

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 45 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 7 November 2020 (Week 45 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 7 November 2020, 4,243,524 laboratory tests for SARS-CoV-2 have been conducted nationally
- Weekly testing volumes have decreased since a peak in week 28. The number of tests performed in week 45 were similar to the previous few weeks
- Western Cape (249 per 100,000 persons), Free State (239 per 100,000 persons) and Northern Cape (235 per 100,000 persons) provinces had the highest testing rates in week 45
- Percentage testing positive has decreased since the peak of 31.2% in week 29. In week 45 the percentage testing positive was 9.6%, similar to the previous week
- Percentage testing positive was highest in the Eastern Cape (27.9%), between 10-19% in the Northern Cape and Free State, and <10% in Western Cape, North West, Gauteng, KwaZulu-Natal, Mpumalanga and Limpopo in week 45
- In week 45, compared to the previous week, the percentage testing positive increased in the Eastern Cape and Western Cape, decreased in Northern Cape, Free State, North West, Gauteng and Limpopo, and did not change in KwaZulu-Natal and Mpumalanga
- Mean laboratory turnaround time in week 45 was 1.9 days; 1.8 days in the public sector and 2.0 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 7 November 2020 (week 45).

Testing volumes and proportion testing positive

From 1 March through 7 November 2020, 4,243,524 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=272,635), but have subsequently decreased. In week 45, 98,932 tests were performed, slightly lower than the number of tests performed in the previous few weeks. 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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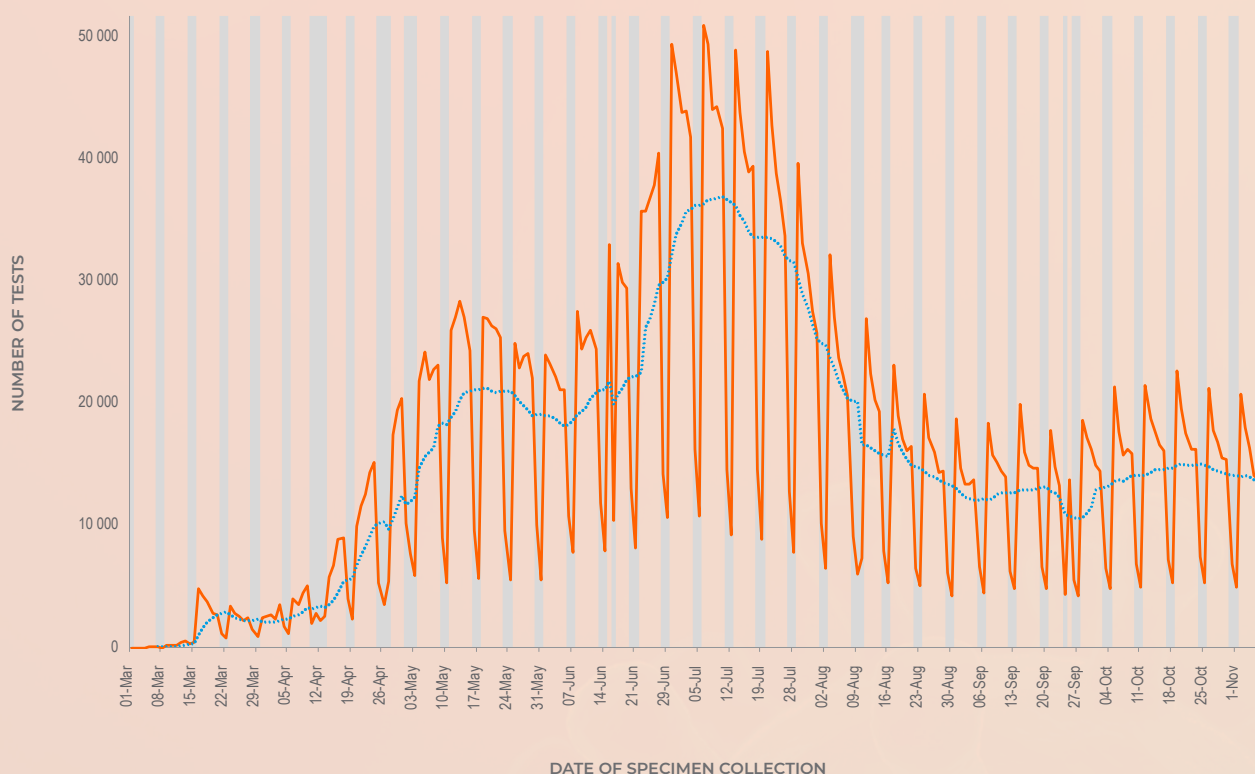


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 7 November 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 45 was 16.7% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.2% in week 29. Since week 29, there has been a 21.6% decrease in the percentage testing positive to 9.6% in week 45. The percentage testing positive in week 45 was 9.6%, similar to that observed in the previous week (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 7 November 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	2329 (0.1)	88	3.8
12	15-Mar	21318 (0.5)	825	3.9
13	22-Mar	17040 (0.4)	470	2.8
14	29-Mar	17383 (0.4)	399	2.3
15	05-Apr	24591 (0.6)	567	2.3
16	12-Apr	41859 (1.0)	1047	2.5
17	19-Apr	75877 (1.8)	1925	2.5
18	26-Apr	89484 (2.1)	2887	3.2
19	03-May	136866 (3.2)	5534	4.0
20	10-May	157008 (3.7)	7423	4.7
21	17-May	156384 (3.7)	10491	6.7
22	24-May	141912 (3.3)	11682	8.2
23	31-May	136134 (3.2)	13460	9.9
24	07-Jun	156784 (3.7)	20460	13.0
25	14-Jun	165002 (3.9)	29850	18.1
26	21-Jun	222076 (5.2)	50413	22.7
27	28-Jun	268975 (6.3)	69111	25.7
28	05-Jul	272635 (6.4)	79547	29.2
29	12-Jul	250222 (5.9)	78189	31.2
30	19-Jul	236183 (5.6)	72321	30.6
31	26-Jul	185552 (4.4)	53526	28.8
32	02-Aug	150448 (3.5)	36824	24.5
33	09-Aug	117304 (2.8)	23428	20.0
34	16-Aug	110122 (2.6)	19090	17.3
35	23-Aug	99960 (2.4)	14630	14.6
36	30-Aug	90415 (2.1)	11407	12.6
37	06-Sep	94098 (2.2)	10794	11.5
38	13-Sep	97550 (2.3)	10900	11.2
39	20-Sep	79204 (1.9)	9182	11.6
40	27-Sep	98175 (2.3)	10026	10.2
41	04-Oct	105062 (2.5)	10689	10.2
42	11-Oct	109299 (2.6)	11009	10.1
43	18-Oct	111678 (2.6)	11022	9.9
44	25-Oct	105254 (2.5)	10382	9.9
45	01-Nov	98932 (2.3)	9464	9.6
Total		4243524 (100.0)	709071	16.7

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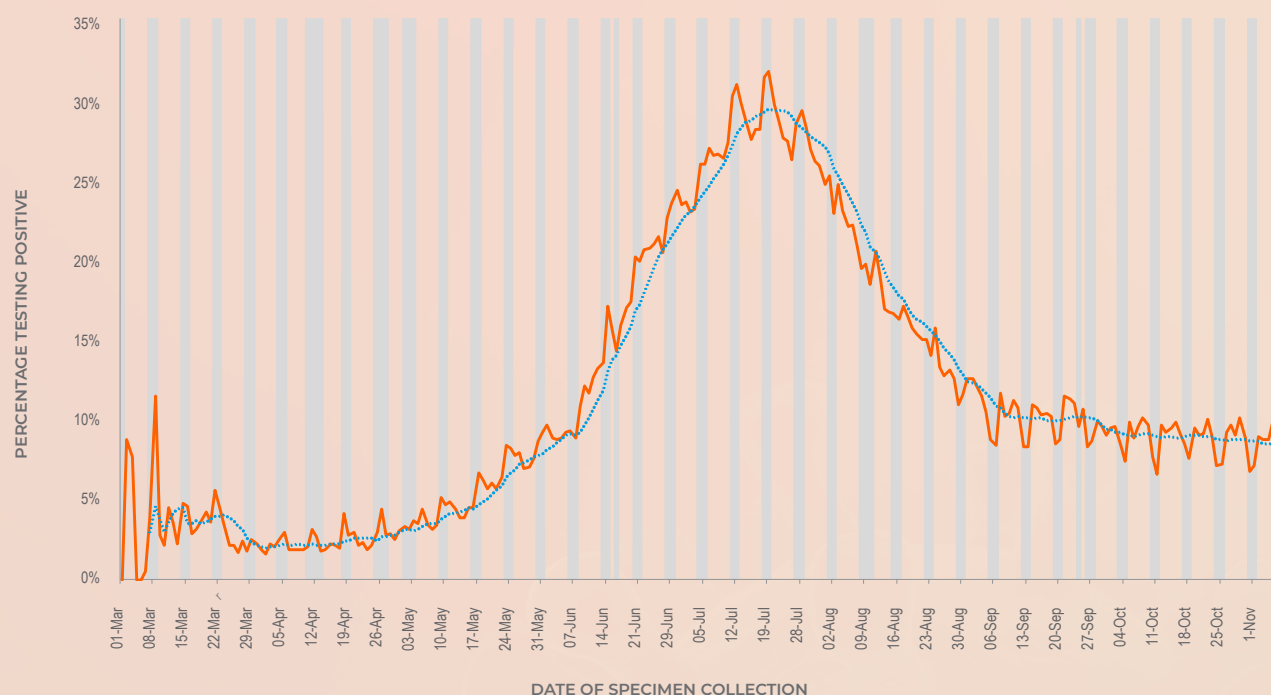


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 7 November 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 7 November, 1,935,048 laboratory tests were conducted in public sector laboratories, with 15.5% testing positive. Over this same period, private sector laboratories conducted 2,308,476 tests, with 17.7% testing positive (Table 2). Overall the public sector has conducted 45.6% of tests and accounted for 42.3% 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 44 to week 45, the percentage testing positive decreased from 11.7% to 10.4% ($P < 0.001$) in the public sector and increased slightly from 8.5% to 9.0% ($P = 0.002$) in the private sector. In week 45 the percentage

testing positive continued to be higher in the public sector (10.4%) compared to the private sector (9.0%) ($P < 0.001$), as has been observed since week 34.

The mean turnaround time for tests conducted in week 45 was 1.9 days. Turnaround time was unchanged in the public sector (1.8 days) and increased slightly in the private sector (2.0 days) (Figure 3). Turnaround times for public sector tests were > 2 days in Eastern Cape (2.7 days) and Northern Cape (2.1 days) (Figure 4). Turnaround times in the past week increased in the Eastern Cape (1.8 to 2.7 days). Twenty-six of the 28 (92.9%) NHLS laboratories performing testing for SARS-CoV-2 had turnaround times ≤ 2 days (Figure 5).

