

# COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR  
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 43 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 24 October 2020 (Week 43 of 2020).

## HIGHLIGHTS

- In the period 1 March 2020 through 24 October 2020, 4,032,639 laboratory tests for SARS-CoV-2 have been conducted nationally
- Weekly testing volumes have decreased since a peak in week 28, however the number of tests performed in weeks 41 to 43 were slightly higher than has been observed since week 34
- Free State (336 per 100,000 persons) and Northern Cape (321 per 100,000 persons) provinces continued to have the highest testing rates in week 43
- Percentage testing positive has decreased since the peak of 31.3% in week 29. In week 43 the percentage testing positive was 9.9%, similar to the previous week
- None of the provinces had a percentage testing positive  $\geq 20\%$  in week 43. Percentages testing positive were between 10-19% in Northern Cape, Free State, Eastern Cape, North West and Limpopo, and were  $<10\%$  in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape.
- In week 43, compared to the previous week, the percentage testing positive increased in the Western Cape and Eastern Cape, decreased in Northern Cape, Free State, KwaZulu-Natal, Gauteng and Mpumalanga, and did not change in the North West.
- Overall laboratory turnaround times in week 43 were 2.3 days; 1.8 days in the public sector and 2.7 days in the private sector

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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 2020 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.

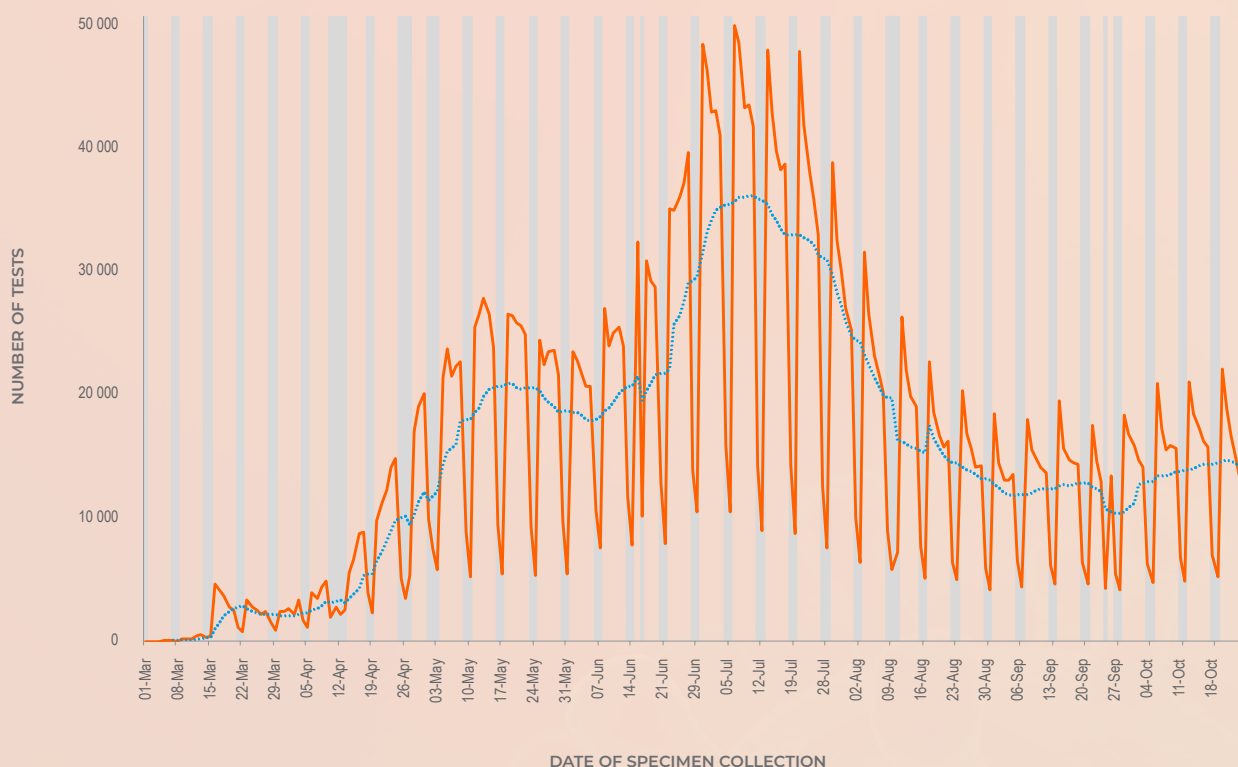
The report includes tests conducted between 1 March 2020 (week 10), the week when the first case of COVID-19 was confirmed, and 24 October 2020 (week 43).

## Testing volumes and proportion testing positive

From 1 March through 24 October 2020, 4,032,639 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=272,739), but have subsequently decreased. In week 43, 105,139 tests were performed, similar to the previous two weeks and slightly higher than the number of tests performed in weeks 35-40. 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 – 24 October 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 43 was 17.1% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.3% in week 29. Since week 29, there has been a 21.4% decrease in the percentage testing positive to 9.9% in week 43. The percentage testing positive in week 43 was similar to that observed in the previous week ( $P=0.056$ ) (Figure 2).

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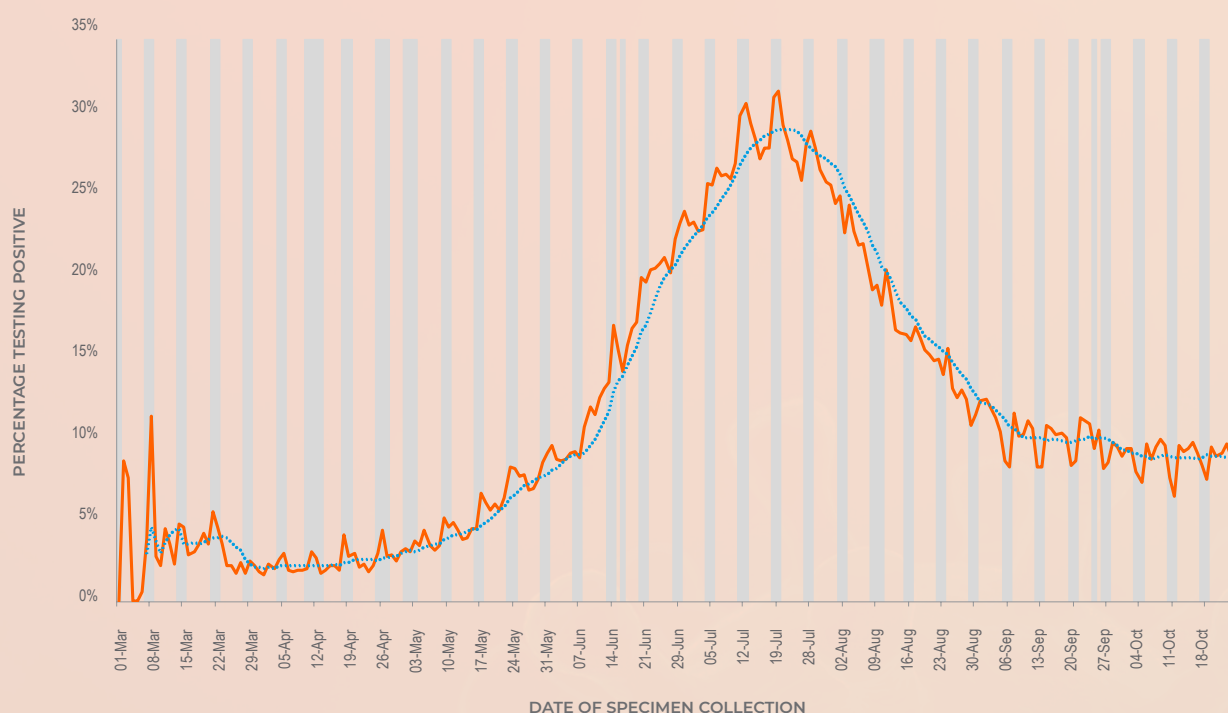
**Table 1.** Weekly number of tests conducted and positive tests, South Africa, 1 March – 24 October 2020

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	2329 (0.1)	88	3.8
12	15-Mar	21319 (0.5)	825	3.9
13	22-Mar	17040 (0.4)	470	2.8
14	29-Mar	17385 (0.4)	399	2.3
15	05-Apr	24600 (0.6)	568	2.3
16	12-Apr	41869 (1.0)	1049	2.5
17	19-Apr	75891 (1.9)	1931	2.5
18	26-Apr	89497 (2.2)	2891	3.2
19	03-May	136887 (3.4)	5544	4.1
20	10-May	157035 (3.9)	7434	4.7
21	17-May	156413 (3.9)	10506	6.7
22	24-May	141857 (3.5)	11697	8.2
23	31-May	136156 (3.4)	13477	9.9
24	07-Jun	156804 (3.9)	20482	13.1
25	14-Jun	164929 (4.1)	29878	18.1
26	21-Jun	222082 (5.5)	50473	22.7
27	28-Jun	268988 (6.7)	69191	25.7
28	05-Jul	272739 (6.8)	79635	29.2
29	12-Jul	250322 (6.2)	78275	31.3
30	19-Jul	236286 (5.9)	72407	30.6
31	26-Jul	185629 (4.6)	53584	28.9
32	02-Aug	150229 (3.7)	36852	24.5
33	09-Aug	117189 (2.9)	23434	20.0
34	16-Aug	110180 (2.7)	19112	17.3
35	23-Aug	99986 (2.5)	14645	14.6
36	30-Aug	90422 (2.2)	11416	12.6
37	06-Sep	94009 (2.3)	10799	11.5
38	13-Sep	97519 (2.4)	10908	11.2
39	20-Sep	79174 (2.0)	9183	11.6
40	27-Sep	98072 (2.4)	9999	10.2
41	04-Oct	105018 (2.6)	10708	10.2
42	11-Oct	109235 (2.7)	11037	10.1
43	18-Oct	105139 (2.6)	10363	9.9
<b>Total</b>		<b>4032639 (100.0)</b>	<b>689269</b>	<b>17.1</b>



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**Figure 2.** Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 24 October 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 24 October, 1,845,610 laboratory tests were conducted in public sector laboratories, with 15.7% testing positive. Over this same period, private sector laboratories conducted 2,187,029 tests, with 18.2% testing positive (Table 2). Overall the public sector has conducted 45.8% of tests and accounted for 42.1% 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 (32.8%). From week 42 to week 43, the percentage testing positive was unchanged in the public sector and decreased slightly by 0.5% in the private sector. In week 43 the percentage

testing positive continued to be higher in the public sector (11.1%) compared to the private sector (8.9%) ( $P < 0.001$ ), as has been observed since week 34.

The mean turnaround time for tests conducted in week 43 remained 2.3 days and was unchanged from the previous week in both the public sector (1.8 days) and private sector (2.7 days) (Figure 3). Turnaround times for public sector tests were  $> 2$  days in Northern Cape (2.9 days), Mpumalanga (2.6 days) and Free State (2.3 days) provinces (Figure 4). Turnaround times in the past week increased in Mpumalanga (2.1 to 2.6 days) and decreased in Northern Cape (4.4 to 2.9 days). Twenty-six of the 28 (92.9%) NHLS laboratories performing testing for SARS-CoV-2 had turnaround times  $\leq 2$  days (Figure 5).

