COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK 28 2020

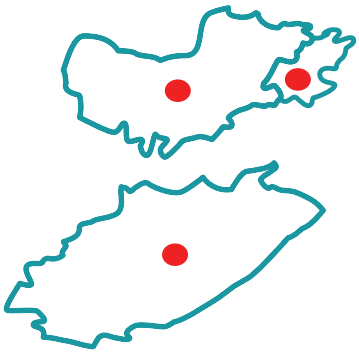
NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

OVERVIEW

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 collected up to 11 July 2020 (week 28 of 2020).

Highlights

- In the period 1 March 2020 through 11 July 2020, 1 978 798 laboratory tests for SARS-CoV-2 have been conducted nationally
- Four provinces including Western Cape, Eastern Cape, KwaZulu-Natal and Gauteng accounted for 81% of tests performed in week 28
- Overall percentage testing positive was 14%, however, there continued to be an increase in the weekly percentage testing positive since week 18 to 31% in week 28 (5-11 July)
- Eastern Cape (38.1%), North West (35.9%) Gauteng (33.8%) provinces had the highest percentage testing positive, while a decreased percentage testing positive was observed in the Western Cape in the past week.
- The mean turnaround time in week 28 was 5.8 days in the public sector and 2.5 days in the private sector. However, public sector turnaround time was lower for hospitalised patients (3.4 days) compared to outpatients (6.6 days).



TESTS

1 978 798

LABORATORY TESTS HAVE BEEN CONDUCTED NATIONALLY FROM 1 MARCH TO 11 JULY 2020

PERSONS

14%

OVERALL PROPORTION TESTING POSITIVE

PROVINCES WITH HIGHEST PERCENTAGE TESTING POSITIVE

Eastern Cape (38.1%), North West (35.9%) Gauteng (33.8%) provinces had the highest percentage testing positive in the past week

METHODS

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5 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 17 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. 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. For these results, estimates of overall prevalence were derived using regression techniques. These estimates were then refined using the margins command in Stata to adjust the district-specific positive test prevalences for 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 for a more accurate comparison of the prevalences 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 11 July 2020 (week 28).

TESTING VOLUMES AND PROPORTION TESTING POSITIVE

From 1 March through 11 July 2020, 1 978 798 laboratory tests for SARS-CoV-2 were performed. The number of tests performed increased week on week, from week 10 to week 21, however decreased in weeks 22 and 23 due to a limited supply of extraction and testing kits. Increased volumes of tests have been observed since week 24, with the highest number of tests (n=246,010) performed in week 27. In week 28, 185 035 tests were performed. 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).

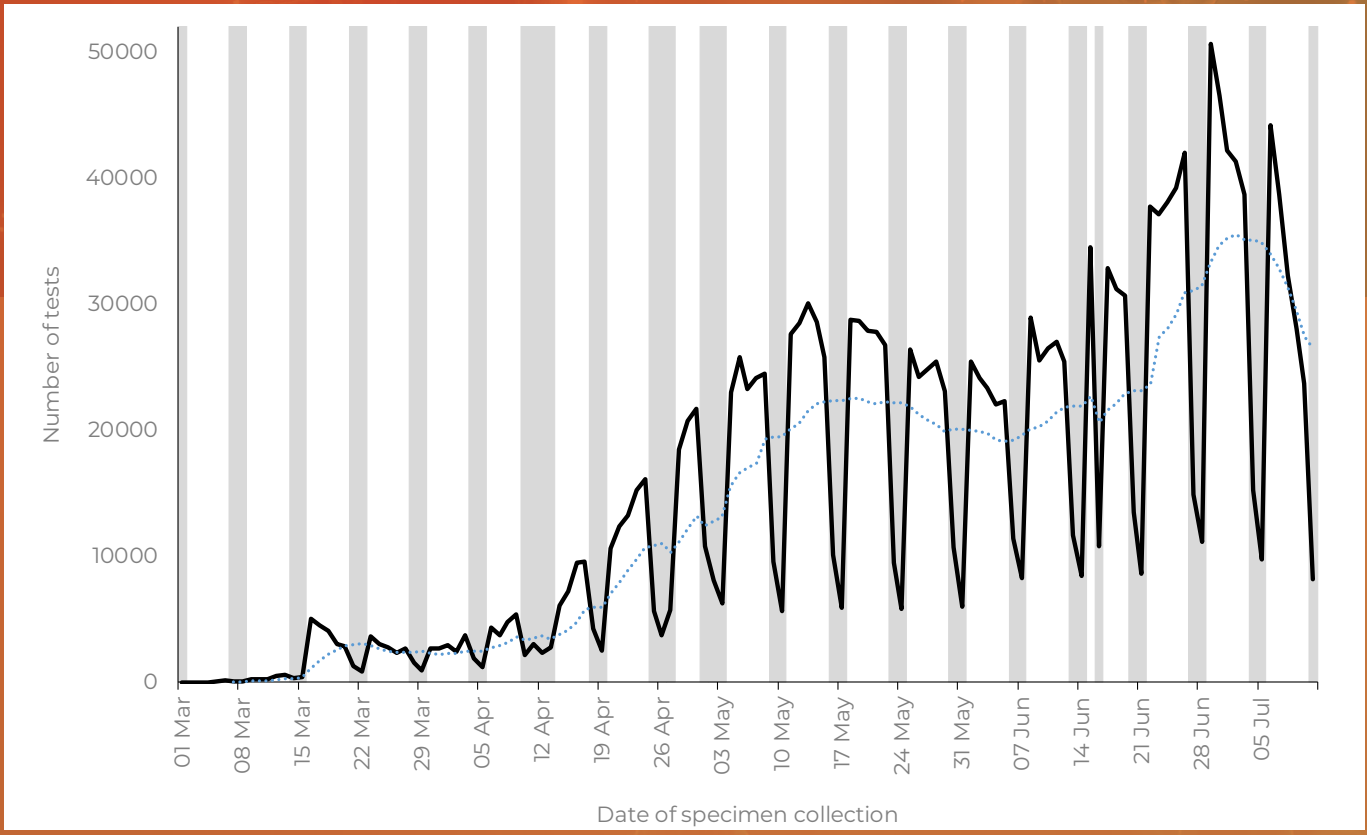


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March –11 July 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays

The overall percentage testing positive from week 10 through 28 was 14.0% (Table 1). The percentage testing positive continued to increase week on week, and has increased from 23.0% in week 26, to 26.2% in week 27 and to 30.6% in week 28 (P<0.001) (Figure 2).

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WEEK 28 2020

Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March –11 July 2020

Week number	Week beginning	No. of tests n(%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar	402 (0.0)	9	2.2
11	08-Mar	2 309 (0.1)	87	3.8
12	15-Mar	21 280 (1.1)	824	3.9
13	22-Mar	17 021 (0.9)	462	2.7
14	29-Mar	17 375 (0.9)	393	2.3
15	05-Apr	24 640 (1.2)	568	2.3
16	12-Apr	41 903 (2.1)	1 041	2.5
17	19-Apr	75 850 (3.8)	1 938	2.6
18	26-Apr	89 450 (4.5)	2 907	3.2
19	03-May	136 755 (6.9)	5 554	4.1
20	10-May	156 494 (7.9)	7 393	4.7
21	17-May	155 460 (7.9)	10 554	6.8
22	24-May	140 749 (7.1)	11 701	8.3
23	31-May	134 820 (6.8)	13 447	10.0
24	07-Jun	153 449 (7.8)	20 395	13.3
25	14-Jun	162 039 (8.2)	29 719	18.3
26	21-Jun	217 757 (11.0)	49 985	23.0
27	28-Jun	246 010 (12.4)	64 460	26.2
28	05-Jul	185 035 (9.4)	56 562	30.6
Total		1 978 798 (100.0)	277 999	14.0

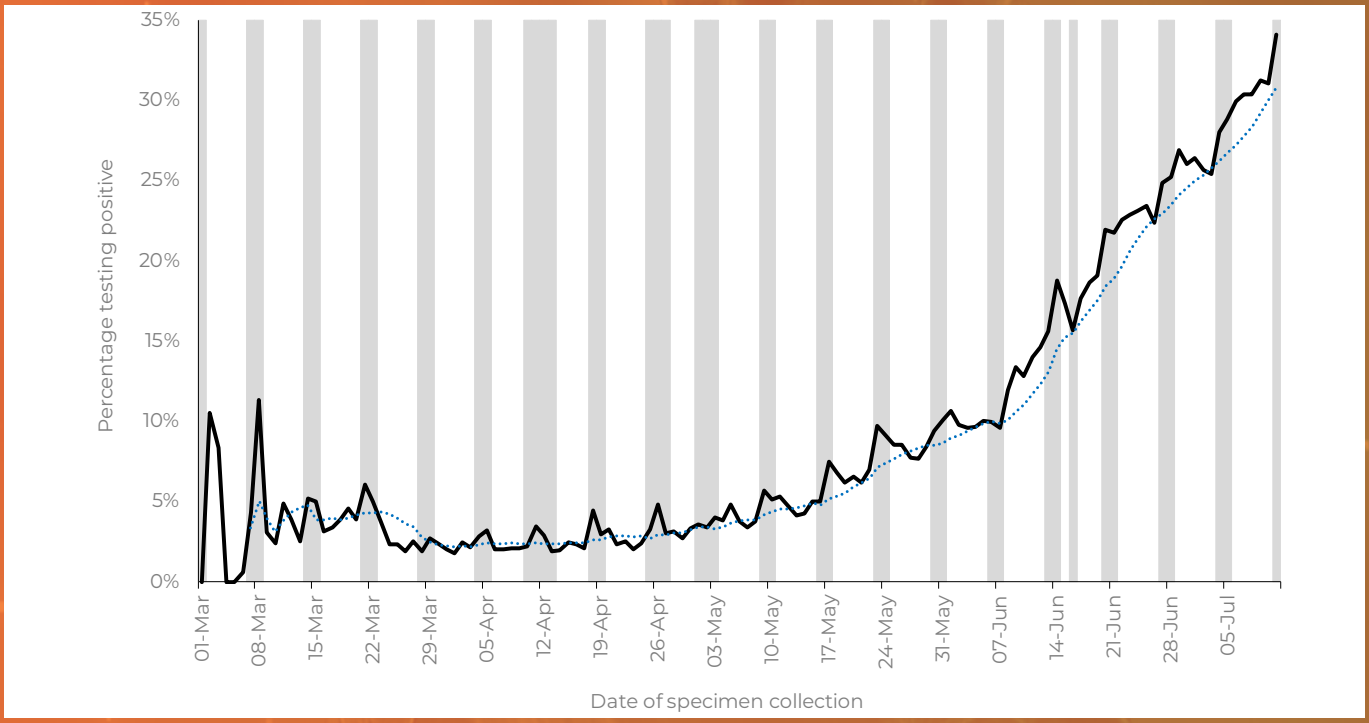

Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 11 July 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays

TESTING IN PRIVATE AND PUBLIC SECTORS

From 1 March through 11 July, 913 013 laboratory tests were conducted in public sector laboratories, with 11.4% testing positive. Over this same period, private sector laboratories conducted 1 065 785 tests, with 16.3% testing positive (Table 2). Overall, the public sector has conducted 46.1% of tests and accounted for 37.5% of cases. The percentage testing positive continued to increase in both the public and private sectors, and was 29.0% in the public sector and 31.1% in the private sector in week 28 ($P<0.001$).

