

# COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR  
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 39 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 26 September 2020 (Week 39 of 2020).

## HIGHLIGHTS

- In the period 1 March 2020 through 26 September 2020, 3,607,151 laboratory tests for SARS-CoV-2 have been conducted nationally
- Weekly testing volumes have decreased since a peak in week 28, and the number of tests performed in week 39 continued to decrease
- Northern Cape (307 per 100,000 persons) and Free State (241 per 100,000 persons) provinces had the highest testing rates in week 39, however testing rates continued to decrease in all provinces
- Percentage testing positive has been decreasing weekly since the peak of 31.4% in week 29. In week 39 the percentage testing positive was 11.2%, relatively unchanged from the previous two weeks
- Percentages testing positive were  $\geq 20\%$  in Northern Cape and Free State, between 10-19% in North West, Mpumalanga and Limpopo, and  $< 10\%$  in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape
- Compared to the previous week, the percentage testing positive increased in the Western Cape, Free State and Limpopo, decreased in KwaZulu-Natal, and did not change in Eastern Cape, Northern Cape, North West, Gauteng and Mpumalanga provinces.
- Of the 25 sub-districts with the highest proportion testing positive in week 39, 8 were in the Northern Cape, 7 in the Free State, and 4 in the North West province

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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.

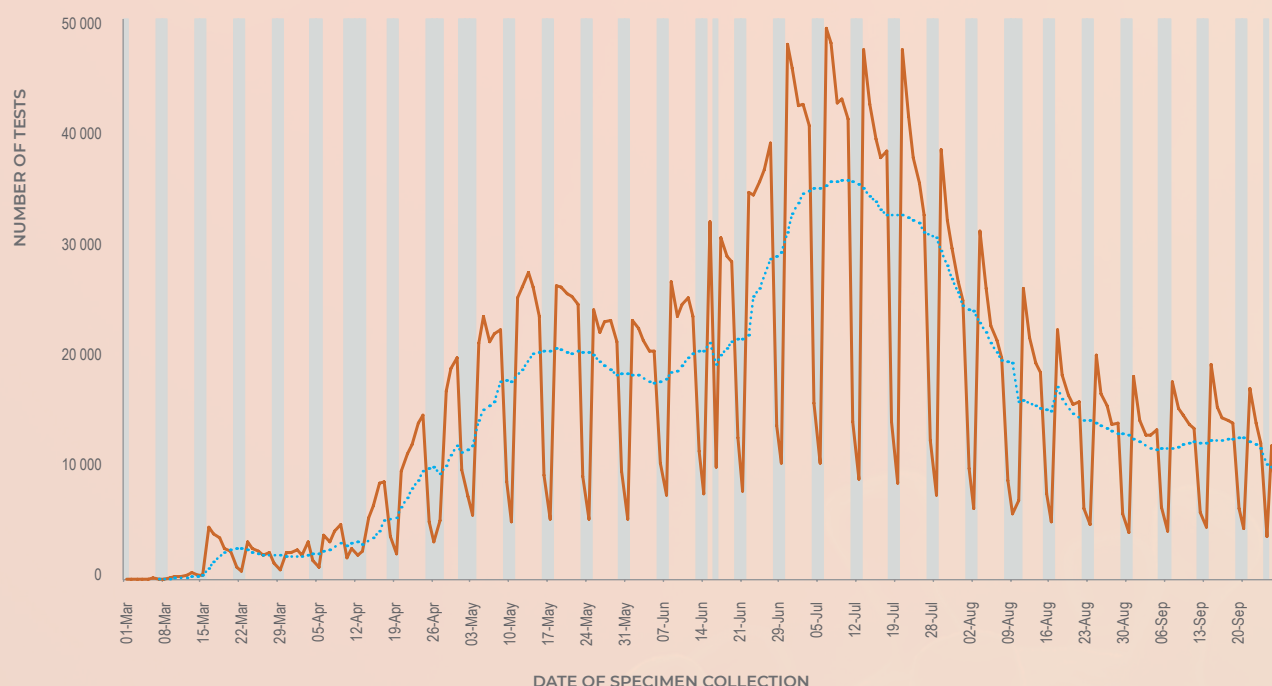
The report includes tests conducted between 1 March 2020 (week 10), the week when the first case of COVID-19 was confirmed, and 26 September 2020 (week 39).

## Testing volumes and proportion testing positive

From 1 March through 26 September 2020, 3,607,151 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=272,815), but have subsequently decreased. In week 39, 74,800 tests were performed, which was the lowest weekly testing volume since week 17 (beginning 19 April). 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 – 26 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 39 was 18.0% (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 20.1% decrease in the percentage testing positive to 11.2% in week 39. The percentage testing positive has remained relatively consistent over the past three weeks (11.5% in week 37, 11.3% in week 38 and 11.2% in week 39,  $P=0.071$ ) (Figure 2).

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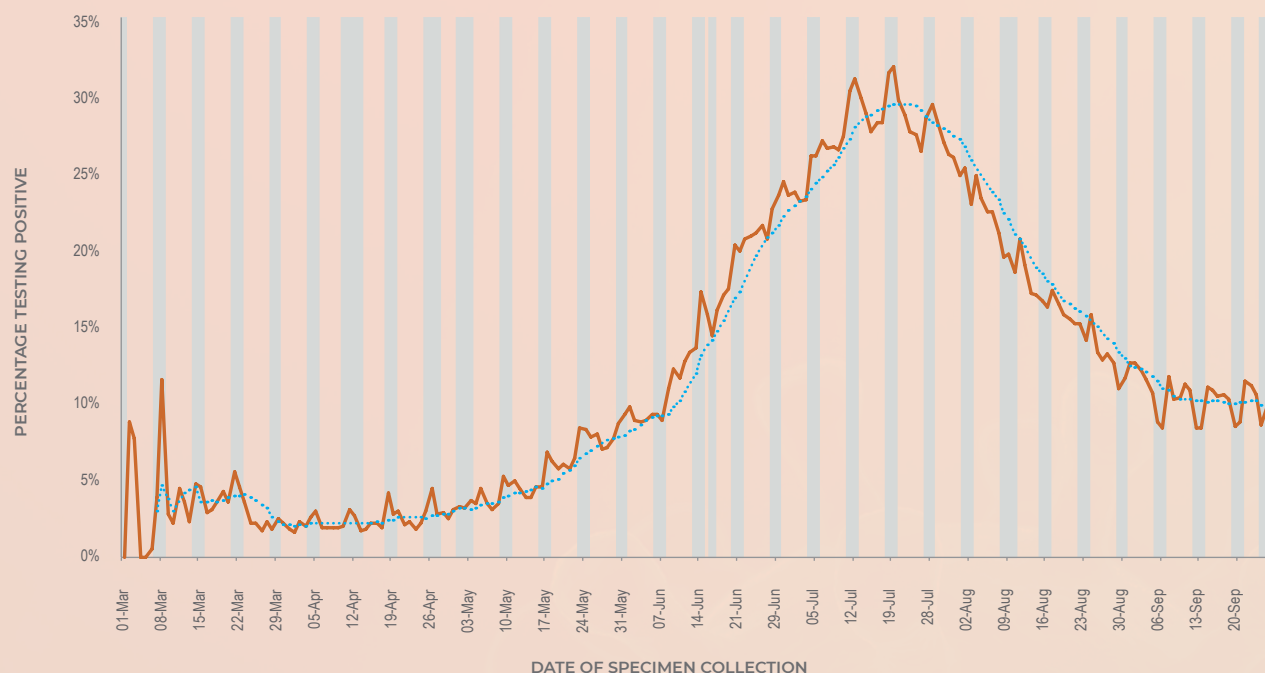
**Table 1.** Weekly number of tests conducted and positive tests, South Africa, 1 March – 26 September 2020.

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	2328 (0.1)	88	3.8
12	15-Mar	21323 (0.6)	826	3.9
13	22-Mar	17040 (0.5)	468	2.7
14	29-Mar	17381 (0.5)	395	2.3
15	05-Apr	24605 (0.7)	567	2.3
16	12-Apr	41874 (1.2)	1044	2.5
17	19-Apr	75910 (2.1)	1934	2.5
18	26-Apr	89498 (2.5)	2896	3.2
19	03-May	136914 (3.8)	5549	4.1
20	10-May	157026 (4.4)	7443	4.7
21	17-May	156409 (4.3)	10532	6.7
22	24-May	141410 (3.9)	11708	8.3
23	31-May	135749 (3.8)	13500	9.9
24	07-Jun	156610 (4.3)	20517	13.1
25	14-Jun	165000 (4.6)	29938	18.1
26	21-Jun	221641 (6.1)	50563	22.8
27	28-Jun	268955 (7.5)	69306	25.8
28	05-Jul	272815 (7.6)	79756	29.2
29	12-Jul	250502 (6.9)	78425	31.3
30	19-Jul	236466 (6.6)	72568	30.7
31	26-Jul	185769 (5.2)	53702	28.9
32	02-Aug	149577 (4.1)	36929	24.7
33	09-Aug	116515 (3.2)	23473	20.1
34	16-Aug	109741 (3.0)	19121	17.4
35	23-Aug	99822 (2.8)	14678	14.7
36	30-Aug	90217 (2.5)	11443	12.7
37	06-Sep	93799 (2.6)	10820	11.5
38	13-Sep	97046 (2.7)	10920	11.3
39	20-Sep	74800 (2.1)	8396	11.2
<b>Total</b>		<b>3607151 (100.0)</b>	<b>647514</b>	<b>18.0</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 – 26 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 26 September, 1,657,557 laboratory tests were conducted in public sector laboratories, with 16.3% testing positive. Over this same period, private sector laboratories conducted 1,949,594 tests, with 19.4% testing positive (Table 2). Overall the public sector has conducted 46.0% of tests and accounted for 41.6% 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 (32.9%). From week 38 to week 39, the percentage testing positive decreased slightly by 0.6% in the public sector and increased slightly by 0.6% in the private sector. In week 39 the percentage testing positive continued to be higher in the public sector (11.8%) compared to the private

sector (10.7%) ( $P < 0.001$ ), as has been observed since week 34.

The mean turnaround time for tests conducted in week 39 was 2.0 days and had increased slightly compared to the previous few weeks but remained  $\leq 2$  days. The turnaround time in the public sector was similar to previous weeks (1.7 days), however the turnaround time in the private sector increased to 2.3 days in week 39 (Figure 3). Turnaround times for public sector tests were  $< 2$  days in all provinces except for the Northern Cape (2.5 days) and Free State (2.2 days) (Figure 4). While the turnaround time in Northern Cape decreased in the past week, increases were observed in the Eastern Cape and Free State. All 28 NHLS laboratories performing testing for SARS-CoV-2 had turnaround times  $\leq 2$  days (Figure 5).