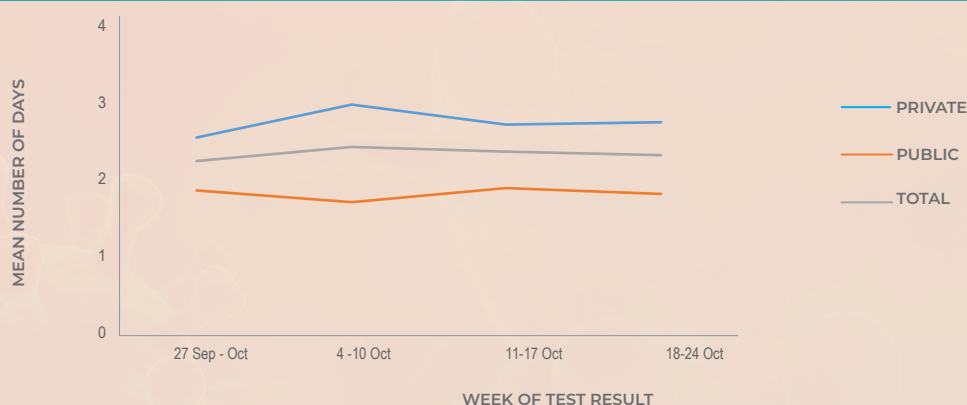
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**Table 2.** Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 24 October 2020

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP <sup>a</sup>
		Tests	Cases n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	
10	01-Mar	251	5 (2.0)	159	4 (2.5)	61.2	55.6	0.792
11	08-Mar	350	12 (3.4)	1979	76 (3.8)	15.0	13.6	0.893
12	15-Mar	1344	51 (3.8)	19975	774 (3.9)	6.3	6.2	0.979
13	22-Mar	3358	124 (3.7)	13682	346 (2.5)	19.7	26.4	1.460
14	29-Mar	5607	158 (2.8)	11778	241 (2.0)	32.3	39.6	1.377
15	05-Apr	11339	319 (2.8)	13261	249 (1.9)	46.1	56.2	1.498
16	12-Apr	23764	608 (2.6)	18105	441 (2.4)	56.8	58.0	1.050
17	19-Apr	54152	1475 (2.7)	21739	456 (2.1)	71.4	76.4	1.299
18	26-Apr	66202	2282 (3.4)	23295	609 (2.6)	74.0	78.9	1.319
19	03-May	92306	4236 (4.6)	44581	1308 (2.9)	67.4	76.4	1.564
20	10-May	104953	5093 (4.9)	52082	2341 (4.5)	66.8	68.5	1.080
21	17-May	95444	6600 (6.9)	60969	3906 (6.4)	61.0	62.8	1.079
22	24-May	74241	5940 (8.0)	67616	5757 (8.5)	52.3	50.8	0.940
23	31-May	60233	6080 (10.1)	75923	7397 (9.7)	44.2	45.1	1.036
24	07-Jun	59975	7327 (12.2)	96829	13155 (13.6)	38.2	35.8	0.899
25	14-Jun	55979	11036 (19.7)	108950	18842 (17.3)	33.9	36.9	1.140
26	21-Jun	82614	18816 (22.8)	139468	31657 (22.7)	37.2	37.3	1.003
27	28-Jun	97301	25091 (25.8)	171687	44100 (25.7)	36.2	36.3	1.004
28	05-Jul	108007	30237 (28.0)	164732	49398 (30.0)	39.6	38.0	0.934
29	12-Jul	101322	29367 (29.0)	149000	48908 (32.8)	40.5	37.5	0.883
30	19-Jul	96244	28387 (29.5)	140042	44020 (31.4)	40.7	39.2	0.938
31	26-Jul	73954	21310 (28.8)	111675	32274 (28.9)	39.8	39.8	0.997
32	02-Aug	64095	15725 (24.5)	86134	21127 (24.5)	42.7	42.7	1.000
33	09-Aug	53670	10390 (19.4)	63519	13044 (20.5)	45.8	44.3	0.943
34	16-Aug	50910	8927 (17.5)	59270	10185 (17.2)	46.2	46.7	1.020
35	23-Aug	45492	7222 (15.9)	54494	7423 (13.6)	45.5	49.3	1.165
36	30-Aug	41053	5599 (13.6)	49369	5817 (11.8)	45.4	49.0	1.157
37	06-Sep	46388	5973 (12.9)	47621	4826 (10.1)	49.3	55.3	1.271
38	13-Sep	49114	6098 (12.4)	48405	4810 (9.9)	50.4	55.9	1.249
39	20-Sep	40936	5128 (12.5)	38238	4055 (10.6)	51.7	55.8	1.181
40	27-Sep	44211	5181 (11.7)	53861	4818 (8.9)	45.1	51.8	1.310
41	04-Oct	46356	5208 (11.2)	58662	5500 (9.4)	44.1	48.6	1.198
42	11-Oct	48212	5305 (11.0)	61023	5732 (9.4)	44.1	48.1	1.171
43	18-Oct	46233	5124 (11.1)	58906	5239 (8.9)	44.0	49.4	1.246
<b>Total</b>		<b>1845610</b>	<b>290434 (15.7)</b>	<b>2187029</b>	<b>398835 (18.2)</b>	<b>45.8</b>	<b>42.1</b>	<b>0.863</b>

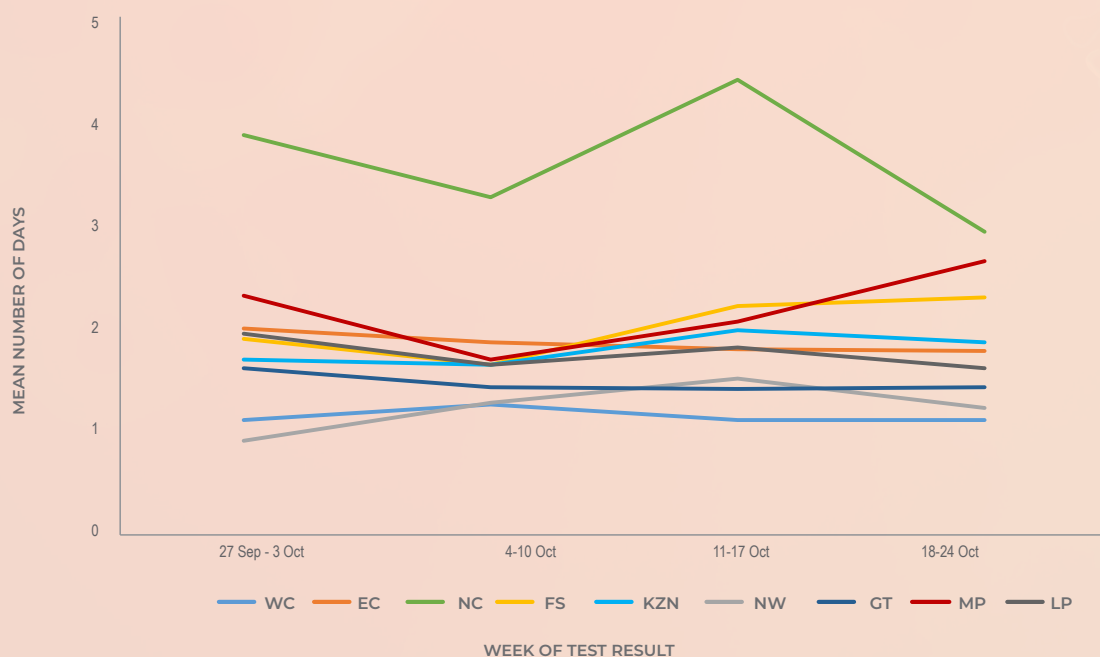
aRatio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/(no. of cases/total tests in private sector)



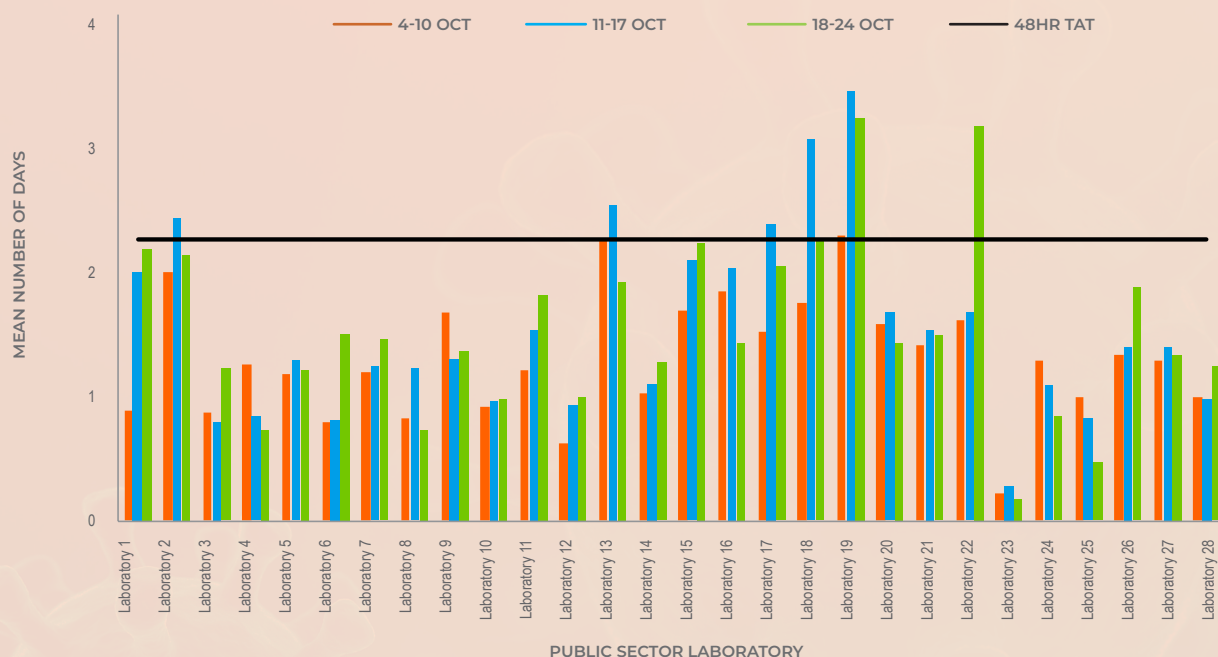
**Figure 3.** Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 27 September – 24 October 2020

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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, 27 September – 24 October 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo



**Figure 5.** Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 4 – 24 October 2020. The horizontal black line indicates 48-hour turnaround time (TAT).



