

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 44 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 31 October 2020 (Week 44 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 31 October 2020, 4,139,878 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 44 were slightly lower than observed in the previous two weeks
- Northern Cape (280 per 100,000 persons) and Free State (272 per 100,000 persons) provinces continued to have the highest testing rates in week 44
- Percentage testing positive has decreased since the peak of 31.3% in week 29. In week 44 the percentage testing positive was 9.5%, slightly lower than the previous week
- Percentage testing positive was highest in the Eastern Cape (23.9%), between 10-19% in Northern Cape, Free State, North West and Limpopo, and <10% in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape in week 44
- In week 44, compared to the previous week, the percentage testing positive increased in the Eastern Cape, decreased in Western Cape, Northern Cape, Free State, North West and Gauteng, and did not change in KwaZulu-Natal, Mpumalanga and Limpopo.
- Mean laboratory turnaround time in week 44 decreased to 1.4 days; 1.7 days in the public sector and 1.3 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 31 October 2020 (week 44).

Testing volumes and proportion testing positive

From 1 March through 31 October 2020, 4,139,878 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=272,690), but have subsequently decreased. In week 44, 100,633 tests were performed, slightly lower than the number of tests performed in the previous two 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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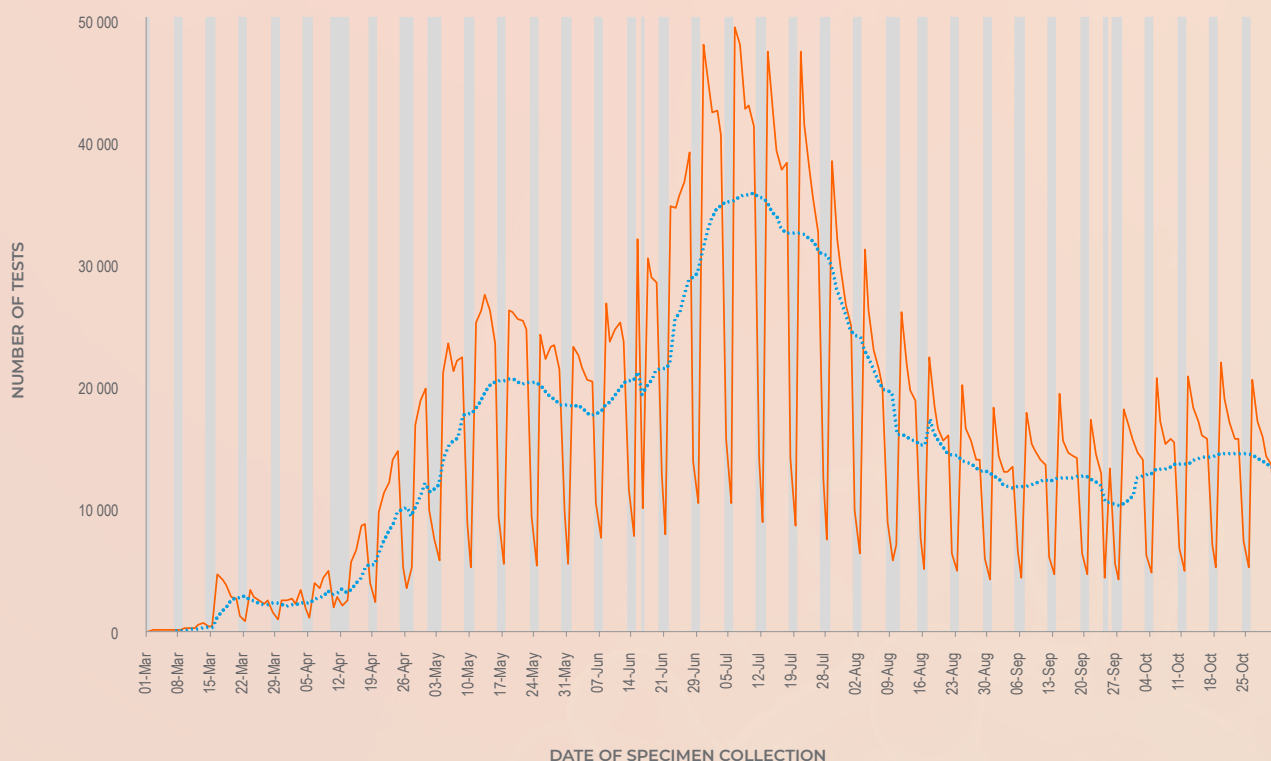


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 31 October 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 44 was 16.9% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.3% in week 29. Since week 29, there has been a 21.8% decrease in the percentage testing positive to 9.5% in week 44. The percentage testing positive in week 44 was slightly lower than that observed in the previous week (9.5% vs 9.9%, $P=0.003$) (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 31 October 2020

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar	410 (0.0)	9	2.2
11	08-Mar	2329 (0.1)	88	3.8
12	15-Mar	21319 (0.5)	825	3.9
13	22-Mar	17040 (0.4)	470	2.8
14	29-Mar	17383 (0.4)	399	2.3
15	05-Apr	24595 (0.6)	568	2.3
16	12-Apr	41863 (1.0)	1049	2.5
17	19-Apr	75888 (1.8)	1927	2.5
18	26-Apr	89493 (2.2)	2890	3.2
19	03-May	136879 (3.3)	5540	4.0
20	10-May	157017 (3.8)	7426	4.7
21	17-May	156397 (3.8)	10501	6.7
22	24-May	141923 (3.4)	11685	8.2
23	31-May	136143 (3.3)	13470	9.9
24	07-Jun	156788 (3.8)	20471	13.1
25	14-Jun	164908 (4.0)	29859	18.1
26	21-Jun	222038 (5.4)	50440	22.7
27	28-Jun	268924 (6.5)	69141	25.7
28	05-Jul	272690 (6.6)	79595	29.2
29	12-Jul	250273 (6.0)	78232	31.3
30	19-Jul	236241 (5.7)	72369	30.6
31	26-Jul	185594 (4.5)	53559	28.9
32	02-Aug	150301 (3.6)	36835	24.5
33	09-Aug	117174 (2.8)	23423	20.0
34	16-Aug	110159 (2.7)	19103	17.3
35	23-Aug	99971 (2.4)	14636	14.6
36	30-Aug	90415 (2.2)	11411	12.6
37	06-Sep	94099 (2.3)	10802	11.5
38	13-Sep	97568 (2.4)	10910	11.2
39	20-Sep	79211 (1.9)	9185	11.6
40	27-Sep	98112 (2.4)	10001	10.2
41	04-Oct	105073 (2.5)	10699	10.2
42	11-Oct	109338 (2.6)	11032	10.1
43	18-Oct	111689 (2.7)	11049	9.9
44	25-Oct	100633 (2.4)	9570	9.5
Total		4139878 (100.0)	699169	16.9

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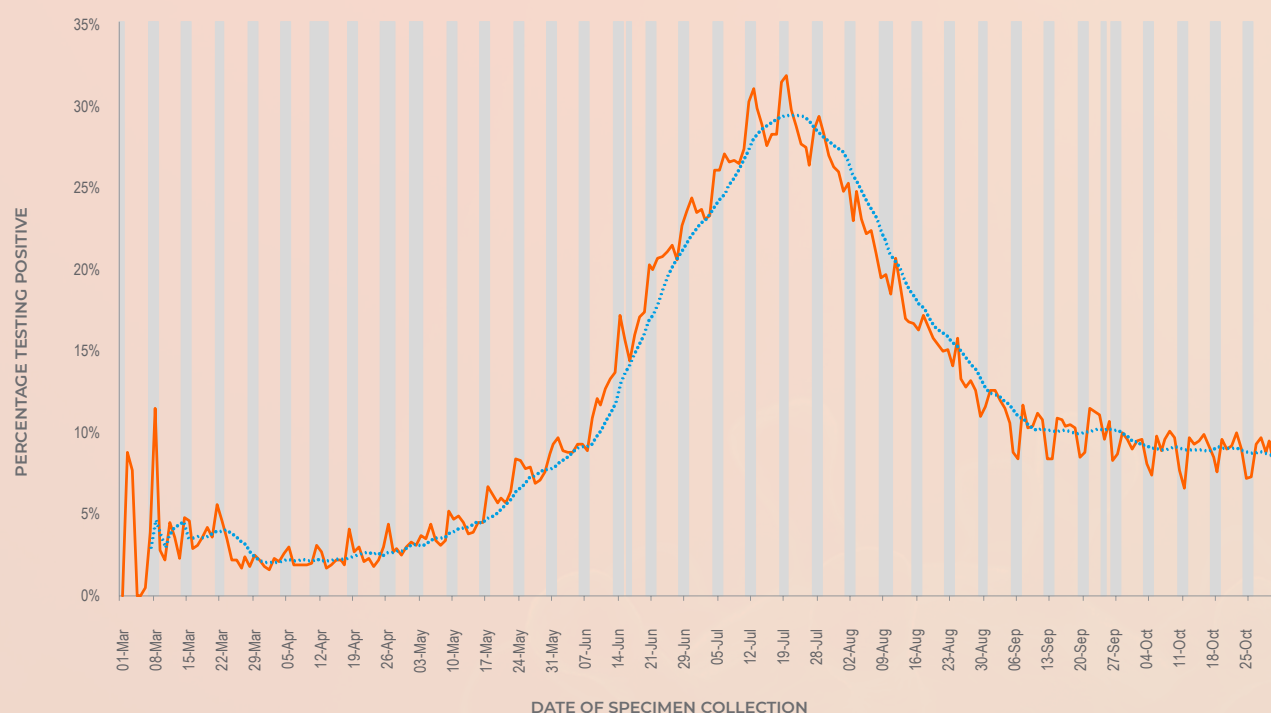


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 31 October 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 31 October, 1,890,515 laboratory tests were conducted in public sector laboratories, with 15.6% testing positive. Over this same period, private sector laboratories conducted 2,249,363 tests, with 18.0% testing positive (Table 2). Overall the public sector has conducted 45.7% of tests and accounted for 42.2% 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 43 to week 44, the percentage testing positive was unchanged in the public sector ($P=0.422$) and decreased slightly by 0.4% in the private sector ($P=0.022$). In week 44 the percentage testing positive continued to be higher

in the public sector (11.0%) compared to the private sector (8.4%) ($P<0.001$), as has been observed since week 34.

