COVID-19 TESTING SUMMARY

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

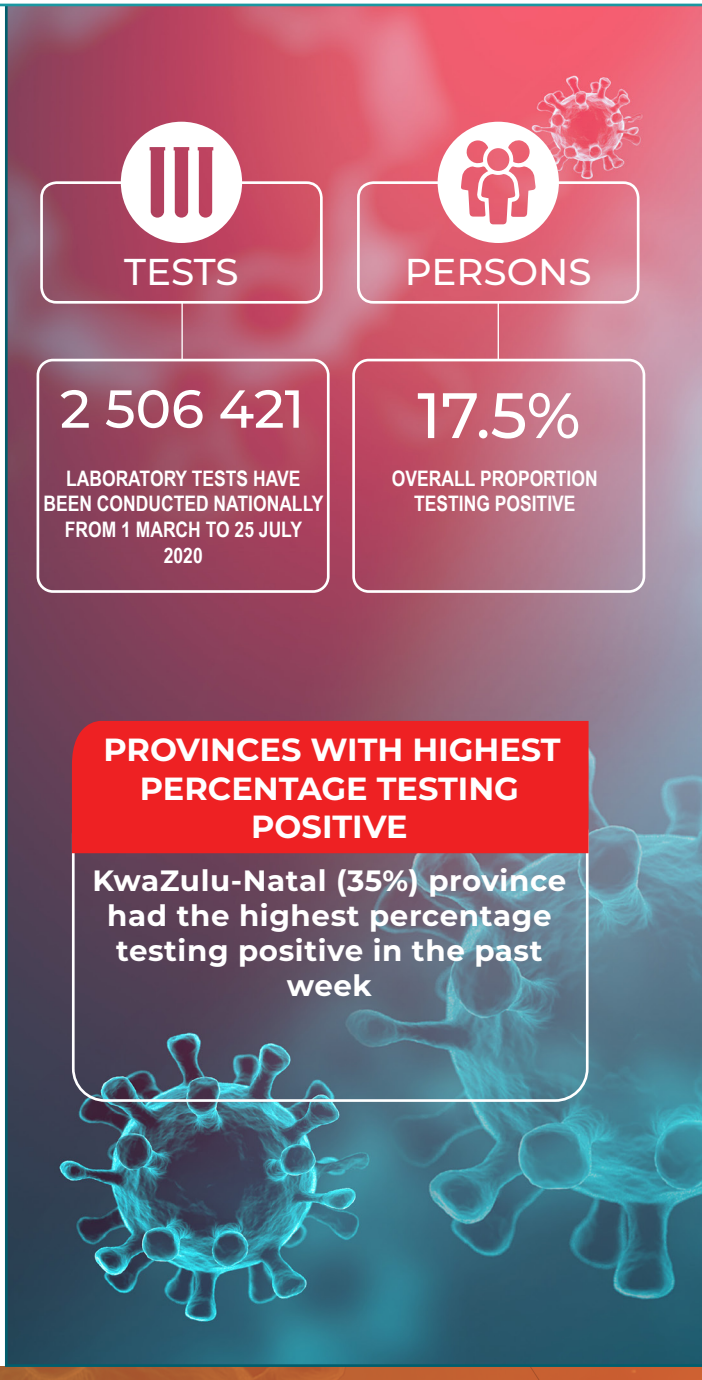
SOUTH AFRICA | WEEK 30 2020

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 25 July 2020 (week 30 of 2020).

Highlights

- In the period 1 March 2020 through 25 July 2020, 2 506 421 laboratory tests for SARS-CoV-2 have been conducted nationally.
- Five provinces including Western Cape, Eastern Cape, KwaZulu-Natal, Free State and Gauteng performed 85% of tests in week 30.
- Gauteng (538 per 100 000 persons) and Free State (399 per 100 000 persons) provinces had the highest testing rates in the past week. However, reduced testing rates were observed in Eastern Cape, KwaZulu-Natal, Western Cape and Gauteng provinces.
- The percentage testing positive in week 30 (19-25 July) was 31.2% and remained the same as the previous week (31.7%).
- KwaZulu-Natal province (35%) had the highest percentage testing positive.
- The percentage testing positive increased in KwaZulu-Natal, Free State and Northern Cape provinces, while decreases were observed in Western Cape, Eastern Cape, North West and Gauteng.
- The mean turnaround time in week 30 was 6.7 days in the public sector and 1.7 days in the private sector.



METHODS

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5th March 2020, testing was expanded to a larger network of private and NHLS laboratories. Laboratory testing was conducted for people meeting the case definition for persons under investigation (PUI). This definition was updated several times over the reporting period but at different times included (i) symptomatic individuals seeking testing, (ii) hospitalized individuals for whom testing was done, (iii) individuals in high-risk occupations, (iv) individuals in outbreak settings, and (v) individuals identified through community screening and testing (CST) programmes which were implemented in April 2020 and was discontinued from the week beginning 17th May. CST was implemented differently in different provinces, and ranged from mass screening approaches (including asymptomatic individuals) to screening of individuals in contact with a confirmed case to targeted testing of clusters of cases. Respiratory specimens were submitted to testing laboratories. Testing was performed using reverse transcriptase real-time PCR, which detects SARS-CoV-2 viral genetic material. Laboratories used any one of several in-house and commercial PCR assays to test for the presence of SARS-CoV-2 RNA. Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate test results for an individual. Date of specimen receipt in the laboratory was used when date of specimen collection was missing. Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 2019 mid-year population estimates from Statistics South Africa to calculate the testing rate, expressed as tests per 100 000 persons. Patient admission status was determined for public sector tests based on the reported patient facility. Laboratory turnaround times were calculated as the mean number of days between specimen collection and reporting of the result. Categorical variables were compared using the chi-squared test, and continuous variables with the students t-test, with a P-value<0.05 considered statistically significant.

Health district and sub-district level results included only public sector data, and were mapped based on the testing facility. Estimates of overall prevalence were derived using regression techniques. Estimates were adjusted to produce district-specific positive test prevalence based on the average age profile, the average sex composition, and the average balance between clinical and CST tests across the entire public testing data for the week. This adjustment allows more accurate comparison of the proportion testing positive across districts.

The report includes tests conducted between 1 March 2020 (week 10), the week when the first case of COVID-19 was confirmed, and 25 July 2020 (week 30).

TESTING VOLUMES AND PROPORTION TESTING POSITIVE

From 1 March through 25 July 2020, 2 506 421 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=268,930). Testing volumes have decreased in week 29 and week 30. In week 30 180 348 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).

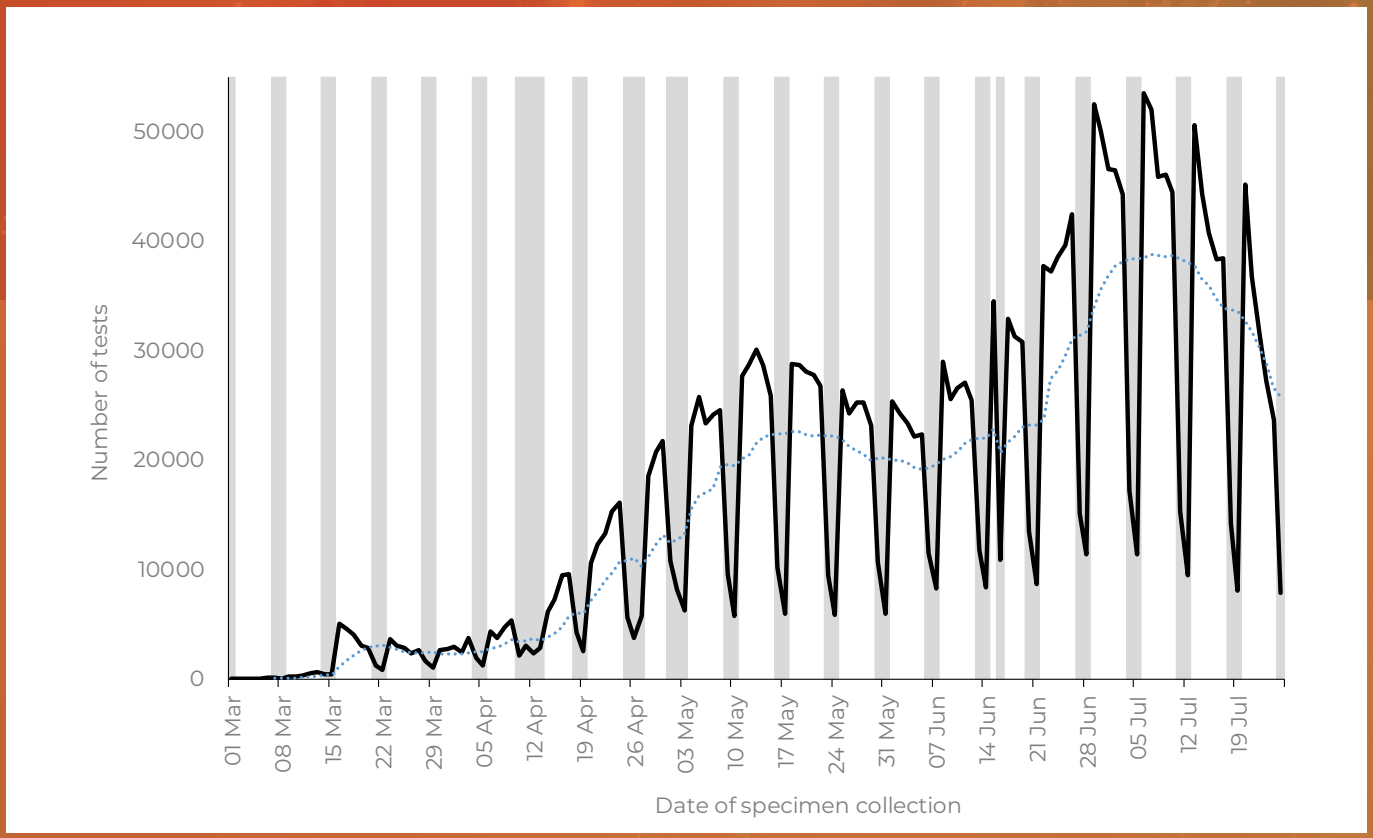


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March –25 July 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 30 was 17.5% (Table 1). The percentage testing positive remained unchanged from 31.7% in week 29 to 31.2% in week 30 (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March –25 July 2020

