  - Growing rapidly
  - Lowest in the country
  - Declining

Introduction

In pursuit of the right to health for all, as enshrined in the Constitution, South Africa aligns its Primary Health Care (PHC) policy to the declaration of the Alma-Ata of 1978 and the 2030 Sustainable Development goals (SDGs). This commitment to comprehensive PHC for all was renewed in 2018 through the Astana Declaration on Primary Health Care.[a] PHC is the level of services closest to the community and therefore plays an important role in responding to immediate health care needs of the community, maintaining good health care and preventing further illnesses.

The country is also committed to the progressive realisation of Universal Health Coverage (UHC), which seeks to realise equity in access to health services, ensure quality of services rendered and financial protection for users when they access healthcare[b]. For South Africa, this means providing healthcare services equitably, affordably and efficiently and strengthening the health system through the phased implementation of the National Health Insurance (NHI).[c] These ambitions cannot be achieved without constructive health financing, a key determinant of improved health outcomes and equity[d] and a critical component of systems strengthening.

[a] World Health Organization and the United Nations Children's Fund (UNICEF), 2018. Astana Declaration: new global commitment to primary health care for all Available from: https://www.who.int/pmnch/media/news/2018/astanadeclaration/en/#:~:text=The%20Declaration%20of%20Astana%2C%20unanimously,Empower%20individuals%20and%20communities%3B%20and

[b] World Health Organization. What is health financing for universal coverage?. Available from: https://www.who.int/health_financing/universal_coverage_definition/en/

[c] National Department of Health. White Paper on National Health Insurance. NDOH; 2017

[d] Schieber G, Baeza C, Kress D, et al. Financing Health Systems in the 21st Century. In: Jamison DT, Breman JG, Measham AR, et al., editors. Disease Control Priorities in Developing Countries. 2nd edition. Washington

As PHC forms an integral part of NHI and is a pathway to the realisation of UHC, research suggests that monitoring and measuring PHC expenditure is one of the fundamental steps in understanding disparities in health outcomes in a country's health system and identifying areas of need.[e] While there are no standard guidelines for health expenditure targets, general history on expenditure trends, healthcare service utilisation rates and health outcomes can be used to determine the reasonableness of expenditure levels in different settings in the country.

This chapter focuses mainly on four key indicators to monitor and measure equity and efficiency of PHC spend across South Africa:

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

The introductory section of this publication describes the methodology used to calculate the indicators in further detail. Provincial health expenditure up to 2019/20 was extracted from the National Treasury's Basic Accounting System (BAS) database. Expenditure allocated to specific health facilities under the 'Responsibility' segment was coded to the latest District Health Information Software (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 2019/20 prices. Statistics South Africa's (Stats SA) Consumer Price Index (CPIX) was used to convert expenditure for all years to real 2019/20 prices. Presenting expenditure in real prices means that changes over time reflect changes in actual resource use rather than inflationary changes in cost. This year's edition uses updated population estimates, and the values for the indicators using population as the denominator have therefore changed from previous editions of this publication, particularly for certain districts with large outbound or inbound migration.

Overview of district health services expenditure

District health services (DHS) have a dedicated budget programme in provincial departments of health (programme 2). This programme is broken down into several sub-programmes, which align to the services provided at this level (described in Box 1). In addition, local governments also spend some of their revenue on PHC facilities owned by municipalities and these amounts are added to the analysis to illustrate the total PHC spend.

(DC): The International Bank for Reconstruction and Development / The World Bank; 2006. Chapter 12. Available from: https://www.ncbi.nlm.nih.gov/books/NBK11772/

[e] Vande Maele N, Xu K, Soucat A*, et al*. Measuring primary healthcare expenditure in low-income and lower middle-income countries. *BMJ Global Health* 2019;**4:**e001497.

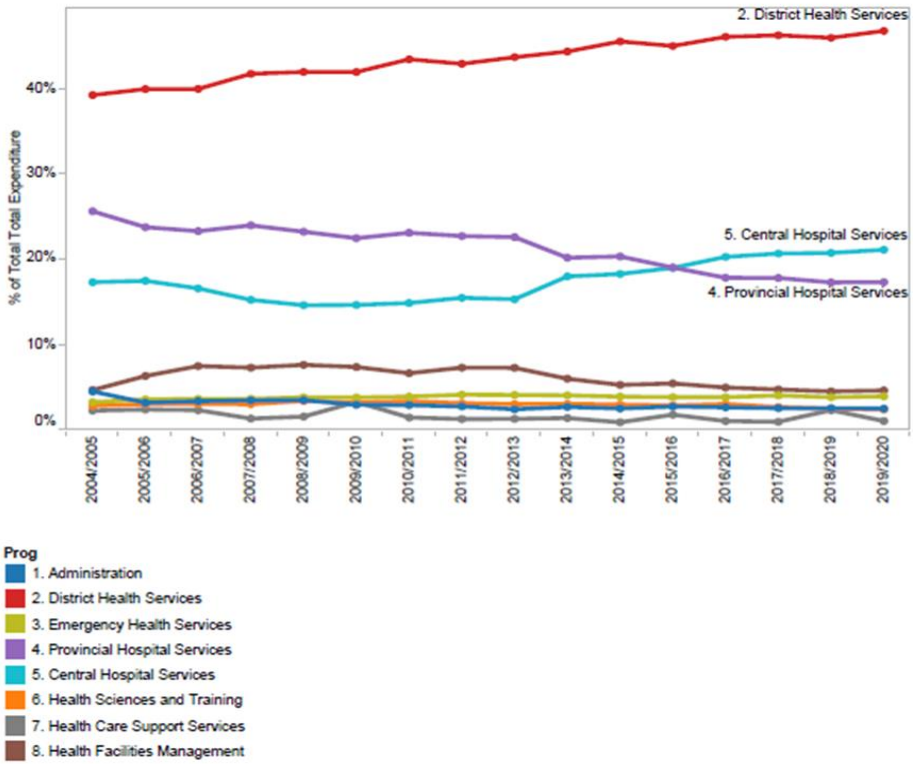
Box 1: District Health Services sub-programme objectives

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 primary health care service at clinic level, including visiting points, mobile clinics and local authority clinics.
Community health centres: Rendering a primary health service 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 homebased 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 primary health care service in respect of HIV and 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.

Source: National Treasury

The country's focus on investing more in PHC services is evident in the proportion of District Health Services (DHS) expenditure from total provincial health expenditure. As shown in Figure 1, DHS expenditure has increased as a proportion of total spend from below 40% to 46.8% in 2019/20, which is higher than Central and Provincial hospital services combined.

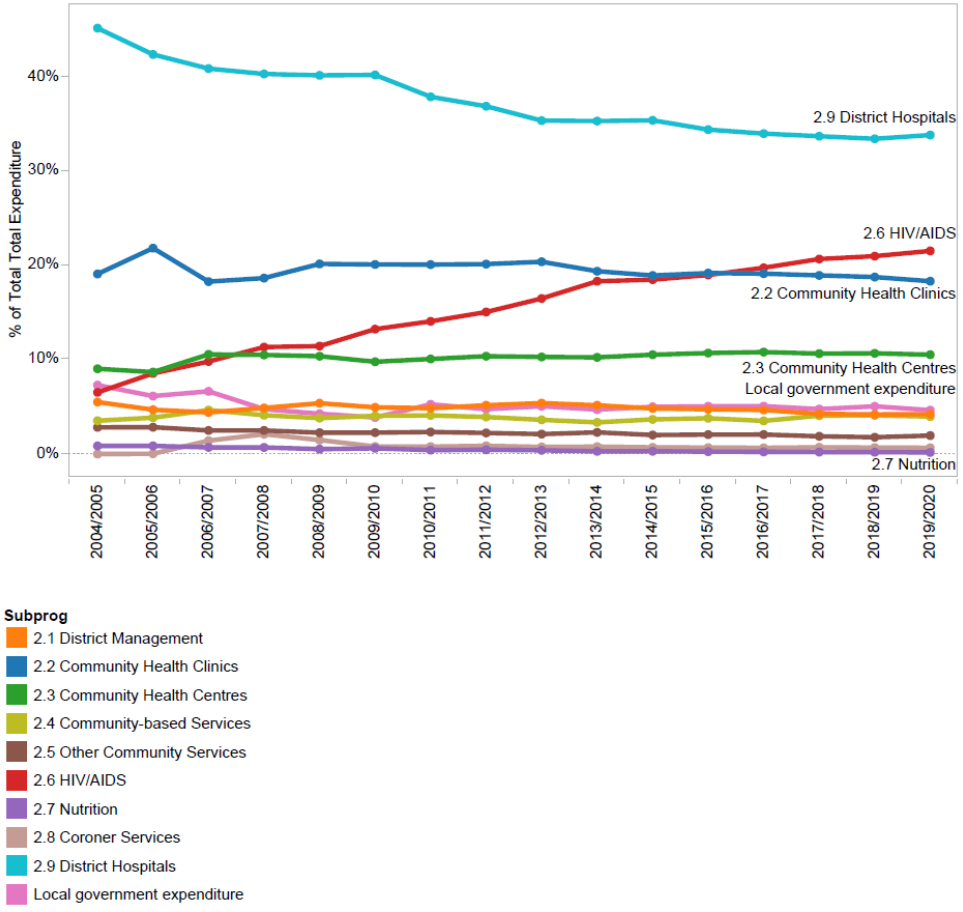
Figure 1: Proportion of provincial health expenditure by programme, 2004/05 – 2019/20



A significant proportion (33.8%) of DHS expenditure goes to District hospitals (Figure 2), which is generally not classified as PHC, the increasing share of spend toward DHS is a reflection

of the efforts towards bringing services closer to the people in a more affordable manner. Clinics, Community Health Centres (CHC), Community-Based Services,Other Community Services and local government expenditure make up 39.5% of total DHS expenditure in 2019/20. The overall increase in total DHS spend is partly driven by the increasing HIV/AIDS subprogramme (Figure 2).

Figure 2. Percentage of DHS expenditure by subprogramme, 2004/05 - 2019/20



Provincial and LG expenditure on DHS per capita uninsured

Provincial and local government (LG) expenditure per capita (uninsured) on DHS is the total spending on DHS per person not covered by a medical scheme. Approximately 16% of South Africans are insured. Expenditure per capita is shown by province and at district level to demonstrate relative equity in DHS spending across the country. The reason for using uninsured population is that these are the predominant users of the public health system.[f] This indicator illustrates average health expenditure per capita and does not consider service utilisation (which is covered in the later sections of this chapter).

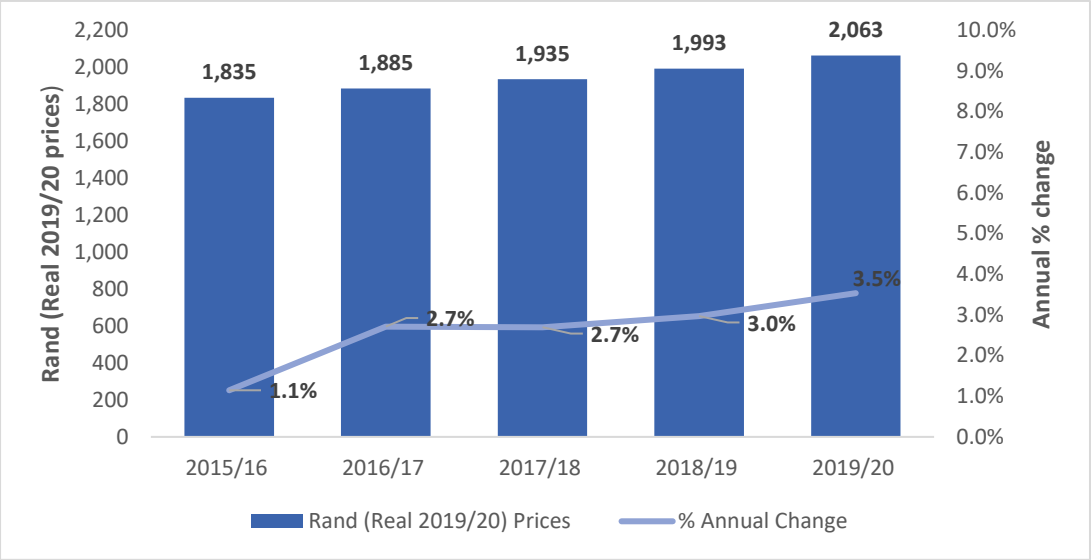
National overview

District Health Services expenditure per capita increased by 3.5% in 2019/20 real prices, from R1 993 in 2018/19 to R2 063 in 2019/20 (Figure 3). This increase has been relatively persistent

[f] Some who are insured still make use of the public health system when their benefits have run out, but this is mostly for hospital-based care and not PHC.

over time and South Africa spent R228 (12.4%) more on DHS per uninsured person in 2019/20 than in 2015/16.

Figure 3: Provincial and local government DHS expenditure per capita (uninsured population), 2015/16 – 2019/20



Provincial overview

Figure 4 shows substantial differences in DHS expenditure per capita in 2019/20 across and within provinces. By province, it ranged from a low of R1 621 in Gauteng to R2 492 in Limpopo. Limpopo has maintained this position for the past two years with an average annual growth of 3% from 2016/17 to 2019/20.