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Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 7 November 2020

Week number	Week beginning	Public sector		Private sector		Public sector percentage of		Ratio of PTP ^a
		Tests	Cases n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	
10	01-Mar	251	5 (2.0)	158	4 (2.5)	61.4	55.6	0.787
11	08-Mar	350	12 (3.4)	1979	76 (3.8)	15.0	13.6	0.893
12	15-Mar	1343	51 (3.8)	19975	774 (3.9)	6.3	6.2	0.980
13	22-Mar	3358	124 (3.7)	13682	346 (2.5)	19.7	26.4	1.460
14	29-Mar	5608	158 (2.8)	11775	241 (2.0)	32.3	39.6	1.377
15	05-Apr	11324	320 (2.8)	13267	247 (1.9)	46.0	56.4	1.518
16	12-Apr	23753	606 (2.6)	18106	441 (2.4)	56.7	57.9	1.047
17	19-Apr	54138	1469 (2.7)	21739	456 (2.1)	71.3	76.3	1.294
18	26-Apr	66186	2277 (3.4)	23298	610 (2.6)	74.0	78.9	1.314
19	03-May	92282	4227 (4.6)	44584	1307 (2.9)	67.4	76.4	1.562
20	10-May	104919	5083 (4.8)	52089	2340 (4.5)	66.8	68.5	1.078
21	17-May	95420	6587 (6.9)	60964	3904 (6.4)	61.0	62.8	1.078
22	24-May	74220	5925 (8.0)	67692	5757 (8.5)	52.3	50.7	0.939
23	31-May	60217	6068 (10.1)	75917	7392 (9.7)	44.2	45.1	1.035
24	07-Jun	59946	7314 (12.2)	96838	13146 (13.6)	38.2	35.7	0.899
25	14-Jun	55960	11011 (19.7)	109042	18839 (17.3)	33.9	36.9	1.139
26	21-Jun	82566	18783 (22.7)	139510	31630 (22.7)	37.2	37.3	1.003
27	28-Jun	97257	25055 (25.8)	171718	44056 (25.7)	36.2	36.3	1.004
28	05-Jul	107972	30214 (28.0)	164663	49333 (30.0)	39.6	38.0	0.934
29	12-Jul	101281	29334 (29.0)	148941	48855 (32.8)	40.5	37.5	0.883
30	19-Jul	96199	28353 (29.5)	139984	43968 (31.4)	40.7	39.2	0.938
31	26-Jul	73913	21286 (28.8)	111639	32240 (28.9)	39.8	39.8	0.997
32	02-Aug	64074	15711 (24.5)	86374	21113 (24.4)	42.6	42.7	1.003
33	09-Aug	53657	10387 (19.4)	63647	13041 (20.5)	45.7	44.3	0.945
34	16-Aug	50896	8916 (17.5)	59226	10174 (17.2)	46.2	46.7	1.020
35	23-Aug	45484	7216 (15.9)	54476	7414 (13.6)	45.5	49.3	1.166
36	30-Aug	41052	5596 (13.6)	49363	5811 (11.8)	45.4	49.1	1.158
37	06-Sep	46380	5964 (12.9)	47718	4830 (10.1)	49.3	55.3	1.270
38	13-Sep	49092	6087 (12.4)	48458	4813 (9.9)	50.3	55.8	1.248
39	20-Sep	40932	5123 (12.5)	38272	4059 (10.6)	51.7	55.8	1.180
40	27-Sep	44266	5206 (11.8)	53909	4820 (8.9)	45.1	51.9	1.315
41	04-Oct	46359	5199 (11.2)	58703	5490 (9.4)	44.1	48.6	1.199
42	11-Oct	48214	5296 (11.0)	61085	5713 (9.4)	44.1	48.1	1.174
43	18-Oct	50199	5617 (11.2)	61479	5405 (8.8)	44.9	51.0	1.273
44	25-Oct	45504	5312 (11.7)	59750	5070 (8.5)	43.2	51.2	1.376
45	01-Nov	40476	4208 (10.4)	58456	5256 (9.0)	40.9	44.5	1.156
Total		1935048	300100 (15.5)	2308476	408971 (17.7)	45.6	42.3	0.875

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)

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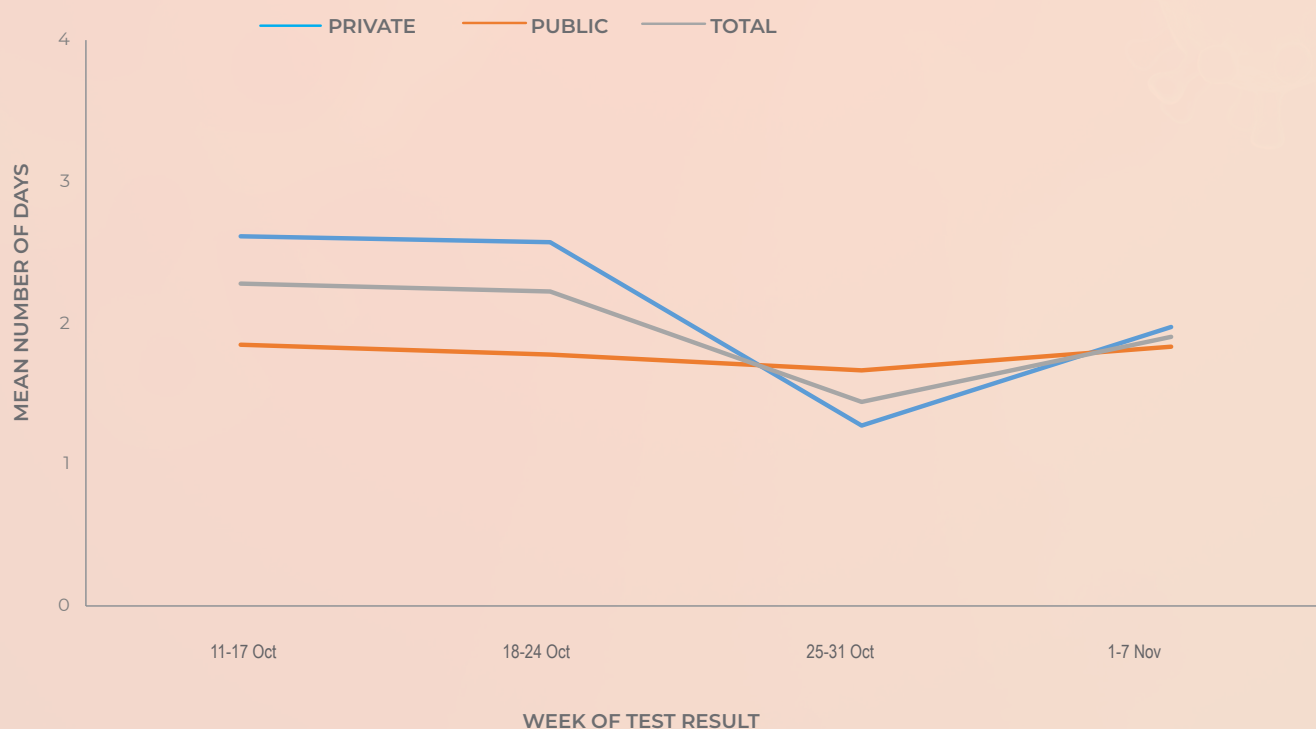


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 11 October – 7 November 2020

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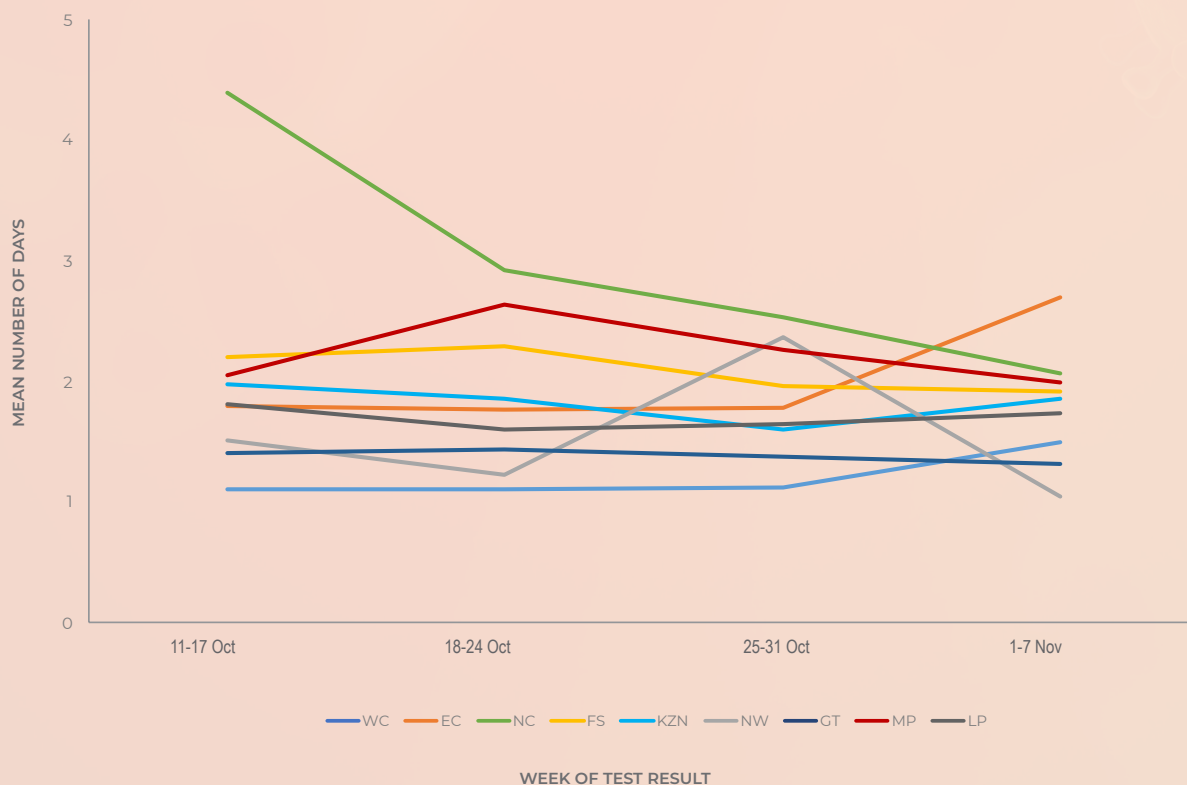


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 11 October – 7 November 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