The mean turnaround time increased from the previous week and in week 28 was 3.6 days overall; 5.8 days in the public sector and 2.5 days in the private sector (Figure 3). Among tests conducted in the public sector in the five provinces conducting the largest volumes of tests, the turnaround time in week 28 was highest in Gauteng (7.5 days) and lowest in the Western Cape (2.8 days). Increases in turnaround time were observed in Gauteng, Eastern Cape and KwaZulu-Natal in the past week (Figure 4). Five of the 20 NHLS laboratories performing testing for SARS-CoV-2 had improved turnaround times in week 28 compared to the previous week, although the large majority of public sector laboratories continued to have turnaround times >48 hours (Figure 5).

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Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 11 July 2020

		Public sector		Private sector		Public sector proportion of		Ratio of PTP[a]
Week number	Week beginning	Tests	Cases	Tests	Cases	Tests (%)	Cases (%)	
10	01-Mar	249	5 (2.0)	153	4 (2.6)	61.9	55.6	0.768
11	08-Mar	348	12 (3.4)	1 961	75 (3.8)	15.1	13.8	0.902
12	15-Mar	1 345	50 (3.7)	19 935	774 (3.9)	6.3	6.1	0.957
13	22-Mar	3 356	121 (3.6)	13 665	341 (2.5)	19.7	26.2	1.445
14	29-Mar	5 617	158 (2.8)	11 758	235 (2.0)	32.3	40.2	1.407
15	05-Apr	11 357	321 (2.8)	13 283	247 (1.9)	46.1	56.5	1.520
16	12-Apr	23 809	608 (2.6)	18 094	433 (2.4)	56.8	58.4	1.067
17	19-Apr	54 249	1 481 (2.7)	21 601	457 (2.1)	71.5	76.4	1.290
18	26-Apr	66 248	2 298 (3.5)	23 202	609 (2.6)	74.1	79.1	1.322
19	03-May	92 301	4 263 (4.6)	44 454	1 291 (2.9)	67.5	76.8	1.590
20	10-May	104 518	5 124 (4.9)	51 976	2 269 (4.4)	66.8	69.3	1.123
21	17-May	95 508	6 648 (7.0)	59 952	3 906 (6.5)	61.4	63.0	1.068
22	24-May	74 370	5 985 (8.0)	66 379	5 716 (8.6)	52.8	51.1	0.935
23	31-May	60 339	6 138 (10.2)	74 481	7 309 (9.8)	44.8	45.6	1.037
24	07-Jun	60 011	7 395 (12.3)	93 438	13 000 (13.9)	39.1	36.3	0.886
25	14-Jun	55 704	11 118 (20.0)	106 335	18 601 (17.5)	34.4	37.4	1.141
26	21-Jun	81 612	18 762 (23.0)	136 145	31 223 (22.9)	37.5	37.5	1.002
27	28-Jun	78 295	21 050 (26.9)	167 715	43 410 (25.9)	31.8	32.7	1.039
28	05-Jul	43 777	12 696 (29.0)	141 258	43 866 (31.1)	23.7	22.4	0.934
Total		913 013	104 233 (11.4)	106 5785	173 766 (16.3)	46.1	37.5	0.700

[a] Ratio of proportion testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/ (no. of cases/total tests in private sector)

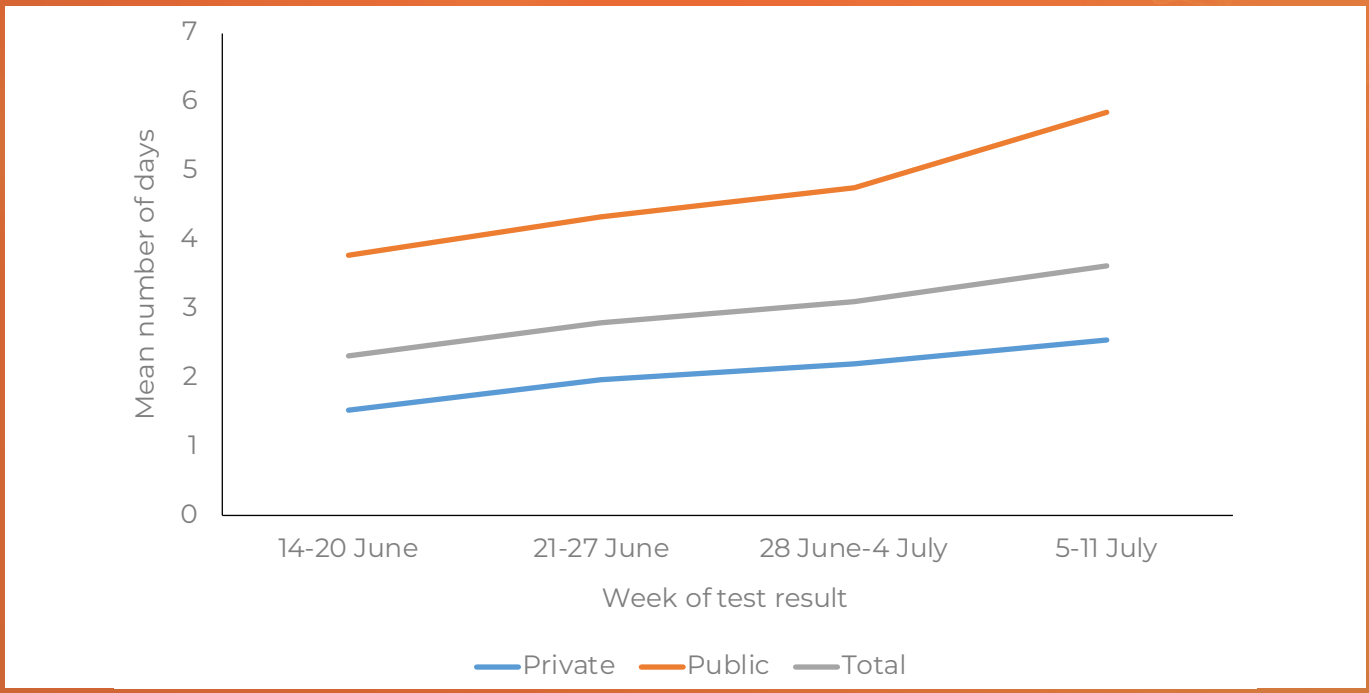

Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 14 June – 11 July 2020

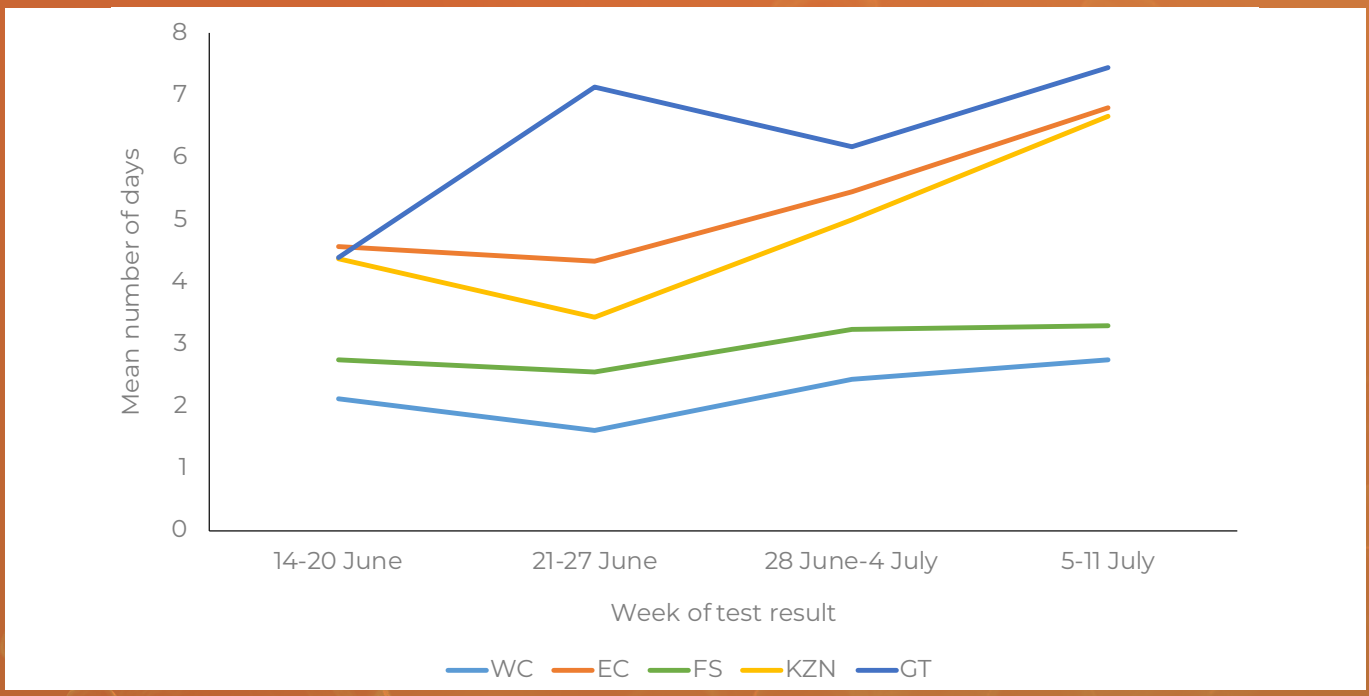

Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, South Africa, 14 June – 11 July 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal, GT, Gauteng

