

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 35 2020

OVERVIEW OF REPORT

This report summarises national laboratory testing for SARS-CoV-2, the virus causing COVID-19, in South Africa. This report is based on data for specimens reported up to 29 August 2020 (Week 35 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 29 August 2020, 3,245,087 laboratory tests for SARS-CoV-2 have been conducted nationally
- Gauteng performed the largest number of tests in week 35 (30.6%), followed by KwaZulu-Natal (19.4%) and Western Cape (15.1%) provinces
- Northern Cape (348 per 100,000 persons) and Free State (325 per 100,000 persons) provinces had the highest testing rates in the past week, although all provinces have shown reduced testing rates over recent weeks
- The percentage testing positive has been decreasing since the peak of 31.4% in week 29, and continued to decrease to 14.6% in week 35
- Northern Cape (25.2%), Free state (24.7%) and North West (20.3%) provinces had the highest percentage testing positive
- Percentage testing positive decreased in seven provinces (Western Cape, Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Mpumalanga and Limpopo) and remained unchanged in Northern Cape and North West provinces in the past week
- Mean laboratory turnaround times in week 35 were <2 days in both the private (1.5 days) and public (1.9 days) sectors

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Methods

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5th March 2020, testing was expanded to a larger network of private and NHLS laboratories. Laboratory testing was conducted for people meeting the case definition for persons under investigation (PUI).

This definition was updated several times over the reporting period but at different times included (i) symptomatic individuals seeking testing, (ii) hospitalized individuals for whom testing was done, (iii) individuals in high-risk occupations, (iv) individuals in outbreak settings, and (v) individuals identified through community screening and testing (CST) programmes which were implemented in April 2020 and was discontinued from the week beginning 17th May.

CST was implemented differently in different provinces, and ranged from mass screening approaches (including asymptomatic individuals) to screening of individuals in contact with a confirmed case to targeted testing of clusters of cases. Respiratory specimens were submitted to testing laboratories.

Testing was performed using reverse transcriptase real-time PCR, which detects SARS-CoV-2 viral genetic material. Laboratories used any one of several in-house and commercial PCR assays to test for the presence of SARS-CoV-2 RNA.

Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate test results for an individual. Date of specimen receipt in the laboratory was used when date of specimen collection was missing.

Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 2019 mid-year population estimates from Statistics South Africa to calculate the testing

rate, expressed as tests per 100 000 persons. Patient admission status was determined for public sector tests based on the reported patient facility. Laboratory turnaround times were calculated as the mean number of days between specimen collection and reporting of the result. Categorical variables were compared using the chi-squared test, and continuous variables with the students t-test, with a P-value < 0.05 considered statistically significant.

Health district and sub-district level results included only public sector data, and were mapped based on the testing facility. Estimates of overall prevalence were derived using regression techniques. Estimates were adjusted to produce district-specific positive test prevalence based on the average age profile, the average sex composition, and the average balance between clinical and CST tests across the entire public testing data for the week. This adjustment allows more accurate comparison of the proportion testing positive across districts.

The report includes tests conducted between 1 March 2020 (week 10), the week when the first case of COVID-19 was confirmed, and 29 August 2020 (week 35).

Testing volumes and proportion testing positive

From 1 March through 29 August 2020, 3,245,087 laboratory tests for SARS-CoV-2 were performed. The number of tests performed increased to week 21, however decreased in weeks 22 and 23 due to a limited supply of extraction and testing kits. Increased volumes of tests were observed week on week from week 24 to week 28, with the highest number of tests performed in week 28 (n=272,697).

Testing volumes have continued to decrease since week 29, with 95,064 tests performed in week 35. All tests for samples collected in the previous week may not yet be reflected. Reduced testing volumes were observed over weekends and public holidays (Figure 1).

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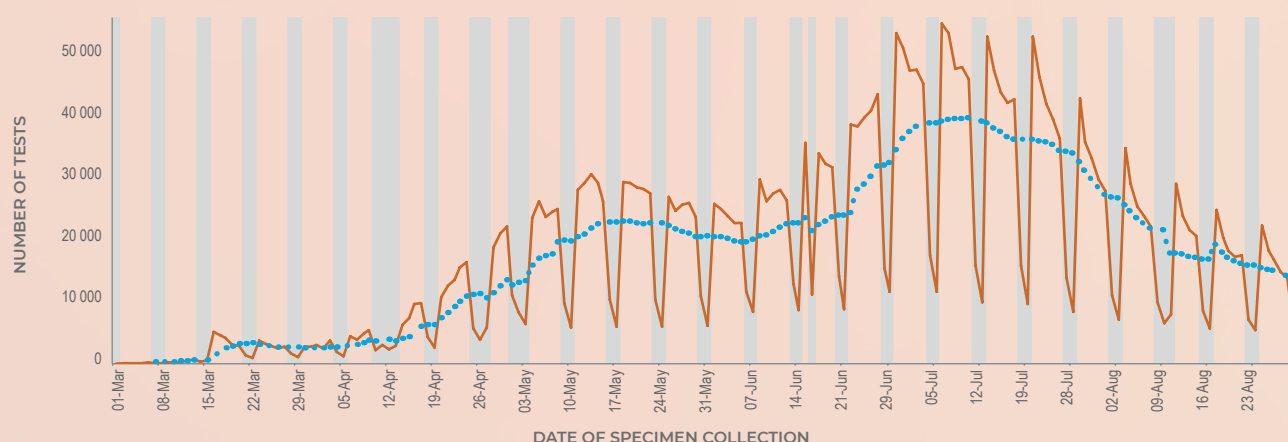


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 29 August 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 35 was 18.7% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.4% in week 29. Since week 29, there has been a 16.8% decrease in the percentage testing positive, and the percentage testing positive decreased from 17.6% in week 34 to 14.6% in week 35 ($P < 0.001$) (Figure 2).

Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 29 August 2020

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar	409 (0.0)	9	2.2
11	08-Mar	2327 (0.1)	88	3.8
12	15-Mar	21326 (0.7)	826	3.9
13	22-Mar	17043 (0.5)	468	2.7
14	29-Mar	17380 (0.5)	395	2.3
15	05-Apr	24613 (0.8)	567	2.3
16	12-Apr	41880 (1.3)	1044	2.5
17	19-Apr	75928 (2.3)	1938	2.6
18	26-Apr	89493 (2.8)	2898	3.2
19	03-May	136930 (4.2)	5555	4.1
20	10-May	157000 (4.8)	7409	4.7
21	17-May	156437 (4.8)	10547	6.7
22	24-May	141433 (4.4)	11726	8.3
23	31-May	135583 (4.2)	13513	10.0
24	07-Jun	156518 (4.8)	20549	13.1
25	14-Jun	164819 (5.1)	29959	18.2
26	21-Jun	221630 (6.8)	50603	22.8
27	28-Jun	269009 (8.3)	69375	25.8
28	05-Jul	272697 (8.4)	79848	29.3
29	12-Jul	250399 (7.7)	78547	31.4
30	19-Jul	236358 (7.3)	72647	30.7
31	26-Jul	185801 (5.7)	53805	29.0
32	02-Aug	149689 (4.6)	37024	24.7
33	09-Aug	116235 (3.6)	23553	20.3
34	16-Aug	109086 (3.4)	19205	17.6
35	23-Aug	95064 (2.9)	13906	14.6
Total		3245087 (100.0)	606004	18.7

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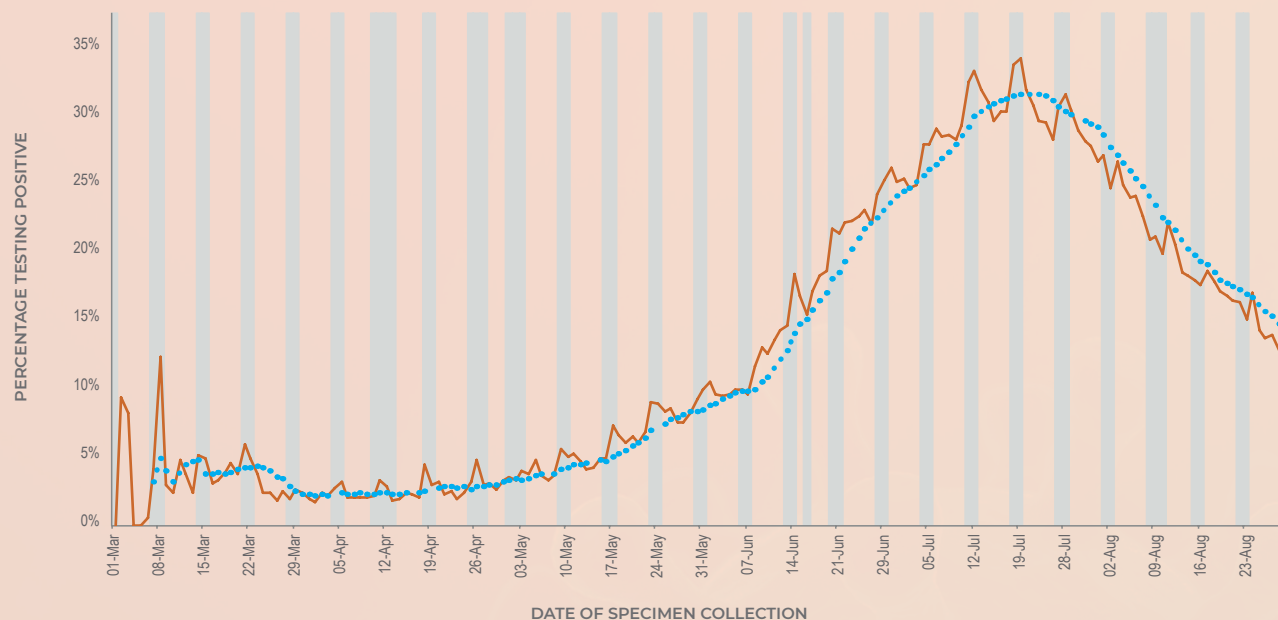


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 29 August 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 29 August, 1,480,503 laboratory tests were conducted in public sector laboratories, with 16.7% testing positive. Over this same period, private sector laboratories conducted 1,764,584 tests, with 20.3% testing positive (Table 2). Overall the public sector has conducted 45.6% of tests and accounted for 40.8% of positive tests. The peak percentage testing positive was observed in week 30 in the public sector (29.5%), and in week 29 in the private sector (33.0%). From week 34 to week 35, the percentage testing positive decreased by 2.0% in the public sector and 3.8% in the private sector, and in week 35 was higher in the public sector (15.6%) compared to the private sector (13.8%) ($P < 0.001$).