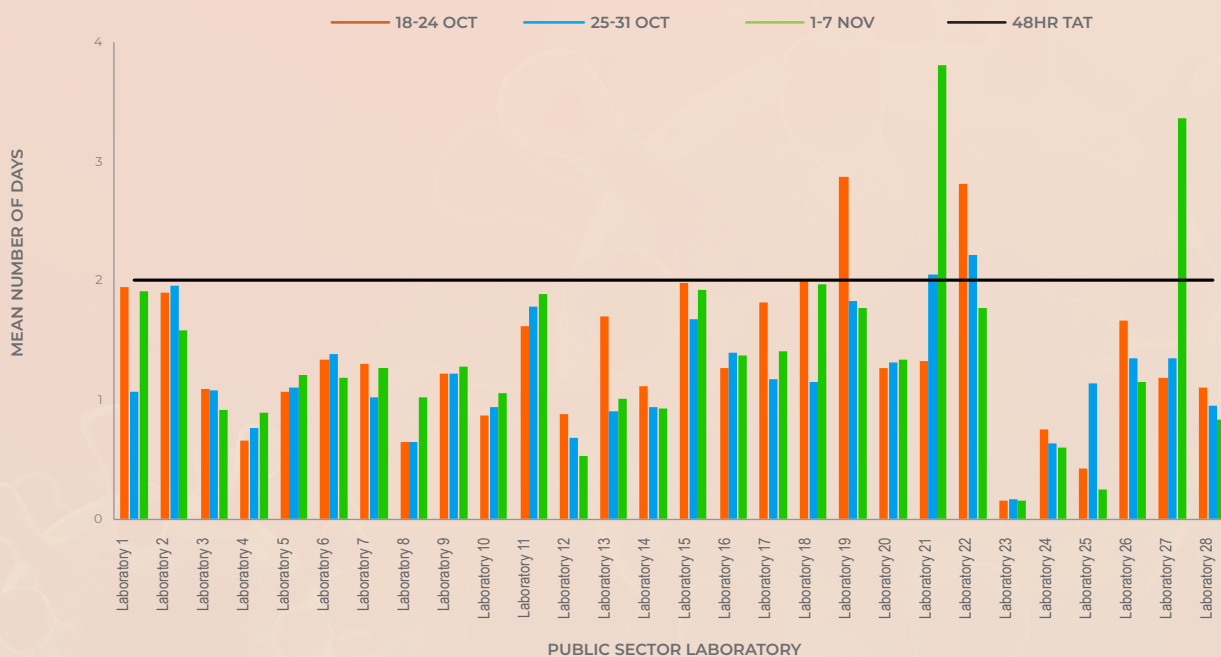


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 18 October – 7 November 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

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Testing by province

Gauteng (31.1%) performed the largest number of tests in week 45, followed by Western Cape (17.6%), KwaZulu-Natal (15.9%) and Eastern Cape provinces (13.8%) (Table 3). Western Cape (249 per 100,000 persons), Free State (239 per 100,000 persons) and Northern Cape (235 per 100,000 persons) provinces had the highest testing rates in week 45 (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 increased in the Eastern Cape and Western Cape over recent weeks, and continued to decrease in Northern Cape and Free State.

The percentage testing positive in week 45 was highest in the Eastern Cape (27.9%). Percentages

testing positive were between 10-19% in Northern Cape and Free State, and were <10% in Western Cape, KwaZulu-Natal, North West, Gauteng, Mpumalanga and Limpopo in week 45 (Figure 7). Compared to the previous week, the percentage testing positive increased by 3.2% in the Eastern Cape (24.7% to 27.9%, $P<0.001$) and by 1.1% in the Western Cape (7.9% to 9.0%), $P=0.001$ in week 45. The percentage testing positive in week 45 compared to week 44 decreased in Northern Cape ($P<0.001$), Free State ($P<0.001$), North West ($P<0.001$), Gauteng ($P<0.001$) and Limpopo ($P<0.001$), and did not change in KwaZulu-Natal ($P=0.053$) and Mpumalanga ($P=0.240$). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, Northern Cape and Free State provinces (Figure 7).

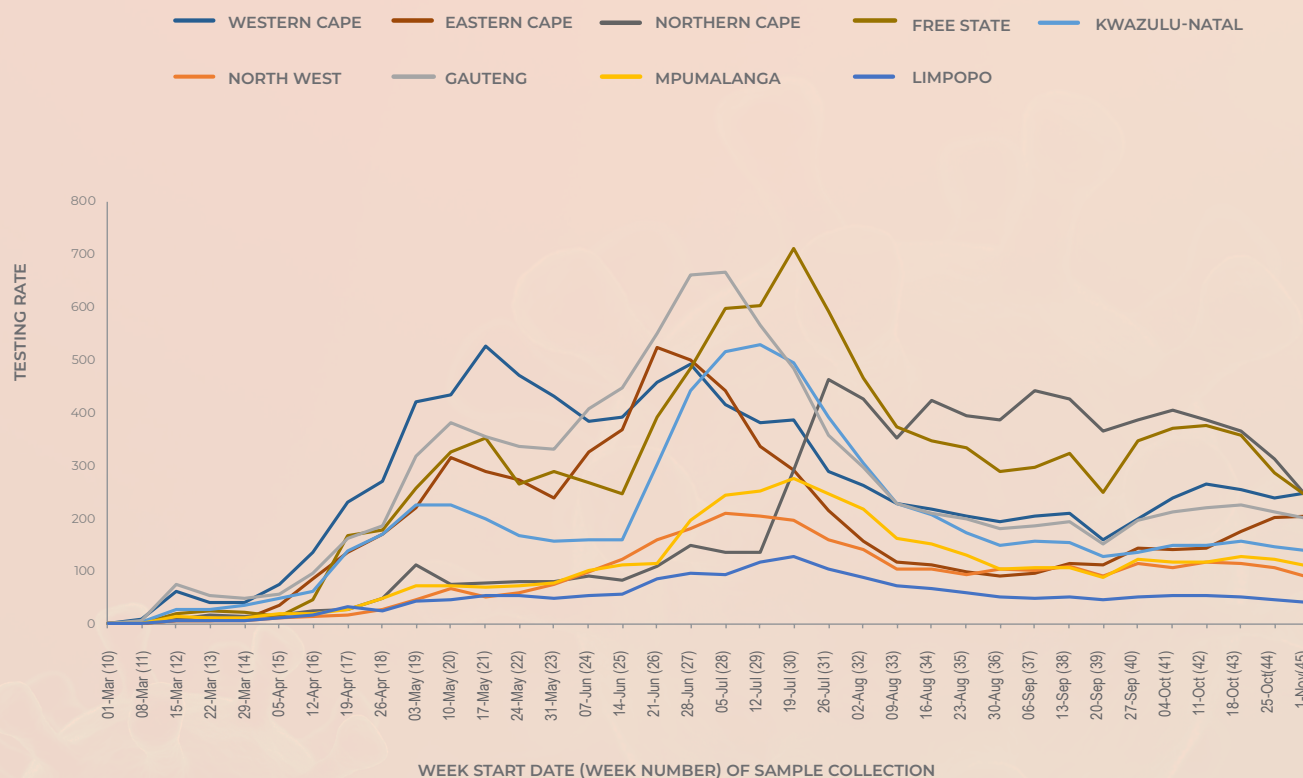


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 7 November 2020

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Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 18 October – 7 November 2020

Province	Population ^a	18-24 Oct		25-31 Oct		1-7 Nov		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	7005741	17899	1632 (9.1)	16709	1322 (7.9)	17442	1562 (9.0)	249	1.1%
Eastern Cape	6734001	11752	1924 (16.4)	13486	3325 (24.7)	13681	3815 (27.9)	203	3.2%
Northern Cape	1292786	4738	907 (19.1)	4030	600 (14.9)	3037	341 (11.2)	235	-3.7%
Free State	2928903	10438	2022 (19.4)	8372	1246 (14.9)	7010	746 (10.6)	239	-4.2%
KwaZulu-Natal	11531628	18089	898 (5.0)	16882	877 (5.2)	15777	746 (4.7)	137	-0.5%
North West	4108816	4725	782 (16.6)	4375	556 (12.7)	3588	346 (9.6)	87	-3.1%
Gauteng	15488137	34937	1902 (5.4)	32904	1611 (4.9)	30747	1256 (4.1)	199	-0.8%
Mpumalanga	4679786	5951	575 (9.7)	5711	504 (8.8)	5150	422 (8.2)	110	-0.6%
Limpopo	5852553	2931	363 (12.4)	2663	338 (12.7)	2375	227 (9.6)	41	-3.1%
Unknown		218	17 (7.8)	122	3 (2.5)	125	3 (2.4)		-0.1%
Total	59622350	111678	11022 (9.9)	105254	10382 (9.9)	98932	9464 (9.6)	166	-0.3%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

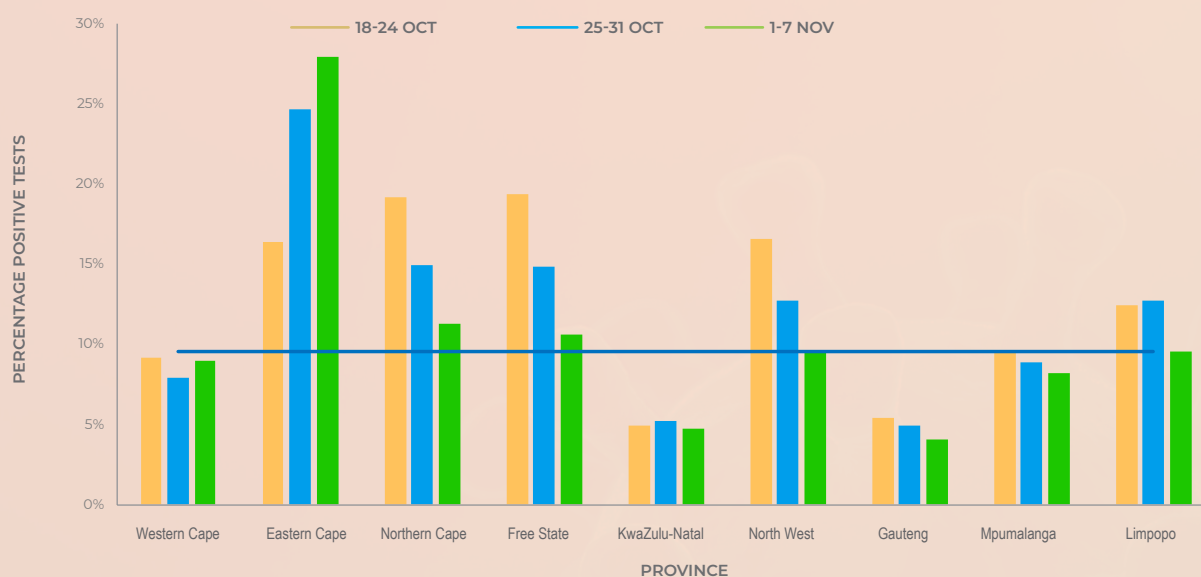


Figure 7. Weekly percentage testing positive, by province, South Africa, 18 October – 7 November 2020. The horizontal blue line shows the national mean for week 45, beginning 1 November 2020.