The mean turnaround time for tests conducted in week 44 was 1.4 days, lower than the previous week. Turnaround time was unchanged in the public sector (1.7 days) and decreased in the private sector (1.3 days) (Figure 3). Turnaround times for public sector tests were >2 days in Northern Cape (2.5 days), North West (2.4 days) and Mpumalanga (2.3 days) provinces (Figure 4). Turnaround times in the past week increased in the North West (1.2 to 2.4 days). Twenty-seven of the 28 (96.4%) 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 – 31 October 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)	159	4 (2.5)	61.2	55.6	0.792
11	08-Mar	351	12 (3.4)	1978	76 (3.8)	15.1	13.6	0.890
12	15-Mar	1344	51 (3.8)	19975	774 (3.9)	6.3	6.2	0.979
13	22-Mar	3358	124 (3.7)	13682	346 (2.5)	19.7	26.4	1.460
14	29-Mar	5612	158 (2.8)	11771	241 (2.0)	32.3	39.6	1.375
15	05-Apr	11333	319 (2.8)	13262	249 (1.9)	46.1	56.2	1.499
16	12-Apr	23759	608 (2.6)	18104	441 (2.4)	56.8	58.0	1.051
17	19-Apr	54146	1471 (2.7)	21742	456 (2.1)	71.3	76.3	1.295
18	26-Apr	66195	2280 (3.4)	23298	610 (2.6)	74.0	78.9	1.316
19	03-May	92296	4234 (4.6)	44583	1306 (2.9)	67.4	76.4	1.566
20	10-May	104939	5087 (4.8)	52078	2339 (4.5)	66.8	68.5	1.079
21	17-May	95430	6597 (6.9)	60967	3904 (6.4)	61.0	62.8	1.080
22	24-May	74232	5931 (8.0)	67691	5754 (8.5)	52.3	50.8	0.940
23	31-May	60219	6075 (10.1)	75924	7395 (9.7)	44.2	45.1	1.036
24	07-Jun	59964	7323 (12.2)	96824	13148 (13.6)	38.2	35.8	0.899
25	14-Jun	55974	11025 (19.7)	108934	18834 (17.3)	33.9	36.9	1.139
26	21-Jun	82587	18797 (22.8)	139451	31643 (22.7)	37.2	37.3	1.003
27	28-Jun	97282	25075 (25.8)	171642	44066 (25.7)	36.2	36.3	1.004
28	05-Jul	107988	30225 (28.0)	164702	49370 (30.0)	39.6	38.0	0.934
29	12-Jul	101306	29353 (29.0)	148967	48879 (32.8)	40.5	37.5	0.883
30	19-Jul	96214	28364 (29.5)	140027	44005 (31.4)	40.7	39.2	0.938
31	26-Jul	73938	21303 (28.8)	111656	32256 (28.9)	39.8	39.8	0.997
32	02-Aug	64089	15720 (24.5)	86212	21115 (24.5)	42.6	42.7	1.001
33	09-Aug	53664	10387 (19.4)	63510	13036 (20.5)	45.8	44.3	0.943
34	16-Aug	50902	8921 (17.5)	59257	10182 (17.2)	46.2	46.7	1.020
35	23-Aug	45486	7219 (15.9)	54485	7417 (13.6)	45.5	49.3	1.166
36	30-Aug	41047	5597 (13.6)	49368	5814 (11.8)	45.4	49.0	1.158
37	06-Sep	46374	5967 (12.9)	47725	4835 (10.1)	49.3	55.2	1.270
38	13-Sep	49102	6092 (12.4)	48466	4818 (9.9)	50.3	55.8	1.248
39	20-Sep	40934	5127 (12.5)	38277	4058 (10.6)	51.7	55.8	1.181
40	27-Sep	44207	5178 (11.7)	53905	4823 (8.9)	45.1	51.8	1.309
41	04-Oct	46363	5201 (11.2)	58710	5498 (9.4)	44.1	48.6	1.198
42	11-Oct	48230	5305 (11.0)	61108	5727 (9.4)	44.1	48.1	1.174
43	18-Oct	50187	5624 (11.2)	61502	5425 (8.8)	44.9	50.9	1.270
44	25-Oct	41212	4549 (11.0)	59421	5021 (8.4)	41.0	47.5	1.306
Total		1890515	295304 (15.6)	2249363	403865 (18.0)	45.7	42.2	0.870

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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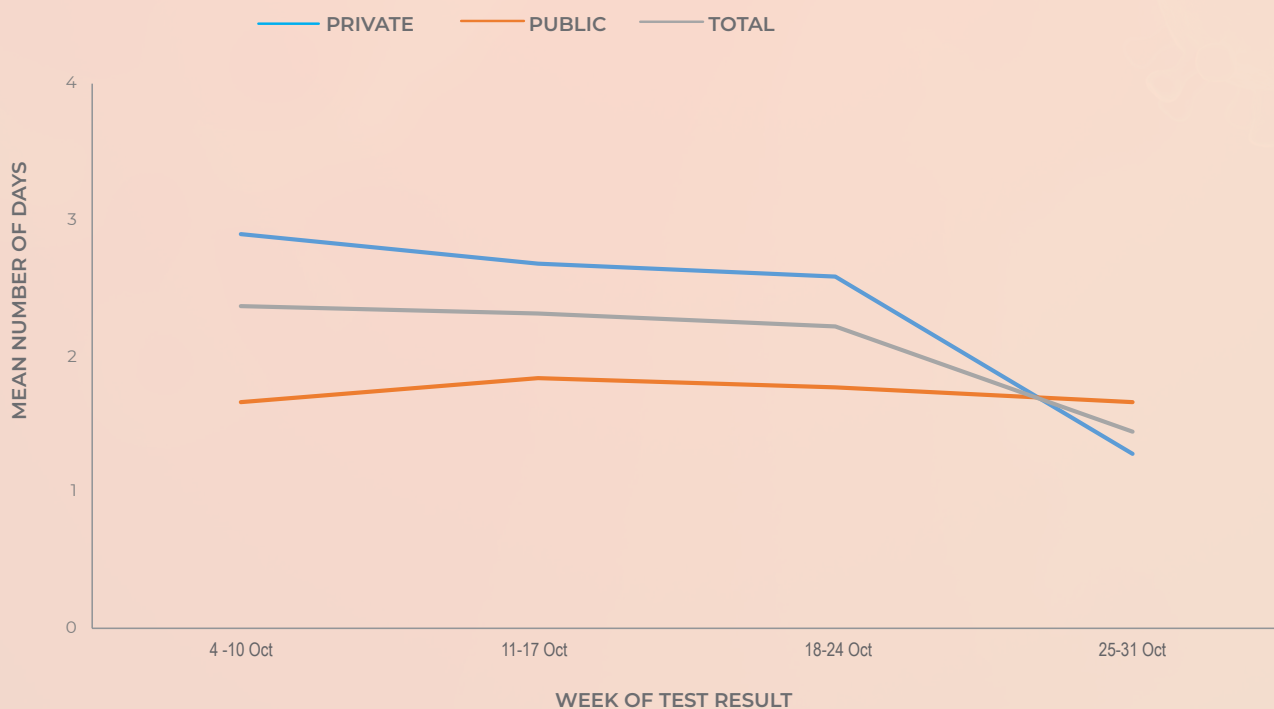


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 4 – 31 October 2020

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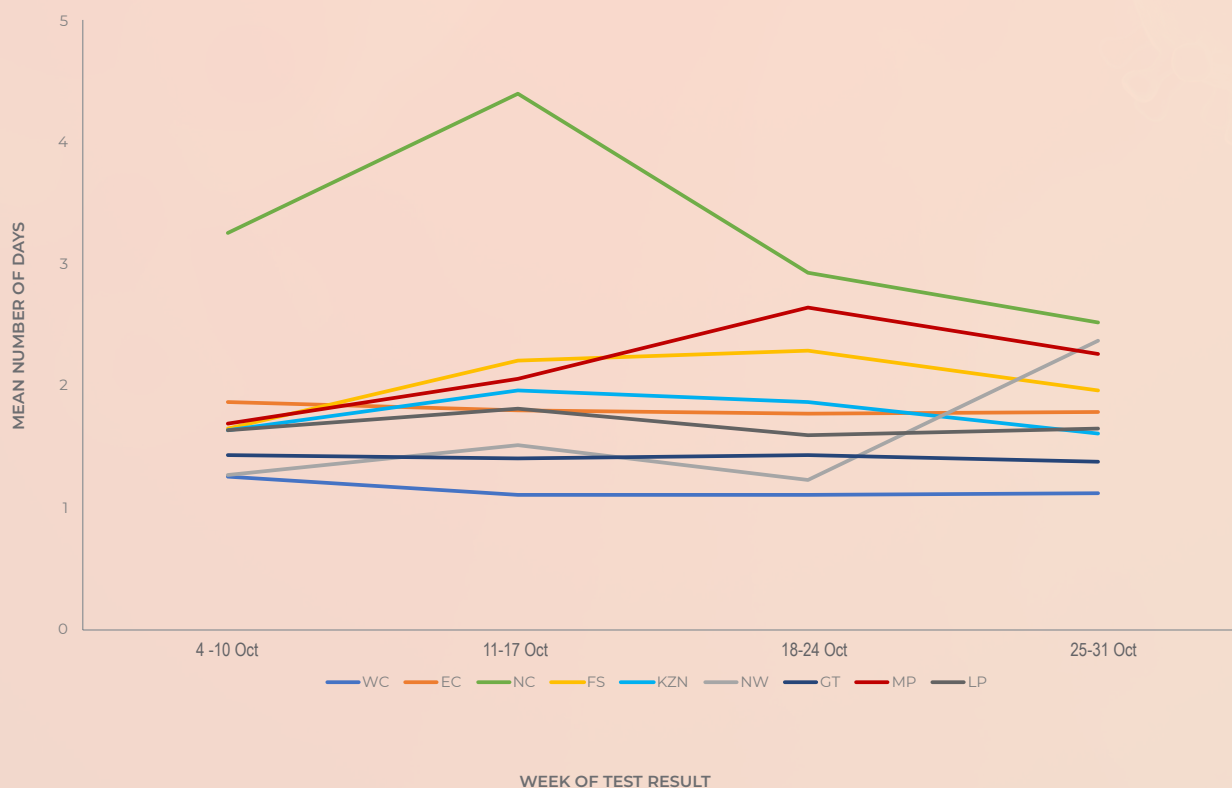


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 4 – 31 October 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal; GT, Gauteng; NC, Northern Cape; NW, North West; MP, Mpumalanga; LP, Limpopo

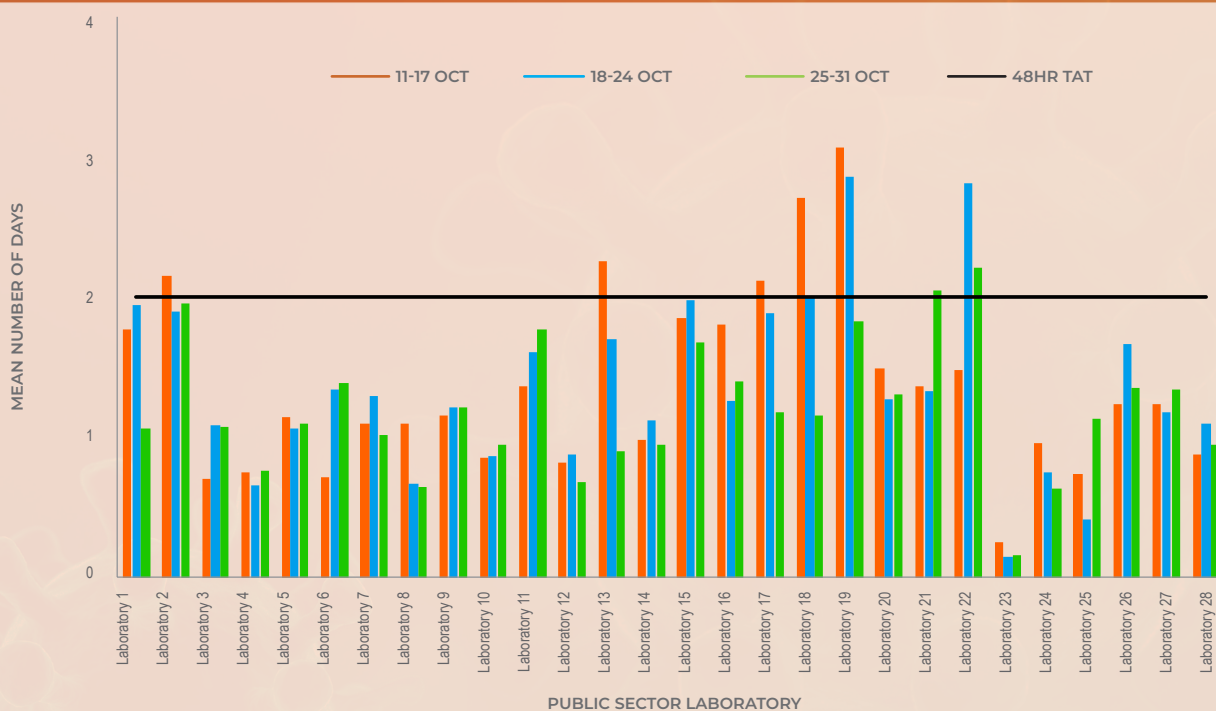


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 11 – 31 October 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

