

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 36 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 5 September 2020 (Week 36 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 5 September 2020, 3,335,910 laboratory tests for SARS-CoV-2 have been conducted nationally
- Gauteng (30.8%), KwaZulu-Natal (18.5%) and Western Cape (15.8%) performed the largest number of tests in week 36
- Northern Cape (336 per 100,000 persons) and Free State (283 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 12.7% in week 36
- Percentages testing positive were $\geq 20\%$ in Northern Cape and Free State, between 10-19% in North West, Mpumalanga, Limpopo and Eastern Cape, and $< 10\%$ in Gauteng, KwaZulu-Natal and Western Cape provinces in the past week
- Laboratory turnaround times in week 36 were < 2 days in both the private and public sectors

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 36 2020

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 5 September 2020 (week 36).

Testing volumes and proportion testing positive

From 1 March through 5 September 2020, 3,335,910 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=272,769).

Testing volumes have continued to decrease since week 29, with 85,472 tests performed in week 36. 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).

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

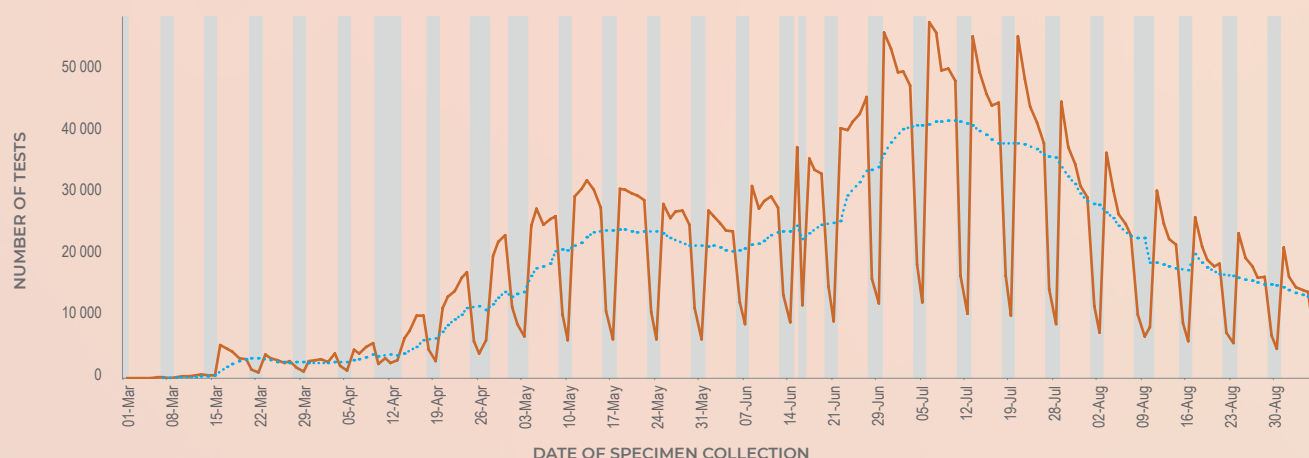


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 5 September 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 36 was 18.5% (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 18.7% decrease in the percentage testing positive, and the percentage testing positive decreased from 14.8% in week 35 to 12.7% in week 36 ($P < 0.001$) (Figure 2).

Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 5 September 2020

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar	410 (0.0)	9	2.2
11	08-Mar	2328 (0.1)	88	3.8
12	15-Mar	21326 (0.6)	826	3.9
13	22-Mar	17043 (0.5)	468	2.7
14	29-Mar	17382 (0.5)	395	2.3
15	05-Apr	24609 (0.7)	567	2.3
16	12-Apr	41879 (1.3)	1044	2.5
17	19-Apr	75923 (2.3)	1936	2.5
18	26-Apr	89513 (2.7)	2897	3.2
19	03-May	136931 (4.1)	5553	4.1
20	10-May	157046 (4.7)	7450	4.7
21	17-May	156436 (4.7)	10543	6.7
22	24-May	141437 (4.2)	11717	8.3
23	31-May	135774 (4.1)	13513	10.0
24	07-Jun	156488 (4.7)	20540	13.1
25	14-Jun	164795 (4.9)	29940	18.2
26	21-Jun	221630 (6.6)	50591	22.8
27	28-Jun	268996 (8.1)	69371	25.8
28	05-Jul	272769 (8.2)	79850	29.3
29	12-Jul	250384 (7.5)	78546	31.4
30	19-Jul	236333 (7.1)	72631	30.7
31	26-Jul	185758 (5.6)	53763	28.9
32	02-Aug	149655 (4.5)	36993	24.7
33	09-Aug	116186 (3.5)	23516	20.2
34	16-Aug	109512 (3.3)	19184	17.5
35	23-Aug	99895 (3.0)	14739	14.8
36	30-Aug	85472 (2.6)	10872	12.7
Total		3335910 (100.0)	617542	18.5

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

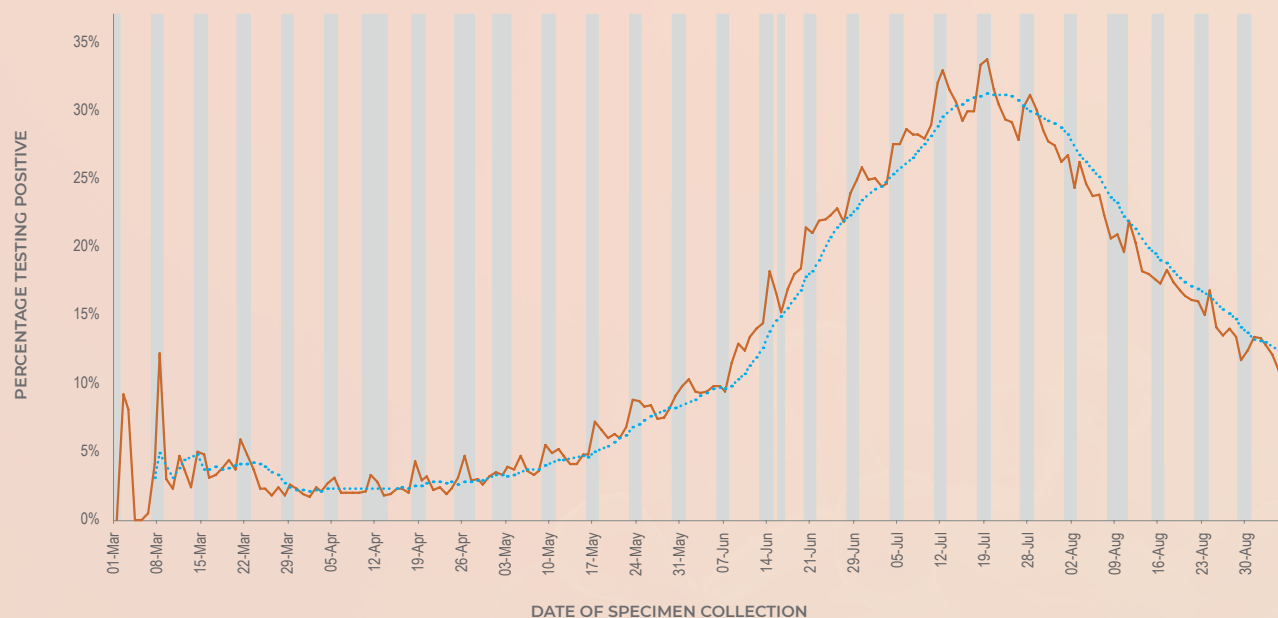


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 5 September 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 5 September, 1,521,538 laboratory tests were conducted in public sector laboratories, with 16.6% testing positive. Over this same period, private sector laboratories conducted 1,814,372 tests, with 20.1% testing positive (Table 2). Overall the public sector has conducted 45.6% of tests and accounted for 40.9% 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 35 to week 36, the percentage testing positive decreased by 2.3% in the public sector and 1.8% in the private sector, and in week 36 was higher in the public sector (13.7%) compared to the private sector (12.0%) ($P < 0.001$).

The mean turnaround time for tests conducted in week 36 was similar to the previous week (1.7 days overall; 1.8 days in the public sector and 1.7 days in the private sector) (Figure 3). Turnaround times for public sector tests were < 2 days in all provinces except for Northern Cape (3.4 days) and Mpumalanga (2.2 days) (Figure 4). Of the 28 NHLS laboratories performing testing for SARS-CoV-2, 23 (82%) public sector laboratories had turnaround times ≤ 2 days with only one NHLS laboratory having a mean turnaround time of more than 3 days (Figure 5).