Week number	Week beginning	No. of tests n(%)	No. of positive tests	Percentage testing positive (%)
10	01-Mar	406 (0.0)	9	2.2
11	08-Mar	2 314 (0.1)	87	3.8
12	15-Mar	21 286 (0.8)	826	3.9
13	22-Mar	17 032 (0.7)	464	2.7
14	29-Mar	17 380 (0.7)	394	2.3
15	05-Apr	24 632 (1.0)	569	2.3
16	12-Apr	41 903 (1.7)	1 043	2.5
17	19-Apr	75 959 (3.0)	1 939	2.6
18	26-Apr	89 516 (3.6)	2 903	3.2
19	03-May	136 957 (5.5)	5 555	4.1
20	10-May	156 967 (6.3)	7 392	4.7
21	17-May	155 647 (6.2)	10 555	6.8
22	24-May	141 070 (5.6)	11 704	8.3
23	31-May	135 021 (5.4)	13 532	10.0
24	07-Jun	153 745 (6.1)	20 487	13.3
25	14-Jun	162 656 (6.5)	29 837	18.3
26	21-Jun	2 194 69 (8.8)	50 349	22.9
27	28-Jun	268 843 (10.7)	69 577	25.9
28	05-Jul	268 930 (10.7)	79 374	29.5
29	12-Jul	236 340 (9.4)	74 992	31.7
30	19-Jul	180348 (7.2)	56 202	31.2
Total		**2 506 421 (100.0)**	**437 790**	**17.5**

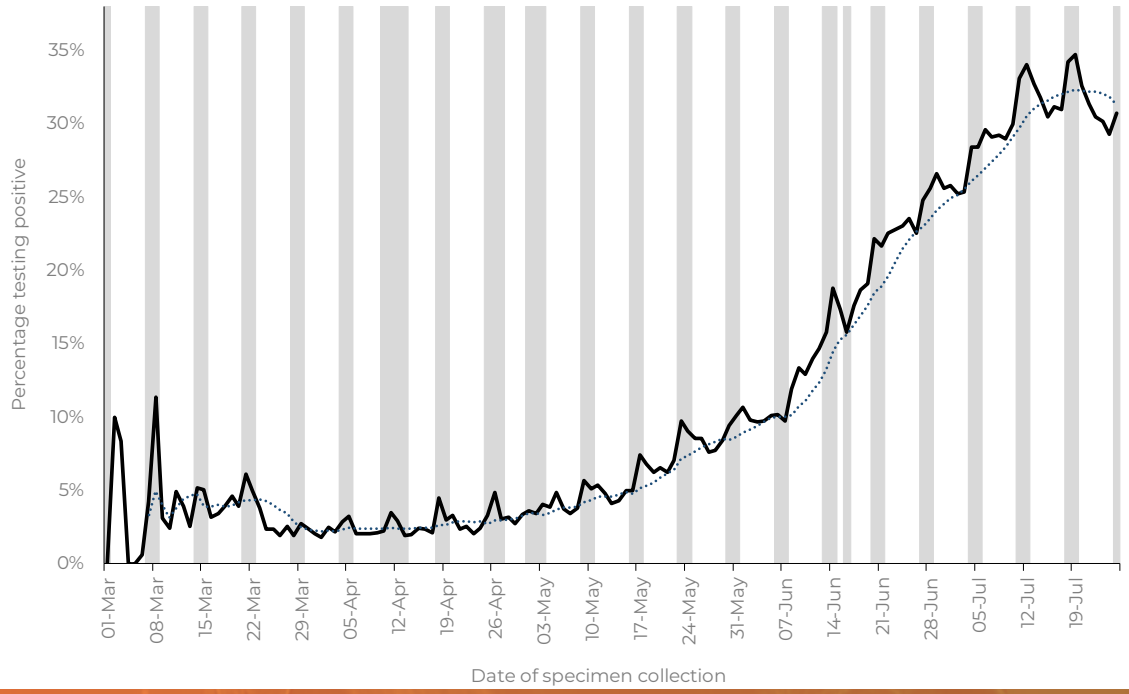

Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 25 July 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

TESTING IN PRIVATE AND PUBLIC SECTORS

From 1 March through 25 July, 1 131 746 laboratory tests were conducted in public sector laboratories, with 14.6% testing positive. Over this same period, private sector laboratories conducted 1 374 675 tests, with 19.8% testing positive (Table 2). Overall the public sector has conducted 45.2% of tests and accounted for 36.7% of cases. For the first week since beginning of March, the percentage testing positive decreased in both the public and private sectors in the past week, although it remained higher in the private sector (32.0%) compared to the public sector (28.8%) (P<0.001).

The mean turnaround time remained relatively consistent since week 27, and in week 30 was 3.9 days overall; 6.7 days in the public sector and 1.7 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 30 was highest in KwaZulu-Natal (11.5 days) and lowest in the Western Cape (3.1 days) provinces. Decreases in turnaround time were observed in KwaZulu-Natal, Free State, Eastern Cape and Western Cape in the past week (Figure 4). Twelve of the 20 NHLS laboratories performing testing for SARS-CoV-2 had improved turnaround times in week 30 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 – 25 July 2020

		Public sector		Private sector		Public sector proportion of		Ratio of PTP[a]
Week number	Week beginning	Tests	Positive tests n (%)	Tests	Positive tests n (%)	Tests (%)	Positive tests (%)	
10	01-Mar	250	5 (2.0)	156	4 (2.6)	61.6	55.6	0.780
11	08-Mar	349	12 (3.4)	1965	75 (3.8)	15.1	13.8	0.901
12	15-Mar	1 344	51 (3.8)	19 942	775 (3.9)	6.3	6.2	0.976
13	22-Mar	3 358	122 (3.6)	13 674	342 (2.5)	19.7	26.3	1.453
14	29-Mar	5 615	158 (2.8)	11 765	236 (2.0)	32.3	40.1	1.403
15	05-Apr	11 353	321 (2.8)	13 279	248 (1.9)	46.1	56.4	1.514
16	12-Apr	23 800	608 (2.6)	1 8103	435 (2.4)	56.8	58.3	1.063
17	19-Apr	54 224	1 481 (2.7)	21 735	458 (2.1)	71.4	76.4	1.296
18	26-Apr	66 271	2 296 (3.5)	23 245	607 (2.6)	74.0	79.1	1.327
19	03-May	92 393	4 262 (4.6)	44 564	1 293 (2.9)	67.5	76.7	1.590
20	10-May	10 4973	5 121 (4.9)	51 994	2 271 (4.4)	66.9	69.3	1.117
21	17-May	95 526	6 645 (7.0)	60 121	3 910 (6.5)	61.4	63.0	1.070
22	24-May	74 341	5 976 (8.0)	66 729	5 728 (8.6)	52.7	51.1	0.936
23	31-May	60 326	6 134 (10.2)	74 695	7 398 (9.9)	44.7	45.3	1.027
24	07-Jun	60 089	7 391 (12.3)	93 656	13 096 (14.0)	39.1	36.1	0.880
25	14-Jun	56 069	11 132 (19.9)	10 6587	18 705 (17.5)	34.5	37.3	1.131
26	21-Jun	82 749	18 930 (22.9)	13 6720	31 419 (23.0)	37.7	37.6	0.995
27	28-Jun	97 225	25 188 (25.9)	17 1618	44 389 (25.9)	36.2	36.2	1.002
28	05-Jul	10 4979	29 598 (28.2)	16 3951	49 776 (30.4)	39.0	37.3	0.929
29	12-Jul	88 788	25 799 (29.1)	14 7552	49 193 (33.3)	37.6	34.4	0.872
30	19-Jul	47 724	13 757 (28.8)	13 2624	42 445 (32.0)	26.5	24.5	0.901
Total		**1 131 746**	**164 987 (14.6)**	**1 374 675**	**272 803 (19.8)**	**45.2**	**37.7**	**0.735**

[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)