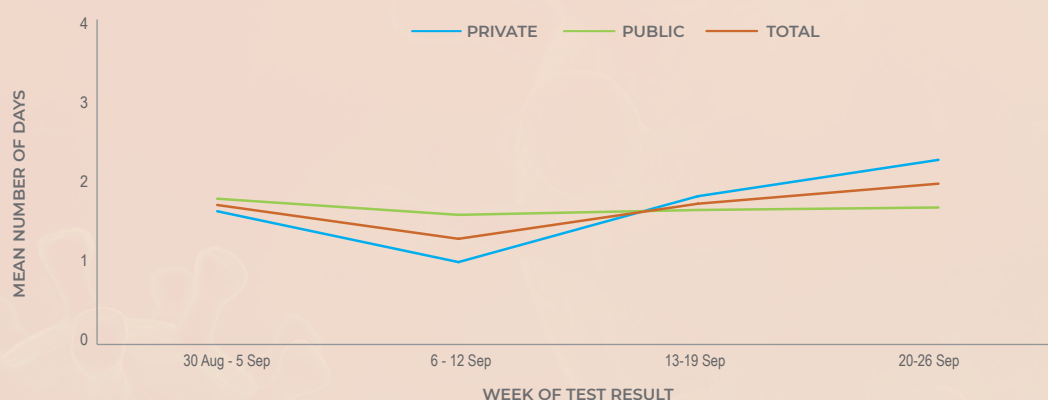
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**Table 2.** Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 26 September 2020

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP <sup>a</sup>
		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	351	12 (3.4)	1977	76 (3.8)	15.1	13.6	0.889
12	15-Mar	1344	51 (3.8)	19979	775 (3.9)	6.3	6.2	0.978
13	22-Mar	3358	124 (3.7)	13682	344 (2.5)	19.7	26.5	1.469
14	29-Mar	5612	159 (2.8)	11769	236 (2.0)	32.3	40.3	1.413
15	05-Apr	11333	320 (2.8)	13272	247 (1.9)	46.1	56.4	1.517
16	12-Apr	23773	608 (2.6)	18101	436 (2.4)	56.8	58.2	1.062
17	19-Apr	54173	1477 (2.7)	21737	457 (2.1)	71.4	76.4	1.297
18	26-Apr	66223	2288 (3.5)	23275	608 (2.6)	74.0	79.0	1.323
19	03-May	92337	4252 (4.6)	44577	1297 (2.9)	67.4	76.6	1.583
20	10-May	104942	5102 (4.9)	52084	2341 (4.5)	66.8	68.5	1.082
21	17-May	95445	6625 (6.9)	60964	3907 (6.4)	61.0	62.9	1.083
22	24-May	74266	5951 (8.0)	67144	5757 (8.6)	52.5	50.8	0.935
23	31-May	60271	6099 (10.1)	75478	7401 (9.8)	44.4	45.2	1.032
24	07-Jun	60015	7354 (12.3)	96595	13163 (13.6)	38.3	35.8	0.899
25	14-Jun	56029	11073 (19.8)	108971	18865 (17.3)	34.0	37.0	1.142
26	21-Jun	82673	18864 (22.8)	138968	31699 (22.8)	37.3	37.3	1.000
27	28-Jun	97374	25144 (25.8)	171581	44162 (25.7)	36.2	36.3	1.003
28	05-Jul	108069	30282 (28.0)	164746	49474 (30.0)	39.6	38.0	0.933
29	12-Jul	101382	29413 (29.0)	149120	49012 (32.9)	40.5	37.5	0.883
30	19-Jul	96309	28441 (29.5)	140157	44127 (31.5)	40.7	39.2	0.938
31	26-Jul	74004	21355 (28.9)	111765	32347 (28.9)	39.8	39.8	0.997
32	02-Aug	64141	15754 (24.6)	85436	21175 (24.8)	42.9	42.7	0.991
33	09-Aug	53713	10415 (19.4)	62802	13058 (20.8)	46.1	44.4	0.933
34	16-Aug	50957	8945 (17.6)	58784	10176 (17.3)	46.4	46.8	1.014
35	23-Aug	45544	7249 (15.9)	54278	7429 (13.7)	45.6	49.4	1.163
36	30-Aug	41074	5624 (13.7)	49143	5819 (11.8)	45.5	49.1	1.156
37	06-Sep	46407	5988 (12.9)	47392	4832 (10.2)	49.5	55.3	1.266
38	13-Sep	49013	6067 (12.4)	48033	4853 (10.1)	50.5	55.6	1.225
39	20-Sep	37174	4379 (11.8)	37626	4017 (10.7)	49.7	52.2	1.103
<b>Total</b>		<b>1657557</b>	<b>269420 (16.3)</b>	<b>1949594</b>	<b>378094 (19.4)</b>	<b>46.0</b>	<b>41.6</b>	<b>0.838</b>

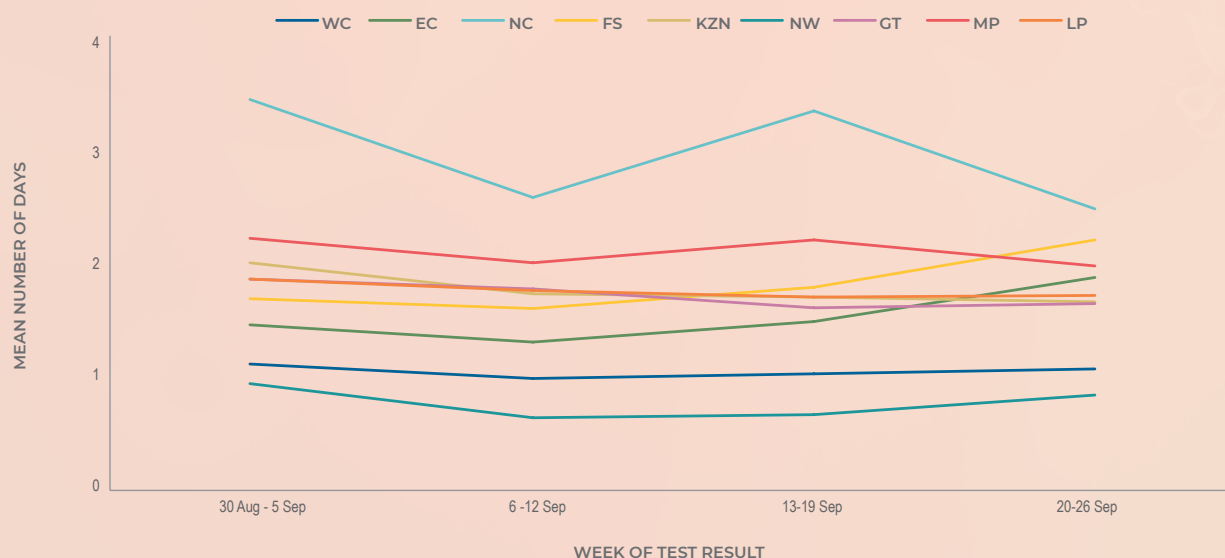
<sup>a</sup>Ratio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/ (no. of cases/total tests in private sector)



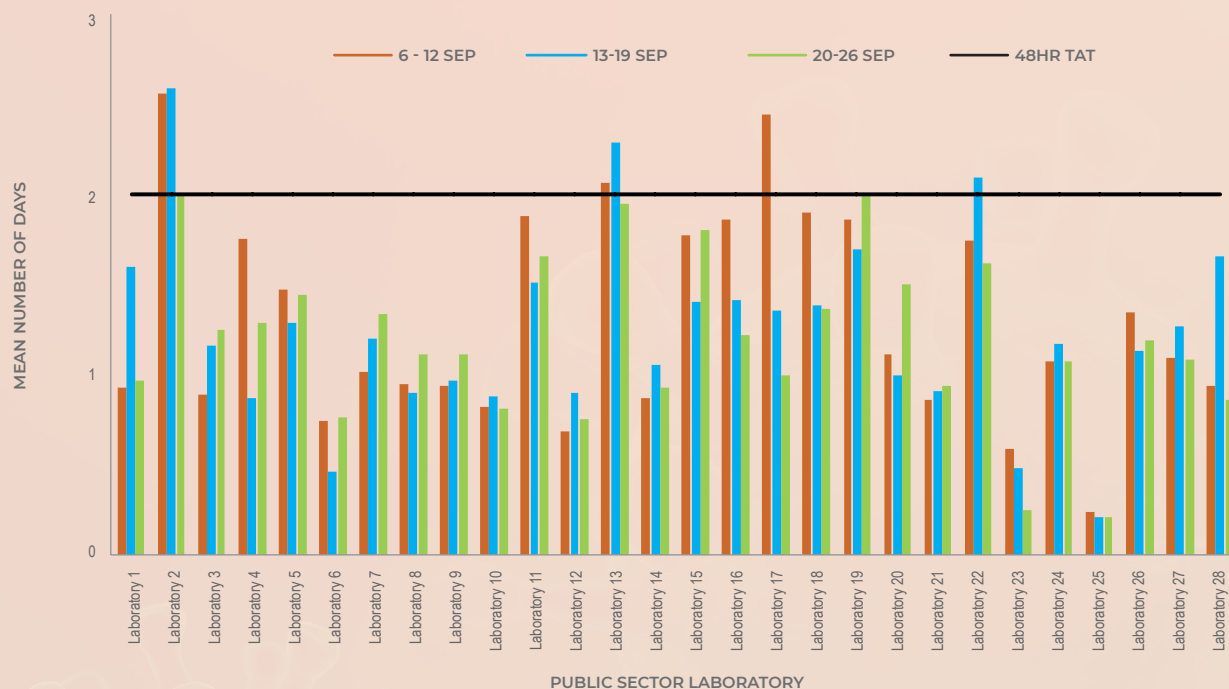
**Figure 3.** Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 30 August – 26 September 2020

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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, 30 August – 26 September 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, 6-26 September 2020. The horizontal black line indicates 48-hour turnaround time (TAT).



