

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 23 2020

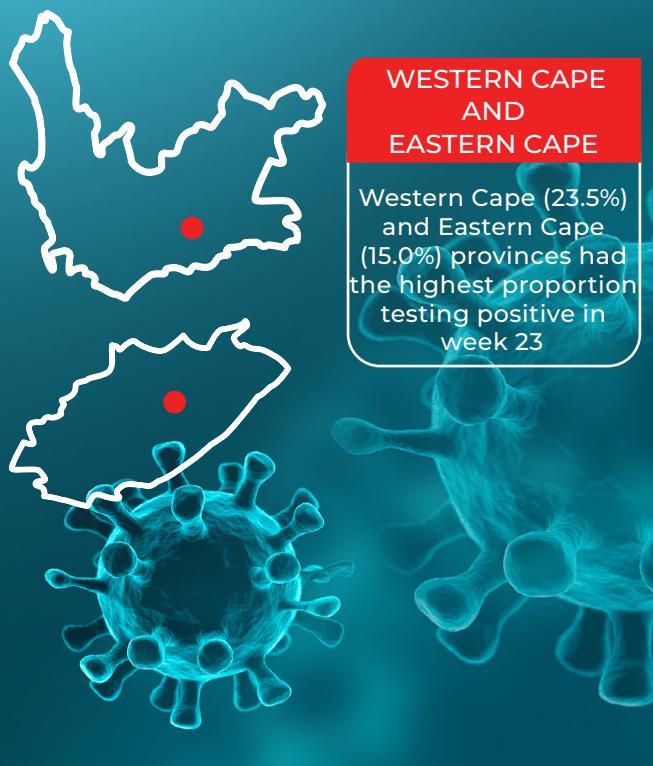
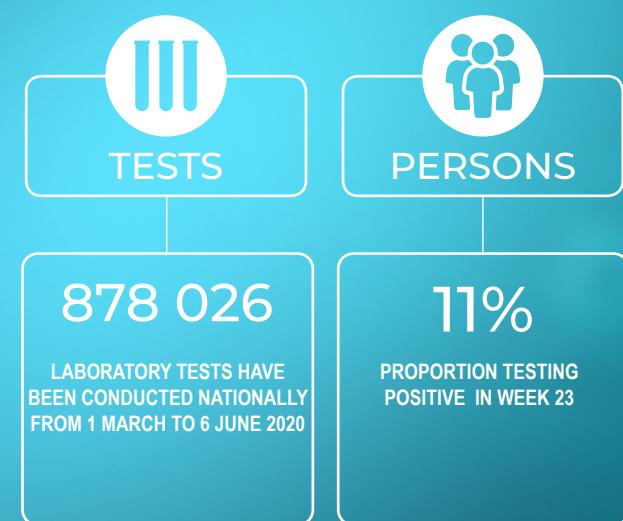
NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

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 collected up to 6 June 2020 (week 23 of 2020). Note: COVID-19 is the name of the disease and SARS-CoV-2 is the name of the virus.

Highlights

- In the period 1 March 2020 through 6 June 2020, 878 026 laboratory tests for SARS-CoV-2 have been conducted nationally
- There has been a decrease in laboratory testing volumes for SARS-CoV-2 in the past three weeks, likely due to the limited supply of extraction and testing kits
- Overall proportion testing positive was 5.9%. However, there continues to be an increase in the weekly proportion testing positive since week 18 to 11.0% in week 23 (31 May – 6 June)
- Western Cape (23.5%) and Eastern Cape (15.0%) provinces continued to have the highest proportion testing positive in the past week, however increased proportions testing positive were observed in 8 of the 9 provinces.
- The proportion of tests referred from community screening decreased over the past three weeks from 48.0% of public sector tests in week 21 to 25.0% in week 23
- The mean turnaround time in the public sector increased from 2.4 days to 12 days from week 19 to week 23, as a result of laboratory testing backlogs



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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 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. 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. Mass screening and testing has been discontinued from the week beginning 17 May, with the goal of using more targeted testing strategies, however there may be a lag in implementation in the provinces. 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. 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 6 June 2020 (week 23).

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TESTING VOLUMES AND PROPORTION TESTING POSITIVE

From 1 March through 6 June 2020, 878 026 laboratory tests for SARS-CoV-2 were conducted. The number of tests conducted increased week on week to week 20 when 135 706 tests were conducted, however, has subsequently decreased in the past three weeks with 93 765 tests having been conducted in week 23. The decrease in the volume of testing conducted over the past three weeks is likely due to a limited supply of extraction and testing kits, and may also reflect reduced sample collection as a result of implementation of targeted testing. Due to backlogs in laboratory testing as a result of influx of specimens from community screening and limited testing kits, all tests for samples collected in previous weeks may not yet be reflected. Reduced testing volumes were observed over weekends and public holidays (Figure 1).