The mean turnaround time in week 35 was 1.7 days overall; 1.9 days in the public sector and 1.5 days in the private sector (Figure 3). The turnaround time for public sector tests in KwaZulu-Natal province continued to improve from 3.7 days in week 34 to 1.9 days in week 35, and turnaround times for public sector tests were < 2 days in Gauteng, Western Cape, Eastern Cape, Free State, KwaZulu-Natal and North West provinces (Figure 4). Turnaround time was highest in the Northern Cape province (4.4 days) in the past week. Of the 28 NHLS laboratories performing testing for SARS-CoV-2, 25 (89%) public sector laboratories had turnaround times ≤ 2 days (Figure 5).

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Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 29 August 2020

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP ^a
		Tests	Cases n (%)	Tests	Cases n (%)	Tests (%)	Cases (%)	
10	01-Mar	251	5 (2.0)	158	4 (2.5)	61.4	55.6	0.787
11	08-Mar	350	12 (3.4)	1977	76 (3.8)	15.0	13.6	0.892
12	15-Mar	1345	51 (3.8)	19981	775 (3.9)	6.3	6.2	0.978
13	22-Mar	3358	124 (3.7)	13685	344 (2.5)	19.7	26.5	1.469
14	29-Mar	5617	159 (2.8)	11763	236 (2.0)	32.3	40.3	1.411
15	05-Apr	11353	320 (2.8)	13260	247 (1.9)	46.1	56.4	1.513
16	12-Apr	23786	608 (2.6)	18094	436 (2.4)	56.8	58.2	1.061
17	19-Apr	54190	1480 (2.7)	21738	458 (2.1)	71.4	76.4	1.296
18	26-Apr	66244	2290 (3.5)	23249	608 (2.6)	74.0	79.0	1.322
19	03-May	92356	4257 (4.6)	44574	1298 (2.9)	67.4	76.6	1.583
20	10-May	104960	5111 (4.9)	52040	2298 (4.4)	66.9	69.0	1.103
21	17-May	95473	6632 (6.9)	60964	3915 (6.4)	61.0	62.9	1.082
22	24-May	74294	5961 (8.0)	67139	5765 (8.6)	52.5	50.8	0.934
23	31-May	60293	6113 (10.1)	75290	7400 (9.8)	44.5	45.2	1.032
24	07-Jun	60053	7372 (12.3)	96465	13177 (13.7)	38.4	35.9	0.899
25	14-Jun	56050	11091 (19.8)	108769	18868 (17.3)	34.0	37.0	1.141
26	21-Jun	82705	18904 (22.9)	138925	31699 (22.8)	37.3	37.4	1.002
27	28-Jun	97424	25177 (25.8)	171585	44198 (25.8)	36.2	36.3	1.003
28	05-Jul	108126	30320 (28.0)	164571	49528 (30.1)	39.7	38.0	0.932
29	12-Jul	101458	29470 (29.0)	148941	49077 (33.0)	40.5	37.5	0.882
30	19-Jul	96380	28480 (29.5)	139978	44167 (31.6)	40.8	39.2	0.937
31	26-Jul	74061	21379 (28.9)	111740	32426 (29.0)	39.9	39.7	0.995
32	02-Aug	64194	15790 (24.6)	85495	21234 (24.8)	42.9	42.6	0.990
33	09-Aug	53736	10433 (19.4)	62499	13120 (21.0)	46.2	44.3	0.925
34	16-Aug	50833	8962 (17.6)	58253	10243 (17.6)	46.6	46.7	1.003
35	23-Aug	41613	6509 (15.6)	53451	7397 (13.8)	43.8	46.8	1.130
Total		1480503	247010 (16.7)	1764584	358994 (20.3)	45.6	40.8	0.820

^aRatio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/ (no. of cases/total tests in private sector)

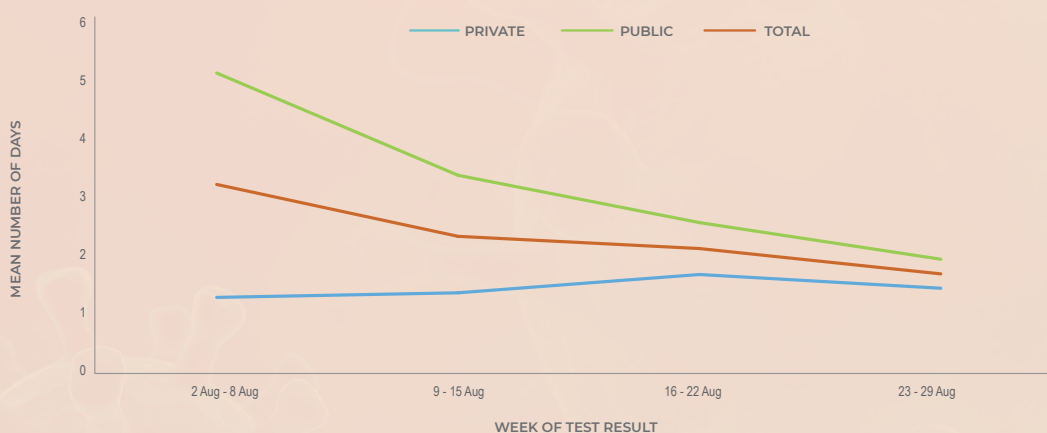


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 2 August – 29 August 2020

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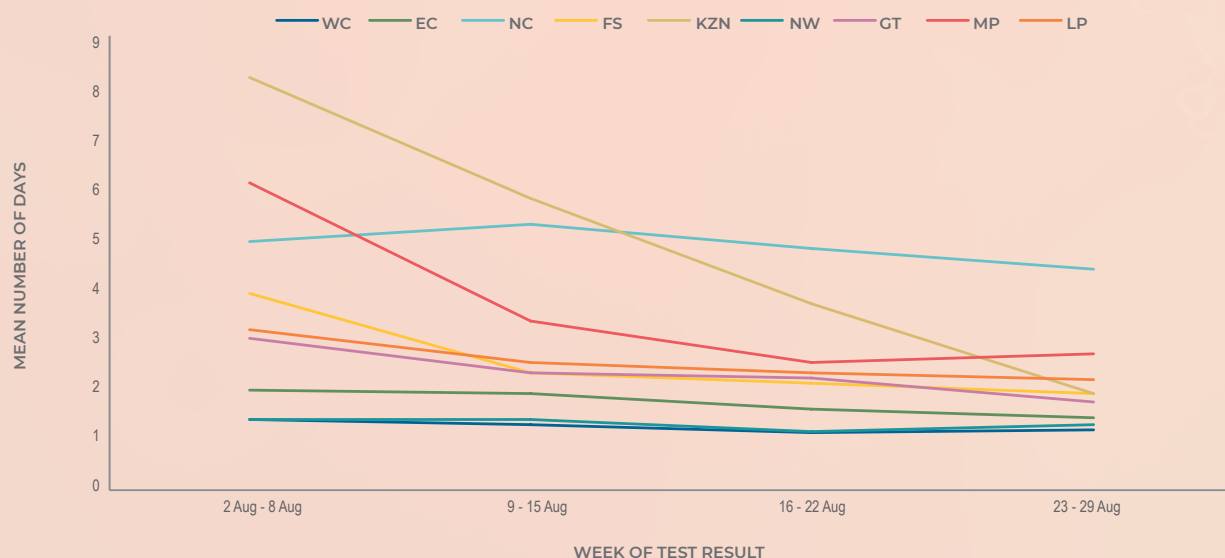


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 2 August – 29 August 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng