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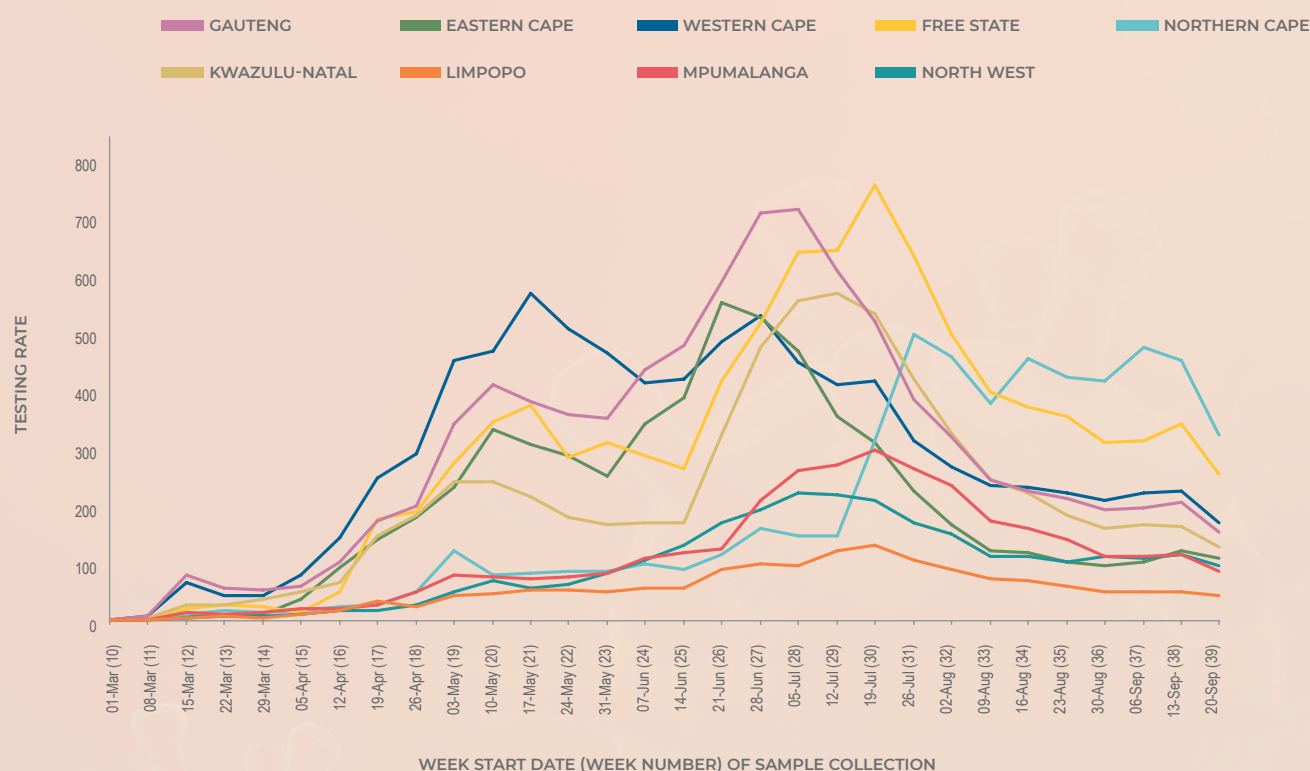
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## Testing by province

As observed in previous weeks Gauteng (29.6%) performed the largest number of tests in week 39, followed by KwaZulu-Natal (18.3%) and Western Cape (14.8%) provinces (Table 3). All other provinces conducted <7,000 tests in week 39. As has been observed since week 31, Northern Cape (307 per 100,000 persons) and Free State (241 per 100,000 persons) provinces had the highest testing rates in week 39 (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. Testing rates decreased in all provinces in week 39 compared to the previous week.

Consistent with the previous two weeks, percentages testing positive remained  $\geq 20\%$  in Northern Cape

(27.0%) and Free State (25.3%), between 10-19% in North West, Mpumalanga and Limpopo, and <10% in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape in week 39 (Figure 7). Compared to the previous week, the percentage testing positive increased in three provinces (Western Cape ( $P=0.018$ ), Free State ( $P=0.013$ ) and Limpopo ( $P=0.014$ )), with the increase in Limpopo being the largest (16.7% to 19.3%). The percentage testing positive in week 39 compared to week 38 decreased in KwaZulu-Natal ( $P<0.001$ ), and did not change in Eastern Cape ( $P=0.595$ ), Northern Cape ( $P=0.297$ ), North West ( $P=0.629$ ), Gauteng ( $P=0.292$ ) and Mpumalanga ( $P=0.589$ ) 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 – 26 September 2020.



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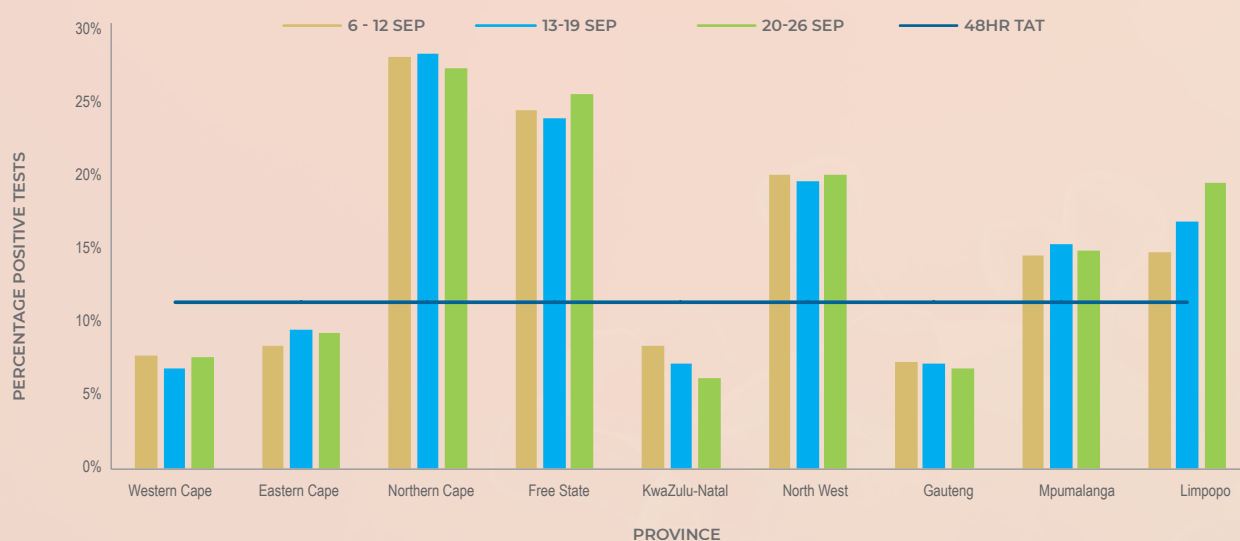
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**Table 3.** Weekly number of tests performed and positive tests, by province, South Africa, 6 - 26 September 2020

Province	Population <sup>a</sup>	6-12 Sep		13-19 Sep		20-26 Sep		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	6844272	14390	1102 (7.7)	14667	992 (6.8)	11105	836 (7.5)	162	0.8%
Eastern Cape	6712276	6455	535 (8.3)	7738	726 (9.4)	6968	636 (9.1)	104	-0.3%
Northern Cape	1263875	5710	1585 (27.8)	5445	1524 (28.0)	3880	1048 (27.0)	307	-1.0%
Free State	2887465	8625	2079 (24.1)	9428	2223 (23.6)	6969	1760 (25.3)	241	1.7%
KwaZulu-Natal	11289086	18084	1509 (8.3)	17679	1260 (7.1)	13723	838 (6.1)	122	-1.0%
North West	4027160	4179	827 (19.8)	4378	848 (19.4)	3667	726 (19.8)	91	0.4%
Gauteng	15176115	28510	2055 (7.2)	29603	2090 (7.1)	22134	1510 (6.8)	146	-0.2%
Mpumalanga	4592187	4940	709 (14.4)	5044	762 (15.1)	3791	557 (14.7)	83	-0.4%
Limpopo	5982584	2820	410 (14.5)	2910	486 (16.7)	2496	481 (19.3)	42	2.6%
Unknown		86	9 (10.5)	154	9 (5.8)	67	4 (6.0)		0.1%
<b>Total</b>	<b>58750220</b>	<b>93799</b>	<b>10820 (11.5)</b>	<b>97046</b>	<b>10920 (11.3)</b>	<b>74800</b>	<b>8396 (11.2)</b>	<b>127</b>	<b>0.0%</b>

<sup>a</sup>2019 Mid-year population Statistics SA

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



**Figure 7.** Weekly percentage testing positive, by province, South Africa, 6 - 26 September 2020. The horizontal blue line shows the national mean for week 39, beginning 20 September 2020.

## Testing in the public sector

In the public sector, the percentage testing positive decreased slightly from 12.4% in week 38 to 11.8% in week 39 ( $P=0.008$ ) (Table 4). The percentage testing positive in week 39 was highest in the North West

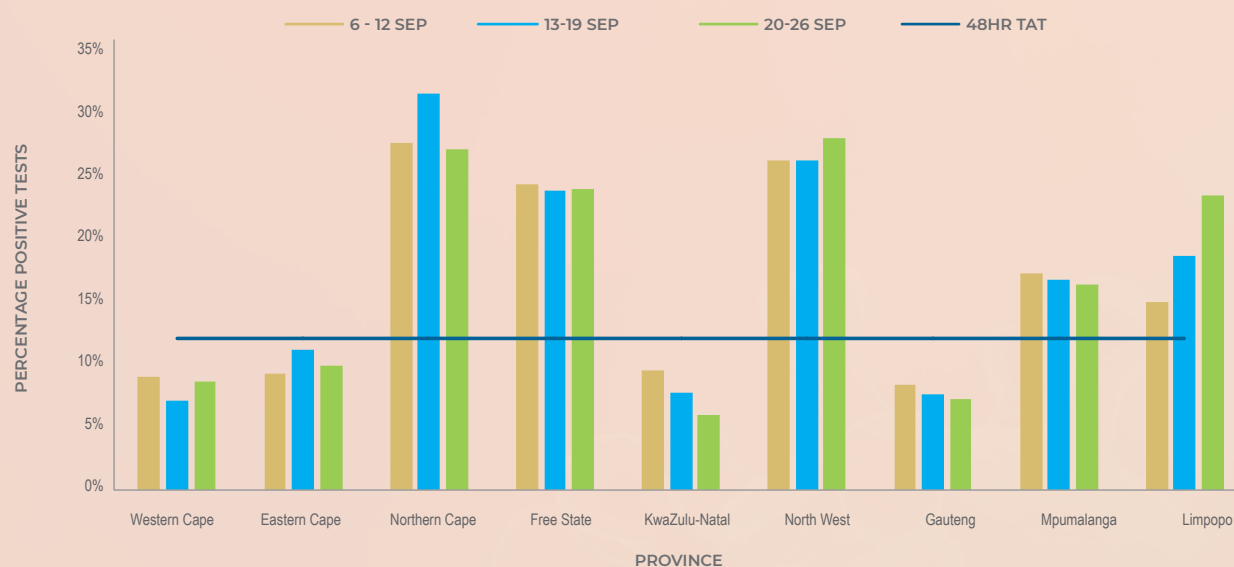
(27.3%), Northern Cape (26.5%), Free State (23.4%) and Limpopo (22.9%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 8).