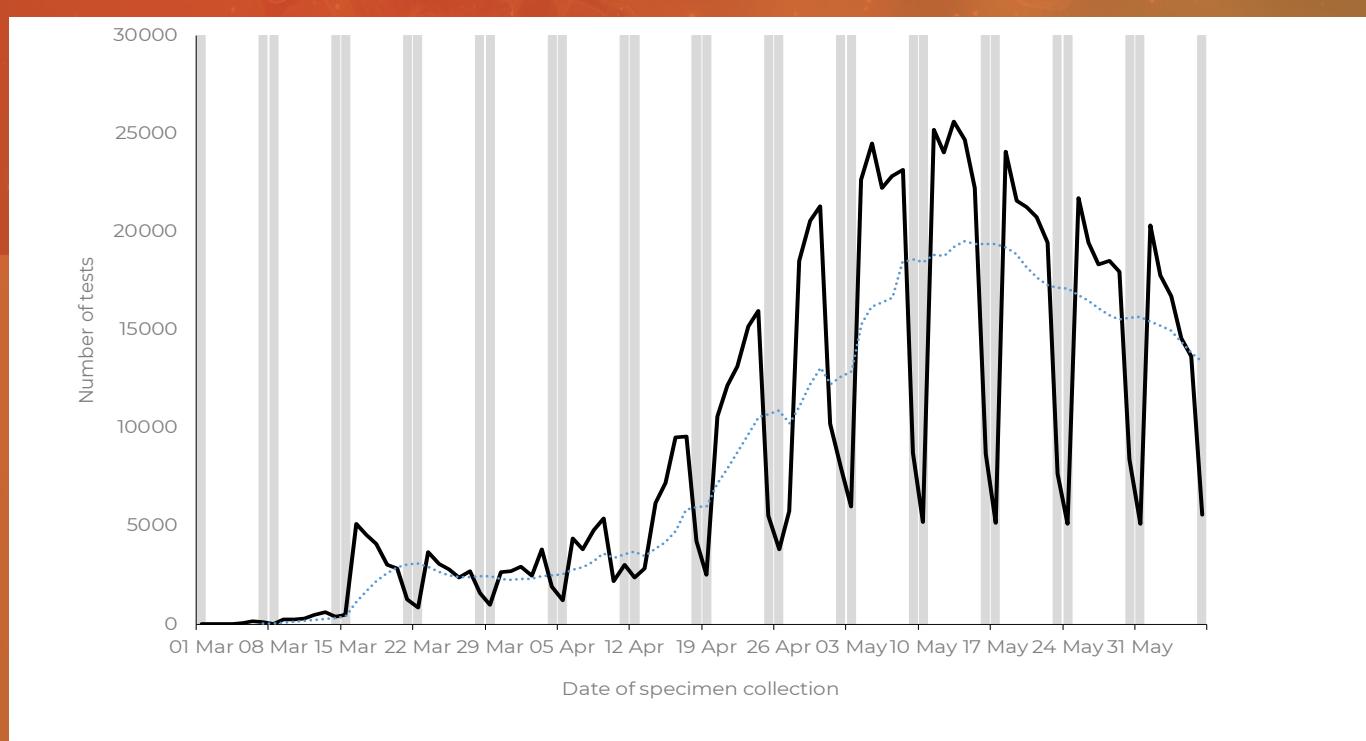


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 6 June 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days

The overall proportion testing positive from week 10 through 23 was 5.9% (Table 1). The proportion testing positive continued to increase week on week, and has increased from 7.5% in week 21, to 9.7% in week 22 and to 11.0% in week 23 ($P<0.001$) (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 6 June 2020

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Proportion testing positive (%)
10	1 Mar	417 (0.0)	8	1.92
11	8 Mar	2 345 (0.3)	97	4.14
12	15 Mar	21 380 (2.4)	863	4.04
13	22 Mar	17 134 (2.0)	480	2.80
14	29 Mar	17 573 (2.0)	444	2.53
15	5 Apr	24 886 (2.8)	697	2.80
16	12 Apr	41 954 (4.8)	1 181	2.81
17	19 Apr	75 116 (8.6)	2 024	2.69
18	26 Apr	88 132 (10.0)	3 037	3.45
19	3 May	130 113 (14.8)	5 744	4.41
20	10 May	135 706 (15.5)	6 928	5.11
21	17 May	119 959 (13.7)	9 050	7.54
22	24 May	109 546 (12.5)	10 635	9.71
23	31 May	93 765 (10.7)	10 299	10.98
Total		878 026 (100)	51 487	5.86

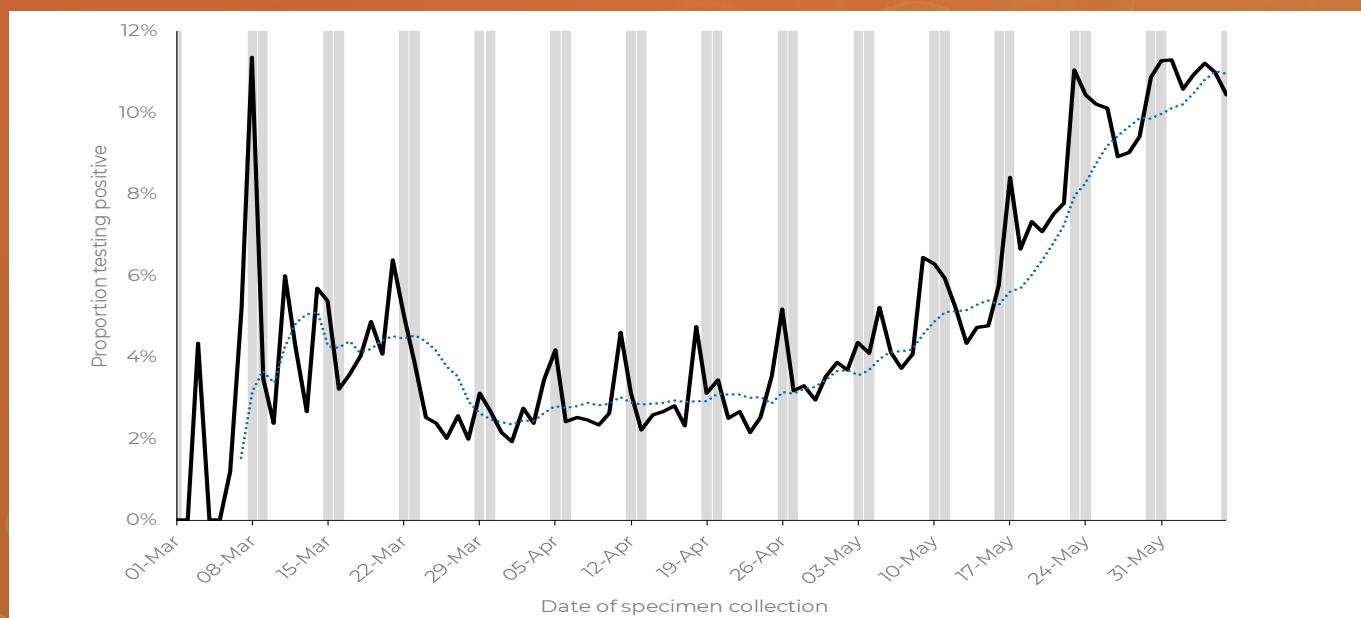


Figure 2. Proportion of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 6 June 2020. Blue dotted line shows the 7-day moving average of the proportion testing positive. Grey bars highlight weekend days

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TESTING IN PRIVATE AND PUBLIC SECTORS

From 1 March through 6 June, 474 901 laboratory tests were conducted in public sector laboratories, with 5.7% testing positive. Over this same period, private sector laboratories conducted 403 125 tests, with 6.0% testing positive (Table 2). Overall the public sector has conducted 54.1% of tests and accounted for 52.7% of cases. The proportion of tests conducted in public sector laboratories increased from week 12 (6.6%) through week 18 (75.0%). However, this has subsequently decreased weekly to 27.0% in week 23. This is likely due to limited supplies of extraction and testing kits and resulting backlogs in testing, and may also reflect the change in testing strategy. The proportion testing positive continued to increase in both the public and private sectors, and was significantly higher in the public sector (12.6%) compared to the private sector (10.4%) in week 23 ($P<0.001$).

Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 6 June 2020

Week number	Week beginning	Public sector		Private sector		Public sector proportion of		Ratio of PTP ^a
		Tests	Cases n (%)	Tests	Cases n (%)	Tests (%)	Cases (%)	
10	1 Mar	283	7 (2.5)	134	1 (0.7)	67.9	87.5	3.314
11	8 Mar	383	21 (5.5)	1 962	76 (3.9)	16.3	21.6	1.415
12	15 Mar	1 417	68 (4.8)	19 963	795 (4.0)	6.6	7.9	1.205
13	22 Mar	3 448	127 (3.7)	13 686	353 (2.6)	20.1	26.5	1.428
14	29 Mar	5 756	169 (2.9)	11 817	275 (2.3)	32.8	38.1	1.262
15	5 Apr	11 557	381 (3.3)	13 329	316 (2.4)	46.4	54.7	1.391
16	12 Apr	24 025	643 (2.7)	17 929	538 (3.0)	57.3	54.4	0.892
17	19 Apr	54 753	1 548 (2.8)	20 363	476 (2.3)	72.9	76.5	1.209
18	26 Apr	66 070	2 386 (3.6)	22 062	651 (3.0)	75.0	78.6	1.224
19	3 May	87 989	4 400 (5.0)	42 124	1 344 (3.2)	67.6	76.6	1.567
20	10 May	86 547	4 568 (5.3)	49 159	2 360 (4.8)	63.8	65.9	1.099
21	17 May	62 321	5 045 (8.1)	57 638	4 005 (6.9)	52.0	55.7	1.165
22	24 May	45 022	4 590 (10.2)	64 524	6 045 (9.4)	41.1	43.2	1.088
23	31 May	25 330	3 202 (12.6)	68 435	7 097 (10.4)	27.0	31.1	1.219
Total		474 901	27 155 (5.7)	403 125	24 332 (6.0)	54.1	52.7	0.947

^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)

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Laboratory delays are indicated by an increase in the mean number of days between specimen collection and reporting of the results over the past weeks, predominantly in the public sector. The mean turnaround time in the public sector increased from 2.4 days to 12 days from week 19 to week 23 (Figure 3). This is likely due to testing of backlogged specimens. The turnaround time in the private sector remained <2 days over this same period. Among tests conducted in the public sector in the five provinces conducting the largest volumes of tests, the turnaround time increased in the past week in Western Cape, Eastern Cape, Free State, and Gauteng provinces, while the turnaround time decreased in KwaZulu-Natal province (Figure 4). The number of tests conducted varied widely by laboratory ranging from 6 to 25 514 tests in week 23 (median of 3 209 tests), depending on the testing platform being used. Of the 20 NHLS laboratories conducting SARS-CoV-2 testing, 18 had turnaround times >48 hours in the past week (Figure 5).