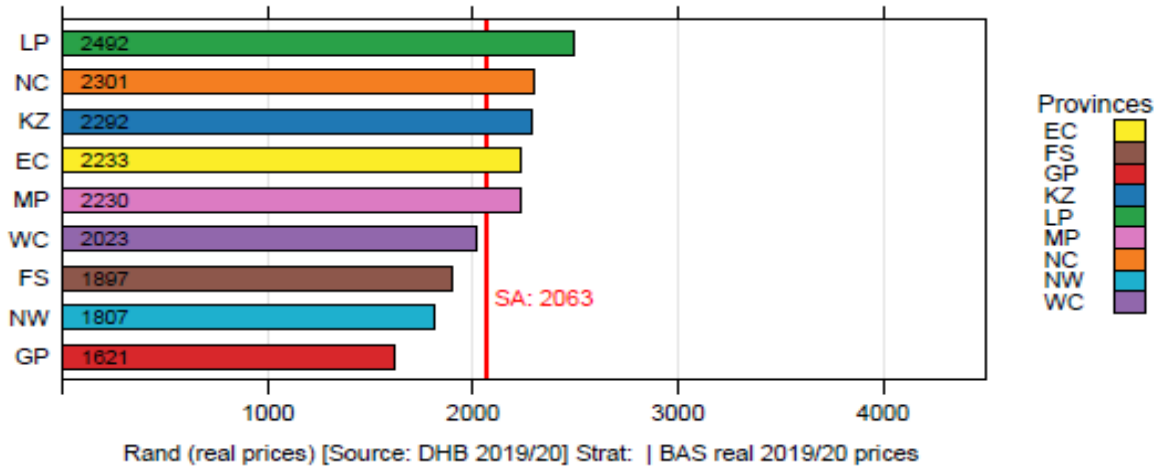
Gauteng has very high in-migration, attracting international migrants as well as domestic migrants from rural provinces such as Limpopo, KwaZulu-Natal and Eastern Cape.[g] Often, these migrants are reliant on the state for healthcare, as they travel in search of better economic opportunities in urban metros.[h] Migrants may not be fully accounted for during the planning and budgeting stages and therefore place additional pressure on facilities. This can result in poor quality of care if the system has insufficient resources to cope with the additional load.[i] Gauteng has relatively few district hospitals but a large tertiary/central hospital service platform. PHC services are often bypassed in favour of hospitals, which has cost implications for the province overall. The low number of district hospitals has resulted in Gauteng's low DHS spend per capita as compared to Limpopo, which has more district hospitals, fewer tertiary hospitals and a more stable population. The uninsured population has also grown in Gauteng (average 2.4% per year since 2015/16). Limpopo showed growth in the uninsured population of only 1.1% on average.

[g] Statistics South Africa. 2019. Mid-year population Estimates. Available from http://www.statssa.gov.za/publications/P0302/P03022019.pdf

[h] Oladipo J. A. (2014). Utilization of health care services in rural and urban areas: a determinant factor in planning and managing health care delivery systems. *African health sciences*, *14*(2), 322–333. https://doi.org/10.4314/ahs.v14i2.6

[i] Oladipo J. A. (2014). Utilization of health care services in rural and urban areas: a determinant factor in planning and managing health care delivery systems. *African health sciences*, *14*(2), 322–333. https://doi.org/10.4314/ahs.v14i2.6

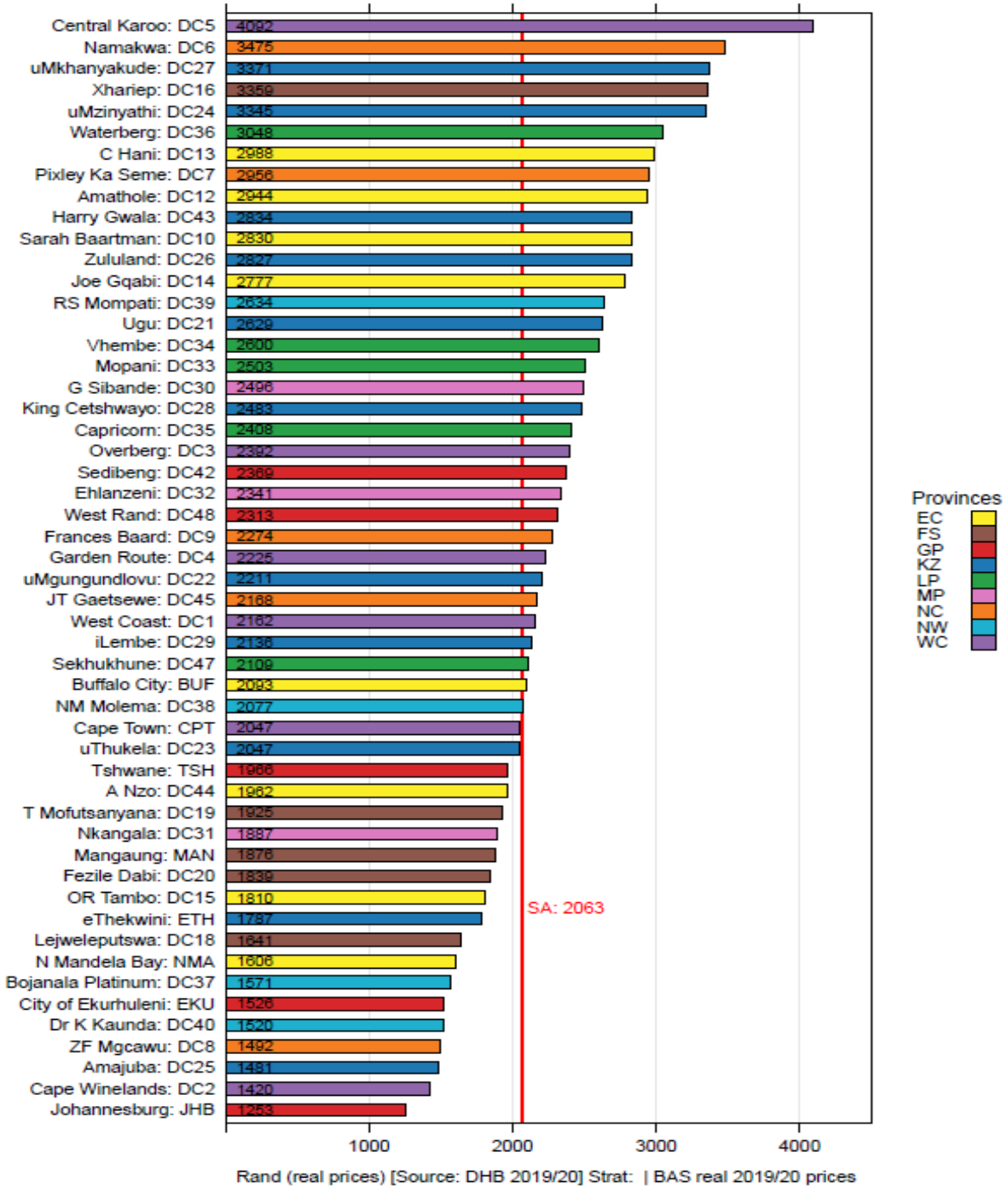
Figure 4: Provincial & LG District Health expenditure per capita (uninsured) by province, 2019/20



District overview

DHS expenditure per capita by district (Figure 5) also shows varying levels, with Johannesburg spending the lowest at R1 253 and Central Karoo spending the highest at R4 092 (69.2% higher than Johannesburg). Central Karoo has also maintained this spot for the past two years. The very high DHS spending per capita in Central Karoo is linked to the sparsity of the region. Nevertheless, it raises questions of equitable distribution of resources, noting that in the same province, Cape Winelands district (also classified as rural) only spends R1 420 per capita.

Figure 5: Provincial & LG District Health Services expenditure per capita (uninsured) by district, 2019/20

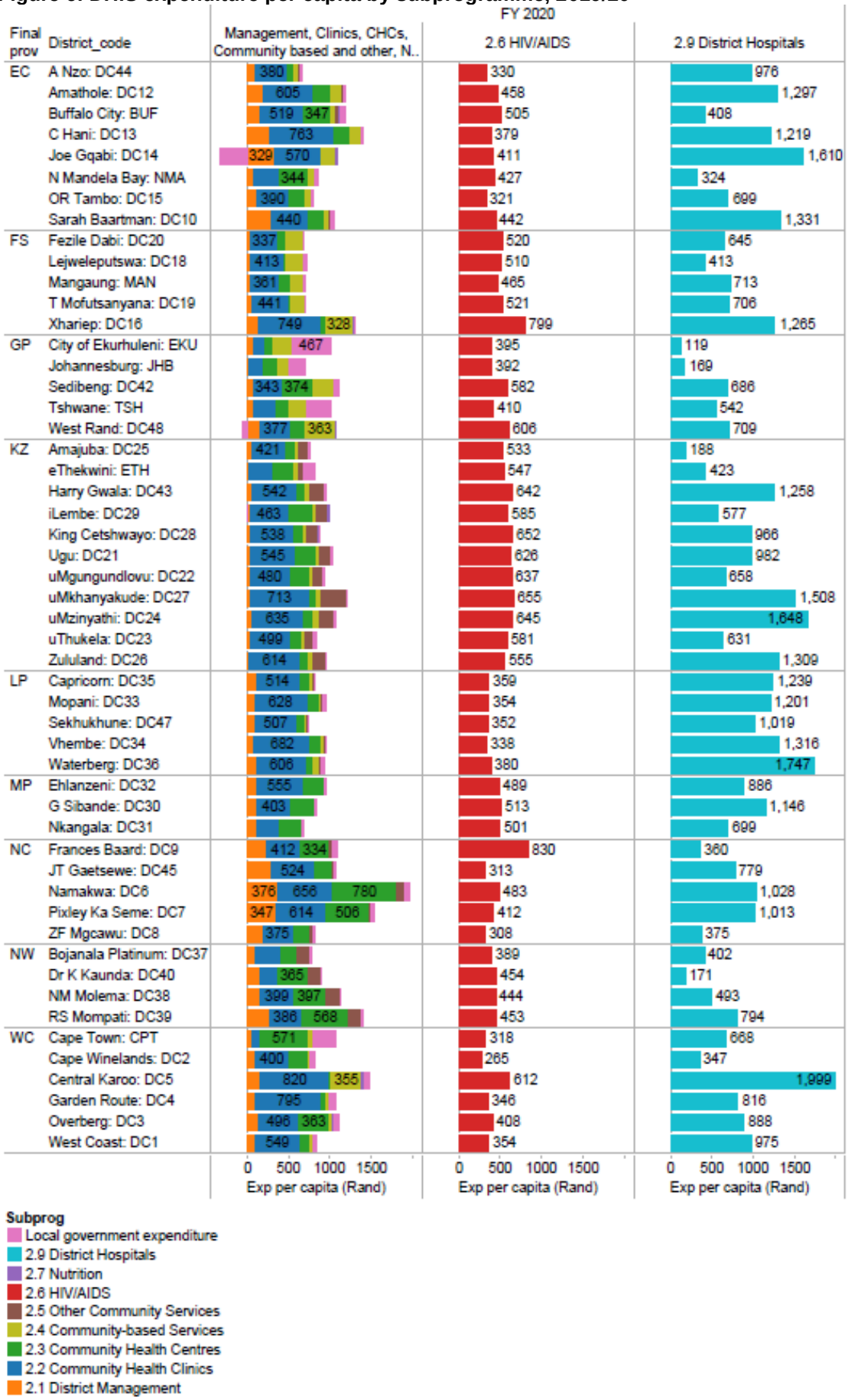


Breakdown of DHS expenditure by subprogramme

The most important factor explaining differences in overall district health expenditure per capita appears to be expenditure per capita on district hospitals (Figure 6). As mentioned above, the number and sizes of district hospitals varies considerably across provinces and districts, depending to a large extent on the existence of higher-level hospitals in the area and the number of hospitals in neighbouring districts. The ten districts with the highest DHS expenditure per capita spent on average R1 398 per capita on district hospitals, compared to a (simple) average of R853 across all districts. The bottom 10 districts had an average per capita district hospital expenditure of only R422.

As discussed in previous editions of the District Health Barometer, expenditure from local government own revenue only contributes significantly to DHS expenditure in metropolitan municipalities. In Gauteng and Western Cape LG expenditure contributes 15.9% and 9.3% respectively of DHS, whereas in all other provinces it constitutes 2.3% or less. The contribution was the highest in Ekurhuleni (GP) at R467 per uninsured person, followed by Tshwane at R291, Cape Town at R264, Johannesburg at R188 and eThekwini at R149. The three other metros (Buffalo City, Nelson Mandela Bay and Mangaung) did not have significant local government contributions. Given the locations of the metros, there were significant differences at the provincial level.