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 5 September 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)	159	4 (2.5)	61.2	55.6	0.792
11	08-Mar	350	12 (3.4)	1978	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	5613	159 (2.8)	11769	236 (2.0)	32.3	40.3	1.413
15	05-Apr	11342	320 (2.8)	13267	247 (1.9)	46.1	56.4	1.515
16	12-Apr	23776	608 (2.6)	18103	436 (2.4)	56.8	58.2	1.062
17	19-Apr	54185	1478 (2.7)	21738	458 (2.1)	71.4	76.3	1.295
18	26-Apr	66240	2290 (3.5)	23273	607 (2.6)	74.0	79.0	1.325
19	03-May	92353	4257 (4.6)	44578	1296 (2.9)	67.4	76.7	1.586
20	10-May	104954	5108 (4.9)	52092	2342 (4.5)	66.8	68.6	1.083
21	17-May	95464	6631 (6.9)	60972	3912 (6.4)	61.0	62.9	1.083
22	24-May	74286	5957 (8.0)	67151	5760 (8.6)	52.5	50.8	0.935
23	31-May	60286	6111 (10.1)	75488	7402 (9.8)	44.4	45.2	1.034
24	07-Jun	60035	7364 (12.3)	96453	13176 (13.7)	38.4	35.9	0.898
25	14-Jun	56045	11083 (19.8)	108750	18857 (17.3)	34.0	37.0	1.140
26	21-Jun	82717	18891 (22.8)	138913	31700 (22.8)	37.3	37.3	1.001
27	28-Jun	97422	25170 (25.8)	171574	44201 (25.8)	36.2	36.3	1.003
28	05-Jul	108111	30319 (28.0)	164658	49531 (30.1)	39.6	38.0	0.932
29	12-Jul	101439	29465 (29.0)	148945	49081 (33.0)	40.5	37.5	0.881
30	19-Jul	96367	28474 (29.5)	139966	44157 (31.5)	40.8	39.2	0.937
31	26-Jul	74048	21371 (28.9)	111710	32392 (29.0)	39.9	39.8	0.995
32	02-Aug	64184	15782 (24.6)	85471	21211 (24.8)	42.9	42.7	0.991
33	09-Aug	53727	10430 (19.4)	62459	13086 (21.0)	46.2	44.4	0.927
34	16-Aug	50991	8975 (17.6)	58521	10209 (17.4)	46.6	46.8	1.009
35	23-Aug	45510	7259 (16.0)	54385	7480 (13.8)	45.6	49.3	1.160
36	30-Aug	37139	5084 (13.7)	48333	5788 (12.0)	43.5	46.8	1.143
Total		1521538	252778 (16.6)	1814372	364764 (20.1)	45.6	40.9	0.826

^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)

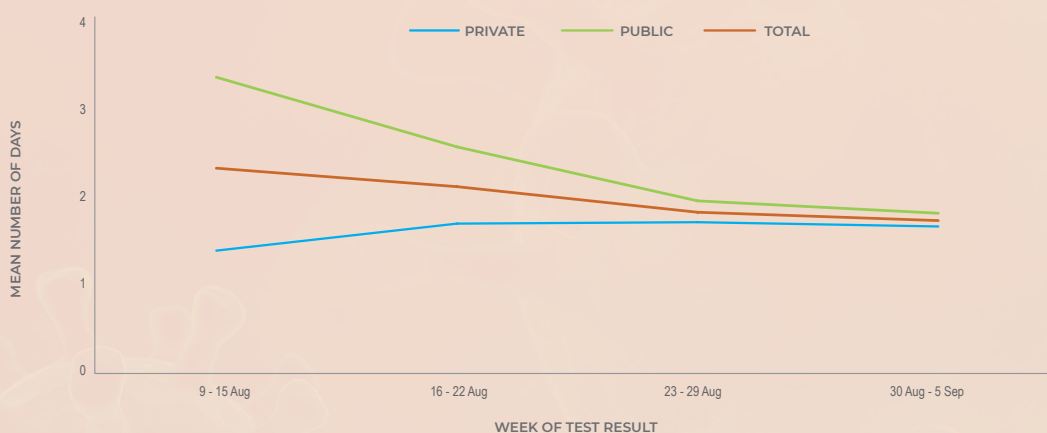


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 9 August – 5 September 2020

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

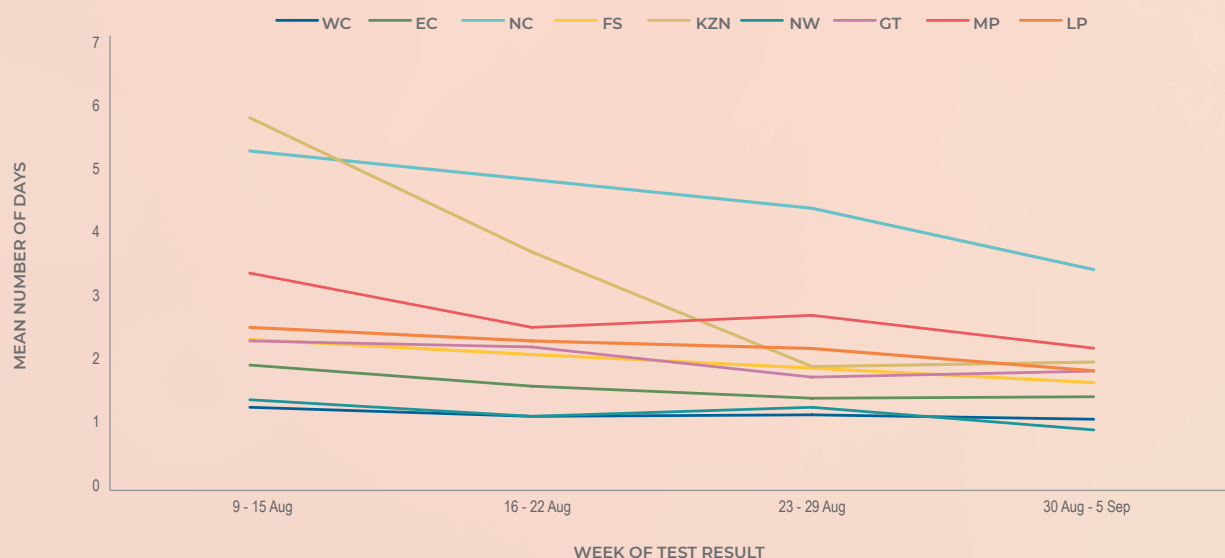


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 9 August – 5 September 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng

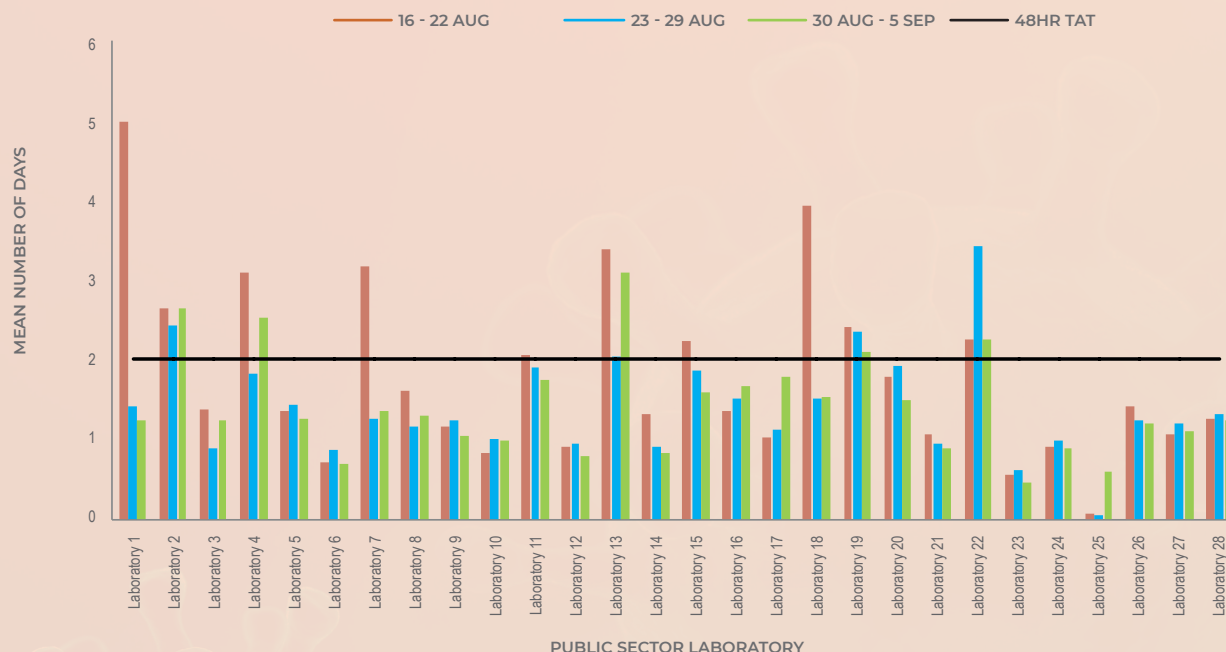


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 16 August–5 September 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Testing by province

As in previous weeks, the provinces that performed the largest number of tests in week 36 were Gauteng (30.8%), KwaZulu-Natal (18.5%) and Western Cape (15.8%) (Table 3). All other provinces conducted <10,000 tests in week 36. Northern Cape (336 per 100,000 persons) and Free State (283 per 100,000 persons) provinces continued to have the highest testing rates in the past week, although all provinces have shown reduced testing rates over the recent weeks (Figure 6).

Percentages testing positive were $\geq 20\%$ in Northern Cape (27.3%) and Free State (23.5%), between 10-19% in North West, Mpumalanga, Limpopo and Eastern

Cape, and <10% in Gauteng, KwaZulu-Natal and Western Cape in week 36 (Figure 7). Compared to the previous week, the percentage testing positive decreased in six provinces (Western Cape ($P<0.001$), Eastern Cape ($P<0.001$), Free State ($P=0.034$), KwaZulu-Natal ($P<0.001$), Gauteng ($P<0.001$) and Mpumalanga ($P=0.001$)). The percentage testing positive in week 36 compared to week 35 did not change in Northern Cape ($P=0.159$), North West ($P=0.186$) and Limpopo ($P=0.936$) 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).