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Testing by province

Gauteng (32.0%) performed the largest number of tests in week 44, followed by Western Cape (16.5%) and KwaZulu-Natal (16.1%) provinces (Table 3). As has been observed since week 31, Northern Cape (280 per 100,000 persons) and Free State (272 per 100,000 persons) provinces had the highest testing rates in week 44, although testing rates continued to decrease in both provinces in the past week (Figure 6). Testing rates have decreased in all provinces since peak testing rates were observed between week 21 (Western Cape) and week 31 (Northern Cape) in the respective provinces. Testing rates have increased in the Eastern Cape over recent weeks.

The percentage testing positive in week 44 was highest in the Eastern Cape (23.9%). Percentages testing

positive were between 10-19% in Northern Cape, Free State, North West and Limpopo, and were <10% in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape in week 44 (Figure 7). Compared to the previous week, the percentage testing positive increased by 7.5% in the Eastern Cape (16.4% to 23.9%, $P<0.001$) in week 44. The percentage testing positive in week 44 compared to week 43 decreased in Western Cape ($P<0.001$), Northern Cape ($P<0.001$), Free State ($P<0.001$), North West ($P<0.001$) and Gauteng ($P=0.001$), and did not change in KwaZulu-Natal ($P=0.268$), Mpumalanga ($P=0.097$) and Limpopo ($P=0.777$). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, Northern Cape, Free State, North West and Limpopo provinces (Figure 7).

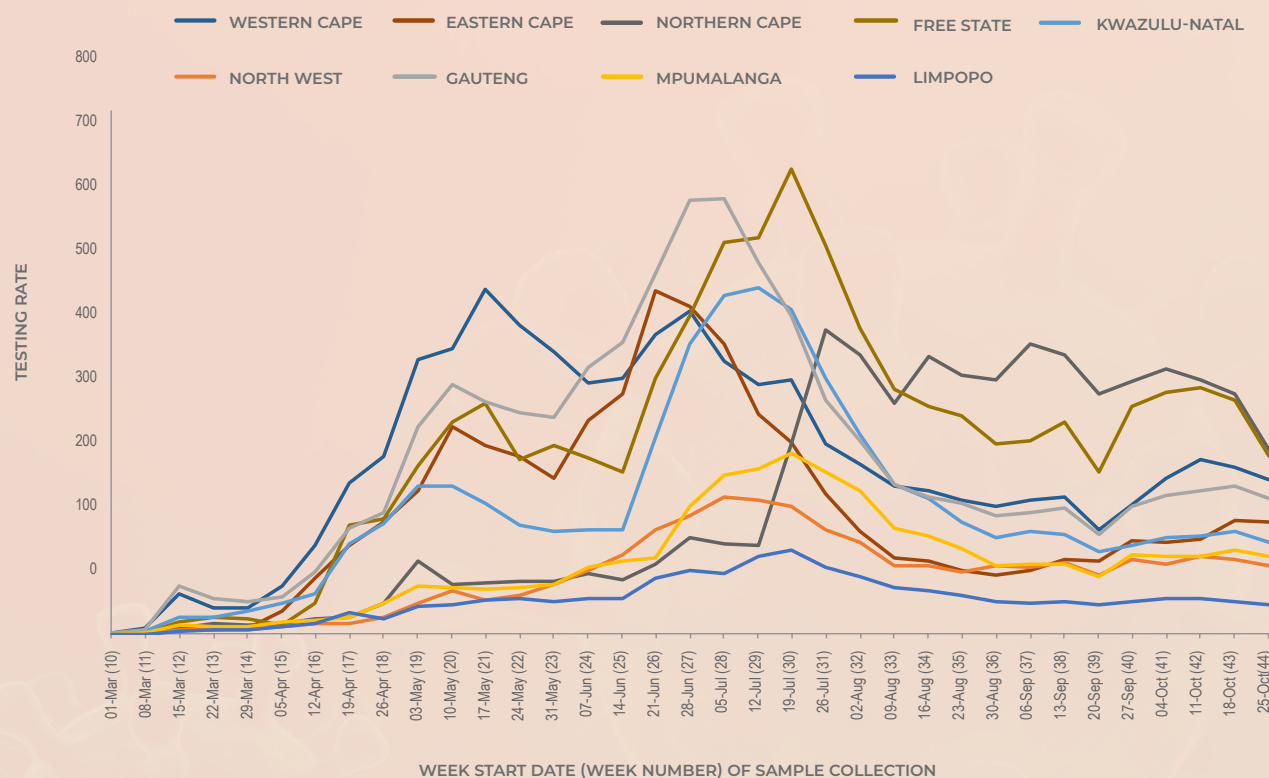


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 31 October 2020

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Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 11 – 31 October 2020

Province	Population ^a	11-17 Oct		18-24 Oct		25-31 Oct		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	18658	1385 (7.4)	17916	1634 (9.1)	16568	1307 (7.9)	236	-1.2%
Eastern Cape	6734001	9729	1077 (11.1)	11749	1926 (16.4)	11563	2758 (23.9)	172	7.5%
Northern Cape	1292786	5004	1206 (24.1)	4740	909 (19.2)	3626	554 (15.3)	280	-3.9%
Free State	2928903	11046	2500 (22.6)	10432	2024 (19.4)	7979	1183 (14.8)	272	-4.6%
KwaZulu-Natal	11531628	17277	947 (5.5)	18088	900 (5.0)	16224	850 (5.2)	141	0.3%
North West	4108816	4847	804 (16.6)	4726	782 (16.5)	4257	537 (12.6)	104	-3.9%
Gauteng	15488137	33928	2046 (6.0)	34926	1909 (5.5)	32200	1573 (4.9)	208	-0.6%
Mpumalanga	4679786	5526	617 (11.2)	5955	580 (9.7)	5499	486 (8.8)	118	-0.9%
Limpopo	5852553	3146	441 (14.0)	2938	368 (12.5)	2599	319 (12.3)	44	-0.3%
Unknown		177	9 (5.1)	219	17 (7.8)	118	3 (2.5)		-5.2%
Total	59622350	109338	11032 (10.1)	111689	11049 (9.9)	100633	9570 (9.5)	169	-0.4%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

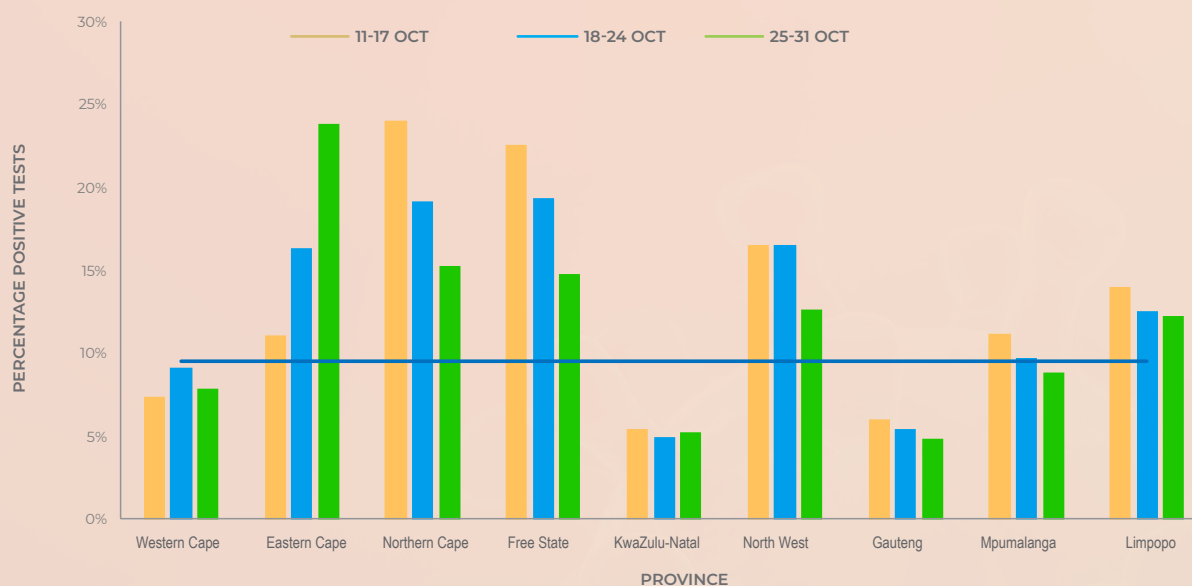


Figure 7. Weekly percentage testing positive, by province, South Africa, 11 – 31 October 2020. The horizontal blue line shows the national mean for week 44, beginning 25 October 2020.

Testing in the public sector

In the public sector, the percentage testing positive remained unchanged in the past week (11.2% in week 43 to 11.0% in week 44, $P=0.422$) (Table 4). The percentage testing positive in week 44 was highest

in the Eastern Cape (21.5%) and North West (19.8%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Eastern Cape, Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 8).