Figure 6: DHIS expenditure per capita by subprogramme, 2019/20



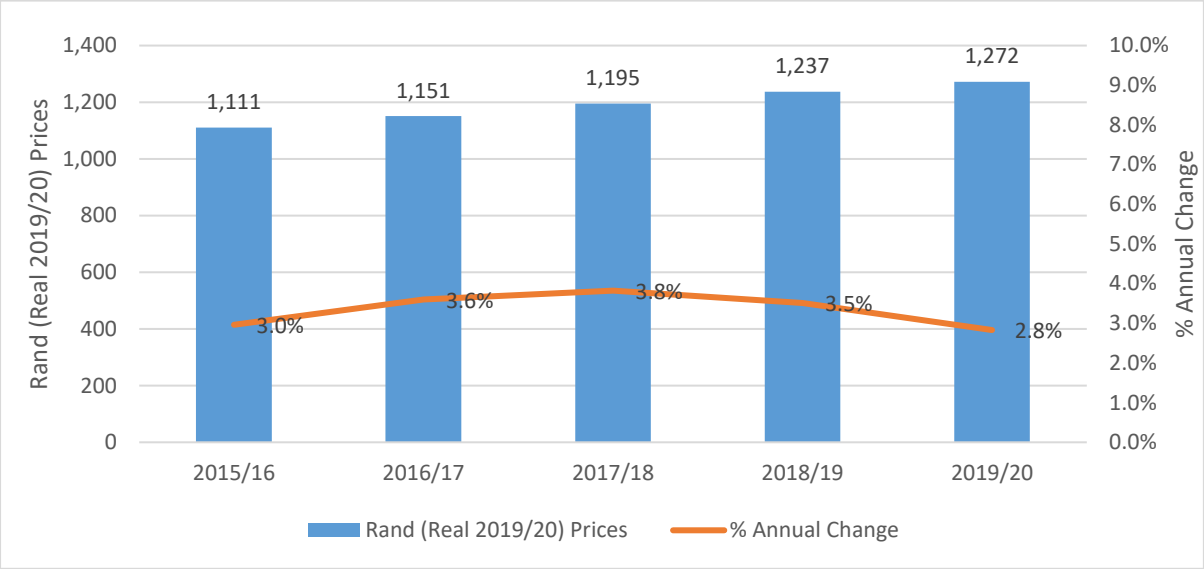
Provincial and LG expenditure on PHC per capita uninsured

Provincial and local government primary health care expenditure is expenditure on clinics, community health centres (CHC), community-based services, other community services, HIV/AIDS, nutrition and local government primary health care expenditure and the denominator for this indicator is the uninsured population.

National Overview

As seen in the figure below, overall PHC expenditure per capita for South Africa was R1 272 in 2019/20. Although this is still a real increase of 2.8% since 2018/19 (R1 242), the pace of growth has slowed down somewhat in the past two years. As with DHS expenditure per capita, the increase in PHC expenditure per capita can be partly attributed to growth in HIV/AIDS expenditure, something which has been analysed in further detail in previous editions of District Health Barometer.[j,k]

Figure 7. Provincial and local government PHC expenditure per capita (uninsured), 2014/15 - 2019/20 (Rand, real prices)



Provincial overview

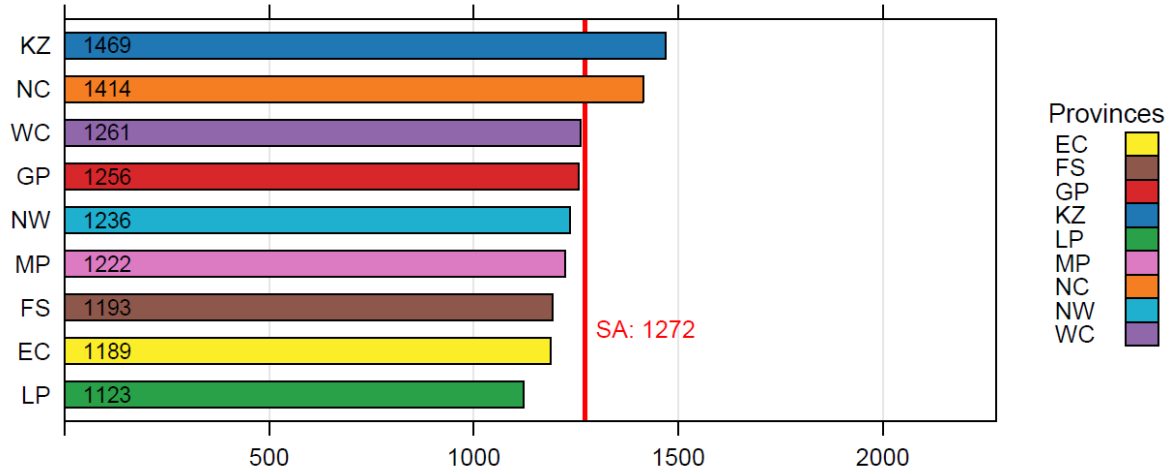
Provincial and local government PHC expenditure per capita (uninsured) in 2019/20 was R1 272. The following is observed:

- In 2018/19 Northern Cape had the highest and Eastern Cape had the lowestPHC expenditure per capitat. In 2019/20 KwaZulu-Natal had the highest PHC expenditure per capita at R1 469, followed by Northern Cape at R1 414 and Western Cape at R1 261.
- .
- year? Limpopo had the highest DHS expenditure per capita and lowest expenditure on PHC per capita at R1 123, indicating that the population is more dependent on district hospitals than PHC facilities to access basic healthcare services.

[j] Massyn N, Pillay Y, Padarath A, editors. District Health Barometer 2017/18. Durban: Health Systems Trust; January 2019.
[k] Massyn N, Barron P, Day C, Ndlovu N, Padarath A, editors. District Health Barometer 2018/19. Durban: Health Systems Trust; February 2020.

- Mpumalanga is the province that has seen the largest increase in PHC expenditure per capita over the past five years, from R949 in 2015/16 to R1 222 in 2019/20 – an increase of 28.8% in total and 6.5% per year on average.

Figure 8: Provincial and local government PHC expenditure per capita (uninsured) by province, 2019/20 (Rand, real prices)



District overview

As in previous years, there is a substantial spread in PHC expenditure per capita across districts (Figure 9). The gap between the highest and lowest spending districts decreased from R1 283 in 2018/19 to R1 232 in 2019/20. The highest spending district, Namakwa (NC) at R2 070 spent 2.5 times more than the lowest spending district Joe Gqabi (EC) at R838.

Most districts had a real positive growth rate in PHC expenditure per capita from 2018/19 to 2019/20 and only 11 districts had a decline. Joe Gqabi (EC) had the largest decline by -23.2%, and is now the lowest funded district and the reasons for this sharp decline should be interrogated. Frances Baard was the district with the highest increase in PHC expenditure per capita in 2019/20 at 11.5%.

Namakwa has remained the highest spending district for the past five years but has decreased for two consecutive years at a real average growth rate of -2.2%. Xhariep (FS) was the second highest spending district in 2019/20 at R1 948 and has increased considerably in recent years. Namakwa is extremely sparsely populated and the cost of delivering care in sparsely populated rural areas is often more expensive.[l,m] Rural facilities are often harder to access (mainly due to limited transport infrastructure), and therefore are likely to have lower levels of usage compared to healthcare facilities in more densely populated areas. This means that healthcare facilities in rural areas are often not able to achieve economies of scale, which makes the per capita costs of delivering services more expensive.[n] Rural areas also sometimes incur additional costs related to difficulties in recruiting and retaining staff (such as

[l] Penno, Erin, Robin Gauld, and Rick Audas. 2013. "How Are Population-Based Funding Formulae for Healthcare Composed? A Comparative Analysis of Seven Models." *BMC Health Services Research* 13 (1)

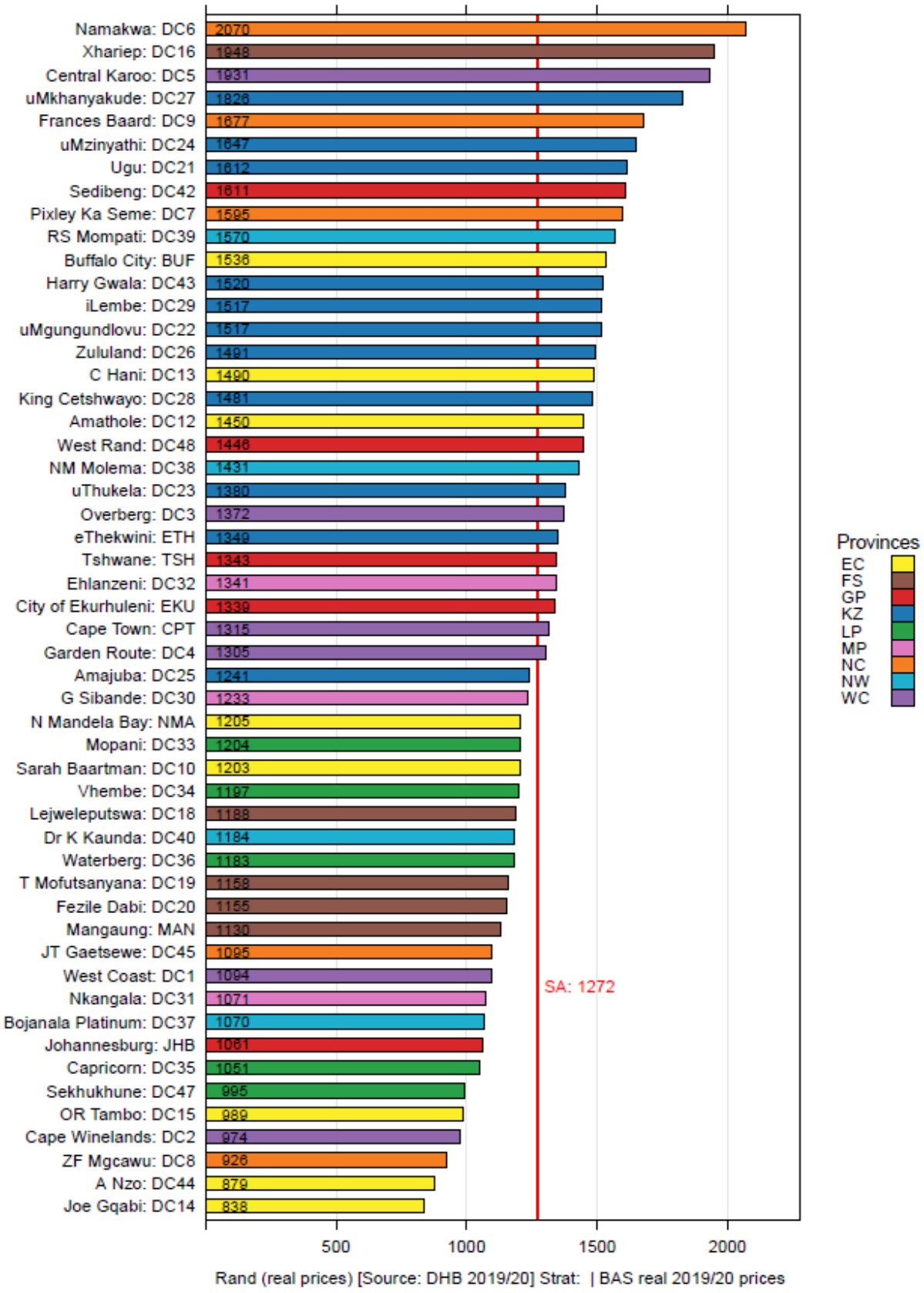
[m] Morris, Stephen, Roy Carr-Hill, and Laura Vallejo-Torres. 2007. "Combining Age Related and Additional Needs (CARAN) Report.

[n] Palmer, Billy, John Appleby, and Jonathan Spencer. 2019. "Rural Health Care: A Rapid Review of the Impact of Rurality on the Costs of Delivering Health Care," January. https://www.nuffieldtrust.org.uk/files/2019-01/rural-health-care-report-web3.pdf.

the rural allowance) and longer travel times for emergency services.[o] Therefore, we do expect differences across the districts that relate to the specific context and burden of disease the district serves.

[o] Palmer, Billy, John Appleby, and Jonathan Spencer. 2019. “Rural Health Care: A Rapid Review of the Impact of Rurality on the Costs of Delivering Health Care,” January. https://www.nuffieldtrust.org.uk/files/2019-01/rural-health-care-report-web3.pdf.

Figure 9: Provincial and Local government PHC expenditure per capita (uninsured) by district, 2019/20 (Rand, real prices)



Analysis between PHC expenditure per capita, ANC 1st visit before 20 weeks, IMMR and ART viral suppression

Expenditure on healthcare is not an end in itself and its purpose is to enable provision of high-quality care to health users. It is therefore important to analyse expenditure in relation to performance. One would expect that higher PHC expenditure per capita would be associated with better performance. In this section we present PHC expenditure per capita together with three key performance indicators to examine the access to and quality of care against the resources used. These three indicators are analysed in greater detail in other chapters in this publication, and in this chapter are mainly discussed in relation to PHC expenditure.

Table 1 shows PHC expenditure per capita, antenatal care (ANC) 1st visit before 20 weeks rate, maternal mortality in facility ratio (per 100 000 live births) and HIV viral load suppressed rate.