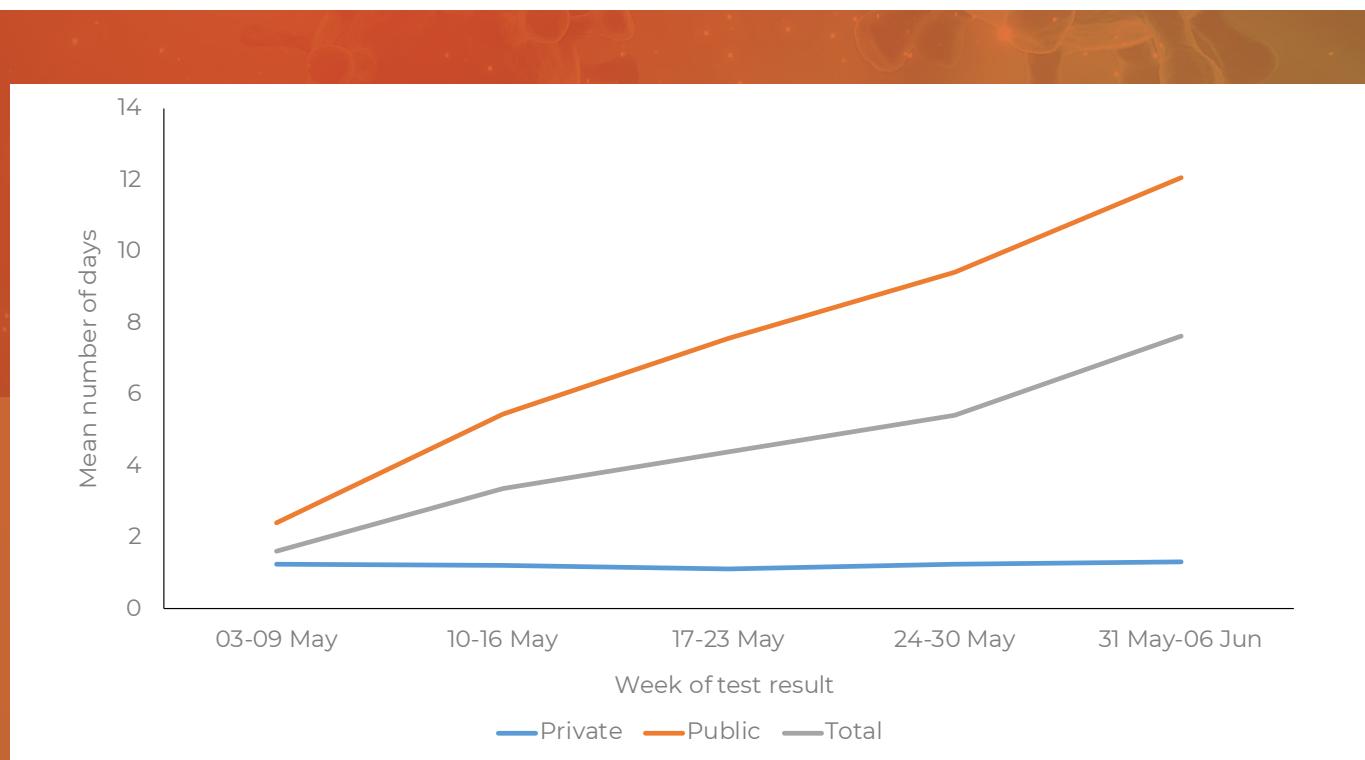


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 3 May – 6 June 2020

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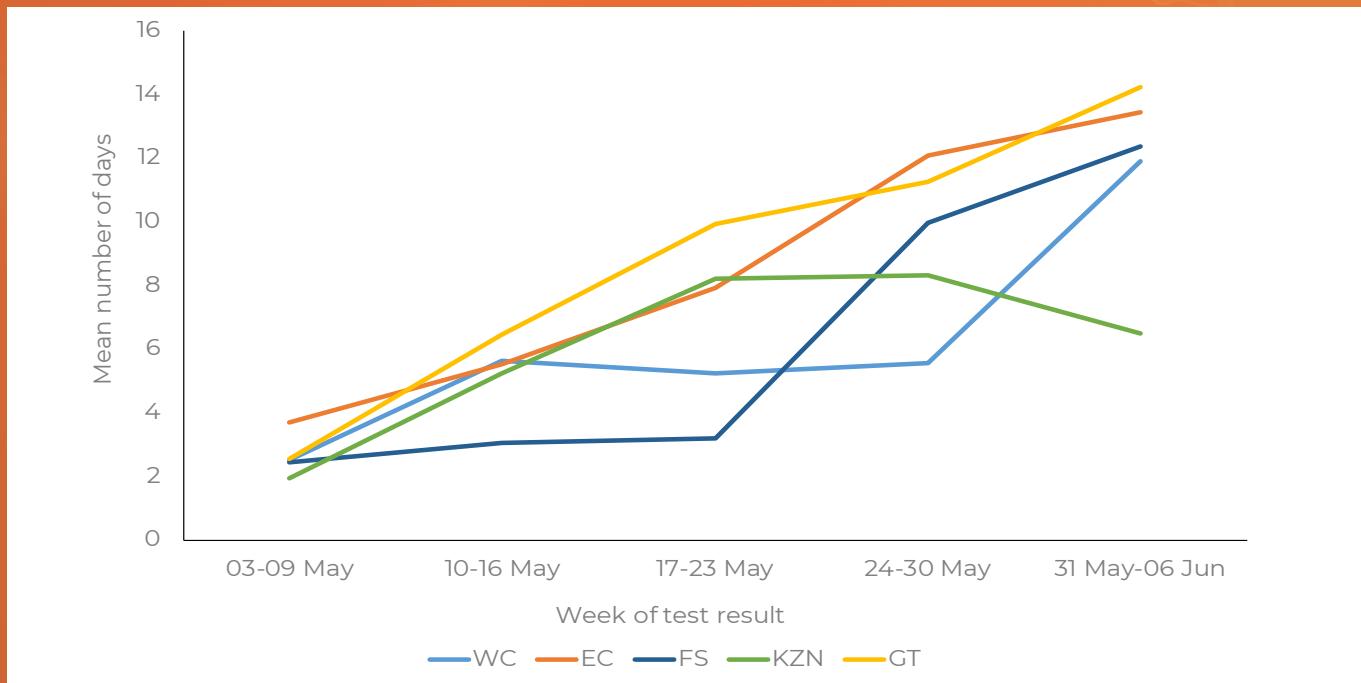


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, South Africa, 3 May – 6 June 2020. WC, Western Cape; EC, Eastern Cape; FS, Free State; KZN, KwaZulu-Natal, GT, Gauteng

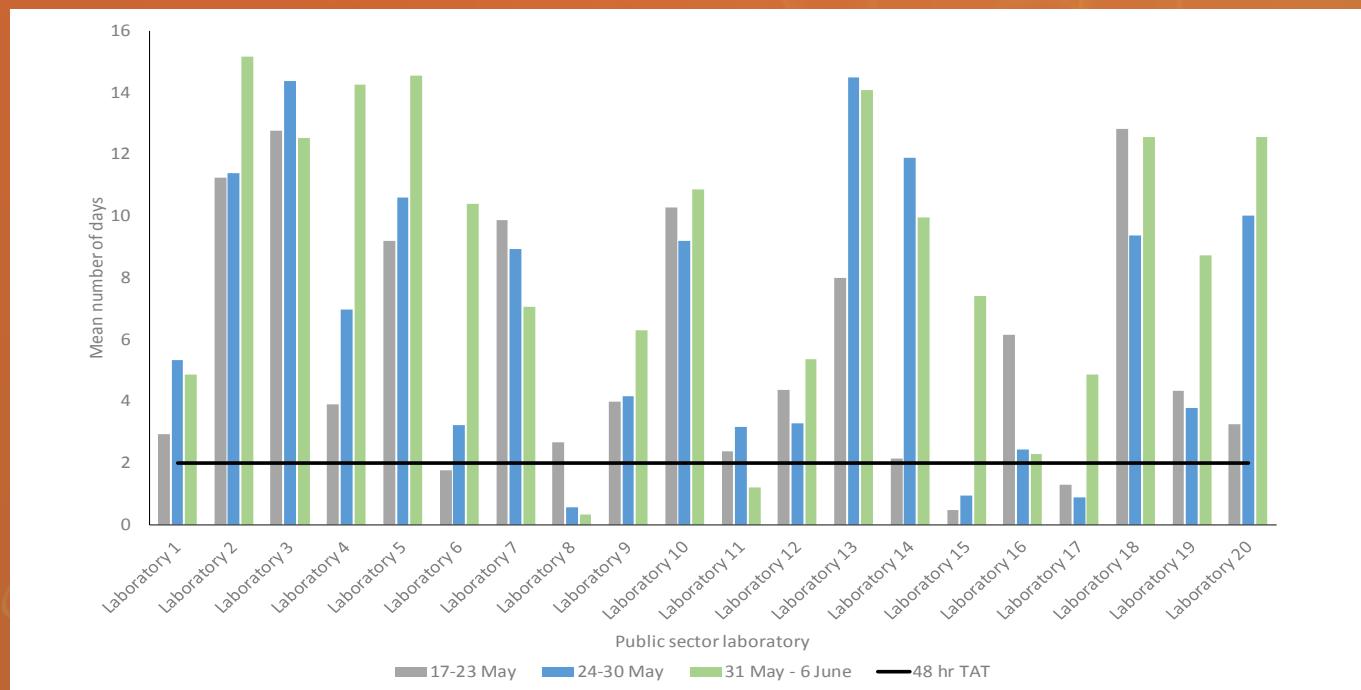


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 17 May – 6 June 2020. The horizontal black line indicates 48-hour turnaround time (TAT)

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TESTING BY PROVINCE

In the past week, Western Cape and Gauteng provinces performed the largest numbers of tests, accounting for 59.4% of tests nationally (Table 3). Five provinces including Western Cape, Eastern Cape, Free State, KwaZulu-Natal and Gauteng performed 89.7% of tests in week 23. Western Cape (23.5%) and Eastern Cape (15.0%) provinces continued to have the highest proportion testing positive in week 23 (Figure 6). KwaZulu-Natal, North West, Gauteng and Mpumalanga provinces each had proportion testing positive of >3% in the past week. Over the past three weeks, the proportion testing positive has increased significantly in 8 of the 9 provinces (Western Cape ($P<0.001$), Eastern Cape ($P<0.001$), Free State ($P=0.006$), KwaZulu-Natal ($P<0.001$), North West ($P<0.001$), Gauteng ($P<0.001$), Mpumalanga ($P<0.001$) and Limpopo ($P=0.002$)). The proportion testing positive was higher than the national average, not weighted for population size, in Western Cape and Eastern Cape provinces (Figure 6).

Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 17 May – 6 June 2020

Province	17-23 May		24-30 May		31 May-06 June	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	33 189	6718 (20.2)	31 717	7 128 (22.5)	25 404	5 976 (23.5)
Eastern Cape	12 329	977 (7.9)	10 643	1 254 (11.8)	9 339	1 397 (15.0)
Northern Cape	998	7 (0.7)	1 042	12 (1.2)	974	17 (1.7)
Free State	10 178	102 (1.0)	6 891	92 (1.3)	4 902	78 (1.6)
KwaZulu-Natal	18 646	325 (1.7)	18 428	786 (4.3)	14 117	503 (3.6)
North West	2 059	34 (1.7)	2 171	88 (4.1)	2 766	217 (7.8)
Gauteng	34 690	584 (1.7)	32 041	1 044 (3.3)	30 372	1 844 (6.1)
Mpumalanga	3 135	62 (2.0)	3 141	92 (2.9)	3 336	159 (4.8)
Limpopo	3 036	19 (0.6)	2 604	17 (0.7)	1 780	27 (1.5)
Unknown	1 699	222 (13.1)	868	122 (14.1)	775	81 (10.5)
Total	119 959	9 050 (7.5)	109 546	10 635 (9.7)	93 765	10 299 (11.0)

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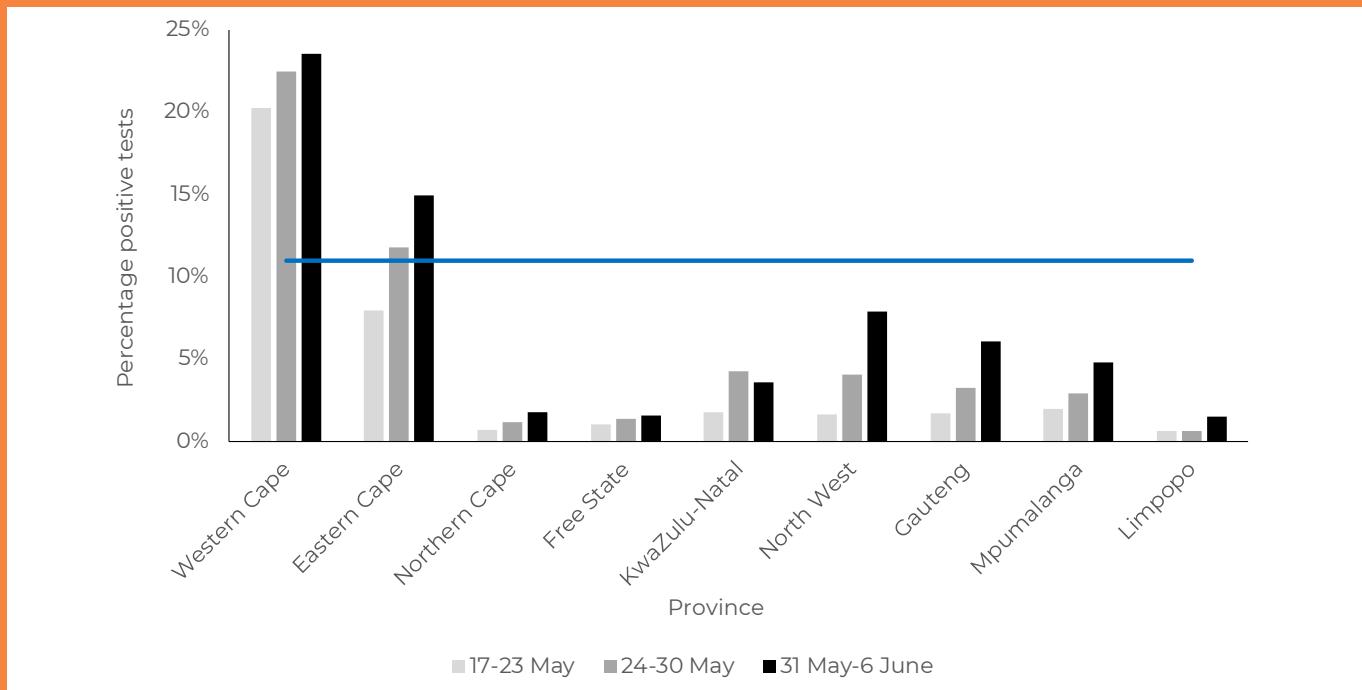


Figure 6. Weekly proportion testing positive, by province, South Africa, 17 May – 6 June 2020. The horizontal blue line shows the national average for week 23, beginning 31 May 2020

TESTING IN THE PUBLIC SECTOR

In the public sector, the proportion testing positive increased to 12.6% in week 23 (Table 4). The proportion testing positive was highest in the Western Cape (30.7%), Eastern Cape (13.6%) and North West (12.8%) provinces. The proportion testing positive in the public sector remains higher than the national average, not weighted for population size, in Western Cape, Eastern Cape and North West provinces (Figure 7).

Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 17 May – 06 June 2020

Province	17-23 May		24-30 May		31 May-06 June	
	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)	No. of tests	No. positive tests (%)
Western Cape	15 663	4 154 (26.5)	12 406	3 661 (29.5)	7 341	2 256 (30.7)
Eastern Cape	7 974	499 (6.3)	4 412	411 (9.3)	3 042	415 (13.6)
Northern Cape	0	0 (0.0)	8	0 (0.0)	3	0 (0.0)
Free State	8 344	76 (0.9)	4 998	58 (1.2)	3 008	39 (1.3)

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KwaZulu-Natal	10 684	127 (1.2)	9 651	187 (1.9)	5 717	211 (3.7)
North West	331	1 (0.3)	237	7 (3.0)	376	48 (12.8)
Gauteng	16 903	178 (1.1)	11 499	260 (2.3)	5 242	231 (4.4)
Mpumalanga	403	1 (0.2)	349	2 (0.6)	21	0 (0.0)
Limpopo	2 019	9 (0.4)	1 462	4 (0.3)	580	2 (0.3)
Total	62 321	5 045 (8.1)	45 022	4 590 (10.2)	25 330	3 202 (12.6)