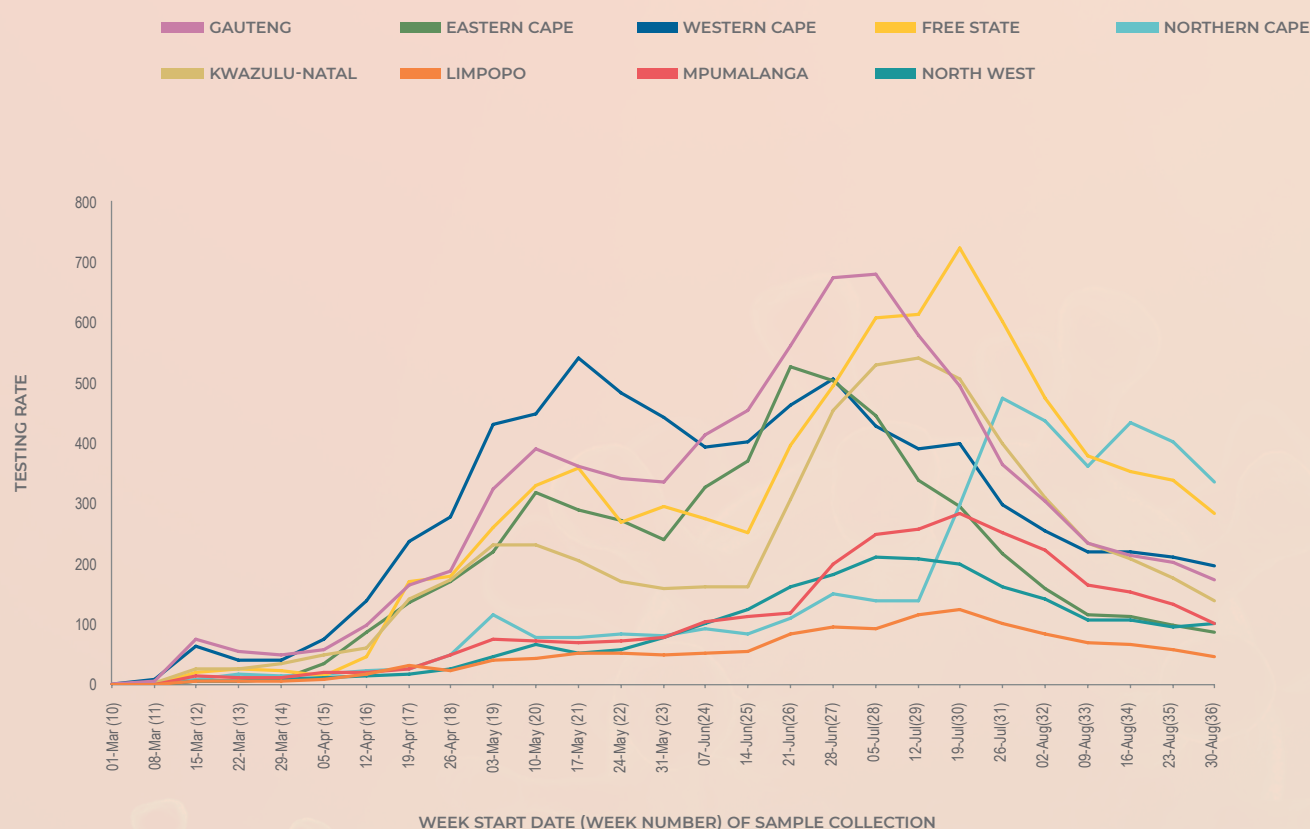


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 5 September 2020.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 16 August – 5 September 2020.

Province	Population ^a	16-22 Aug		23-29 Aug		30 Aug - 5 Sep		Tests per 100,000 persons	Change in percentage positive ^b
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)		
Western Cape	6844272	15022	1909 (12.7)	14448	1383 (9.6)	13498	1114 (8.3)	197	-1.3%
Eastern Cape	6712276	7511	1034 (13.8)	6592	822 (12.5)	5794	589 (10.2)	86	-2.3%
Northern Cape	1263875	5493	1346 (24.5)	5083	1322 (26.0)	4245	1159 (27.3)	336	1.3%
Free State	2887465	10168	2787 (27.4)	9760	2425 (24.8)	8151	1914 (23.5)	282	-1.4%
KwaZulu-Natal	11289086	23468	3849 (16.4)	19765	2726 (13.8)	15773	1568 (9.9)	140	-3.9%
North West	4027160	4298	900 (20.9)	3888	784 (20.2)	4128	784 (19.0)	103	-1.2%
Gauteng	15176115	32345	4991 (15.4)	30689	3615 (11.8)	26316	2566 (9.8)	173	-2.0%
Mpumalanga	4592187	7062	1612 (22.8)	6127	1129 (18.4)	4664	746 (16.0)	102	-2.4%
Limpopo	5982584	3933	735 (18.7)	3436	519 (15.1)	2787	423 (15.2)	47	0.1%
Unknown		212	21 (9.9)	107	14 (13.1)	116	9 (7.8)		-5.3%
Total	58750220	109512	19184 (17.5)	99895	14739 (14.8)	85472	10872 (12.7)	145	-2.0%

^a2019 Mid-year population Statistics SA

^bCurrent week compared to previous week

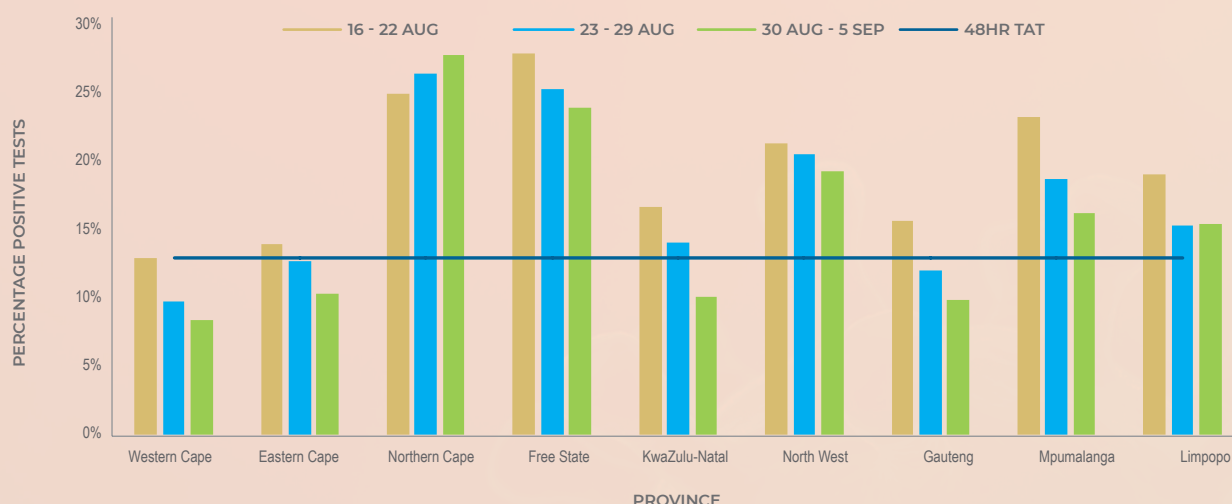


Figure 7. Weekly percentage testing positive, by province, South Africa, 16 August – 5 September 2020. The horizontal blue line shows the national mean for week 36, beginning 30 August 2020.

Testing in the public sector

In the public sector, the percentage testing positive continued to decrease from 16.0% in week 35 to 13.7% in week 36 ($P < 0.001$) (Table 4). The percentage testing positive in week 36 was highest in Northern

Cape (26.4%), North West (24.8%) and Free State (23.9%) 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, Mpumalanga and Limpopo provinces (Figure 8).

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 16 August – 5 September 2020.