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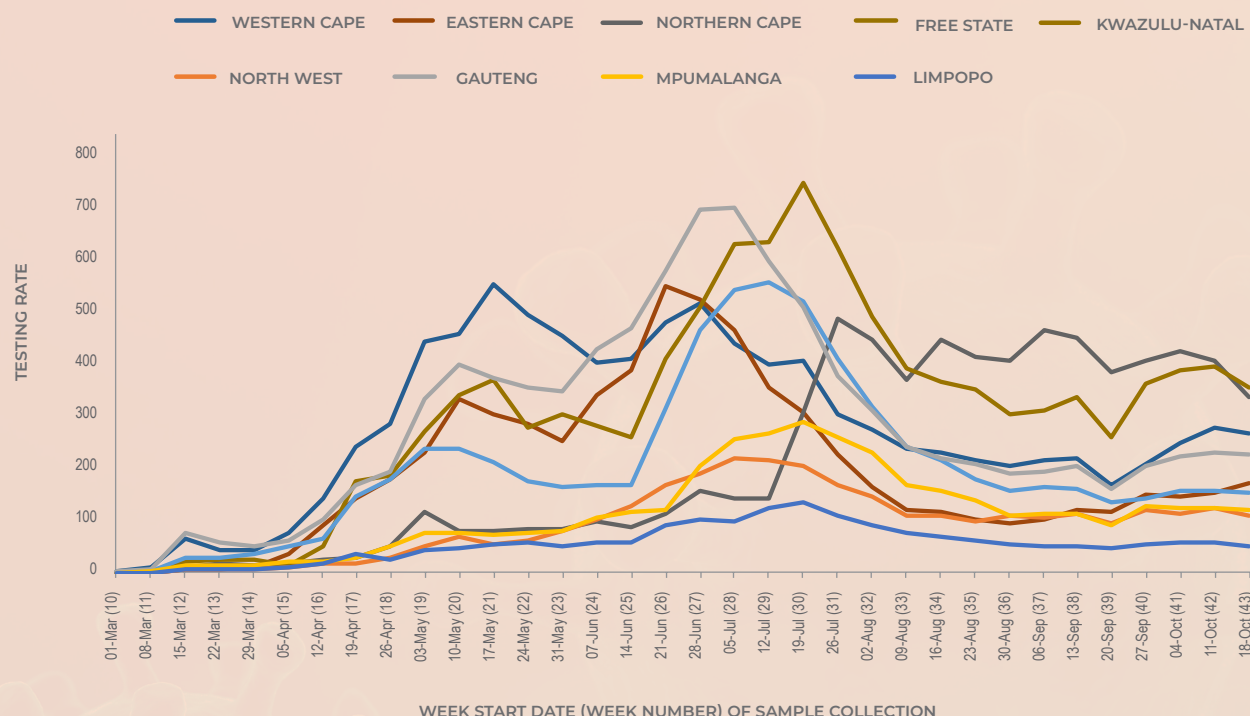
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## Testing by province

As observed in previous weeks Gauteng (31.5%) performed the largest number of tests in week 43, followed by Western Cape (16.8%) and KwaZulu-Natal (15.9%) provinces (Table 3). As has been observed since week 31, Free State (336 per 100,000 persons) and Northern Cape (321 per 100,000 persons) provinces had the highest testing rates in week 43, although testing rates decreased in both provinces in the past week. (Figure 6). Testing rates have decreased in all provinces since peak testing rates were observed between week 21 (Western Cape) and week 31 (Northern Cape) in the respective provinces. Compared to the previous three weeks, testing rates increased in the Western Cape in week 43.

There were no provinces in week 43 with a percentage testing positive  $\geq 20\%$ . Northern Cape (19.9%) and

Free State (19.6%) had the highest percentage testing positive in the past week. Percentages testing positive were additionally between 10-19% in Eastern Cape, North West and Limpopo, and were  $<10\%$  in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape in week 43 (Figure 7). Compared to the previous week, the percentage testing positive increased in Western Cape (7.4% to 9.1%,  $P<0.001$ ) and Eastern Cape (11.1% to 16.5%,  $P<0.001$ ) in week 43. The percentage testing positive in week 43 compared to week 42 decreased in Northern Cape ( $P<0.001$ ), Free State ( $P<0.001$ ), KwaZulu-Natal ( $P=0.023$ ), Gauteng ( $P=0.003$ ), and Mpumalanga ( $P=0.009$ ), and did not change in the North West ( $P=0.078$ ). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, Northern Cape, Free State, North West and Limpopo provinces (Figure 7).



**Figure 6.** Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 24 October 2020



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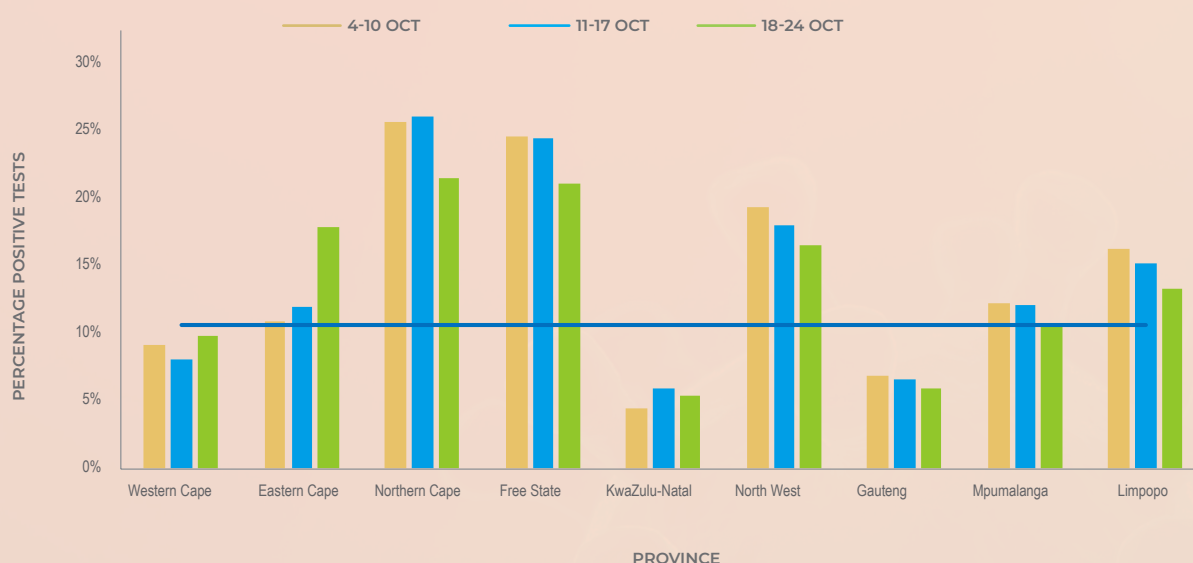
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**Table 3.** Weekly number of tests performed and positive tests, by province, South Africa, 4 – 24 October 2020

Province	Population <sup>a</sup>	4-10 Oct		11-17 Oct		18-24 Oct		Tests per 100,000 persons	Change in percentage positive <sup>b</sup>
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)		
Western Cape	7005741	16613	1405 (8.5)	18620	1385 (7.4)	17698	1617 (9.1)	253	1.7%
Eastern Cape	6734001	9422	949 (10.1)	9727	1078 (11.1)	10935	1807 (16.5)	162	5.4%
Northern Cape	1292786	5228	1241 (23.7)	5000	1206 (24.1)	4152	826 (19.9)	321	-4.2%
Free State	2928903	10778	2445 (22.7)	10985	2488 (22.6)	9845	1925 (19.6)	336	-3.1%
KwaZulu-Natal	11531628	17048	703 (4.1)	17275	951 (5.5)	16668	826 (5.0)	145	-0.5%
North West	4108816	4380	784 (17.9)	4846	805 (16.6)	4318	659 (15.3)	105	-1.3%
Gauteng	15488137	32689	2074 (6.3)	33928	2054 (6.1)	33159	1828 (5.5)	214	-0.5%
Mpumalanga	4679786	5532	627 (11.3)	5531	620 (11.2)	5347	517 (9.7)	114	-1.5%
Limpopo	5852553	3146	472 (15.0)	3146	441 (14.0)	2812	345 (12.3)	48	-1.7%
Unknown		182	8 (4.4)	177	9 (5.1)	205	13 (6.3)		1.3%
<b>Total</b>	<b>59622350</b>	<b>105018</b>	<b>10708 (10.2)</b>	<b>109235</b>	<b>11037 (10.1)</b>	<b>105139</b>	<b>10363 (9.9)</b>	<b>176</b>	<b>-0.2%</b>

<sup>a</sup> 2020 Mid-year population Statistics SA

<sup>b</sup> Current week compared to previous week



**Figure 7.** Weekly percentage testing positive, by province, South Africa, 4 – 24 October 2020. The horizontal blue line shows the national mean for week 43, beginning 18 October 2020.

## Testing in the public sector

In the public sector, the percentage testing positive remained unchanged in the past week (11.0% in week 42 to 11.1% in week 43,  $P=0.697$ ) (Table 4). The percentage testing positive in week 43 was highest

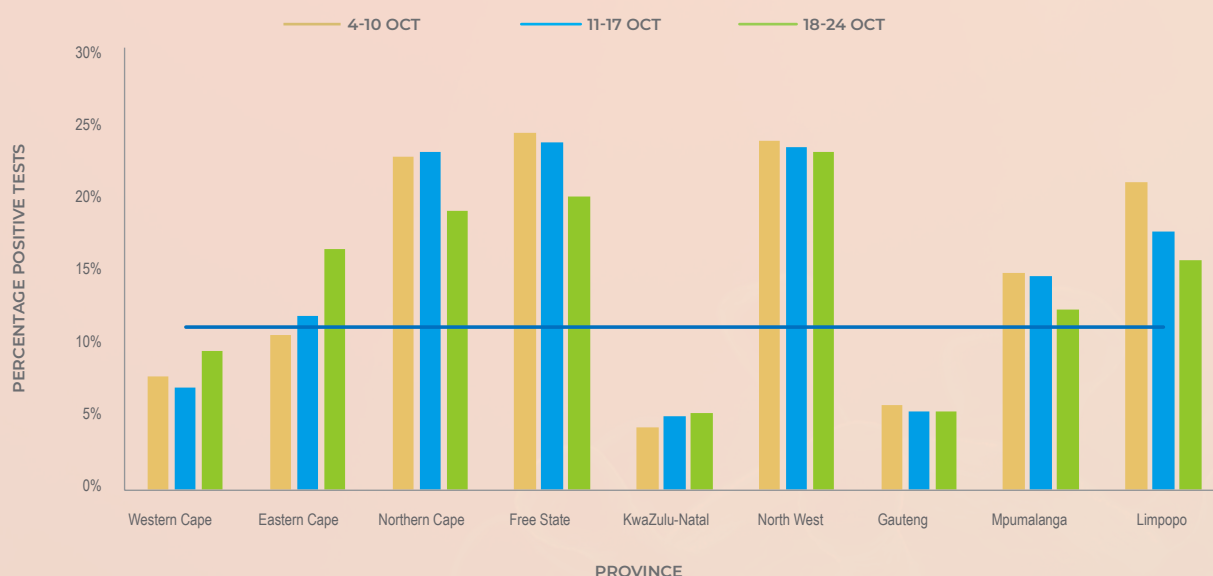
in the North West (22.9%) and Free State (20.0%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Eastern Cape, Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 8).