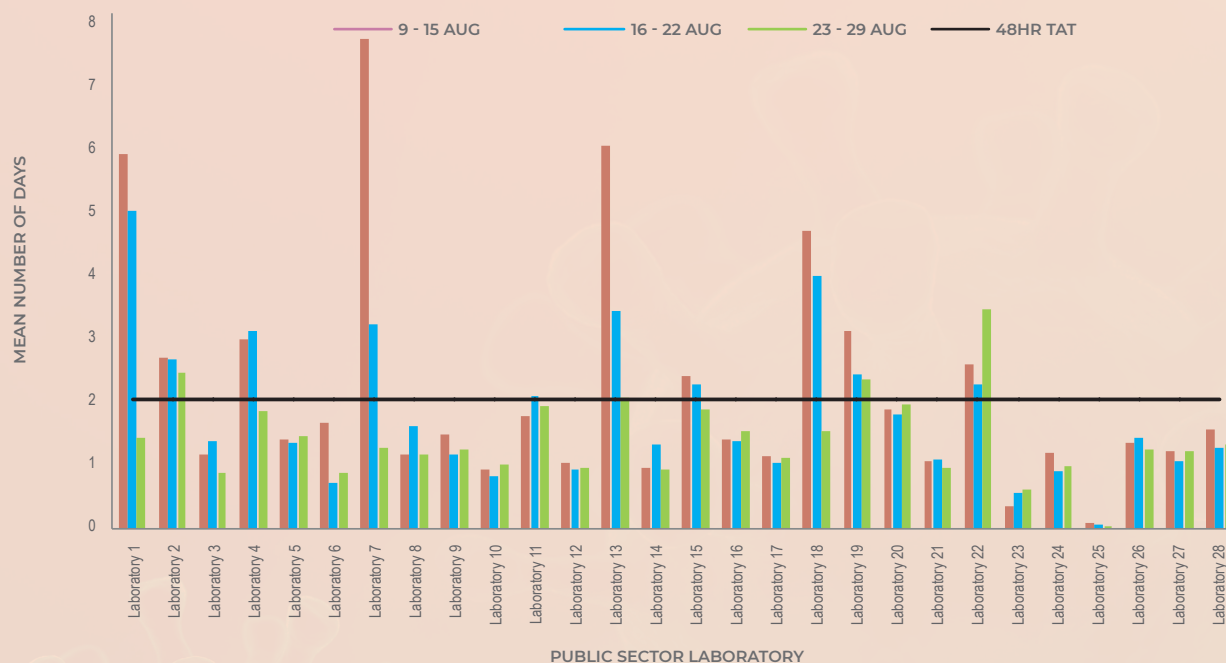


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 9 August - 29 August 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

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Testing by province

Gauteng continued to perform the largest number of tests in week 35 accounting for 30.6% of tests, followed by KwaZulu-Natal (19.4%) and Western Cape (15.1%) (Table 3). Northern Cape (348 per 100,000 persons) and Free State (325 per 100,000 persons) provinces had the highest testing rates in the past week, although all provinces have shown reduced testing rates over the recent weeks (Figure 6).

Northern Cape (25.2%), Free state (24.7%) and North West (20.3%) provinces had the highest percentage testing positive in week 35 (Figure 7). Compared to the previous week, the percentage testing positive

decreased in seven provinces (Western Cape ($P<0.001$), Eastern Cape ($P=0.008$), Free State ($P<0.001$), KwaZulu-Natal ($P<0.001$), Gauteng ($P<0.001$), Mpumalanga ($P<0.001$) and Limpopo ($P<0.001$) provinces). The percentage testing positive in week 35 compared to week 34 did not change in Northern Cape ($P=0.480$) and North West ($P=0.451$) provinces. The percentage testing positive was higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 7).

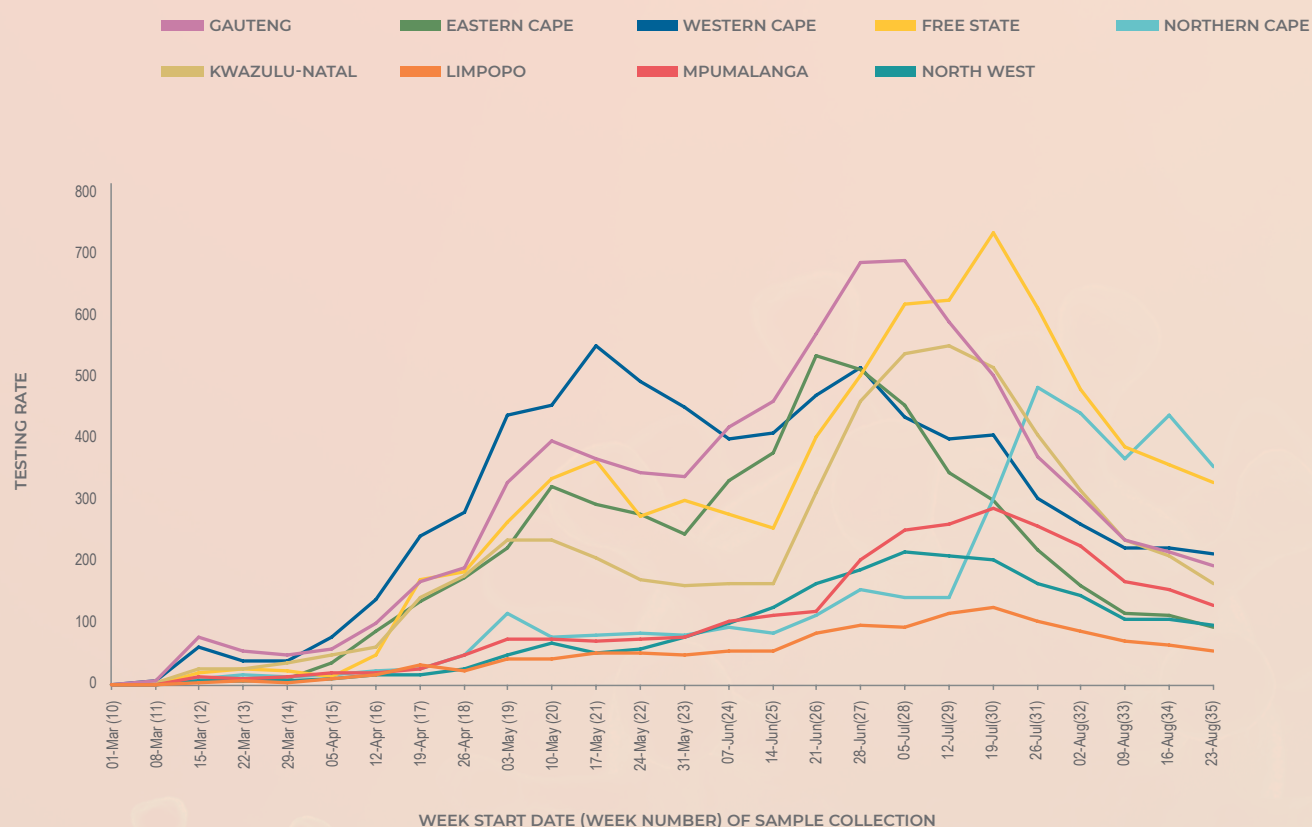


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 29 August 2020.

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Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 9 August - 29 August 2020

Province	Population ^a	9-15 Aug		16-22 Aug		23-29 Aug		Tests per 100,000 persons
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	
Western Cape	6844272	14991	2239 (14.9)	15036	1916 (12.7)	14328	1368 (9.5)	209
Eastern Cape	6712276	7808	1293 (16.6)	7510	1034 (13.8)	6320	774 (12.2)	94
Northern Cape	1263875	4551	1111 (24.4)	5425	1331 (24.5)	4393	1105 (25.2)	348
Free State	2887465	10932	3205 (29.3)	10161	2790 (27.5)	9375	2312 (24.7)	325
KwaZulu-Natal	11289086	26315	5093 (19.4)	23191	3857 (16.6)	18455	2502 (13.6)	163
North West	4027160	4287	1182 (27.6)	4300	900 (20.9)	3817	773 (20.3)	95
Gauteng	15176115	35359	6468 (18.3)	32263	5005 (15.5)	29048	3469 (11.9)	191
Mpumalanga	4592187	7562	2077 (27.5)	7050	1610 (22.8)	5898	1095 (18.6)	128
Limpopo	5982584	4154	846 (20.4)	3938	741 (18.8)	3322	495 (14.9)	56
Unknown		276	39 (14.1)	212	21 (9.9)	108	13 (12.0)	
Total	58750220	116235	23553 (20.3)	109086	19205 (17.6)	95064	13906 (14.6)	162

^a2019 Mid-year population Statistics SA



Figure 7. Weekly percentage testing positive, by province, South Africa, 9 August - 29 August 2020. The horizontal blue line shows the national mean for week 35, beginning 23 August 2020.

Testing in the public sector

In the public sector, the percentage testing positive continued to decrease from 17.6% in week 34 to 15.6% in week 35 ($P < 0.001$) (Table 4). The percentage testing positive in week 35 was highest in North West

(25.8%), Free State (24.3%), Northern Cape (22.9%) and Mpumalanga (19.9%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West and Mpumalanga provinces (Figure 8).