Province	16-22 Aug		23-29 Aug		30 Aug - 5 Sep	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	6314	837 (13.3)	6282	682 (10.9)	5897	521 (8.8)
Eastern Cape	4937	750 (15.2)	4069	590 (14.5)	3418	384 (11.2)
Northern Cape	3174	676 (21.3)	2790	698 (25.0)	2134	564 (26.4)
Free State	5990	1562 (26.1)	5379	1326 (24.7)	4270	1021 (23.9)
KwaZulu-Natal	11971	1992 (16.6)	9990	1490 (14.9)	8216	839 (10.2)
North West	1316	367 (27.9)	1474	378 (25.6)	1636	405 (24.8)
Gauteng	12983	1853 (14.3)	11891	1446 (12.2)	9063	955 (10.5)
Mpumalanga	2437	552 (22.7)	2031	398 (19.6)	1339	217 (16.2)
Limpopo	1869	386 (20.7)	1604	251 (15.6)	1166	178 (15.3)
Unknown	0	0 (0.0)	0	0 (0.0)	0	0 (0.0)
Total	50991	8975 (17.6)	45510	7259 (16.0)	37139	5084 (13.7)

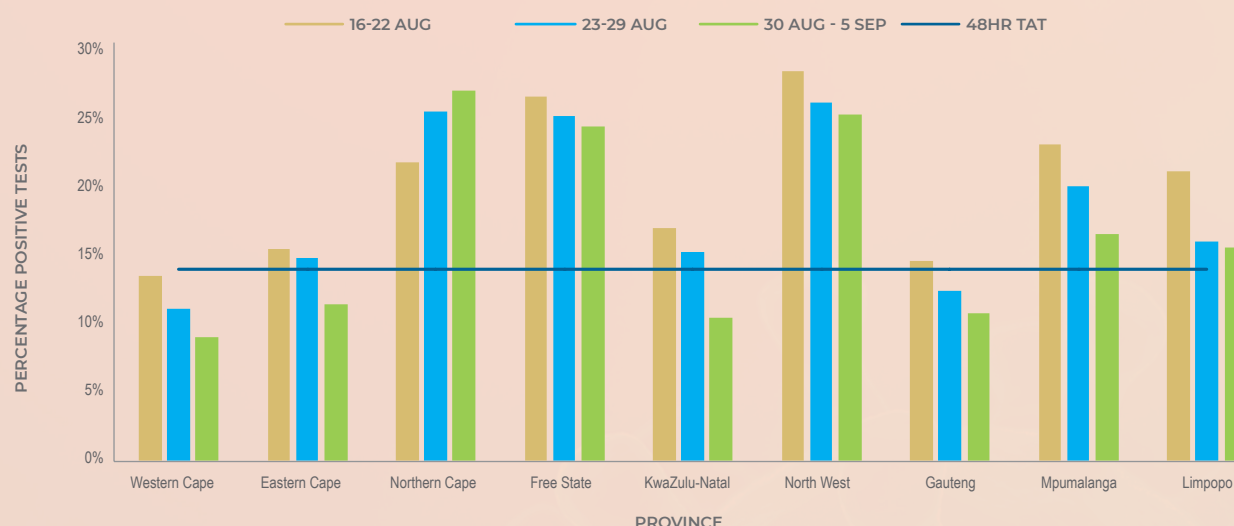


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 16 August – 5 September 2020. The horizontal blue line shows the national mean for week 36, beginning 30 August 2020.

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

30 August – 5 September, with the highest proportion testing positive nationally.

This week's list is dominated by facilities in the Free State (10), and Northern Cape (8). There are two facilities in each of KwaZulu-Natal, North West, and Gauteng; and one in the Western Cape.

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 36 2020

Table 5. Public healthcare facilities with a high proportion testing positive, 30 August – 5 September 2020.

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Northern Cape	135	0.570 (0.487;0.654)
Facility 2	Free State	29	0.517 (0.335;0.699)
Facility 3	Gauteng	54	0.481 (0.348;0.615)
Facility 4	Free State	27	0.481 (0.293;0.670)
Facility 5	Free State	44	0.477 (0.330;0.625)
Facility 6	North West	26	0.462 (0.270;0.653)
Facility 7	Free State	60	0.417 (0.292;0.541)
Facility 8	Northern Cape	29	0.414 (0.235;0.593)
Facility 9	KwaZulu-Natal	37	0.405 (0.247;0.564)
Facility 10	Free State	48	0.396 (0.257;0.534)
Facility 11	Northern Cape	120	0.392 (0.304;0.479)
Facility 12	Northern Cape	80	0.388 (0.281;0.494)
Facility 13	Northern Cape	26	0.385 (0.198;0.572)
Facility 14	Northern Cape	40	0.375 (0.225;0.525)
Facility 15	KwaZulu-Natal	27	0.370 (0.188;0.553)
Facility 16	Free State	54	0.370 (0.242;0.499)
Facility 17	Northern Cape	30	0.367 (0.194;0.539)
Facility 18	Free State	249	0.361 (0.302;0.421)
Facility 19	Free State	28	0.357 (0.180;0.535)
Facility 20	Western Cape	31	0.355 (0.186;0.523)
Facility 21	Northern Cape	37	0.351 (0.198;0.505)
Facility 22	North West	60	0.350 (0.229;0.471)
Facility 23	Free State	26	0.346 (0.163;0.529)
Facility 24	Gauteng	55	0.345 (0.220;0.471)
Facility 25	Free State	29	0.345 (0.172;0.518)

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 30 August – 5 September 2020 are shown in Table 6. The list of districts is dominated by those in the Free State (10),

Northern Cape (6) and North West (4) provinces. No district showed a proportion testing positive greater than 40%, and only ten with a proportion testing positive greater than 30%. Significant increases were observed in two of these 25 districts; Sol Plaatje in Northern Cape, and Letsemeng in the Free State.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 30 August – 5 September 2020.

Health district or sub-district	Province	PTP (95% CI)	Previous week
Sol Plaatjie	Northern Cape	0.379 (0.332-0.425)	0.284 (0.247-0.322)
Phokwane	Northern Cape	0.366 (0.284-0.448)	0.364 (0.280-0.449)
Ga-Segonyana	Northern Cape	0.365 (0.292-0.438)	0.374 (0.303-0.445)
Tsantsabane	Northern Cape	0.348 (0.281-0.415)	0.369 (0.302-0.435)
Letsemeng	Free State	0.328 (0.224-0.432)	0.157 (0.103-0.212)
Tswelopele	Free State	0.325 (0.225-0.426)	0.258 (0.180-0.337)
Umsobomvu	Northern Cape	0.318 (0.192-0.443)	0.271 (0.172-0.369)
Khara Hais	Northern Cape	0.311 (0.240-0.381)	0.212 (0.179-0.246)
Beaufort West	Western Cape	0.307 (0.197-0.417)	0.269 (0.181-0.356)
Naledi	North West	0.303 (0.227-0.378)	0.201 (0.082-0.320)
Mafikeng	North West	0.293 (0.226-0.361)	0.256 (0.200-0.313)
Steve Tshwete	Mpumalanga	0.275 (0.193-0.356)	0.390 (0.288-0.492)
Nketoana	Free State	0.269 (0.173-0.364)	0.286 (0.194-0.379)
Dihlabeng	Free State	0.265 (0.202-0.328)	0.239 (0.194-0.285)
Lephalale	Limpopo	0.260 (0.134-0.386)	...
Kopanong	Free State	0.256 (0.187-0.325)	0.249 (0.201-0.296)
City of Matlosana	North West	0.256 (0.222-0.290)	0.276 (0.234-0.318)
Ba-Phalaborwa	Limpopo	0.254 (0.138-0.370)	0.107 (0.041-0.172)
Ngwathe	Free State	0.249 (0.169-0.330)	0.212 (0.146-0.278)
Greater Taung	North West	0.248 (0.167-0.330)	0.325 (0.249-0.402)
Nxuba	Eastern Cape	0.239 (0.119-0.359)	0.111 (0.033-0.190)
Mangaung	Free State	0.238 (0.220-0.256)	0.247 (0.230-0.264)
Tokologo	Free State	0.236 (0.090-0.383)	...
Moqhaka	Free State	0.236 (0.167-0.305)	0.213 (0.164-0.261)
Metsimaholo	Free State	0.235 (0.130-0.341)	0.249 (0.164-0.335)

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.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