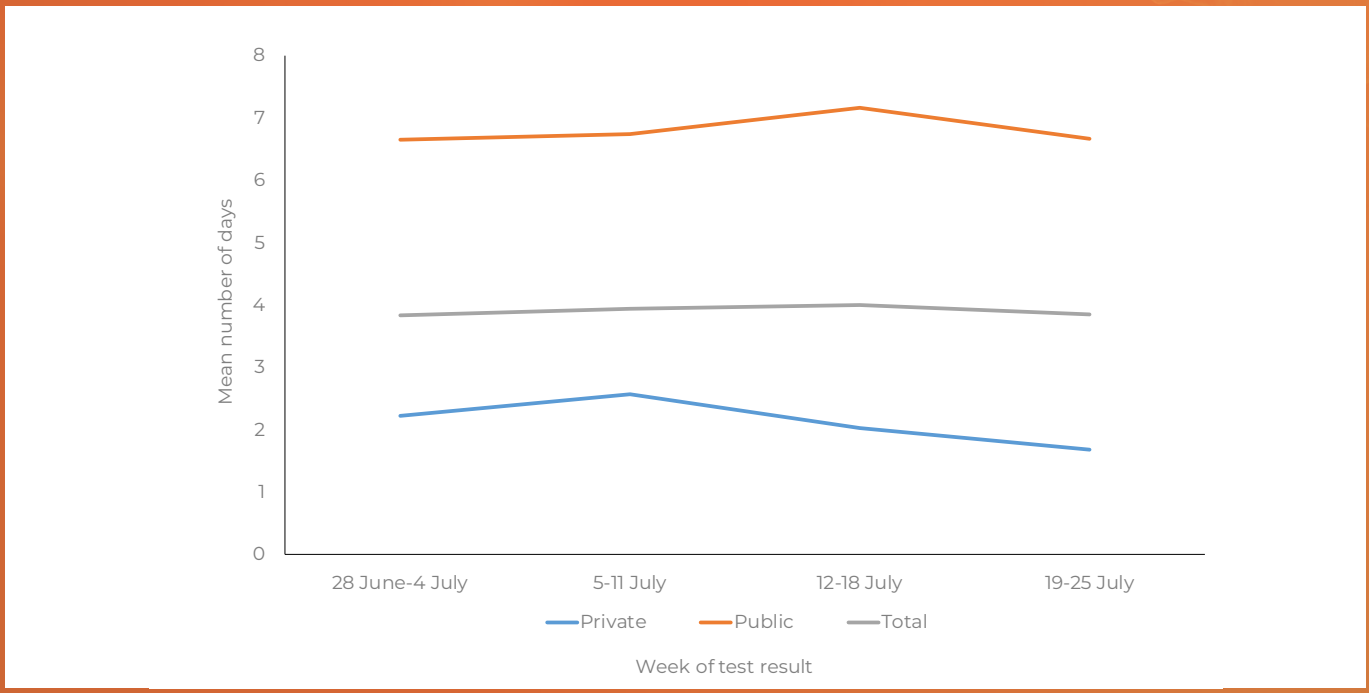

Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 28 June – 25 July 2020

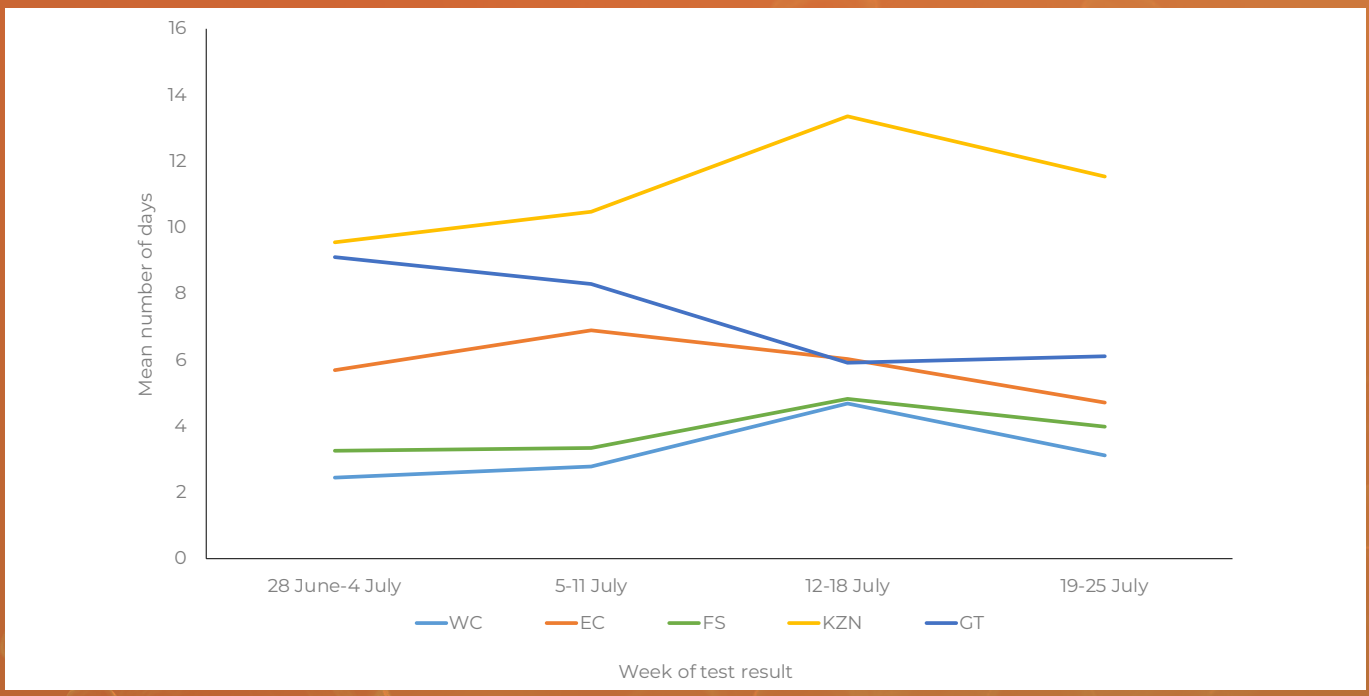

Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, South Africa, 28 June – 25 July 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal, GT, Gauteng

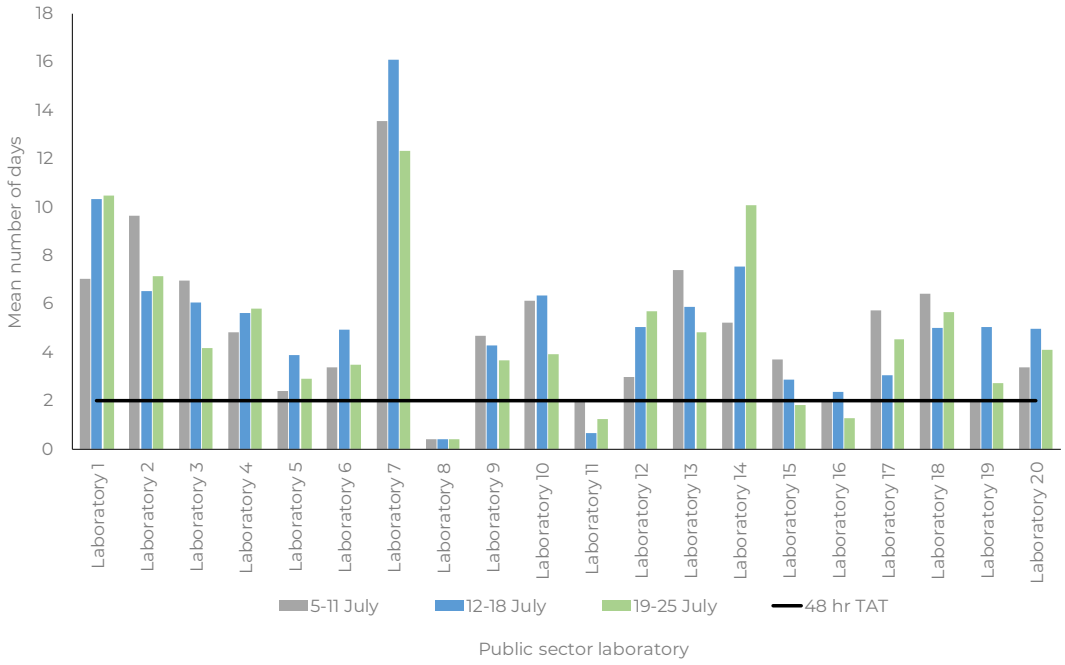

Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 5-25 July 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

TESTING BY PROVINCE

In the past week Gauteng province performed the largest numbers of tests, accounting for 34% of tests nationally (Table 3). Although five provinces including Western Cape, Eastern Cape, KwaZulu-Natal, Free State and Gauteng continued to perform the majority of tests (85%) in week 30, reduced testing rates were observed in these provinces (Figure 6). Gauteng and Free State had the highest testing rates (538 and 399 per 100 000 persons respectively) in the past week.

KwaZulu-Natal province (34.5%) had the highest percentage testing positive in week 30 (Figure 7), however Eastern Cape, Free State, North West, Gauteng and Mpumalanga provinces also all had percentages testing positive >30%. Compared to the previous week, the percentage testing positive increased significantly in 3 provinces (KwaZulu-Natal (P<0.001), Free State (P<0.001) and Northern Cape (P=0.009)) and decreased in 4 provinces (Western Cape (P=0.004), Eastern Cape (P<0.001), North West (P<0.001) and Gauteng (P<0.001)). The percentage testing positive was higher than the national average, not weighted for population size, in the Eastern Cape, Free State, KwaZulu-Natal, North West, Gauteng and Mpumalanga provinces (Figure 7).

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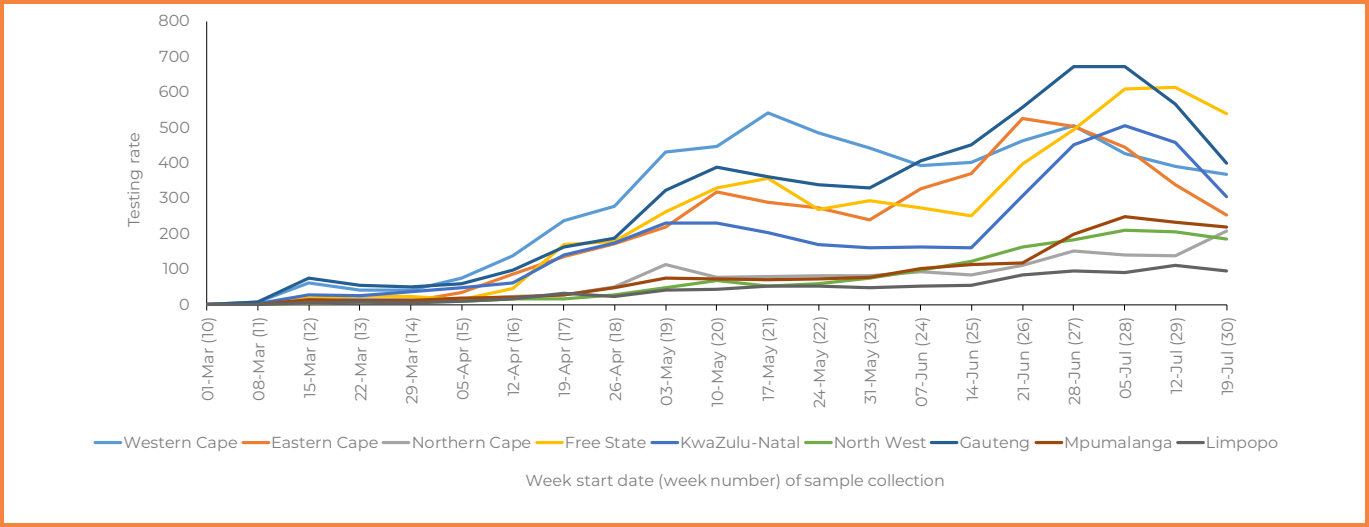

Figure 6. Testing rate per 100 000 persons by province and week of specimen collection, South Africa, 1 March – 25 July 2020.

Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 5-25 July 2020

Province		5-11 July		12-11 July		19-25 July		
		No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	Tests per 100 000 persons
Western Cape	6 844 272	29 250	7 743 (26.5)	26 743	6 545 (24.5)	25 182	5 891 (23.4)	368
Eastern Cape	6 712 276	29 778	11 032 (37.0)	22 681	8 241 (36.3)	16 975	5 729 (33.7)	253
Northern Cape	1 263 875	1 763	275 (15.6)	1 737	451 (26.0)	2 617	775 (29.6)	207
Free State	2 887 465	17 554	3 651 (20.8)	177 00	5 383 (30.4)	15 539	5 156 (33.2)	538
KwaZulu-Natal	11 289 086	57 090	15 222 (26.7)	51 675	16 211 (31.4)	34 394	11 879 (34.5)	305
North West	4 027 160	8 495	2 980 (35.1)	8 301	3 072 (37.0)	7 500	2 531 (33.7)	186
Gauteng	15 176 115	101 862	33 433 (32.8)	85 872	29 401 (34.2)	60 490	19 330 (32.0)	399
Mpumalanga	4 592 187	11 373	2 933 (25.8)	10 699	3 536 (33.0)	10 121	3 413 (33.7)	220
Limpopo	5 982 584	5 454	961 (17.6)	6 607	1 385 (21.0)	5 668	1 242 (21.9)	95
Unknown		6 311	1 144 (18.1)	4 325	767 (17.7)	1 862	256 (13.7)	
Total	**58 750 220**	**268 930**	**79 374 (29.5)**	**236 340**	**74 992 (31.7)**	**180 348**	**56 202 (31.2)**	**307**

[a]2019 Mid-year population Statistics SA

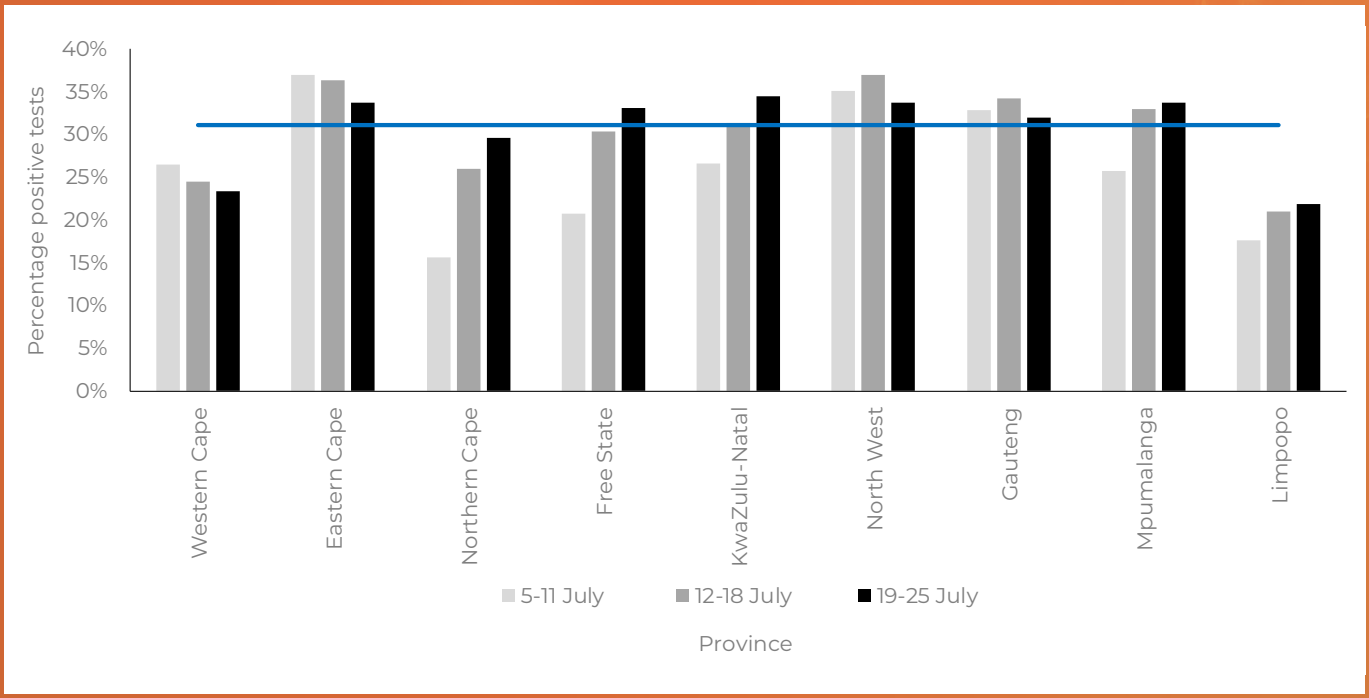

Figure 7. Weekly percentage testing positive, by province, South Africa, 5-25 July 2020. The horizontal blue line shows the national mean for week 30, beginning 19 July 2020.

TESTING IN THE PUBLIC SECTOR

In the public sector, the percentage testing positive decreased from 29.1% in week 29 to 28.8% in week 30 (P=0.370) (Table 4). The percentage testing positive was highest in Mpumalanga (41.0%) and was >30% in the Eastern Cape (31.0%), KwaZulu-Natal (36.4%) North West (34.5%) and Gauteng (30.4%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Eastern Cape, KwaZulu-Natal, North West, Gauteng and Mpumalanga provinces (Figure 8).

Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 5-25 July 2020

	5-11 July		12-18 July		19-25 July	
Province	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**
Western Cape	14 764	4 280 (29.0)	14 190	3 500 (24.7)	11 935	2 870 (24.0)
Eastern Cape	16 975	5 842 (34.4)	13 099	4 363 (33.3)	9 402	2 916 (31.0)
Northern Cape	4	0 (0.0)	0	0 (0.0)	87	18 (20.7)

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Free State	11 819	1 997 (16.9)	10 752	2 670 (24.8)	6 667	1 874 (28.1)
KwaZulu-Natal	25 434	6 384 (25.1)	17 235	5 157 (29.9)	3 108	1 132 (36.4)
North West	1 957	649 (33.2)	2 056	682 (33.2)	1 619	558 (34.5)
Gauteng	28 211	9 169 (32.5)	26 922	8 338 (31.0)	12 836	3 903 (30.4)
Mpumalanga	3 665	870 (23.7)	1 887	540 (28.6)	288	118 (41.0)
Limpopo	2 150	407 (18.9)	2 647	549 (20.7)	1 782	368 (20.7)
Unknown	0	0 (0.0)	0	0 (0.0)	0	0 (0.0)
Total	**104 979**	**29 598 (28.2)**	**88 788**	**25 799 (29.1)**	**47 724**	**13 757 (28.8)**

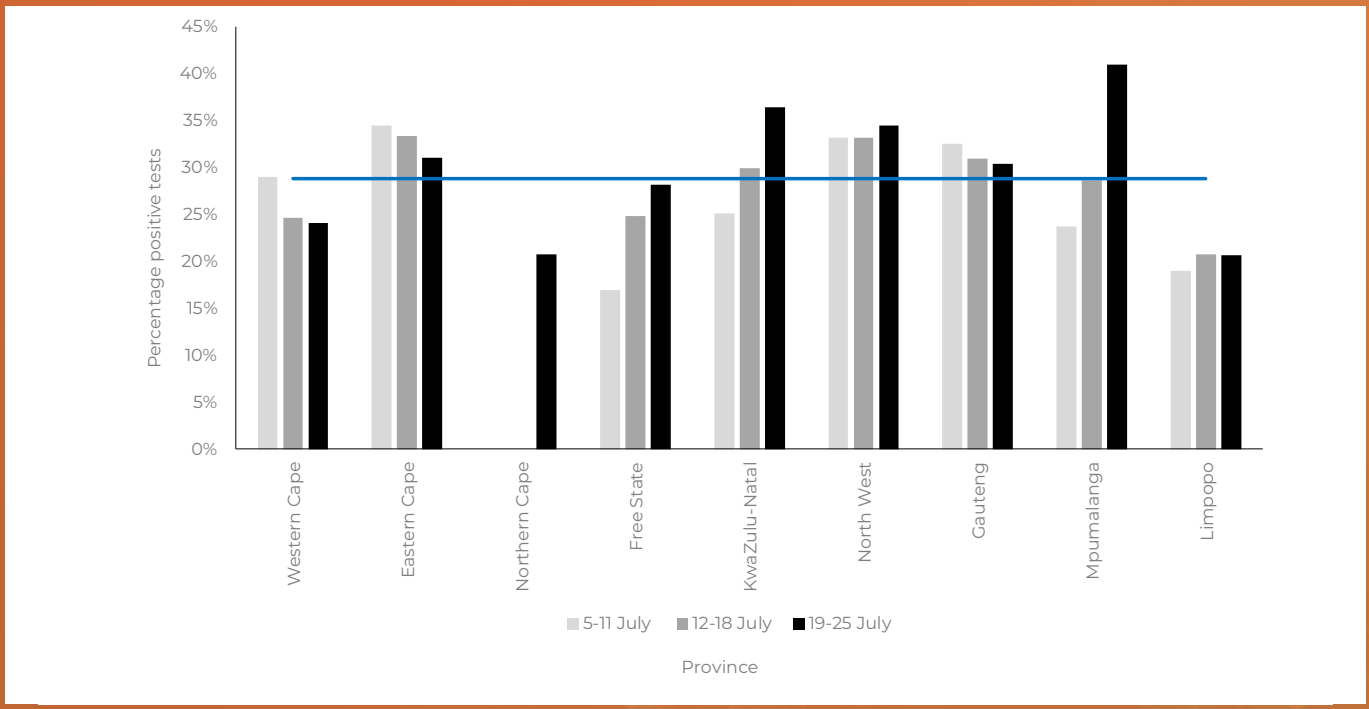

Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 5-25 July 2020. The horizontal blue line shows the national mean for week 30, beginning 19 July 2020.