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Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 11 - 31 October 2020

Province	11-17 Oct		18-24 Oct		25-31 Oct	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	7333	507 (6.9)	7029	662 (9.4)	6350	543 (8.6)
Eastern Cape	6660	784 (11.8)	7998	1296 (16.2)	6756	1454 (21.5)
Northern Cape	3027	695 (23.0)	2861	509 (17.8)	2018	267 (13.2)
Free State	5848	1380 (23.6)	5743	1130 (19.7)	3986	668 (16.8)
KwaZulu-Natal	9015	449 (5.0)	9711	523 (5.4)	8115	443 (5.5)
North West	1716	399 (23.3)	1881	462 (24.6)	1317	261 (19.8)
Gauteng	11690	625 (5.3)	11890	622 (5.2)	10075	576 (5.7)
Mpumalanga	1660	242 (14.6)	1884	232 (12.3)	1719	196 (11.4)
Limpopo	1277	224 (17.5)	1184	188 (15.9)	876	141 (16.1)
Unknown	4	0 (0.0)	6	0 (0.0)	0	0 (0.0)
Total	48230	5305 (11.0)	50187	5624 (11.2)	41212	4549 (11.0)

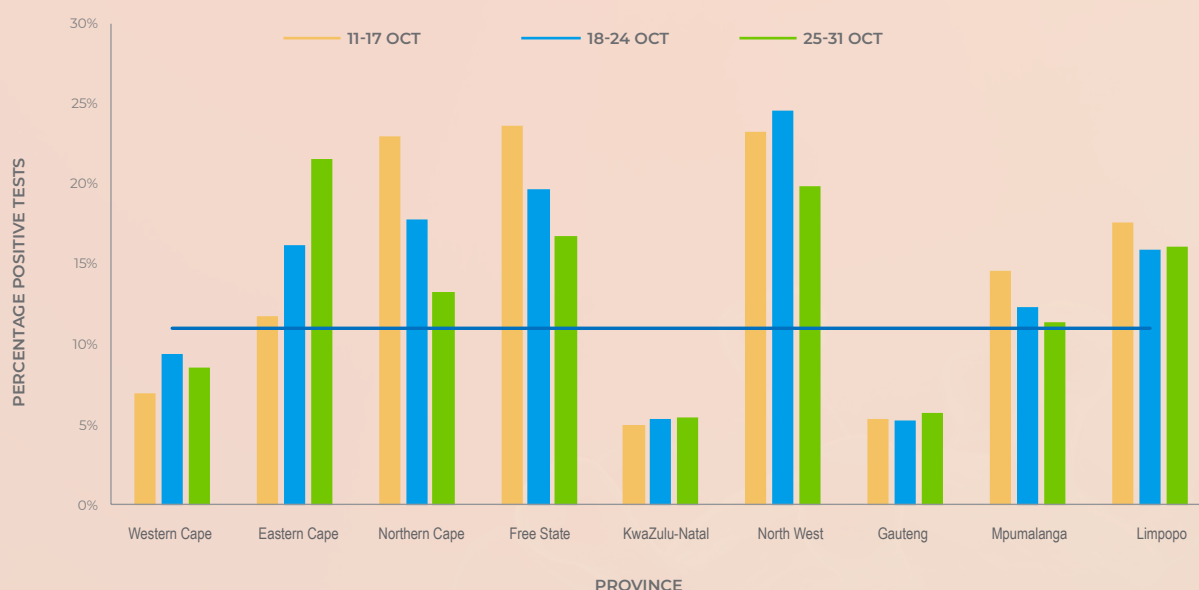


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 11 – 31 October 2020. The horizontal blue line shows the national mean for week 44, beginning 25 October 2020.

Public facilities with high proportions testing positive

Table 5 shows the 25 public clinics, hospitals and testing laboratories (where specimens were not tied to a particular facility), that had 25 or more specimens

tested and at least five positive results in the week of 25-31 October, with the highest proportion testing positive nationally. This week's list is dominated by facilities in the Eastern Cape (15) and Free State (4). Two facilities each are in Mpumalanga and North West.

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Table 5. Public healthcare facilities with a high proportion testing positive, 25-31 October 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Eastern Cape	39	0.538 (0.382;0.695)
Facility 2	Eastern Cape	92	0.500 (0.398;0.602)
Facility 3	Eastern Cape	35	0.486 (0.320;0.651)
Facility 4	North West	68	0.471 (0.352;0.589)
Facility 5	Eastern Cape	54	0.426 (0.294;0.558)
Facility 6	Eastern Cape	142	0.423 (0.341;0.504)
Facility 7	Eastern Cape	31	0.419 (0.246;0.593)
Facility 8	KwaZulu-Natal	39	0.410 (0.256;0.565)
Facility 9	Mpumalanga	28	0.393 (0.212;0.574)
Facility 10	Limpopo	46	0.391 (0.250;0.532)
Facility 11	Free State	59	0.390 (0.265;0.514)
Facility 12	Eastern Cape	99	0.374 (0.278;0.469)
Facility 13	Eastern Cape	31	0.355 (0.186;0.523)
Facility 14	Free State	43	0.349 (0.206;0.491)
Facility 15	North West	87	0.345 (0.245;0.445)
Facility 16	Eastern Cape	32	0.344 (0.179;0.508)
Facility 17	Free State	47	0.340 (0.205;0.476)
Facility 18	Free State	30	0.333 (0.165;0.502)
Facility 19	Eastern Cape	110	0.327 (0.240;0.415)
Facility 20	Eastern Cape	25	0.320 (0.137;0.503)
Facility 21	Mpumalanga	25	0.320 (0.137;0.503)
Facility 22	Eastern Cape	25	0.320 (0.137;0.503)
Facility 23	Eastern Cape	169	0.314 (0.244;0.384)
Facility 24	Eastern Cape	83	0.313 (0.213;0.413)
Facility 25	Eastern Cape	61	0.311 (0.195;0.428)

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 25-31 October 2020 are shown in Table 6. Districts showing the greatest proportions testing positive are concentrated in the Eastern Cape (10 districts), with four in the Free State, three in Limpopo, and two in each of the North

West, Northern Cape, and Western Cape. One district (Ikwezi in the Eastern Cape) showed a proportion testing positive greater than 40%, nine greater than 30% and nine showed a proportion testing positive less than 25%. A significant increase over the week was observed in three districts – Amahlathi in the Eastern Cape, Umzumbe in KwaZulu-Natal, and Pixley ka Seme in Mpumalanga. The proportion testing positive in Ga-Segonyana in the Northern Cape 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 25-31 October 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Ikwezi	Eastern Cape	0.489 (0.340-0.638)	...
Nelson Mandela Bay A	Eastern Cape	0.386 (0.325-0.447)	0.320 (0.268-0.372)
Amahlathi	Eastern Cape	0.360 (0.246-0.474)	0.152 (0.092-0.212)
Umzumbe	KwaZulu-Natal	0.359 (0.209-0.509)	0.064 (0.000-0.151)
Mafikeng	North West	0.335 (0.272-0.398)	0.385 (0.336-0.435)
Nelson Mandela Bay B	Eastern Cape	0.315 (0.284-0.346)	0.257 (0.221-0.293)
Nketoana	Free State	0.312 (0.214-0.410)	0.215 (0.136-0.294)
Ndlambe	Eastern Cape	0.309 (0.222-0.397)	0.459 (0.335-0.583)
Tswelopele	Free State	0.306 (0.212-0.401)	0.409 (0.292-0.527)
Lephalale	Limpopo	0.305 (0.215-0.394)	0.411 (0.310-0.511)
Tsantsabane	Northern Cape	0.294 (0.186-0.403)	0.342 (0.259-0.424)
Baviaans	Eastern Cape	0.277 (0.211-0.342)	0.384 (0.298-0.471)
Naledi	Free State	0.272 (0.128-0.415)	0.240 (0.143-0.337)
Pixley Ka Seme	Mpumalanga	0.255 (0.130-0.379)	0.021 (0.000-0.060)
Mogalakwena	Limpopo	0.252 (0.114-0.391)	0.170 (0.073-0.267)
Nelson Mandela Bay C	Eastern Cape	0.250 (0.228-0.272)	0.254 (0.232-0.277)
Cape Agulhas	Western Cape	0.245 (0.105-0.385)	...
Ba-Phalaborwa	Limpopo	0.240 (0.160-0.320)	0.234 (0.138-0.329)
Sundays River Valley	Eastern Cape	0.240 (0.158-0.322)	...
Ca-Segonyana	Northern Cape	0.239 (0.174-0.304)	0.378 (0.308-0.448)
Mohokare	Free State	0.236 (0.141-0.331)	0.284 (0.179-0.390)
Makana	Eastern Cape	0.232 (0.164-0.299)	0.237 (0.137-0.337)
Nxuba	Eastern Cape	0.224 (0.107-0.342)	0.093 (0.015-0.171)
Matzikama	Western Cape	0.224 (0.139-0.309)	0.206 (0.131-0.281)
Ditsobotla	North West	0.221 (0.093-0.350)	0.383 (0.255-0.511)

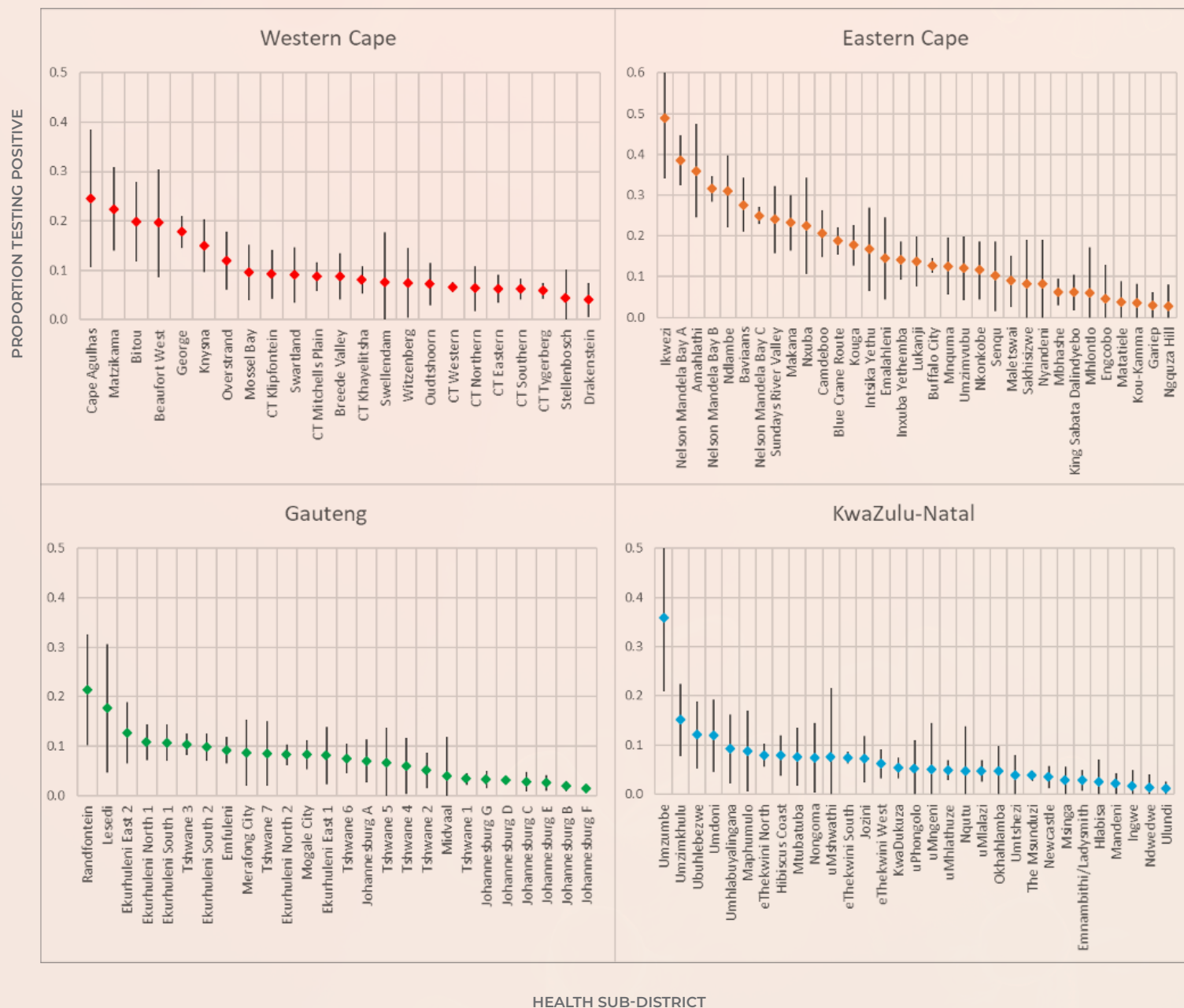
95% CI: 95% confidence interval; PTP: adjusted positive test proportion; PTP marked in red or blue have current week proportions testing positive that are significantly higher or lower than the previous week, respectively.