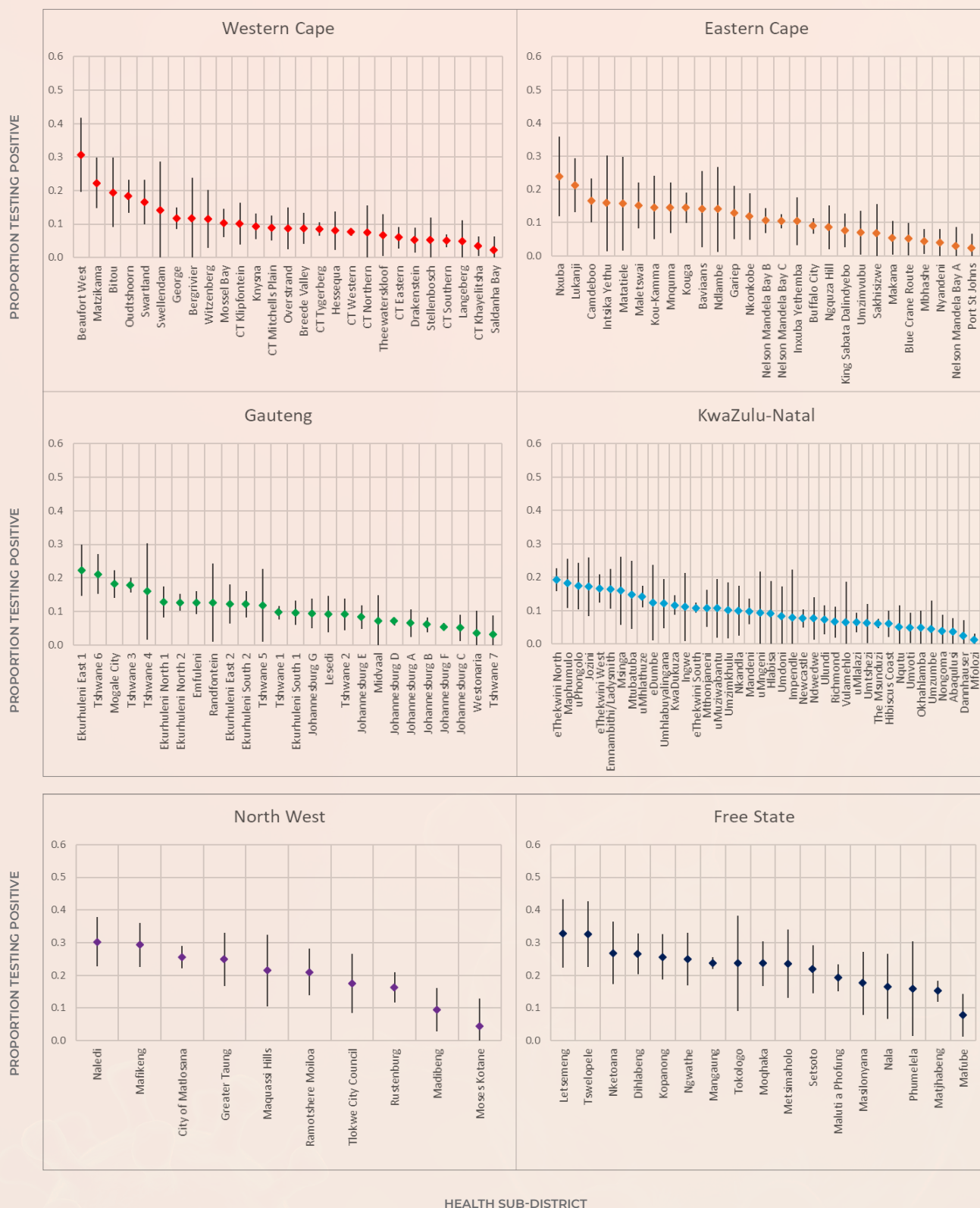


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 30 August – 5 September 2020.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020



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 30 August – 5 September 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).

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

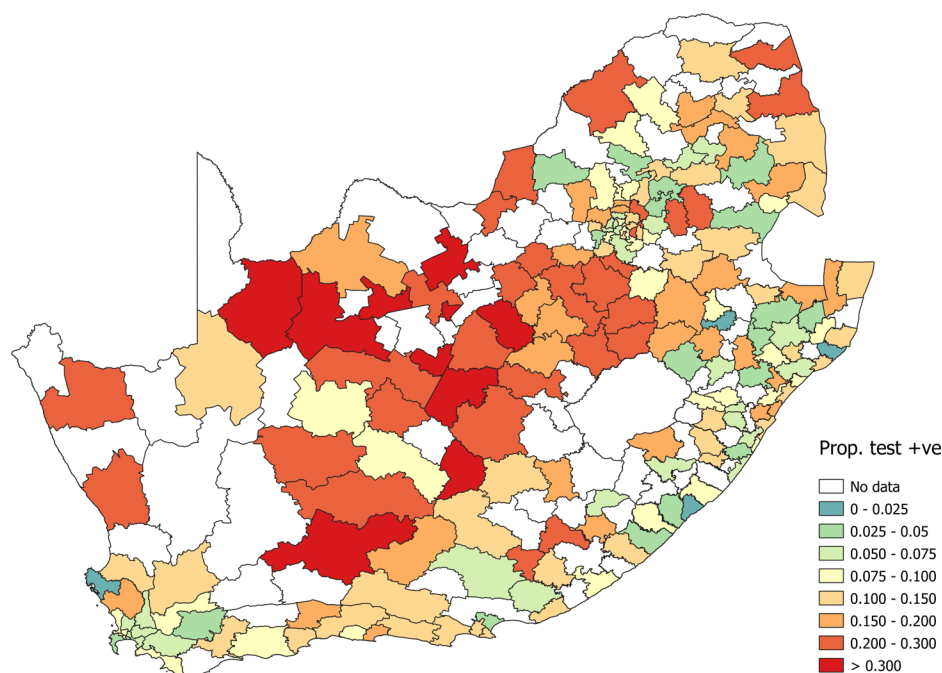


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 30 August-5 September 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