Table 1. Comparison between PHC expenditure per capita and other key indicators[p]

	District	Province	PHC exp per capita	ANC 1st visit before 20 weeks rate	iMMR	Viral load suppression rate
Top 10	Namakwa	NC	2,070	76.3		78.8
	Xhariep	FS	1,948	75.3	183.7	83.1
	Central Karoo	WC	1,931	77.8		
	uMkhanyakude	KZ	1,826	78.0	51.3	90.2
	Frances Baard	NC	1,677	62.8	172.8	89.4
	uMzinyathi	KZ	1,647	81.1	32.8	90.6
	Ugu	KZ	1,612	73.8	52.1	89.9
	Sedibeng	GP	1,611	68.7	120.5	89.4
	Pixley Ka Seme	NC	1,595	70.7		84.1
	RS Mompati	NW	1,570	67.0	54.9	85.2
	Buffalo City	EC	1,536	53.9	182.4	89.7
	Harry Gwala	KZ	1,520	74.9	54.1	90.6
	iLembe	KZ	1,517	75.2	62.5	89.3
	uMgungundlovu	KZ	1,517	72.1	163.3	87.4
	Zululand	KZ	1,491	78.1	43.3	90.2
	C Hani	EC	1,490	70.7	81.9	81.6
	King Cetshwayo	KZ	1,481	71.5	73.7	89.7
	Amathole	EC	1,450	74.9	31.9	84.5
	West Rand	GP	1,446	73.3	105.7	87.0
	NM Molema	NW	1,431	72.2	106.2	81.9
	uThukela	KZ	1,380	71.3	81.1	89.3
	Overberg	WC	1,372	80.5		
	eThekwini MM	KZ	1,349	73.8	91.5	90.5
	Tshwane MM	GP	1,343	64.8	88.3	88.5
	Ehlanzeni	MP	1,341	83.3	67.1	83.1
	City of Ekurhuleni	GP	1,339	66.3	115.0	88.8
	Cape Town	WC	1,315	68.8	53.2	
	Garden Route	WC	1,305	76.2	37.6	
	Amajuba	KZ	1,241	73.5	27.7	92.9
	G Sibande	MP	1,233	69.8	47.4	89.4
	N Mandela Bay	EC	1,205	70.2	85.2	81.6
	Mopani	LP	1,204	73.1	93.9	85.5
	Sarah Baartman	EC	1,203	70.8	62.3	80.7
	Vhembe	LP	1,197	72.1	66.5	83.0
	Lejweleputswa	FS	1,188	64.4	147.2	87.5
	Dr K Kaunda	NW	1,184	72.1	117.2	84.1
	Waterberg	LP	1,183	68.4	61.4	85.3
	T Mofutsanyana	FS	1,158	65.4	76.1	88.9
	Fezile Dabi	FS	1,155	69.1	90.1	89.7

[p] For each indicator, blue cells are the highest 10 values and yellow cells are the lowest 10 values, irrespective of whether desired performance for respective indicator is high or low.

	District	Province	PHC exp per capita	ANC 1st visit before 20 weeks rate	iMMR	Viral load suppression rate
	Mangaung	FS	1,130	66.7	136.0	91.4
	JT Gaetsewe	NC	1,095	60.2	106.2	
	West Coast	WC	1,094	76.7		
Bottom 10	Nkangala	MP	1,071	74.0	85.9	86.3
	Bojanala Platinum	NW	1,070	71.3	73.1	86.7
	Johannesburg	GP	1,061	66.1	98.7	84.4
	Capricorn	LP	1,051	62.4	195.8	86.2
	Sekhukhune	LP	995	68.1	56.7	85.7
	OR Tambo	EC	989	64.9	171.0	87.7
	Cape Winelands	WC	974	76.4	35.1	
	ZF Mgcawu	NC	926	67.6	108.2	73.2
	A Nzo	EC	879	50.0	42.6	88.9
	Joe Gqabi	EC	838	68.7	38.8	88.1
Averages	**All districts (simple average)**		**1,335**	**70.7**	**87.9**	**86.7**
	All districts (weighted average)		**1,272**	**69.7**	**88.0**	**87.5**
	Top 10 spending districts		**1,749**	**73.2**	**95.4**	**86.7**
	Bottom 10 spending districts		**985**	**67.0**	**90.6**	**85.2**
	Top 20 spending districts		**1,618**	**72.4**	**92.5**	**87.0**
	Bottom 20 spending districts		**1,072**	**67.8**	**93.1**	**85.8**

Antenatal care

ANC is an important component of PHC as it brings women into the service more regularly, allowing for screening for other health conditions such as HIV. It is also an important predictor of maternal and child health, where quality ANC can prevent maternal mortality and adverse events during delivery. South Africa uses the ANC visit before 20 weeks metric as a proxy measure for the coverage and quality of ANC in the country. The NDOH had a target rate of 80% by 2019/20[q] but the national average rate of ANC visit before 20 weeks was 69.7% in 2019/20, well below this target.

Only three districts achieved the national target, namely, Ehlanzeni (MP) at 83.3%, uMzinyathi (KZN) at 81.1% and Overberg (WC) at 80.5%. While Ehlanzeni is a densely populated, mostly urban district, uMzinyathi, and Overberg are very rural districts. Of the top 10 performers, nine are classified as rural. Given the widespread literature that shows lower access to ANC for women living rurally, these nine rural districts should be commended for their efforts in ensuring access to care.

While it is difficult to draw any definite conclusions from the data presented in Table 1, it is noticeable that the top 10 spending districts had higher average ANC coverage than the bottom 10 districts, indicating a potential positive correlation.

However, there are also notable exceptions. Alfred Nzo (EC) had the lowest rate at 50.0%, followed by Buffalo City (EC) at 53.9%. This suggests that Buffalo City's relatively high (11th highest) PHC expenditure per capita uninsured is not yielding substantially better ANC coverage than the second lowest spending district in the country. Conversely, Cape Winelands had the fourth lowest expenditure per PHC and yet performed equally well on ANC coverage as the highest spending district (Namakwa). This varied picture shows the influence of non-financial factors on performance.

HIV viral load suppression

Another indicator that is useful in measuring quality of care is HIV viral load suppression rate (VLSR) in a district. High levels of suppression infer a functional ART programme that has

[q] South African National Department of Health. Strategic Plan 2015/16–2019/20.

high levels of retention in care. This year's DHB data includes data from quarter 1 of 2020[r], which is the end of the 2019/20 financial year. The national VLSR was 87.5%. Only Namakwa (78.8%[s]) and ZF Mgcawu (73.2%), both of which are in the Northern Cape, had rates below 80%. No obvious correlation between PHC expenditure per capita and HIV viral load suppression can be discerned from the data presented in Table 1. The top 10 spending districts had a simple average viral load suppression rate of 86.7%, mirroring the simple average for the country but slightly below the weighted average of 87.5%. The two highest spending districts were among the bottom 10 performers in viral load suppression.

Maternal mortality in facility ratio

Finally, we look at the maternal mortality in facility ratio (MMR).[t]. This is directly linked to the quality of ANC received and, therefore, one can make assumptions about the quality of PHC care when analysing MMR. The national average sits at 88 deaths per 100K live births. Although MMR in facility is different from population-level MMR (which is estimated at 134/100k live births in South Africa[u]), it is nevertheless interesting to consider this in relation to the Sustainable Development Goals target of 70/100K live births globally by 2030.

Table 2 shows the districts that have already surpassed the SDG goal. Once again, Ehlanzeni (MP) falls in the top performers. Western Cape districts are also well represented in the top performers across several indicators. Some of the district level differences could, however, be driven by differences in the number and type of hospitals available in the district. We would expect those with more hospitals and more specialised hospitals, to have higher MMR given the complexity of the cases. Notably, Cape Town is the only metro that has surpassed the SDG goal. This is impressive, given the high number of tertiary and central hospitals in the metro.

Table 2: Districts whose MMR in facility have surpassed SDG MMR target

District	MMR
Amajuba (KZN)	27.7
Amathole (EC)	31.9
uMzinyathi (KZN)	32.8
Cape Winelands (WC)	35.1
Garden Route (WC)	37.6
Joe Gqabi (EC)	38.8
Alfred Nzo (EC)	42.6
Zululand (KZN)	43.3
Gert Sibande (MP)	47.4
uMkhanyakude (KZN)	51.3
Ugu (KZN)	52.1
Cape Town (WC)	53.2
Harry Gwala (KZN)	54.1
RS Mompati (NW)	54.9
Sekhukhune (LP)	56.7
Waterberg (LP)	61.4
Sarah Baartman (EC)	62.3
iLembe (KZN)	62.5
Vhembe (LP)	66.5
Ehlanzeni (MP)	67.1

Judging from Table 1, there does not appear to be a direct linear relationship between PHC expenditure per capita and MMR in facility. It is likely that MMR in facility is driven more by

[r] There was no data for JT Gaetsewe (NC) and the WC districts

[s]

[t] No data available for Namakwa (NC), Overberg (WC), West Coast (WC), Central Karoo (WC) and Pixley Ka Seme (NC)

[u] Dorrington RE, Bradshaw D, Laubscher R, Nannan N (2020). Rapid mortality surveillance report 2018. Cape Town: South African Medical Research Council. ISBN: 978-1-928340-44-7.

funding and performance of hospitals and emergency medical services than by PHC expenditure.

Summary

In summary, from these analyses of the PHC expenditure per capita against performance and health outcome measures, we see a disconnect between resource allocation and performance. However, more rigorous statistical analysis would be required to draw firm conclusions in this regard. This lends credence to the notion that more money does not always equate to better health outcomes.

It is also a cautionary tale, for the need to analyse financial performance based on health outcomes, to ensure value for money. Not all districts have the same burden of disease nor the same needs. Therefore, there is nothing inherently wrong with some variation in spending across districts, so long as one can see patterns between outcomes and spend. What this analysis has shown is that it is more likely that the better performing districts have other qualities that are allowing them to continue performing well in an austere climate. Whether that could be attributed to strong leadership and management or better infrastructure would have to be investigated at an individual district level.

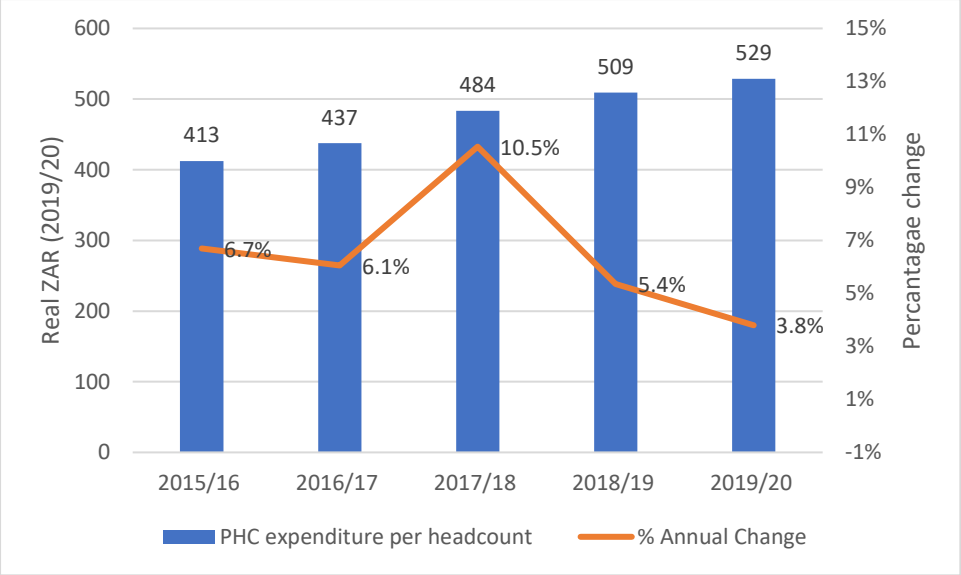
Provincial and LG expenditure per PHC headcount

While PHC expenditure per capita is an important measure of equity in resource distribution, it does not say much about efficiency and productivity because it is not linked to outputs. PHC expenditure per headcount is therefore an important complementary indicator as it puts expenditure in relation to PHC service volumes.

National overview

Figure 10 demonstrates that PHC expenditure per headcount has grown substantially from R413 in 2015/16 to R529 in 2019/20 at an annual average growth of 6.4% (real 2019/20 prices). This considerable growth is a result of an annual decline of -1.4% in headcount (-2.8% per capita, see Figure 11) and annual real growth of 4.9% in PHC expenditure during this period. Many reasons have been expressed previously on this continuous trend of a decline in PHC utilisation rates. *Inter alia*, these have included the introduction of the Central Chronic Medicine Dispensing and Distribution (CCMDD) programme which has reduced congestion in PHC facilities with patients having a choice of selecting a convenient pick-up point for their chronic medication. Alongside this programme, is the Ward Based Primary Healthcare Outreach Teams which also play a pivotal role in health promotion, distribution of medication and managing healthcare needs at a community level. The penetration of these teams in communities is deemed to have reduced number of patients seeking healthcare services in facilities. Other reasons which have been put forward are lower service demand due to improved health status of the population and rationalisation of patient registers in facilities which has reduced double-counting of patients. Increasing ART patients as a share of total patients is likely also contributing to the increasing average expenditure per patient.