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 19-25 July. All 25 facilities continue to show a proportion testing positive greater than 50%. However, whereas in past weeks, the list was dominated by facilities in the Western Cape, only one facility in the Western Cape is on the list. Ten facilities are in the Eastern Cape, 6 in Gauteng, 3 in Free State, two each in Mpumalanga and North West, and one in KwaZulu-Natal.

Table 5. Public healthcare facilities with a high proportion testing positive, 19-25 July 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Gauteng	57	0.754 (0.643;0.866)
Facility 2	Gauteng	33	0.727 (0.575;0.879)
Facility 3	Eastern Cape	25	0.720 (0.544;0.896)
Facility 4	Gauteng	27	0.704 (0.531;0.876)
Facility 5	Gauteng	55	0.673 (0.549;0.797)
Facility 6	Eastern Cape	84	0.667 (0.566;0.767)
Facility 7	Mpumalanga	26	0.654 (0.471;0.837)
Facility 8	Eastern Cape	59	0.644 (0.522;0.766)
Facility 9	Eastern Cape	131	0.641 (0.559;0.723)
Facility 10	Gauteng	27	0.630 (0.447;0.812)
Facility 11	Eastern Cape	57	0.614 (0.488;0.740)
Facility 12	North West	237	0.603 (0.541;0.666)
Facility 13	Eastern Cape	72	0.597 (0.484;0.711)
Facility 14	Eastern Cape	103	0.592 (0.497;0.687)
Facility 15	Gauteng	198	0.586 (0.517;0.654)
Facility 16	Mpumalanga	71	0.577 (0.463;0.692)
Facility 17	Western Cape	52	0.577 (0.443;0.711)
Facility 18	KwaZulu-Natal	80	0.575 (0.467;0.683)
Facility 19	Eastern Cape	92	0.565 (0.464;0.667)

Facility 20	North West	80	0.563 (0.454;0.671)
Facility 21	Eastern Cape	27	0.556 (0.368;0.743)
Facility 22	Free State	27	0.556 (0.368;0.743)
Facility 23	Free State	58	0.534 (0.406;0.663)
Facility 24	Eastern Cape	38	0.526 (0.368;0.685)
Facility 25	Free State	91	0.516 (0.414;0.619)

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 19-25 July 2020 are shown in Table 6. All sub-districts in this table have a proportion testing positive of >35%. The shifting geo-centre of the outbreak is indicated by the increasing dominance of districts in the Eastern Cape and Gauteng in this list. None of the Cape Town sub-districts remain on the list below, and only one from the Western Cape.

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. Only 9 of 53 districts in KwaZulu-Natal met the inclusion criteria. Of the other 44, 27 did have testing performed, but the resulting confidence intervals were deemed too wide for inclusion.

Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 19-25 July 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
Amahlathi	Eastern Cape	0.575 (0.513-0.638)	0.412 (0.369-0.456)
Pixley Ka Seme	Mpumalanga	0.553 (0.435-0.671)	0.279 (0.242-0.317)
Merafong City	Gauteng	0.551 (0.451-0.652)	0.530 (0.464-0.596)
Saldanha Bay	Western Cape	0.551 (0.434-0.668)	0.283 (0.202-0.364)
Maquassi Hills	NorthWest	0.547 (0.437-0.657)	...
Makana	Eastern Cape	0.516 (0.436-0.596)	0.559 (0.477-0.642)
Ndlambe	Eastern Cape	0.489 (0.400-0.578)	0.501 (0.430-0.573)

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City of Matlosana	NorthWest	0.465 (0.421-0.510)	0.477 (0.424-0.531)
Dr JS Moroka	Mpumalanga	0.454 (0.307-0.600)	0.262 (0.197-0.327)
Ngqushwa	Eastern Cape	0.453 (0.316-0.591)	0.445 (0.356-0.533)
Ekurhuleni East 2	Gauteng	0.448 (0.401-0.495)	0.379 (0.337-0.420)
Blue Crane Route	Eastern Cape	0.447 (0.402-0.493)	0.259 (0.227-0.292)
Nelson Mandela Bay A	Eastern Cape	0.443 (0.346-0.540)	0.399 (0.305-0.492)
Tshwane 5	Gauteng	0.441 (0.365-0.516)	0.233 (0.191-0.275)
Buffalo City	Eastern Cape	0.440 (0.415-0.466)	0.444 (0.422-0.467)
Maletswai	Eastern Cape	0.429 (0.335-0.523)	0.307 (0.246-0.367)
Kouga	Eastern Cape	0.426 (0.366-0.485)	0.324 (0.270-0.378)
Maluti a Phofung	Free State	0.424 (0.381-0.467)	0.298 (0.264-0.333)
Newcastle	KwaZulu-Natal	0.422 (0.331-0.513)	0.478 (0.445-0.512)
Tlokwe City Council	NorthWest	0.421 (0.344-0.499)	0.493 (0.421-0.564)
Nkonkobe	Eastern Cape	0.416 (0.360-0.472)	0.423 (0.366-0.479)
Mogale City	Gauteng	0.416 (0.368-0.464)	0.375 (0.345-0.405)
Msinga	KwaZulu-Natal	0.415 (0.272-0.558)	0.260 (0.201-0.318)
Lukanji	Eastern Cape	0.404 (0.342-0.465)	0.527 (0.472-0.581)
Lesedi	Gauteng	0.398 (0.275-0.522)	0.400 (0.331-0.468)

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

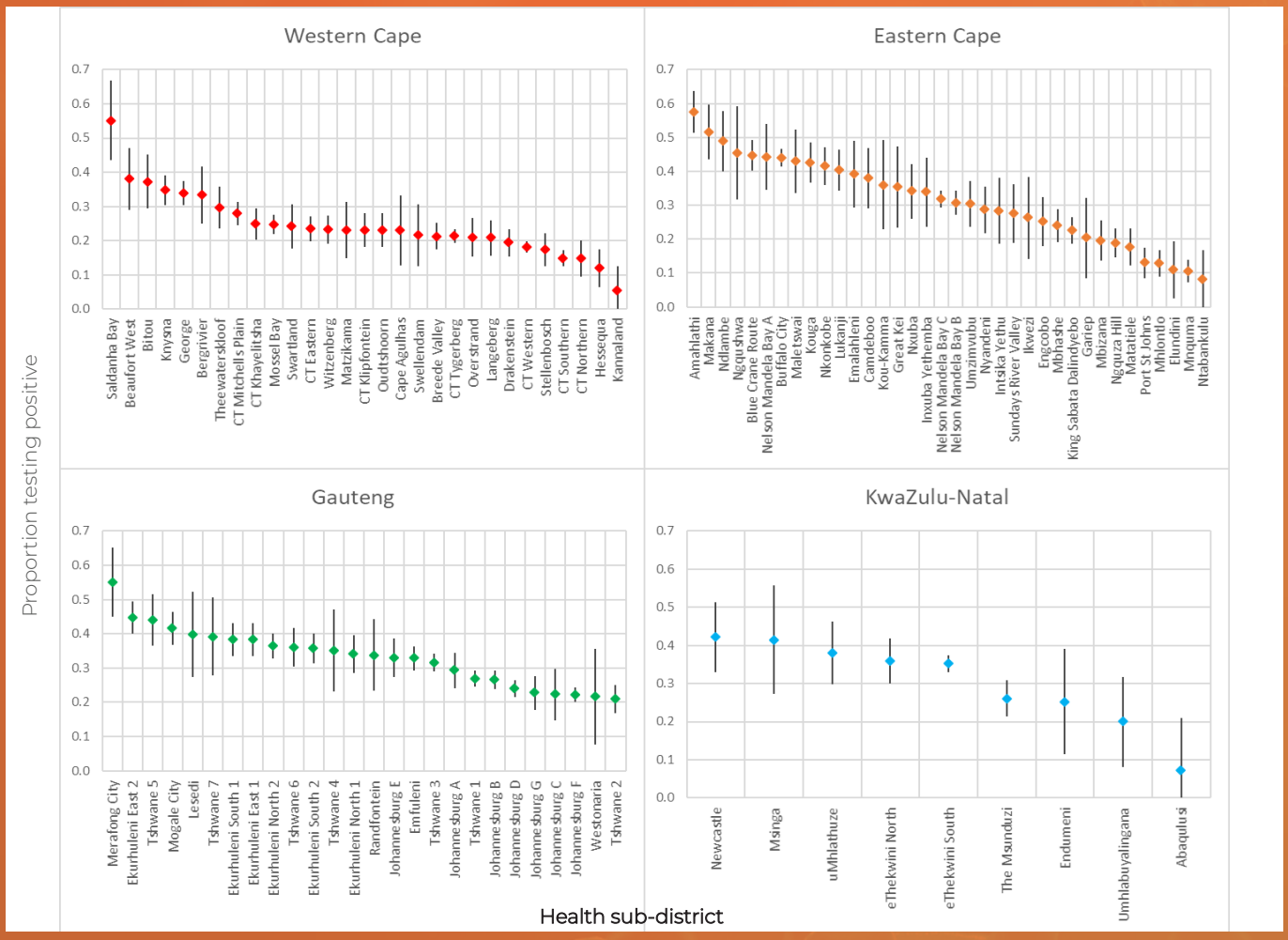

Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 19-25 July 2020.