Testing in the public sector

In the public sector, the percentage testing positive decreased in the past week (11.7% in week 44 to 10.4% in week 45, $P < 0.001$) (Table 4). The percentage testing positive in week 45 continued to be highest

in the Eastern Cape (22.8%) and North West (15.5%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Western Cape, Eastern Cape, Free State, North West 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, 18 October – 7 November 2020

Province	18-24 Oct		25-31 Oct		1-7 Nov	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	7021	661 (9.4)	6429	552 (8.6)	6956	738 (10.6)
Eastern Cape	8001	1294 (16.2)	8624	2000 (23.2)	7589	1732 (22.8)
Northern Cape	2859	507 (17.7)	2404	309 (12.9)	1692	170 (10.0)
Free State	5745	1130 (19.7)	4343	727 (16.7)	3512	379 (10.8)
KwaZulu-Natal	9709	521 (5.4)	8754	468 (5.3)	7815	355 (4.5)
North West	1879	462 (24.6)	1369	271 (19.8)	1196	185 (15.5)
Gauteng	11912	624 (5.2)	10735	611 (5.7)	9502	402 (4.2)
Mpumalanga	1884	230 (12.2)	1912	214 (11.2)	1405	145 (10.3)
Limpopo	1183	188 (15.9)	934	160 (17.1)	809	102 (12.6)
Unknown	6	0 (0.0)	0	0 (0.0)	0	0 (0.0)
Total	50199	5617 (11.2)	45504	5312 (11.7)	40476	4208 (10.4)

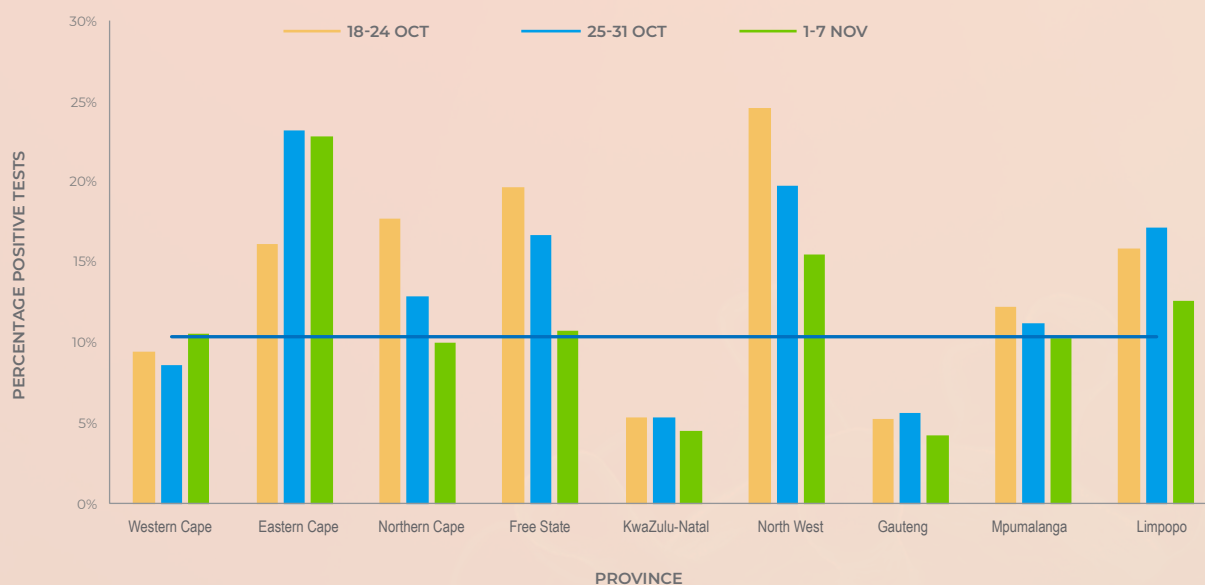


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 18 October – 7 November 2020. The horizontal blue line shows the national mean for week 45, beginning 1 November 2020.

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 1-7 November, with the highest proportion testing positive nationally. This week's list is dominated by facilities in the Eastern Cape (18) and Western Cape (3).

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Table 5. Public healthcare facilities with a high proportion testing positive, 1-7 November 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Eastern Cape	50	0.540 (0.402;0.678)
Facility 2	Eastern Cape	28	0.536 (0.351;0.720)
Facility 3	Eastern Cape	32	0.500 (0.327;0.673)
Facility 4	KwaZulu-Natal	39	0.462 (0.305;0.618)
Facility 5	Eastern Cape	279	0.448 (0.390;0.506)
Facility 6	Eastern Cape	114	0.447 (0.356;0.539)
Facility 7	Eastern Cape	27	0.444 (0.257;0.632)
Facility 8	Eastern Cape	27	0.444 (0.257;0.632)
Facility 9	Mpumalanga	41	0.439 (0.287;0.591)
Facility 10	Eastern Cape	35	0.429 (0.265;0.593)
Facility 11	Western Cape	66	0.424 (0.305;0.543)
Facility 12	Eastern Cape	26	0.423 (0.233;0.613)
Facility 13	Eastern Cape	38	0.421 (0.264;0.578)
Facility 14	Eastern Cape	48	0.417 (0.277;0.556)
Facility 15	Eastern Cape	51	0.392 (0.258;0.526)
Facility 16	Eastern Cape	239	0.389 (0.327;0.451)
Facility 17	Western Cape	96	0.385 (0.288;0.483)
Facility 18	Gauteng	52	0.385 (0.252;0.517)
Facility 19	Western Cape	60	0.383 (0.260;0.506)
Facility 20	Eastern Cape	29	0.379 (0.203;0.556)
Facility 21	Eastern Cape	45	0.378 (0.236;0.519)
Facility 22	Eastern Cape	95	0.368 (0.271;0.465)
Facility 23	Northern Cape	36	0.361 (0.204;0.518)
Facility 24	Eastern Cape	73	0.356 (0.246;0.466)
Facility 25	Eastern Cape	168	0.345 (0.273;0.417)

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 1-7 November 2020 are shown in Table 6. Districts showing the greatest proportions testing positive are concentrated in the Eastern Cape (13 districts), with 3 each in the North West and Western Cape, 2 in the Free State, and one

in each of Gauteng, Mpumalanga, Northern Cape and Limpopo. No district showed a proportion testing positive greater than 40%, four were greater than 30% and 12 showed a proportion testing positive less than 25%. A significant increase over the week was observed in four districts – Bitou in the Western Cape, Letsemeng in the Free State, George in the Western Cape and Tshwane sub-district 6 in Gauteng. The proportion testing positive in Mafikeng in North West fell by a statistically significant margin.

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Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 1-7 November 2020

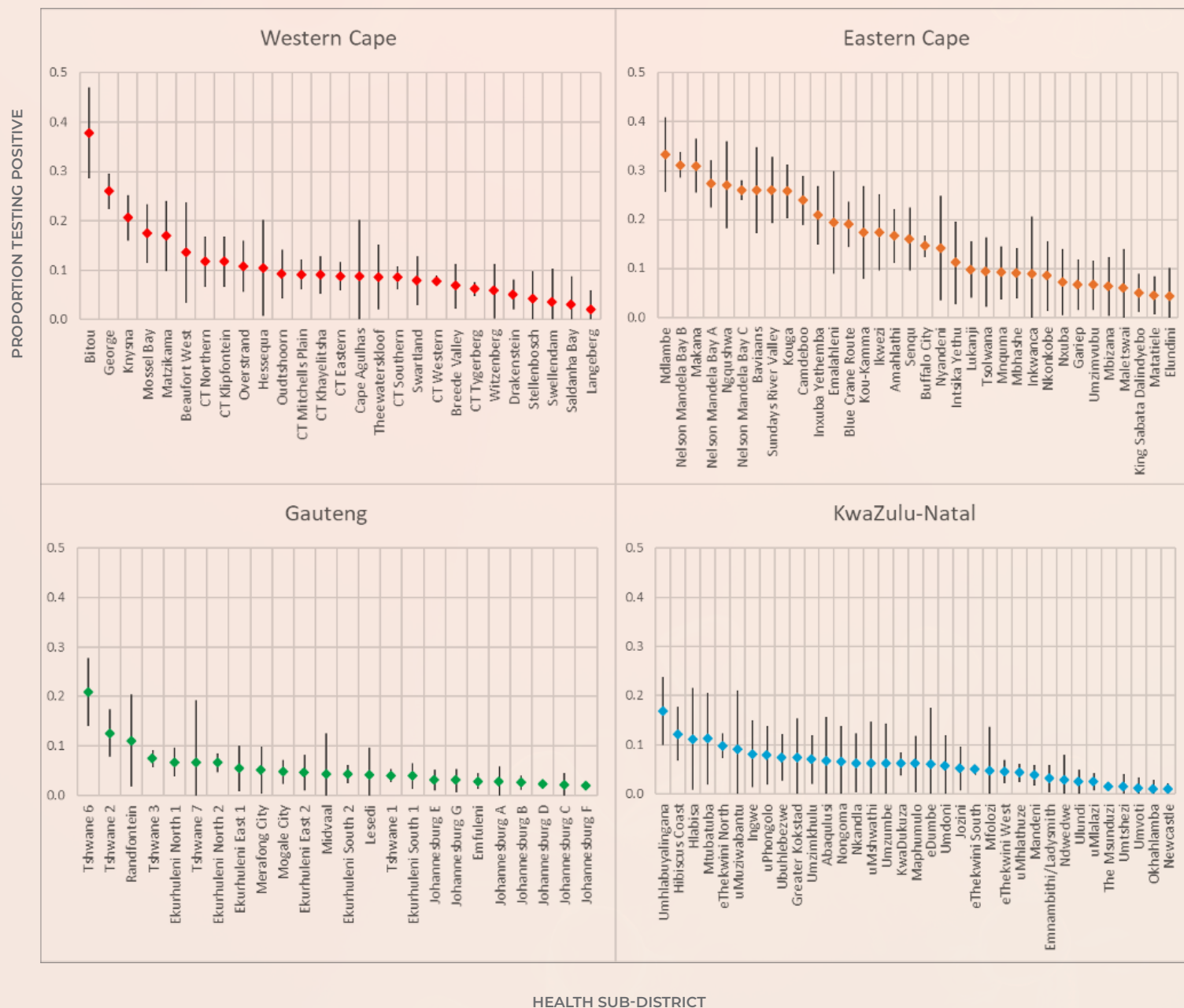
Health district or sub-district	Province	PTP (95% CI)	Previous week
Bitou	Western Cape	0.378 (0.286-0.471)	0.199 (0.118-0.279)
Ndlambe	Eastern Cape	0.333 (0.257-0.409)	0.335 (0.261-0.408)
Nelson Mandela Bay B	Eastern Cape	0.312 (0.286-0.337)	0.330 (0.302-0.358)
Makana	Eastern Cape	0.310 (0.255-0.366)	0.254 (0.185-0.323)
Letsemeng	Free State	0.291 (0.178-0.405)	0.072 (0.004-0.140)
Nelson Mandela Bay A	Eastern Cape	0.273 (0.224-0.321)	0.325 (0.286-0.364)
Ngqushwa	Eastern Cape	0.271 (0.182-0.359)	...
Nelson Mandela Bay C	Eastern Cape	0.260 (0.240-0.280)	0.254 (0.237-0.272)
Baviaans	Eastern Cape	0.260 (0.172-0.349)	0.286 (0.221-0.351)
Sundays River Valley	Eastern Cape	0.260 (0.193-0.328)	0.226 (0.159-0.293)
George	Western Cape	0.260 (0.224-0.295)	0.178 (0.144-0.211)
Kouga	Eastern Cape	0.258 (0.203-0.313)	0.192 (0.147-0.237)
Lephalale	Limpopo	0.254 (0.147-0.362)	0.314 (0.225-0.404)
Camdeboo	Eastern Cape	0.240 (0.190-0.289)	0.219 (0.163-0.275)
Tlokwe City Council	North West	0.226 (0.131-0.322)	0.189 (0.096-0.281)
Mafikeng	North West	0.222 (0.166-0.277)	0.342 (0.281-0.404)
Tshwane 6	Gauteng	0.209 (0.140-0.278)	0.081 (0.050-0.112)
Greater Taung	North West	0.209 (0.079-0.338)	0.098 (0.029-0.167)
Inxuba Yethemba	Eastern Cape	0.208 (0.148-0.268)	0.151 (0.104-0.198)
Knysna	Western Cape	0.206 (0.159-0.253)	0.162 (0.108-0.217)
Govan Mbeki	Mpumalanga	0.205 (0.091-0.319)	...
Emalahleni	Eastern Cape	0.194 (0.089-0.299)	0.163 (0.058-0.268)
Blue Crane Route	Eastern Cape	0.190 (0.143-0.236)	0.188 (0.156-0.220)
Tswelopele	Free State	0.183 (0.109-0.258)	0.304 (0.222-0.386)
Ubuntu	Northern Cape	0.183 (0.067-0.299)	0.137 (0.075-0.200)

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 1-7 November 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 1-7 November 2020.