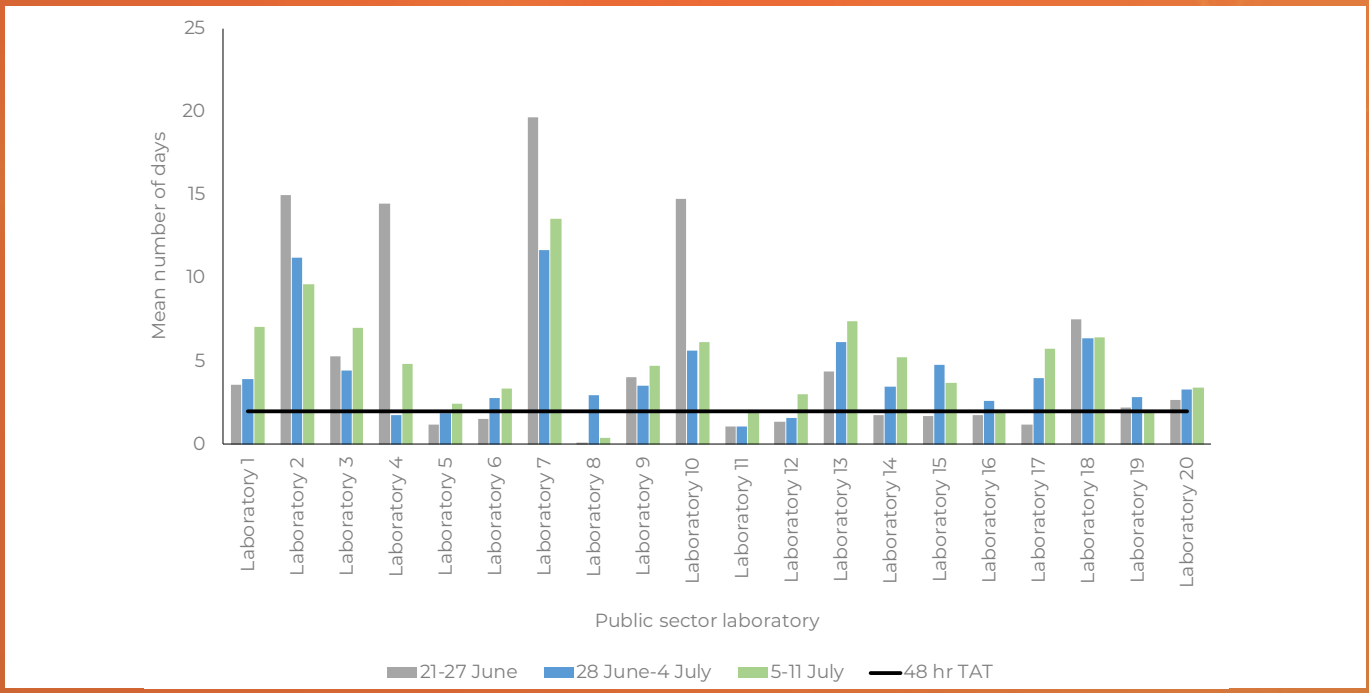

Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 21 June – 11 July 2020. The horizontal black line indicates 48-hour turnaround time (TAT)

TESTING BY PROVINCE

In the past week Gauteng province performed the largest numbers of tests, accounting for 41% of tests nationally (Table 3). Four provinces including Western Cape, Eastern Cape, KwaZulu-Natal and Gauteng performed 81.0% of tests in week 28. Gauteng performed an increased number of tests week on week, whereas volumes of tests have remained relatively consistent in other provinces since May 2020 (Figure 6). Decreased testing volumes were observed in a number of provinces in week 28, although this may be due to samples collected in week 28 not yet reflected in the current report.

Eastern Cape (38.1%), North West (35.9%), Gauteng (33.8%) provinces had the highest proportion testing positive in week 28 (Figure 7). Based on the last three weeks, the percentage testing positive continued to increase significantly in 8 provinces (Eastern Cape (P<0.001), Northern Cape (P<0.001), Free State (P<0.001), KwaZulu-Natal (P<0.001), North West (P<0.001), Gauteng (P<0.001), Mpumalanga (P<0.001) and Limpopo (P<0.001)), whereas the percentage testing positive decreased over this period in the Western Cape (P<0.001). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, North West and Gauteng provinces (Figure 7).

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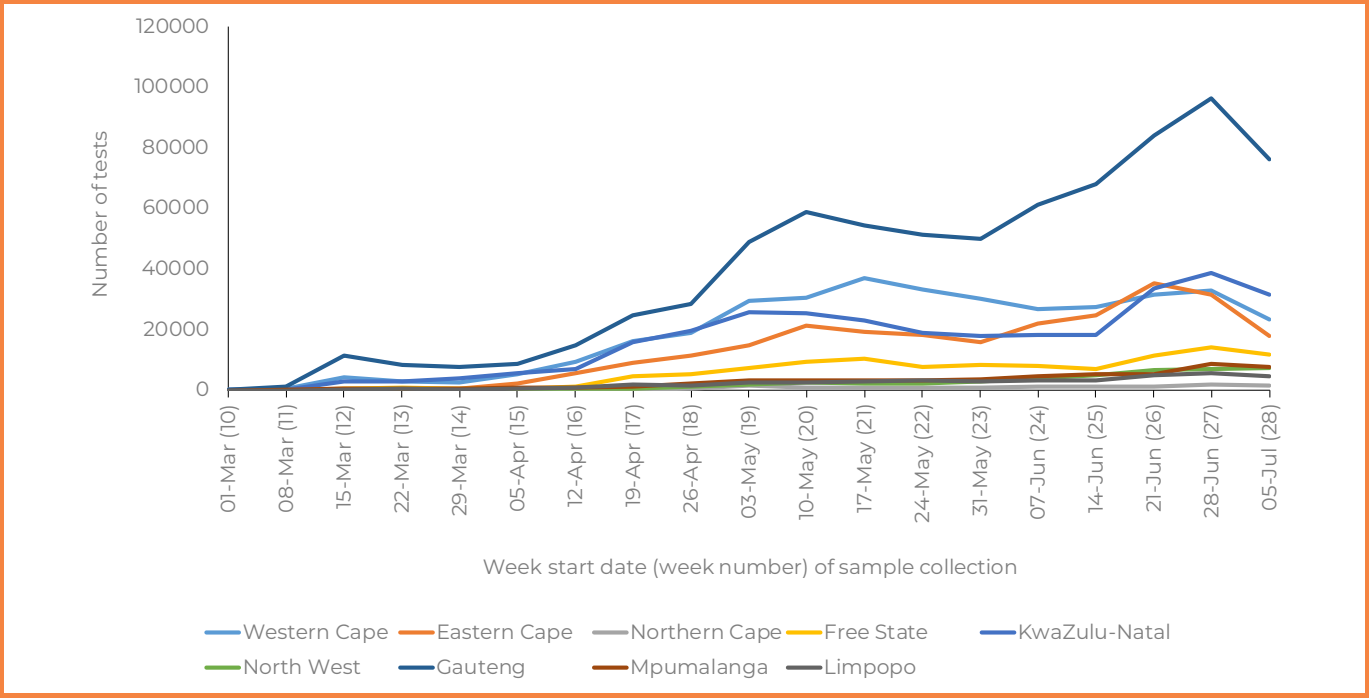

Figure 6. Weekly number of laboratory tests conducted per province by date of specimen collection, South Africa, 1 March – 11 July 2020

Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 21 June – 11 July 2020

	21-27 June		28 June-4 July		5-11 July	
Province	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**
Western Cape	31 699	9 206 (29.0)	33 113	9 503 (28.7)	2 3481	6 107 (26.0)
Eastern Cape	35 237	11 394 (32.3)	31 615	11 155 (35.3)	18 067	6 876 (38.1)
Northern Cape	1 392	112 (8.0)	1 908	224 (11.7)	1 683	263 (15.6)
Free State	11 412	916 (8.0)	14 085	1 861 (13.2)	11 724	2 653 (22.6)
KwaZulu-Natal	33 787	4 935 (14.6)	38 736	8 259 (21.3)	31 472	8 840 (28.1)
North West	6 531	1 208 (18.5)	7 187	1 989 (27.7)	7 339	2 637 (35.9)
Gauteng	83 947	20 515 (24.4)	96 319	27 971 (29.0)	76 335	25 790 (33.8)
Mpumalanga	5 403	6 64 (12.3)	8 872	1 545 (17.4)	7 786	21 17 (27.2)
Limpopo	5 080	564 (11.1)	5 621	876 (15.6)	4 530	794 (17.5)
Unknown	3 269	471 (14.4)	8 554	1 077 (12.6)	2 618	485 (18.5)
Total	**217 757**	**49 985 (23.0)**	**246 010**	**64 460 (26.2)**	**185 035**	**56 562 (30.6)**