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**Table 4.** Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 4 - 24 October 2020

Province	4-10 Oct		11-17 Oct		18-24 Oct	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	6184	477 (7.7)	7333	507 (6.9)	6927	654 (9.4)
Eastern Cape	6601	696 (10.5)	6661	785 (11.8)	7224	1182 (16.4)
Northern Cape	3136	708 (22.6)	3026	695 (23.0)	2340	442 (18.9)
Free State	5782	1402 (24.2)	5848	1381 (23.6)	5347	1067 (20.0)
KwaZulu-Natal	9437	400 (4.2)	9012	450 (5.0)	8912	468 (5.3)
North West	1771	420 (23.7)	1714	399 (23.3)	1569	360 (22.9)
Gauteng	10594	612 (5.8)	11678	623 (5.3)	11351	600 (5.3)
Mpumalanga	1660	244 (14.7)	1659	241 (14.5)	1438	176 (12.2)
Limpopo	1191	249 (20.9)	1277	224 (17.5)	1119	175 (15.6)
Unknown	0	0 (0.0)	4	0 (0.0)	6	0 (0.0)
<b>Total</b>	<b>46356</b>	<b>5208 (11.2)</b>	<b>48212</b>	<b>5305 (11.0)</b>	<b>46233</b>	<b>5124 (11.1)</b>



**Figure 8.** Weekly percentage testing positive in the public sector, by province, South Africa, 4 – 24 October 2020. The horizontal blue line shows the national mean for week 43, beginning 18 October 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 18-24 October, with the highest proportion testing positive nationally. This week's list is dominated by facilities in the Eastern Cape (12) and North West (5) provinces. Three facilities are in each of the Free State and the Northern Cape, and two in Limpopo.

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**Table 5.** Public healthcare facilities with a high proportion testing positive, 18-24 October 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Northern Cape	44	0.636 (0.494;0.779)
Facility 2	North West	49	0.551 (0.412;0.690)
Facility 3	Eastern Cape	32	0.500 (0.327;0.673)
Facility 4	Eastern Cape	40	0.475 (0.320;0.630)
Facility 5	Limpopo	41	0.463 (0.311;0.616)
Facility 6	North West	27	0.444 (0.257;0.632)
Facility 7	North West	43	0.442 (0.293;0.590)
Facility 8	Eastern Cape	56	0.429 (0.299;0.558)
Facility 9	Free State	49	0.429 (0.290;0.567)
Facility 10	Northern Cape	33	0.424 (0.256;0.593)
Facility 11	Eastern Cape	26	0.423 (0.233;0.613)
Facility 12	Eastern Cape	69	0.420 (0.304;0.537)
Facility 13	Northern Cape	72	0.417 (0.303;0.531)
Facility 14	Eastern Cape	70	0.386 (0.272;0.500)
Facility 15	Eastern Cape	29	0.379 (0.203;0.556)
Facility 16	Free State	27	0.370 (0.188;0.553)
Facility 17	Eastern Cape	33	0.364 (0.200;0.528)
Facility 18	North West	103	0.359 (0.267;0.452)
Facility 19	Eastern Cape	162	0.358 (0.284;0.432)
Facility 20	Eastern Cape	174	0.356 (0.285;0.427)
Facility 21	Eastern Cape	31	0.355 (0.186;0.523)
Facility 22	North West	40	0.350 (0.202;0.498)
Facility 23	Eastern Cape	26	0.346 (0.163;0.529)
Facility 24	Free State	35	0.343 (0.186;0.500)
Facility 25	Limpopo	41	0.341 (0.196;0.487)

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 18-24 October 2020 are shown in Table 6. Districts showing the greatest proportions testing positive are spread throughout the country: 7 in the Free State, 5 in the Northern

Cape, 4 each in the Eastern Cape and North West, 3 in Limpopo and 1 each in the Western Cape and KwaZulu-Natal. Three districts showed a proportion testing positive greater than 40%, 8 greater than 30% and 7 showed a proportion testing positive less than 25%. A significant increase over the week was observed in three districts – Tswelopele in the Northern Cape, and two of the three sub-districts in Nelson Mandela Bay.



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**Table 6.** Health sub-districts with the highest proportion testing positive based on public sector data for the week of 18-24 October 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Baviaans	Eastern Cape	0.467 (0.362-0.573)	0.376 (0.265-0.487)
Lephalale	Limpopo	0.418 (0.317-0.519)	0.372 (0.263-0.481)
Tswelopele	Free State	0.410 (0.291-0.528)	0.181 (0.111-0.250)
Ga-Segonyana	Northern Cape	0.394 (0.321-0.468)	0.397 (0.318-0.475)
Mafikeng	North West	0.383 (0.321-0.446)	0.384 (0.334-0.434)
Ubuntu	Northern Cape	0.375 (0.261-0.489)	0.415 (0.322-0.508)
Mafube	Free State	0.346 (0.249-0.443)	0.243 (0.152-0.333)
Masilonyana	Free State	0.337 (0.213-0.461)	0.291 (0.182-0.400)
Ramotshere Moiloa	North West	0.333 (0.246-0.420)	0.253 (0.160-0.347)
Nelson Mandela Bay A	Eastern Cape	0.326 (0.271-0.381)	0.215 (0.086-0.345)
Tsantsabane	Northern Cape	0.318 (0.225-0.411)	0.321 (0.238-0.403)
Nongoma	KwaZulu-Natal	0.294 (0.164-0.424)	0.211 (0.089-0.333)
Mohokare	Free State	0.281 (0.176-0.386)	0.262 (0.165-0.360)
Mantsopa	Free State	0.266 (0.122-0.410)	0.136 (0.081-0.190)
Siyancuma	Northern Cape	0.252 (0.121-0.384)	0.111 (0.061-0.161)
Makhado	Limpopo	0.251 (0.151-0.350)	0.188 (0.112-0.264)
Nelson Mandela Bay B	Eastern Cape	0.250 (0.213-0.288)	0.124 (0.087-0.162)
Nelson Mandela Bay C	Eastern Cape	0.250 (0.226-0.273)	0.120 (0.101-0.139)
Naledi	North West	0.249 (0.158-0.340)	0.340 (0.234-0.445)
Emthanjeni	Northern Cape	0.247 (0.176-0.319)	0.280 (0.226-0.333)
Maquassi Hills	North West	0.247 (0.165-0.328)	0.226 (0.149-0.303)
Ba-Phalaborwa	Limpopo	0.246 (0.129-0.362)	0.258 (0.179-0.337)
Bitou	Western Cape	0.242 (0.138-0.345)	0.138 (0.026-0.251)
Naledi	Free State	0.235 (0.140-0.331)	0.340 (0.234-0.445)
Setsotho	Free State	0.232 (0.155-0.309)	0.290 (0.228-0.351)

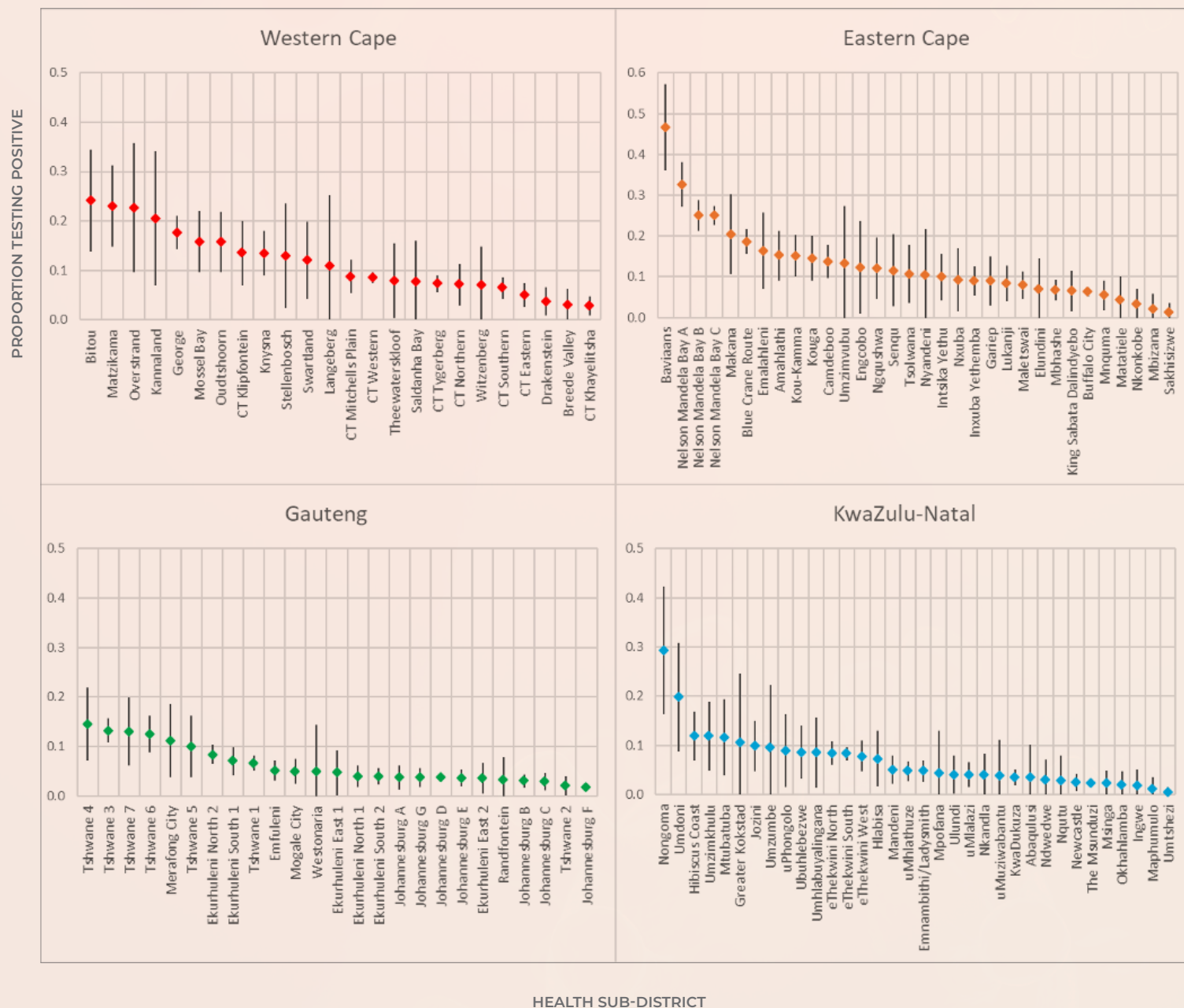
95% CI: 95% confidence interval; PTP: adjusted positive test proportion; PTP marked in red or blue have current week proportions testing positive that are significantly higher or lower than the previous week, respectively.