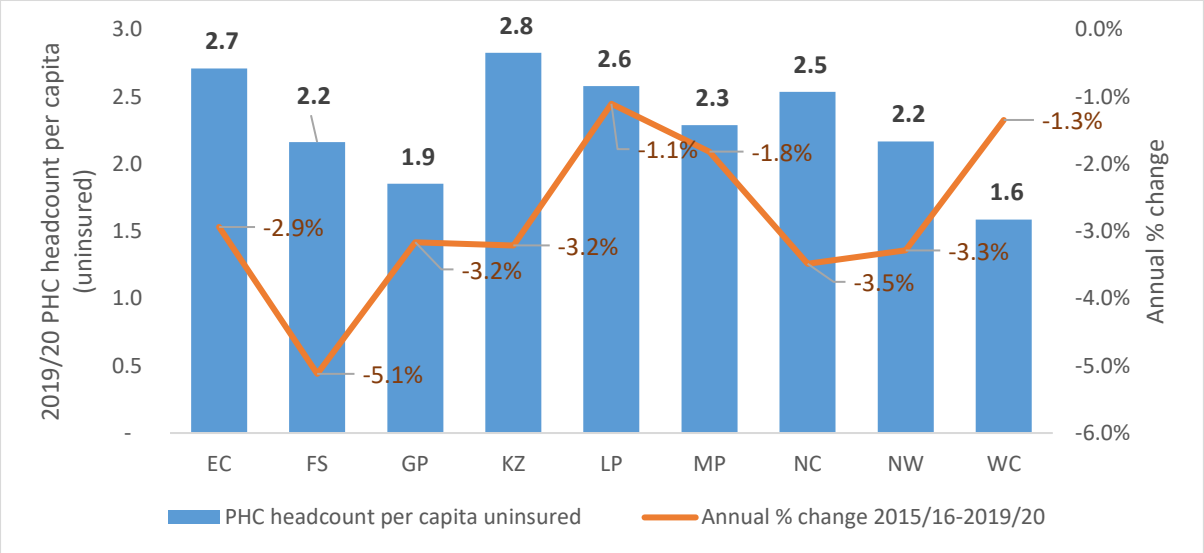
Figure 10. Provincial and local government PHC expenditure per headcount (uninsured population), 2013/14 – 2019/20



Source: National Treasury

PHC utilisation rates (i.e. average headcount per uninsured person), as shown in the graph, have declined at a negative annual average growth of 2.8% nationally from 2015/16-2019/20. While all provinces have declining utilisation rates, FS (5.1%), NC (3.5%), Gauteng (3.2%), NW (3.3%) and KZN (3.2%) have a decline higher than the national average. The argument in Gauteng has and continues to be patients bypassing PHC facilities and making use of regional and tertiary services as well as seeking care at private general practitioners even if uninsured (opting to pay out of pocket for perceived better quality of care and/or shorter waiting times). Community-based interventions have also been noted as a contributor to the low and continuous decline in utilisation.[v]

Figure 11. 2019/20 PHC utilisation rates and average annual change from 2015/16 to 2019/20

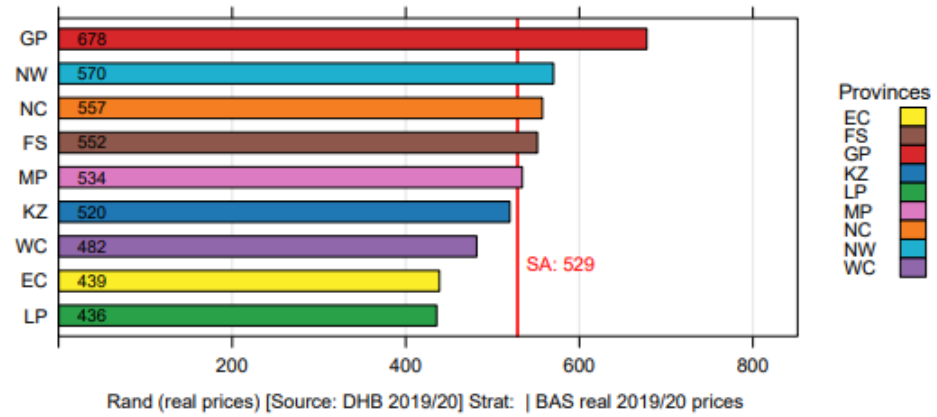


[v] Gauteng Department of Health. 2018/19 annual report. Available from: https://provincialgovernment.co.za/department_annual/780/2019-gauteng-health-annual-report.pdf

Provincial overview

PHC expenditure per PHC headcount ranges from a low of R439 in Limpopo to a high of R678 in Gauteng (Figure 12). In Gauteng this is consistent with low PHC utilisation rate as mentioned above. NW (R570), NC (R557) and FS (R552) are above the national average, which also accords with the decline in PHC headcount in these provinces over the past four years (2015/16-2019/20).

Figure 12. Provincial & LG PHC expenditure per PHC headcount by province 2019/20

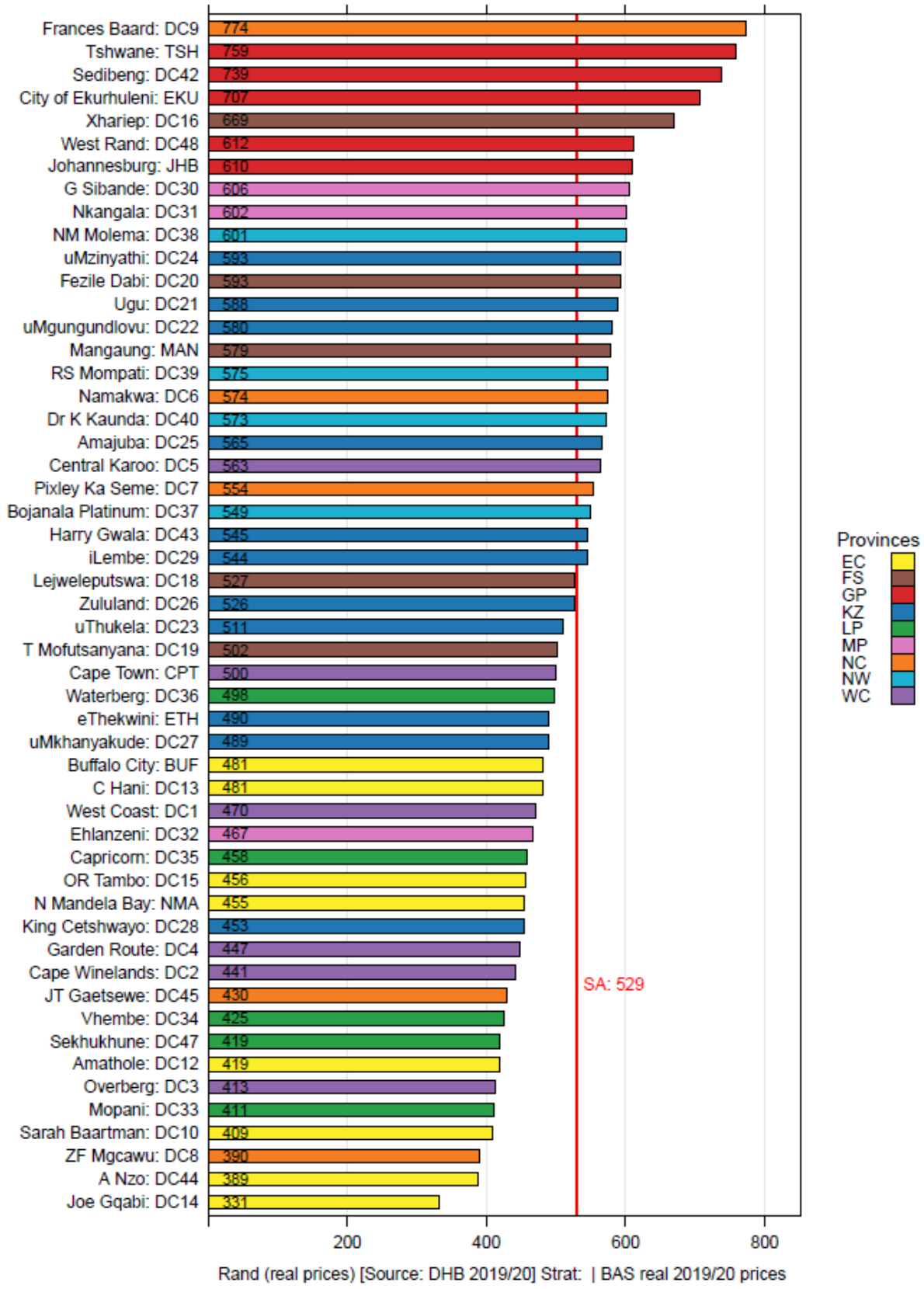


District overview

Spending in districts (Figure 13) has shifted compared to the previous year (2018/19). The concentration of Gauteng's districts at the top of the chart has become even stronger, now occupying 5 of the 7 highest places. Francis Baard (NC) spent the highest (R774) per PHC headcount and Joe Gqabi (EC) spent lowest (R331). Although all Eastern Cape districts fall below the national average, spending per PHC headcount increased by 4.9% in 2019/20 from a growth of only 2.8% in 2018/19.

The wide disparities across districts in Northern Cape is a cause for concern, with Francis Baard having spent highest in the country and ZF Mgcawu at the third to last. A similar observation can be made in Western Cape and Free State, where the highest spending districts spent more than 30% more than the lowest districts. This raises concerns around equity and allocative efficiency in distribution of resources across districts in these provinces. In the current economic climate, where health budgets are increasingly constrained, provinces may have to consider reviewing the allocation of resources in districts to be more consistent with the demand for services. The concerns raised in this publication mirror what previous editions of this publication noted, illustrating that little has been done to improve the status quo.

Figure 13. Provincial & LG PH expenditure per PHC headcount by district 2019/20



Expenditure per patient day equivalent (district hospitals)

South Africa has around 250 district hospitals, which is the lowest level of hospital care and is generally the most accessible to the population, particularly in rural areas. In 2019/20, R35 billion was spent on district hospitals, making up 33.8% of total district health expenditure.

A patient day equivalent (PDE) is a weighted measure that combines inpatient days, day patient headcounts and outpatient department (OPD) visits into a utilisation measure that roughly corresponds to the resource requirements of one inpatient day.[w] Change in expenditure per PDE can be driven by either change in expenditure or in number of PDEs or a combination of the two.

Differences in the number of PDEs across geographic areas can have different causes. While PHC is generally meant to be delivered in clinics, community health centres and through outreach services, in reality many provinces also rely to various degrees on district hospital outpatient departments (OPDs) to deliver PHC services. A weaker PHC platform can therefore result in a higher number of OPD visits, driving up the number of PDEs. Another factor can be cross-district patient movement. As patients are not bound by these borders, if the closest hospital is in a neighbouring district or if services are perceived as better in that hospital, patients will likely seek care there rather than in their home district.

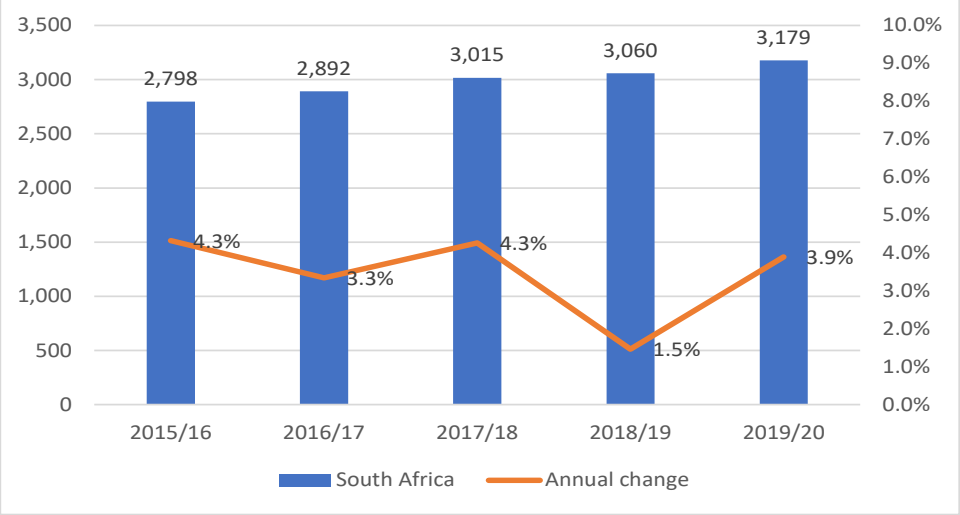
Expenditure per PDE is an important indicator measuring efficiency in use of resources. Other efficiency measures include average length of stay and bed utilisation rate and later sections of this chapter analyses relationships between these indicators.

National overview

South Africa's overall expenditure per PDE in district hospitals has seen a real increase over time (Figure 14). In 2019/20 expenditure per PDE was R3 179, and this has increased by an average of 3.2% per year in real prices since 2015/16 and by 3.9% in 2019/20.

Note that expenditure grew by 3.2% per year and the number of PDEs statyed constant at 10.9 million in both 2019/20 and 2015/16.