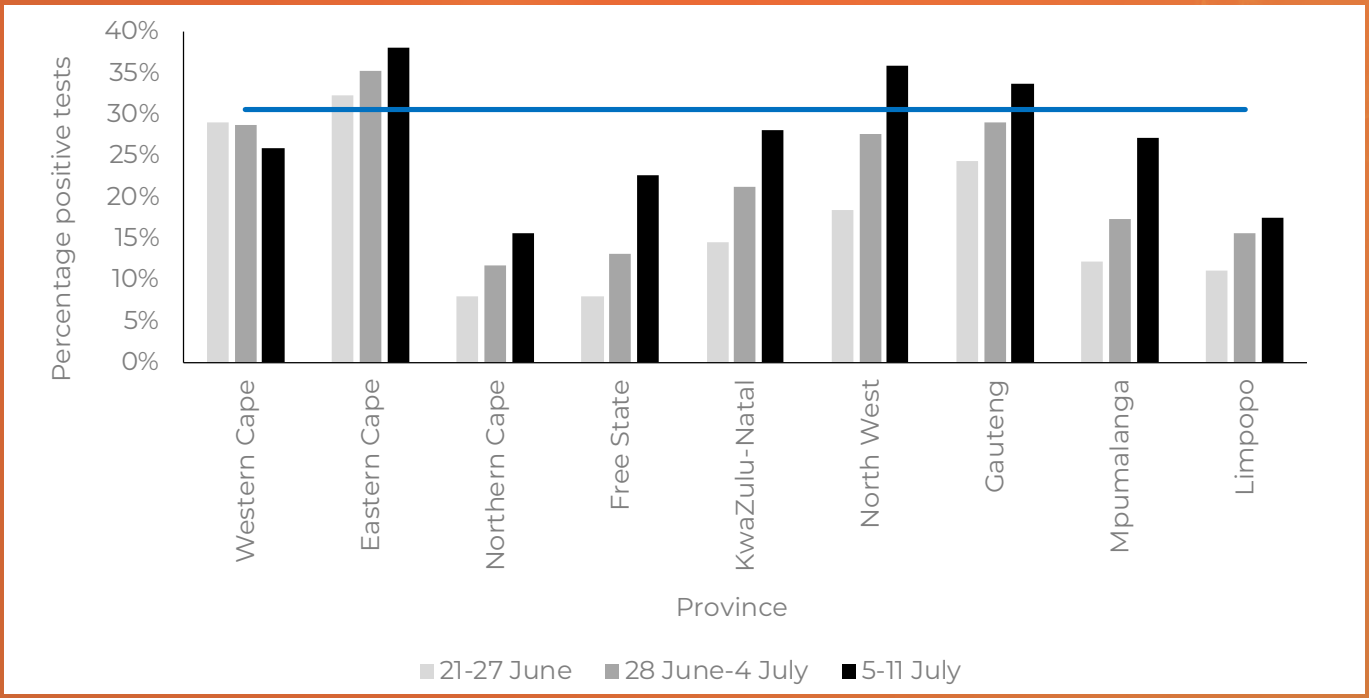

Figure 7. Weekly percentage testing positive, by province, South Africa, 21 June – 11 July 2020. The horizontal blue line shows the national mean for week 28, beginning 5 July 2020

TESTING IN THE PUBLIC SECTOR

In the public sector, the percentage testing positive increased to 29.0% in week 28 (Table 4). The percentage testing positive was >30% in Eastern Cape (33.5%), North West (40.9%) and Gauteng (34.3%) 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, North West and Gauteng provinces (Figure 8).

Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 21 June – 11 July 2020

	21-27 June		28 June-4 July		5-11 July	
Province	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**
Western Cape	12 589	4 294 (34.1)	14 621	4 667 (31.9)	9 529	2 779 (29.2)
Eastern Cape	17 345	5 531 (31.9)	13 874	4 768 (34.4)	7 151	2 399 (33.5)
Northern Cape	2	1 (50.0)	9	0 (0.0)	4	0 (0.0)

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Free State	8 282	573 (6.9)	9 270	9 92 (10.7)	6 206	1 058 (17.0)
KwaZulu-Natal	15 525	1 968 (12.7)	11 267	2 228 (19.8)	5 178	1 279 (24.7)
North West	1 944	303 (15.6)	1 479	411 (27.8)	1 116	457 (40.9)
Gauteng	22 430	5 685 (25.3)	22 757	7 229 (31.8)	12 516	4 296 (34.3)
Mpumalanga	442	45 (10.2)	2 054	280 (13.6)	778	181 (23.3)
Limpopo	3 052	362 (11.9)	2 964	475 (16.0)	1 299	247 (19.0)
Unknown	1	0 (0.0)	0	0 (0.0)	0	0 (0.0)
Total	**81 612**	**18 762 (23.0)**	**78 295**	**21 050 (26.9)**	**43 777**	**12 696 (29.0)**

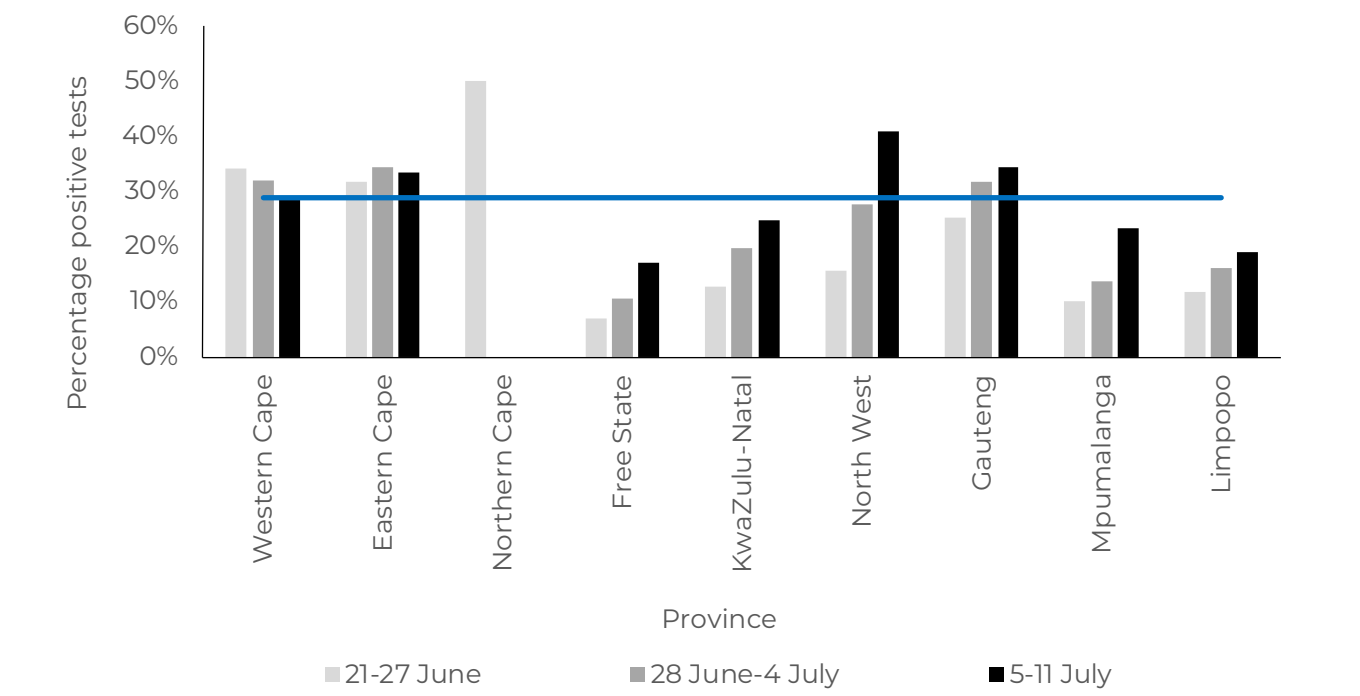

Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 21 June – 11 July 2020. The horizontal blue line shows the national mean for week 28, beginning 5 July 2020

PUBLIC FACILITIES WITH HIGH PROPORTIONS TESTING POSITIVE

Table 5 shows the 25 public healthcare facilities with the highest proportion testing positive nationally in the week of 5-11 July. All 25 facilities show a proportion testing positive greater than 50% and are, with the exception of a single facility in the North West, all in the Eastern Cape (10), Gauteng (8) and Western Cape (6).

Table 5. Public healthcare facilities with a high proportion testing positive, 5-11 July 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Eastern Cape	58	0.776 (0.669;0.883)
Facility 2	Eastern Cape	142	0.768 (0.698;0.837)
Facility 3	Eastern Cape	30	0.767 (0.615;0.918)
Facility 4	Eastern Cape	28	0.714 (0.547;0.882)
Facility 5	Eastern Cape	29	0.655 (0.482;0.828)
Facility 6	Western Cape	25	0.640 (0.452;0.828)
Facility 7	Western Cape	41	0.634 (0.487;0.782)
Facility 8	Western Cape	30	0.633 (0.461;0.806)
Facility 9	Gauteng	38	0.632 (0.478;0.785)
Facility 10	Western Cape	73	0.630 (0.519;0.741)
Facility 11	Eastern Cape	68	0.618 (0.502;0.733)
Facility 12	Eastern Cape	169	0.604 (0.530;0.677)
Facility 13	Eastern Cape	233	0.592 (0.529;0.655)
Facility 14	Gauteng	39	0.590 (0.435;0.744)
Facility 15	Gauteng	266	0.579 (0.520;0.638)
Facility 16	North West	143	0.552 (0.471;0.634)
Facility 17	Gauteng	29	0.552 (0.371;0.733)
Facility 18	Western Cape	46	0.543 (0.400;0.687)
Facility 19	Western Cape	26	0.538 (0.347;0.730)

Facility 20	Eastern Cape	41	0.537 (0.384;0.689)
Facility 21	Eastern Cape	43	0.535 (0.386;0.684)
Facility 22	Gauteng	121	0.529 (0.440;0.618)
Facility 23	Gauteng	114	0.518 (0.426;0.609)
Facility 24	Gauteng	273	0.516 (0.457;0.576)
Facility 25	Gauteng	78	0.513 (0.402;0.624)

95% CI: 95% confidence interval; PTP: positive test proportion

PUBLIC SECTOR TESTING: HEALTH DISTRICT-LEVEL RESULTS

The 25 municipalities and metropolitan health sub-districts with the highest adjusted proportion testing positive nationally in the week of 5-11 July 2020 are shown in Table 6. All sub-districts in this table have a proportion testing positive of >35%. The shifting epicentre of the outbreak is indicated by the increasing dominance of provinces in the Eastern Cape and Gauteng in this list. Only two sub-districts in the Cape Town metropole remain within the top 25.

The data for every district with a non-zero proportion testing positive or where the range of the confidence interval is not more than 30% (15% either side of the point estimate) for the past week is presented in Figure 9.

Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 5-11 July 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Amahlathi	Eastern Cape	0.872 (0.733-1.000)	0.493 (0.435-0.552)
Buffalo City	Eastern Cape	0.587 (0.549-0.624)	0.509 (0.484-0.534)
Lukanji	Eastern Cape	0.548 (0.437-0.660)	0.320 (0.261-0.379)
Tlokwe City Council	North West	0.543 (0.440-0.645)	0.479 (0.371-0.586)
Lesedi	Gauteng	0.536 (0.409-0.664)	0.347 (0.279-0.415)
Saldanha Bay	Western Cape	0.510 (0.416-0.603)	0.459 (0.373-0.545)
Merafong City	Gauteng	0.465 (0.395-0.535)	0.312 (0.255-0.369)

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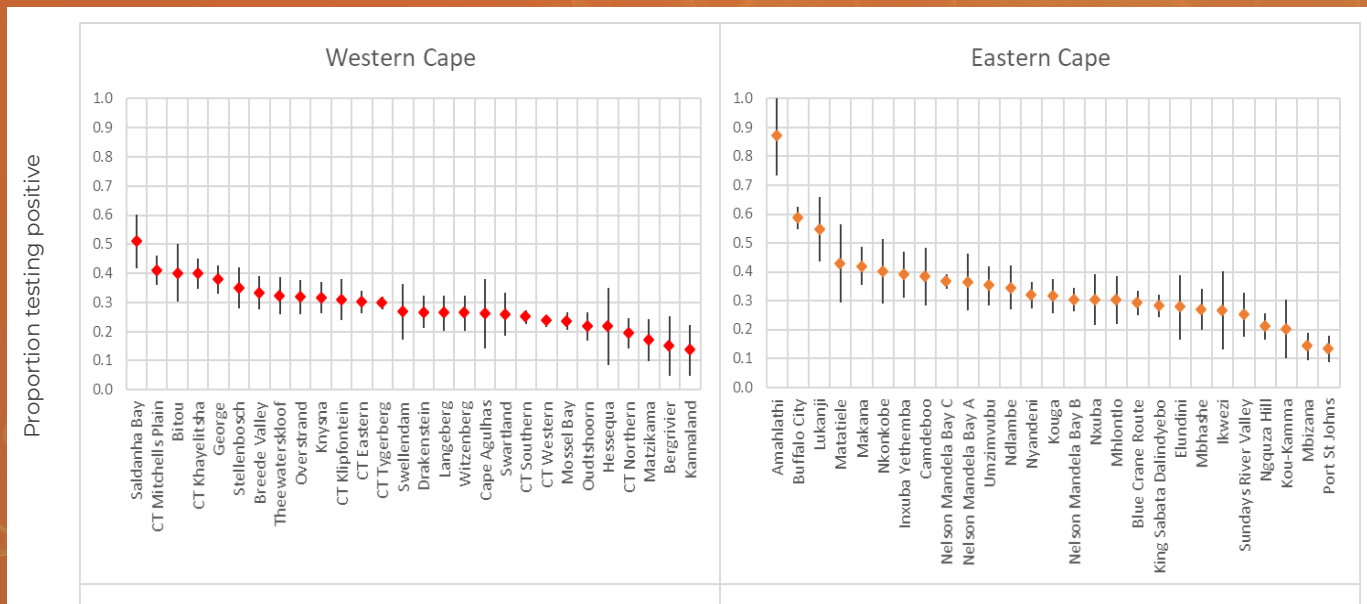
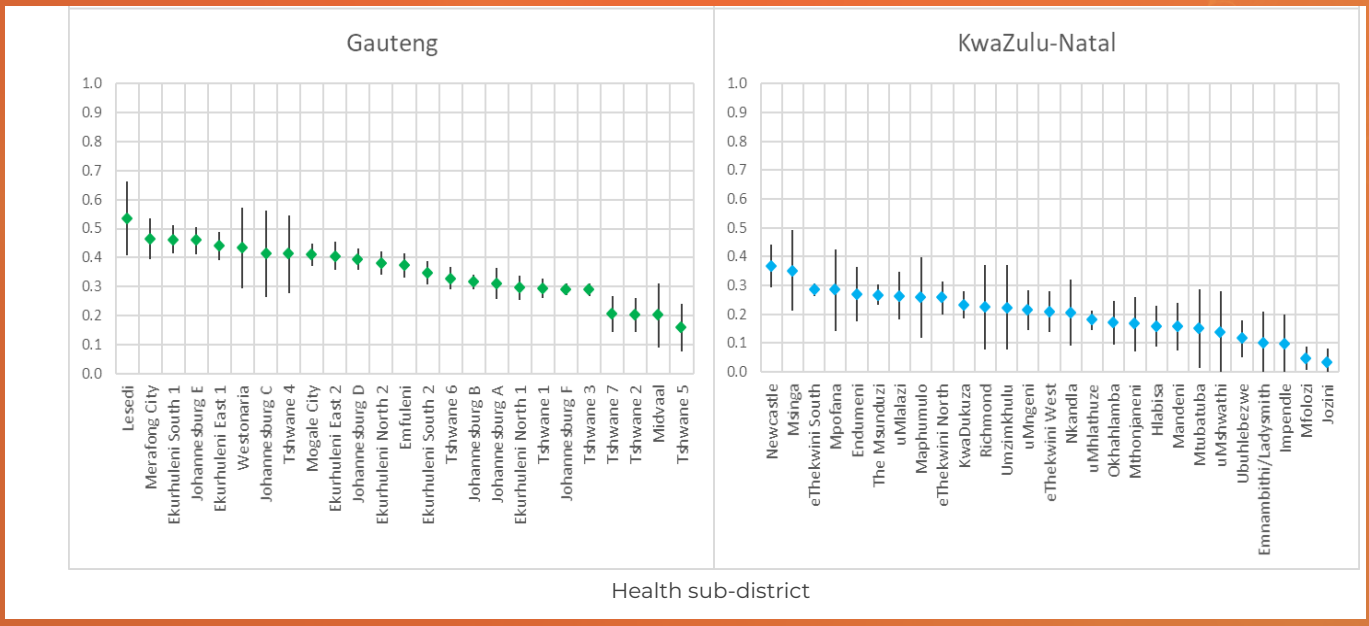
Ekurhuleni South 1	Gauteng	0.463 (0.416-0.510)	0.440 (0.405-0.475)
Johannesburg E	Gauteng	0.460 (0.413-0.507)	0.384 (0.357-0.412)
Ekurhuleni East 1	Gauteng	0.441 (0.392-0.490)	0.313 (0.286-0.340)
Westonaria	Gauteng	0.434 (0.295-0.573)	0.211 (0.142-0.279)
City of Matlosana	North West	0.432 (0.386-0.478)	0.409 (0.336-0.482)
Matatiele	Eastern Cape	0.429 (0.294-0.563)	0.289 (0.228-0.350)
Makana	Eastern Cape	0.420 (0.356-0.485)	0.462 (0.398-0.525)
Johannesburg C	Gauteng	0.414 (0.265-0.562)	0.393 (0.338-0.448)
Tshwane 4	Gauteng	0.412 (0.278-0.547)	0.229 (0.199-0.258)
CT Mitchells Plain	Western Cape	0.411 (0.361-0.462)	0.385 (0.347-0.424)
Mogale City	Gauteng	0.410 (0.372-0.449)	0.373 (0.341-0.404)
Ekurhuleni East 2	Gauteng	0.406 (0.356-0.456)	0.439 (0.398-0.479)
Nkonkobe	Eastern Cape	0.401 (0.289-0.514)	0.448 (0.389-0.508)
Bitou	Western Cape	0.401 (0.302-0.500)	0.277 (0.202-0.353)
CT Khayelitsha	Western Cape	0.400 (0.348-0.452)	0.486 (0.427-0.545)
Ramotshere Moiloa	North West	0.398 (0.284-0.513)	0.135 (0.084-0.187)
Johannesburg D	Gauteng	0.394 (0.359-0.430)	0.402 (0.379-0.424)
Moses Kotane	North West	0.392 (0.312-0.471)	0.333 (0.242-0.423)

95% CI: 95% confidence interval; PTP: adjusted positive test proportion; CT: Cape Town; PTP marked in red have current week proportions testing positive that are significantly higher than the previous week



COVID-19 TESTING SUMMARY

WEEK 28 2020



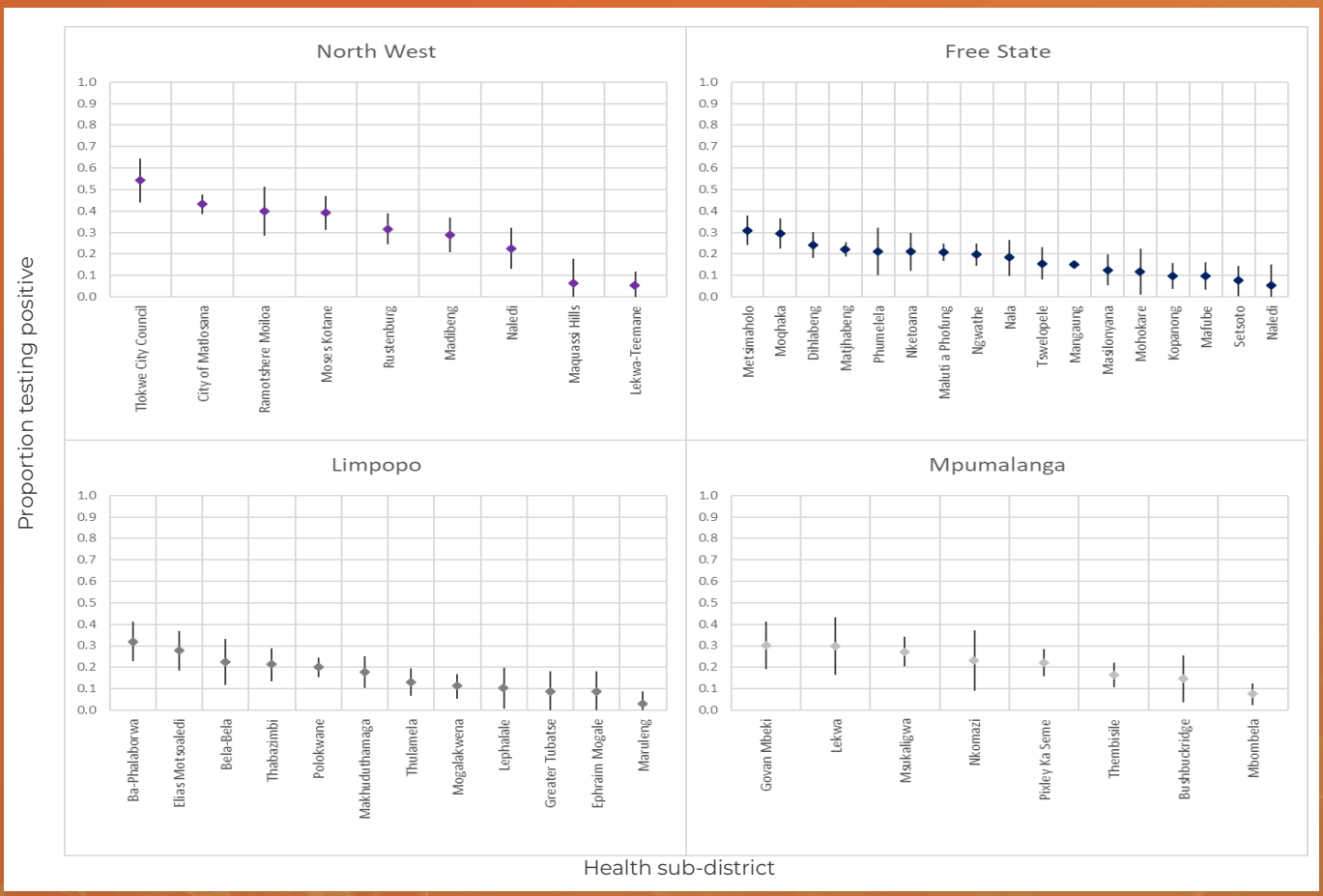


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo and Mpumalanga provinces based on public sector data for the week of 5-11 July 2020

The spatial pattern of adjusted proportions testing positive in public facilities by health district and sub-district are shown for South Africa (Figure 10), and the three most affected provinces: Western Cape (Figure 11), Eastern Cape (Figure 12), and Gauteng (Figure 13).