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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HEALTH SUB-DISTRICT

**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 18-24 October 2020.

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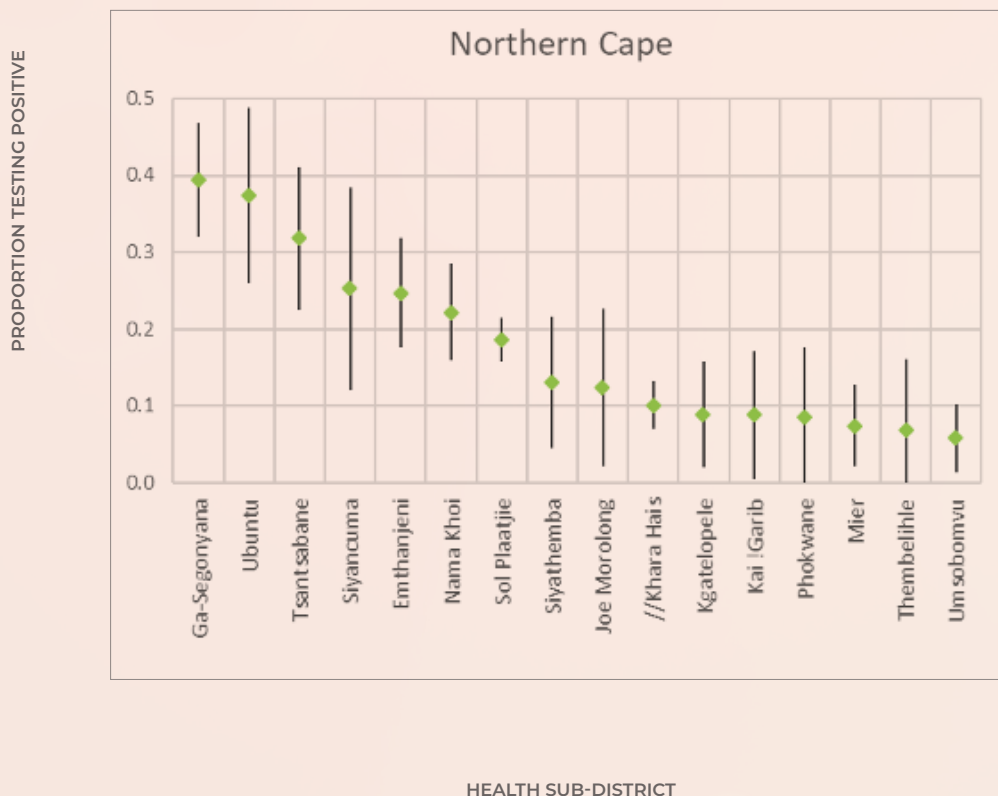
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**Figure 9.** Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 18-24 October 2020.

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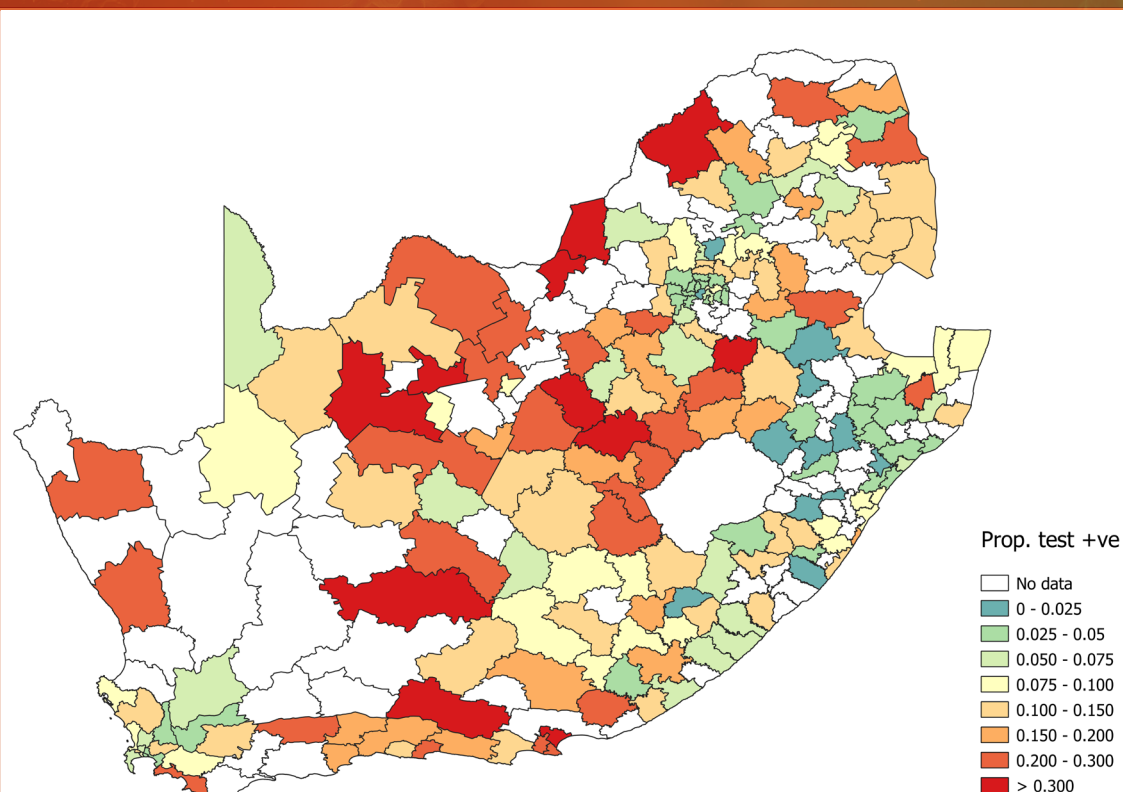
**Figure 9.** Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 18-24 October 2020.

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).

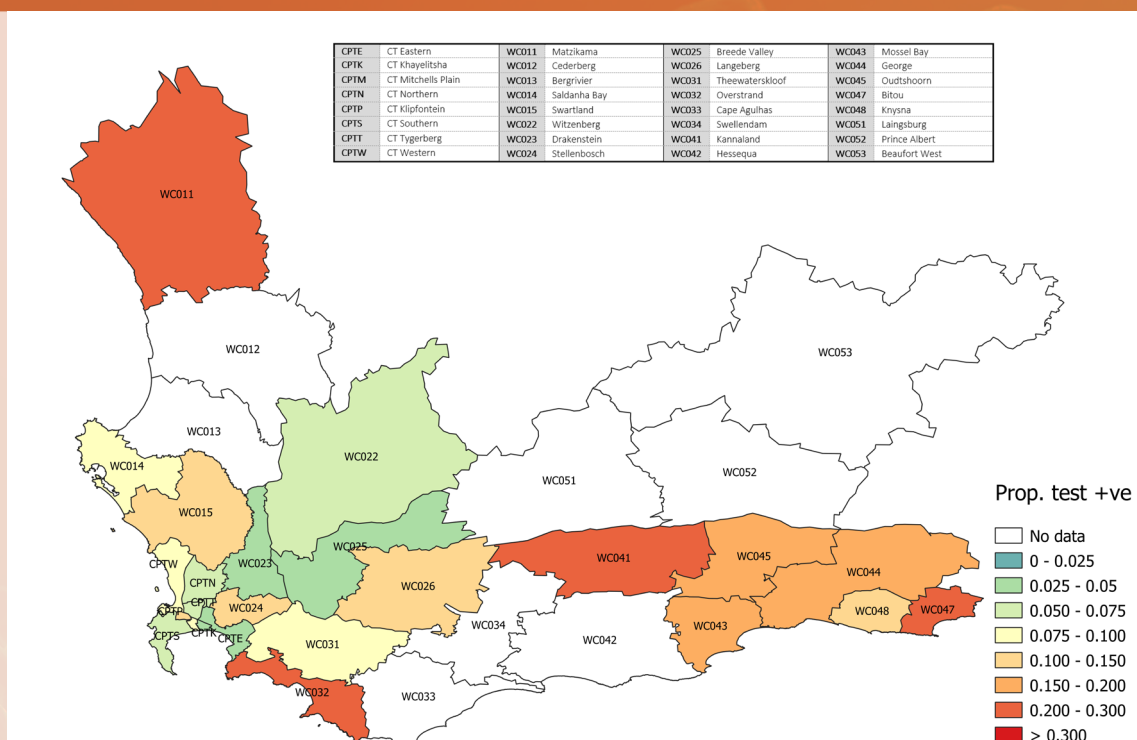


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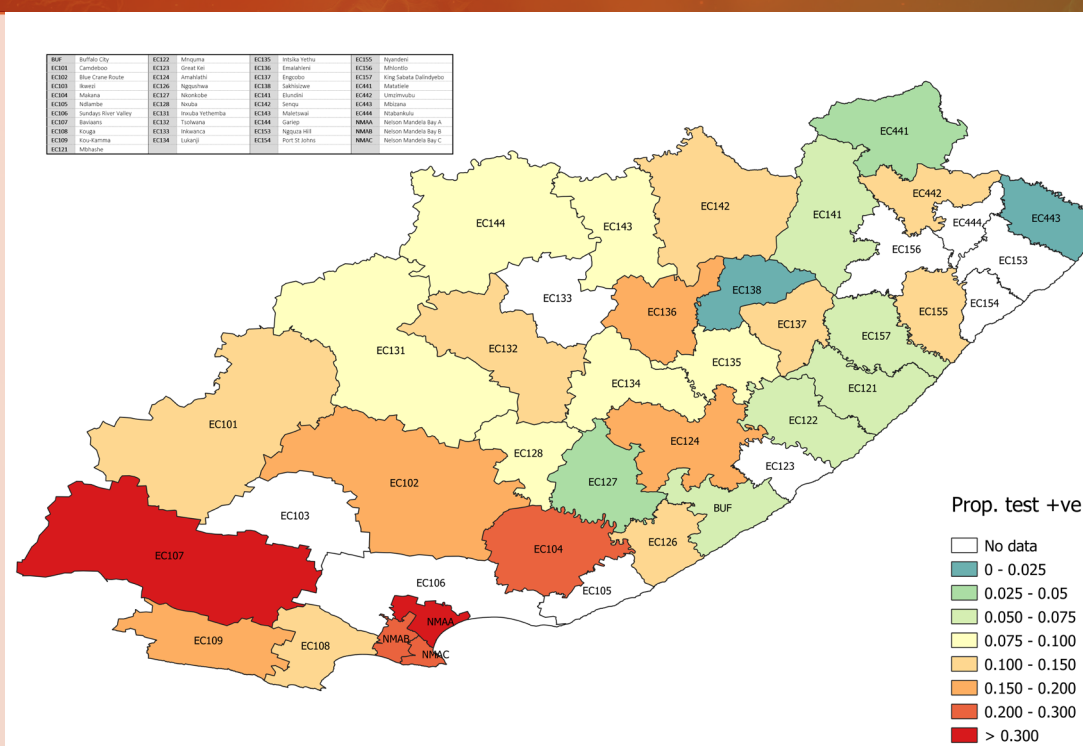
**Figure 10.** Proportion testing positive by health sub-district based on public sector data for the week of 18-24 October 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.