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 19-25 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).

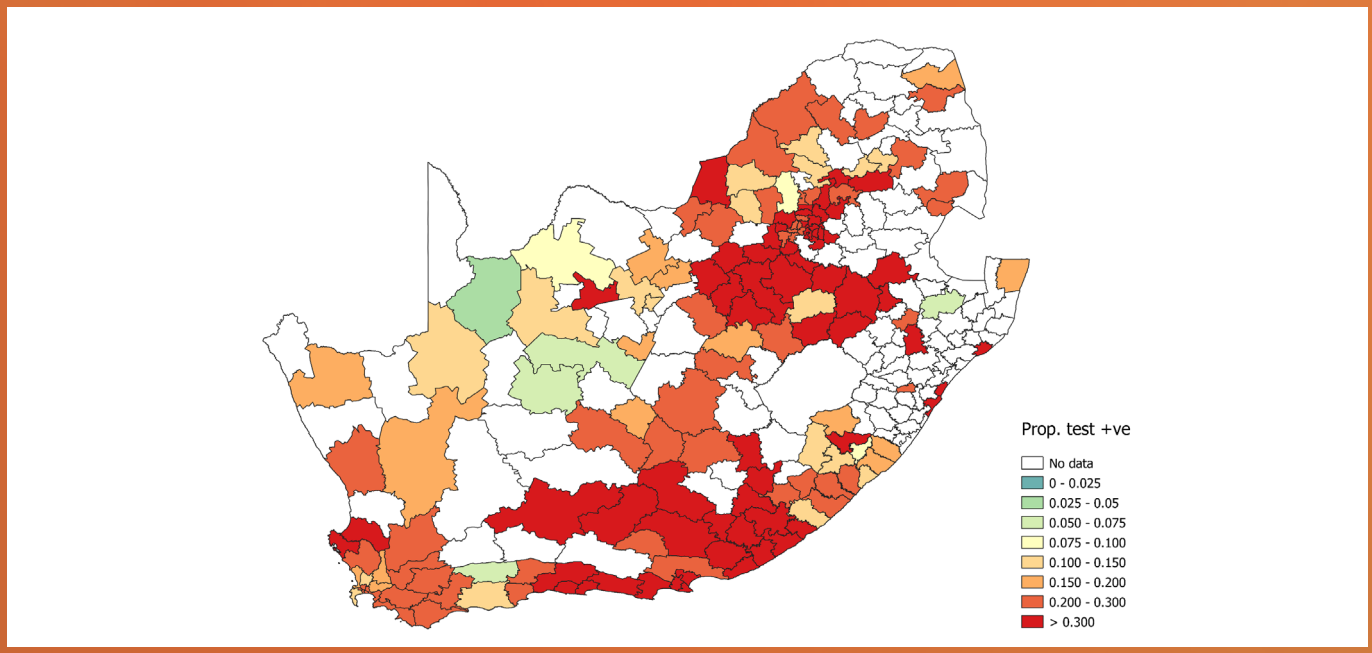

Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 19-25 July 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

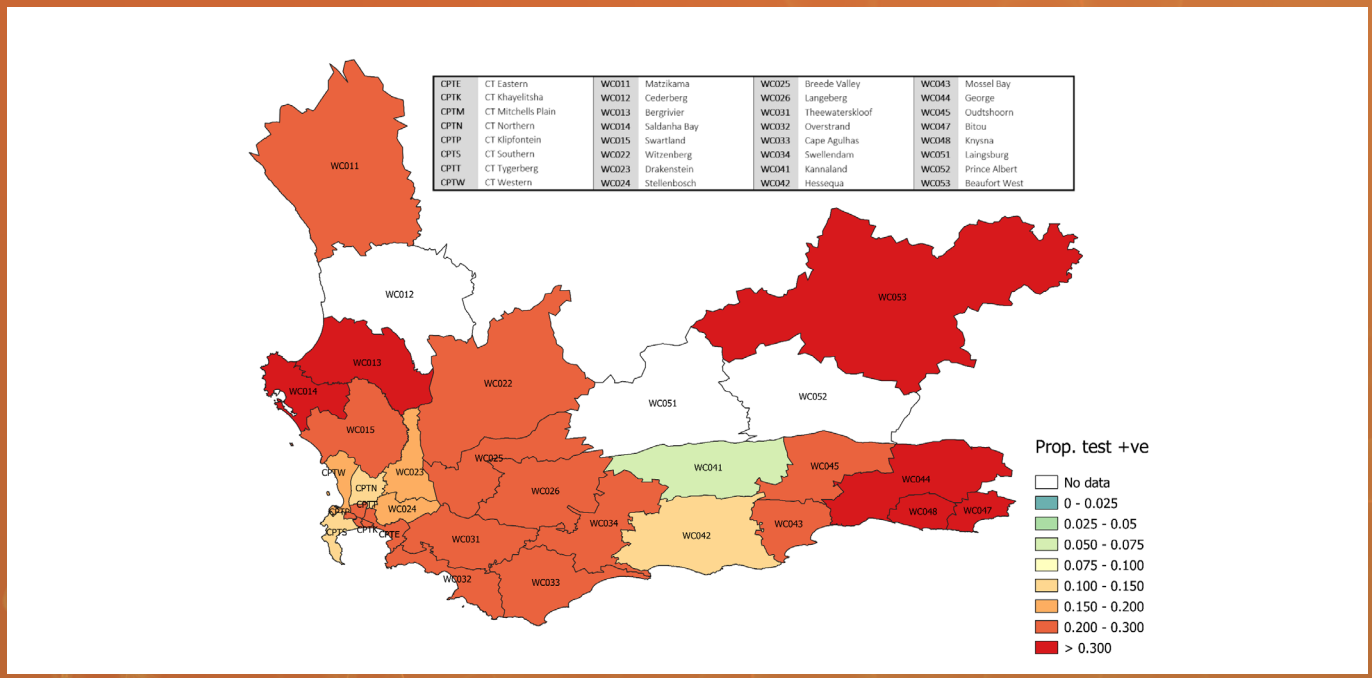

Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 19-25 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

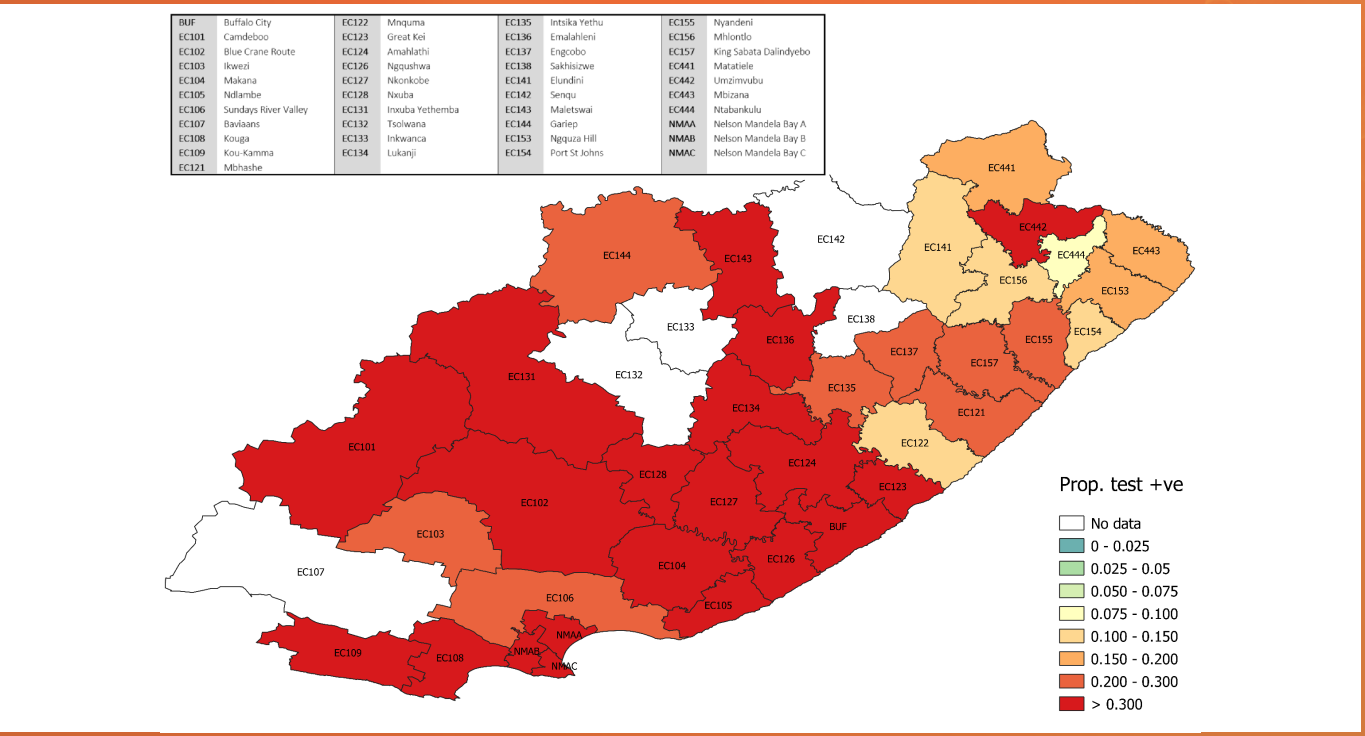

Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 19-25 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