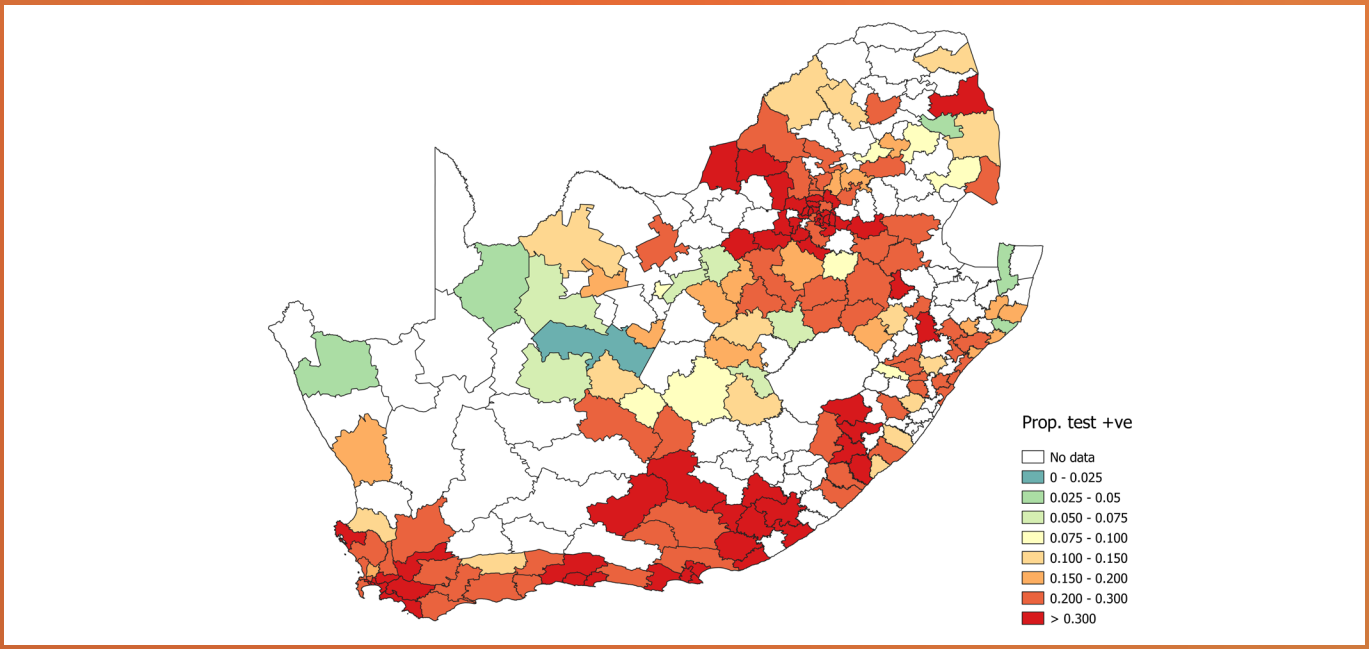


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 5-11 July 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

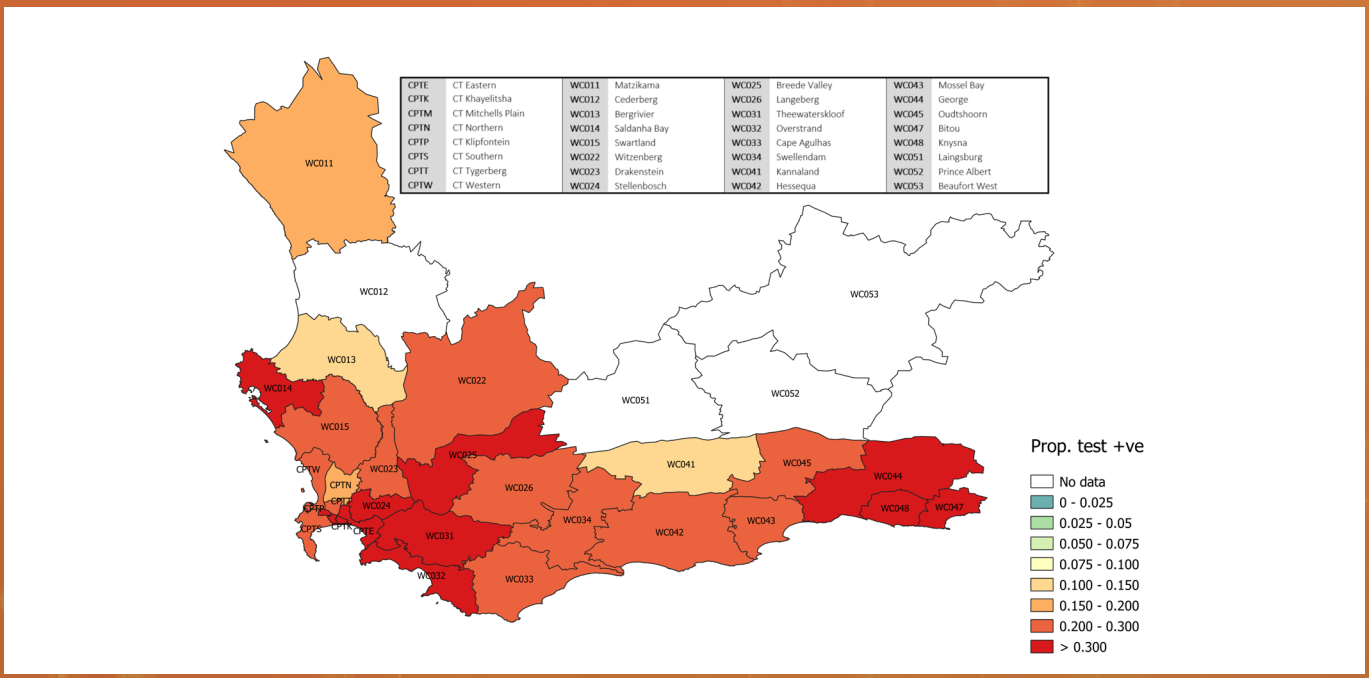


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 5-11 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

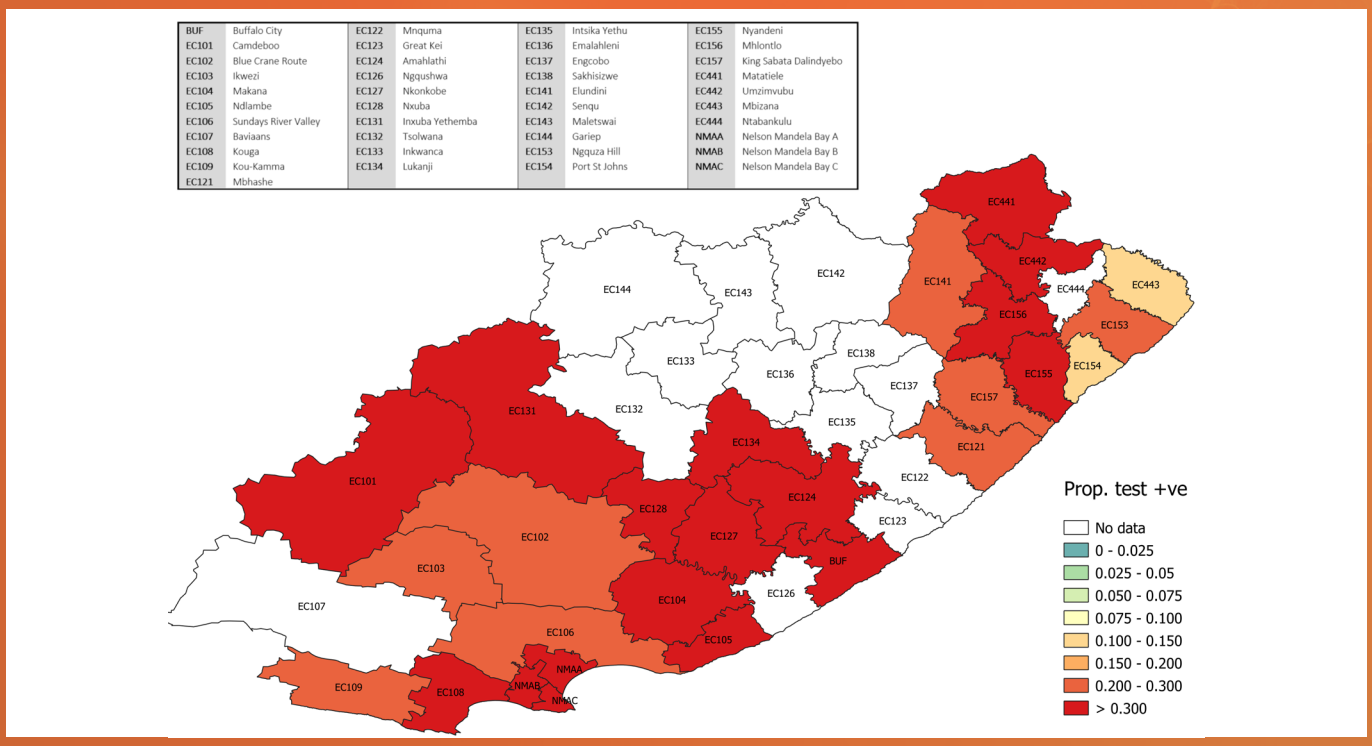


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 5-11 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