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Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 9 - 29 August 2020

Province	9-15 Aug		16-22 Aug		23-29 Aug	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	6664	1073 (16.1)	6322	840 (13.3)	6182	671 (10.9)
Eastern Cape	5108	858 (16.8)	4936	750 (15.2)	3871	555 (14.3)
Northern Cape	2574	504 (19.6)	3106	661 (21.3)	2115	485 (22.9)
Free State	5940	1539 (25.9)	5982	1564 (26.1)	5005	1216 (24.3)
KwaZulu-Natal	12960	2295 (17.7)	11964	1992 (16.6)	9070	1303 (14.4)
North West	1461	457 (31.3)	1316	367 (27.9)	1437	371 (25.8)
Gauteng	14571	2557 (17.5)	12911	1849 (14.3)	10587	1311 (12.4)
Mpumalanga	2498	717 (28.7)	2426	551 (22.7)	1833	365 (19.9)
Limpopo	1960	433 (22.1)	1870	388 (20.7)	1512	232 (15.3)
Unknown	0	0 (0.0)	0	0 (0.0)	1	0 (0.0)
Total	53736	10433 (19.4)	50833	8962 (17.6)	41613	6509 (15.6)

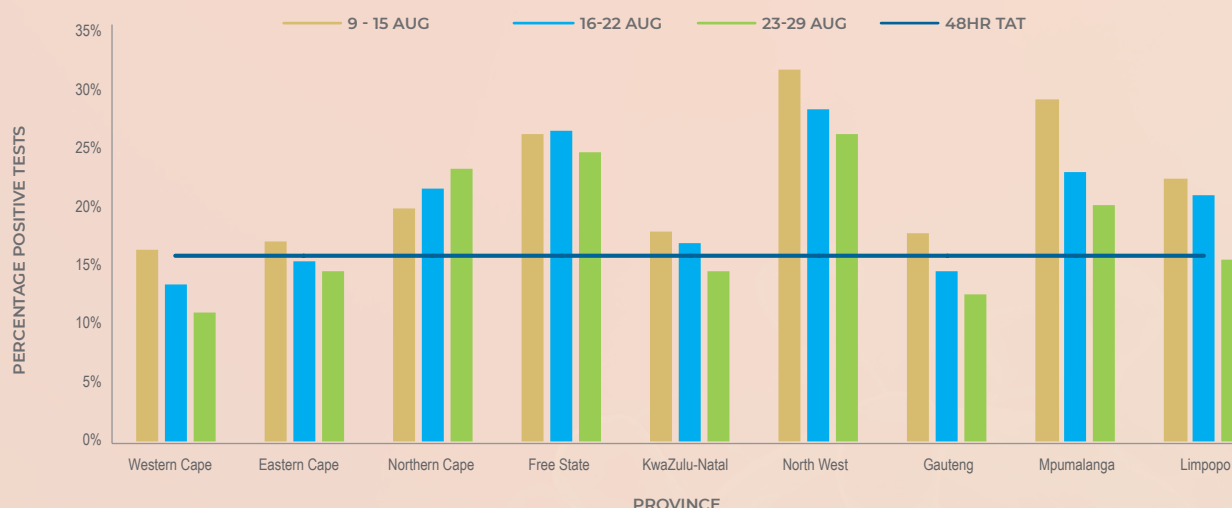


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 9 August - 29 August 2020. The horizontal blue line shows the national mean for week 35, beginning 23 August 2020.

Public facilities with high proportions testing positive

Table 5 shows the 25 public clinics, hospitals and testing laboratories (where specimens were not tied to a particular facility), that had 25 or more specimens tested and at least five positive results in the week

of 23-29 August, with the highest proportion testing positive nationally.

This week's list is dominated by facilities in the North West (7), Northern Cape (6) and Free State (4), with two in each of the Western Cape, Eastern Cape and KwaZulu-Natal, and one in each Gauteng and Mpumalanga.

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Table 5. Public healthcare facilities with a high proportion testing positive, 23-29 August 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Northern Cape	25	0.600 (0.408;0.792)
Facility 2	KwaZulu-Natal	42	0.500 (0.349;0.651)
Facility 3	Gauteng	42	0.476 (0.325;0.627)
Facility 4	North West	34	0.471 (0.303;0.638)
Facility 5	Western Cape	34	0.471 (0.303;0.638)
Facility 6	Mpumalanga	26	0.462 (0.270;0.653)
Facility 7	North West	29	0.448 (0.267;0.629)
Facility 8	Free State	27	0.444 (0.257;0.632)
Facility 9	Northern Cape	30	0.433 (0.256;0.611)
Facility 10	North West	30	0.433 (0.256;0.611)
Facility 11	North West	37	0.432 (0.273;0.592)
Facility 12	Northern Cape	35	0.429 (0.265;0.593)
Facility 13	North West	61	0.410 (0.286;0.533)
Facility 14	Eastern Cape	71	0.394 (0.281;0.508)
Facility 15	Eastern Cape	61	0.393 (0.271;0.516)
Facility 16	Northern Cape	64	0.391 (0.271;0.510)
Facility 17	Western Cape	153	0.386 (0.308;0.463)
Facility 18	Free State	68	0.382 (0.267;0.498)
Facility 19	North West	63	0.381 (0.261;0.501)
Facility 20	KwaZulu-Natal	27	0.370 (0.188;0.553)
Facility 21	Northern Cape	27	0.370 (0.188;0.553)
Facility 22	North West	49	0.367 (0.232;0.502)
Facility 23	Free State	60	0.367 (0.245;0.489)
Facility 24	Northern Cape	66	0.364 (0.248;0.480)
Facility 25	Free State	47	0.362 (0.224;0.499)

95% CI: 95% confidence interval; PTP: positive test proportion

Public sector testing: Health district-level results

The results, for the 25 municipalities and metropolitan health sub-districts showing the greatest proportions testing positive in the week of 23-29 August 2020 are shown in Table 6. The list of districts is dominated by those in the North West (7),

Mpumalanga (5), Northern Cape (4), and Free State (4). No district showed a proportion testing positive greater than 50%, and only two with a proportion testing positive greater than 40%. Significant increases were observed in two of these 25 districts – Tsantsabane in Northern Cape, and Mthonjaneni in KwaZulu-Natal.

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Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 23-29 August 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Phokwane	Northern Cape	0.418 (0.288-0.547)	0.278 (0.168-0.388)
Ditsobotla	North West	0.407 (0.308-0.506)	0.261 (0.142-0.380)
Tsantsabane	Northern Cape	0.398 (0.324-0.471)	0.201 (0.160-0.242)
Steve Tshwete	Mpumalanga	0.391 (0.288-0.493)	0.221 (0.151-0.291)
Ga-Segonyana	Northern Cape	0.373 (0.297-0.448)	0.258 (0.203-0.312)
Govan Mbeki	Mpumalanga	0.351 (0.233-0.469)	0.443 (0.329-0.558)
Msukaligwa	Mpumalanga	0.342 (0.266-0.419)	0.306 (0.231-0.381)
Naledi	North West	0.334 (0.245-0.423)	0.199 (0.087-0.311)
Greater Taung	North West	0.328 (0.252-0.405)	0.362 (0.243-0.481)
Setsoto	Free State	0.326 (0.238-0.414)	0.297 (0.230-0.365)
Oudtshoorn	Western Cape	0.326 (0.268-0.383)	0.347 (0.292-0.402)
Emakhazeni	Mpumalanga	0.314 (0.193-0.434)	0.196 (0.118-0.273)
Maquassi Hills	North West	0.307 (0.176-0.438)	0.529 (0.384-0.674)
Tlokwe City Council	North West	0.304 (0.216-0.393)	0.255 (0.168-0.343)
Tshwane 4	Gauteng	0.292 (0.164-0.421)	0.172 (0.086-0.257)
Nketoana	Free State	0.282 (0.189-0.375)	0.374 (0.288-0.461)
City of Matlosana	North West	0.281 (0.239-0.324)	0.291 (0.246-0.336)
uMhlathuze	KwaZulu-Natal	0.281 (0.241-0.322)	0.254 (0.214-0.295)
Mthonjaneni	KwaZulu-Natal	0.273 (0.200-0.346)	0.051 (0.014-0.088)
Maluti a Phofung	Free State	0.272 (0.228-0.317)	0.241 (0.204-0.278)
Beaufort West	Western Cape	0.270 (0.182-0.358)	0.392 (0.308-0.476)
Tswelopele	Free State	0.265 (0.184-0.345)	0.286 (0.212-0.360)
Mafikeng	North West	0.259 (0.199-0.318)	0.337 (0.272-0.402)
Thembelihle	Northern Cape	0.255 (0.173-0.337)	0.226 (0.166-0.286)
Emalahleni	Mpumalanga	0.254 (0.160-0.347)	0.206 (0.077-0.335)

95% CI: 95% confidence interval; PTP: adjusted positive test proportion; PTP marked in red have current week proportions testing positive that are significantly higher than the previous week.

The data for every district with a non-zero proportion testing positive or where the range of confidence interval is not more than 30% (15% either side of the point estimate) for the current week is presented graphically below.

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Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 23-29 August 2020.

The spatial pattern of adjusted proportions testing positive in public facilities by health district and sub-district are shown for South Africa (Figure 10), Western Cape (Figure 11), Eastern Cape (Figure 12), Northern

Cape (Figure 13), Free State (Figure 14), KwaZulu-Natal (Figure 15), North West (Figure 16), Gauteng (Figure 17), Mpumalanga (Figure 18) and Limpopo (Figure 19).