Figure 14: National expenditure per PDE (district hospitals)



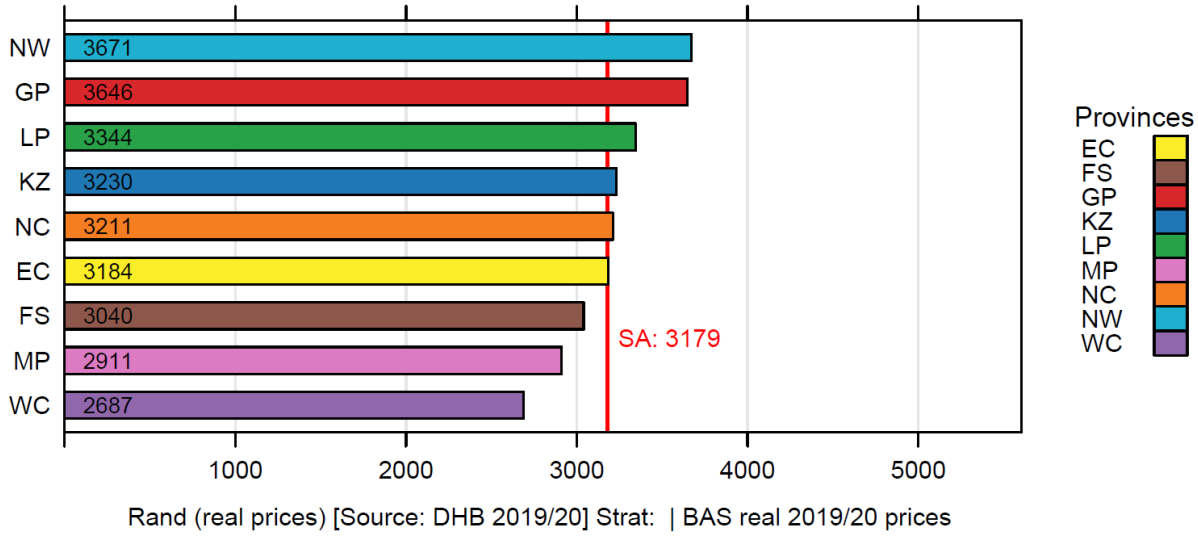
[w] An inpatient day is weighted at 1, a day patient at 1/2 and an outpatient visit at 1/3. Expenditure per PDE for district hospitals is calculated by dividing total district hospital expenditure by the number of PDEs in district hospitals.

Provincial overview

Expenditure per PDE in district hospitals in 2019/20 ranged from R2 687 in WC to R3 671 in NW (Figure 15). This is a difference of 36.6% between the highest and lowest province. This gap has narrowed somewhat compared to 2018/19, when the highest province (GP) was 38.5% higher than the lowest (WC). The highest increase in expenditure per PDE in 2019/20 was in NC (8.9%), FS (8.7%) and NW (7.5%). Whereas FS expenditure per PDE is below national average, NW was already the second highest in 2018/19, and should consider whether it can improve efficiency/productivity in its district hospitals. WC's expenditure per PDE remains the lowest in the country, which it has been for the past 5 years.

Case mix analysis would be required to shed light on whether these differences are related to a different burden and acuity of disease in the clients being served. For example, areas with few regional hospital beds might treat more complex cases at district hospital level, and areas with a weak PHC system have a less complex case mix.

Figure 15. Expenditure per PDE (district hospitals) by province, 2019/20



District overview

Figure 16 shows district hospital expenditure per PDE by district and shows very wide variations across districts. The highest spending district, Amajuba (KZN), spent R5 094 per PDE, which is 60.2% higher than the national average and 127.7% higher than the lowest district, Cape Winelands (WC) at R2 237 per PDE.

Also within several provinces there were wide differences in expenditure per PDE. KZN had the widest difference between the highest and lowest district, with Amajuba spending 117% more per PDE than eThekwini (R2 346). In contrast, NW had relatively equal expenditure per PDE across its district, with Bojanala only spending 16% more per PDE than the lowest district, RS Mompati.

Figure 16: District hospital expenditure per PDE by district, 2019/20

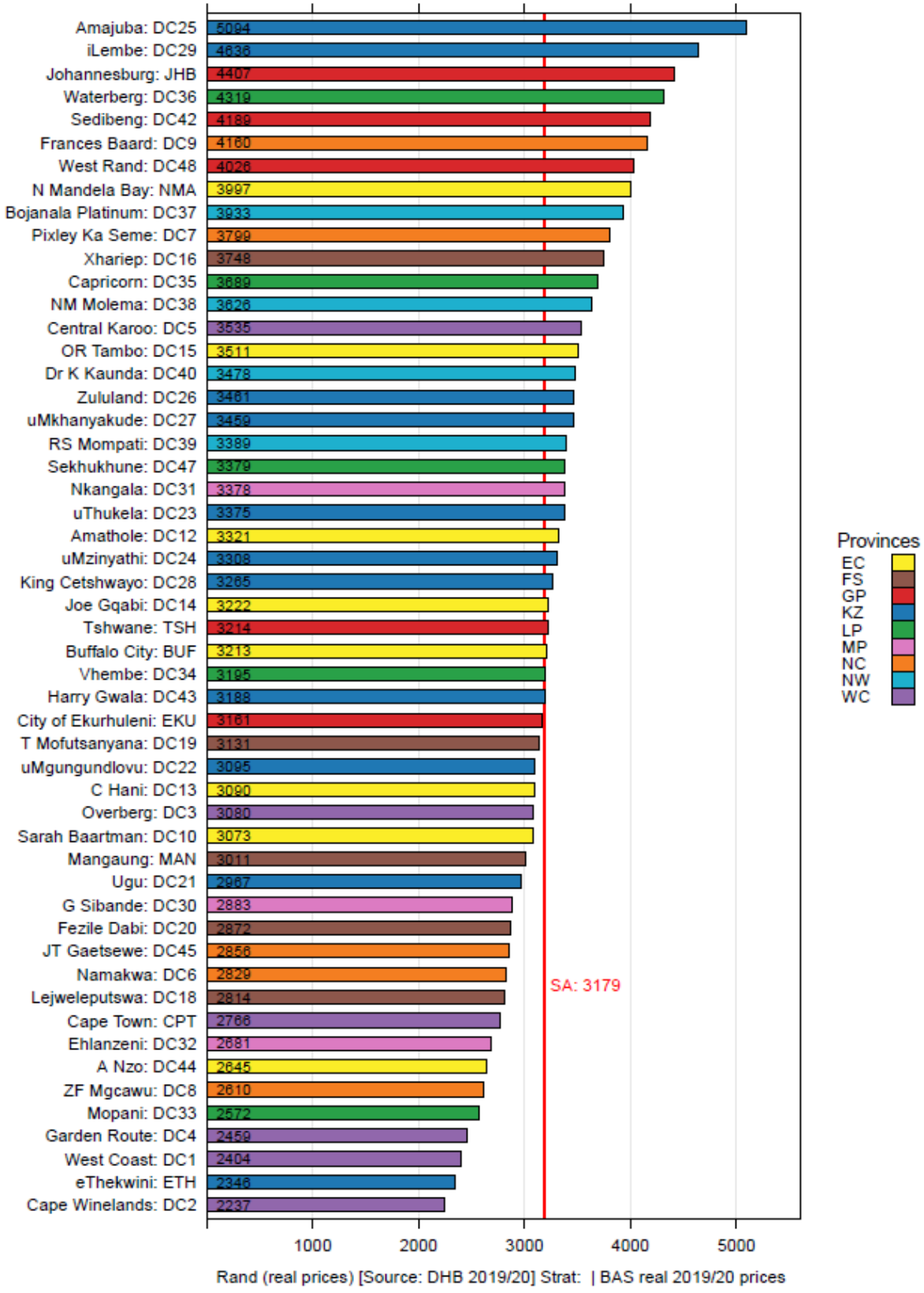
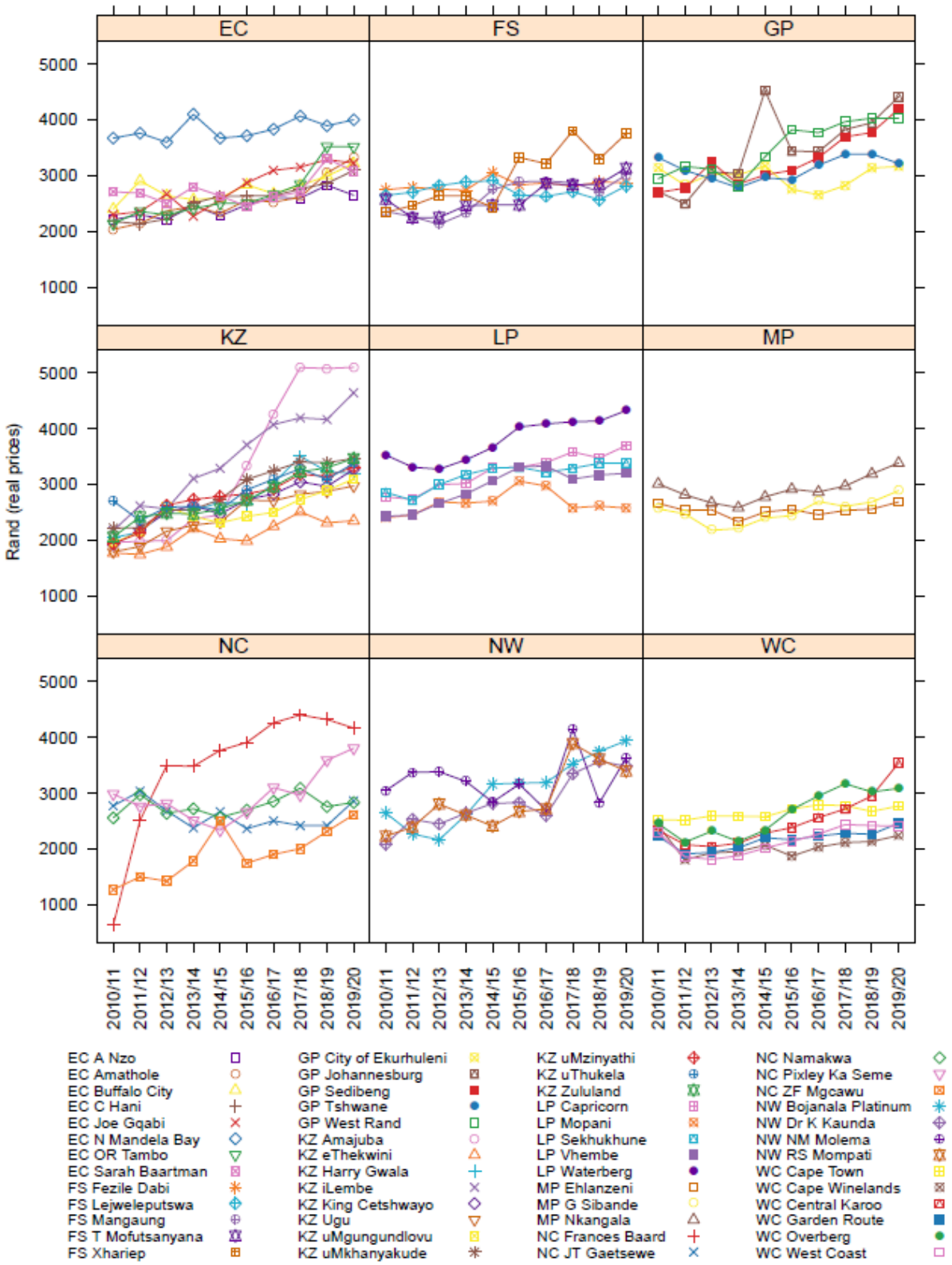


Figure 17 shows the annual trends for expenditure per PDE between 2010/11 and 2019/20, which is similar across most districts.. Notable exceptions include Alfred Nzo (EC), Sarah

Baartman (EC), Tshwane (GP), RS Mompati (NW) and Dr K Kaunda (NW), which show stark declines from 2018/19.

Figure 17: Annual trends - Expenditure per PDE (DH) | | BAS real 2019/20 prices



Analysis between expenditure per PDE, BUR, ALOS, hospital beds per 10,000 target population and inpatient crude death rate – District Hospitals

While PHC facilities are mostly well-spread throughout the country, access to district hospital services is less so. Figure 18 below shows the expenditure on district hospitals against the number of district hospitals in each province. District hospitals vary widely in terms of the number of beds and therefore this only provides insight into overall district hospital expenditure across the provinces. For example, FS has 25 district hospitals and MP 27, but FS district hospital expenditure is almost half that of MP.

Figure 18: Expenditure on district hospitals against number of district hospitals, per province, 2019/20 (Rand- real terms)

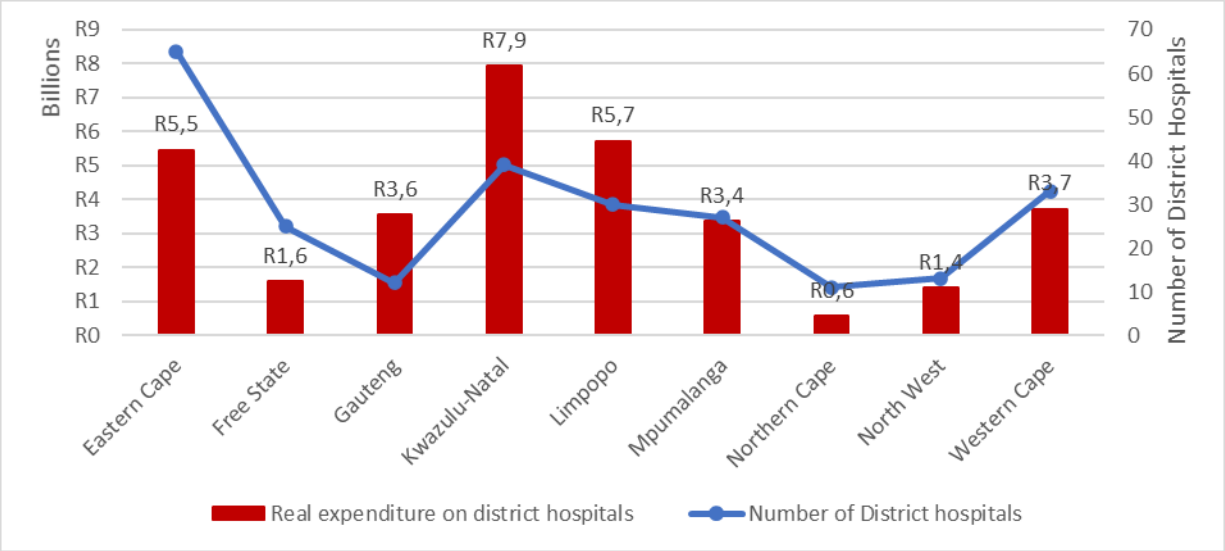


Table 3 compares expenditure per PDE, BUR, ALOS, beds per 10 000 population and inpatient crude death rate for district hospitals in all 52 districts in 2019/20.