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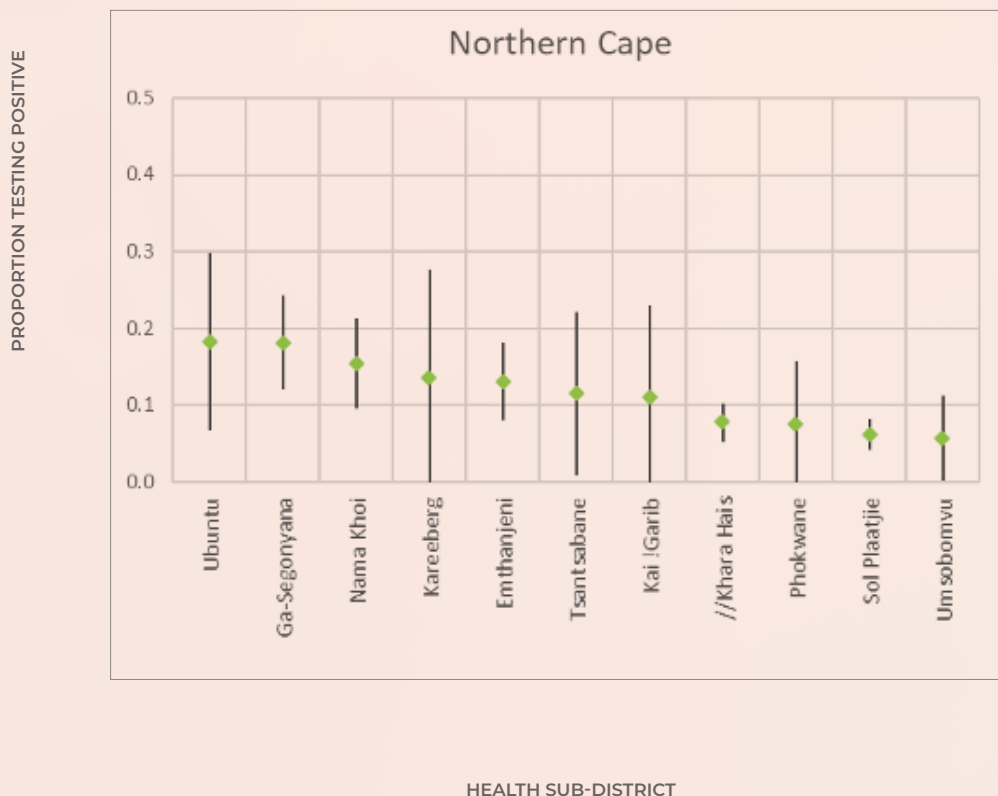


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 1-7 November 2020.

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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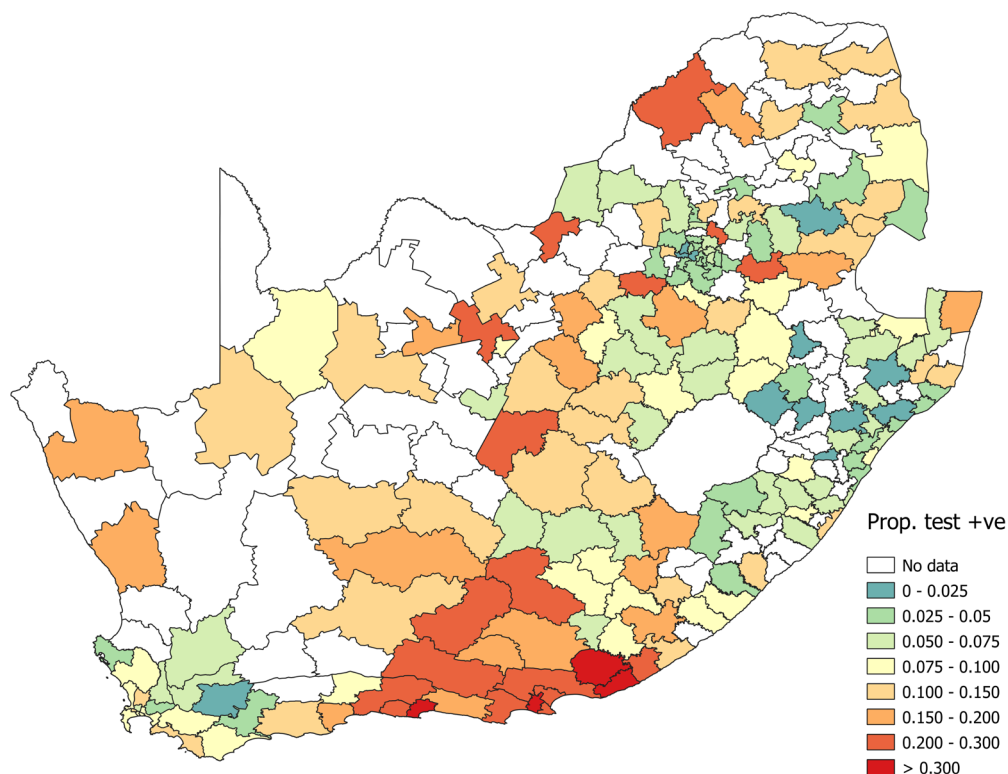


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 1-7 November 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

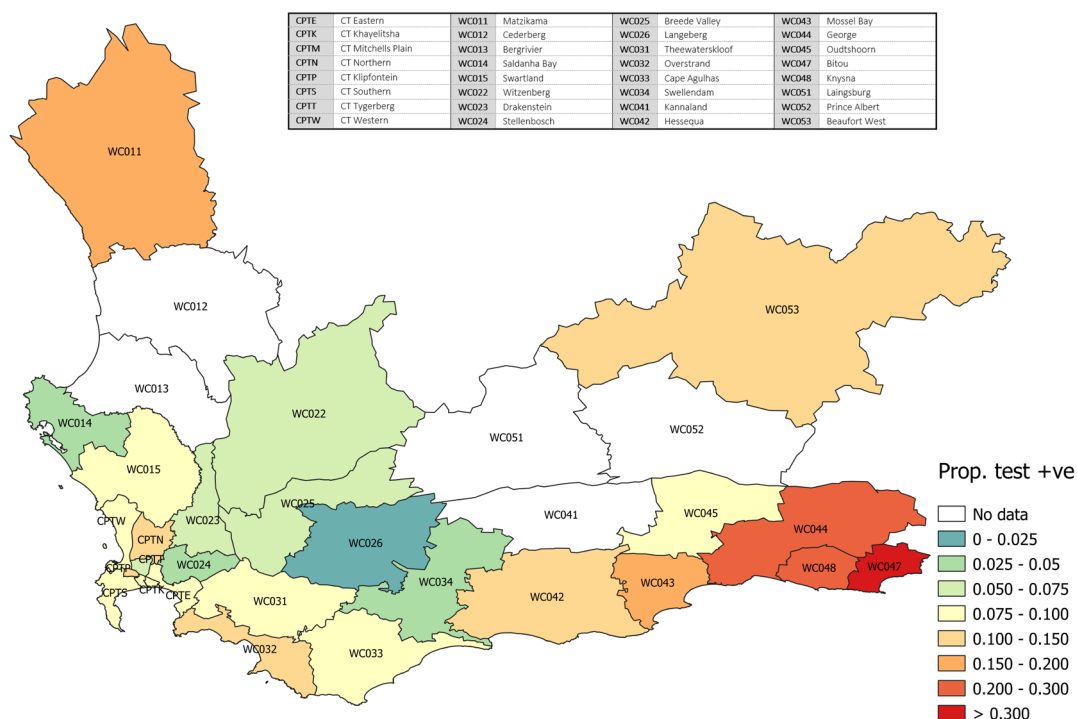


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

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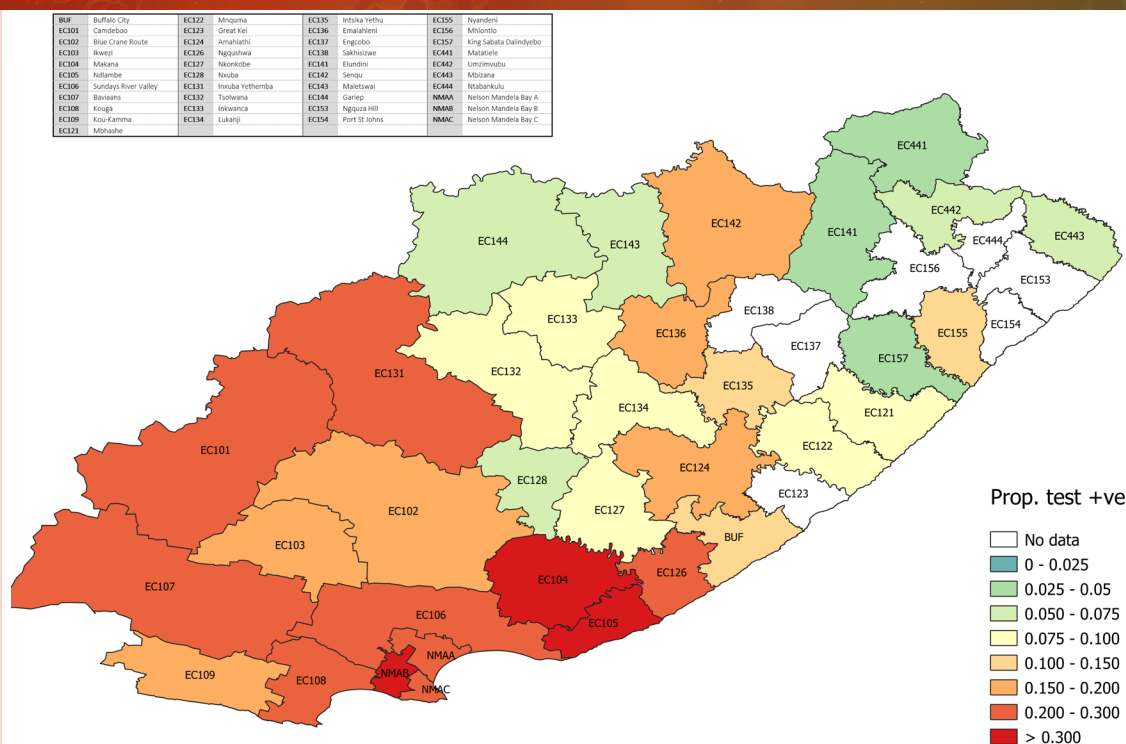