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**Table 4.** Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 6 – 26 September 2020

Province	6-12 Sep		13-19 Sep		20-26 Sep	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	6752	598 (8.9)	7056	487 (6.9)	4913	411 (8.4)
Eastern Cape	4277	385 (9.0)	5337	580 (10.9)	4943	475 (9.6)
Northern Cape	3534	954 (27.0)	3215	992 (30.9)	2157	572 (26.5)
Free State	5091	1207 (23.7)	5776	1341 (23.2)	4050	947 (23.4)
KwaZulu-Natal	10391	960 (9.2)	10461	793 (7.6)	8129	469 (5.8)
North West	1864	478 (25.6)	1748	448 (25.6)	1531	418 (27.3)
Gauteng	11656	955 (8.2)	12478	923 (7.4)	9118	642 (7.0)
Mpumalanga	1643	276 (16.8)	1757	288 (16.4)	1282	204 (15.9)
Limpopo	1199	175 (14.6)	1185	215 (18.1)	1051	241 (22.9)
Unknown	0	0 (0.0)	0	0 (0.0)	0	0 (0.0)
<b>Total</b>	<b>46407</b>	<b>5988 (12.9)</b>	<b>49013</b>	<b>6067 (12.4)</b>	<b>37174</b>	<b>4379 (11.8)</b>



**Figure 8.** Weekly percentage testing positive in the public sector, by province, South Africa, 6 – 26 September 2020. The horizontal blue line shows the national mean for week 39, beginning 20 September 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

20-26 September, with the highest proportion testing positive nationally.

This week's list is dominated by facilities in the Northern Cape (8), Free State (8), and North West (4) provinces. There are also two facilities in Mpumalanga and one each in the Western Cape, Eastern Cape and Limpopo.

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**Table 5.** Public healthcare facilities with a high proportion testing positive, 20-26 September 2020.

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Limpopo	56	0.750 (0.637;0.863)
Facility 2	Free State	27	0.519 (0.330;0.707)
Facility 3	North West	51	0.510 (0.373;0.647)
Facility 4	Western Cape	26	0.500 (0.308;0.692)
Facility 5	Free State	34	0.471 (0.303;0.638)
Facility 6	Mpumalanga	31	0.419 (0.246;0.593)
Facility 7	Free State	42	0.405 (0.256;0.553)
Facility 8	Free State	70	0.400 (0.285;0.515)
Facility 9	Northern Cape	31	0.387 (0.216;0.559)
Facility 10	Northern Cape	44	0.386 (0.242;0.530)
Facility 11	Northern Cape	47	0.383 (0.244;0.522)
Facility 12	North West	50	0.380 (0.245;0.515)
Facility 13	Mpumalanga	37	0.378 (0.222;0.535)
Facility 14	North West	106	0.368 (0.276;0.460)
Facility 15	Free State	25	0.360 (0.172;0.548)
Facility 16	Northern Cape	25	0.360 (0.172;0.548)
Facility 17	Free State	42	0.357 (0.212;0.502)
Facility 18	Northern Cape	98	0.357 (0.262;0.452)
Facility 19	Free State	82	0.354 (0.250;0.457)
Facility 20	Northern Cape	40	0.350 (0.202;0.498)
Facility 21	Free State	214	0.346 (0.282;0.410)
Facility 22	North West	466	0.343 (0.300;0.386)
Facility 23	Northern Cape	297	0.340 (0.286;0.394)
Facility 24	Eastern Cape	62	0.339 (0.221;0.457)
Facility 25	Northern Cape	62	0.339 (0.221;0.457)

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 20-26 September 2020 are shown in Table 6. The list of districts continues to be dominated by those in the Northern Cape (8), Free State (7), and North West (4) provinces. Lepele-

Nkumpi district in Limpopo was the only district showing a proportion testing positive greater than 40%. A further 11 districts showed a proportion testing positive greater than 30%. Significant increases were observed in three of these 25 districts; City of Matlosana in the North West, Knysna in the Western Cape and Polokwane in Limpopo. Proportions testing positive decreased significantly in two districts in the Northern Cape.



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**Table 6.** Health sub-districts with the highest proportion testing positive based on public sector data for the week of 20-26 September 2020.

Health district or sub-district	Province	PTP (95% CI)	Previous week
Lepele-Nkumpi	Limpopo	0.568 (0.458-0.678)	0.447 (0.309-0.586)
Tsantsabane	Northern Cape	0.394 (0.297-0.490)	0.319 (0.241-0.397)
Umsobomvu	Northern Cape	0.377 (0.262-0.493)	0.267 (0.151-0.384)
Thembelihle	Northern Cape	0.373 (0.281-0.464)	0.244 (0.174-0.314)
Mohokare	Free State	0.372 (0.244-0.499)	0.187 (0.103-0.271)
Mafikeng	North West	0.340 (0.282-0.397)	0.341 (0.284-0.398)
Siyancuma	Northern Cape	0.330 (0.267-0.394)	0.571 (0.447-0.695)
City of Matlosana	North West	0.324 (0.284-0.365)	0.228 (0.195-0.260)
Naledi	Free State	0.322 (0.210-0.435)	0.178 (0.034-0.322)
Phokwane	Northern Cape	0.311 (0.236-0.385)	0.333 (0.270-0.395)
Tswelopele	Free State	0.310 (0.226-0.394)	0.270 (0.207-0.332)
Knysna	Western Cape	0.304 (0.225-0.384)	0.125 (0.075-0.175)
Greater Taung	North West	0.284 (0.185-0.384)	0.192 (0.132-0.251)
Maquassi Hills	North West	0.281 (0.199-0.364)	0.313 (0.233-0.393)
Sol Plaatjie	Northern Cape	0.275 (0.240-0.310)	0.452 (0.417-0.486)
Tokologo	Free State	0.261 (0.152-0.369)	0.331 (0.253-0.410)
Ga-Segonyana	Northern Cape	0.256 (0.172-0.340)	0.253 (0.193-0.312)
Lephalale	Limpopo	0.255 (0.147-0.364)	0.228 (0.114-0.342)
Camdeboo	Eastern Cape	0.252 (0.180-0.323)	0.132 (0.081-0.183)
Emalahleni	Mpumalanga	0.249 (0.120-0.379)	0.189 (0.099-0.279)
Setsoto	Free State	0.249 (0.173-0.324)	0.326 (0.241-0.410)
Polokwane	Limpopo	0.244 (0.191-0.298)	0.124 (0.082-0.167)
Letsemeng	Free State	0.243 (0.176-0.311)	0.235 (0.170-0.301)
Mangaung	Free State	0.243 (0.225-0.261)	0.243 (0.226-0.260)
Khara Hais	Northern Cape	0.241 (0.178-0.304)	0.221 (0.189-0.254)

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.

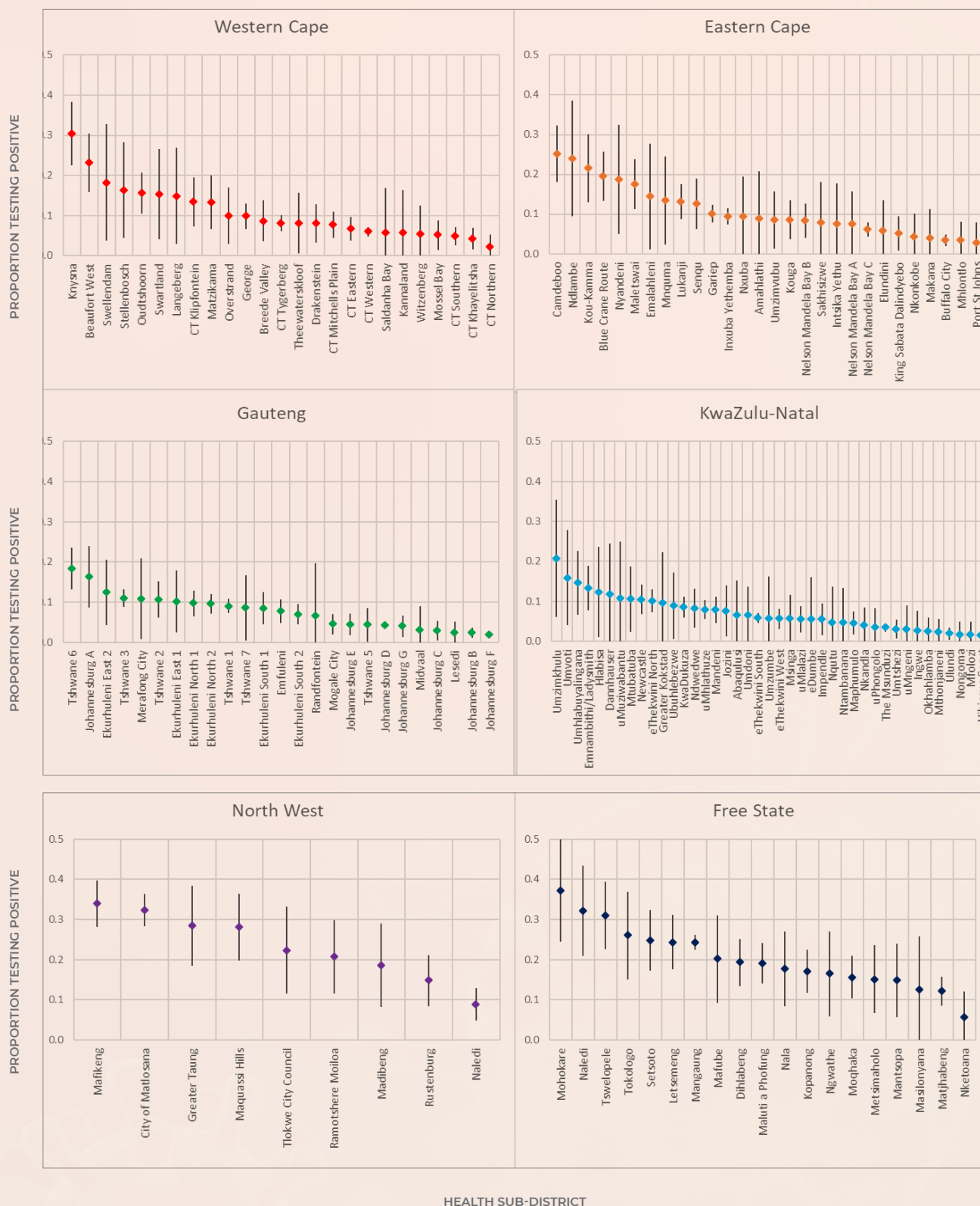
The data for every district with a non-zero proportion testing positive or where the range of confidence interval is not more than 30% (15% either side of the point estimate) for the current week is presented graphically below.