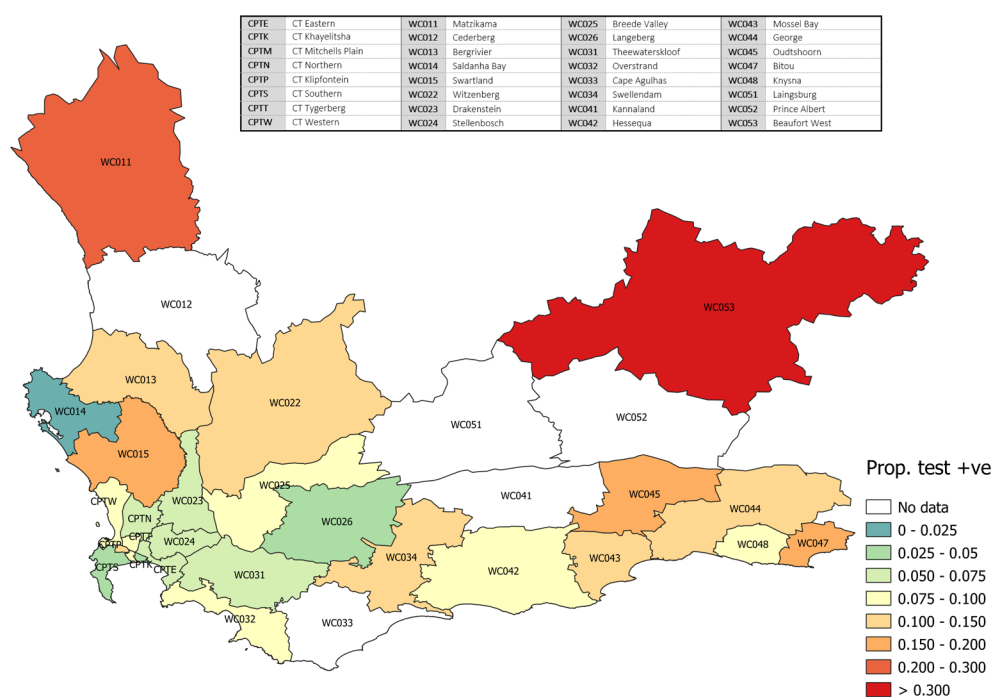


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

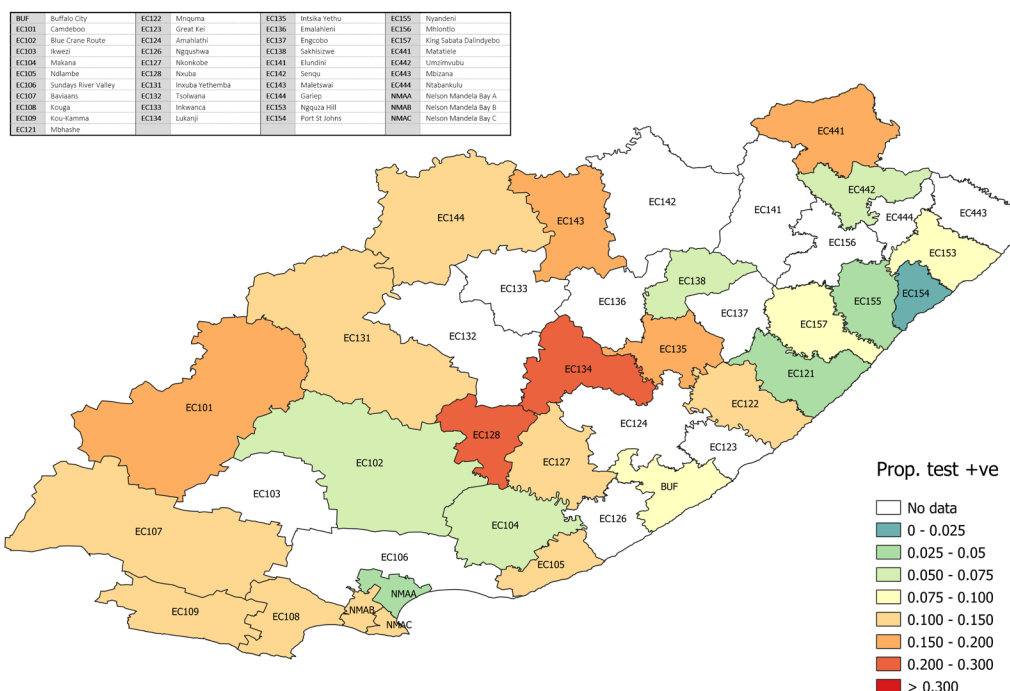


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

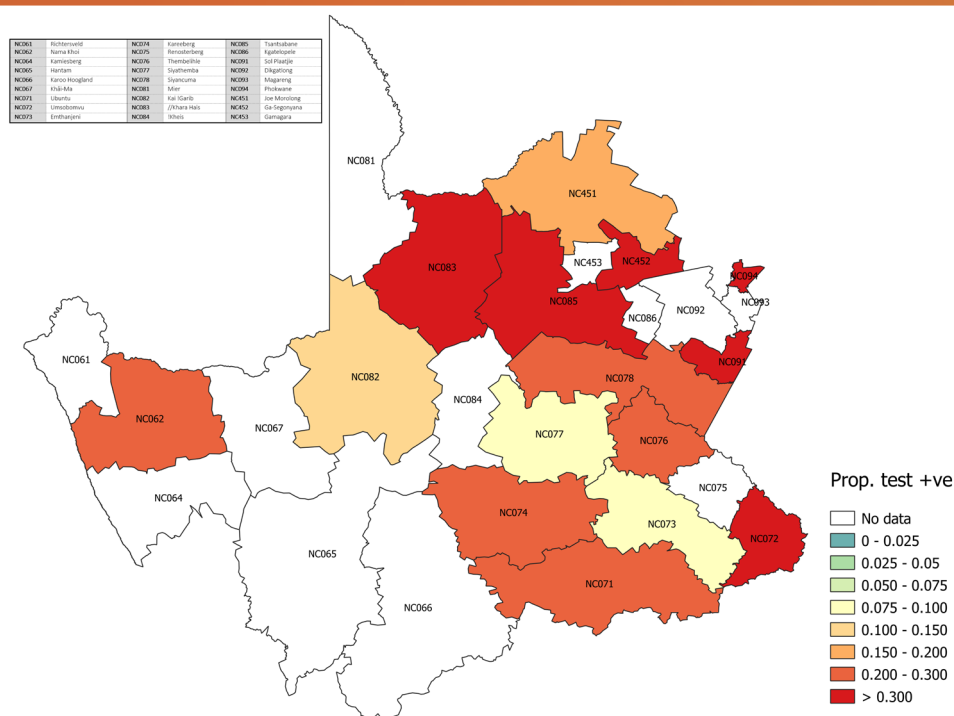


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

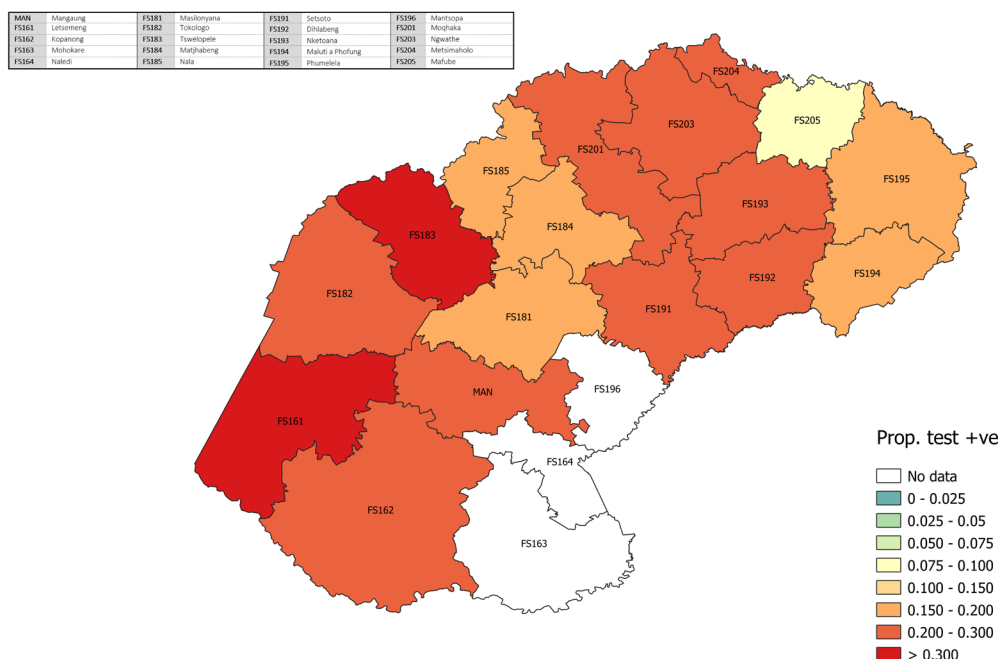


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

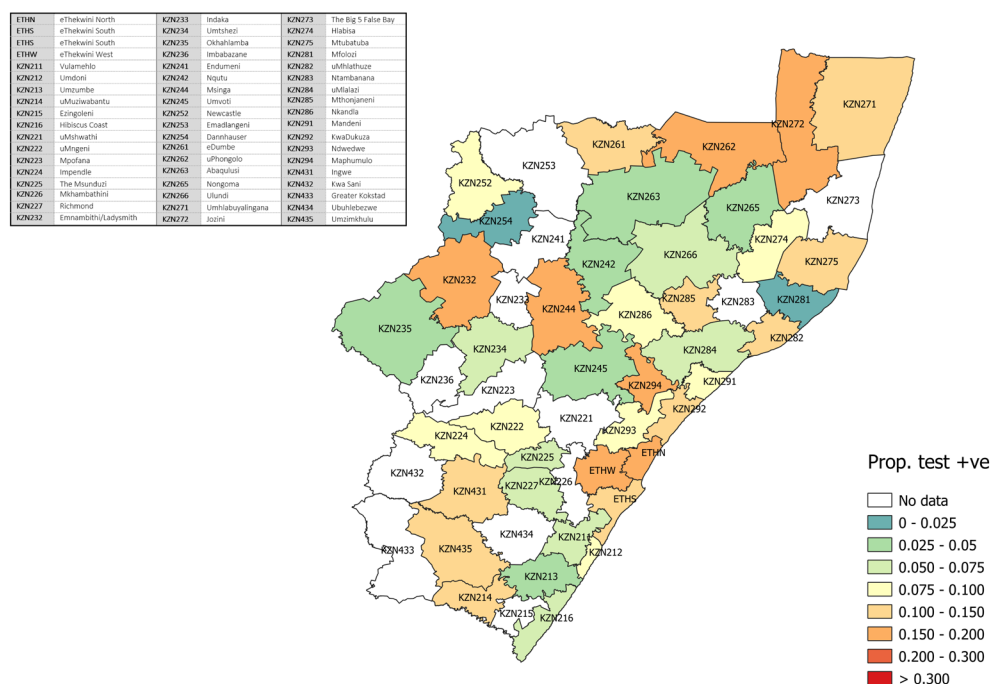


Figure 15. Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

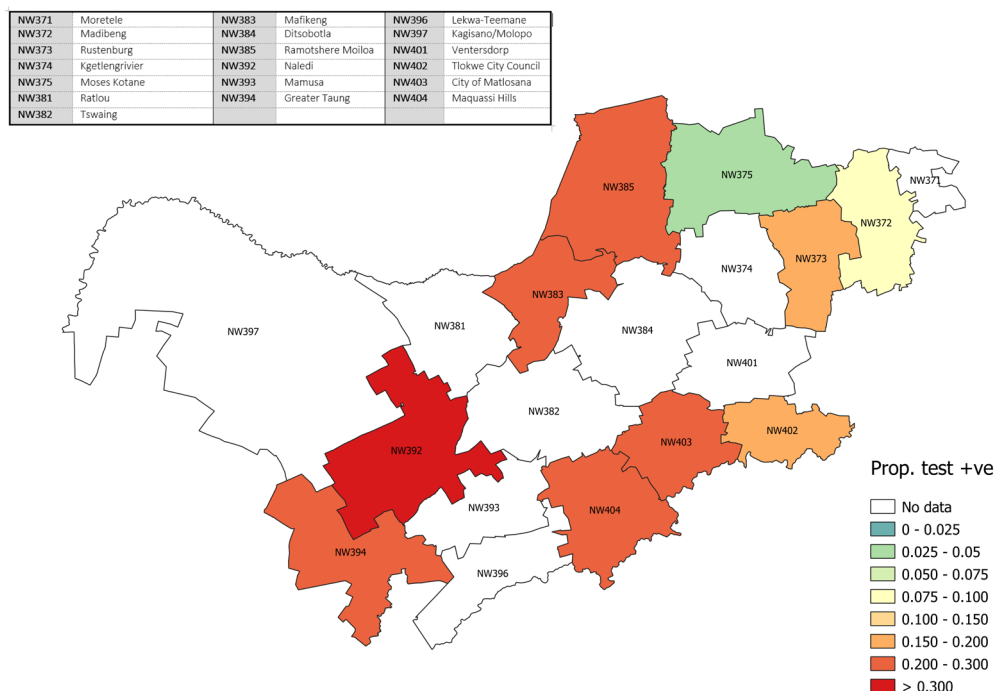


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

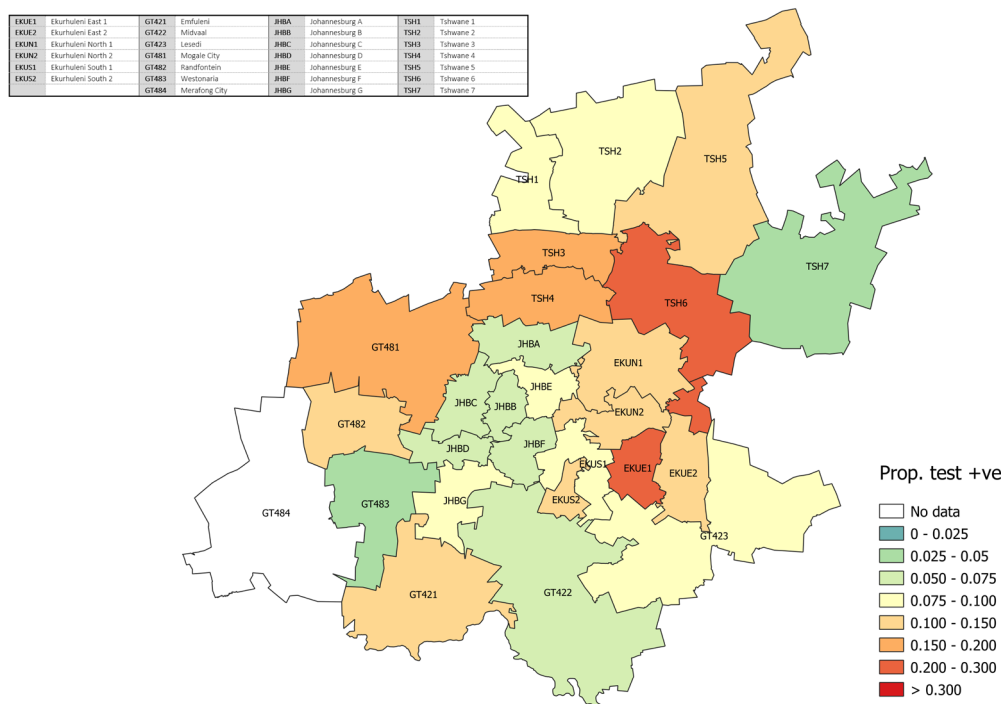


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 36 2020

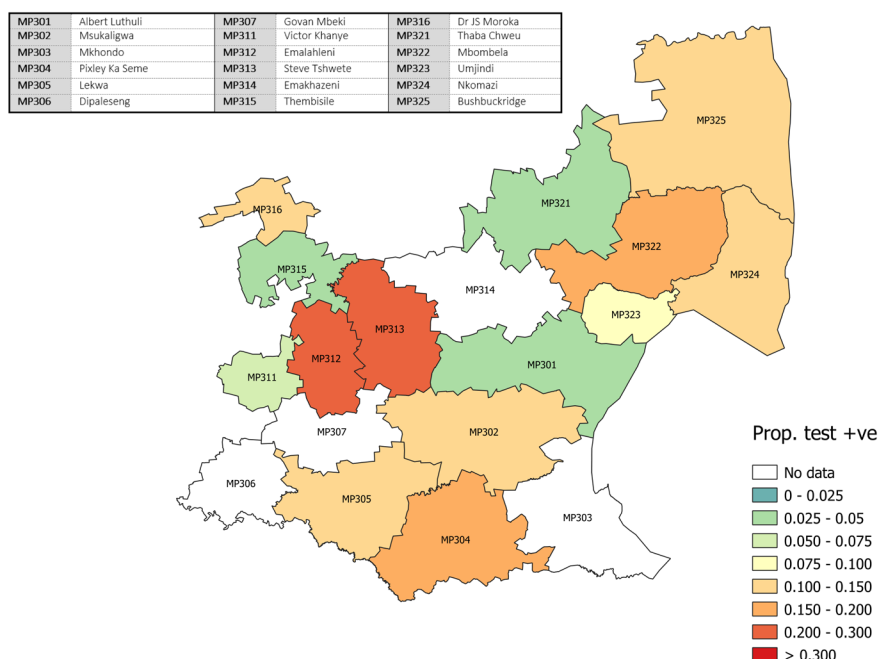


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

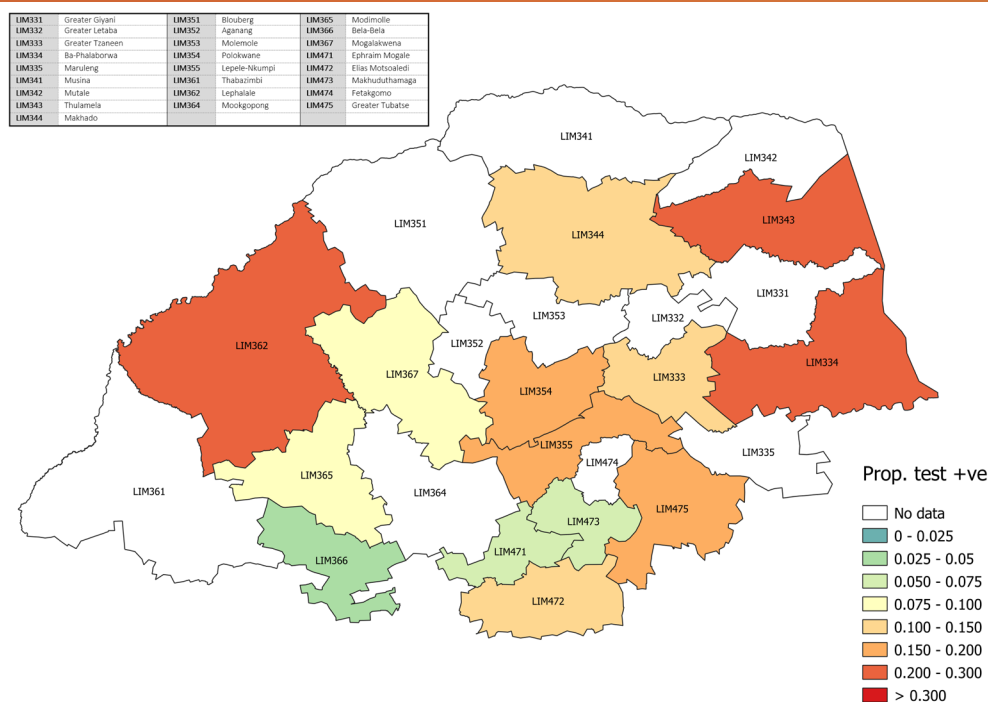