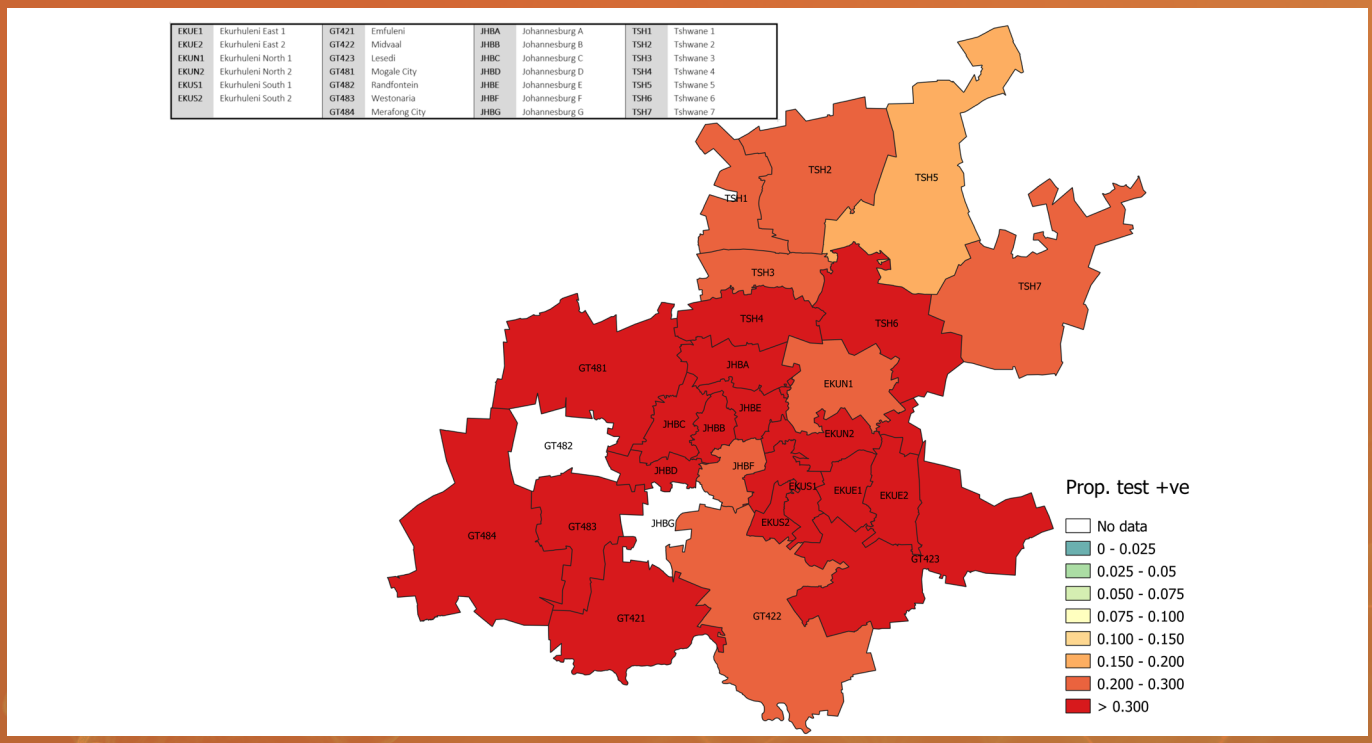


Figure 13. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 5-11 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%

TESTING BY PATIENT ADMISSION STATUS

In week 28, 29.9% of tests in the public sector were performed for hospitalised patients and had increased from 21.6% in week 27 (P<0.001) (Figure 14). Among the five provinces performing the largest volume of tests in week 28 (Western Cape, Eastern Cape, Free State, KwaZulu-Natal and Gauteng), the proportion of inpatient tests was highest in the Western Cape (40.1%) and had increased in all five provinces compared to the previous week. The percentage testing positive in week 28 was higher among inpatients (30.4%) than outpatients (28.3%) (P<0.001), however had increased in both groups over the past few weeks (Figure 15). In the public sector in week 28 the mean turnaround time was shorter for inpatients (3.4 days) compared to outpatients (6.6 days), likely reflecting prioritised testing for severe patients.

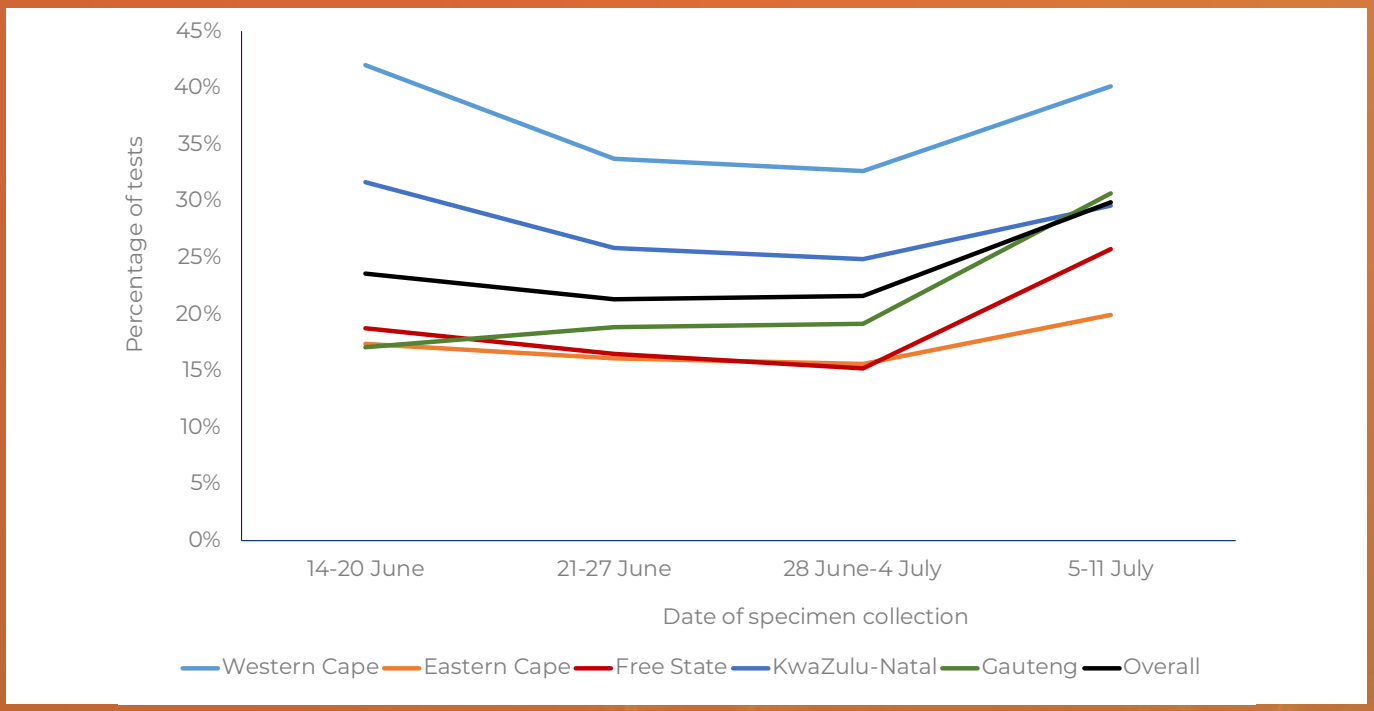


Figure 14. Percentage of inpatient tests performed in the public sector by province, 14 June-11 July 2020

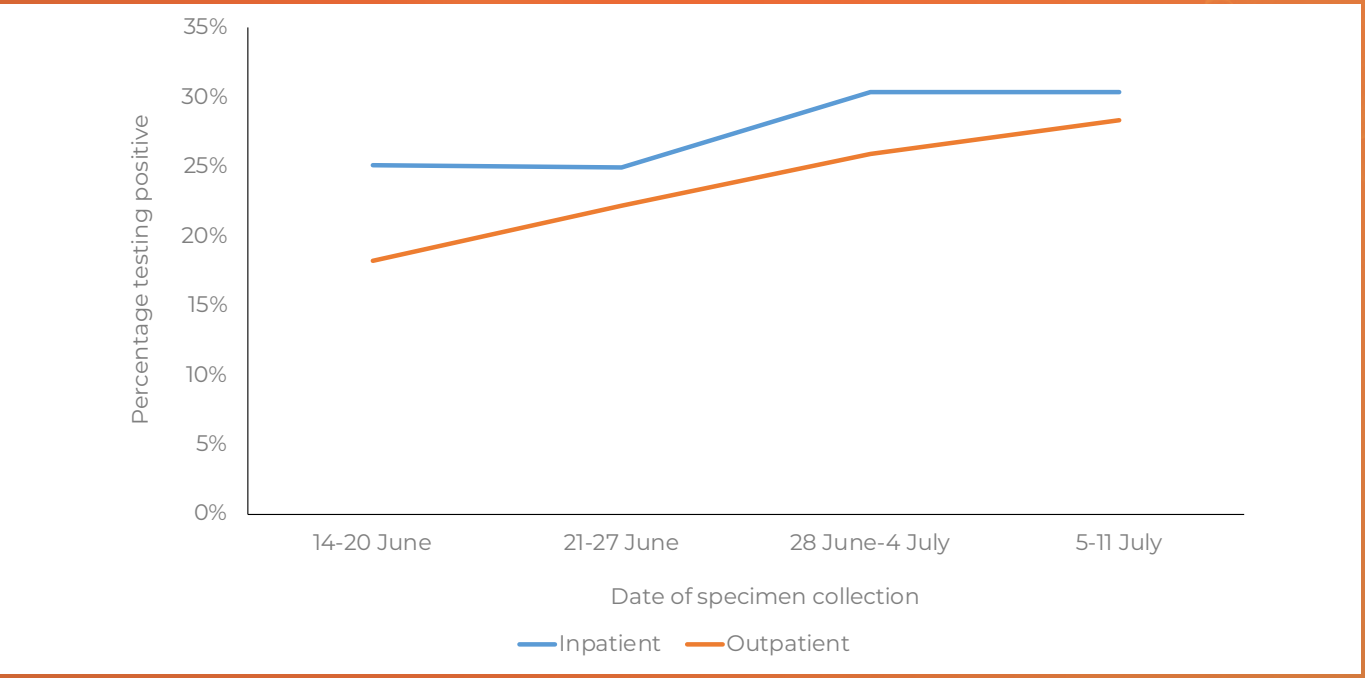


Figure 15. Percentage testing positive by patient admission status in the public sector, 14 June-11 July 2020