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SOUTH AFRICA

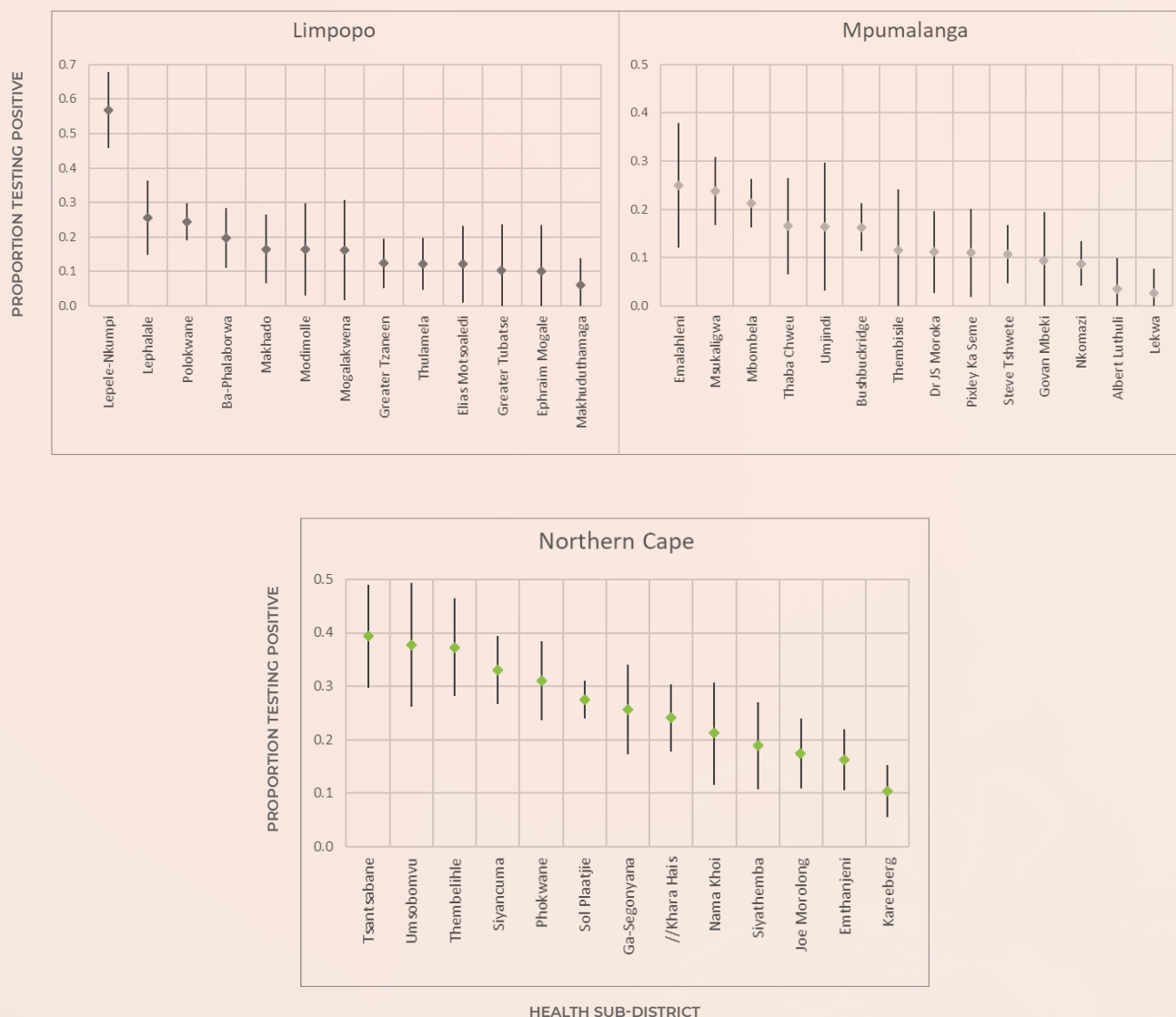
WEEK 39 2020



**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 20-26 September 2020.

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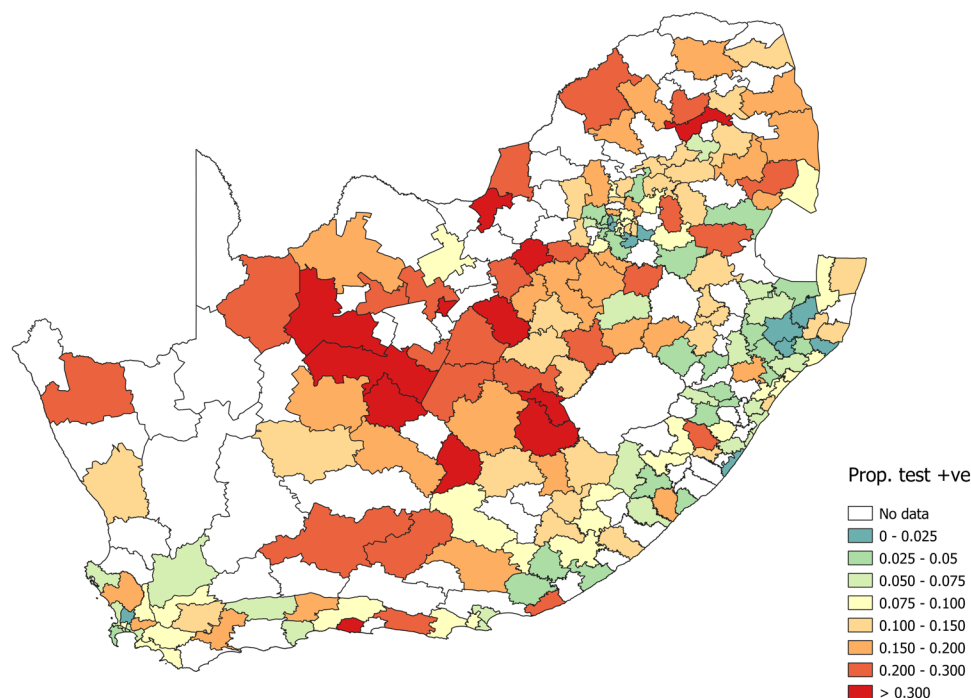
**Figure 9.** Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 20-26 September 2020.

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

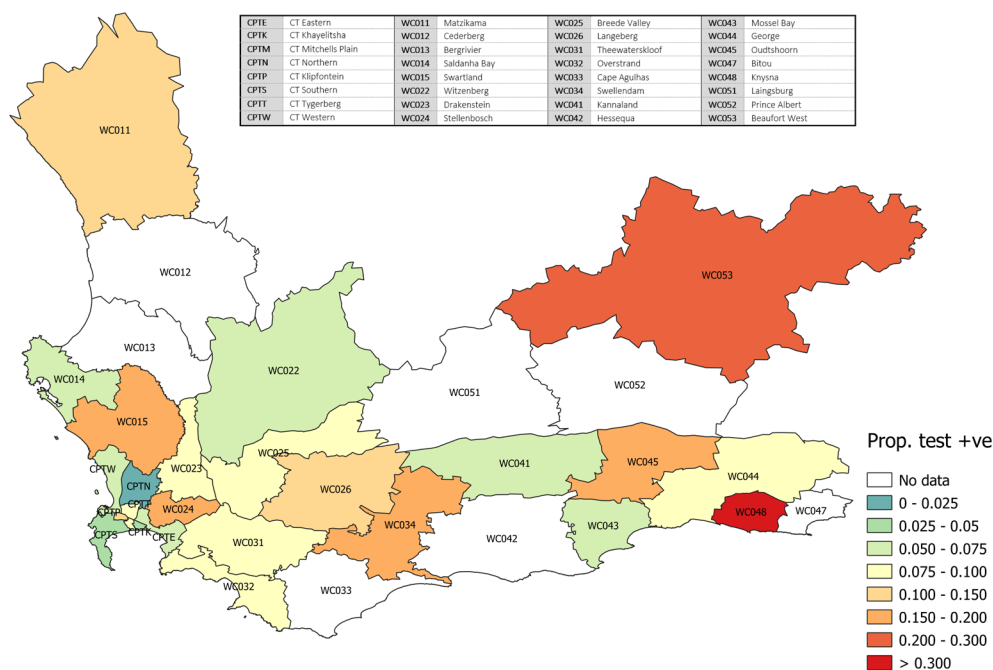
Cape (Figure 13), Free State (Figure 14), KwaZulu-Natal (Figure 15), North West (Figure 16), Gauteng (Figure 17), Mpumalanga (Figure 18) and Limpopo (Figure 19).

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**Figure 10.** Proportion testing positive by health sub-district based on public sector data for the week of 20-26 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 20-26 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%.

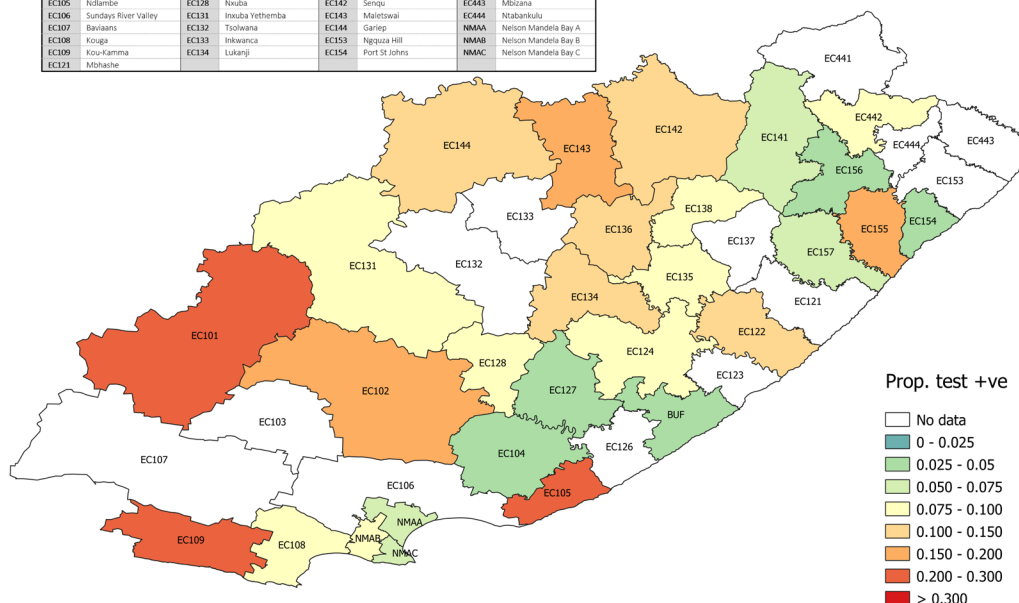


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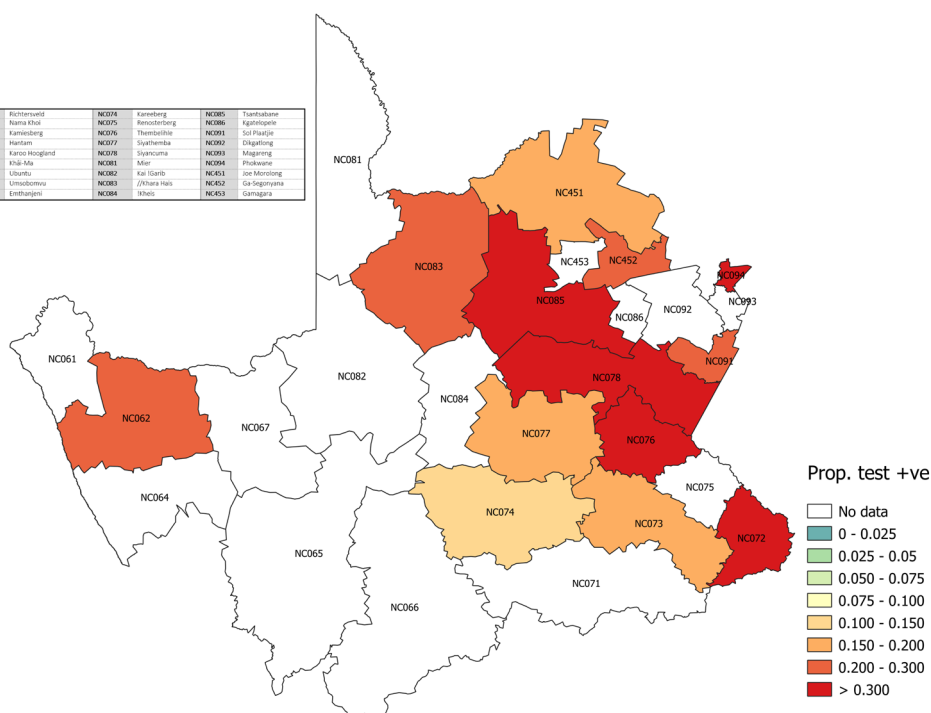
WEEK 39 2020