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 30 August-5 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

Testing by patient admission status

In week 36, 29.0% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Gauteng (36.6%), Western Cape (34.5%), Northern Cape (33.0%) and KwaZulu-Natal (30.7%) provinces. The proportion of inpatient tests increased in the past

week in Gauteng, Limpopo, Free State and Eastern Cape. The percentage testing positive in week 36 remained lower among inpatients (11.4%) compared to outpatients (15.1%), with the percentage in both groups continuing to decrease in the past week (Figure 21). In the public sector in week 36 the mean laboratory turnaround time was similar for inpatients (1.8 days) and outpatients (2.0 days) (Figure 22).

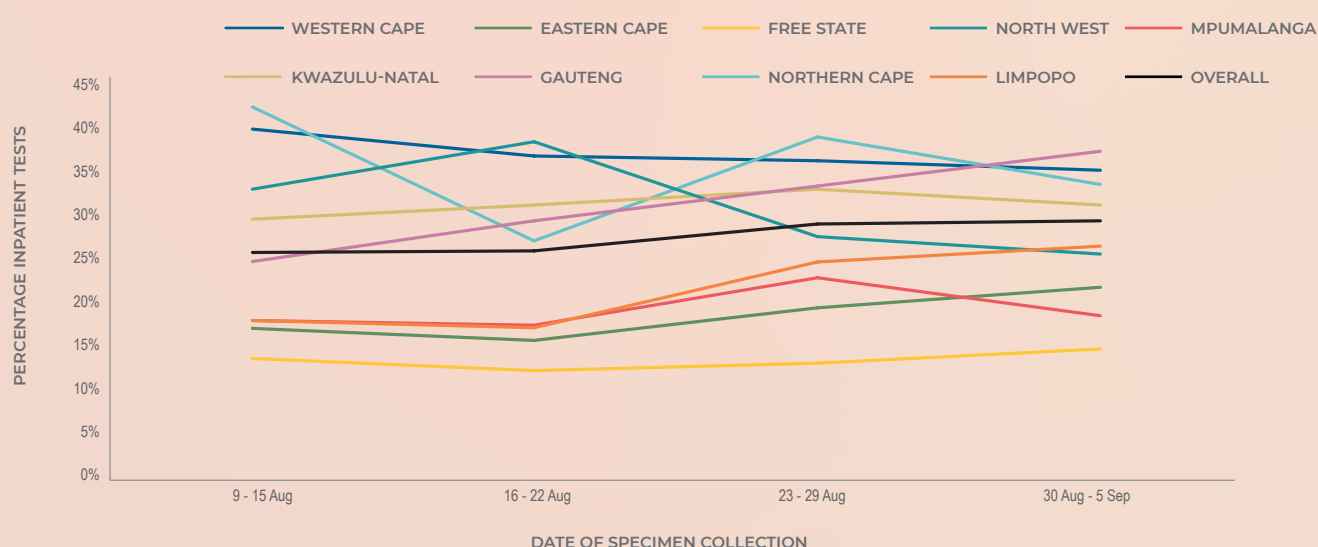


Figure 20. Percentage of inpatient tests performed in the public sector by province, 9 August - 5 September 2020.