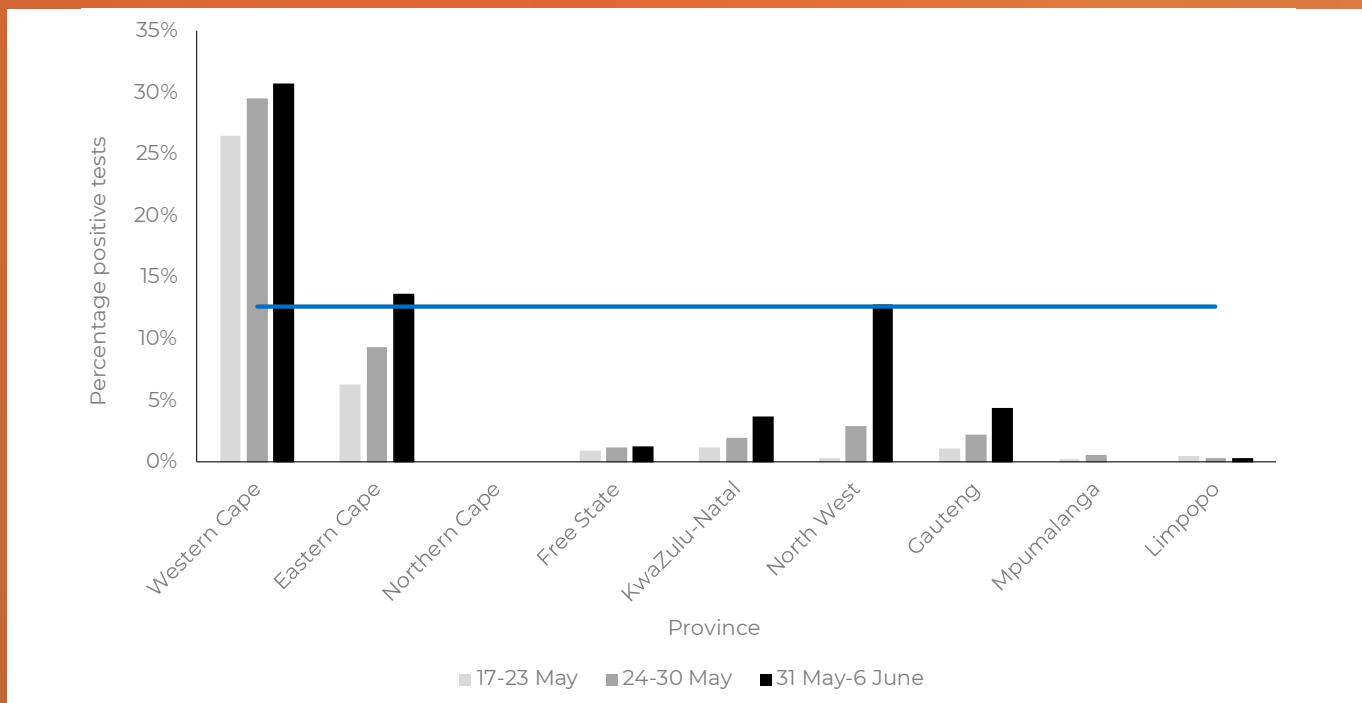


Figure 7. Weekly proportion testing positive in the public sector, by province, South Africa, 17 May – 6 June 2020. The horizontal blue line shows the national average for week 23, beginning 31 May 2020

The proportion of tests in the public sector performed for individuals that were referred from community screening (active case finding) decreased over the past three weeks (48.0% in week 21, 38.1% in week 22 and 25.0% in week 23, $P<0.001$), with decreases noted in all five provinces where the largest volume of tests were performed (Figure 8). This likely reflects the change in policy in mid-May to discontinue mass screening and testing approaches. The proportion testing positive among CST tests varied widely by province, likely reflecting the different approaches to the programme in the provinces. The proportion testing positive in week 23 was 31.5% in the Western Cape and 13.9% in the Eastern Cape, while this proportion was <5% in Free State, KwaZulu-Natal and Gauteng provinces (Figure 9). The proportion testing positive among CST tests increased significantly over the past three weeks in the Western Cape (25.6% to 31.5%, $P<0.001$), Eastern Cape (4.8% to 13.9%, $P<0.001$), KwaZulu-Natal (1.0% to 4.4%, $P<0.001$), North West (0.0% to 31.9%, $P<0.001$) and Gauteng (1.0% to 2.8%, $P<0.001$) provinces.

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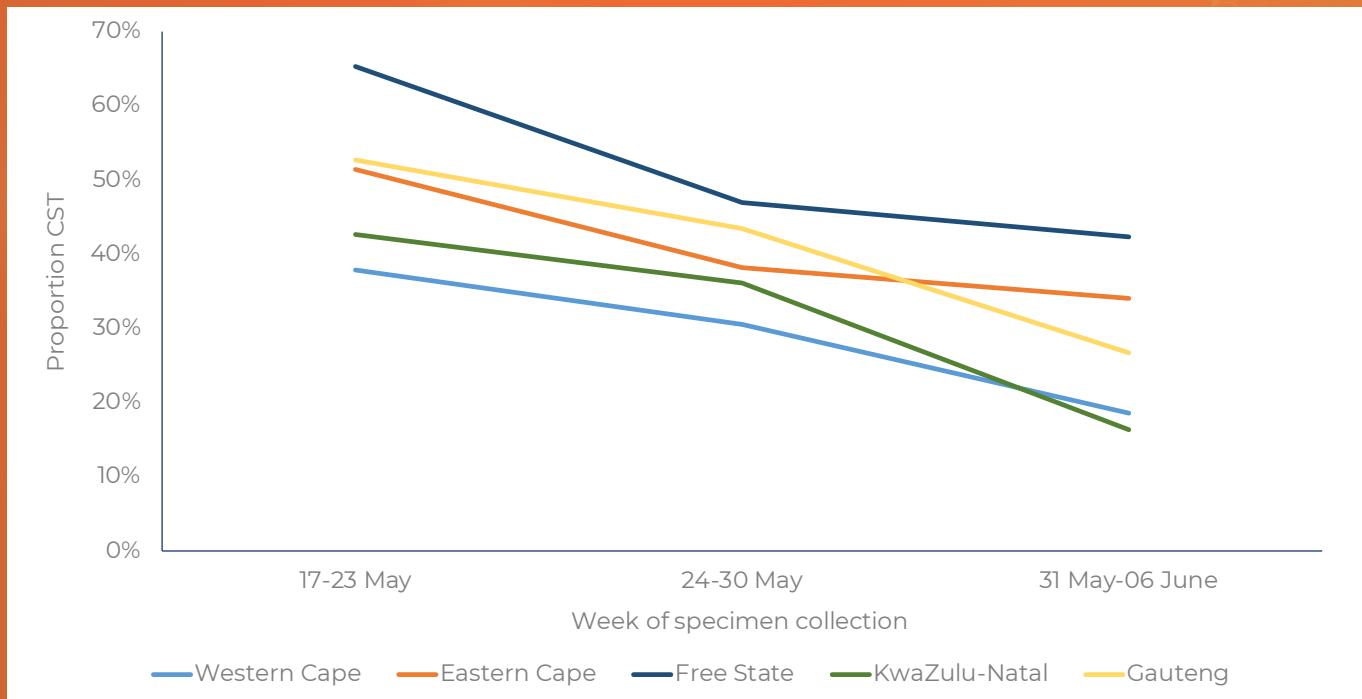


Figure 8. Weekly proportion of tests resulting from public sector community screening and testing, by province, South Africa, 17 May-6 June 2020