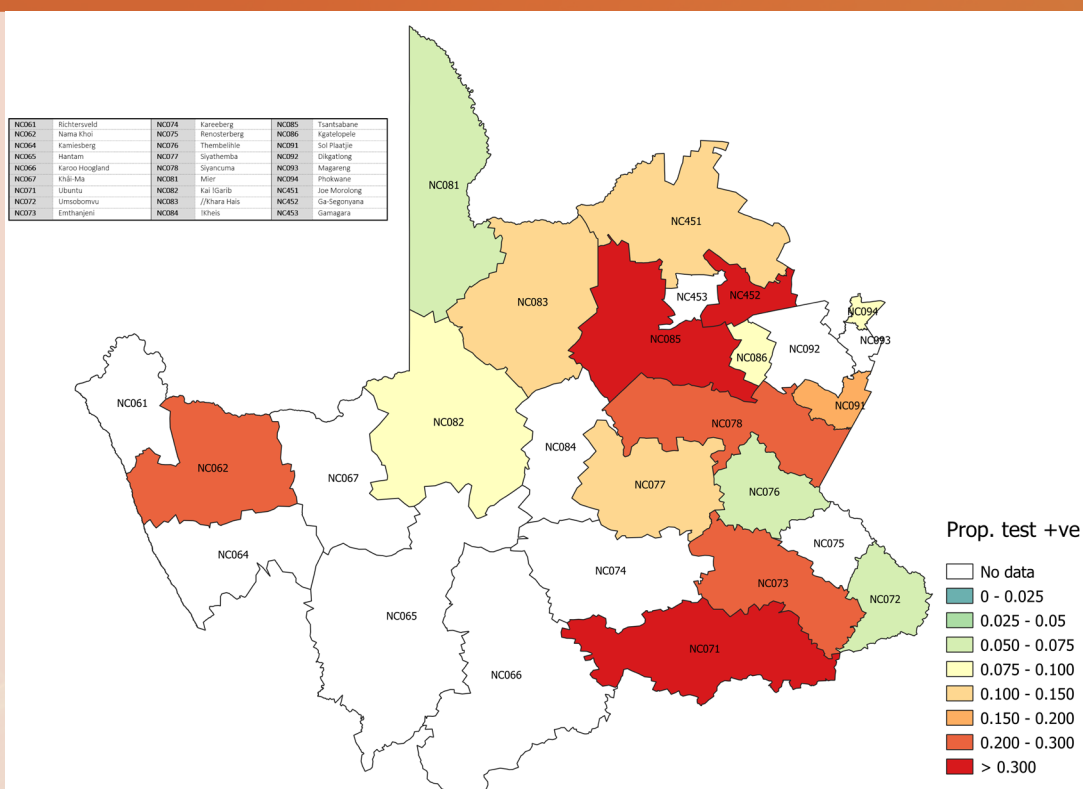
**Figure 11.** Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 18-24 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.



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**Figure 12.** Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 18-24 October 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%.



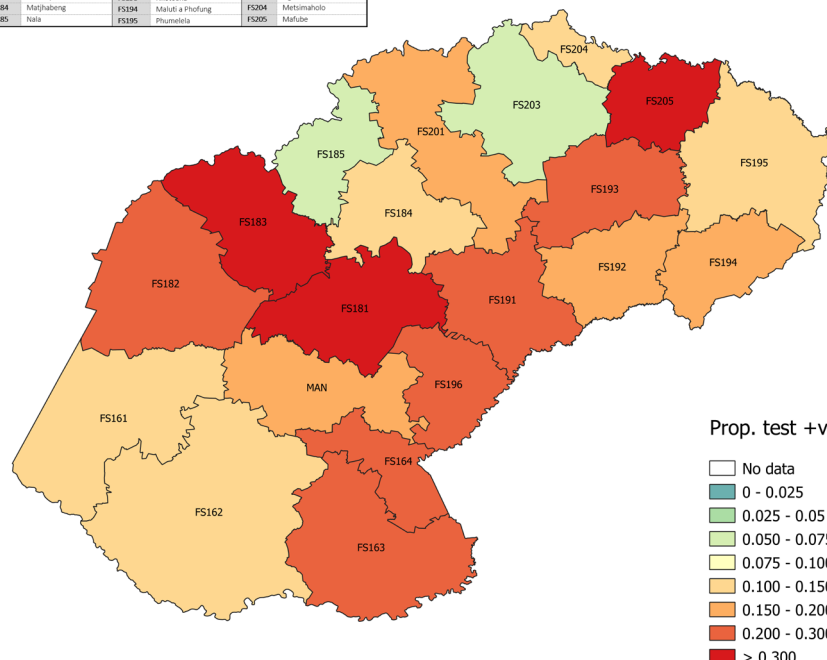
**Figure 13.** Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 18-24 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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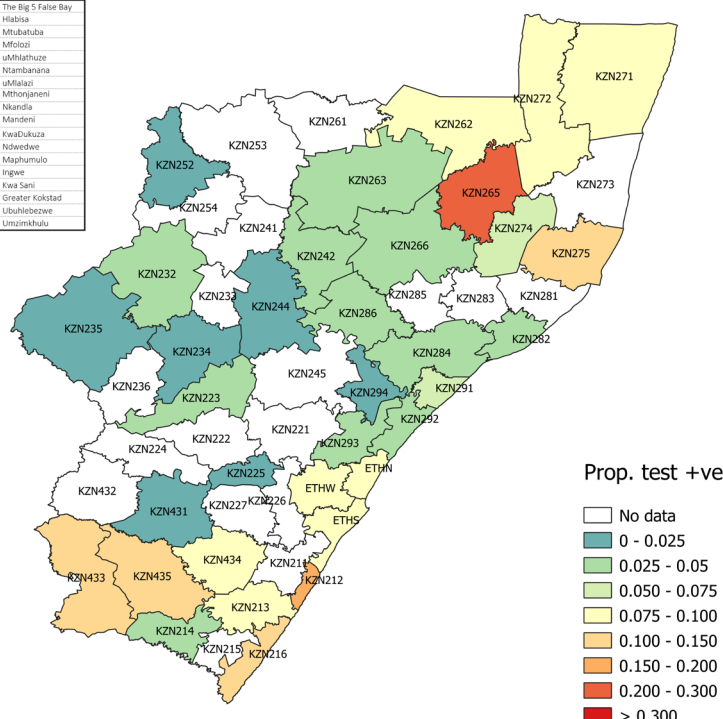
WEEK 43 2020

MAN	Mangaung	FS181	Mashepene	FS191	Setoto	FS196	Mantsoa
FS161	Letsemeng	FS182	Tokologo	FS192	Dhlabeng	FS201	Mophaka
FS162	Kopanong	FS183	Tsewopet	FS193	Nkomoa	FS203	Tgwathe
FS163	Mokone	FS184	Moghele	FS194	Nkomoa	FS204	Ketimahlolo
FS164	Naledi	FS185	Nala	FS195	Phumelela	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 18-24 October 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	Umtsheni	KZN274	Hlabisa
ETHS	eThekweni South	KZN235	Okhahlamba	KZN275	Mthababisa
ETHW	eThekweni West	KZN236	Imbabazane	KZN281	Mfokosi
KZN211	Vulamekalo	KZN241	Endumeni	KZN282	uMhlathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umtsheni	KZN244	Mzinga	KZN284	uMlalazi
KZN214	uMthwathu	KZN245	Umtsheni	KZN285	Mthongweni
KZN215	Engeleni	KZN250	Newcastle	KZN286	Ntandeni
KZN216	Hlabisa Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMthwathu	KZN254	Dannhauser	KZN292	KwaDukuza
KZN222	uMthwathu	KZN261	eDumbe	KZN293	Ndweni
KZN223	Mphahlele	KZN262	uPhongolo	KZN294	Maghamulo
KZN224	Impendle	KZN263	Abaqulusi	KZN311	Ingwe
KZN225	The Mshwathi	KZN265	Nongoma	KZN312	Kwa Sani
KZN226	Mkhambathini	KZN266	Ulundi	KZN313	Greater Kokstad
KZN227	Richmond	KZN271	Umhlathuze	KZN314	Ubuhlebezwe
KZN232	Emmabithi/Ladysmith	KZN272	Jozini	KZN315	Umtsheni

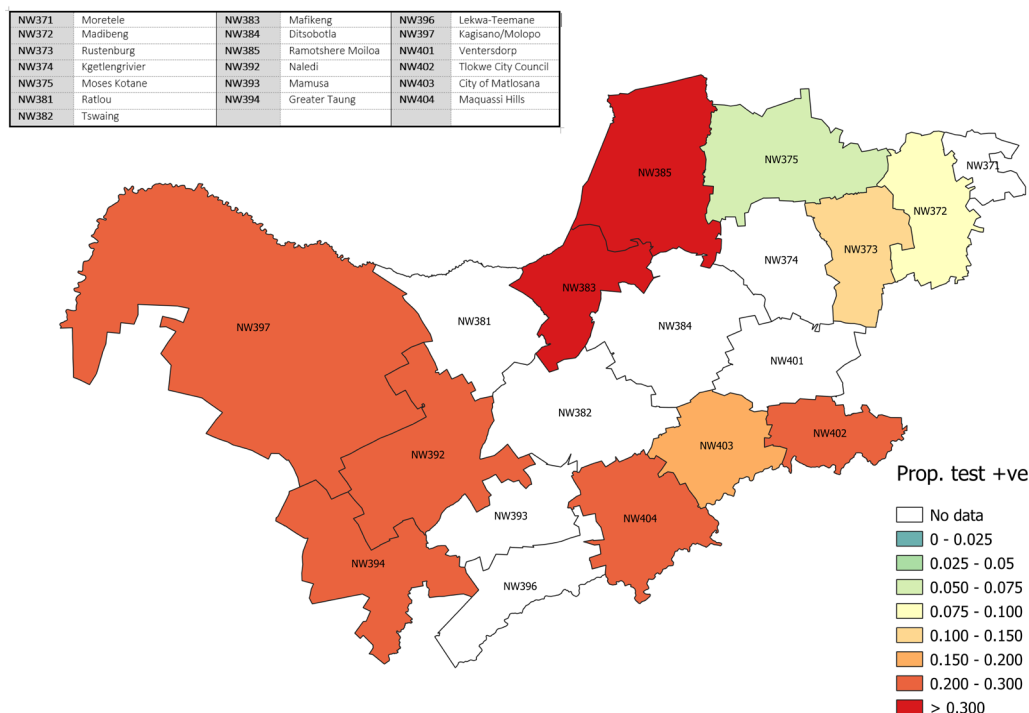


**Figure 15.** Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 18-24 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