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

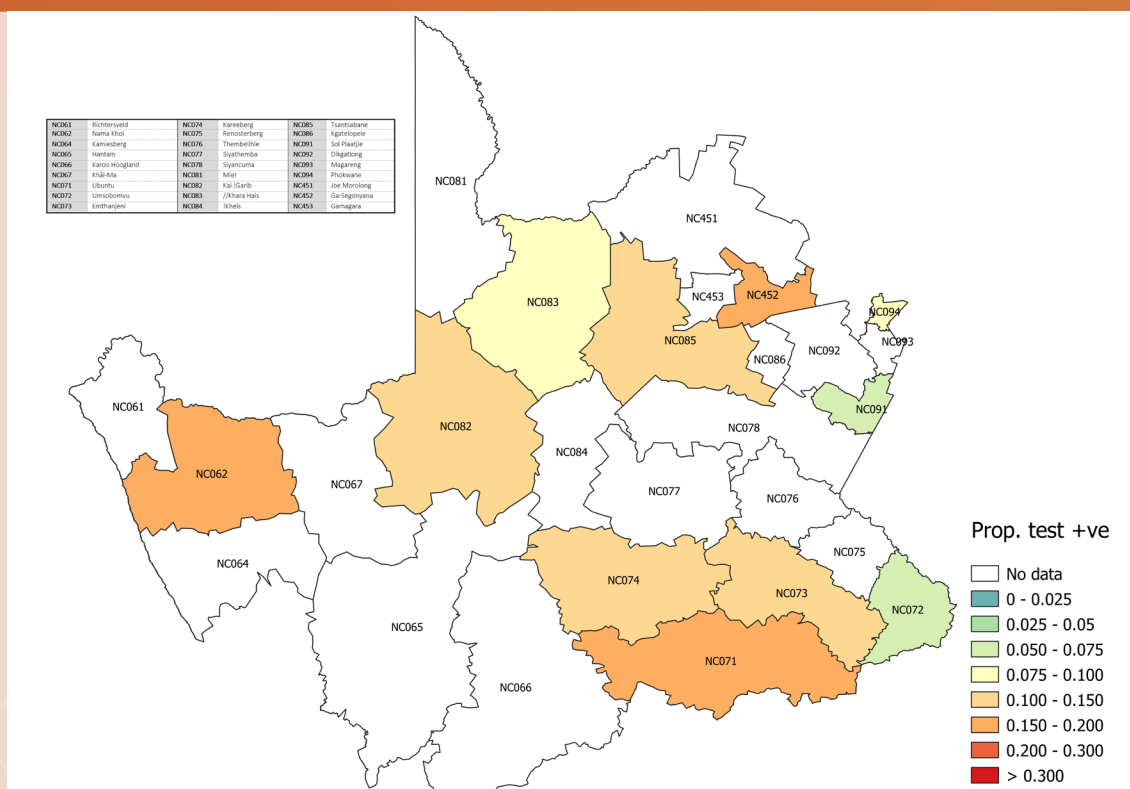


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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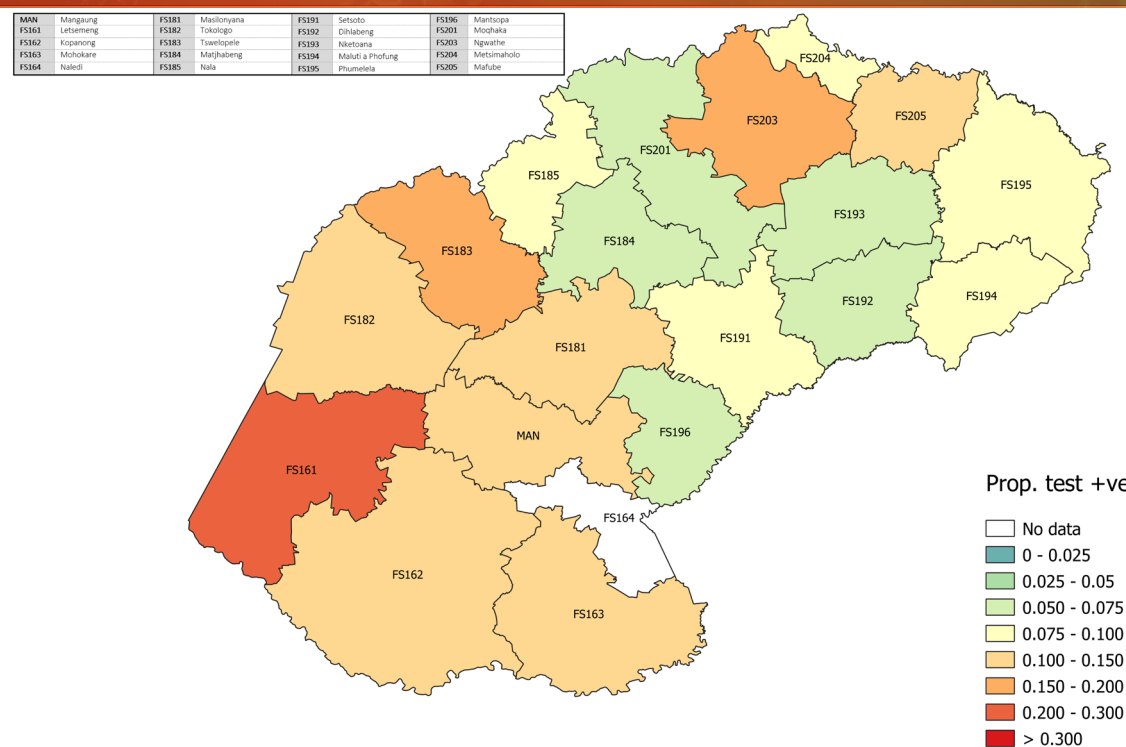


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

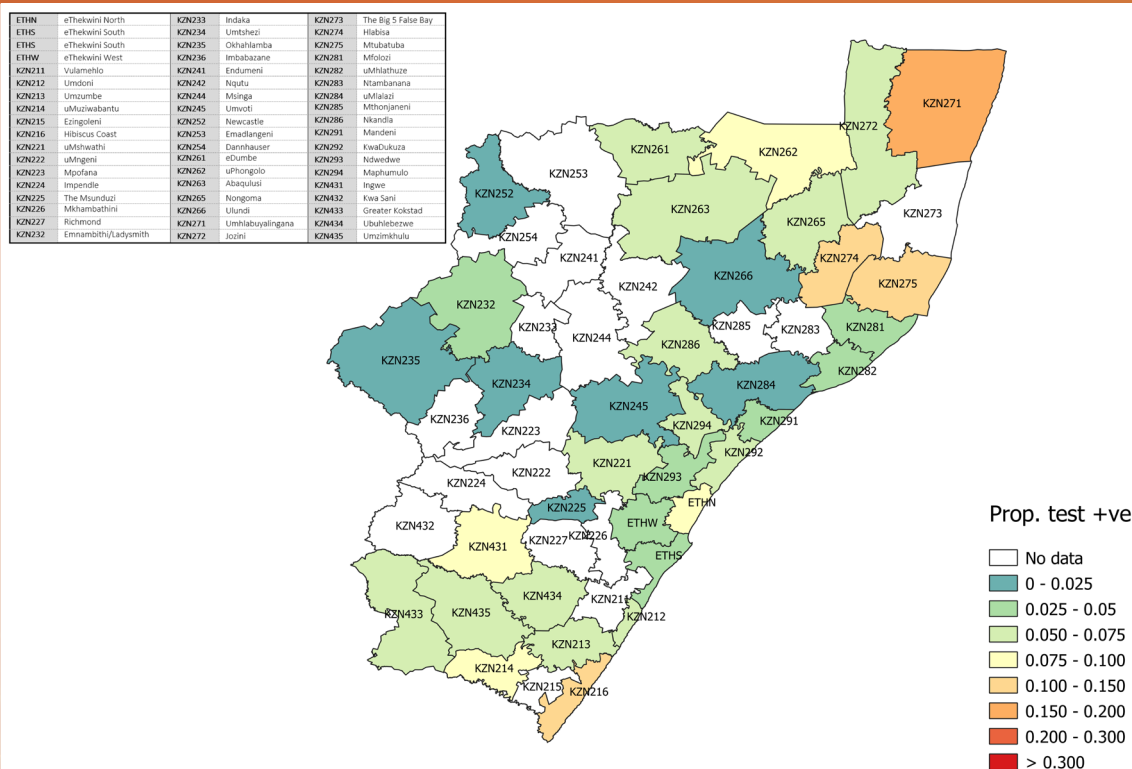


Figure 15. Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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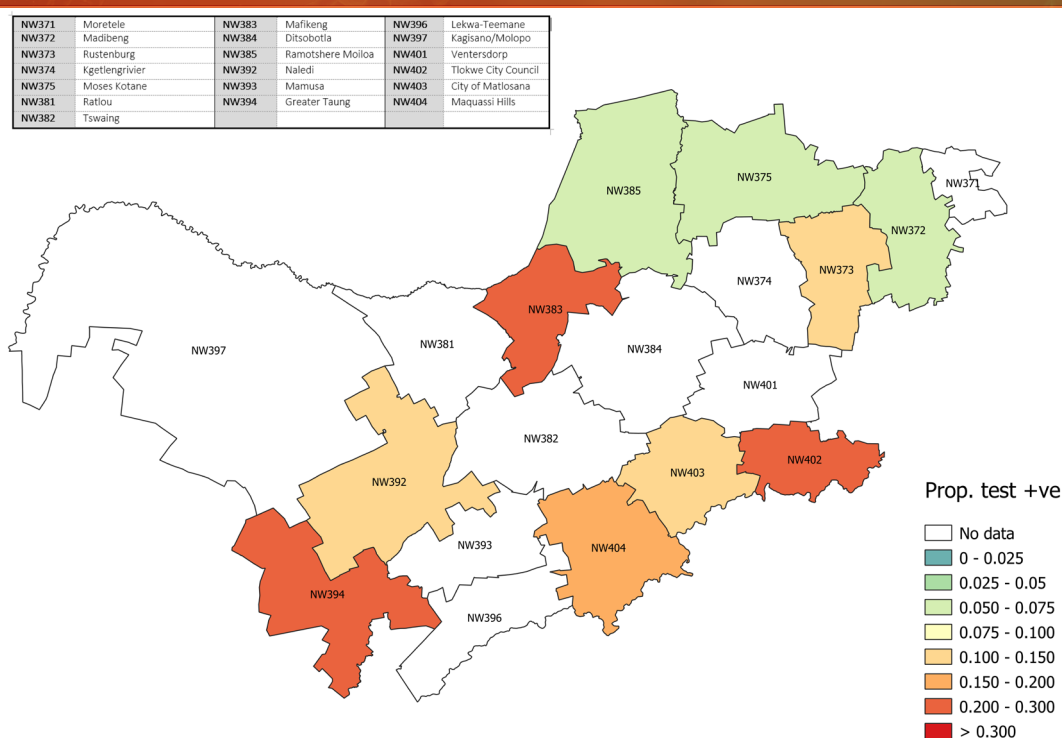


