

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 47 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 21 November 2020 (Week 47 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 21 November 2020, 4,475,522 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 47 were similar to the previous few weeks
- Eastern Cape (312 per 100,000 persons) and Western Cape (306 per 100,000 persons) provinces had the highest testing rates in week 47
- Percentage testing positive decreased from a peak of 31.2% in week 29 to 9.8% in week 43. In week 47 the percentage testing positive was 12.9%, higher than has been observed in the previous 11 weeks.
- Percentage testing positive remained highest in the Eastern Cape (34.9%) and Western Cape (16.3%). Percentages testing positive were <10% in Northern Cape, Free State, North West, Gauteng, KwaZulu-Natal, Mpumalanga and Limpopo.
- In week 47, compared to the previous week, the percentage testing positive increased in the Eastern Cape, Western Cape, KwaZulu-Natal and Gauteng, decreased in the Free State, North West, Mpumalanga and Limpopo, and did not change in the Northern Cape.
- Mean laboratory turnaround time in week 47 was 1.5 days; 2.0 days in the public sector and 1.0 day 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 21 November 2020 (week 47).

Testing volumes and proportion testing positive

From 1 March through 21 November 2020, 4,475,522 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=272,525), but have subsequently decreased. In week 47, 111,983 tests were performed, similar to 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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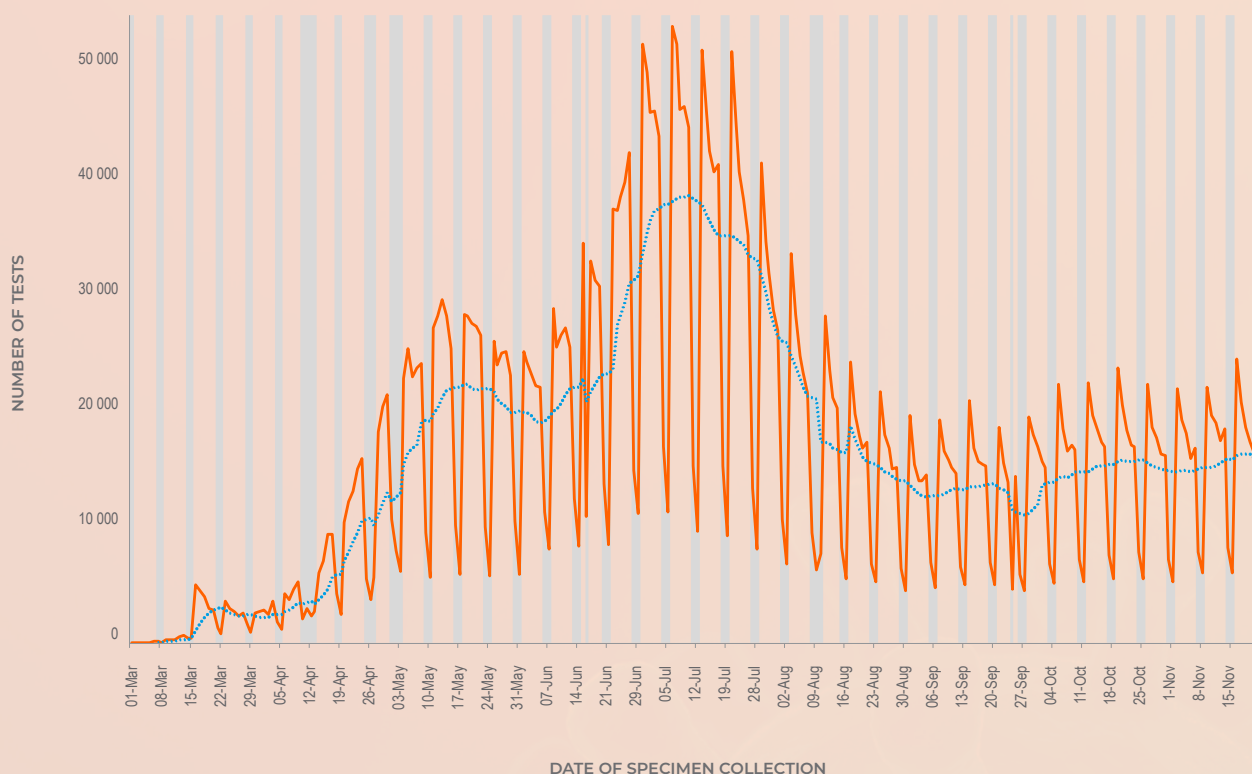


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 21 November 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 47 was 16.5% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.2% in week 29, and subsequently decreased to 9.8% in week 43. The percentage testing positive in week 47 was 12.9%, 1.1% higher than observed in week 46 ($P < 0.001$) (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 21 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	21316 (0.5)	825	3.9
13	22-Mar	17039 (0.4)	470	2.8
14	29-Mar	17379 (0.4)	399	2.3
15	05-Apr	24587 (0.5)	568	2.3
16	12-Apr	41853 (0.9)	1047	2.5
17	19-Apr	75865 (1.7)	1923	2.5
18	26-Apr	89469 (2.0)	2883	3.2
19	03-May	136851 (3.1)	5527	4.0
20	10-May	156973 (3.5)	7408	4.7
21	17-May	156350 (3.5)	10473	6.7
22	24-May	141885 (3.2)	11665	8.2
23	31-May	136110 (3.0)	13445	9.9
24	07-Jun	156744 (3.5)	20433	13.0
25	14-Jun	164957 (3.7)	29810	18.1
26	21-Jun	222158 (5.0)	50345	22.7
27	28-Jun	268835 (6.0)	69015	25.7
28	05-Jul	272525 (6.1)	79452	29.2
29	12-Jul	250132 (5.6)	78084	31.2
30	19-Jul	236081 (5.3)	72240	30.6
31	26-Jul	185468 (4.1)	53460	28.8
32	02-Aug	150328 (3.4)	36788	24.5
33	09-Aug	117272 (2.6)	23405	20.0
34	16-Aug	110088 (2.5)	19064	17.3
35	23-Aug	99929 (2.2)	14611	14.6
36	30-Aug	90395 (2.0)	11396	12.6
37	06-Sep	94075 (2.1)	10784	11.5
38	13-Sep	97526 (2.2)	10890	11.2
39	20-Sep	79182 (1.8)	9171	11.6
40	27-Sep	98150 (2.2)	10013	10.2
41	04-Oct	105048 (2.3)	10676	10.2
42	11-Oct	109343 (2.4)	11002	10.1
43	18-Oct	111920 (2.5)	11021	9.8
44	25-Oct	105574 (2.4)	10383	9.8
45	01-Nov	106640 (2.4)	10923	10.2
46	08-Nov	112754 (2.5)	13329	11.8
47	15-Nov	111983 (2.5)	14452	12.9
Total		4475522 (100.0)	737477	16.5

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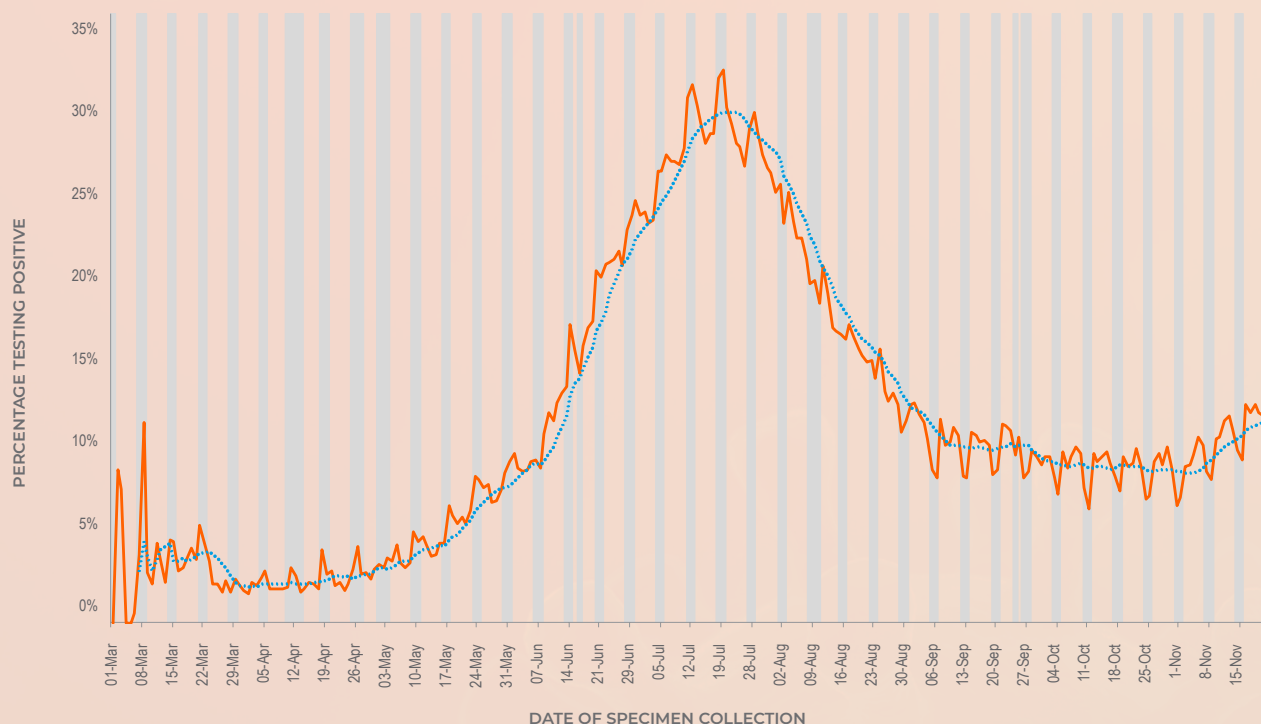


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 21 November 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 21 November, 2,041,039 laboratory tests were conducted in public sector laboratories, with 15.5% testing positive. Over this same period, private sector laboratories conducted 2,434,483 tests, with 17.3% testing positive (Table 2). Overall the public sector has conducted 45.6% of tests and accounted for 42.8% of positive tests. The peak percentage testing positive was observed in week 30 in the public sector (29.5%), and in week 29 in the private sector (32.8%). From week 46 to week 47, the percentage testing positive increased slightly from 14.3% to 15.1% ($P=0.001$) in the public sector and increased from 9.7% to 11.2% ($P<0.001$) in the private sector. In week 47 the percentage testing positive

continued to be higher in the public sector (15.1%) compared to the private sector (11.2%) ($P<0.001$), as has been observed since week 34.