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

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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 25-31 October 2020.

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SOUTH AFRICA WEEK 44 2020

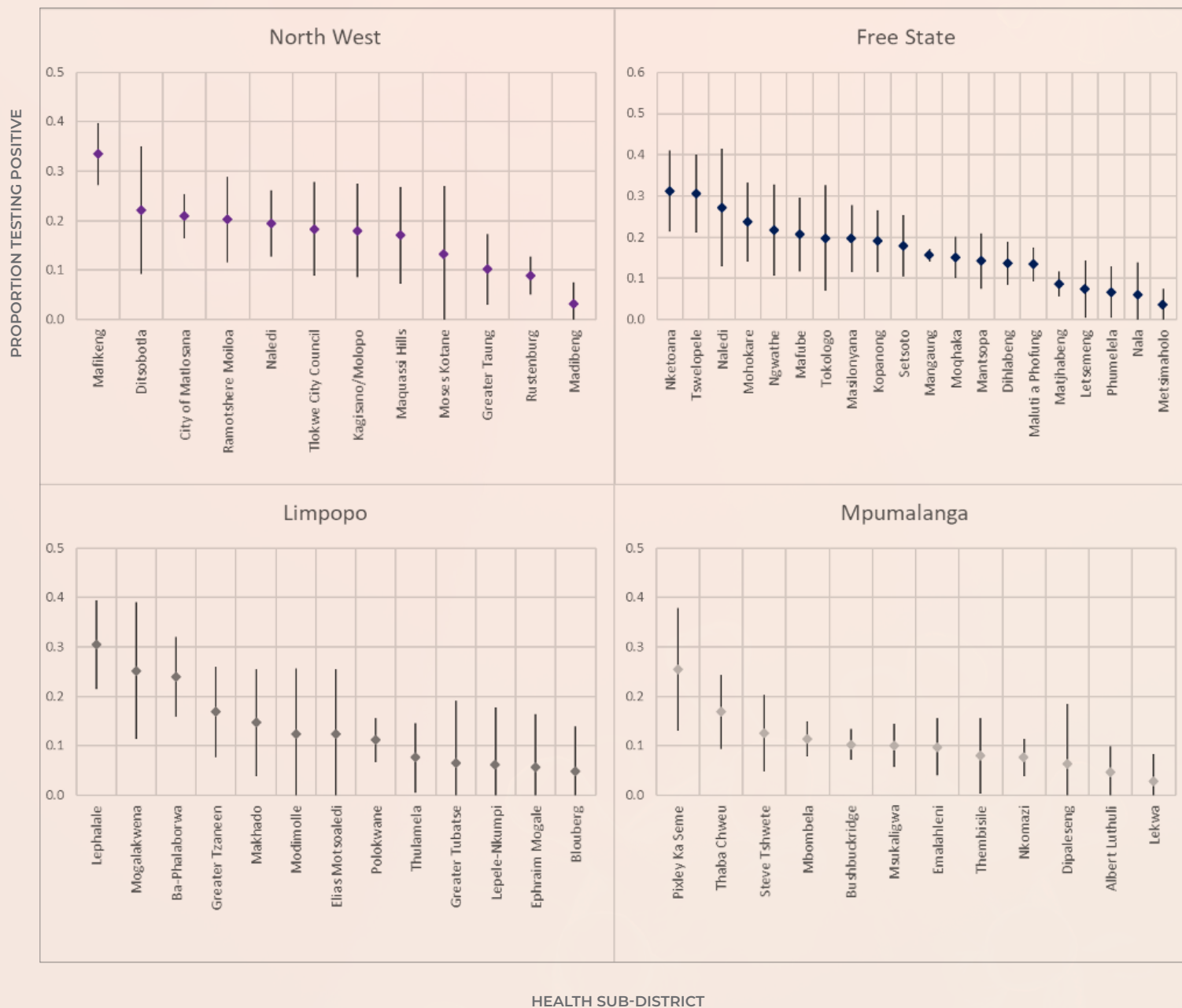


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 25-31 October 2020.

COVID-19 TESTING SUMMARY

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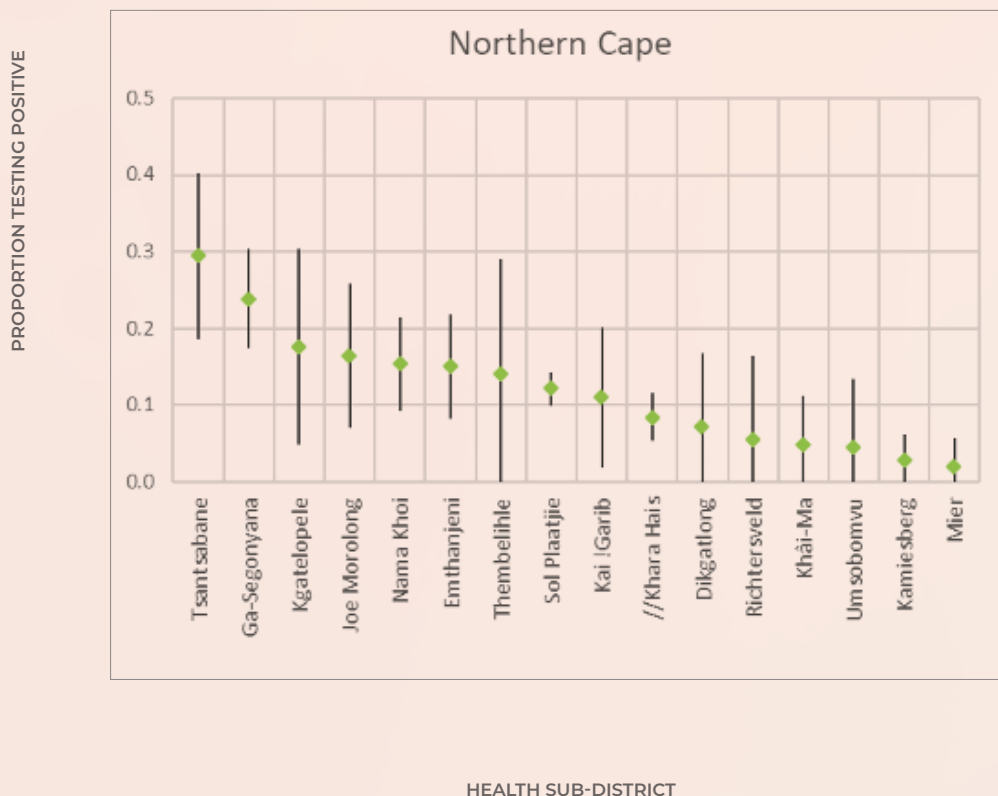


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 25-31 October 2020.

The spatial pattern of adjusted proportions testing positive in public facilities by health district and sub-district are shown for South Africa (Figure 10), Western Cape (Figure 11), Eastern Cape (Figure 12), Northern Cape (Figure 13), Free State (Figure 14), KwaZulu-Natal (Figure 15), North West (Figure 16), Gauteng (Figure 17), Mpumalanga (Figure 18) and Limpopo (Figure 19).

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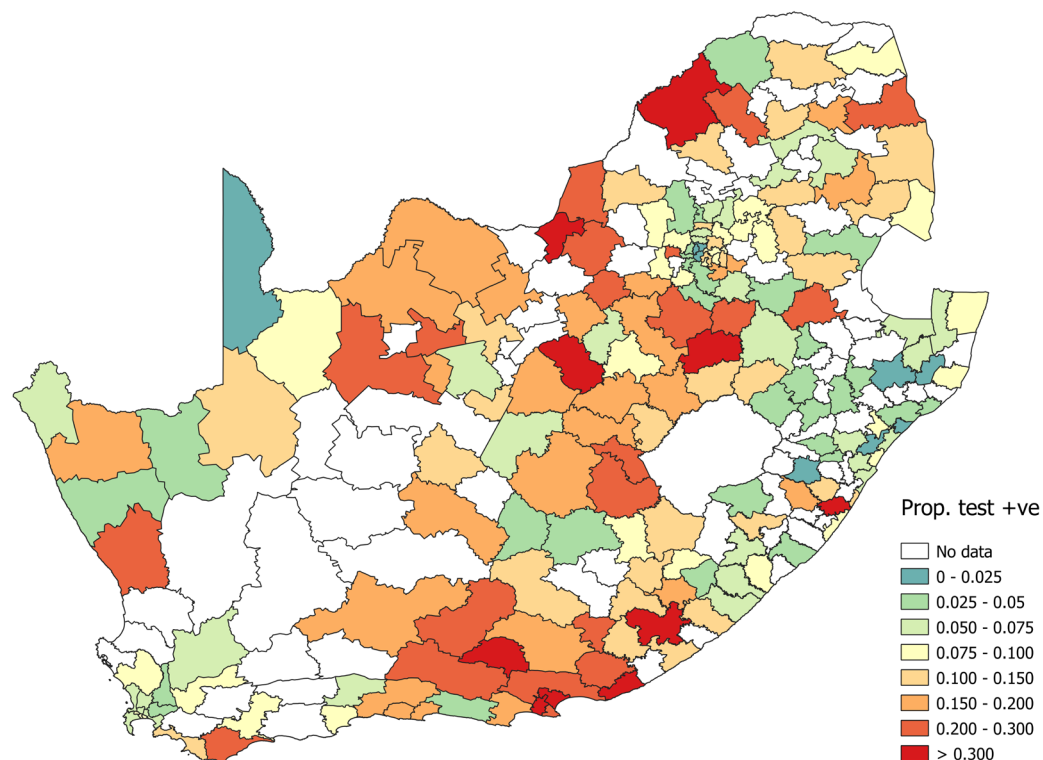


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 25-31 October 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