BUF	Buffalo City	EC122	Mquma	EC135	Intsika Yethu	EC155	Nyandeni
EC101	Camdeboo	EC123	Great Kai	EC136	Emalahleni	EC156	Mkhonto
EC102	Blue Crane Route	EC124	Amahlathi	EC137	Engcobo	EC157	King Sabata Dalindyebo
EC103	Ikwezi	EC126	Ngqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Elundini	EC442	Umtzimvubu
EC105	Nolambeni	EC128	Nvudza	EC142	Sengu	EC443	Mlilana
EC106	Sundays River Valley	EC131	Inusaba Yethemba	EC143	Maletswai	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsohlwana	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kouga	EC133	Inkwanca	EC153	Ngqusa Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Kamma	EC134	Lukani	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mphahle						



**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 20-26 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%.

NC061	Richtersveld	NC076	Kamoung	NC085	Tsankubane
NC062	Nama Khoi	NC077	Rensosterberg	NC086	Kgathlope
NC063	Kamoung	NC078	Thembu	NC087	Loi Pongile
NC064	Harlam	NC079	Syphemba	NC088	Dikgatong
NC065	Karoo Hoogland	NC080	Syphemba	NC089	Mogaming
NC066	Khal-Ida	NC081	Mor	NC090	Prokavane
NC067	Uburu	NC082	Kai Gauri	NC091	Joe Morolong
NC068	Umsobomvu	NC083	Zikhara Hala	NC092	Ga Segonyana
NC069	Enthabeni	NC084	Wits	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 20-26 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%.

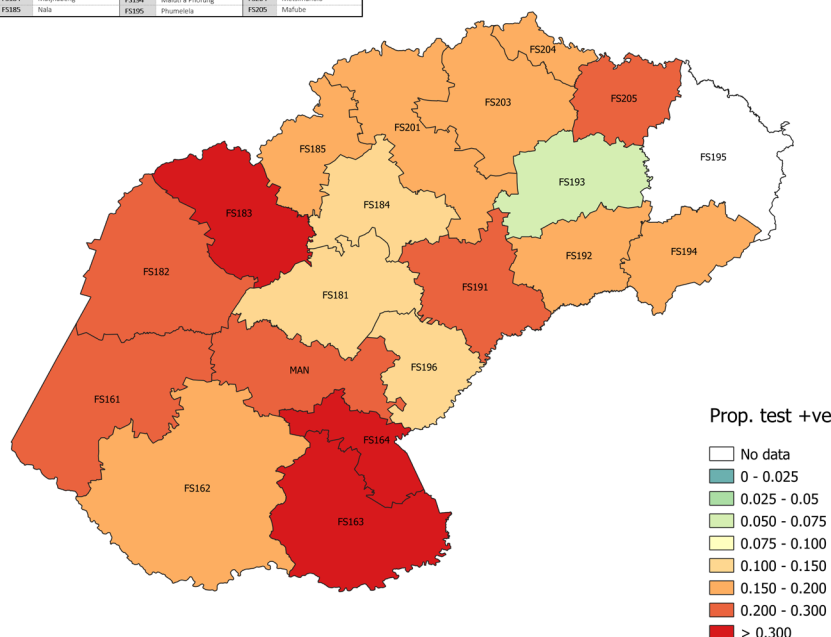


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MAN	Mangaung	FS181	Masfongyama	FS191	Selloto	FS196	Meritsosa
FS163	Letleng	FS182	Tsoelike	FS192	Orkney	FS201	Mogale
FS162	Kopong	FS183	Tswelopele	FS193	Nkomo	FS203	Nkwatle
FS163	Mochokare	FS184	Matjhabeng	FS194	Maluti a Phofung	FS204	Motimaholo
FS164	Isidit	FS185	Nela	FS195	Phumelele	FS205	Malib



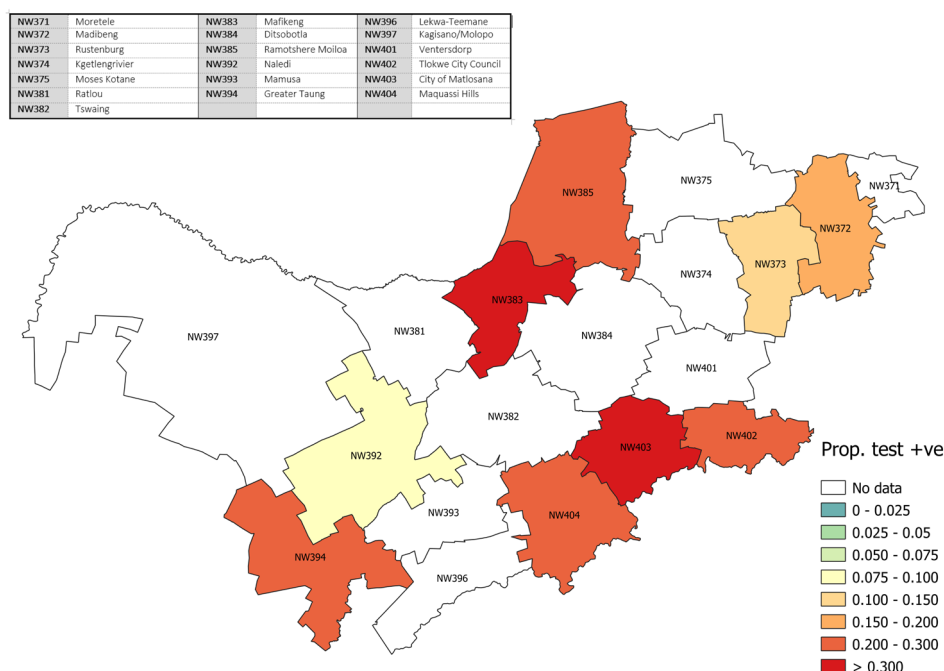
**Figure 14.** Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 20-26 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 F&S Bay
ETHS	eThekweni South	KZN234	Umlazi	KZN274	Hiabisa
ETHW	eThekweni West	KZN235	Okhahlamba	KZN275	Mtshiselwe
KZN211	Vulamehlo	KZN236	Imbumbane	KZN281	Mtholweni
KZN212	Umdoni	KZN241	Endumeni	KZN282	uMthathuze
KZN213	Umtsheni	KZN242	Isizulu	KZN283	Ntambanana
KZN214	uMthathuze	KZN244	Manga	KZN284	uMthathuze
KZN215	Ezingweni	KZN245	Umtsheni	KZN285	Mthongweni
KZN216	Hlabisa Coast	KZN252	Newcastle	KZN286	Nkandla
KZN217	uMthathuze	KZN253	Umtsheni	KZN287	Mandeni
KZN218	uMthathuze	KZN254	Danahauze	KZN292	KwaDukuza
KZN219	uMthathuze	KZN261	eDumbe	KZN293	Ndweni
KZN220	uMthathuze	KZN262	uMthathuze	KZN294	Maphumulo
KZN221	uMthathuze	KZN263	Abagquleni	KZN311	Ingeni
KZN222	uMthathuze	KZN265	Nongoma	KZN312	Kwa Sani
KZN223	uMthathuze	KZN266	Umtsheni	KZN313	Greater KwaDukuza
KZN224	uMthathuze	KZN271	Umtsheni	KZN314	Umtsheni
KZN225	uMthathuze	KZN272	Umtsheni	KZN315	Umtsheni
KZN226	uMthathuze	KZN273	Umtsheni	KZN316	Umtsheni
KZN227	uMthathuze	KZN274	Umtsheni	KZN317	Umtsheni
KZN228	uMthathuze	KZN275	Umtsheni	KZN318	Umtsheni
KZN229	uMthathuze	KZN276	Umtsheni	KZN319	Umtsheni
KZN230	uMthathuze	KZN277	Umtsheni	KZN320	Umtsheni
KZN231	uMthathuze	KZN278	Umtsheni	KZN321	Umtsheni
KZN232	uMthathuze	KZN279	Umtsheni	KZN322	Umtsheni
KZN233	uMthathuze	KZN280	Umtsheni	KZN323	Umtsheni
KZN234	uMthathuze	KZN281	Umtsheni	KZN324	Umtsheni
KZN235	uMthathuze	KZN282	Umtsheni	KZN325	Umtsheni
KZN236	uMthathuze	KZN283	Umtsheni	KZN326	Umtsheni
KZN237	uMthathuze	KZN284	Umtsheni	KZN327	Umtsheni
KZN238	uMthathuze	KZN285	Umtsheni	KZN328	Umtsheni
KZN239	uMthathuze	KZN286	Umtsheni	KZN329	Umtsheni
KZN240	uMthathuze	KZN287	Umtsheni	KZN330	Umtsheni
KZN241	uMthathuze	KZN288	Umtsheni	KZN331	Umtsheni
KZN242	uMthathuze	KZN289	Umtsheni	KZN332	Umtsheni
KZN243	uMthathuze	KZN290	Umtsheni	KZN333	Umtsheni
KZN244	uMthathuze	KZN291	Umtsheni	KZN334	Umtsheni
KZN245	uMthathuze	KZN292	Umtsheni	KZN335	Umtsheni
KZN246	uMthathuze	KZN293	Umtsheni	KZN336	Umtsheni
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KZN248	uMthathuze	KZN295	Umtsheni	KZN338	Umtsheni
KZN249	uMthathuze	KZN296	Umtsheni	KZN339	Umtsheni
KZN250	uMthathuze	KZN297	Umtsheni	KZN340	Umtsheni
KZN251	uMthathuze	KZN298	Umtsheni	KZN341	Umtsheni
KZN252	uMthathuze	KZN299	Umtsheni	KZN342	Umtsheni
KZN253	uMthathuze	KZN300	Umtsheni	KZN343	Umtsheni
KZN254	uMthathuze	KZN301	Umtsheni	KZN344	Umtsheni
KZN255	uMthathuze	KZN302	Umtsheni	KZN345	Umtsheni
KZN256	uMthathuze	KZN303	Umtsheni	KZN346	Umtsheni
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KZN258	uMthathuze	KZN305	Umtsheni	KZN348	Umtsheni
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KZN260	uMthathuze	KZN307	Umtsheni	KZN350	Umtsheni
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KZN262	uMthathuze	KZN309	Umtsheni	KZN352	Umtsheni
KZN263	uMthathuze	KZN310	Umtsheni	KZN353	Umtsheni
KZN264	uMthathuze	KZN311	Umtsheni	KZN354	Umtsheni
KZN265	uMthathuze	KZN312	Umtsheni	KZN355	Umtsheni
KZN266	uMthathuze	KZN313	Umtsheni	KZN356	Umtsheni
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KZN268	uMthathuze	KZN315	Umtsheni	KZN358	Umtsheni
KZN269	uMthathuze	KZN316	Umtsheni	KZN359	Umtsheni
KZN270	uMthathuze	KZN317	Umtsheni	KZN360	Umtsheni
KZN271	uMthathuze	KZN318	Umtsheni	KZN361	Umtsheni
KZN272	uMthathuze	KZN319	Umtsheni	KZN362	Umtsheni
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KZN276	uMthathuze	KZN323	Umtsheni	KZN366	Umtsheni
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KZN293	uMthathuze	KZN340	Umtsheni	KZN383	Umtsheni
KZN294	uMthathuze	KZN341	Umtsheni	KZN384	Umtsheni
KZN295	uMthathuze	KZN342	Umtsheni	K	