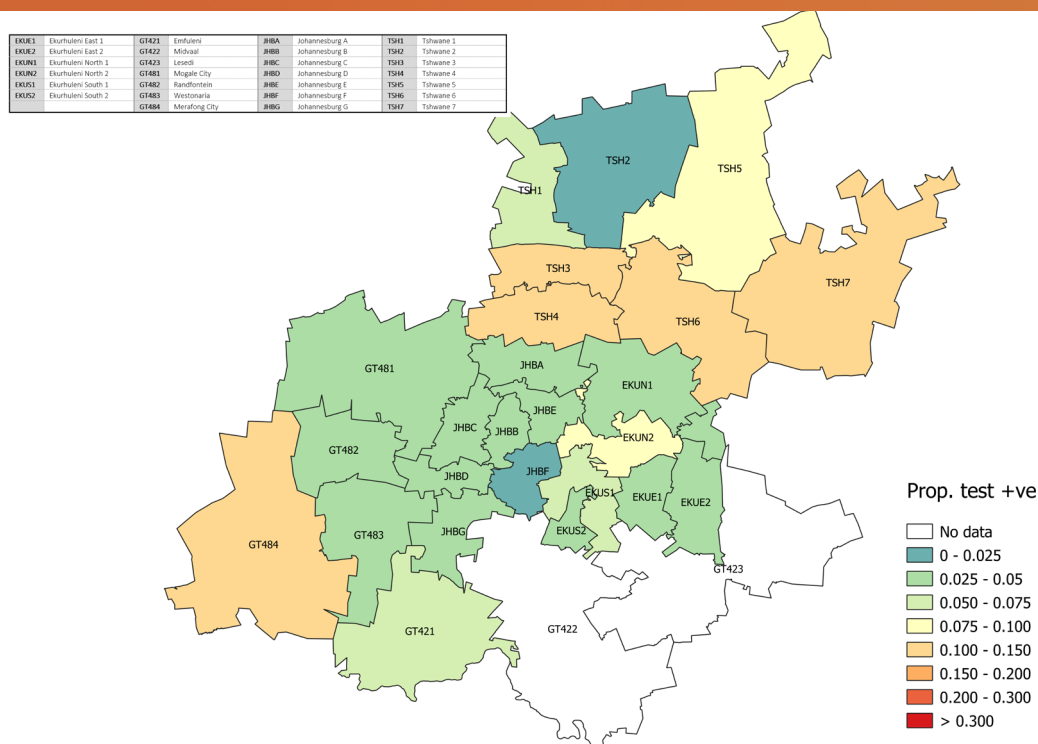
# COVID-19 TESTING SUMMARY

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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 18-24 October 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%.



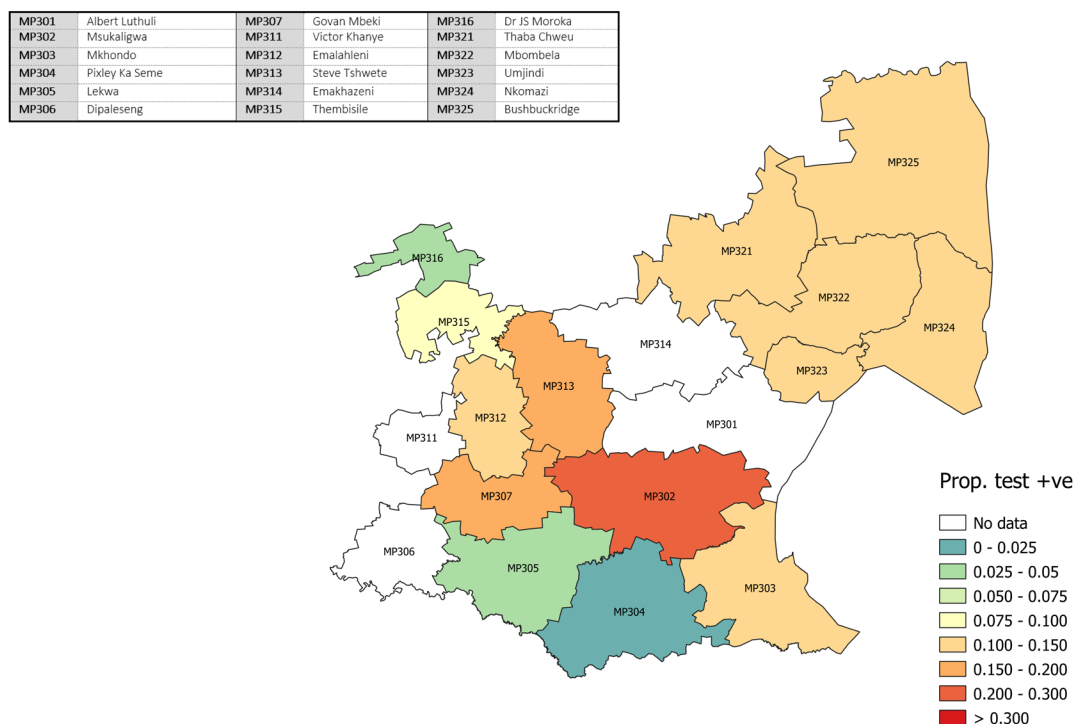
**Figure 17.** Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 18-24 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.



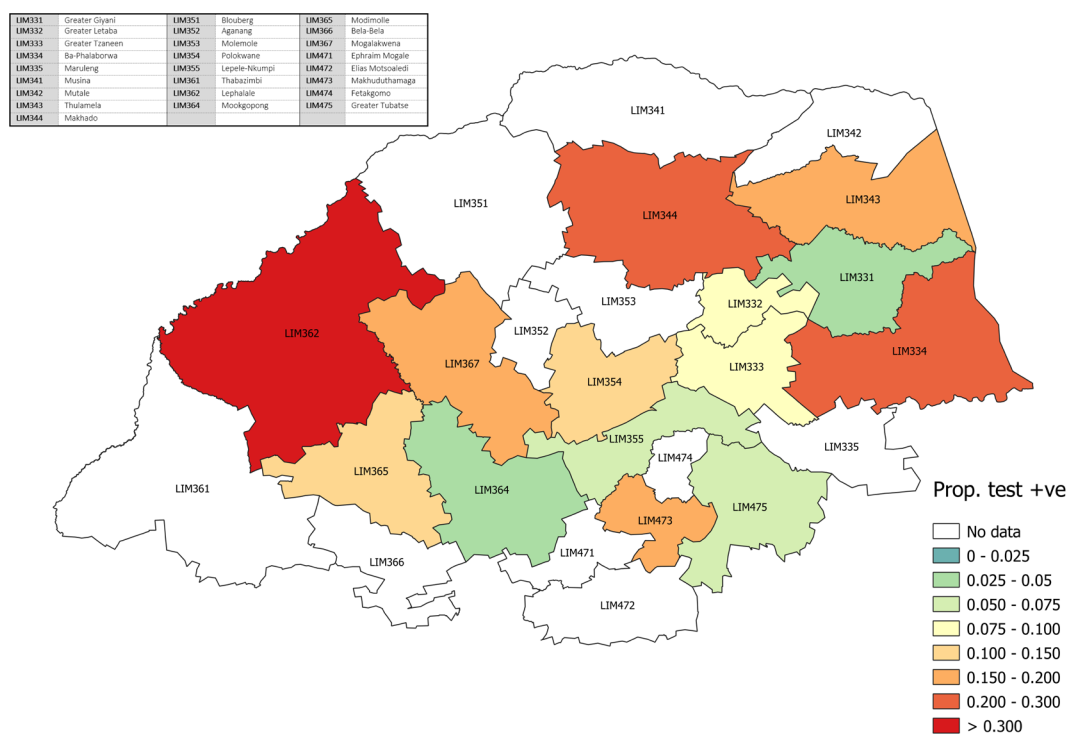
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**Figure 18.** Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 18-24 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) 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 18-24 October 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%.



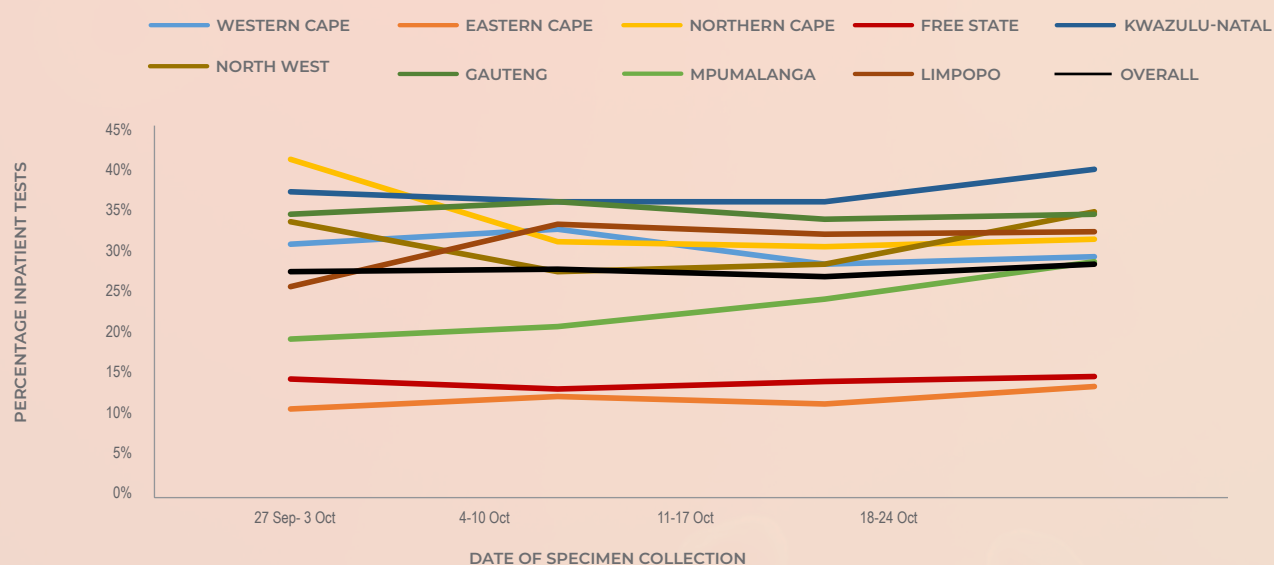
# COVID-19 TESTING SUMMARY

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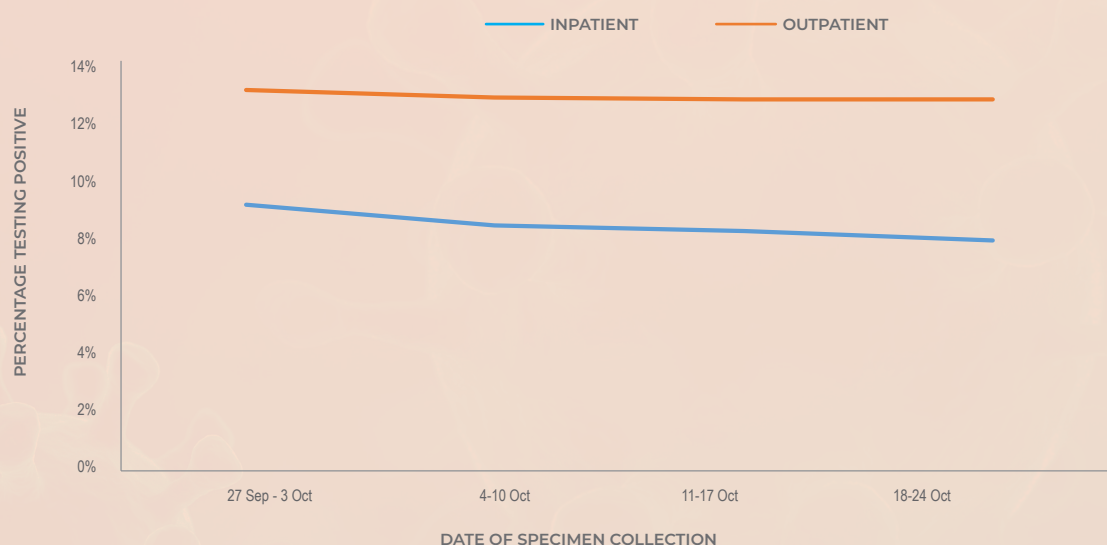
## Testing by patient admission status