The mean turnaround time for tests conducted in week 47 was 1.5 days. Turnaround time increased slightly in the public sector (2.0 days) and remained consistent in the private sector (1.0 days) (Figure 3). Turnaround times for public sector tests were >2 days in Eastern Cape (3.1 days) and Mpumalanga (2.1 days) (Figure 4). Turnaround times in the past week increased in Eastern Cape, Free State and Western Cape. Twenty-four of the 28 (85.7%) 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 – 21 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	351	12 (3.4)	1978	76 (3.8)	15.1	13.6	0.890
12	15-Mar	1344	51 (3.8)	19972	774 (3.9)	6.3	6.2	0.979
13	22-Mar	3358	124 (3.7)	13681	346 (2.5)	19.7	26.4	1.460
14	29-Mar	5609	158 (2.8)	11770	241 (2.0)	32.3	39.6	1.376
15	05-Apr	11318	318 (2.8)	13269	250 (1.9)	46.0	56.0	1.491
16	12-Apr	23752	606 (2.6)	18101	441 (2.4)	56.8	57.9	1.047
17	19-Apr	54124	1467 (2.7)	21741	456 (2.1)	71.3	76.3	1.292
18	26-Apr	66170	2273 (3.4)	23299	610 (2.6)	74.0	78.8	1.312
19	03-May	92268	4221 (4.6)	44583	1306 (2.9)	67.4	76.4	1.562
20	10-May	104893	5068 (4.8)	52080	2340 (4.5)	66.8	68.4	1.075
21	17-May	95383	6572 (6.9)	60967	3901 (6.4)	61.0	62.8	1.077
22	24-May	74207	5915 (8.0)	67678	5750 (8.5)	52.3	50.7	0.938
23	31-May	60198	6060 (10.1)	75912	7385 (9.7)	44.2	45.1	1.035
24	07-Jun	59917	7298 (12.2)	96827	13135 (13.6)	38.2	35.7	0.898
25	14-Jun	55923	10989 (19.7)	109034	18821 (17.3)	33.9	36.9	1.138
26	21-Jun	82514	18748 (22.7)	139644	31597 (22.6)	37.1	37.2	1.004
27	28-Jun	97181	25000 (25.7)	171654	44015 (25.6)	36.1	36.2	1.003
28	05-Jul	107911	30166 (28.0)	164614	49286 (29.9)	39.6	38.0	0.934
29	12-Jul	101222	29286 (28.9)	148910	48798 (32.8)	40.5	37.5	0.883
30	19-Jul	96135	28316 (29.5)	139946	43924 (31.4)	40.7	39.2	0.938
31	26-Jul	73867	21262 (28.8)	111601	32198 (28.9)	39.8	39.8	0.998
32	02-Aug	64053	15701 (24.5)	86275	21087 (24.4)	42.6	42.7	1.003
33	09-Aug	53646	10377 (19.3)	63626	13028 (20.5)	45.7	44.3	0.945
34	16-Aug	50875	8902 (17.5)	59213	10162 (17.2)	46.2	46.7	1.020
35	23-Aug	45464	7204 (15.8)	54465	7407 (13.6)	45.5	49.3	1.165
36	30-Aug	41042	5591 (13.6)	49353	5805 (11.8)	45.4	49.1	1.158
37	06-Sep	46366	5964 (12.9)	47709	4820 (10.1)	49.3	55.3	1.273
38	13-Sep	49080	6084 (12.4)	48446	4806 (9.9)	50.3	55.9	1.250
39	20-Sep	40914	5116 (12.5)	38268	4055 (10.6)	51.7	55.8	1.180
40	27-Sep	44251	5200 (11.8)	53899	4813 (8.9)	45.1	51.9	1.316
41	04-Oct	46358	5194 (11.2)	58690	5482 (9.3)	44.1	48.7	1.200
42	11-Oct	48198	5293 (11.0)	61145	5709 (9.3)	44.1	48.1	1.176
43	18-Oct	50168	5608 (11.2)	61752	5413 (8.8)	44.8	50.9	1.275
44	25-Oct	45503	5307 (11.7)	60071	5076 (8.5)	43.1	51.1	1.380
45	01-Nov	46568	5536 (11.9)	60072	5387 (9.0)	43.7	50.7	1.326
46	08-Nov	51814	7435 (14.3)	60940	5894 (9.7)	46.0	55.8	1.484
47	15-Nov	48843	7362 (15.1)	63140	7090 (11.2)	43.6	50.9	1.342
Total		2041039	315789 (15.5)	2434483	421688 (17.3)	45.6	42.8	0.893

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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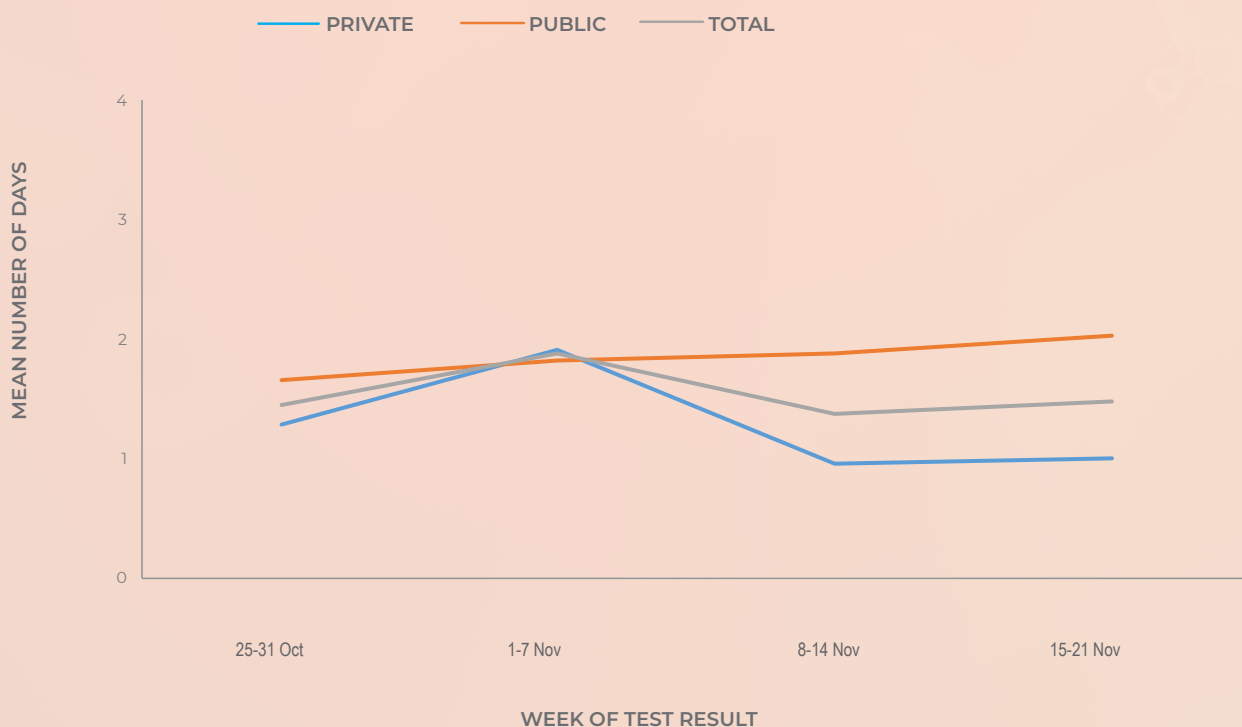


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 25 October – 21 November 2020

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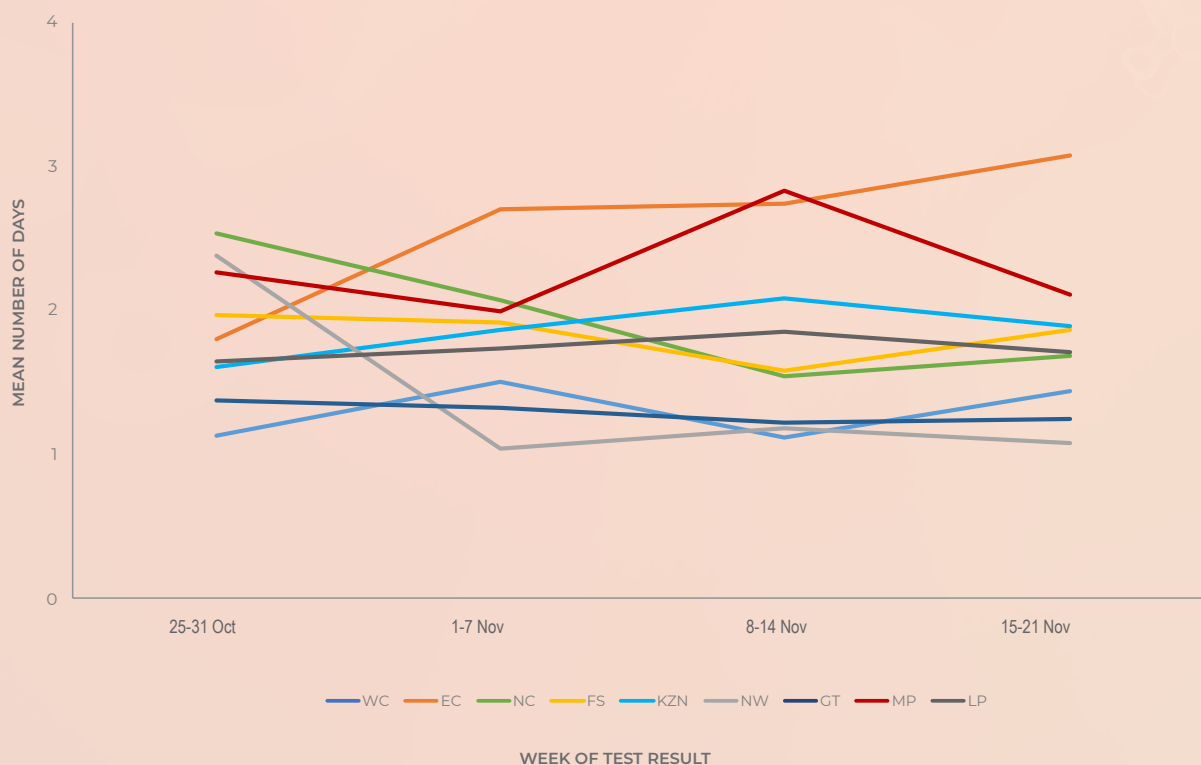


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 25 October – 21 November 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

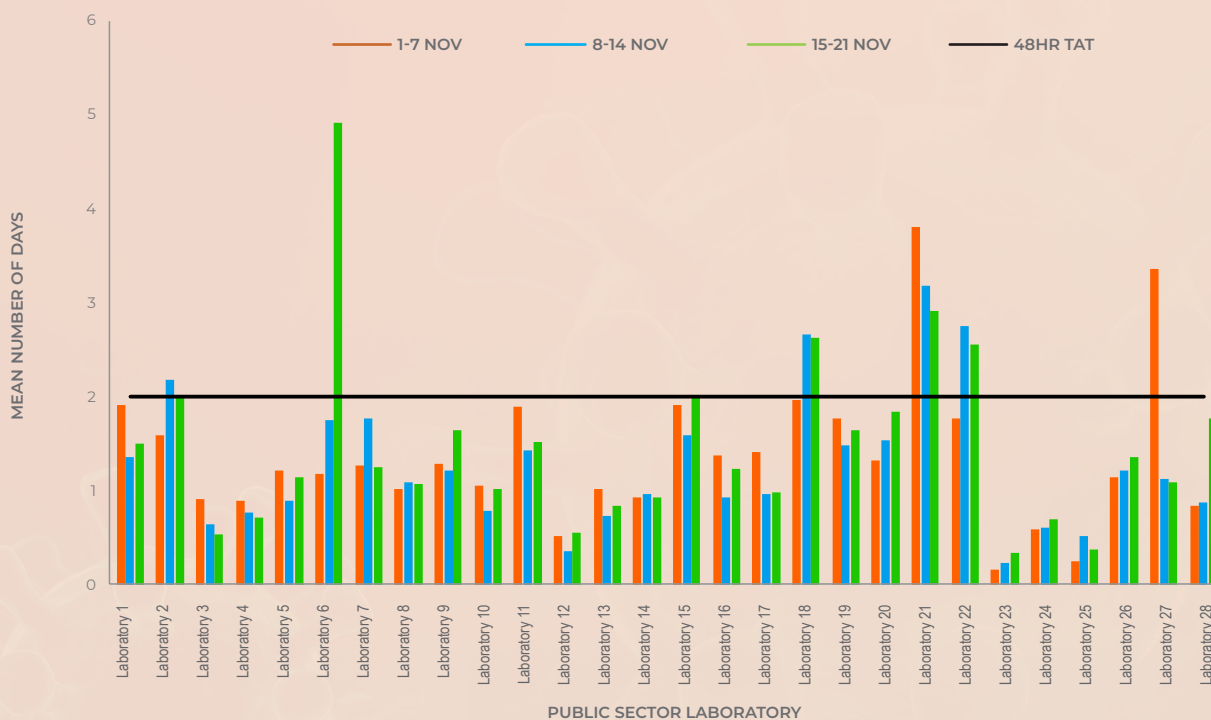


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 1-21 November 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