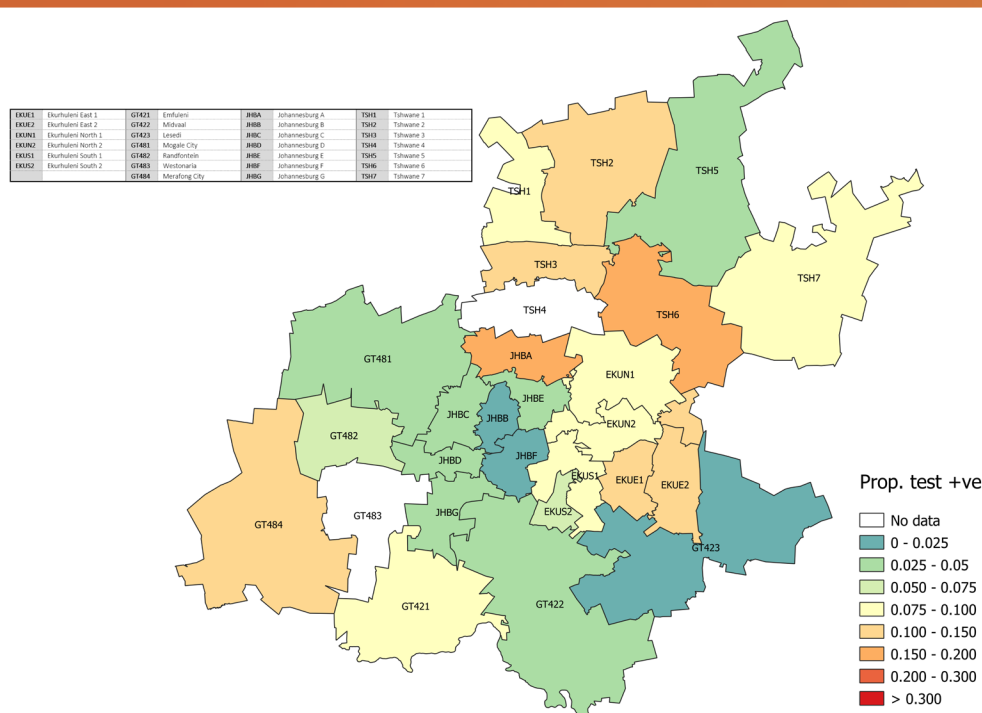
# COVID-19 TESTING SUMMARY

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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 20-26 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%.

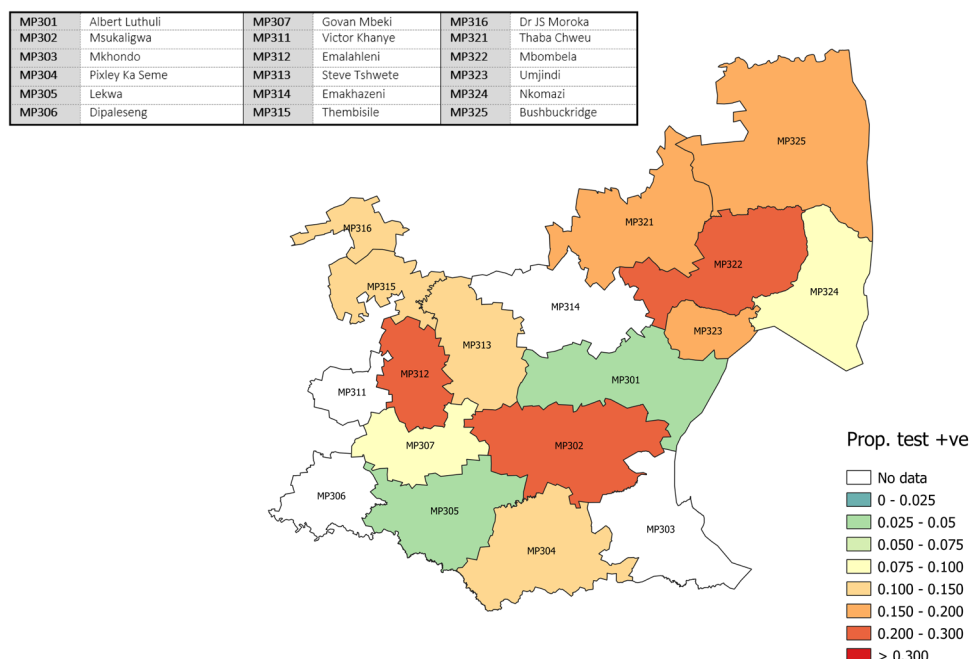


**Figure 17.** Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 20-26 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

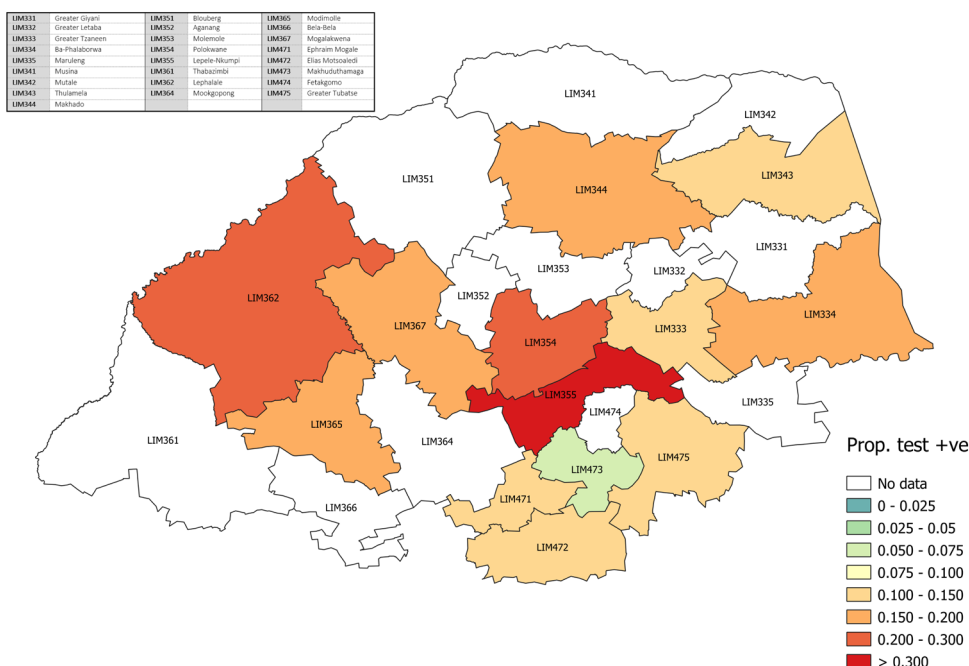
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**Figure 18.** Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 20-26 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.