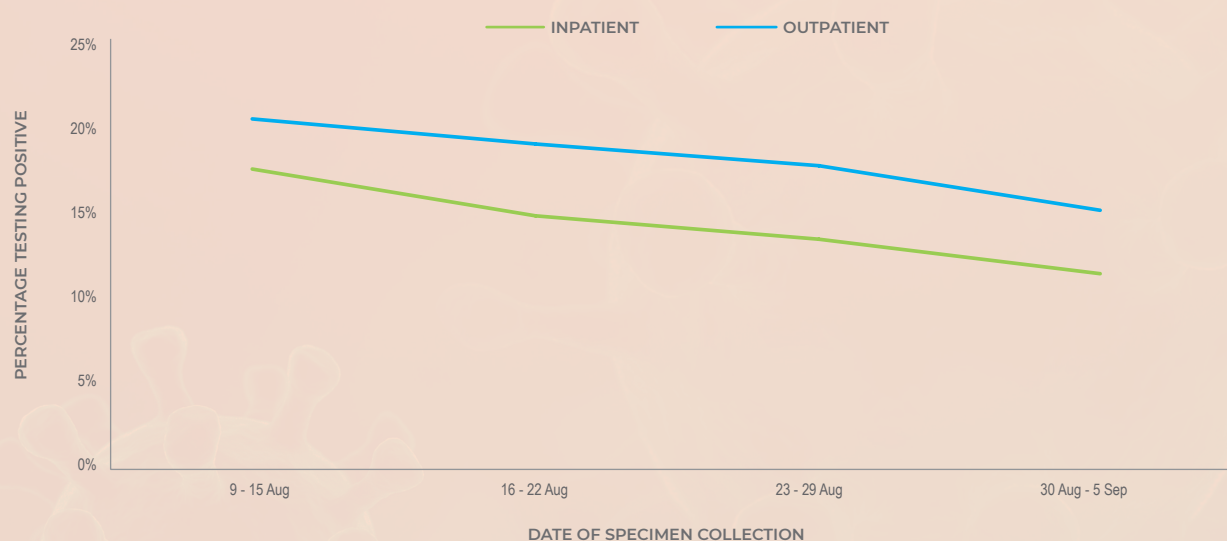


Figure 21. Percentage testing positive by patient admission status in the public sector, 9 August - 5 September 2020.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

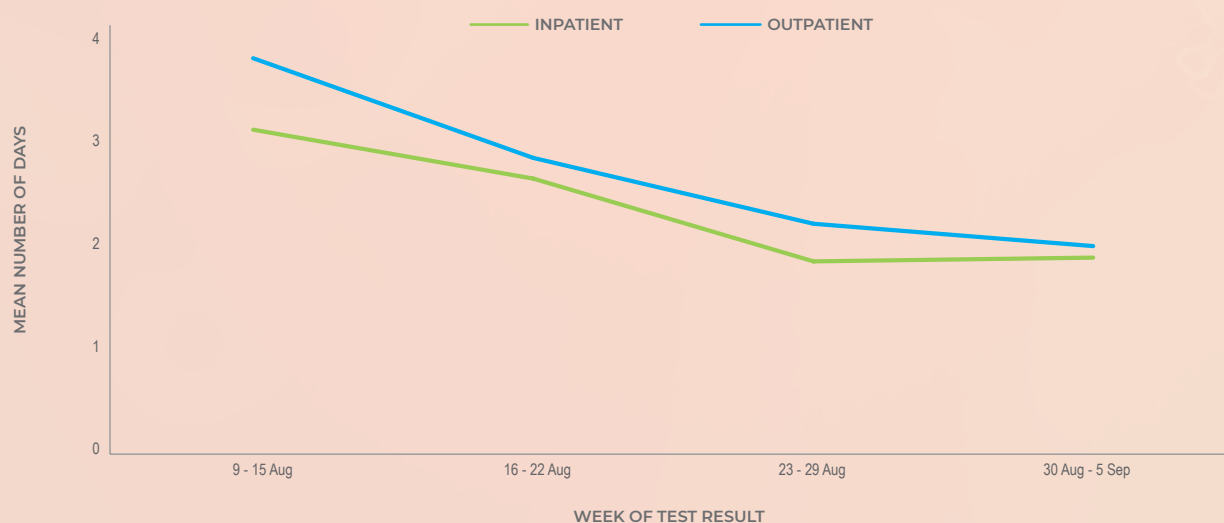


Figure 22. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 9 August-5 September 2020.

Testing by age and sex

The mean age of individuals tested in week 36 was 39.5 years, similar to the previous weeks. The mean age of individuals with a positive test in week 36 was 41.2 years, and was similar in males (41.0 years) and females

(41.4 years, $P=0.323$) (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 73.6 in week 36. For both sexes, the proportion testing positive in week 36 was lower than the previous two weeks across all age groups (Figure 23).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 9 August - 5 September 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
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	76.9	66.2
35	23 August	39.3	40.0	41.3	41.9	79.7	71.2
36	30 August	39.4	39.8	41.0	41.4	82.4	73.6

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 36 2020

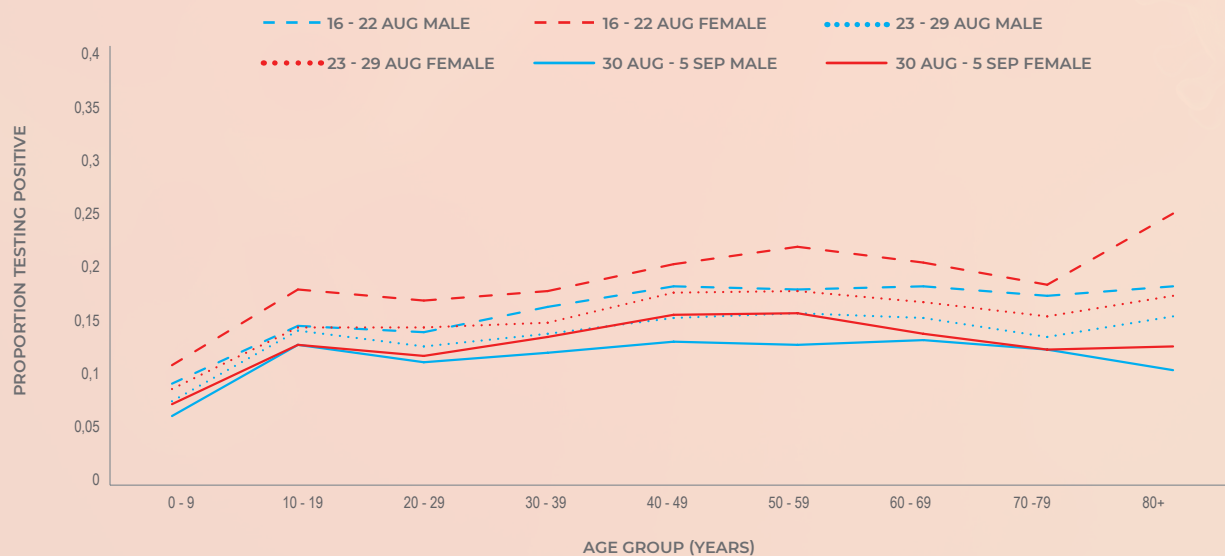


Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 16 August-5 September 2020.

From week 33 to week 36, the percentage testing positive decreased 7.1% in males (from 19.1% to 12.0%) and 7.7% in females (from 21.1% to 13.4%) (Table 8). In week 36 the percentage testing positive was higher

in females compared to males in the 20-39 years ($P=0.007$) and 40-59 years ($P<0.001$) age groups, and did not differ in other age groups.

Table 8. Percentage testing positive by sex and week, South Africa, 9 August – 5 September 2020

Age (years)	9-15 August		16-22 August		23-29 August		30 August - 5 September	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	13.5%	14.9%	12.3%	15.5%	11.2%	12.4%	9.8%	10.8%
20-39	18.0%	20.0%	15.3%	17.3%	13.3%	14.7%	11.8%	12.8%
40-59	21.7%	24.0%	18.0%	20.9%	15.4%	17.6%	12.9%	15.6%
60-69	22.4%	23.4%	18.1%	20.3%	15.2%	16.6%	13.2%	13.8%
70+	20.4%	21.8%	17.5%	20.7%	14.0%	16.0%	11.8%	12.4%
Total	19.1%	21.1%	16.1%	18.7%	13.9%	15.5%	12.0%	13.4%

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 36 2020

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.
- 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 36 the week on week reduction in the weekly testing volume since the peak in week 28 continued. As in previous weeks, the provinces that performed the largest number of tests in week 36 were Gauteng (30.8%), KwaZulu-Natal (18.5%) and Western Cape (15.8%). Northern Cape (336 per 100,000 persons) and Free State (283 per 100,000 persons) provinces continued to have the highest testing rates, although all provinces have shown reduced testing rates over the recent weeks. Laboratory turnaround times in week 36 were <2 days in both the private and public sectors.

The percentage testing positive has been decreasing since a peak of 31.4% in week 29, and continued to decrease to 12.7% in week 36. Similar levels of percentage testing positive were last observed in week 24, beginning 7th June 2020. Percentages testing positive were $\geq 20\%$ in Northern Cape and Free State, between 10-19% in North West, Mpumalanga, Limpopo and Eastern Cape, and $<10\%$ in Gauteng, KwaZulu-Natal and Western Cape. Compared to the previous week, the percentage testing positive decreased in six provinces (Western Cape, Eastern Cape, Free State, KwaZulu-Natal, Gauteng, Mpumalanga) and remained unchanged in Northern Cape, North West and Limpopo provinces.