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Testing by province

Gauteng (28.7%) performed the largest number of tests in week 47, followed by Western Cape (19.1%), Eastern Cape (18.8%) and KwaZulu-Natal (15.9%) provinces (Table 3). Eastern Cape (312 per 100,000 persons) and Western Cape (306 per 100,000 persons) provinces had the highest testing rates in week 47 (Figure 6). Testing rates have 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 47 continued to increase and was highest in the Eastern Cape (34.9%) and Western Cape (16.3%). Percentages testing positive were <10% in Northern Cape, Free State, KwaZulu-Natal, North West, Gauteng, Mpumalanga

and Limpopo in week 47 (Figure 7). Compared to the previous week, the percentage testing positive increased by 4.1% in the Western Cape (12.2% to 16.3%, $P<0.001$), 3.2% (31.7% to 34.9%, $P<0.001$) in the Eastern Cape, 1.0% (5.0% to 6.0%, $P<0.001$) in KwaZulu-Natal and 0.3% (3.9% to 4.2%, $P=0.041$) in Gauteng in week 47. The percentage testing positive in week 47 compared to week 46 decreased in the Free State ($P=0.001$), North West ($P<0.001$), Mpumalanga ($P=0.032$) and Limpopo ($P=0.004$), and did not change in the Northern Cape ($P=0.100$). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, and Western Cape provinces (Figure 7).

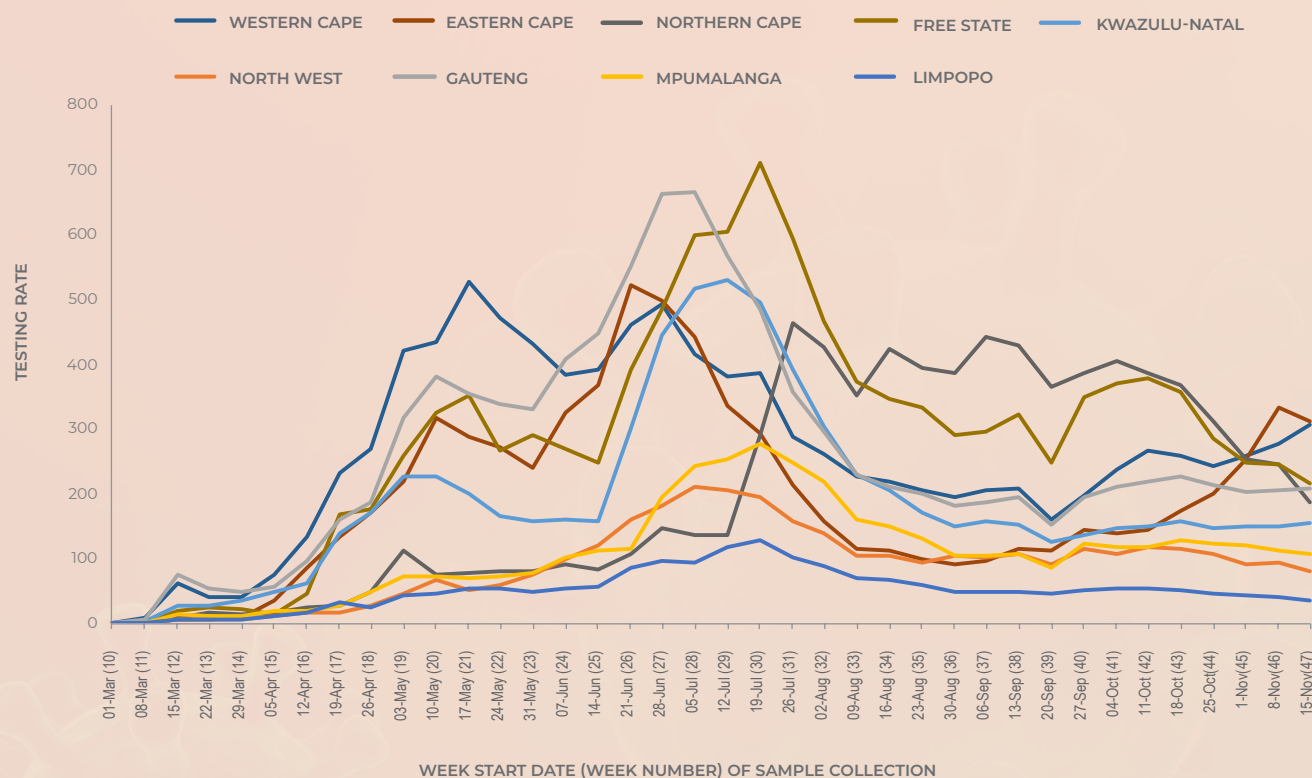


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 21 November 2020

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Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 1-21 November 2020

Province	Population ^a	1-7 Nov		8-14 Nov		15-21 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	18157	1608 (8.9)	19443	2374 (12.2)	21419	3488 (16.3)	306	4.1%
Eastern Cape	6734001	17040	4970 (29.2)	22361	7096 (31.7)	20999	7329 (34.9)	312	3.2%
Northern Cape	1292786	3271	374 (11.4)	3179	308 (9.7)	2403	202 (8.4)	186	-1.3%
Free State	2928903	7265	769 (10.6)	7156	453 (6.3)	6333	317 (5.0)	216	-1.3%
KwaZulu-Natal	11531628	17335	800 (4.6)	17335	871 (5.0)	17781	1065 (6.0)	154	1.0%
North West	4108816	3731	372 (10.0)	3843	368 (9.6)	3324	201 (6.0)	81	-3.5%
Gauteng	15488137	31486	1299 (4.1)	31593	1232 (3.9)	32140	1356 (4.2)	208	0.3%
Mpumalanga	4679786	5669	486 (8.6)	5265	398 (7.6)	4988	323 (6.5)	107	-1.1%
Limpopo	5852553	2502	242 (9.7)	2309	218 (9.4)	2116	149 (7.0)	36	-2.4%
Unknown		184	3 (1.6)	270	11 (4.1)	480	22 (4.6)		0.5%
Total	59622350	106640	10923 (10.2)	112754	13329 (11.8)	111983	14452 (12.9)	188	1.1%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

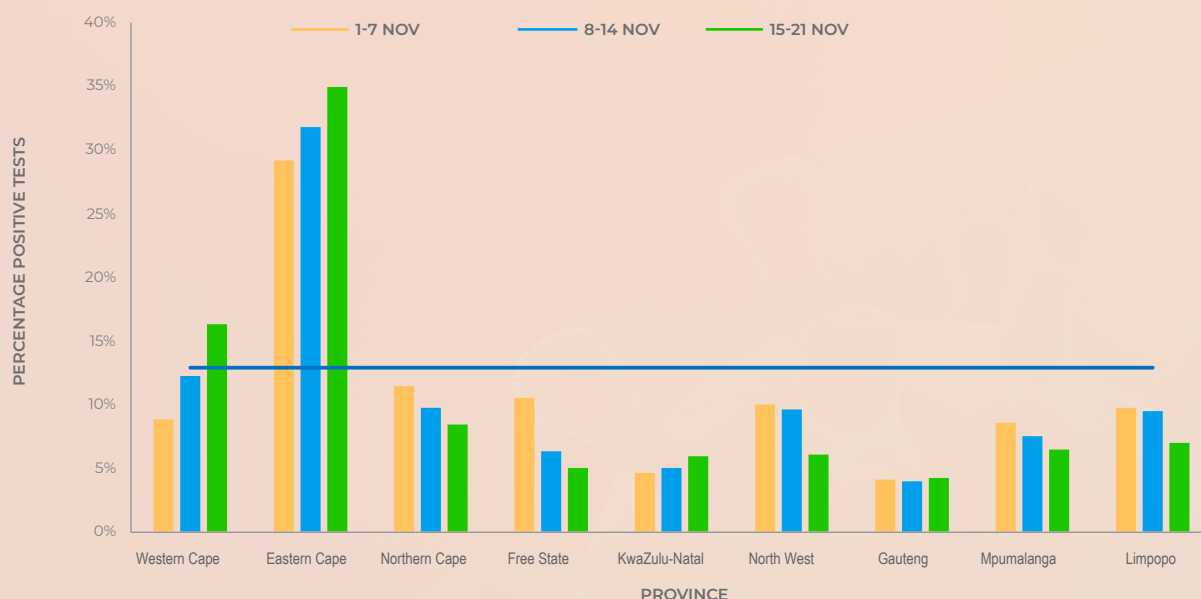


Figure 7. Weekly percentage testing positive, by province, South Africa, 1-21 November 2020. The horizontal blue line shows the national mean for week 47, beginning 15 November 2020.

Testing in the public sector

In the public sector, the percentage testing positive increased in the past week (14.3% in week 46 to 15.1% in week 47, $P=0.001$) (Table 4). The percentage testing positive in week 47 continued to be highest

in the Eastern Cape (32.6%) and Western Cape (19.7%). The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Western Cape and Eastern Cape 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, 1-21 November 2020

Province	1-7 Nov		8-14 Nov		15-21 Nov	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	7067	746 (10.6)	7647	1197 (15.7)	8714	1715 (19.7)
Eastern Cape	10769	2819 (26.2)	14851	4440 (29.9)	12697	4139 (32.6)
Northern Cape	1872	197 (10.5)	1926	188 (9.8)	1410	121 (8.6)
Free State	3709	397 (10.7)	3320	236 (7.1)	2843	154 (5.4)
KwaZulu-Natal	9111	394 (4.3)	9487	431 (4.5)	8973	429 (4.8)
North West	1247	200 (16.0)	1326	233 (17.6)	1025	90 (8.8)
Gauteng	10024	453 (4.5)	10454	407 (3.9)	10386	461 (4.4)
Mpumalanga	1855	209 (11.3)	1946	194 (10.0)	1830	172 (9.4)
Limpopo	914	121 (13.2)	835	108 (12.9)	788	69 (8.8)
Unknown	0	0 (0.0)	22	1 (4.5)	177	12 (6.8)
Total	46568	5536 (11.9)	51814	7435 (14.3)	48843	7362 (15.1)

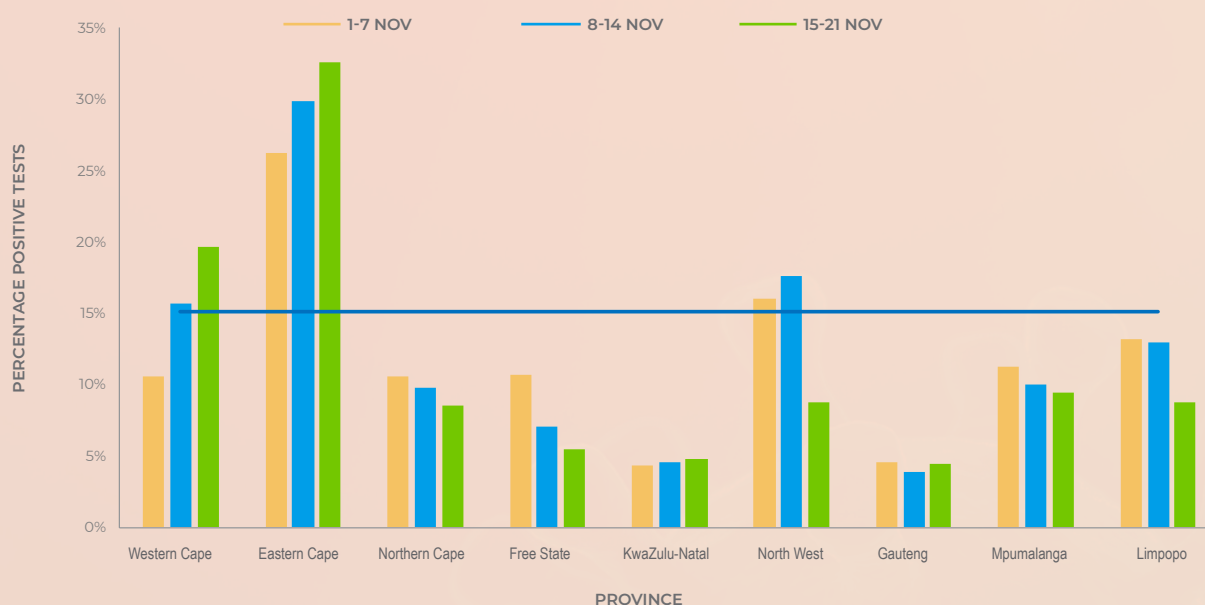


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 1-21 November 2020. The horizontal blue line shows the national mean for week 47, beginning 15 November 2020.