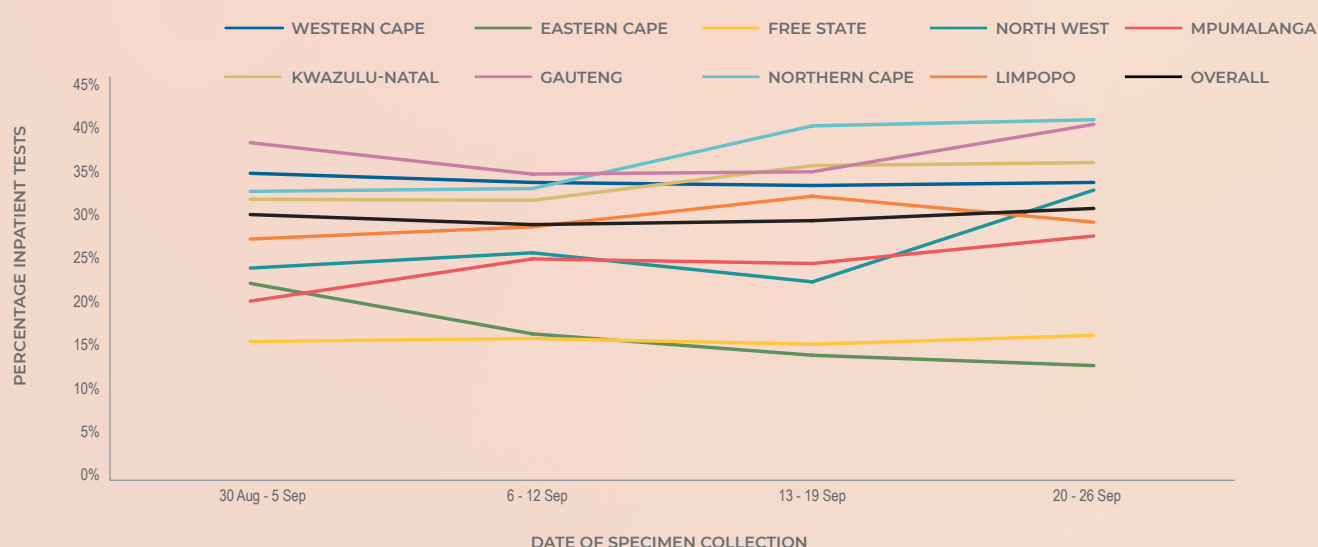
# COVID-19 TESTING SUMMARY

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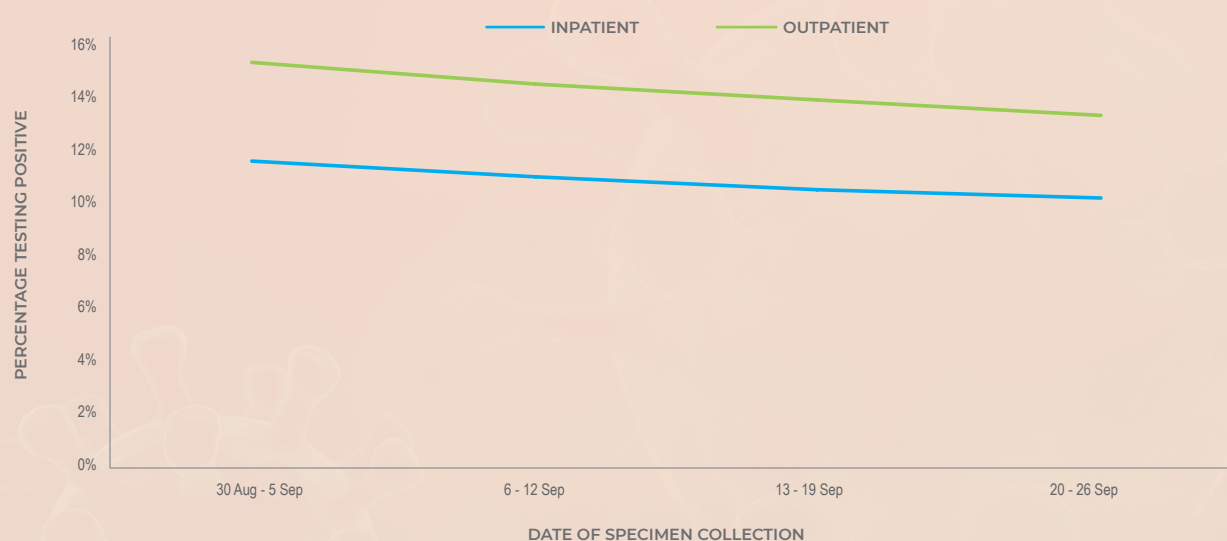
## Testing by patient admission status

In week 39, 30.4% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Northern Cape (40.2%) and Gauteng (39.7%). Comparing week 39 to the previous week, the proportion of inpatient tests increased from 22.1% to 32.3% in the North West and from 34.4% to 39.7% in Gauteng. The percentage

testing positive in week 39 remained lower among inpatients (10.0%) compared to outpatients (13.1%), with the percentage in both groups similar to the previous past week (Figure 21). In the public sector in week 39 the mean laboratory turnaround time continued to be lower for inpatients (1.5 days) compared to outpatients (1.9 days), and remained <2 days in both groups (Figure 22).



**Figure 20.** Percentage of inpatient tests performed in the public sector by province, 30 August - 26 September 2020.

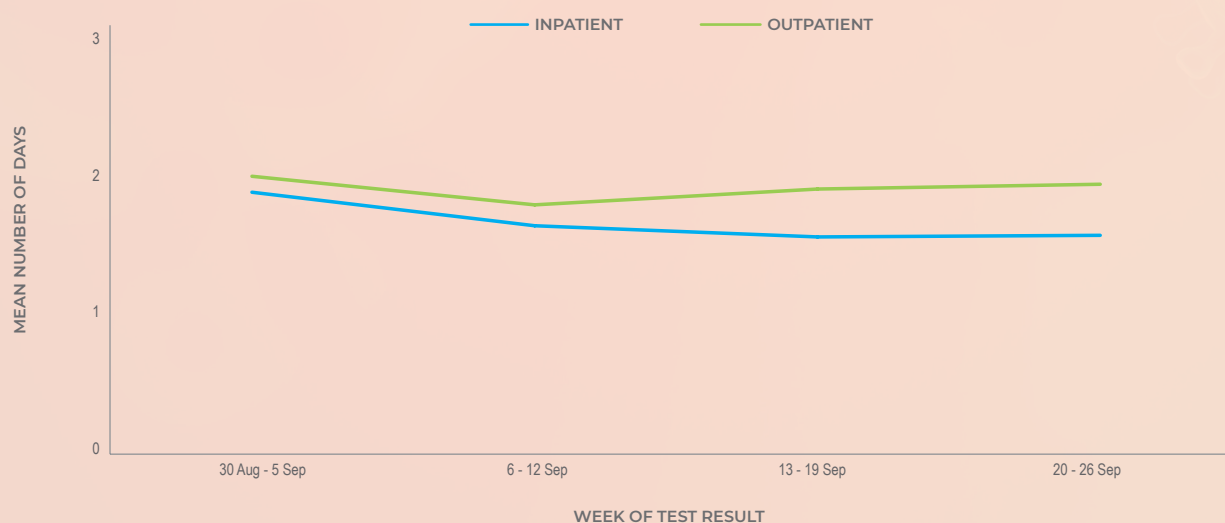


**Figure 21.** Percentage testing positive by patient admission status in the public sector, 30 August - 26 September 2020.



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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, 30 August - 26 September 2020.

## Testing by age and sex

The mean age of individuals tested in week 39 was 37.9 years, similar to the previous weeks. The mean age of individuals with a positive test in week 39 was 39.7 years, and did not differ between males (39.5 years) and females (40.0 years,  $P=0.191$ ) (Table 7). The sex ratio

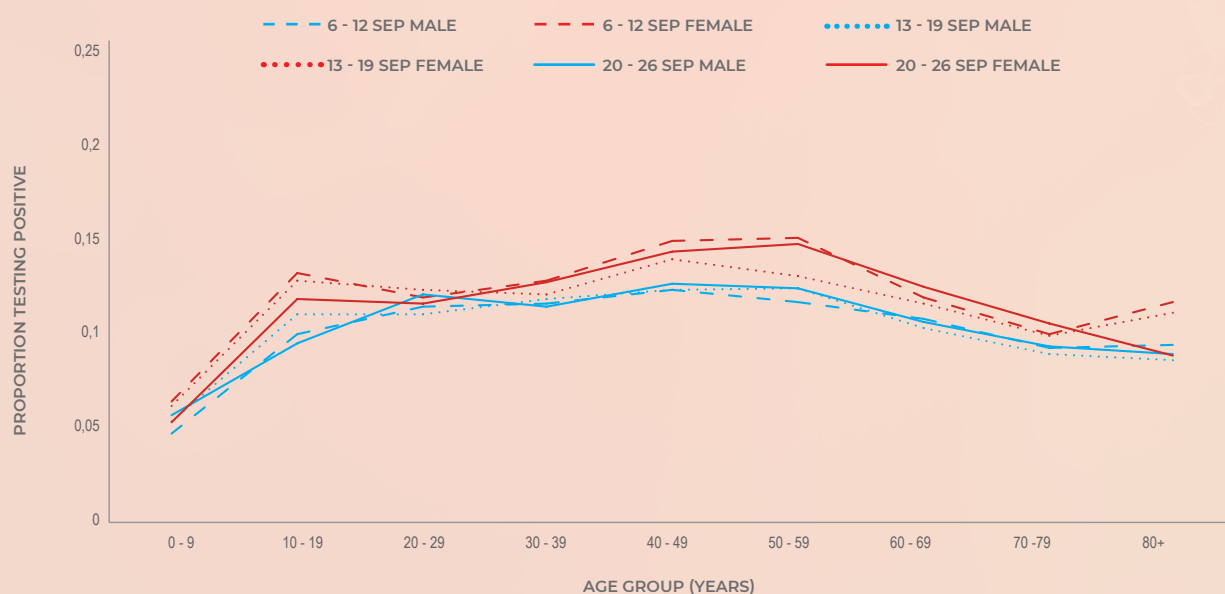
(the number of males per 100 females) of individuals with a positive test in week 39 was 73.9, similar to the previous week. For both sexes, the proportion testing positive in week 39 was similar to the previous two weeks across all age groups, except in females aged  $\geq 80$  years in which the proportion testing positive decreased (Figure 23).

**Table 7.** Mean age and sex ratio of individuals tested, South Africa, 30 August - 26 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	Positive tests
36	30 August	39.3	39.7	40.9	41.2	82.6	73.3
37	6 September	38.4	39.3	40.2	40.4	81.2	68.4
38	13 September	37.9	38.4	39.1	39.1	81.9	73.8
39	20 September	37.5	38.4	39.5	40.0	82.7	73.9

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**Figure 23.** Weekly proportion testing positive by age group and sex, South Africa, 6 - 26 September 2020.

From week 36 to week 39, the percentage testing positive decreased 1.3% in males (from 11.9% to 10.6%) and 1.5% in females (from 13.4% to 11.9%) (Table 8). In week 39 the percentage testing positive was higher

in females compared to males in the 0-19 years ( $P=0.001$ ), 40-59 years ( $P<0.001$ ) and 60-69 years ( $P=0.030$ ) age groups, and did not differ in the other age groups.

**Table 8.** Percentage testing positive by sex and week, South Africa, 30 August – 26 September 2020.

Age (years)	30 Aug-5 Sep		6-12 Sep		13-19 Sep		20-26 Sep	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	9.9%	10.8%	7.4%	10.5%	8.2%	10.1%	7.5%	9.1%
20-39	11.7%	12.8%	11.3%	12.2%	11.3%	11.9%	11.5%	12.0%
40-59	12.7%	15.6%	11.8%	14.7%	12.1%	13.3%	12.3%	14.2%
60-69	13.2%	13.8%	10.6%	11.7%	10.1%	11.3%	10.4%	12.2%
70+	11.9%	12.5%	9.1%	10.4%	8.6%	10.1%	9.0%	9.7%
<b>Total</b>	<b>11.9%</b>	<b>13.4%</b>	<b>10.5%</b>	<b>12.5%</b>	<b>10.6%</b>	<b>11.8%</b>	<b>10.6%</b>	<b>11.9%</b>

# COVID-19 TESTING SUMMARY

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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.
- 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 39 testing volumes continued to decrease since the peak in weekly testing volume in week 28. As has been observed throughout the first wave of the pandemic, Gauteng (29.6%) performed the largest number of tests in week 39, followed by KwaZulu-Natal (18.3%) and Western Cape (14.8%) provinces. Northern Cape (307 per 100,000 persons) and Free State (241 per 100,000 persons) provinces continued to have the highest testing rates in week 39. 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, and continued to decrease in week 39. Overall laboratory turnaround times in week 39 were sustained at  $\leq 2$  days, however increased to  $>2$  days in the private sector.

The percentage testing positive has been decreasing weekly since the peak of 31.4% in week 29. In week 39 the percentage testing positive was 11.2%, relatively unchanged from the previous two weeks. As for the previous week, percentages testing positive were  $\geq 20\%$  in Northern Cape and Free State, between 10-19% in North West, Mpumalanga and Limpopo, and  $<10\%$  in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape. Compared to the previous week, the percentage testing positive increased in the Western Cape, Free State and Limpopo, decreased in KwaZulu-Natal, and did not change in Eastern Cape, Northern Cape, North West, Gauteng and Mpumalanga provinces. Of the 25 sub-districts with the highest proportion testing positive in the past week, 8 were in the Northern Cape, 7 in the Free State, and 4 in the North West province.