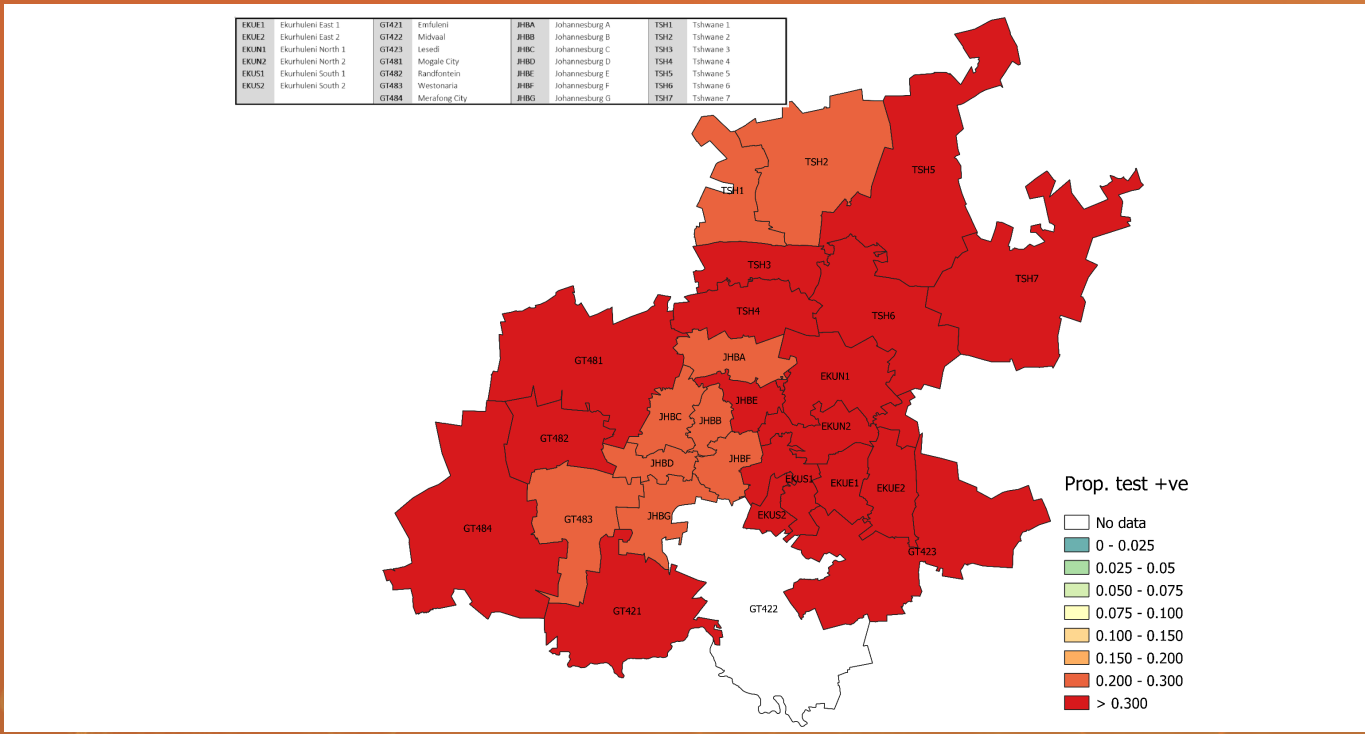

Figure 13. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 19-25 July 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

TESTING BY PATIENT ADMISSION STATUS

In week 30, 24.2% of tests in the public sector were performed for hospitalised patients (Figure 14). Among the five provinces performing the largest volume of tests in week 30 (Western Cape, Eastern Cape, Free State, KwaZulu-Natal and Gauteng), the proportion of inpatient tests was highest in KwaZulu-Natal (38.8%). The percentage of inpatient tests has decreased in the Western Cape in recent weeks. The percentage testing positive in week 30 was higher among inpatients (30.7%) than outpatients (28.2%) (P<0.001). In the public sector in week 30 the mean laboratory turnaround time was shorter for inpatients (5.9 days) compared to outpatients (7.0 days), likely reflecting prioritised testing for severe patients.

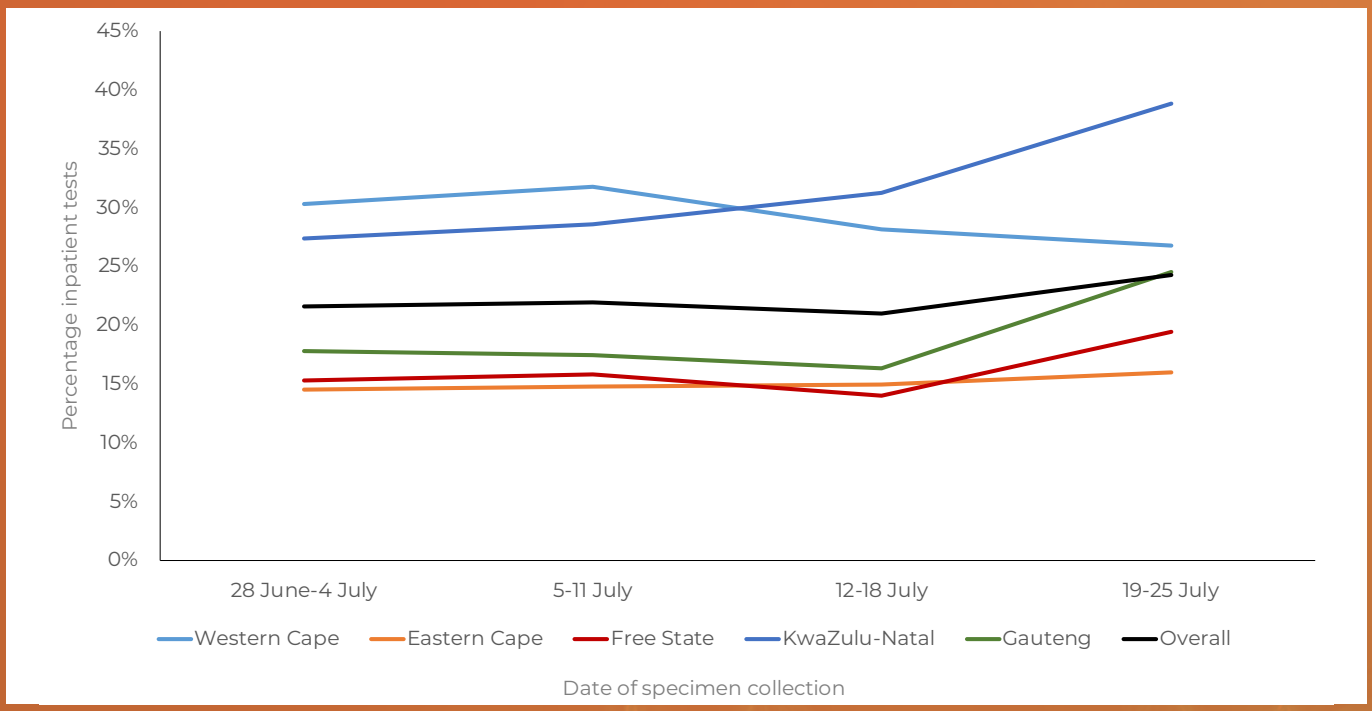

Figure 14. Percentage of inpatient tests performed in the public sector by province, 28 June-25 July 2020

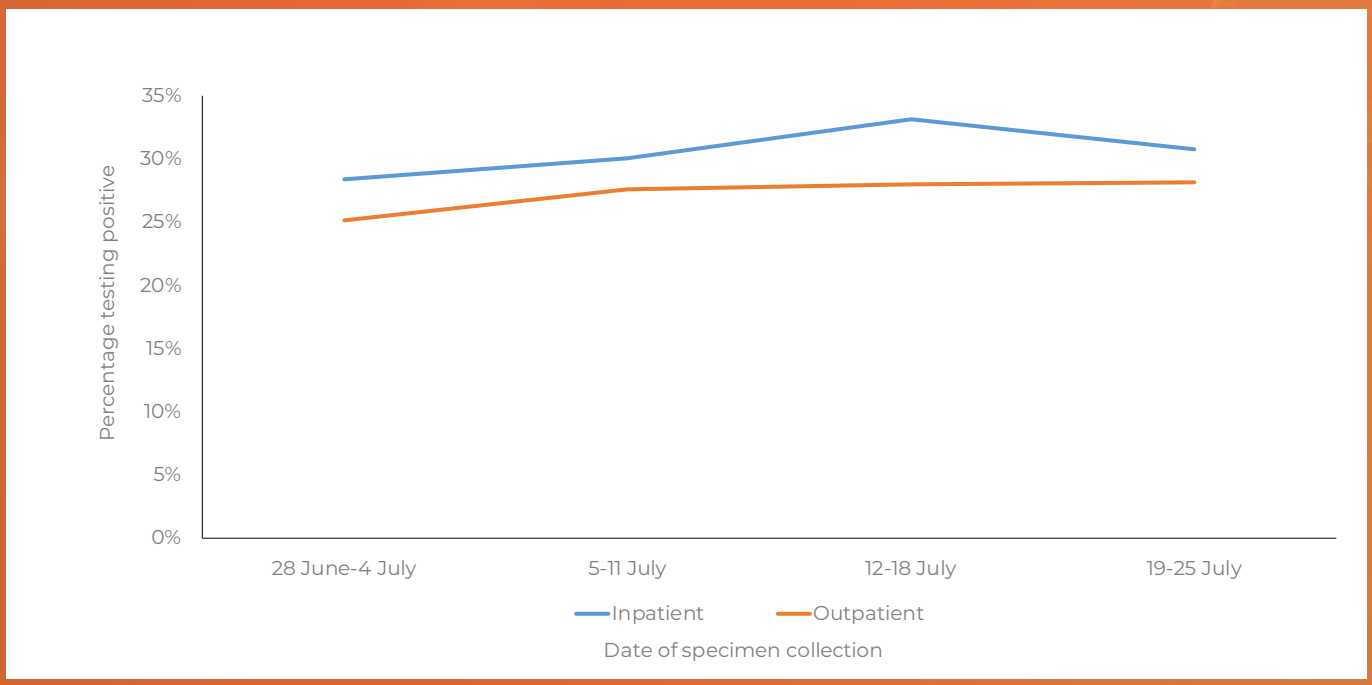

Figure 15. Percentage testing positive by patient admission status in the public sector, 28 June-25 July 2020