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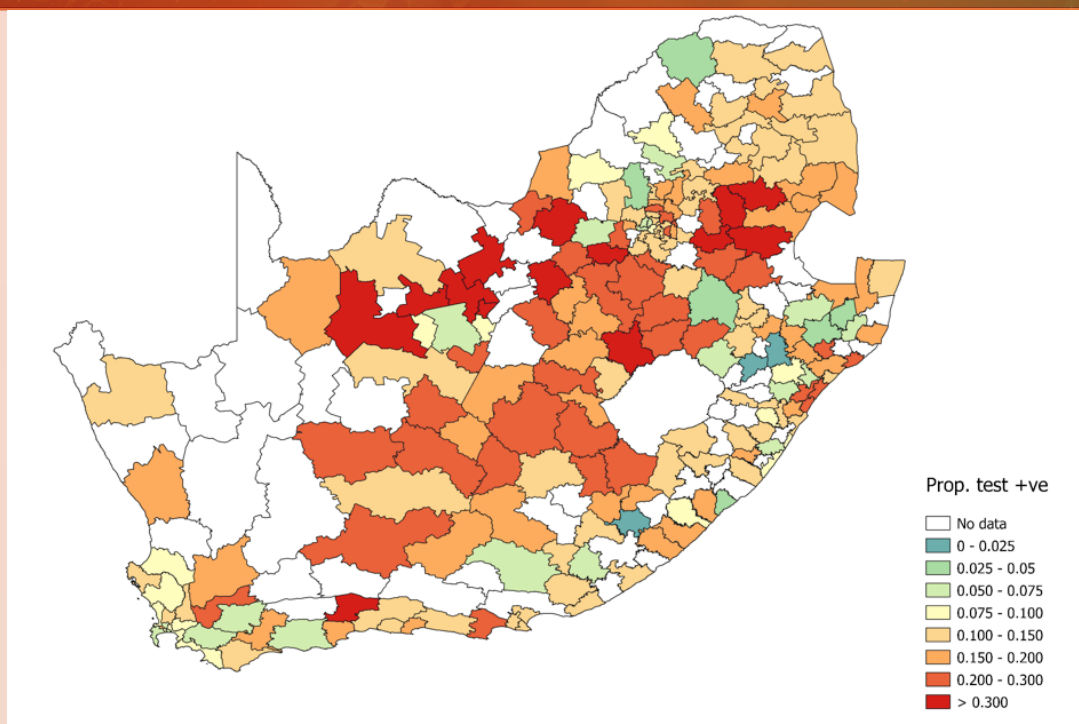


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 23-29 August 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

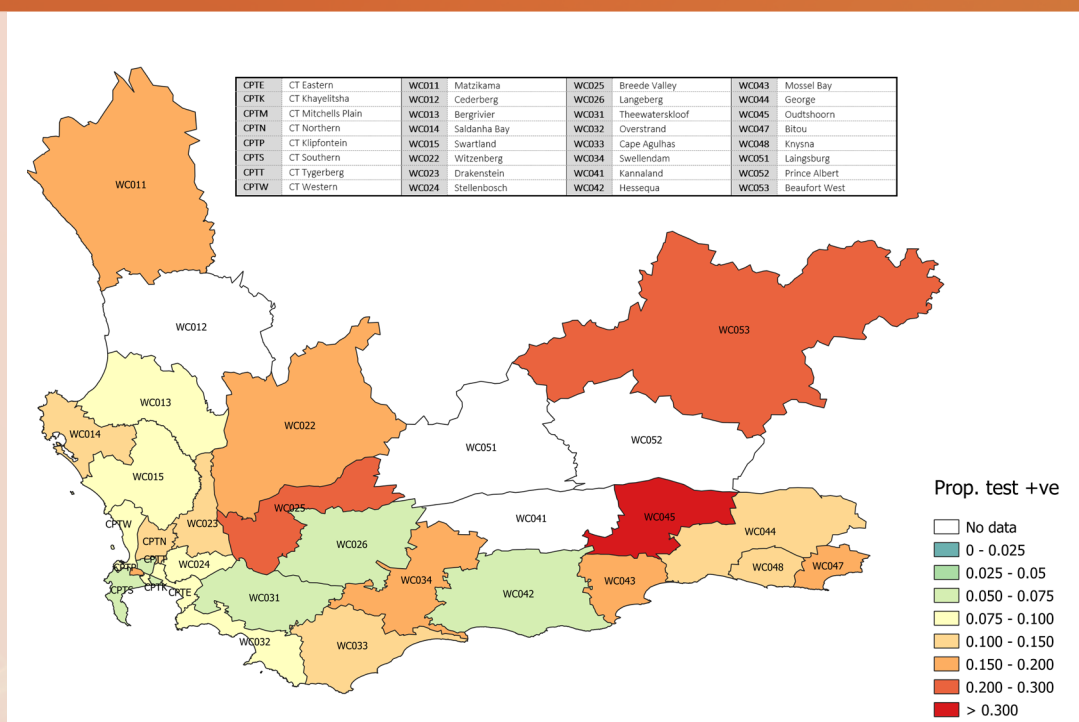


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

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BUF	Buffalo City	EC122	Minquma	EC135	Intsika Yethu	EC155	Nyandeni
EC101	Camdeboo	EC123	Great Kei	EC136	Emalahleni	EC156	Mhlontlo
EC102	Blue Crane Route	EC124	Amahlathi	EC137	Engobo	EC157	King Sabata Dalindyebo
EC103	Ikwezi	EC126	Ngqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Elundini	EC442	Umdimvubu
EC105	Ndlambe	EC128	Nvuba	EC142	Sengq	EC443	Mbizana
EC106	Sundays River Valley	EC131	Insuba Yethemba	EC143	Maletswai	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsolwana	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kouga	EC133	Inkwanca	EC153	Ngqiza Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Kamma	EC134	Lukani	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mbashe						

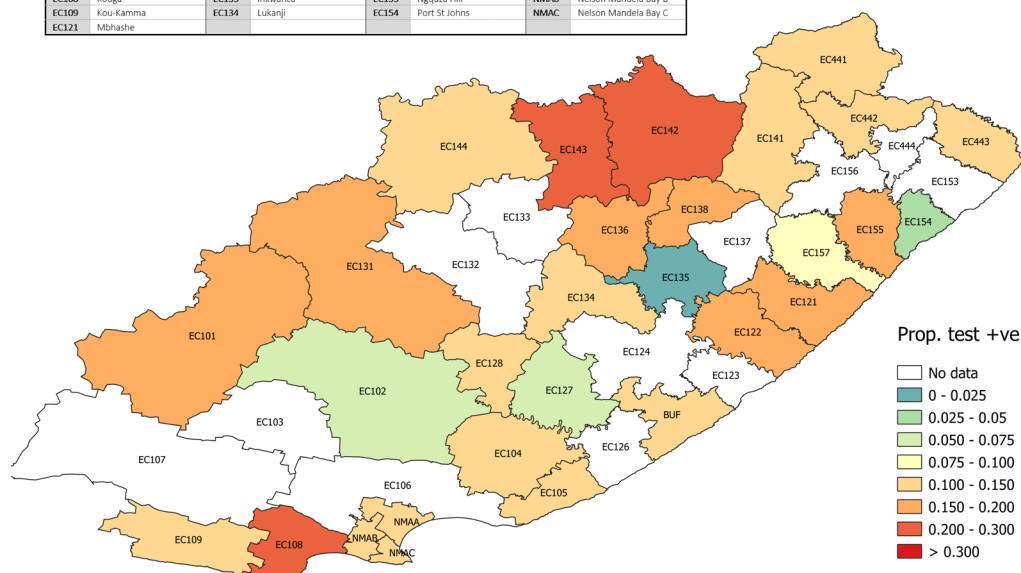


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

NC061	Botteriveld	NC076	Kanaboseng	NC085	Tsoelike
NC062	Nama Khoi	NC077	Ramotshabeng	NC086	Kgathakoppe
NC063	Kamabong	NC078	Thabakgale	NC087	Sothabale
NC064	Haritan	NC079	Syphemba	NC088	Qigatong
NC065	Karoo Kroogland	NC080	Syphemba	NC089	Magareng
NC066	Kala Nam	NC081	Alor	NC090	Phokwane
NC067	Ukuthu	NC082	Kar Gato	NC091	Joe Morong
NC068	Umtsheni	NC083	Yohane Ross	NC092	Ga-Segomane
NC069	Emthangeni	NC084	Uthuli	NC093	Gamagana

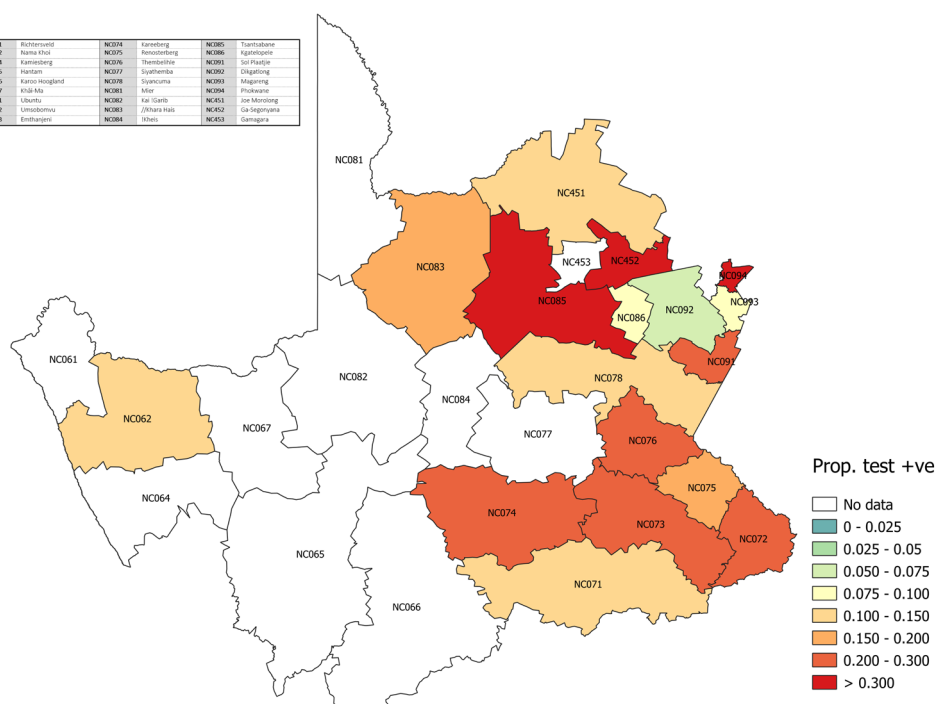


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

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MAN	Mangaung	FS181	Masilonyana	FS191	Setsoto	FS196	Mantsopa
FS161	Letsemeng	FS182	Tokologo	FS192	Ditlabeng	FS201	Moghaka
FS162	Kopanong	FS183	Tswelopele	FS193	Nketoana	FS203	Ngwalthe
FS163	Mohokare	FS184	Matjhabeng	FS194	Matluti a Phofung	FS204	Metsimaholo
FS164	Naledi	FS185	Nala	FS195	Phumelele	FS205	Mafube