Table 3. Comparison between Expenditure per PDE, IBUR, ALOS Beds per 10 000 target population, and inpatient crude death rate, 2019/20 (district hospitals)[x]. [a] For each indicator, blue cells are the highest 10 values and yellow cells are the lowest 10 values, irrespective of whether desired performance for the indicator is high or low.

	District	Province	Expenditure per PDE	iBUR	ALOS	Beds per 10 000 pop	Inpatient crude death rate
Top 10	Amajuba	KZ	5,094	64.6	4.8	1.1	6.4
	iLembe	KZ	4,636	47.0	5.3	6.1	5.2
	Johannesburg	GP	4,407	66.3	4.2	1.1	2.6
	Waterberg	LP	4,319	62.6	3.9	10.3	4.3
	Sedibeng	GP	4,189	74.2	3.7	4.5	4.8
	Frances Baard	NC	4,160	36.8	3.3	2.7	7.3
	West Rand	GP	4,026	56.5	3.7	6.4	3.8
	N Mandela Bay	EC	3,997	64.6	3.7	2.5	4.7
	Bojanala Platinum	NW	3,933	71.0	4.4	2.7	5.7
	Pixley Ka Seme	NC	3,799	68.3	3.9	6.4	5.9
	Xhariep	FS	3,748	53.3	3.5	13.0	4.6
	Capricorn	LP	3,689	73.4	4.0	6.2	5
	NM Molema	NW	3,626	51.9	4.3	6.2	5.4
	Central Karoo	WC	3,535	64.3	3.0	18.4	3.1

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	District	Province	Expenditure per PDE	iBUR	ALOS	Beds per 10 000 pop	Inpatient crude death rate
	OR Tambo	EC	3,511	54.1	5.0	7.4	5.5
	Dr K Kaunda	NW	3,478	68.2	3.5	1.3	4.8
	Zululand	KZ	3,461	61.3	5.0	14.4	5
	uMkhanyakude	KZ	3,459	60.6	5.4	17.1	4.5
	RS Mompati	NW	3,389	66.8	4.4	8.1	5.8
	Sekhukhune	LP	3,379	70.3	3.8	5.9	3.6
	Nkangala	MP	3,378	68.9	4.6	4.6	6
	uThukela	KZ	3,375	58.0	5.0	7.0	5
	Amathole	EC	3,321	50.5	4.7	16.6	6.3
	uMzinyathi	KZ	3,308	52.9	5.8	21.3	5.4
	King Cetshwayo	KZ	3,265	46.5	5.7	13.2	4.7
	Joe Gqabi	EC	3,222	60.7	5.3	16.0	6.6
	Tshwane	GP	3,214	75.2	4.5	3.8	5
	Buffalo City	EC	3,213	51.4	5.3	4.4	8
	Vhembe	LP	3,195	72.2	4.5	8.6	4.9
	Harry Gwala	KZ	3,188	65.7	4.4	14.8	4.2
	City of Ekurhuleni	GP	3,161	77.5	4.6	1.0	4.2
	T Mofutsanyana	FS	3,131	50.3	2.8	7.2	5.4
	uMgungundlovu	KZ	3,095	76.0	5.5	5.6	4.4
	C Hani	EC	3,090	48.2	4.6	16.8	6.3
	Overberg	WC	3,080	78.8	2.8	8.1	2.4
	Sarah Baartman	EC	3,073	55.5	3.5	13.7	4.5
	Mangaung	FS	3,011	60.5	3.9	7.0	7.3
	Ugu	KZ	2,967	66.4	5.3	10.6	5.5
	G Sibande	MP	2,883	66.7	3.8	8.8	4.2
	Fezile Dabi	FS	2,872	68.8	3.9	6.4	5.4
	JT Gaetsewe	NC	2,856	53.8	4.5	9.8	6.1
	Namakwa	NC	2,829	64.6	2.4	7.8	3.8
Bottom 10	Lejweleputswa	FS	2,814	57.2	2.7	5.0	4.7
	Cape Town	WC	2,766	97.7	3.9	4.7	3.3
	Ehlanzeni	MP	2,681	66.3	4.1	7.6	4.1
	A Nzo	EC	2,645	62.5	5.0	11.3	5.5
	ZF Mgcawu	NC	2,610	43.2	2.7	3.9	4.6
	Mopani	LP	2,572	84.2	4.5	7.7	4.5
	Garden Route	WC	2,459	79.8	2.8	7.7	3.1
	West Coast	WC	2,404	88.3	2.8	8.4	2.9
	eThekwini	KZ	2,346	64.2	4.4	2.2	4
	Cape Winelands	WC	2,237	82.8	2.8	3.1	3.3
Averages	**All districts (simple average**		**3,310**	**64.1**	**4.2**	**8.0**	**4.9**
	All districts (weighted average)		**3,179**	**64.8**	**4.2**	**6.1**	**4.6**
	Top 10 spending districts		**4,256**	**61.2**	**4.1**	**4.4**	**5.1**
	Bottom 10 spending districts		**2,553**	**72.6**	**3.6**	**6.2**	**4.0**
	Top 20 spending districts		**3,892**	**61.8**	**4.1**	**7.1**	**4.9**
	Bottom 20 spending districts		**2,764**	**68.3**	**3.8**	**7.8**	**4.5**

Beds per 10 000 population

The district hospital bed density was on average lower in districts with high expenditure per PDE. The ten highest spending districts had on average 4.4 beds per 10 000 population, considerably below the national weighted average of 6.1, which could possibly be due to diseconomies of scale where a small district hospital platform (and possibly few beds per hospital) lead to higher unit costs. At the other end of the spectrum, the ten lowest spending districts had an average bed to population ratio of 6.2, which is not a large deviation from the national average. There are however several exceptions to this pattern. The two lowest spending districts (eThekwini and Cape Winelands) both had very low bed to population ratios. Interestingly both the districts with the lowest (eKurhuleni at 1.0) and the highest (uMzinyathi at 21.3) bed to population ratios were very close to the national average in terms of

expenditure. This is evidence of a mismatch between need and infrastructure; where many districts are still under-served due to historical decisions around access to care.

iBUR and ALOS

The next step in interpreting these financial indicators, is to compare utilisation indictors such as inpatient bed utilisation rates (iBUR) and average length of stay (ALOS). A low BUR indicates that the hospital beds may be under-utilised; or if the average length of stay (ALOS) is very long beds may be utilised for the wrong purposes. Therefore, it is important to analyse these two indicators together. In doing so, we can further understand whether similar expenditure per PDE is related to similar utilisation. For district hospitals, an acceptable iBUR sits between 70%-80% and ALOS of between 3.5 and 4.5 days. The national average iBUR sits below the target range, at 64.8% and by district this ranged from 47% in iLembe to 97.7% in Cape Town. Only 11 districts fell within the target range.

The national average ALOS was 4.2 days, ranging from 2.4 in Namakwa to 5.8 in uMzinyathi, and 25 of the 52 districts fall within the target range. uMzinyathi and King Cetshwayo districts in KZN had the highest ALOS at 5.8 and 5.7 days, respectively and both districts have a high proportion of people living in rural areas. Planned patient transport is often not easily available in these areas and therefore patients need to wait for their families to collect them from the hospital. This often drives up ALOS in a district hospital as patients stay longer than is medically necessary.

Looking at iBUR and ALOS together, we are able to interpret whether the 10 districts with optimal iBURs are in fact providing efficient services. Table 4 shows the 10 districts that fall within the iBUR target range against their ALOS performance. Those highlighted in green represent the districts where both the iBUR and ALOS fell within the target ranges. The WC shows a very high provincial average iBUR of 90.4%, which, when compared to the low ALOS could signal very high turnover rates in the hospital to cope with a high demand for services. This could result in poor quality care if patients are being discharged before it is clinically advised to do so because of high volumes of acutely ill patients who require a hospital bed urgently.

Table 4: Analysing districts with optimal iBUR against their ALOS

District	iBUR	ALOS
Ekurhuleni (GP),	77.5%	4.6
Sedibeng (GP),	74.2%	3.7
Tshwane (GP)	75.2%	4.5
uMgungundlovu (GP)	76.0%	5.5
Capricorn (LP)	73.4%	4.0
Sekhukhune (LP	70.3%	3.8
Vhembe (LP)	72.2%	4.5
Bojanala Platinum (NW),	71.0%	4.4
Garden Route (WC)	79.8%	2.8
Overberg (WC)	78.8%	2.8

There appears to be an association between expenditure per PDE and these two efficiency indicators.. The 10 districts with the highest expenditure per PDE had an average iBUR of 61.2% and ALOS of 4.1 days, as compared to 72.6% and 3.6 days respectively at the 10 districts with the lowest expenditure per PDE. One would expect higher expenditure per PDE to be associated with a higher BUR combined with a reasonable ALOS (which is seen at the more efficient districts). However this is not the case, which suggest that resource allocation to district hospitals is not being driven by patient load. This is evidence of the widespread under-utilisation of district hospital inpatient services that we see across the country.

Inpatient death rates

Health outcomes can be used to examine the quality of care provided across the districts. The national average inpatient crude death rate (IPDR) in district hospitals was 4.6 per 100 admissions in 2019/20 (Table 3), ranging from a low of 2.3 in Overberg (WC) to 8 in Buffalo City (EC).

The 10 highest spending districts had an average IPDR of 5.1 as compared to 4.0 in the 10 lowest spending districts, indicating that variations in health outcomes and quality of care is more likely to be driven by non-financial aspects than finances and that good quality of care can be achieved at comparably low cost. Variations in disease burden and socio-economic status are likely important factors as well as the quality of the management of districts and facilities.

Inpatient deaths of children under 5 years can provide another useful proxy for health outcomes, to better interpret the utilisation indicators. The national average of deaths in facility for under-5s in 2019/20 was 5%, ranging from 0.7% in West Coast (WC) to 10.2% in Ehlanzeni (MP). Seven districts had an inpatient death under-5 rate of less than 2%, as shown in Table 5.

Notably, all six of the WCs districts had very low death rates, pointing to a high quality of care in this province. Therefore, although the WC showed low ALOS and high iBURs in its district hospitals, the death data indicates that quality is still being upheld in the WC facilities. Green highlights in the table indicate that the indicator is within the target range.

Table 5: Districts with inpatient death rate for under-5s of less than 2%

District	Inpatient death rate for under-5s	iBUR	ALOS
West Coast (WC)	0.7%	88.3%	2.8
Garden Route (WC)	1.1%	79.8%	2.8
Xhariep (FS)	1.2%	53.3%	3.5
Cape Winelands (WC)	1.2%	82.8%	2.8
Overberg (WC)	1.2%	78.8%	2.8
Central Karoo (WC)	1.2%	64.3%	3.0
Cape Town (WC)	1.7%	97.7%	3.9

Summary

In this section we have shown how the indicators can be analysed together to give a fuller picture of performance. The findings presented here should be seen as indicative as more comprehensive statistical analysis would be required to confirm or refute the associations discussed. A general finding is that strong efficiency in one indicator appears to be associated with efficiency in other indicators. For example, the 10 districts with the lowest expenditure per PDE on average had higher than average IBUR, lower than average ALOS and lower than average inpatient crude death rates. The same was true for the 20 lowest spending districts, giving further weight to this finding.

As we move towards NHI, it will be important to generate more quality measures that districts can be evaluated against. This will assist with resource allocation as it will allow provinces and districts to know where problematic areas are that may require more attention and/or more funding.

Expenditure per PDE – all hospitals

Table 6 shows the same indicators as? but includes data for all hospitals and not just district hospitals. Given the uneven distribution of regional, and in particular, central/tertiary hospitals, these are only analysed by province and not by district.

Gauteng had the highest expenditure per PDE (all hospitals), followed by Northern Cape and Western Cape. These three provinces had proportionally high spending on central hospitals (Table 7), which is the level of care that treats the most complicated cases and is therefore generally the costliest. It is therefore reasonable that overall expenditure per PDE in these provinces is relatively high. The lowest expenditure per PDE in the country was in North West.

ALOS and BUR are generally longer and higher at higher levels of care. GP had the third longest ALOS in the country but both WC and NC had below average ALOS. LP and MP, which had the highest proportional spending on district hospitals, both had ALOS considerably below the national average.