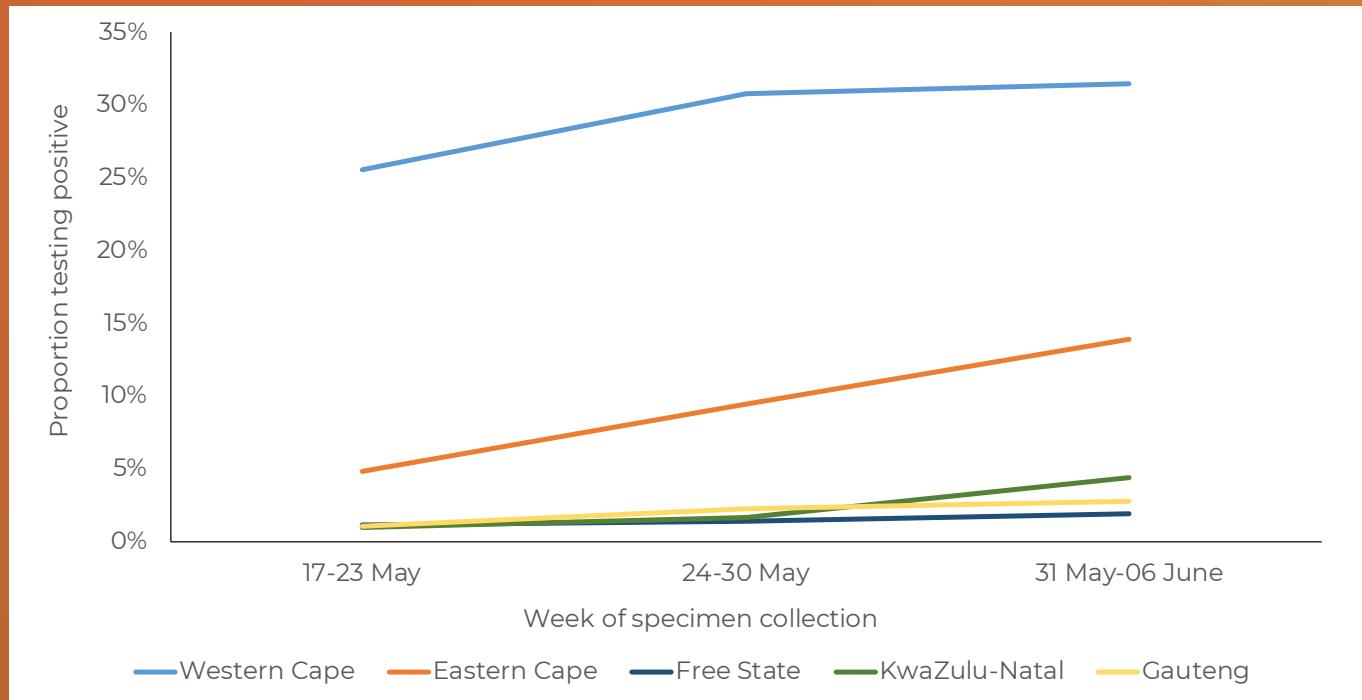


Figure 9. Weekly proportion testing positive in the public sector among individuals identified through community screening and testing, by province, South Africa, 17 May-6 June 2020

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PUBLIC FACILITIES WITH HIGH PROPORTIONS TESTING POSITIVE

Table 5 shows anonymised public healthcare facilities that tested ≥ 25 specimens, had ≥ 5 positive tests and had the highest proportion testing positive ($>3\%$) in the week of 31 May – 6 June. Of 77 facilities, 35 are in the Western Cape, 16 in the Eastern Cape, 12 in KwaZulu-Natal, 10 in Gauteng, 2 in Free State and 2 in North West province.

Table 5. Public healthcare facilities with a high proportion testing positive, 31 May – 6 June 2020

Facility Name	Province	Tests	PTP (95% CI)
Facility 1	Western Cape	33	0.727 (0.575;0.879)
Facility 2	Western Cape	48	0.708 (0.580;0.837)
Facility 3	Western Cape	43	0.605 (0.459;0.751)
Facility 4	Western Cape	55	0.564 (0.433;0.695)
Facility 5	Western Cape	30	0.533 (0.355;0.712)
Facility 6	Western Cape	51	0.490 (0.353;0.627)
Facility 7	Western Cape	189	0.481 (0.410;0.553)
Facility 8	Western Cape	208	0.442 (0.375;0.510)
Facility 9	Western Cape	62	0.435 (0.312;0.559)
Facility 10	Western Cape	56	0.429 (0.299;0.558)
Facility 11	Western Cape	84	0.417 (0.311;0.522)
Facility 12	Western Cape	57	0.404 (0.276;0.531)
Facility 13	Western Cape	34	0.382 (0.219;0.546)
Facility 14	Western Cape	320	0.381 (0.328;0.434)
Facility 15	Western Cape	877	0.347 (0.315;0.378)
Facility 16	Western Cape	156	0.346 (0.271;0.421)
Facility 17	North-West	29	0.345 (0.172;0.518)
Facility 18	Western Cape	112	0.339 (0.252;0.427)
Facility 19	Western Cape	684	0.336 (0.301;0.372)
Facility 20	Western Cape	324	0.330 (0.279;0.381)

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Facility 21	Western Cape	451	0.317 (0.274;0.360)
Facility 22	Western Cape	70	0.300 (0.193;0.407)
Facility 23	Western Cape	360	0.289 (0.242;0.336)
Facility 24	Eastern Cape	28	0.286 (0.118;0.453)
Facility 25	Western Cape	62	0.274 (0.163;0.385)
Facility 26	Western Cape	147	0.272 (0.200;0.344)
Facility 27	Eastern Cape	45	0.267 (0.137;0.396)
Facility 28	Eastern Cape	60	0.267 (0.155;0.379)
Facility 29	Western Cape	81	0.259 (0.164;0.355)
Facility 30	Western Cape	147	0.259 (0.188;0.329)
Facility 31	Western Cape	392	0.258 (0.214;0.301)
Facility 32	Western Cape	239	0.255 (0.200;0.311)
Facility 33	Western Cape	86	0.244 (0.153;0.335)
Facility 34	Western Cape	392	0.242 (0.200;0.285)
Facility 35	Eastern Cape	58	0.241 (0.131;0.352)
Facility 36	Eastern Cape	25	0.240 (0.073;0.407)
Facility 37	Western Cape	26	0.231 (0.069;0.393)
Facility 38	KwaZulu-Natal	26	0.231 (0.069;0.393)
Facility 39	Eastern Cape	220	0.227 (0.172;0.283)
Facility 40	Western Cape	173	0.208 (0.148;0.269)
Facility 41	Gauteng	46	0.196 (0.081;0.310)
Facility 42	Eastern Cape	77	0.195 (0.106;0.283)
Facility 43	Eastern Cape	26	0.192 (0.041;0.344)
Facility 44	Western Cape	33	0.182 (0.050;0.313)
Facility 45	Free State	51	0.176 (0.072;0.281)
Facility 46	Gauteng	182	0.148 (0.097;0.200)
Facility 47	Eastern Cape	83	0.145 (0.069;0.220)
Facility 48	Eastern Cape	88	0.136 (0.065;0.208)
Facility 49	North-West	104	0.125 (0.061;0.189)
Facility 50	Eastern Cape	216	0.116 (0.073;0.158)