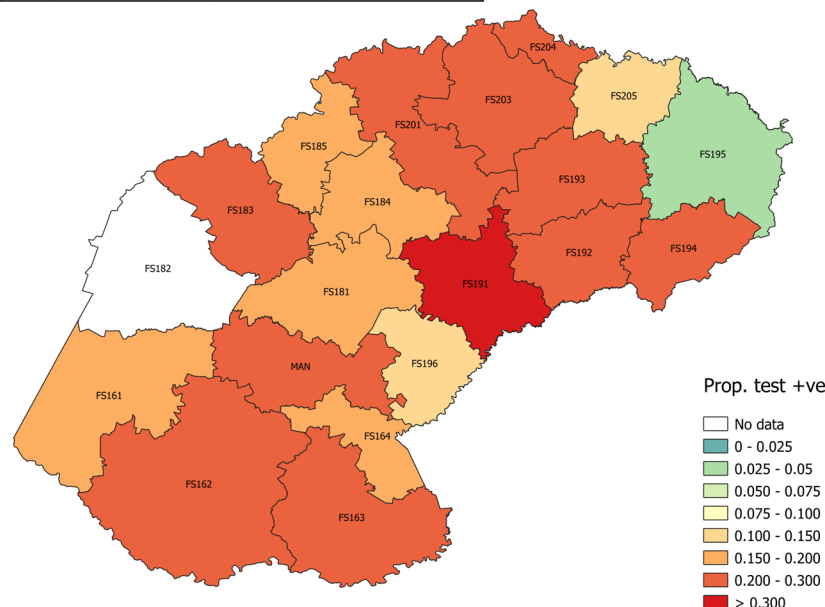


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekweni South	KZN234	Umtshezi	KZN274	Hlabisa
ETHW	eThekweni West	KZN235	Okhahlamba	KZN275	Mtubatuba
KZN211	Vulameklo	KZN241	Endumeni	KZN281	Mfotolzi
KZN212	Umdoni	KZN242	Nqutu	KZN282	uMkhathuze
KZN213	Umkumbe	KZN244	Mzinga	KZN283	Ntambanana
KZN214	uMuziwabantu	KZN245	Umvoti	KZN284	uMlalazi
KZN215	Ezingoleni	KZN252	Newcastle	KZN285	Mthonjaneni
KZN216	Helicoid Coast	KZN253	Emadlangeni	KZN286	Nkandla
KZN221	uMthwathi	KZN254	Dannhauser	KZN291	Malandeni
KZN222	uMngeni	KZN261	eDumbe	KZN292	KwaDukutsa
KZN223	Mpofana	KZN262	uPhongolo	KZN293	Ndwendwe
KZN224	Impendle	KZN263	Abaqulusi	KZN294	Maphumulo
KZN225	The Msunduzi	KZN265	Nongoma	KZN31	Inqwe
KZN226	Mkhambathini	KZN266	Ulundi	KZN432	Kwa Sani
KZN227	Richmond	KZN271	Umkhaya	KZN433	Greater Kokstad
KZN232	Emnambithi/Ladysmith	KZN272	Jozini	KZN434	Libuhlebezwe
				KZN435	Umsizikhulu

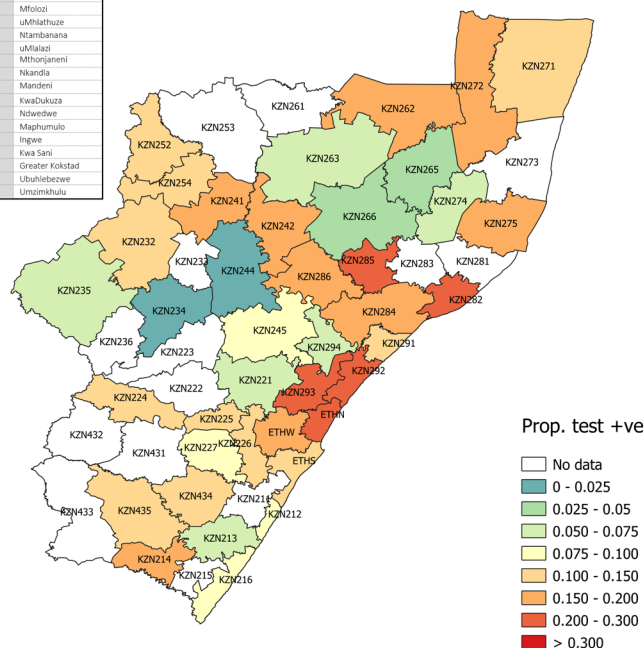


Figure 15. Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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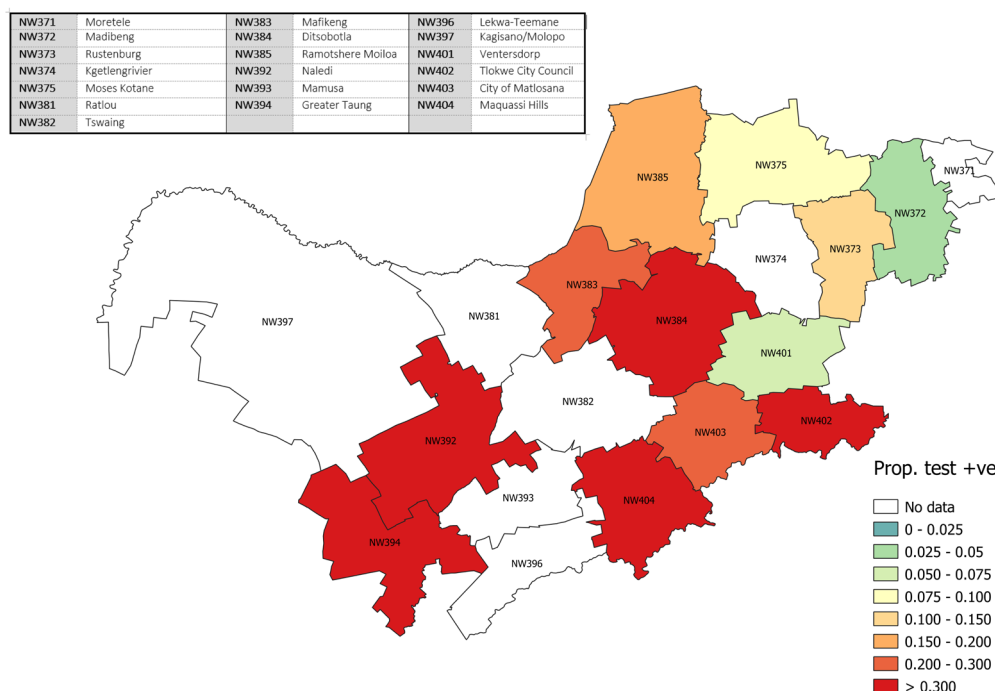


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

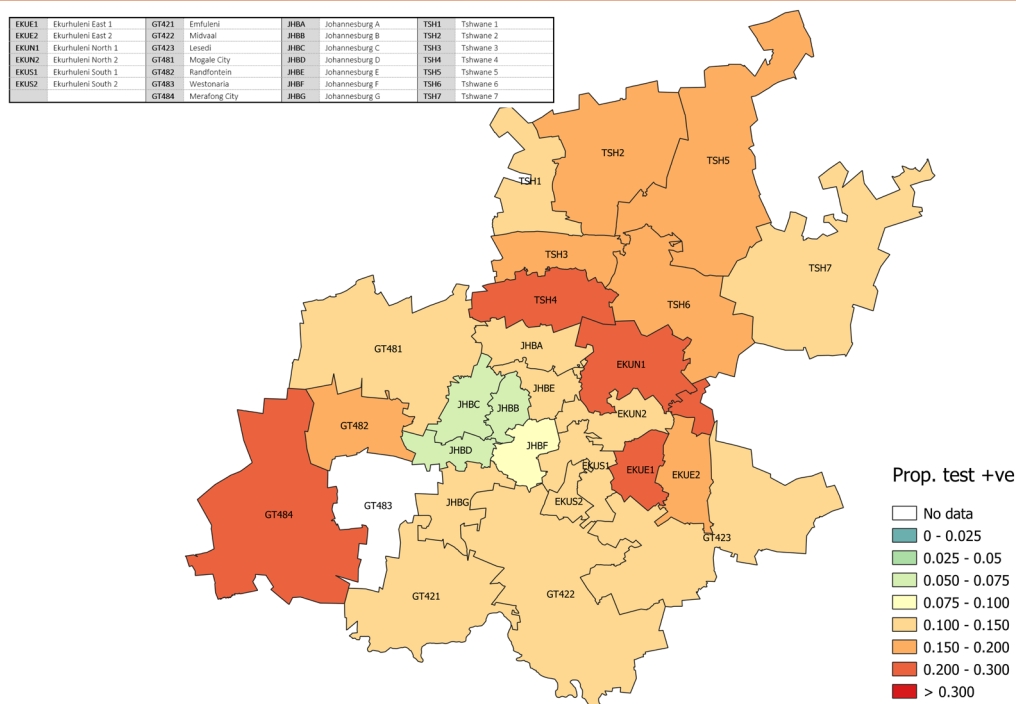


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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MP301	Albert Luthuli	MP307	Govan Mbeki	MP316	Dr JS Moroka
MP302	Msukaligwa	MP311	Victor Khanye	MP321	Thaba Chweu
MP303	Mkhondo	MP312	Emalahleni	MP322	Mbombela
MP304	Pitso ka Seme	MP313	Steve Tshwete	MP323	Umgindi
MP305	Lekwa	MP314	Emakhazeni	MP324	Nkomazi
MP306	Dipaleseng	MP315	Thembisile	MP325	Bushbuckridge