Overall iBUR was the highest in WC followed by GP, again likely a reflection of the large numbers of central/tertiary hospital beds in these provinces. NC on the other hand had the lowest iBUR, which is possibly an indication of an inefficiently configured hospital platform with a high concentration of central/tertiary hospital beds, which are underutilised, driving up unit costs.

Table 6. Expenditure per PDE, BUR, ALOS, hospital beds per 10,000 target population and inpatient crude death rate – all hospitals, 2019/20

Province	Expenditure per PDE	Average length of stay - total	Hospital beds per 10 000 target population	Inpatient bed utilisation rate - total	Inpatient crude death rate
EC	3,458	6.8	22.3	64.0	5.8
FS	3,734	5.6	19.8	72.4	4.1
GP	4,149	6.7	17.1	82.0	5.0
KZ	3,847	6.6	21.2	65.0	4.6
LP	3,641	5.3	14.2	74.2	4.8
MP	3,446	4.5	12.4	63.6	4.6
NC	4,132	5.1	17.7	61.7	5.2
NW	3,168	6.8	13.8	73.8	5.5
WC	3,853	5.3	20.0	86.9	2.9
RSA	**3,789**	**6.1**	**17.3**	**72.4**	**4.6**

Table 7. Expenditure by hospital programme / subprogramme, 2019/20

	Expenditure (R million)				% of total hospital spending			
Province	District hospitals	Provincial hospitals[y]	Central hospitals[z]	Total hospitals	District hospitals	Provincial hospitals	Central hospitals	Total hospitals
EC	5,316	4,026	4,327	**13,668**	39%	29%	32%	100%
FS	1,635	1,608	2,712	**5,954**	27%	27%	46%	100%
GP	3,527	9,225	19,080	**31,832**	11%	29%	60%	100%
KZ	7,941	11,521	5,169	**24,632**	32%	47%	21%	100%
LP	7,058	2,637	2,018	**11,713**	60%	23%	17%	100%
MP	3,595	1,435	1,302	**6,332**	57%	23%	21%	100%
NC	666	416	1,058	**2,140**	31%	19%	49%	100%
NW	1,517	1,833	1,995	**5,345**	28%	34%	37%	100%
WC	3,746	3,910	6,945	**14,600**	26%	27%	48%	100%
Total	**35,001**	**36,609**	**44,608**	**116,218**	**30%**	**32%**	**38%**	**100%**

[y] The Provincial Hospitals budget programme funds mainly regional hospitals, but also specialist hospitals, e.g. TB, psychiatric and dental hospitals.
[z] The Central Hospitals budget programme includes central and tertiary hospitals

Key findings per province

The sections below summarize some of the key observations made in each province. As the authors do not have detailed in-depth knowledge of each province, it is important that these findings are tested against the local context and some of the concerns raised may have justifiable explanations.

All analyses discussed below cover the period ….

Eastern Cape

Despite PHC expenditure per capita growing by 3.6% and PHC per headcount increased by 4.9% in 2019/20, Eastern Cape was the second lowest ranked in the country on these indicators. This is despite a relatively high reliance on PHC with a utilisation rate per uninsured person at 2.7, compared to 2.2 in the country overall. There was a decline in PHC headcount, which contributed to the continued increased in PHC expenditure per headcount. The province reprioritissed funds across districts between 2018/19 and 2019/20, which resulted in a large expenditure decrease in Joe Gqabi (-28% decrease in expenditure per capita) and notable increases in Sarah Baartman (10.7%), Chris Hani (7.0%) and OR Tambo (10.4%). However, the extent to which this fully aligns with workload is not clear, since Joe Gqabi saw a 3.4% increase in headcount.

There is considerable variation between districts in terms of expenditure per district hospital PDE, ranging from R2 645 in Alfred Nzo to R3 997 in Nelson Mandela Bay.

Free State

All indicators remained relatively stable in 2019/20 except DH expenditure per PDE which increased considerably by 8.7% from when to when. Overall, the province was fairly close to the national average on all indicators, with its PHC expenditure per headcount (R552) slightly above national average (R529) and DH expenditure per PDE (R3 040) also close to the national average (R3 179). Of possible concern is PHC expenditure per capita in Mangaung, which declined from R1 145 to R1 130 in 2019/20, despite already being the lowest in the province.

The province may need to look at the efficiency of services in Xhariep as this district spends considerably more than other districts in the province, both per capita and per headcount.

Gauteng

DHS expenditure per capita is the lowest in the country, mainly because its two most populous districts (Johannesburg and Ekurhuleni) have very low reliance and expenditure on district hospitals. PHC expenditure per capita was just shy of the national average, but due to low per capita PHC utilisation, expenditure per PHC headcount was by far the highest in the country at R678, which was R108 (18.9%) higher than the second highest province (NW) and R242 (55.5%) higher than the lowest province (LP). Gauteng's five districts were all in the top seven districts in the country in terms of PHC expenditure per headcount.

The low PHC utilisation rate in Gauteng is attributed to patients bypassing PHC facilities and seeking healthcare services from hospitals and/or the private sector. The expansion of the CHW programme and CCMDD programme may have also contributed to this. Patients bypassing PHC facilities continue to be a cause for concern as it may be an indication of a lack of trust between patients and the PHC system and it is important for Gauteng to strengthen the PHC's gatekeeping role in the referral system.

Three of Gauteng's five districts are metros, which generally have better possibilities to generate own revenue that smaller municipalities. LG own revenue contributed considerably

to Gauteng's PHC financing, particularly in Ekurhuleni where LG comprised 34.9% of total PHC expenditure.

KwaZulu-Natal

The year-on-year growth was positive in all finance indicators. Overall, DHS expenditure per capita increased by 4.8% and the increase is higher in district hospitals compared to other PHC services. KwaZulu-Natal had the highest PHC expenditure per capita in the country at R1 469 (compared to the national average of R1 272). However, expenditure per headcount was slightly below the national average as a result of a high PHC utilisation rate at 2.8 headcounts per uninsured person per year (compared to the national average of 2.2). This is a positive sign, indicating that PHC services are generally accessible to the population.

There was an extremely wide variation in DH expenditure per PDE, ranging from a low of R2 346 in eThekwini to a high of R5 094 in Amajuba. This disparity of 117% is far larger than in any other province (LP had the second widest disparity at 68%) and it would be useful to explore the reasons for this further.

Limpopo

The province had the lowest PHC expenditure per headcount of R436 against a national average of R529 and the lowest PHC expenditure per capita of R1 123 against a national average of R1 272. As expressed previously, the population in Limpopo is largely dependent on District Hospitals which is also reflected in an exceptionally high OPD not referred rate of 71.8% at district hospitals. This signals a weak PHC system, which has financial implications for the province.

Adding to this concern is that the province's expenditure per district hospital PDE is above the national average and increased by 1.9% in real prices in 2019/20. The disparities across districts in DH expenditure per PDE, were the second largest in the country, ranging from R2 572 in Mopani to R4 319 in Waterberg. This disparity is partly explained by Mopani having a considerably higher iBUR than Waterberg (84.2% vs 62.6%). It is likely that very low utilisation of inpatient services in district hospitals is driving the higher cost per PDE and district and provincial management should discuss how to better manage the service delivery platform for the need.

Limpopo would likely become more efficient and accessible by shifting toward a stronger PHC focus, ensuring better gatekeeping and more appropriate referrals.

Mpumalanga

Somewhat similar to Limpopo, Mpumalanga had above average DHS expenditure per capita (R2 230) in 2019/20 but below average PHC expenditure per capita, indicating a relatively high prioritisation of funding towards district hospitals and that resource allocation is likely not taking patient load and need into consideration. However, the province appears to have made considerable efforts to strengthen PHC financing over time and expenditure per capita increased in real terms by 7.3% in 2019/20 and by a total of 28.8% over the past five years. Nkangala district had the lowest increase in PHC expenditure per capita in the province but still saw a growth of 6.3% and 5.6% per headcount in 2019/20. Expenditure per district hospital PDE was the second lowest in the country.

Northern Cape

Northern Cape had very wide differences in expenditure across districts for all indicators, particularly PHC expenditure per capita, where Namakwa was the highest spending district in the country at R2 070 – more than twice as much as ZF Mgcawu, which was the third lowest in the country at R926. While some variation may be motivated, this vast discrepancy likely needs to be looked into further to improve equity in resource allocation. As a whole, the

province had comparably high expenditure per capita on both DHS and PHC, arguably driven partly by the small population and low population density, which causes diseconomies of scale. However, Frances Baard, with the highest population density in the province, had high expenditure across all indicators as well.

North West

North West had relatively high expenditure per PHC headcount, and per district hospital PDE, despite having below average DHS and PHC expenditure per capita. This would indicate that utilisation rates are relatively low, particularly for district hospitals, where it has the highest expenditure per PDE in the country. There is thus likely a case for looking into whether district hospital services should be made more accessible or whether better efficiency can be achieved thereby lowering unit costs.

Western Cape

Partly due to differences in district hospital expenditure, Western Cape had the widest difference between districts in terms of DHS expenditure per capita. Central Karoo had the highest DHS spending per capita in the country at R4 092 (roughly half of this was district hospital spending), and Cape Winelands was the second lowest at R1 420 (with relatively low district hospital spending).

Interestingly, Western Cape had expenditure per district hospital PDE considerably below the national average in all districts except Central Karoo, but nevertheless performed well on inpatient death rate in all districts. This shows that comparably good quality of care can be achieved at low cost, if facilities are well manged. The low expenditure per PDE, combined with high iBUR and low ALOS likely reflects a combination of high service demand and efficiencies in hospital management.

Conclusions

Government budgets have become increasingly constrained as a result of over a decade of poor economic growth. Despite this, expenditure on district health services and primary healthcare services has increased in real terms over this period, and continued to do so in 2019/20. District health services expenditure per uninsured person increased by 3.5% in 2019/20, reaching R2 063, and primary healthcare expenditure per uninsured person increased by 2.8%, reaching R1 272.

Wide discrepancies across provinces and districts, which have been highlighted both in this chapter and in previous editions of this publication, remain a cause for concern. While some variation in expenditure per capita, PHC headcount and hospital PDE is likely warranted due to differences in disease burden, demographics, operating environment etc., there is a continued need to look into improvements in allocative equity and efficiency across geographical units.

This chapter has also found that average expenditure per unit of service utilisation is increasing rapidly, both for district hospitals and PHC. District hospital expenditure per PDE has increased by R381 (13.6%) in total over the past five years. Similarly, average spending per PHC headcount increased by R116 (28%).

The analysis also shows that increasing expenditure is not necessarily a panacea for improving performance. While districts with high PHC spending on average had slightly better early ANC coverage than low-spending districts, there were notable exceptions on both ends of the spectrum, and there appeared to be no such correlation for institutional MMR and only a very marginal difference for viral load suppression. In our comparison of high and low expenditure per PDE in district hospitals, the higher spending districts had higher crude inpatient death rates than low spending districts. A possible explanation for this could be that low expenditure per PDE is a reflection of better, more efficiently managed hospitals as also

reflected in the iBUR and ALOS indicators. However, further research would be required to provide more robust explanations for these patterns.

Recommendations

Key recommendations emanating from the data and analyses presented in this chapter include:

- *Improving equity in resource allocation:* Resource allocations across provinces and districts should be responsive to variations in healthcare need, demand and (where warranted) cost structures. The wide interprovincial and inter-district variations in health expenditure show the need for more systematic and evidence-based methods for resource allocations. National Treasury, in collaboration with the National Department, is in the process of reviewing the health component of the provincial equitable share formula which determines the horizontal distribution of resources across provinces. Treasury has also commissioned a project to develop a district health services funding allocation formula, which can be used to assist provinces in allocative decisions. Both these projects are expected to be completed in 2020. Provinces are also encouraged to develop their own formulae or other methodologies to account for need in resource allocations.
- *Strategic purchasing:* The NHI White Paper[aa] foresees that under NHI, healthcare providers will be reimbursed through strategic purchasing mechanisms designed to improve equity and efficiency of health financing. PHC services will mainly be paid through risk-adjusted capitation and hospital services through diagnosis-related groups. The health sector is recommended to make increased use of such strategic purchasing mechanisms instead of incremental budgeting and phasing in of such mechanisms does not need to wait until NHI is fully established.
- *Limiting increases in unit costs:* While increases in expenditure per PHC headcount and district hospital PDE may be warranted, particularly for provinces and districts that come from a low base, several already high spending areas saw large increases. The health sector is recommended to look into such cases, for example expenditure per PDE in NW province and Amajuba district.
- *Improving hospital efficiency:* There appears to be a relatively strong correlation between expenditure per PDE, iBUR and ALOS, in that high iBUR and low ALOS was associated with low spending per PDE. This seems to indicate that lower hospital unit costs can be achieved by better management of existing hospital capacity and improving inpatient management.
- *Correlation between expenditure and performance:* Further research into the relationship between expenditure and performance is recommended, including exploration of which other performance and health outcome indicators, besides those used in this chapter, can be used to best assess quality and effectiveness of expenditure.

Given the high-level nature of the analysis in this chapter, some of the above recommendations should be considered tentative, and subject to further research. In many cases they also need to be tested at the local level considering context-specific factors.

[aa] National Department of Health. National Health Insurance White Paper, Pretoria: 2017