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

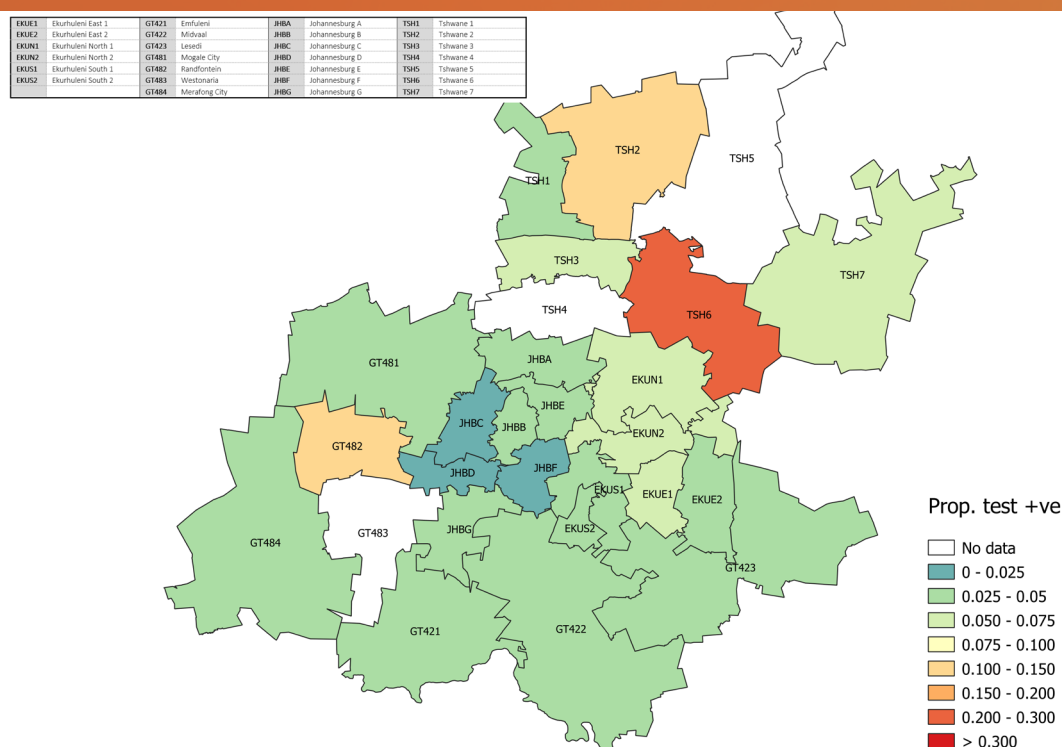


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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

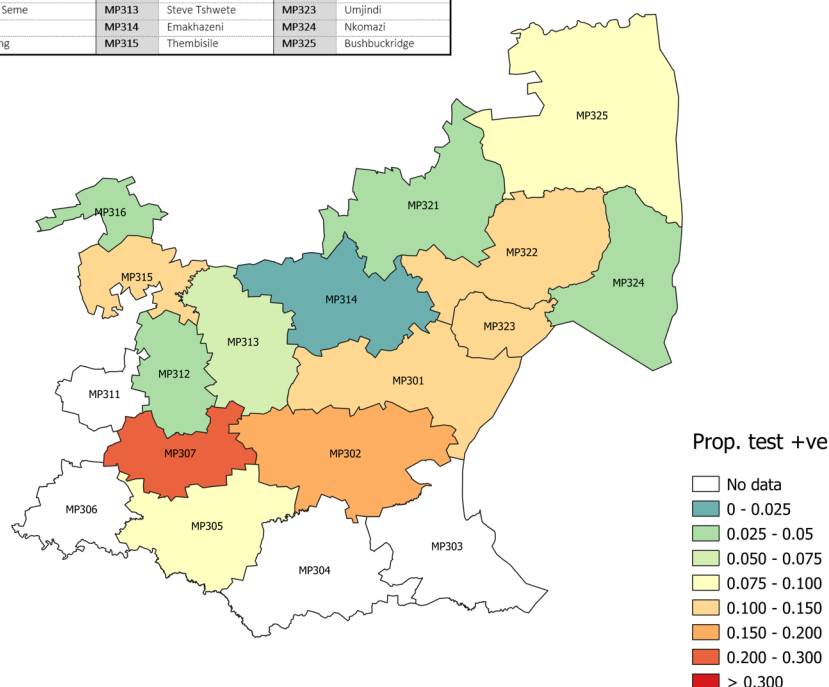


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Bloubaerg	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Aganang	LIM366	Bela-Bela
LIM333	Greater Tzaneen	LIM353	Molemole	LIM367	Mogalakwena
LIM334	Ba-Pheko/Phala	LIM354	Potlakoane	LIM471	Ephraim Mogile
LIM335	Maruleng	LIM355	Lepelle-Nkumpi	LIM472	Elias Mootsoaledi
LIM341	Musina	LIM361	Thabazimbi	LIM473	Makhuduthamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Mookgopong	LIM475	Greater Tlopatse
LIM344	Makhado				

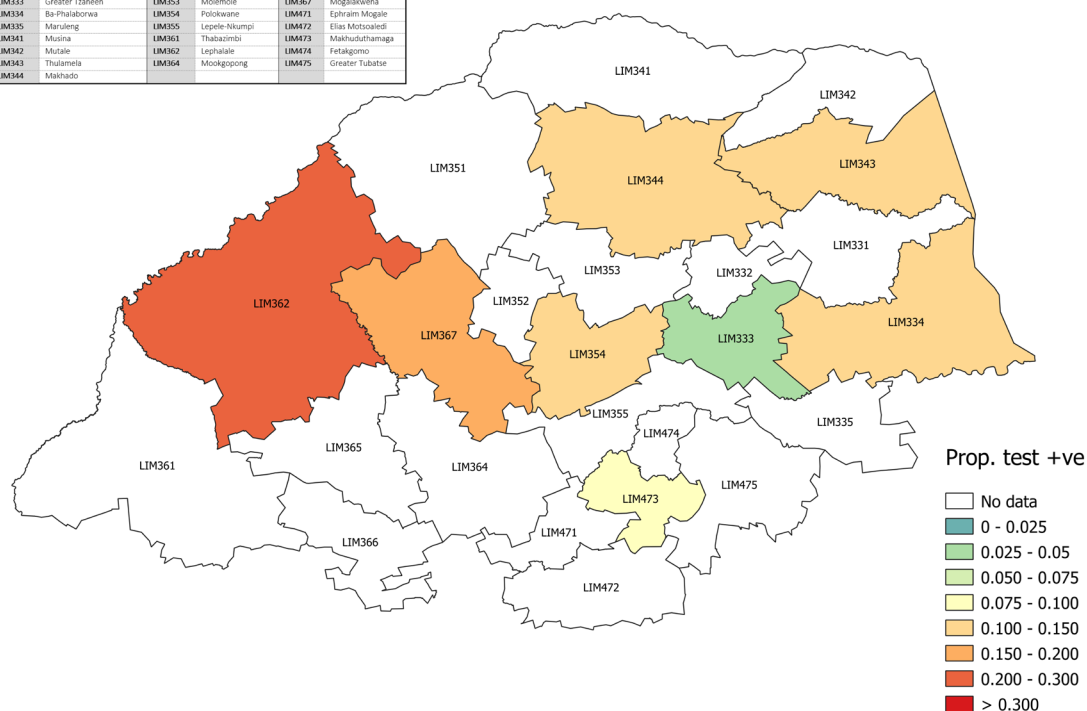


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 1-7 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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Testing by patient admission status

In week 45, 32.9% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Gauteng (42.1%), KwaZulu-Natal (41.8%) and Northern Cape (39.1%). Comparing week 45 to the previous week, the proportion of inpatient tests increased in the Eastern

Cape, Northern Cape, Free State, KwaZulu-Natal, Gauteng and Mpumalanga. The percentage testing positive in week 45 remained lower among inpatients (7.2%) compared to outpatients (12.4%) (Figure 21). In the public sector in week 45 the mean laboratory turnaround time continued to be lower for inpatients (1.6 days) compared to outpatients (2.0 days) (Figure 22).

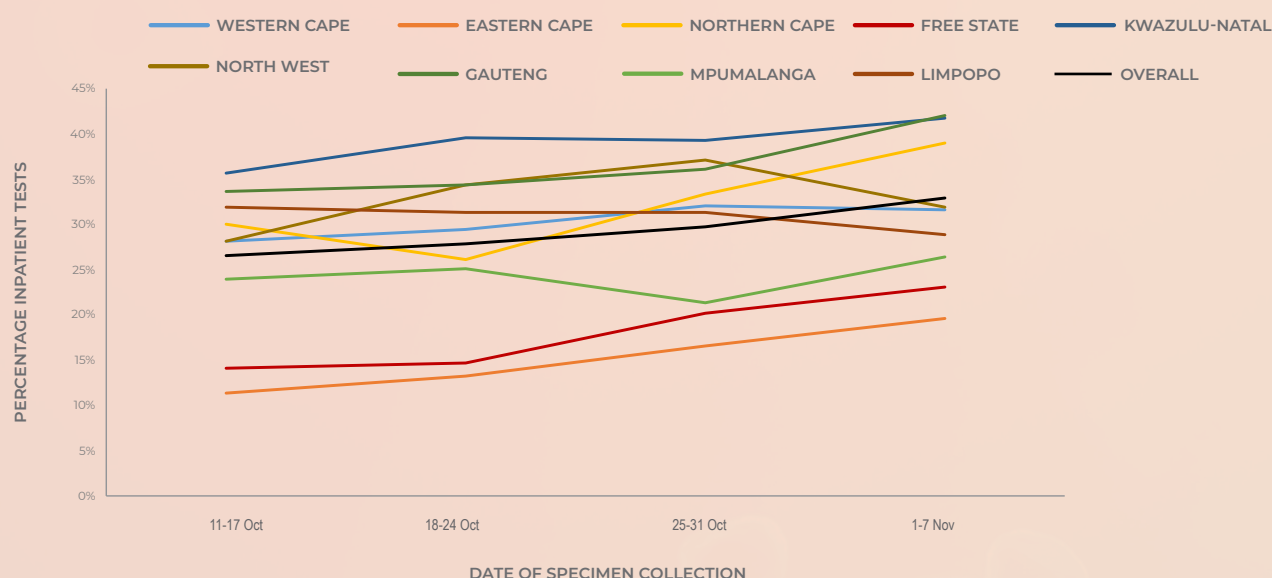


Figure 20. Percentage of inpatient tests performed in the public sector by province, 11 October – 7 November 2020