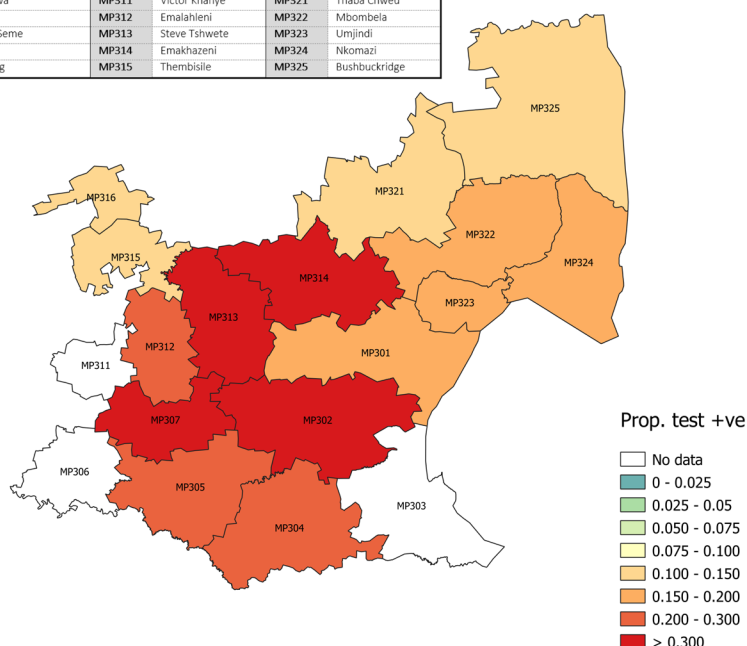


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Bloubaai	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Agnang	LIM366	Jelo-Bela
LIM333	Greater Tzaneen	LIM353	Molemole	LIM367	Mogalakwena
LIM334	Ba-Palataborwa	LIM354	Potlakaane	LIM471	Ephraim Mogale
LIM335	Murumbi	LIM355	Lepelle-Nkumpi	LIM472	Ellis-Motswagole
LIM341	Musina	LIM361	Thabazimbi	LIM473	Mashudu/hamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Mookgopong	LIM475	Greater Tloze
LIM344	Makadono				

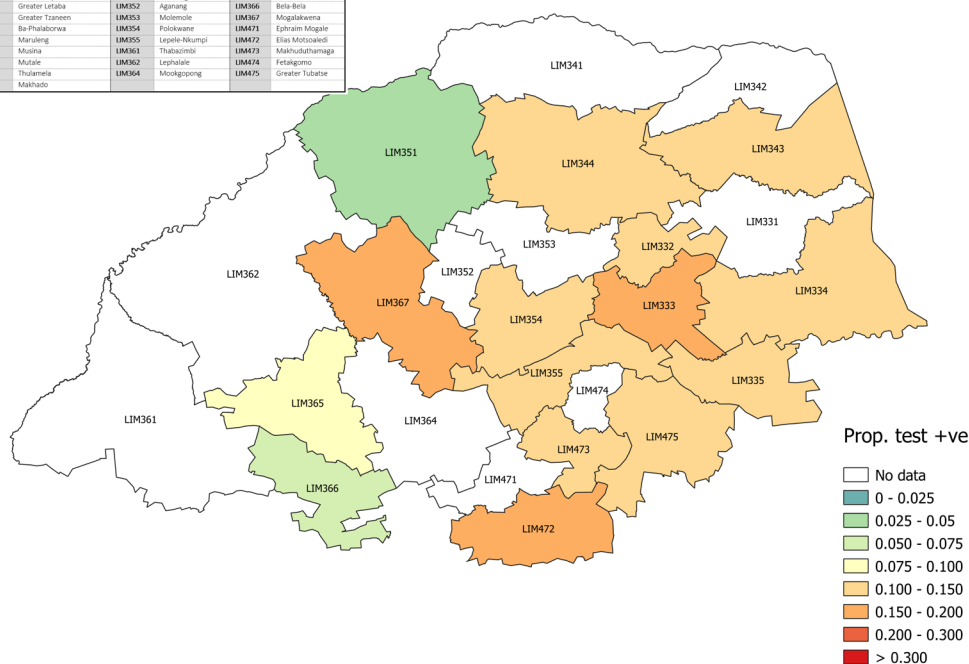


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 23-29 August 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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Testing by patient admission status

In week 35, 27.9% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in the Northern Cape (39.9%), and increased in the past week in Northern Cape, Limpopo and Mpumalanga provinces. Proportion of inpatient tests decreased in North West province from 37.8% in week 34 to 26.6%

in week 35. The percentage testing positive in week 35 was lower among inpatients (13.0%) compared to outpatients (17.3%), with the percentage in both groups continuing to decrease in the past week (Figure 21). In the public sector in week 35 the mean laboratory turnaround time was similar for inpatients (1.8 days) and outpatients (2.2 days), with a reduction in turnaround time observed for both inpatient and outpatient tests in the past week (Figure 22).

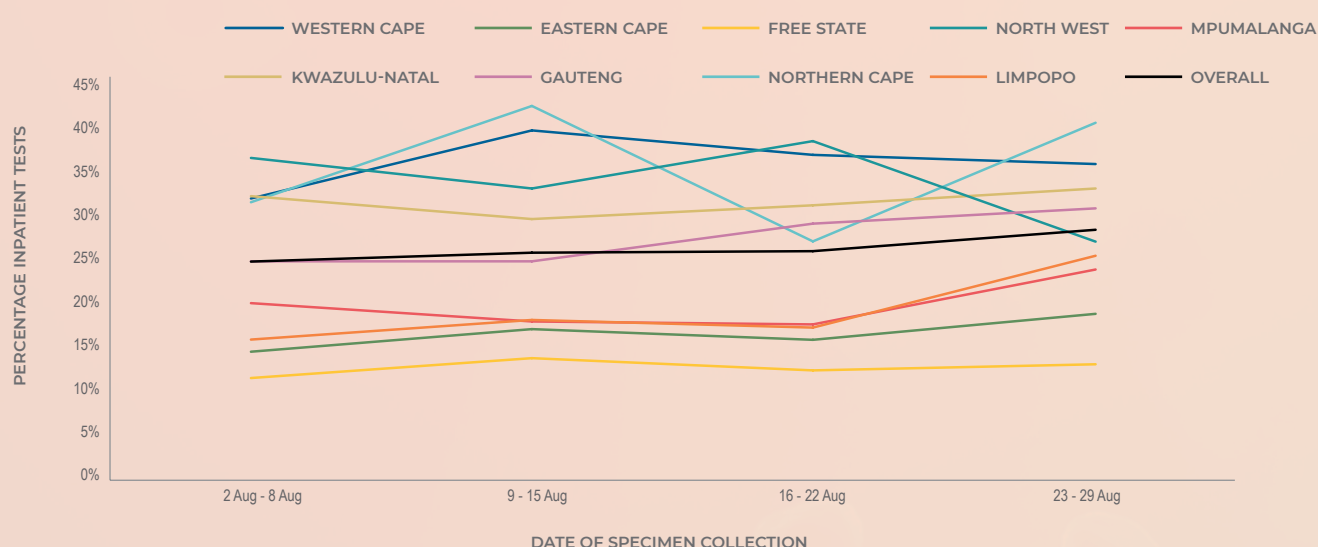


Figure 20. Percentage of inpatient tests performed in the public sector by province, 2 August - 29 August 2020