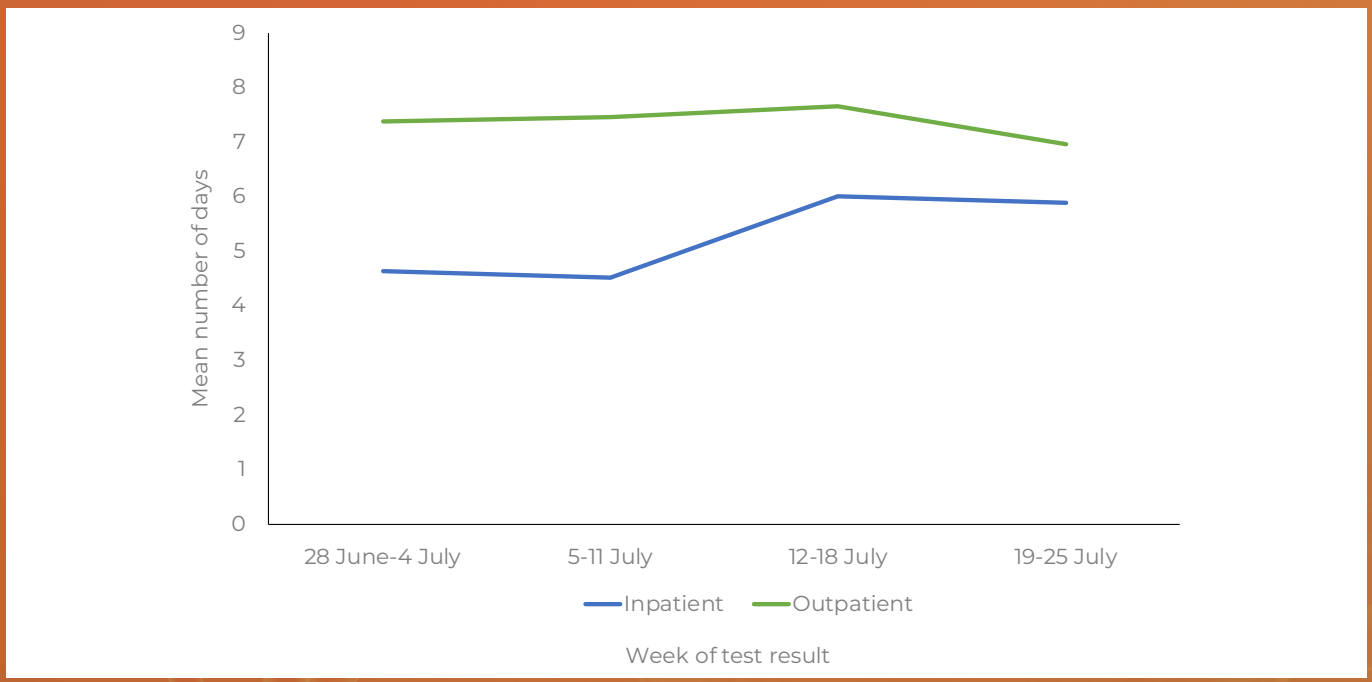

Figure 16. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 28 June – 25 July 2020.

TESTING BY AGE AND SEX

The mean age of individuals tested in week 30 was 39.7 years and has increased over the past 3 weeks in males and females. The mean age of cases in week 30 was 41.9 years and was higher in males (42.1 years) than females (41.8 years) (P=0.025) (Table 7). The sex ratio (the number of males per 100 females) of cases was 74.2 in week 30. With the exception of the elderly age groups (≥70 years), there was an increasing proportion testing positive with increasing age in both males and females (Figure 17). For both sexes, the proportion testing positive was similar to the previous week for all age groups, except the elderly (≥70 years) age groups where the proportion testing positive decreased in week 30.

Table 7. Mean age and sex ratio of individuals tested, South Africa, 28 June-25 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
27	28 June	37.9	38.7	39.7	39.9	76.2	72.7
28	5 July	38.3	38.6	40.3	40.1	76.1	72.6
29	12 July	38.7	39.0	41.0	40.8	75.2	71.2
30	19 July	39.6	39.8	42.1	41.8	75.9	74.2

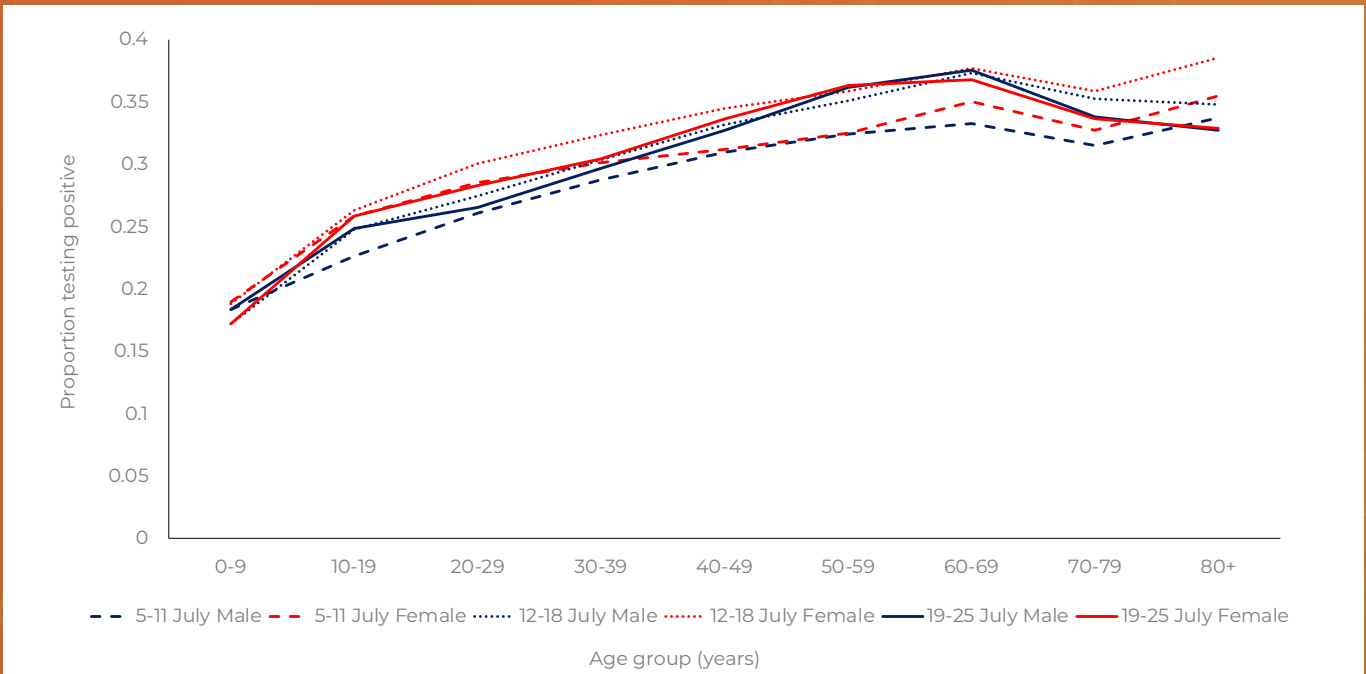

Figure 17. Weekly proportion testing positive by age group and sex, South Africa, 5-25 July 2020

From week 29 to week 30, the percentage testing positive did not change significantly in males (P=0.980) and decreased in females from 32.5% to 31.5% (P<0.001) (Table 8). In week 30 the percentage testing positive differed between males and females only in the 20-39 years' age group, where the percentage was higher in females than males (P=0.001).

Table 8. Percentage testing positive by sex and week, South Africa, 28 June -25 July 2020

Age (years)	28 June - 4 July		5 - 11 July		12 - 18 July		19 - 25 July	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	19.6%	21.8%	21.1%	23.8%	22.0%	24.0%	22.3%	23.1%
20-39	24.3%	25.8%	27.7%	29.5%	29.2%	31.4%	28.5%	29.6%
40-59	27.3%	27.7%	31.6%	31.7%	34.0%	35.0%	34.2%	34.8%
60-69	29.1%	30.4%	33.2%	35.0%	37.3%	37.7%	37.5%	36.8%
70+	26.9%	27.3%	32.1%	33.7%	35.1%	36.9%	33.5%	33.3%
Total	25.2%	26.4%	28.8%	30.1%	30.8%	32.5%	30.7%	31.5%

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.
- 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.

CONCLUSIONS

Following the week on week improvement in testing volumes since week 24, there has been a reduction is testing volumes in the past two weeks. The majority of testing (74%) in the past week continued to be performed in the private sector. Five provinces including Western Cape, Eastern Cape, KwaZulu-Natal, Free State and Gauteng performed 85% of tests in the previous week, however decreased testing rates were observed in these provinces. The percentage testing positive remained unchanged from 31.7% in week 29 to 31.2% in week 30. KwaZulu-Natal province (34.5%) had the highest percentage testing positive in week 30 however Eastern Cape, Free State, North West, Gauteng and Mpumalanga provinces additionally had percentages testing positive >30%. Compared to the previous week, the percentage testing positive increased in KwaZulu-Natal, Free State and Northern Cape provinces, whereas decreases were noted in Western Cape, Eastern Cape, North West and Gauteng provinces. Laboratory turnaround times were similar to the previous week (1.7 days in the private sector and 6.7 days in the public sector). Although prioritised testing was reflected by the shorter turnaround time in the public sector for inpatients (5.9 days) compared to outpatients (7.0 days), turnaround times were high in both groups.