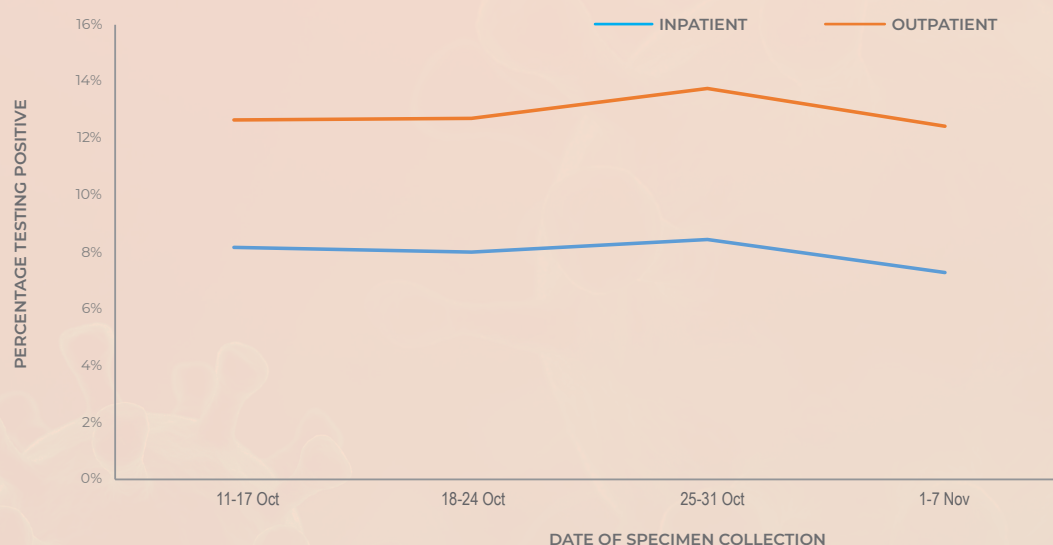


Figure 21. Percentage testing positive by patient admission status in the public sector, 11 October – 7 November 2020

COVID-19 TESTING SUMMARY

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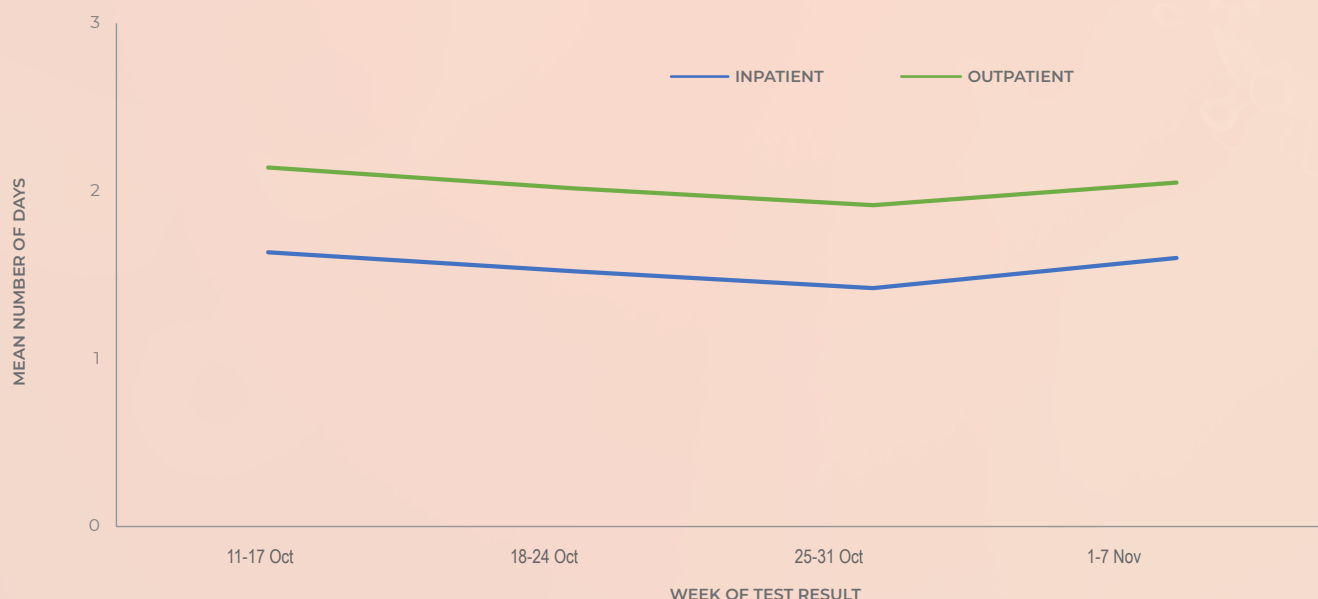


Figure 22. Meannumber of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 11 October – 7 November 2020

Testing by age and sex

The mean age of individuals tested in week 45 was 39.3 years, similar to the previous week. The mean age of individuals with a positive test in week 45 was 40.9 years. The mean age of individuals with a positive test in week 45 did not differ between males (40.9 years)

and females (41.0 years, $P=0.967$) (Table 7). The sex ratio (the number of males per 100 females) of individuals with a positive test in week 45 was 78.4. For both sexes, the proportion testing positive in week 45 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, 11 October – 7 November 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
42	11 October	38.1	38.3	38.5	38.8	89.2	76.9
43	18 October	38.1	38.5	40.0	39.9	88.0	72.8
44	25 October	38.9	39.4	40.7	40.9	90.0	76.5
45	1 November	39.2	39.6	40.9	41.0	90.9	78.4

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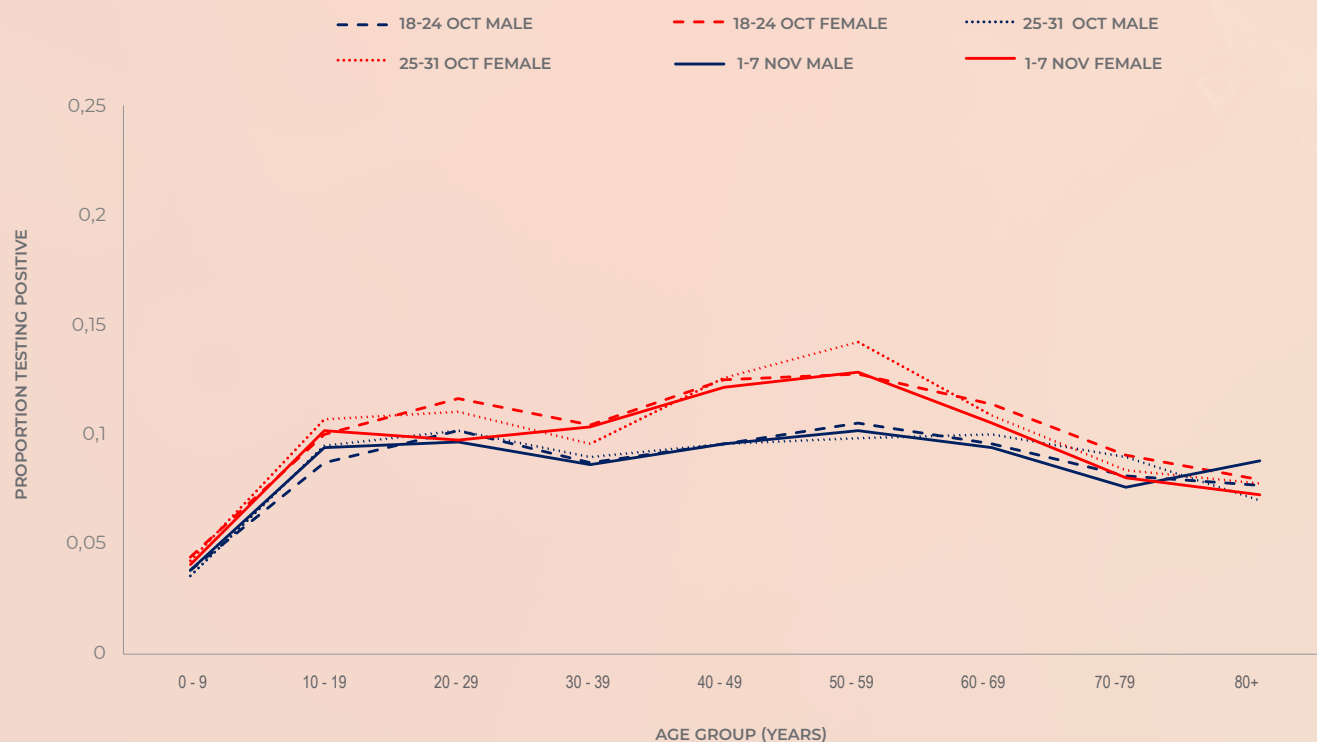


Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 18 October – 7 November 2020

From week 42 to week 45, the percentage testing positive decreased slightly by 0.4% in males (from 9.3% to 8.9%) and decreased by 0.5% in females (from 10.8% to 10.3%) (Table 8). In week 45 the percentage

testing positive was higher in females compared to males in the 0-19 years ($P=0.008$), 20-39 years ($P=0.001$) and 40-59 years ($P<0.001$) age groups, and did not differ in the older age groups.

Table 8. Percentage testing positive by sex and week, South Africa, 11 October – 7 November 2020

Age (years)	11-17 Oct		18-24 Oct		25-31 Oct		1-7 Nov	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	7.5%	8.6%	6.4%	7.8%	6.4%	7.8%	6.4%	7.5%
20-39	10.4%	11.5%	9.3%	11.0%	9.5%	10.2%	9.1%	10.1%
40-59	9.7%	11.8%	9.9%	12.6%	9.7%	13.3%	9.9%	12.5%
60-69	8.4%	10.3%	9.5%	11.4%	10.0%	10.9%	9.4%	10.5%
70+	7.8%	8.9%	8.0%	8.7%	8.5%	8.2%	7.9%	7.8%
Total	9.3%	10.8%	8.9%	10.8%	9.1%	10.7%	8.9%	10.3%

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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 peaked in week 28, and subsequently decreased. The number of tests performed in week 45 were similar to the previous few weeks. Gauteng (31.1%), Western Cape (17.6%), KwaZulu-Natal (15.9%) and Eastern Cape (13.8%) provinces performed the majority of tests in the past week. Western Cape (249 per 100,000 persons), Free State (239 per 100,000 persons) and Northern Cape (235 per 100,000 persons) provinces had the highest testing rates in week 45, with recent increases in testing rates observed in Eastern Cape and Western Cape. The overall laboratory turnaround times in week 45 were 1.9 days; 1.8 days in the public sector and 2.0 days in the private sector.

The percentage testing positive has been decreasing weekly since the peak of 31.2% in week 29. In week 45 the percentage testing positive was 9.6%, similar to the previous week. As for the previous week, the percentage testing positive was highest in the Eastern Cape (27.9%). Percentages testing positive were between 10-19% in Northern Cape and Free State and were <10% in Western Cape, North West, Gauteng, KwaZulu-Natal, Mpumalanga and Limpopo. In week 45, compared to the previous week, the percentage testing positive increased in the Eastern Cape and Western Cape, decreased in Northern Cape, Free State, North West, Gauteng and Limpopo, and did not change in KwaZulu-Natal and Mpumalanga. Of the 25 districts with the highest proportions testing positive in week 45, thirteen were in the Eastern Cape.