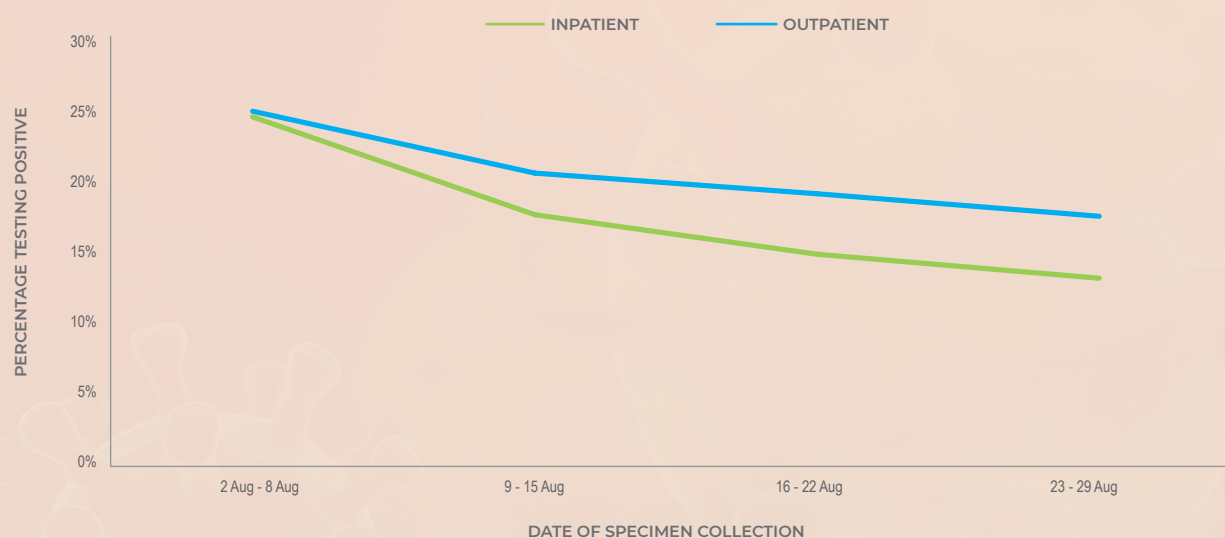


Figure 21. Percentage testing positive by patient admission status in the public sector, 2 August - 29 August 2020

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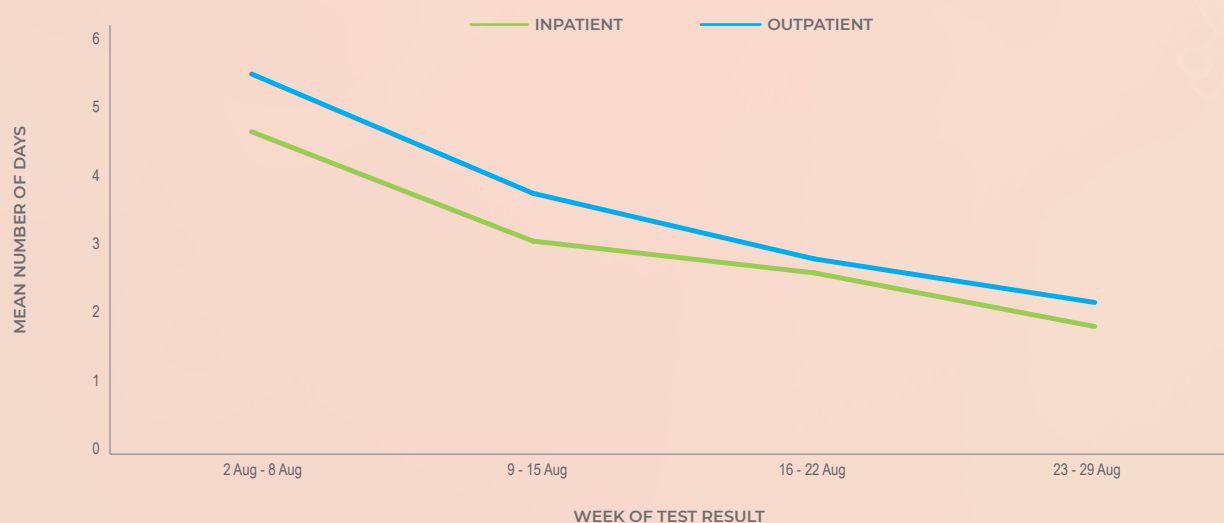


Figure 22. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 2 August - 29 August 2020

Testing by age and sex

The mean age of individuals tested in week 35 was 39.7 years. The mean age of individuals with a positive test in week 35 was 41.6 years, and was similar in males (41.4 years) and females (41.8 years, $P=0.208$) (Table 7).

The sex ratio (the number of males per 100 females) of individuals with a positive test increased compared to previous weeks and was 71.7 in week 35. For both sexes, the proportion testing positive in week 35 was similar to or lower than the previous two weeks across all age groups (Figure 23).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 2 August - 29 August 2020

Week number	Week beginning	Mean age of tested (years)		Mean age of positive tests (years)		Sex ratios (males / 100 females)	
		Males	Females	Males	Females	Tested	Cases
32	2 August	39.7	40.0	42.6	42.2	78.3	69.6
33	9 August	39.9	40.3	42.6	42.5	77.1	69.9
34	16 August	39.5	40.1	41.9	42.2	77.1	66.2
35	23 August	39.4	40.1	41.4	41.8	80.0	71.7

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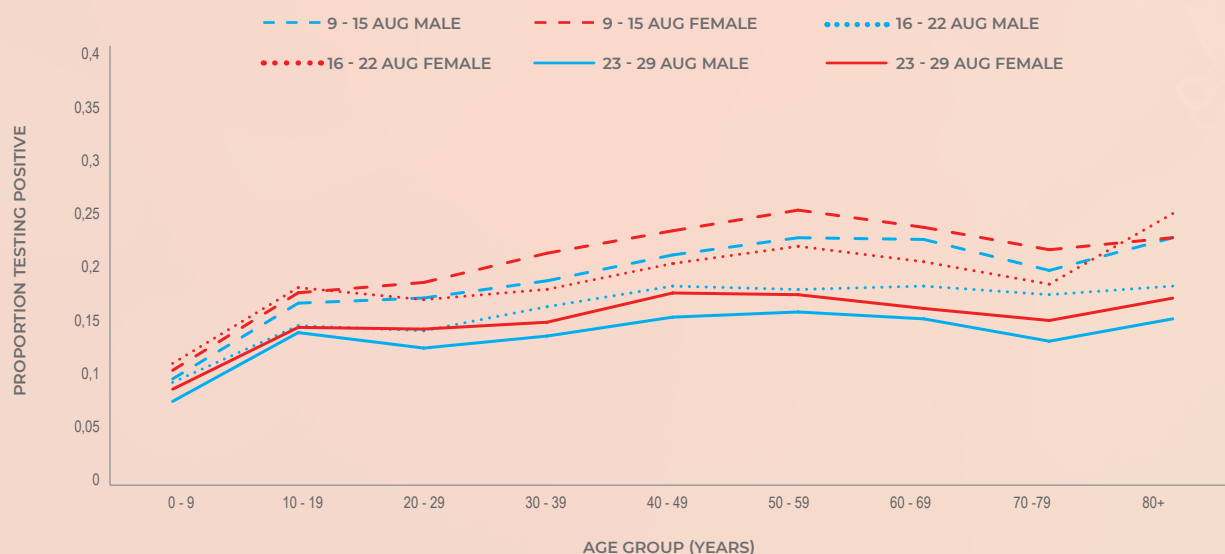


Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 9 August-29 August 2020

From week 32 to week 35, the percentage testing positive decreased 9.3% in males (from 23.1% to 13.8%) and 10.6% in females (from 26.0% to 15.4%) (Table 8). In week 35 the percentage testing positive

was higher in females compared to males across all age groups ($P \leq 0.001$), except for the 60-69 year's age group ($P = 0.252$).

Table 8. Percentage testing positive by sex and week, South Africa, 2 August - 29 August 2020

Age (years)	2-8 August		9-15 August		16-22 August		23-29 August	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	17.4%	21.0%	13.5%	14.9%	12.3%	15.6%	11.1%	12.4%
20-39	21.1%	23.9%	18.0%	20.0%	15.3%	17.5%	13.1%	14.6%
40-59	25.3%	28.9%	21.7%	24.1%	18.0%	20.9%	15.5%	17.4%
60-69	28.9%	30.4%	22.4%	23.5%	18.2%	20.4%	15.2%	16.1%
70+	28.2%	28.5%	20.4%	21.9%	17.6%	20.8%	13.7%	15.7%
Total	23.1%	26.0%	19.2%	21.1%	16.2%	18.8%	13.8%	15.4%

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Limitations

- The backlog in testing of samples by public laboratories affects the reported numbers of tests performed. As a result, numbers tested during this period may change in subsequent reports.
- If higher-priority specimens were tested preferentially, this would likely result in an inflated proportion testing positive.
- The delay in testing affects the analysis of the testing data and identification of outbreak hotspots.
- Different and changing testing strategies (targeted vs. mass testing) used by different provinces makes percentage testing positive difficult to interpret and compare.
- Health district and sub-district level results included public-sector data only and were mapped based on the testing facility and not place of residence.
- Patient admission status was categorised based on the reported patient facility, which was only available for public sector data and may not reflect whether the patient was actually admitted to hospital.
- Province was determined based on the location of the laboratory where the specimen was registered, which may have resulted in misallocation of tests if the sample was registered in a different province to the patient residence.

CONCLUSIONS

In week 35 the week on week reduction in the weekly testing volume since the peak in week 28 continued. Gauteng performed the largest number of tests in week 35 accounting for 30.6% of tests, followed by KwaZulu-Natal (19.4%) and Western Cape (15.1%) provinces. Northern Cape (348 per 100,000 persons) and Free State (325 per 100,000 persons) provinces had the highest testing rates in the past week, although all provinces have shown reduced testing rates over the recent weeks. Laboratory turnaround times in week 35 were <2 days in both the private (1.5 days) and public (1.9 days) sectors.

The percentage testing positive has been decreasing since a peak of 31.4% in week 29, and continued to decrease to 14.6% in week 35. Similar levels of percentage testing positive were last observed in week 24 of 2020. Northern Cape (25.2%), Free state (24.7%) and North West (20.3%) provinces had the highest percentage testing positive in week 35. Compared to the previous week, the percentage testing positive decreased in seven provinces (Western Cape, Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Mpumalanga and Limpopo) and did not change in Northern Cape and North West provinces.