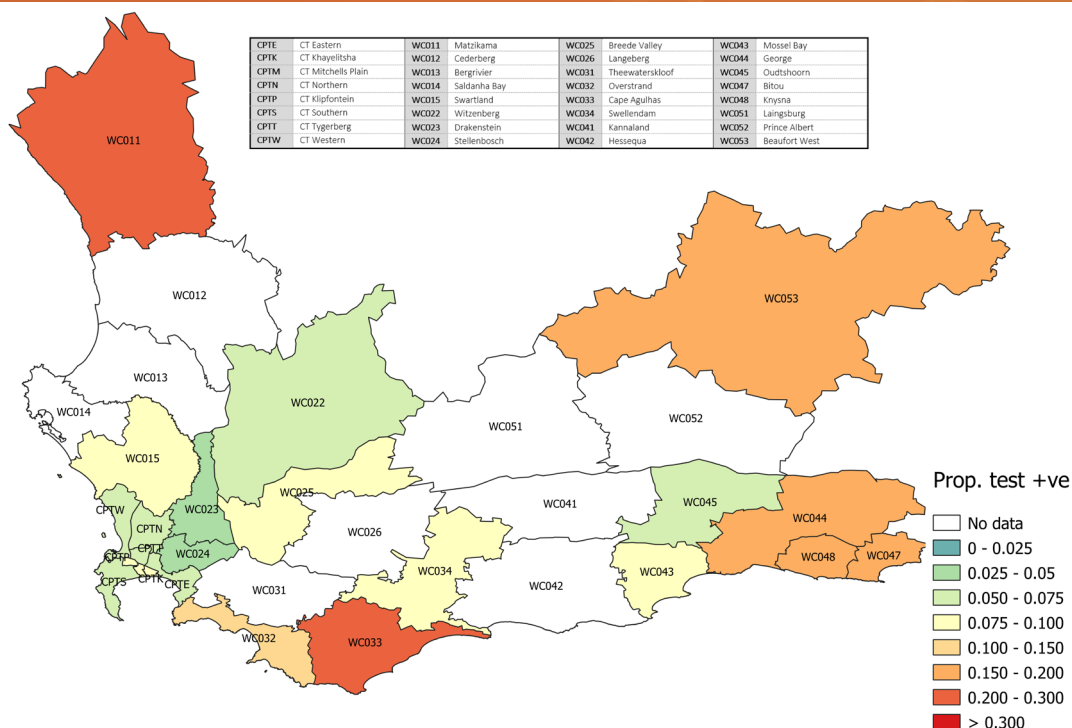


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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BUF	Buffalo City	EC122	Mquma	EC135	Irishia Yethu	EC155	Nyaneni
EC101	Camdeboo	EC123	Great Kei	EC136	Emalahle	EC156	Mthombo
EC102	Blue Crane Route	EC124	Amaluthi	EC137	Engcobo	EC157	King Sabata Dalindyebo
EC103	Ixwezi	EC126	Nqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Elundini	EC442	Umtombu
EC105	Indumbe	EC128	Nouba	EC142	Sengca	EC443	Mthatha
EC106	Sundays River Valley	EC131	Inouba Yethemba	EC143	Maletwal	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsoelwano	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kouga	EC133	Inkwanca	EC153	Ngozwa Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Kamma	EC134	Lukang	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mthashe						

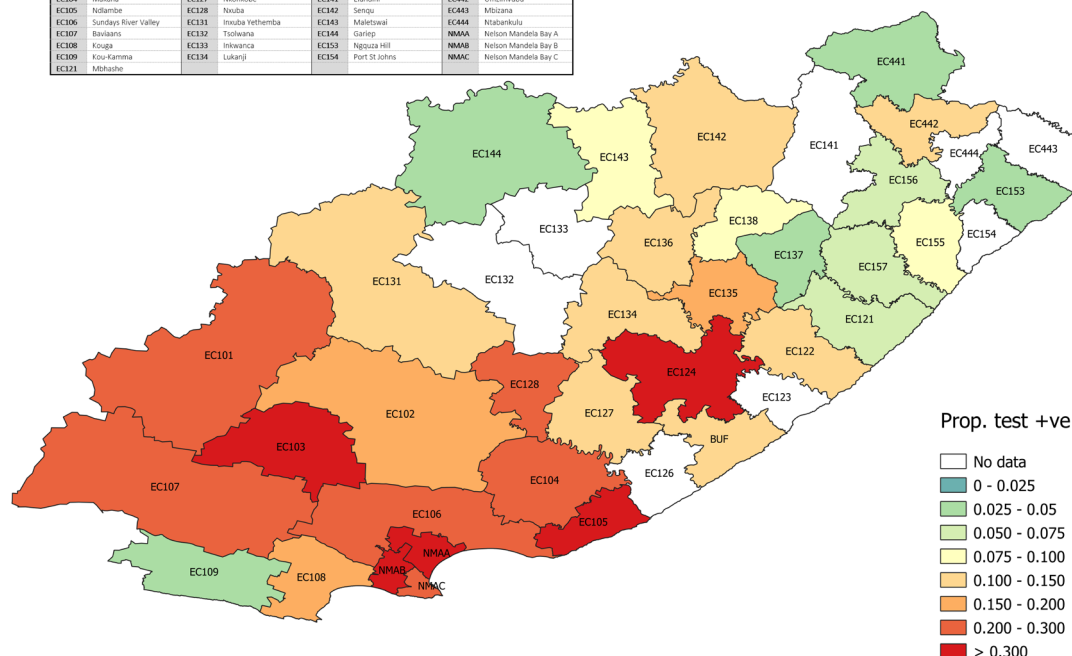


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

NC061	Richtersveld	NC074	Kamoung	NC085	Tsantabane
NC062	Nama-Kro	NC075	Kamoung	NC086	Agathangweni
NC063	Kamoung	NC076	Thabakane	NC087	Sol Plaatje
NC064	Hantam	NC077	Syngamab	NC088	Chigatong
NC065	Karoo-Koedoo	NC078	Syngamab	NC089	Magnien
NC066	Karoo-Koedoo	NC079	Moor	NC090	Phokwane
NC067	Karoo-Koedoo	NC080	Karoo-Koedoo	NC091	Joe Koning
NC068	Umtata	NC081	Karoo-Koedoo	NC092	Ge-Sagonyana
NC069	Umtata	NC082	Karoo-Koedoo	NC093	Gamagara
NC070	Umtata	NC083	Karoo-Koedoo		
NC071	Umtata	NC084	Karoo-Koedoo		
NC072	Umtata				
NC073	Umtata				

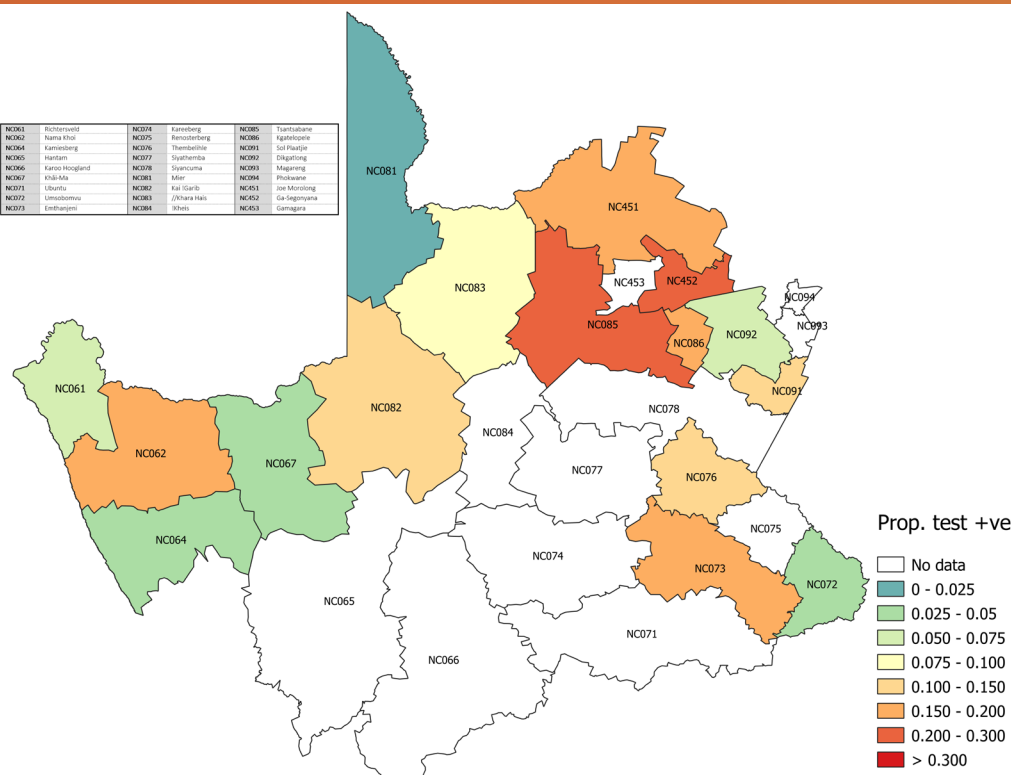


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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SOUTH AFRICA