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 15-21 November, with the highest proportion testing positive nationally. This week's list is again dominated by facilities in the Eastern Cape (16) and Western Cape (9)

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Table 5. Public healthcare facilities with a high proportion testing positive, 15-21 November 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Eastern Cape	36	1.000 (1.000;1.000)
Facility 2	Eastern Cape	43	0.884 (0.788;0.980)
Facility 3	Eastern Cape	31	0.613 (0.441;0.784)
Facility 4	Western Cape	49	0.592 (0.454;0.729)
Facility 5	Western Cape	110	0.591 (0.499;0.683)
Facility 6	Western Cape	51	0.588 (0.453;0.723)
Facility 7	Eastern Cape	32	0.563 (0.391;0.734)
Facility 8	Eastern Cape	27	0.556 (0.368;0.743)
Facility 9	Eastern Cape	35	0.543 (0.378;0.708)
Facility 10	Eastern Cape	39	0.538 (0.382;0.695)
Facility 11	Eastern Cape	34	0.529 (0.362;0.697)
Facility 12	Western Cape	97	0.526 (0.426;0.625)
Facility 13	Western Cape	197	0.523 (0.453;0.593)
Facility 14	Western Cape	71	0.521 (0.405;0.637)
Facility 15	Eastern Cape	25	0.520 (0.324;0.716)
Facility 16	Eastern Cape	52	0.519 (0.383;0.655)
Facility 17	Western Cape	87	0.517 (0.412;0.622)
Facility 18	Western Cape	72	0.514 (0.398;0.629)
Facility 19	Eastern Cape	76	0.513 (0.401;0.626)
Facility 20	Western Cape	100	0.510 (0.412;0.608)
Facility 21	Eastern Cape	26	0.500 (0.308;0.692)
Facility 22	Eastern Cape	32	0.500 (0.327;0.673)
Facility 23	Eastern Cape	90	0.489 (0.386;0.592)
Facility 24	Eastern Cape	29	0.483 (0.301;0.665)
Facility 25	Eastern Cape	114	0.482 (0.391;0.574)

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 15-21 November 2020 are shown in Table 6. Districts showing the greatest proportions testing positive are concentrated in the Eastern Cape (18 districts), with 6 in the Western Cape, and 1 in the Northern Cape.

Five districts showed a proportion testing positive greater than 40%, and 13 greater than 30%. A significant increase over the week was observed in four districts – Camdeboo, Mbhashe and Buffalo City in the Eastern Cape, and Stellenbosch in the Western 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 15-21 November 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Mhlontlo	Eastern Cape	0.629 (0.519-0.739)	...
Bitou	Western Cape	0.480 (0.419-0.541)	0.438 (0.367-0.508)
Knysna	Western Cape	0.467 (0.419-0.515)	0.396 (0.347-0.446)
George	Western Cape	0.439 (0.405-0.473)	0.402 (0.369-0.435)
Nkonkobe	Eastern Cape	0.403 (0.317-0.490)	0.336 (0.251-0.421)
Ndlambe	Eastern Cape	0.399 (0.351-0.447)	0.398 (0.349-0.447)
Makana	Eastern Cape	0.382 (0.337-0.427)	0.302 (0.265-0.339)
Mnquma	Eastern Cape	0.377 (0.291-0.463)	0.325 (0.246-0.404)
Nelson Mandela Bay C	Eastern Cape	0.364 (0.345-0.383)	0.368 (0.352-0.385)
Nelson Mandela Bay B	Eastern Cape	0.349 (0.330-0.369)	0.375 (0.355-0.395)
Intsika Yethu	Eastern Cape	0.345 (0.226-0.463)	0.267 (0.149-0.386)
Ngqushwa	Eastern Cape	0.336 (0.261-0.410)	0.288 (0.251-0.325)
Camdeboo	Eastern Cape	0.327 (0.297-0.357)	0.235 (0.208-0.262)
Nxuba	Eastern Cape	0.326 (0.232-0.420)	0.271 (0.171-0.371)
Nelson Mandela Bay A	Eastern Cape	0.324 (0.286-0.362)	0.348 (0.314-0.382)
Kou-Kamma	Eastern Cape	0.319 (0.253-0.385)	0.216 (0.151-0.280)
Mossel Bay	Western Cape	0.312 (0.272-0.353)	0.233 (0.186-0.279)
Kouga	Eastern Cape	0.304 (0.268-0.341)	0.300 (0.267-0.334)
Ngquza Hill	Eastern Cape	0.299 (0.211-0.388)	...
Amahlathi	Eastern Cape	0.298 (0.238-0.359)	0.324 (0.276-0.372)
Ubuntu	Northern Cape	0.287 (0.190-0.384)	0.151 (0.098-0.205)
Hessequa	Western Cape	0.272 (0.167-0.378)	0.125 (0.052-0.197)
Mbhashe	Eastern Cape	0.264 (0.162-0.367)	0.085 (0.042-0.128)
Stellenbosch	Western Cape	0.263 (0.177-0.349)	0.084 (0.019-0.149)
Buffalo City	Eastern Cape	0.262 (0.239-0.286)	0.170 (0.152-0.189)

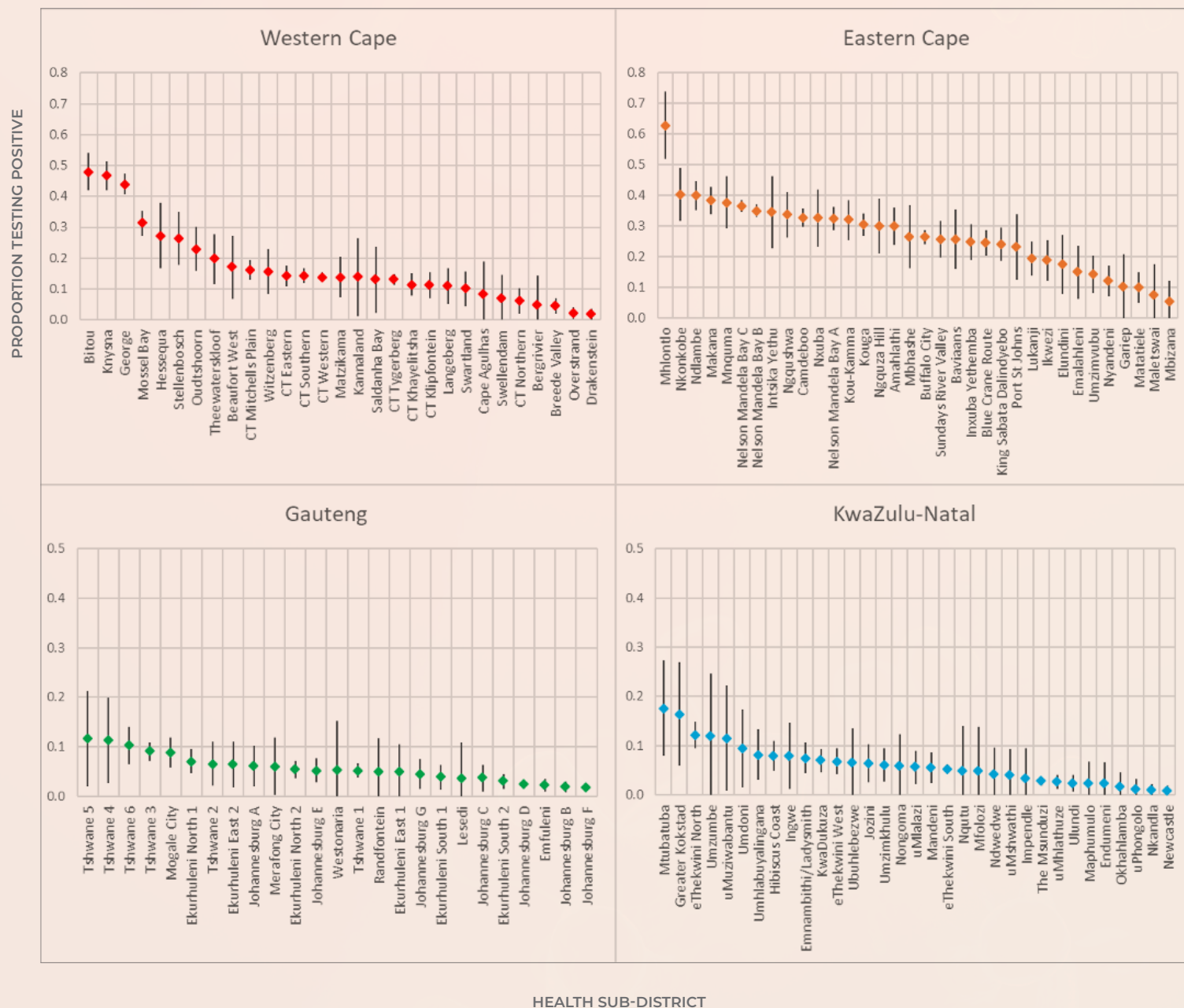
95% CI: 95% confidence interval; PTP: adjusted positive test proportion; PTP marked in red or blue have current week proportions testing positive that are significantly higher or lower than the previous week, respectively.

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.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

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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 15-21 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 15-21 November 2020.