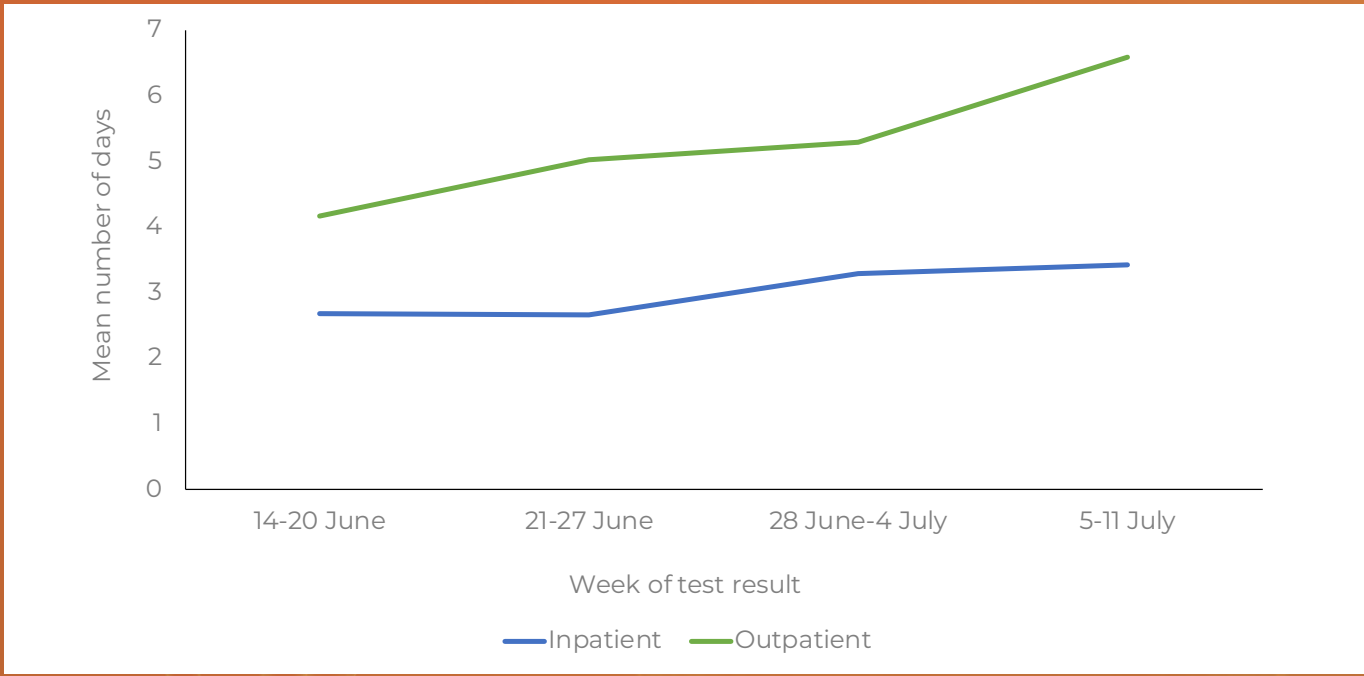


Figure 16. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 14 June – 11 July 2020

TESTING BY AGE AND SEX

The mean age of individuals tested in week 28 was 39.1 years and has remained relatively stable over the past 4 weeks in males and females. The mean age of cases in week 28 was 40.8 years and was higher in males (41.1 years) than females (40.6 years) (P<0.001) (Table 7). The sex ratio (the number of males per 100 females) of cases was 76.3 in week 28. An increased proportion testing positive was observed for both males and females across all age groups aged ≥10 years in week 28 compared to the previous week (Figure 17).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 14 June-11 July 2020

		Mean age of tested (years)		Mean age of cases (years)		Sex ratios (males / 100 females)	
Week number	Week beginning	Males	Females	Males	Females	Tested	Cases
25	14 June	39.2	39.5	40.9	40.6	80.8	75.5
26	21 June	38.6	39.1	40.3	40.3	76.7	74.5
27	28 June	38.2	38.9	40.0	40.0	76.9	73.5
28	5 July	39.0	39.1	41.1	40.6	78.5	76.3

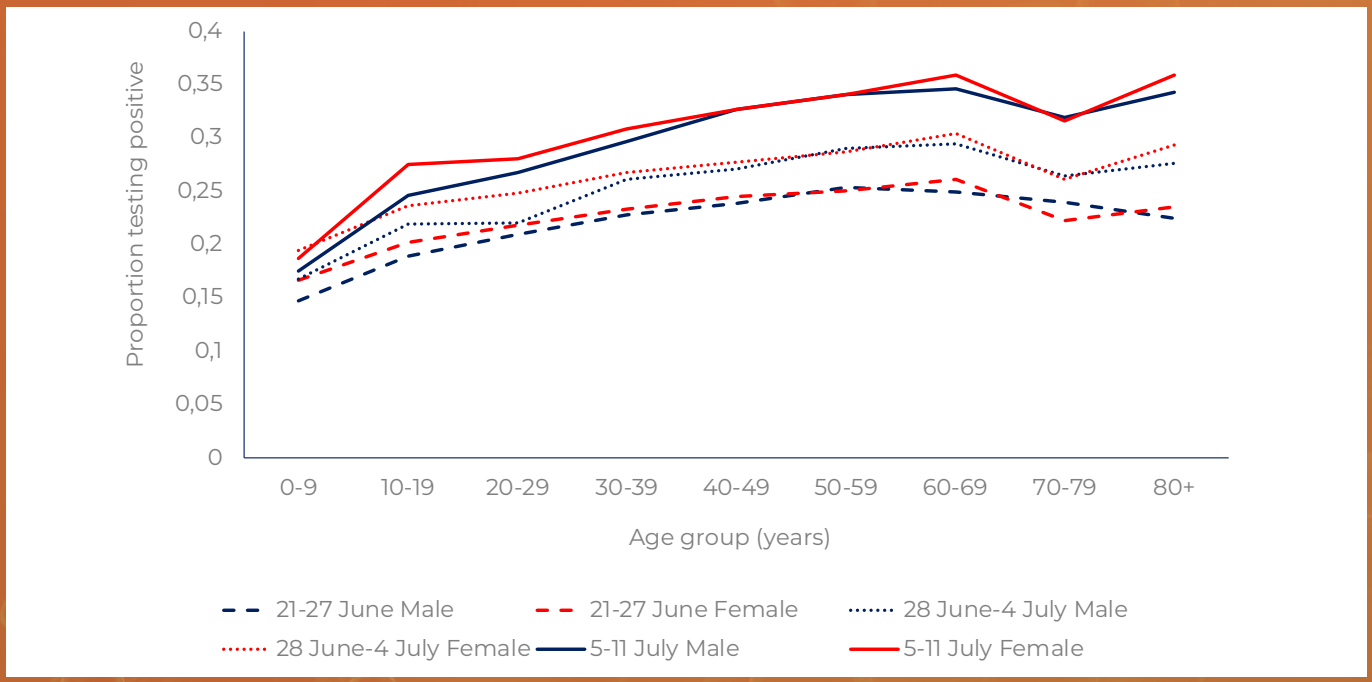


Figure 17. Weekly proportion testing positive by age group and sex, South Africa, 21 June-11 July 2020

From week 25 to week 28, the percentage testing positive increased significantly from 18.8% to 31.0% in females (P<0.001) and from 17.6% to 30.1% in males (P<0.001) (Table 8). In week 28 the proportion testing positive was higher in females than males in the <20-year (P<0.001) and 20-39 year age groups (P<0.001), but did not differ in other age groups.

Table 8. Percentage testing positive by sex and week, South Africa, 14 June-11 July 2020

Age (years)	14-20 June		21-27 June		28 June-04 July		5-11 July	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	13.5%	16.0%	17.4%	19.1%	20.0%	22.3%	21.7%	24.4%
20-39	17.1%	18.5%	22.1%	22.7%	24.5%	26.0%	28.6%	29.7%
40-59	19.1%	19.8%	24.5%	24.7%	27.8%	28.1%	33.3%	33.2%
60-69	19.2%	19.8%	24.9%	26.1%	29.4%	30.4%	34.6%	35.8%
70+	18.4%	19.9%	23.5%	22.7%	26.7%	27.4%	32.5%	33.1%
Total	**17.6%**	**18.8%**	**22.6%**	**23.3%**	**25.5%**	**26.7%**	**30.1%**	**31.0%**

LIMITATIONS

- The backlog in testing of samples by public laboratories affects the reported numbers of tests performed. As a result, numbers tested during this period may change in subsequent reports.
- If higher-priority specimens were tested preferentially, this would likely result in an inflated proportion testing positive.
- The delay in testing affects the analysis of the testing data and identification of outbreak hotspots.
- 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.

CONCLUSIONS

Subsequent to the reduction in volume of tests performed due to limited availability of extraction and testing kits, there has been an improvement in testing volumes in recent weeks. The overall percentage testing positive continued to increase, to 30.6% in week 28, with increases observed in both the public and private sectors. Gauteng performed the highest number of tests, accounting for 41% of tests in week 28. The Eastern Cape (38.1%), North West (35.9%) and Gauteng (33.8%) provinces had the highest percentage testing positive. While the percentage testing positive continued to increase in eight provinces, decreases were observed in the Western Cape. In week 28, 30% of public sector tests were performed for hospitalised patients. Laboratory turnaround times increased compared to the previous week (2.5 days in the private sector and 5.8 days in the public sector), however prioritised testing was reflected by the shorter turnaround time in the public sector for inpatients (3.4 days) compared to outpatients (6.6 days).