In week 43, 28.2% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in KwaZulu-Natal (39.7%). Comparing week 43 to the previous week, the proportion of inpatient tests increased from 28.2% to 34.4% in the North West, from 24.0% to 28.3%

in Mpumalanga and from 35.8% to 39.7% in KwaZulu-Natal. The percentage testing positive in week 43 remained lower among inpatients (7.9%) compared to outpatients (12.6%) (Figure 21). In the public sector in week 43 the mean laboratory turnaround time continued to be lower for inpatients (1.5 days) compared to outpatients (2.0 days) (Figure 22).



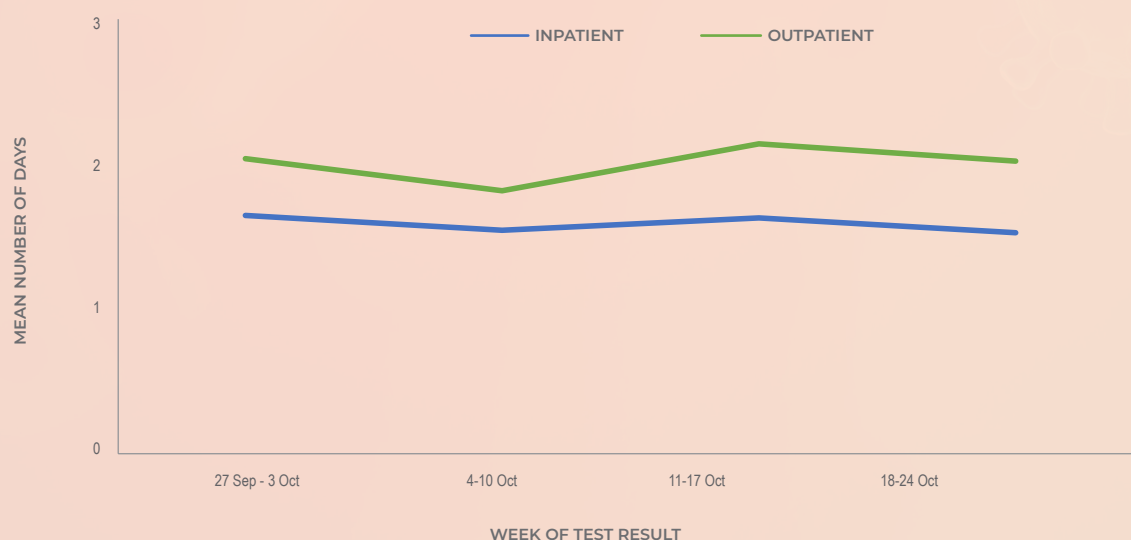
**Figure 20.** Percentage of inpatient tests performed in the public sector by province, 27 September - 24 October 2020



**Figure 21.** Percentage testing positive by patient admission status in the public sector, 27 September - 24 October 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, 27 September - 24 October 2020

## Testing by age and sex

The mean age of individuals tested in week 43 was 38.4 years, similar to the previous weeks. The mean age of individuals with a positive test in week 43 was 40.0 years, and did not differ between males (40.1

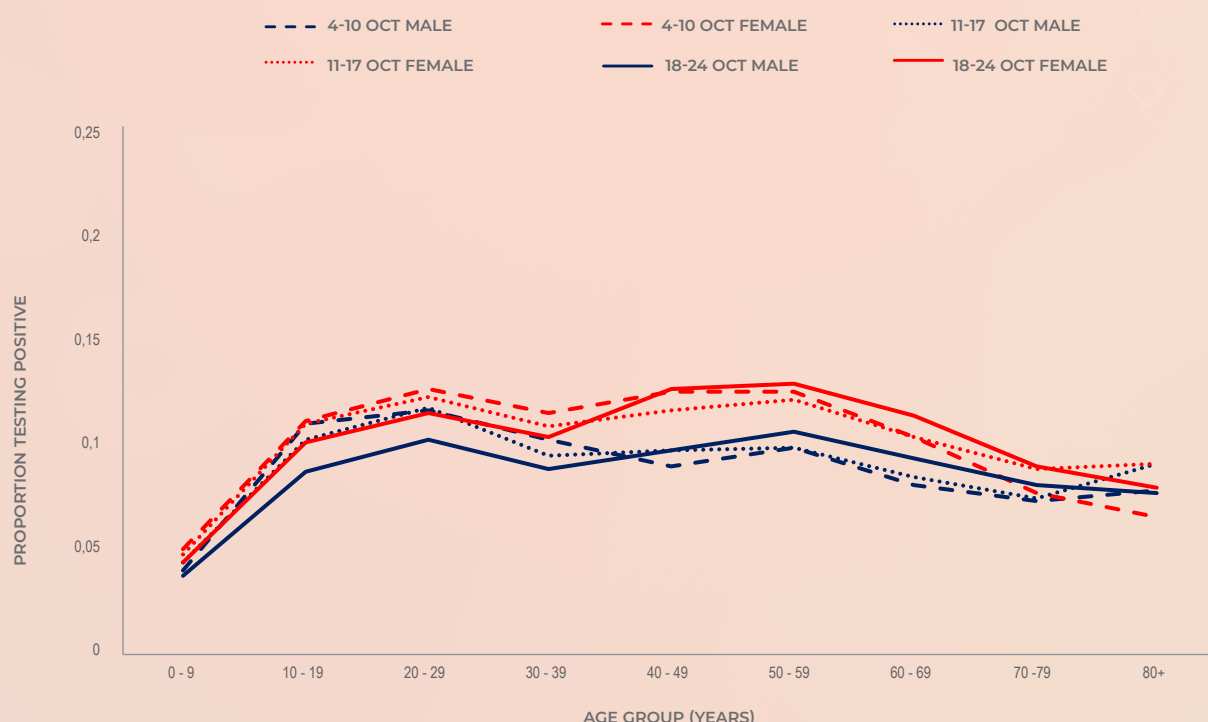
years) and females (40.0 years,  $P=0.800$ ) (Table 7). The sex ratio (the number of males per 100 females) of individuals with a positive test in week 43 was 73.4, slightly lower than the previous two weeks. For both sexes, the proportion testing positive in week 43 was similar to the previous two weeks across all age groups (Figure 23).

**Table 7.** Mean age and sex ratio of individuals tested, South Africa, 27 September - 24 October 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	Positive tests
40	27 September	38.2	38.3	39.0	38.9	88.9	72.7
41	4 October	38.4	38.4	38.4	38.5	90.0	75.7
42	11 October	38.2	38.3	38.5	38.8	89.2	77.0
43	18 October	38.2	38.6	40.1	40.0	88.0	73.4

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**Figure 23.** Weekly proportion testing positive by age group and sex, South Africa, 4 – 24 October 2020

From week 40 to week 43, the percentage testing positive was relatively unchanged in males (from 9.2% to 9.0%) and decreased slightly by 0.5% in females (from 11.2% to 10.7%) (Table 8). In week 43 the percentage testing positive was higher in females

compared to males in the 0-19 years ( $P<0.001$ ), 20-39 years ( $P<0.001$ ), 40-59 years ( $P<0.001$ ) and 60-69 years ( $P=0.004$ ) age groups, and did not differ in the  $\geq 70$  years' age group.

**Table 8.** Percentage testing positive by sex and week, South Africa, 27 September – 24 October 2020

Age (years)	27 Sep-3 Oct		4-10 Oct		11-17 Oct		18-24 Oct	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	7.1%	9.5%	7.8%	8.9%	7.5%	8.6%	6.3%	7.7%
20-39	10.3%	11.4%	10.7%	12.0%	10.4%	11.5%	9.4%	10.8%
40-59	9.5%	13.0%	9.3%	12.5%	9.8%	11.8%	10.1%	12.7%
60-69	8.8%	10.4%	8.0%	10.4%	8.5%	10.3%	9.4%	11.3%
70+	7.5%	8.3%	7.4%	7.3%	7.8%	8.9%	8.0%	8.6%
<b>Total</b>	<b>9.2%</b>	<b>11.2%</b>	<b>9.3%</b>	<b>11.1%</b>	<b>9.4%</b>	<b>10.9%</b>	<b>9.0%</b>	<b>10.7%</b>



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## Limitations

- A backlog in testing of samples by 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

Weekly testing volumes have decreased since the peak in week 28, however the number of tests performed in weeks 41 to 43 were slightly higher than has been observed since week 34 (beginning 16 August). Gauteng continued to perform the largest proportion of tests (31.5%), followed by Western Cape (16.8%) and KwaZulu-Natal (15.9%). Free State (336 per 100,000 persons) and Northern Cape (321 per 100,000 persons) provinces had the highest testing rates in week 43, and increased testing rates were observed in the Western Cape in recent weeks. The overall laboratory turnaround times in week 43 remained consistent at 2.3 days; 1.8 days in the public sector and 2.7 days in the private sector.

The percentage testing positive has been decreasing weekly since the peak of 31.3% in week 29. In week 43 the percentage testing positive was 9.9%, similar to the previous week. There were no provinces with a percentage testing positive  $\geq 20\%$  in week 43. Percentages testing positive were between 10-19% in Northern Cape, Free State, Eastern Cape, North West and Limpopo, and were  $<10\%$  in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape. In week 43, compared to the previous week, the percentage testing positive increased in the Western Cape and Eastern Cape. The percentage testing positive decreased in Northern Cape, Free State, KwaZulu-Natal, Gauteng and Mpumalanga, and did not change in the North West.