COVID-19 TESTING SUMMARY

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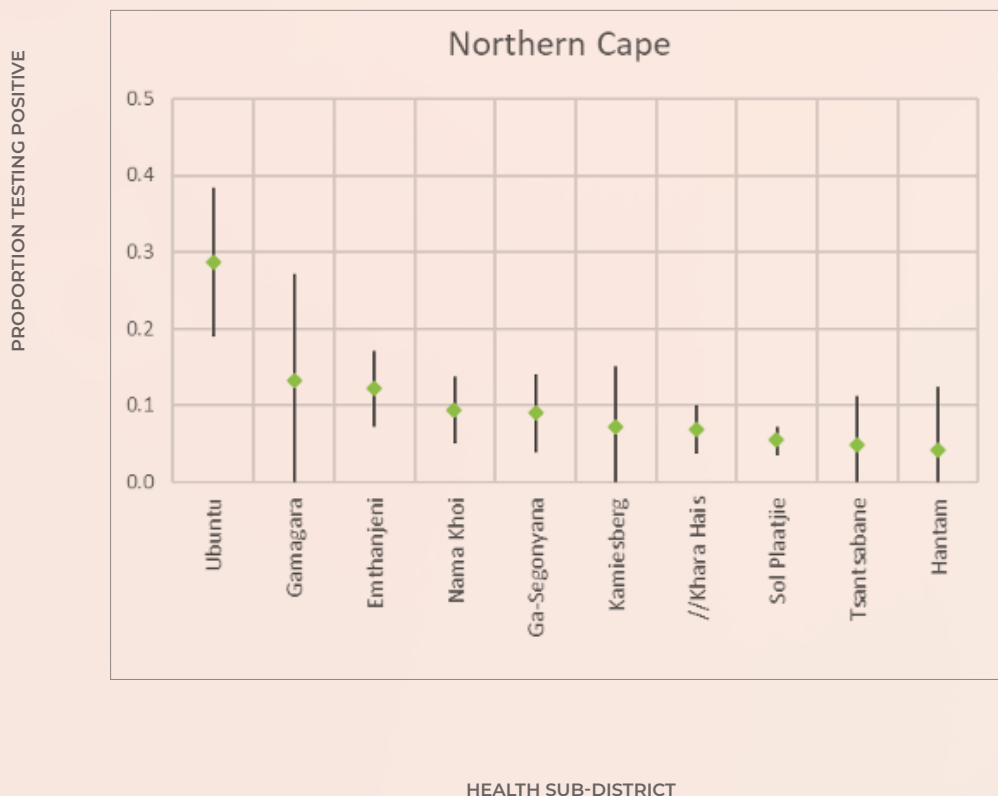


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 15-21 November 2020.

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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SOUTH AFRICA WEEK 47 2020

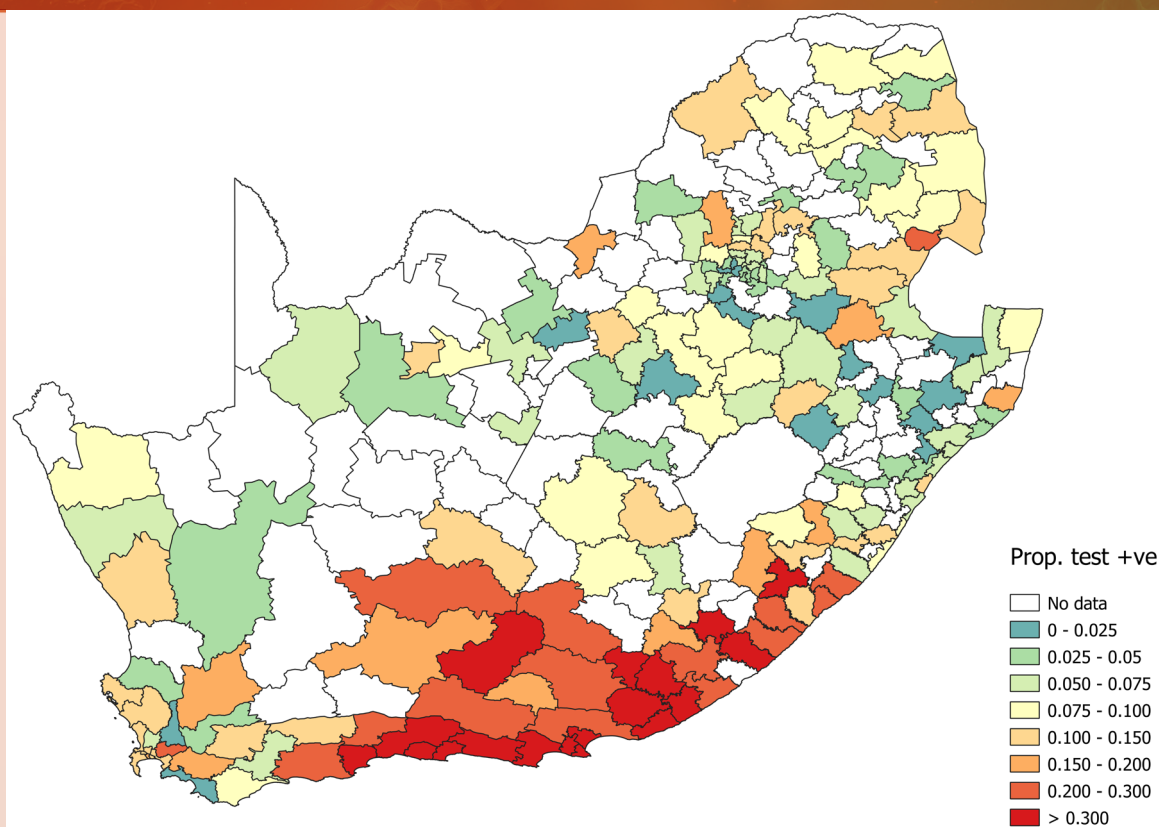


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 15-21 November 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

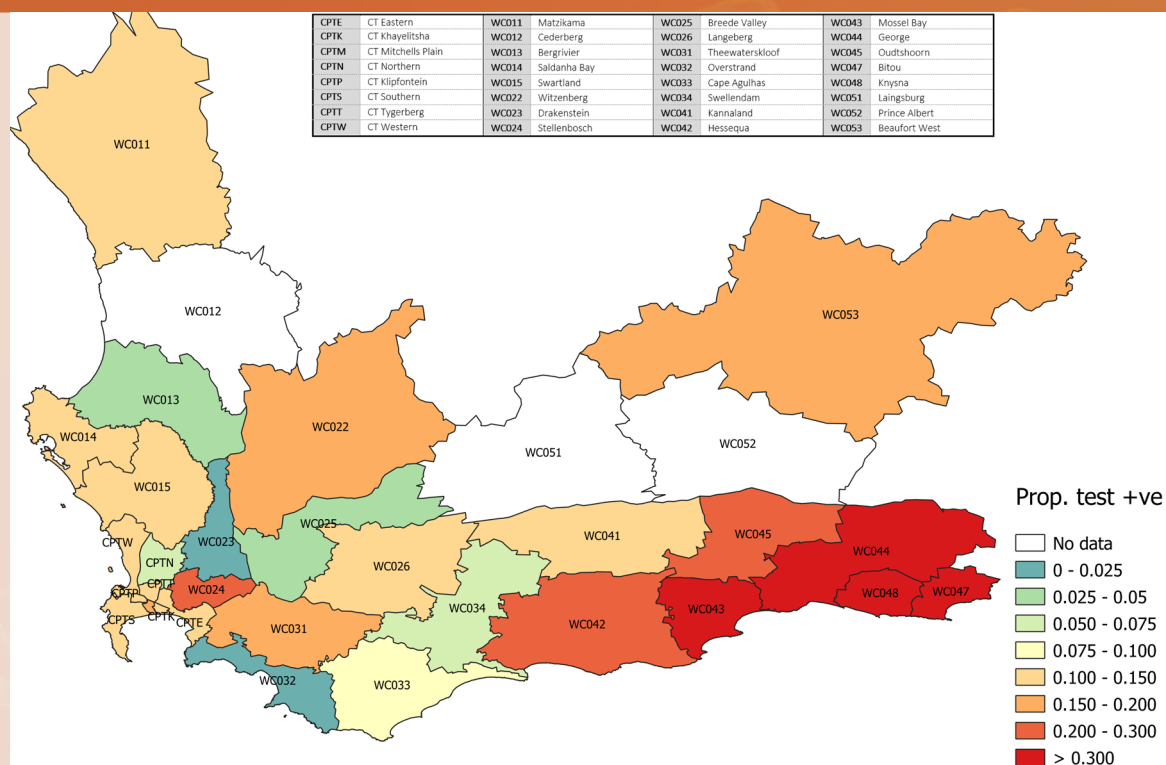


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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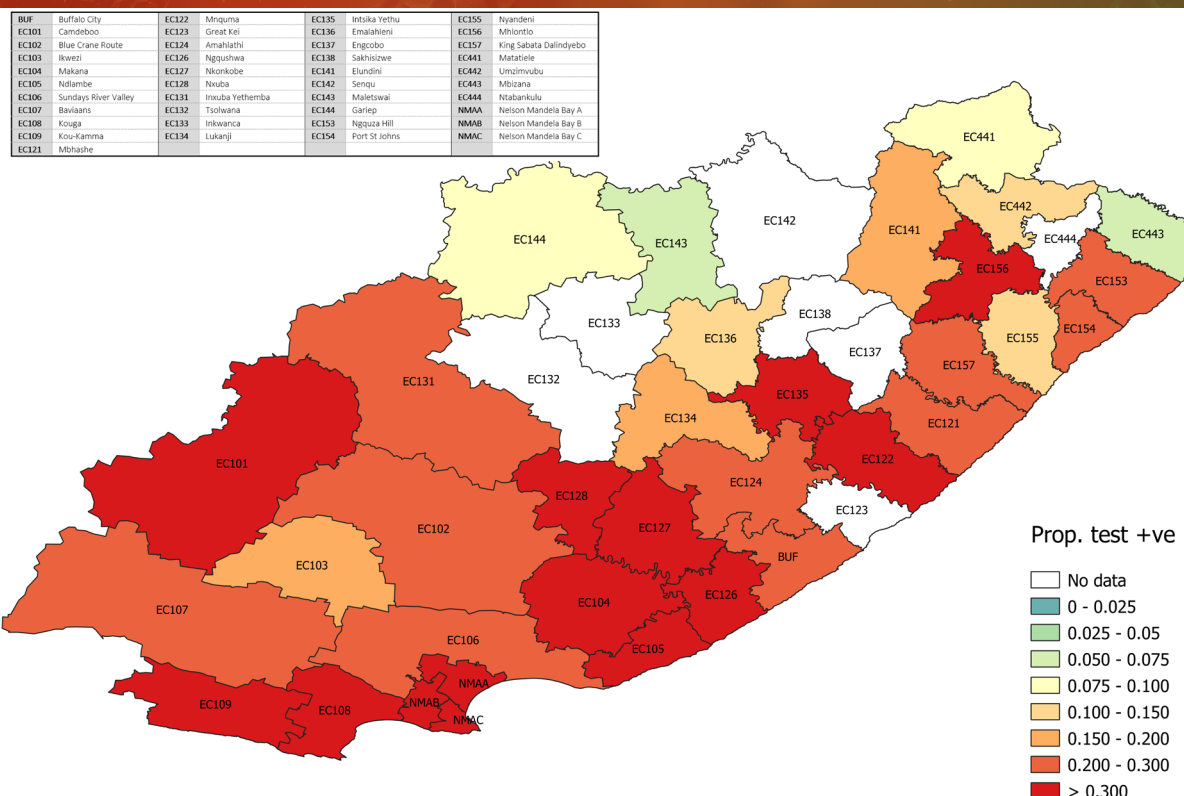