WEEK 44 2020

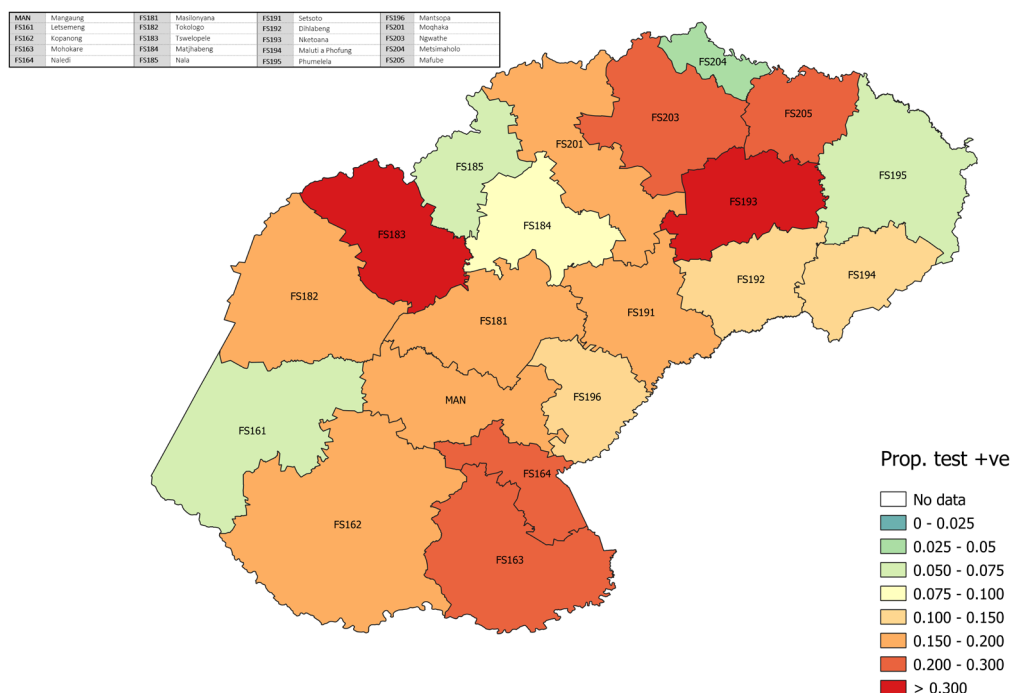


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

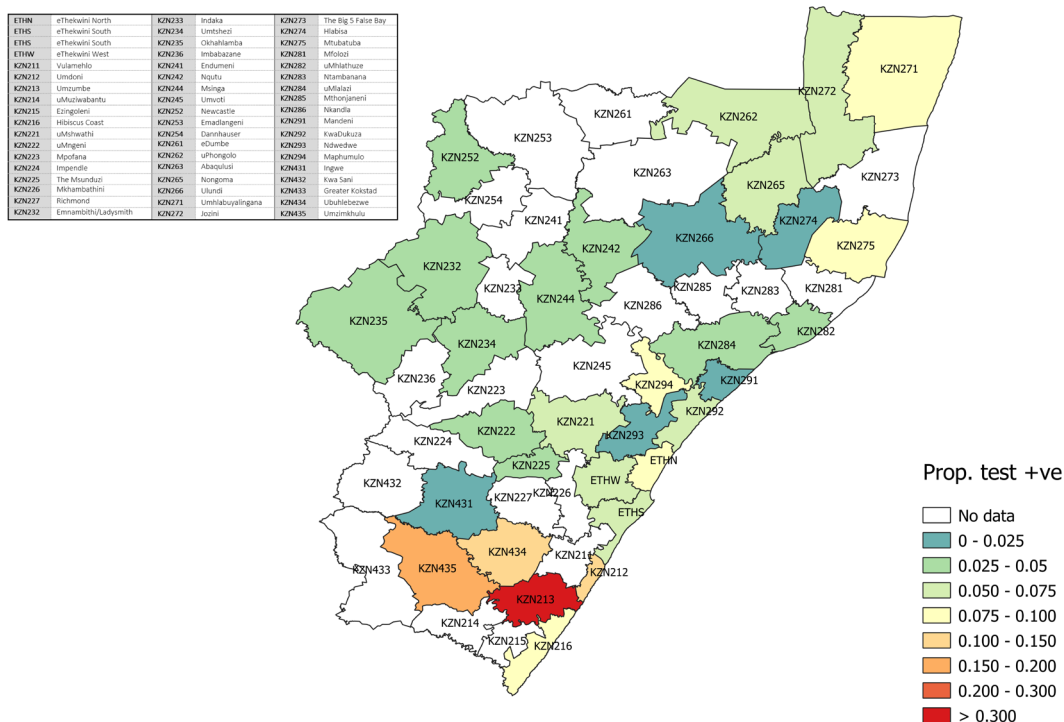


Figure 15. Health sub-districts in KwaZulu-Natal Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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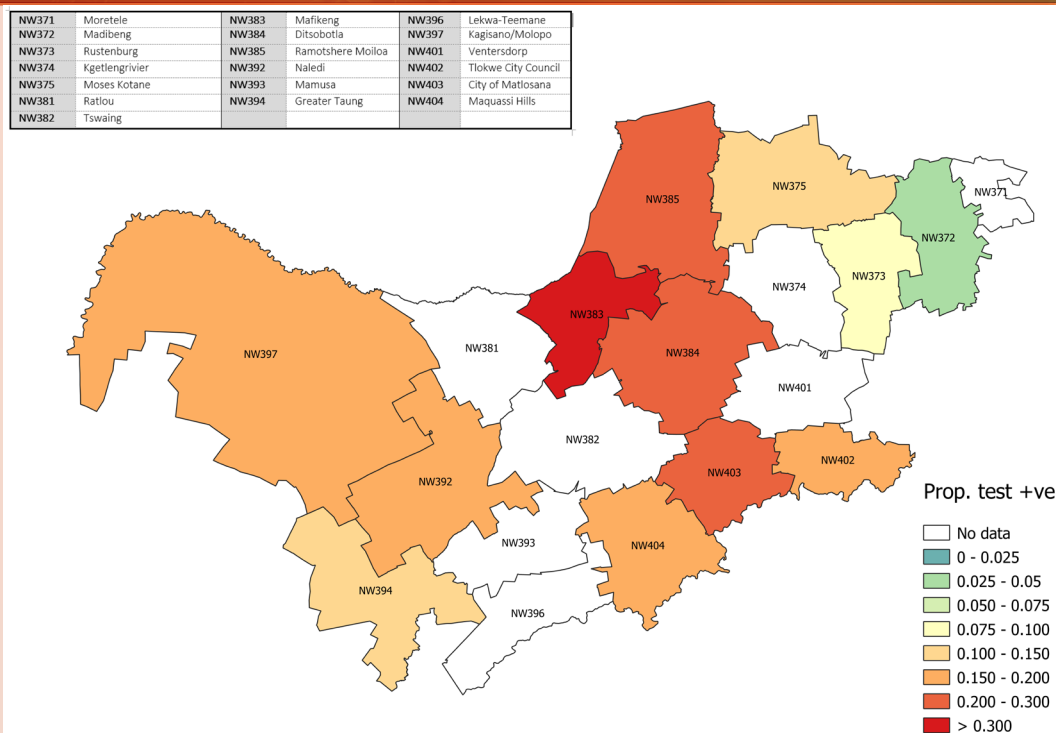


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

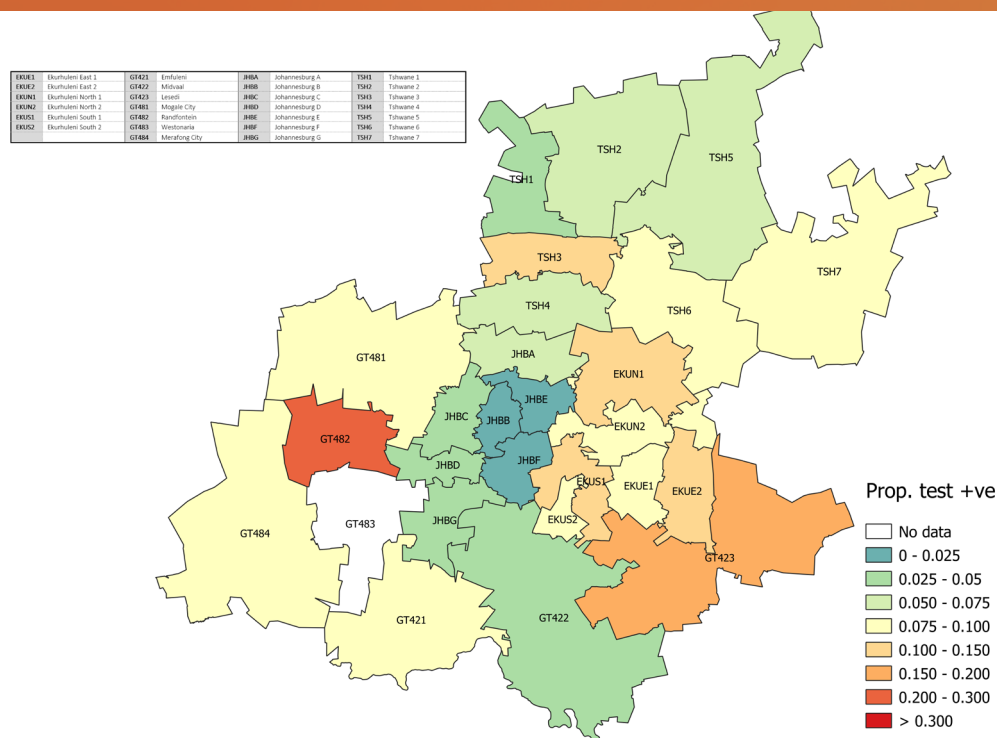


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

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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	Pixley Ka Seme	MP313	Steve Tshwete	MP323	Umjindi
MP305	Lekwa	MP314	Emakhazeni	MP324	Nkomazi
MP306	Dipaleseng	MP315	Thembisile	MP325	Bushbuckridge

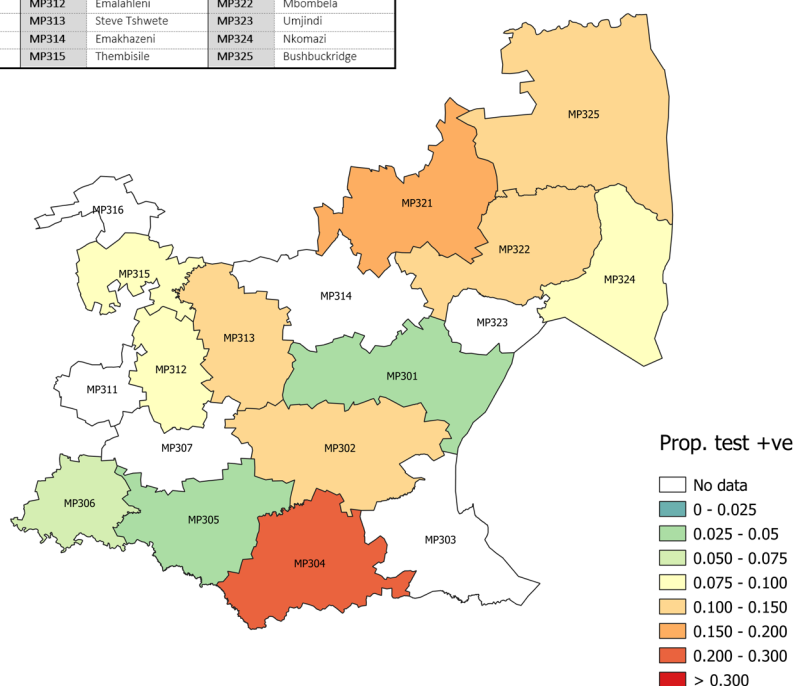


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Bloubaerg	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Agnang	LIM366	Bela-Bela
LIM333	Greater Tzaneen	LIM353	Molemole	LIM367	Mogalakwena
LIM334	Ba-Palataborwa	LIM354	Polokwane	LIM471	Ephraim Mogale
LIM335	Maruleng	LIM355	Lepelle-Nkumpi	LIM472	Elias Motosoale
LIM341	Musina	LIM361	Thabazimbi	LIM473	Makhuduthamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Modikgopong	LIM475	Greater Tzaneen
LIM344	Makhado				

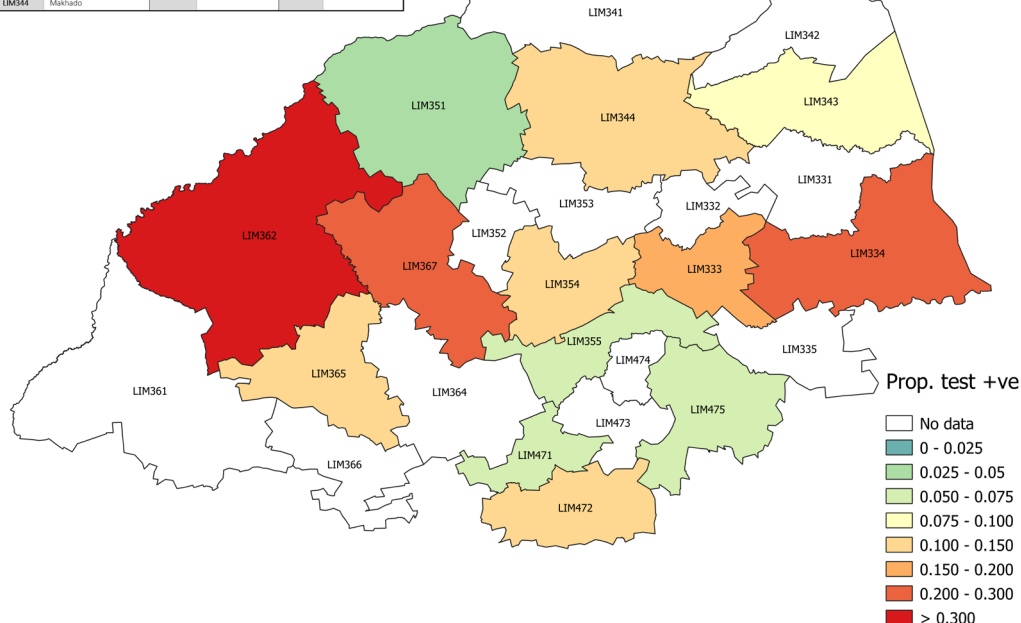


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 25-31 October 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 44 2020

Testing by patient admission status

In week 44, 30.6% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Northern Cape (39.8%) and KwaZulu-Natal (39.1%). Comparing week 44 to the previous week, the proportion of inpatient tests increased from 26.1% to

39.8% in the Northern Cape, from 14.7% to 20.0% in the Free State and from 13.2% to 18.4% in the Eastern Cape. The percentage testing positive in week 44 remained lower among inpatients (8.2%) compared to outpatients (12.9%) (Figure 21). In the public sector in week 44 the mean laboratory turnaround time continued to be lower for inpatients (1.4 days) compared to outpatients (1.9 days) (Figure 22).