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

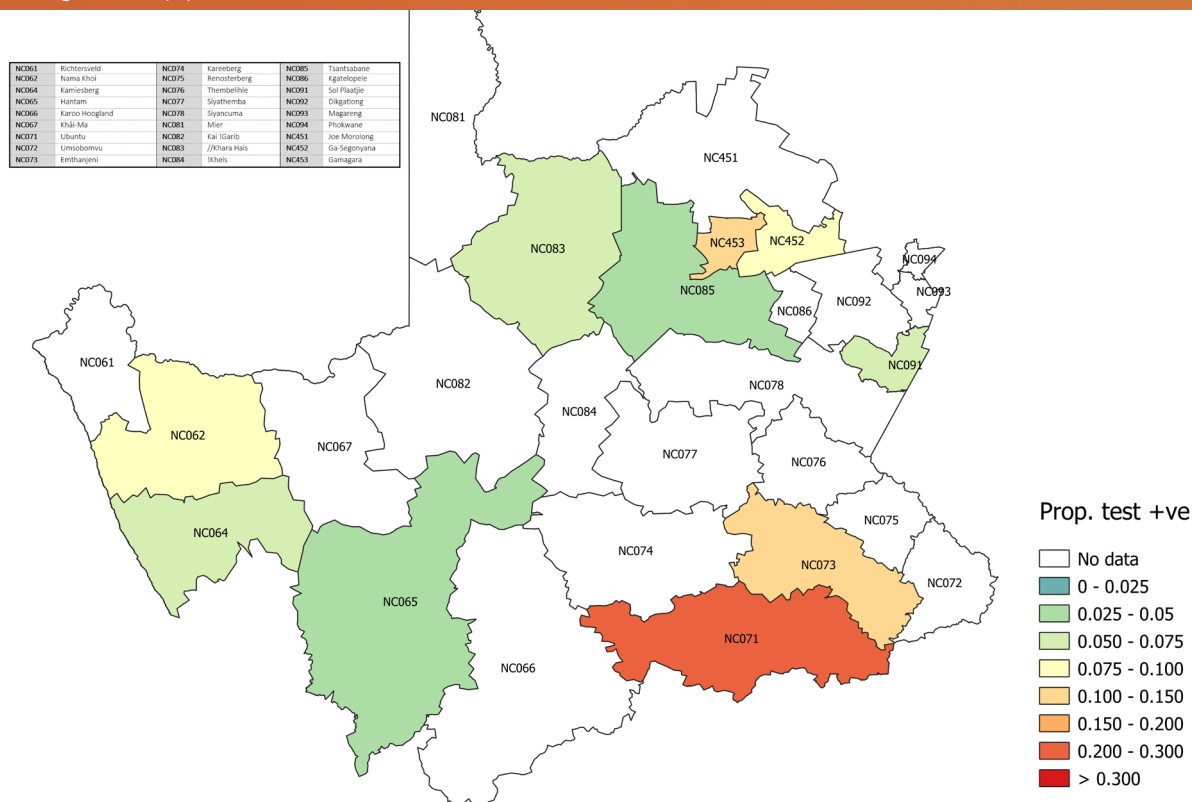


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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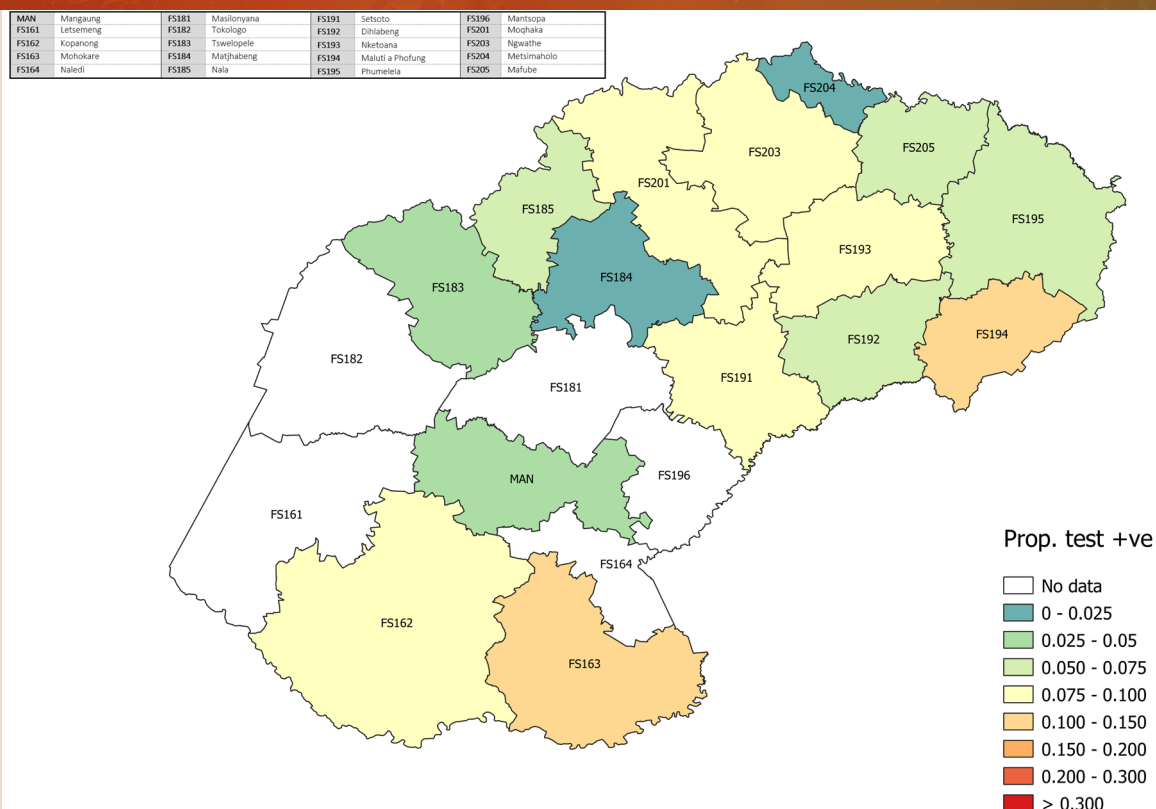


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

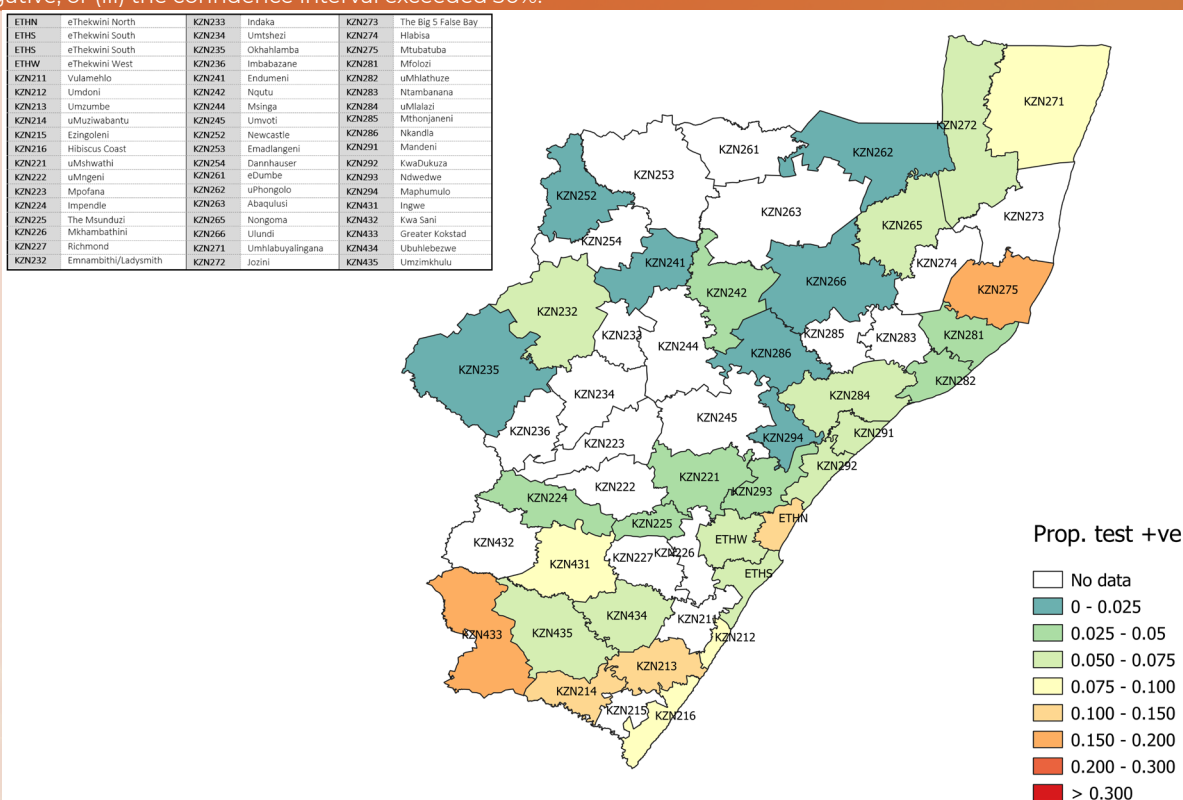


Figure 15. Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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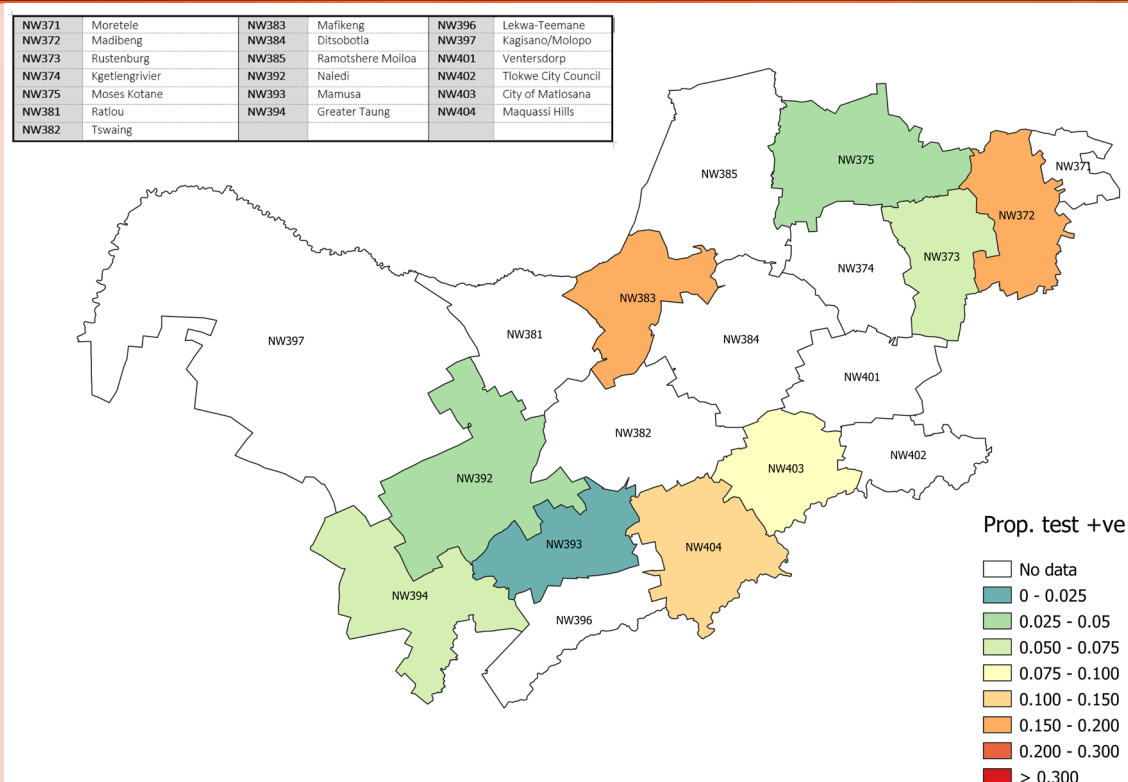


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

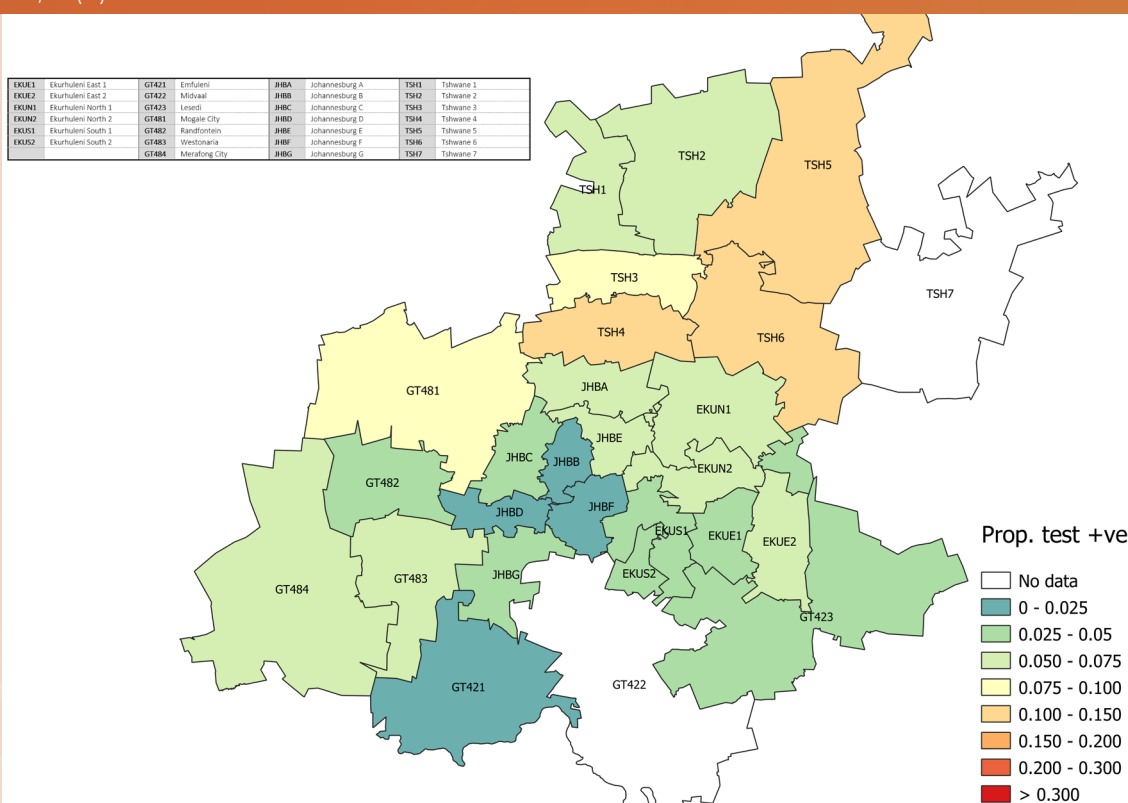


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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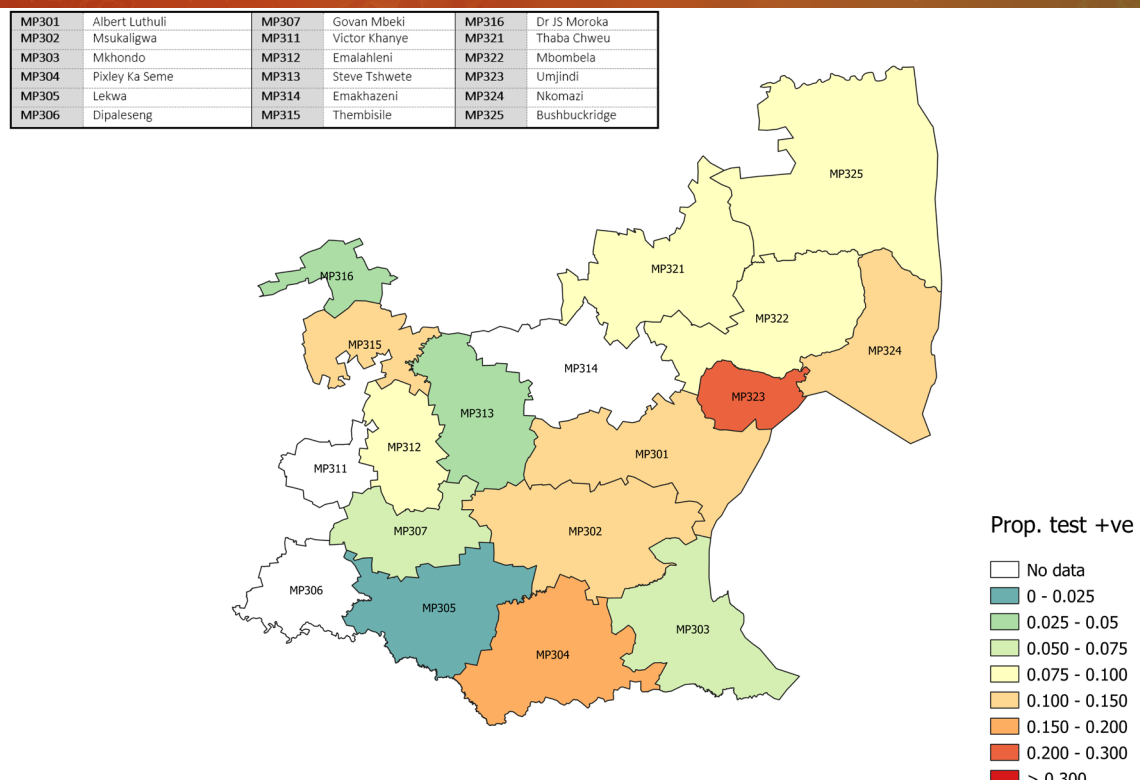


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

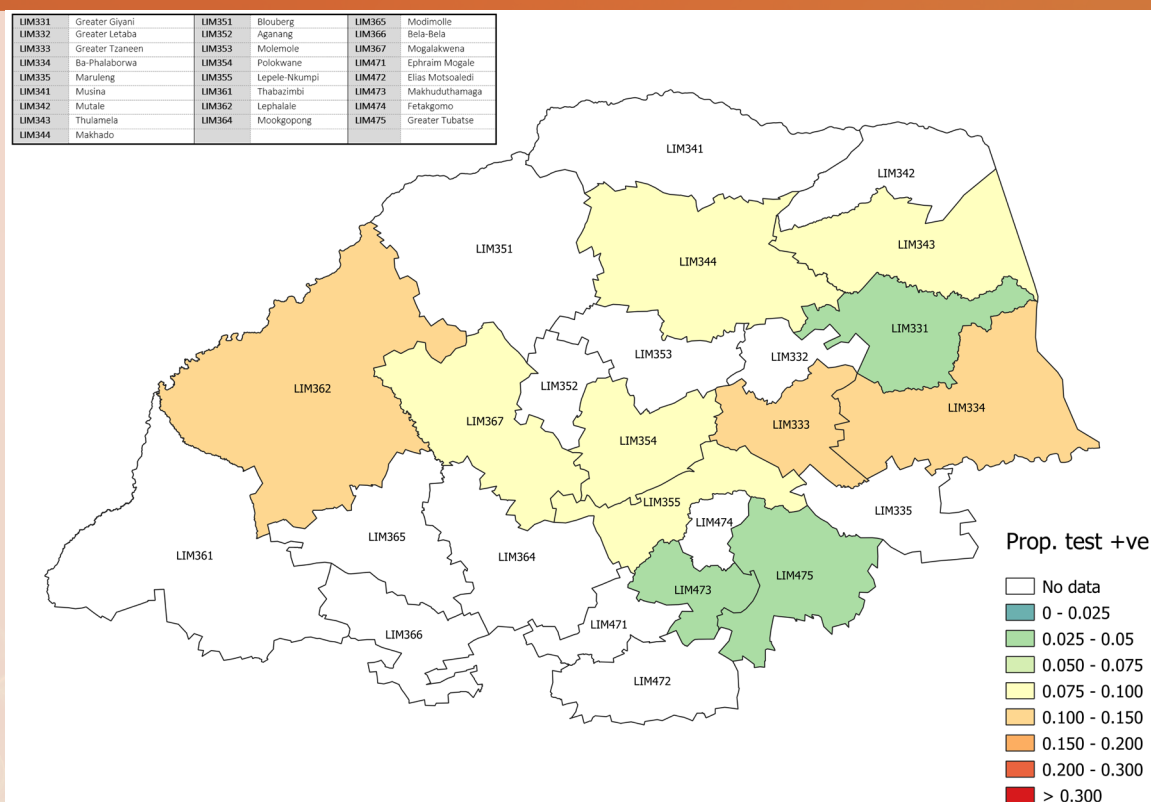


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 15-21 November 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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Testing by patient admission status

In week 47, 30.8% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Northern Cape (44.3%), KwaZulu-Natal (41.9%), Mpumalanga (41.2%) and Gauteng (39.7%) provinces. Comparing week 47 to the previous week, the proportion of inpatient tests increased by 15.3% in Mpumalanga and

decreased by 23.1% in the North West. The percentage testing positive in week 47 remained lower among inpatients (10.5%) compared to outpatients (18.2%), although increases were observed in both groups compared to the previous week (Figure 21). In the public sector in week 47 the mean laboratory turnaround time continued to be lower for inpatients (1.6 days) compared to outpatients (2.4 days) (Figure 22).

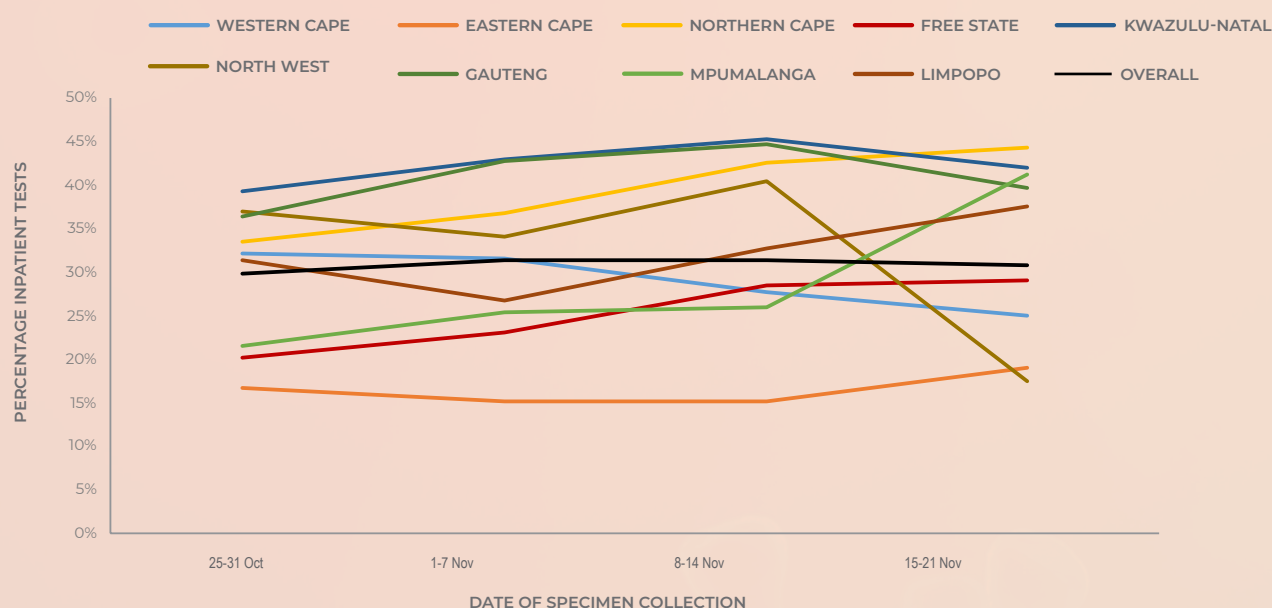


Figure 20. Percentage of inpatient tests performed in the public sector by province, 25 October – 21 November 2020