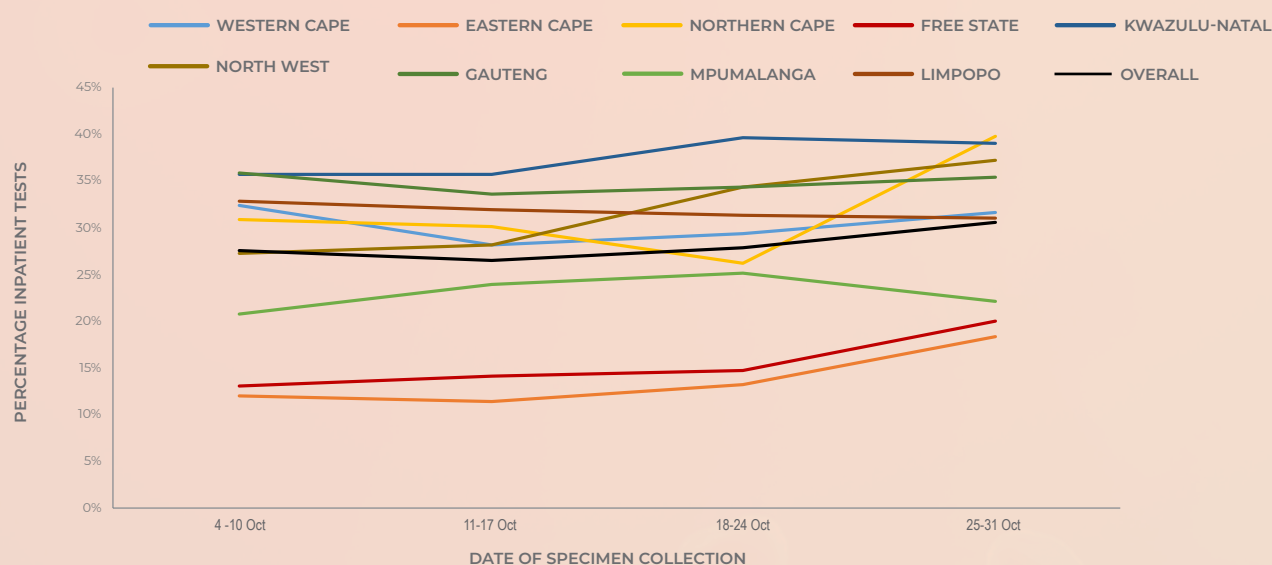


Figure 20. Percentage of inpatient tests performed in the public sector by province, 4 - 31 October 2020

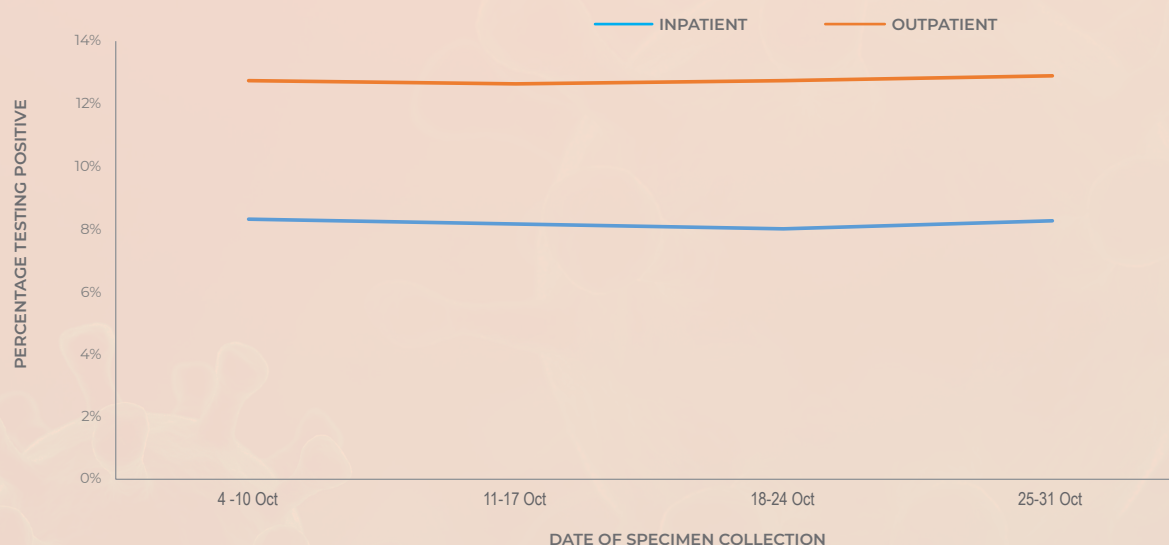


Figure 21. Percentage testing positive by patient admission status in the public sector, 4 - 31 October 2020

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 44 2020

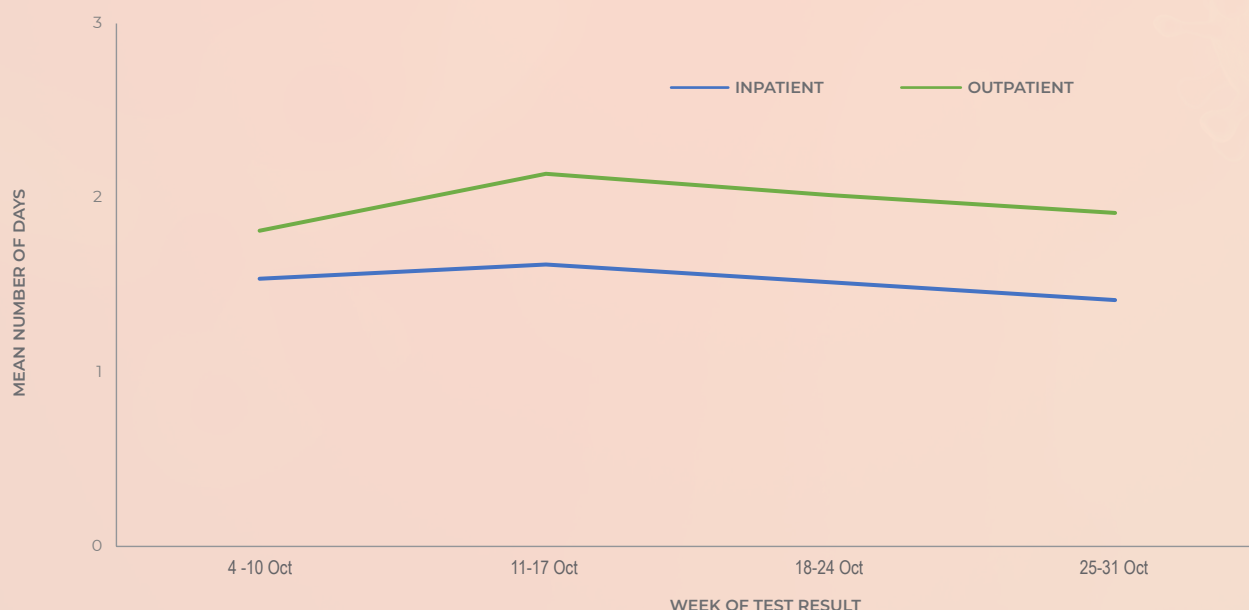


Figure 22. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 4 - 31 October 2020

Testing by age and sex

The mean age of individuals tested in week 44 was 39.3 years, slightly higher than previous weeks. The mean age of individuals with a positive test in week 44 was 40.8 years, also slightly higher than previous weeks. The mean age of individuals with a positive test

in week 44 did not differ between males (40.8 years) and females (41.0 years, $P=0.752$) (Table 7). The sex ratio (the number of males per 100 females) of individuals with a positive test in week 44 was 77.9. For both sexes, the proportion testing positive in week 44 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, 4 - 31 October 2020

Week number	Week beginning	Mean age of tested (years)		Mean age of positive tests (years)		Sex ratios (males / 100 females)	
		Males	Females	Males	Females	Tested	Positive tests
41	4 October	38.4	38.4	38.4	38.5	90.0	75.6
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	39.1	39.5	40.8	41.0	90.9	77.9

COVID-19 TESTING SUMMARY

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Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 11 – 31 October 2020

From week 41 to week 44, the percentage testing positive decreased by 0.5% in males (from 9.3% to 8.8%) and decreased by 0.9% in females (from 11.1% to 10.2%) (Table 8). In week 44 the percentage testing

positive was higher in females compared to males in the 0-19 years ($P=0.001$) and 40-59 years' age group ($P<0.001$), and did not differ in the other age groups.

Table 8. Percentage testing positive by sex and week, South Africa, 4 – 31 October 2020

Age (years)	4-10 Oct		11-17 Oct		18-24 Oct		25-31 Oct	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	7.8%	8.9%	7.5%	8.6%	6.4%	7.8%	6.0%	7.4%
20-39	10.7%	12.0%	10.4%	11.5%	9.4%	11.0%	9.2%	9.8%
40-59	9.3%	12.5%	9.7%	11.8%	10.0%	12.7%	9.4%	13.0%
60-69	8.0%	10.4%	8.4%	10.3%	9.6%	11.4%	9.7%	10.1%
70+	7.4%	7.3%	7.8%	8.9%	8.0%	8.7%	8.1%	7.8%
Total	9.3%	11.1%	9.3%	10.8%	8.9%	10.8%	8.8%	10.2%

COVID-19 TESTING SUMMARY

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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 44 were slightly lower than observed in the previous two weeks. Gauteng (32.0%), Western Cape (16.5%) and KwaZulu-Natal (16.1%) provinces continued to perform the majority of tests in the past week. Northern Cape (280 per 100,000 persons) and Free State (272 per 100,000 persons) provinces had the highest testing rates in week 44, although decreased testing rates were observed in these provinces and increased testing rates observed in the Eastern Cape over recent weeks. The overall laboratory turnaround times in week 44 decreased to 1.4 days; 1.7 days in the public sector and 1.3 days in the private sector.

The percentage testing positive has been decreasing weekly since the peak of 31.3% in week 29. In week 44 the percentage testing positive was 9.5%, slightly lower than the previous week. The percentage testing positive was highest in the Eastern Cape (23.9%). Percentages testing positive were between 10-19% in Northern Cape, Free State, North West and Limpopo, and were <10% in Gauteng, KwaZulu-Natal, Mpumalanga and Western Cape. In week 44, compared to the previous week, the percentage testing positive increased in the Eastern Cape, decreased in Western Cape, Northern Cape, Free State, North West and Gauteng, and did not change in KwaZulu-Natal, Mpumalanga and Limpopo. Of the 25 districts with the highest proportions testing positive in week 44, ten were in the Eastern Cape.