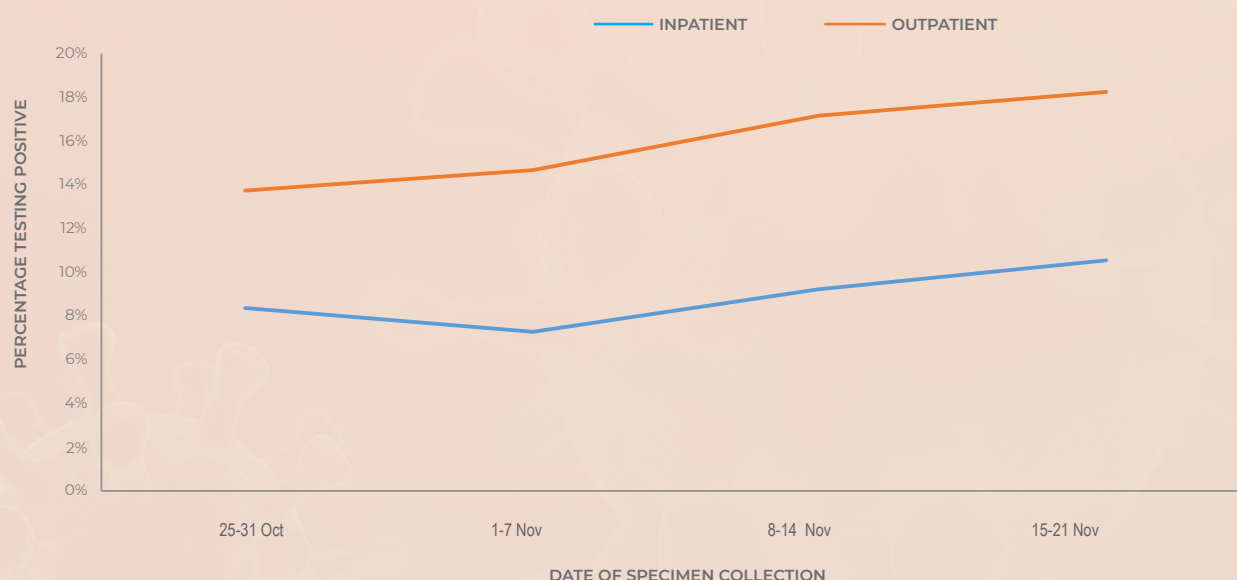


Figure 21. Percentage testing positive by patient admission status in the public sector, 25 October – 21 November 2020

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 47 2020

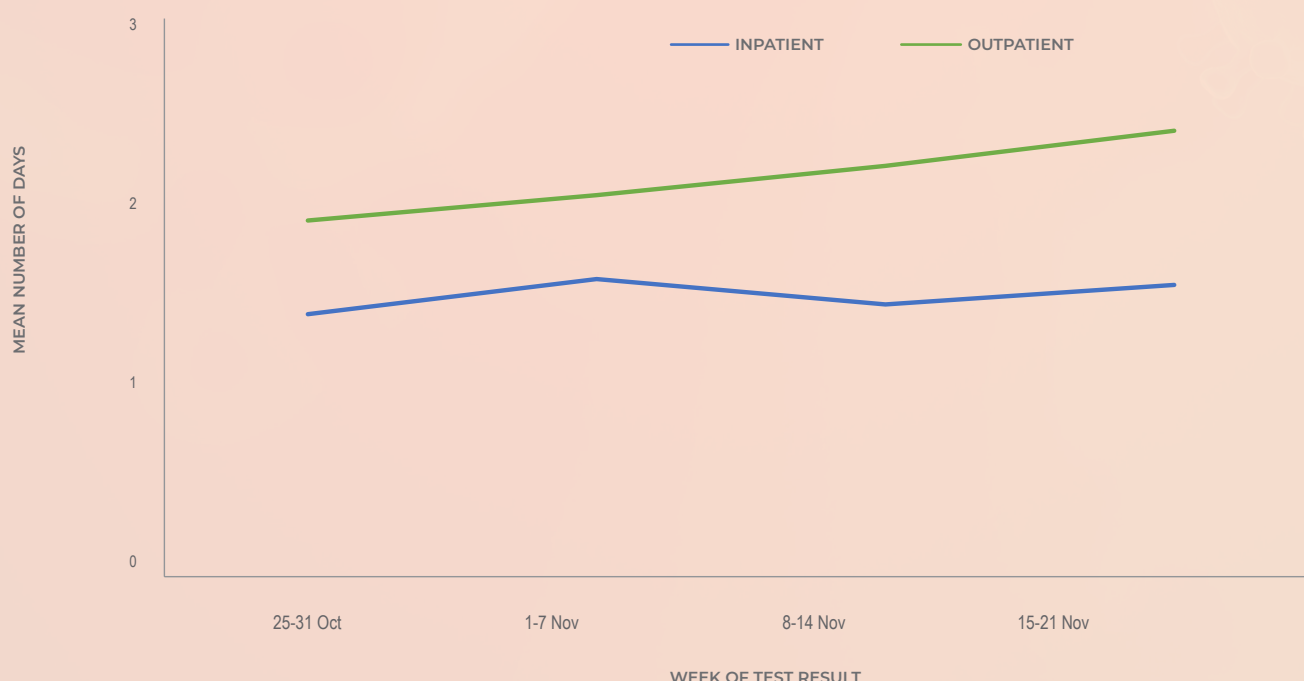


Figure 22. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 25 October – 21 November 2020

Testing by age and sex

The mean age of individuals tested in week 47 was 39.2 years, similar to the previous weeks. The mean age of individuals with a positive test in week 47 was 41.6 years, also similar to previous weeks. The mean age of individuals with a positive test in week 47 did not differ

between males (41.7 years) and females (41.7 years, $P=0.740$) (Table 7). The sex ratio (the number of males per 100 females) of individuals with a positive test in week 47 was 73.3. In both sexes the proportion testing positive in week 47 was higher than the previous two weeks in all groups, except for the older age group (≥ 70 years) (Figure 23).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 25 October – 21 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
44	25 October	38.9	39.4	40.6	40.9	90.1	76.3
45	1 November	39.0	39.5	40.6	40.9	90.0	76.6
46	8 November	38.9	39.3	41.6	41.7	88.0	74.5
47	15 November	39.0	39.6	41.7	41.7	89.3	73.3

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 47 2020

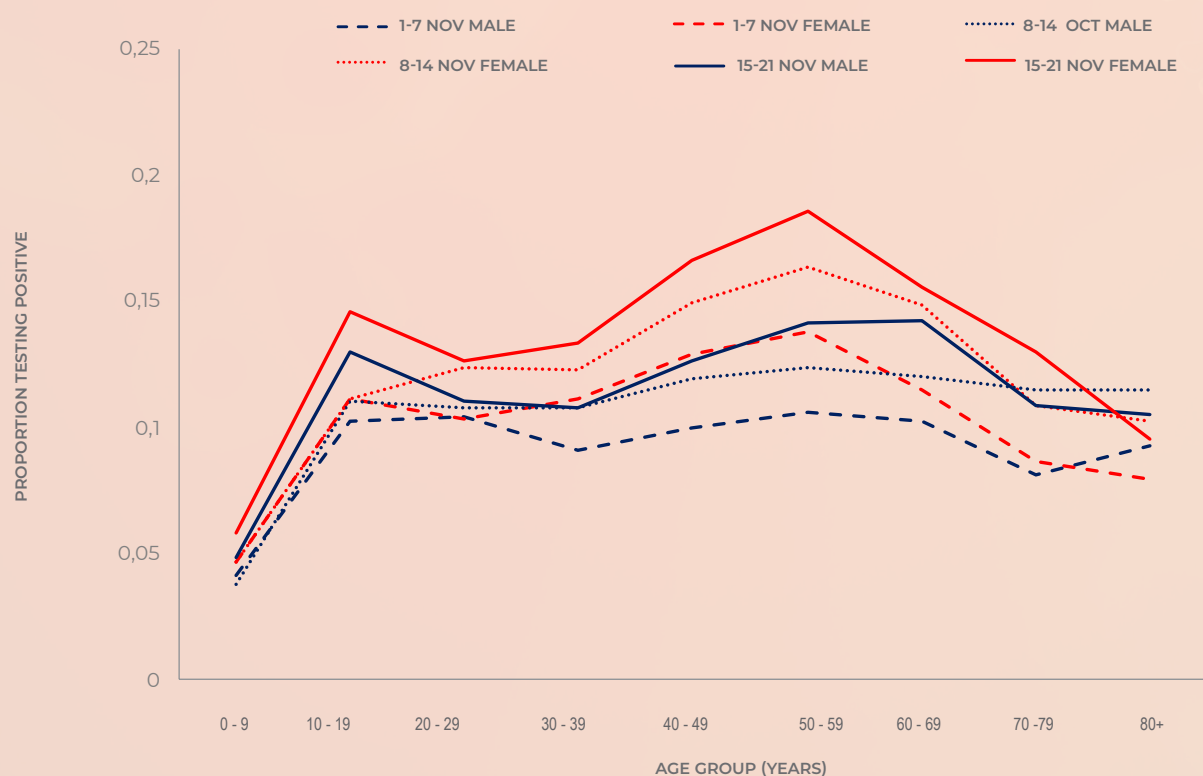


Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 1-21 November 2020

From week 44 to week 47, the percentage testing positive increased by 2.6% in males (from 9.0% to 11.6%) and increased by 3.6% in females (from 10.6% to 14.2%) (Table 8). In week 47 the percentage testing

positive was higher in females compared to males in the 0-19 years ($P<0.001$), 20-39 years ($P<0.001$) and 40-59 years ($P<0.001$) age groups, and did not differ in individuals aged ≥ 60 years.

Table 8. Percentage testing positive by sex and week, South Africa, 25 October – 21 November 2020

Age (years)	25-31 Oct		1-7 Nov		8-14 Nov		15-21 Nov	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	6.4%	7.9%	7.0%	8.4%	7.2%	8.4%	8.5%	10.5%
20-39	9.4%	10.2%	9.7%	10.8%	10.8%	12.3%	10.9%	13.1%
40-59	9.7%	13.3%	10.2%	13.3%	12.1%	15.6%	13.3%	17.5%
60-69	10.0%	10.8%	10.2%	11.5%	12.1%	14.9%	14.2%	15.6%
70+	8.5%	8.1%	8.4%	8.5%	11.5%	10.7%	10.8%	11.8%
Total	9.0%	10.6%	9.4%	11.1%	10.8%	12.8%	11.6%	14.2%

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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 47 were similar to the previous few weeks. Gauteng (28.7%), Western Cape (19.1%), Eastern Cape (18.8%) and KwaZulu-Natal (15.9%) provinces performed the majority of tests in the past week. Eastern Cape (312 per 100,000 persons) and Western Cape (306 per 100,000 persons) provinces had the highest testing rates in week 47. The overall laboratory turnaround time in week 47 was 1.5 days; 2.0 days in the public sector and 1.0 day in the private sector.

The percentage testing positive decreased from a peak of 31.2% in week 29 to 9.8% in week 43. In week 47 the percentage testing positive was 12.9%, higher than has been observed in the previous 11 weeks. The percentage testing positive remained highest in the Eastern Cape (34.9%) and Western Cape (16.3%). Percentages testing positive were <10% in Northern Cape, Free State, North West, Gauteng, KwaZulu-Natal, Mpumalanga and Limpopo. In week 47, compared to the previous week, the percentage testing positive increased in the Eastern Cape, Western Cape, KwaZulu-Natal and Gauteng, decreased in the Free State, North West, Mpumalanga and Limpopo, and did not change in the Northern Cape. Of the 25 districts with the highest proportions testing positive in week 47, 18 were in the Eastern Cape, 6 in the Western Cape, and 1 in the Northern Cape.