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Facility 51	Western Cape	35	0.114 (0.009;0.220)
Facility 52	Eastern Cape	114	0.114 (0.056;0.172)
Facility 53	Eastern Cape	62	0.113 (0.034;0.192)
Facility 54	KwaZulu-Natal	221	0.104 (0.064;0.144)
Facility 55	Eastern Cape	159	0.101 (0.054;0.147)
Facility 56	Eastern Cape	100	0.100 (0.041;0.159)
Facility 57	Western Cape	231	0.100 (0.061;0.138)
Facility 58	Gauteng	72	0.097 (0.029;0.166)
Facility 59	Gauteng	46	0.087 (0.006;0.168)
Facility 60	Gauteng	141	0.085 (0.039;0.131)
Facility 61	KwaZulu-Natal	255	0.082 (0.049;0.116)
Facility 62	KwaZulu-Natal	27	0.074 (0.000;0.173)
Facility 63	Eastern Cape	82	0.073 (0.017;0.130)
Facility 64	Gauteng	104	0.067 (0.019;0.115)
Facility 65	KwaZulu-Natal	31	0.065 (0.000;0.151)
Facility 66	KwaZulu-Natal	251	0.064 (0.034;0.094)
Facility 67	Gauteng	747	0.060 (0.043;0.077)
Facility 68	KwaZulu-Natal	230	0.052 (0.023;0.081)
Facility 69	Gauteng	122	0.049 (0.011;0.088)
Facility 70	Gauteng	210	0.048 (0.019;0.076)
Facility 71	KwaZulu-Natal	345	0.046 (0.024;0.069)
Facility 72	Gauteng	269	0.045 (0.020;0.069)
Facility 73	KwaZulu-Natal	158	0.044 (0.012;0.076)
Facility 74	KwaZulu-Natal	302	0.036 (0.015;0.058)
Facility 75	Free State	194	0.036 (0.010;0.062)
Facility 76	KwaZulu-Natal	500	0.032 (0.017;0.047)
Facility 77	KwaZulu-Natal	364	0.030 (0.013;0.048)

*Colour coding is used to demarcate bands (more than 30%; 20%-29.9%; 15%-19.9%; 10%-14.9%; 7.5%-9.9%; 5%-7.4%; and 3%-4.9%)
 95% CI: 95% confidence interval; PTP: positive test proportion

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PUBLIC SECTOR TESTING: HEALTH DISTRICT-LEVEL RESULTS

Table 6 and Figure 10 show health sub-districts with high adjusted proportion testing positive for the week of 31 May – 06 June. The adjusted positive test proportion exceeded 20% in 12 districts and health sub-districts in the Western Cape (Figure 11), and 3 in the Eastern Cape (Figure 12). Adjusted positive test proportions exceeded 10% in a further 12 districts (1 in the Western Cape; 9 in the Eastern Cape; 1 in North West and 1 in KwaZulu-Natal). The proportion testing positive increased significantly in three districts and health sub-districts in the Eastern Cape (Inxuba Yethemba, Emalahleni and Buffalo City), two in Gauteng (Ekurhuleni South 1 and Tshwane 3) and eThekewini South in KwaZulu-Natal.

Table 6. Health sub-districts with a high proportion testing positive based on public sector data for the week of 31 May – 6 June 2020

Health district or sub-district	Province	PTP (95% CI)	Previous week
CT Khayelitsha	Western Cape	0.552 (0.442-0.661)	0.463 (0.418-0.508)
Stellenbosch	Western Cape	0.444 (0.328-0.561)	0.421 (0.313-0.530)
CT Klipfontein	Western Cape	0.438 (0.354-0.523)	0.403 (0.350-0.456)
Drakenstein	Western Cape	0.413 (0.343-0.484)	0.401 (0.348-0.455)
CT Northern	Western Cape	0.398 (0.290-0.506)	0.290 (0.227-0.352)
CT Eastern	Western Cape	0.378 (0.329-0.428)	0.348 (0.313-0.383)
CT Mitchells Plain	Western Cape	0.365 (0.325-0.405)	0.344 (0.313-0.376)
CT Tygerberg	Western Cape	0.341 (0.303-0.378)	0.308 (0.285-0.330)
CT Western	Western Cape	0.303 (0.277-0.329)	0.307 (0.284-0.330)
Swartland	Western Cape	0.298 (0.182-0.414)	0.213 (0.114-0.312)
Breede Valley	Western Cape	0.269 (0.210-0.328)	0.303 (0.244-0.362)
Inxuba Yethemba	Eastern Cape	0.240 (0.121-0.358)	...
Emalahleni	Eastern Cape	0.237 (0.147-0.327)	0.067 (0.024-0.109)
CT Southern	Western Cape	0.232 (0.199-0.265)	0.236 (0.207-0.265)
Lukanji	Eastern Cape	0.217 (0.137-0.298)	0.149 (0.093-0.206)
Nelson Mandela Bay C	Eastern Cape	0.194 (0.158-0.229)	0.165 (0.131-0.199)
Knysna	Western Cape	0.178 (0.086-0.270)	0.058 (0.003-0.112)
Buffalo City	Eastern Cape	0.162 (0.114-0.210)	0.075 (0.050-0.100)

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Nkonkobe	Eastern Cape	0.155 (0.040-0.269)	0.061 (0.017-0.105)
Umzimvubu	Eastern Cape	0.155 (0.055-0.254)	0.033 (0.000-0.069)
Nelson Mandela Bay B	Eastern Cape	0.142 (0.095-0.190)	0.064 (0.030-0.098)
Intsika Yethu	Eastern Cape	0.132 (0.032-0.232)	...
Rustenburg	NorthWest	0.126 (0.053-0.199)	...
Engcobo	Eastern Cape	0.124 (0.067-0.182)	0.180 (0.097-0.263)
King Sabata Dalindyebo	Eastern Cape	0.122 (0.081-0.162)	0.087 (0.066-0.108)
KwaDukuza	KwaZulu-Natal	0.119 (0.070-0.169)	0.055 (0.035-0.076)
Mbhashe	Eastern Cape	0.107 (0.018-0.197)	0.038 (0.000-0.090)
City of Matlosana	NorthWest	0.098 (0.053-0.144)	0.028 (0.000-0.066)
eThekewini West	KwaZulu-Natal	0.096 (0.028-0.165)	0.018 (0.000-0.043)
Ekurhuleni South 1	Gauteng	0.075 (0.034-0.116)	0.010 (0.000-0.022)
Blue Crane Route	Eastern Cape	0.070 (0.000-0.146)	0.096 (0.016-0.177)
Johannesburg F	Gauteng	0.066 (0.047-0.085)	0.057 (0.042-0.072)
Witzenberg	Western Cape	0.063 (0.000-0.147)	0.125 (0.056-0.194)
Endumeni	KwaZulu-Natal	0.062 (0.000-0.146)	...
Mnquma	Eastern Cape	0.062 (0.017-0.107)	...
eThekewini South	KwaZulu-Natal	0.061 (0.048-0.074)	0.025 (0.018-0.032)
Kopanong	Free State	0.060 (0.020-0.101)	0.032 (0.015-0.049)
eThekewini North	KwaZulu-Natal	0.056 (0.036-0.077)	0.040 (0.027-0.053)
Johannesburg A	Gauteng	0.056 (0.003-0.109)	0.010 (0.000-0.030)
Tshwane 3	Gauteng	0.054 (0.029-0.079)	0.008 (0.003-0.013)
Johannesburg E	Gauteng	0.054 (0.012-0.095)	0.037 (0.012-0.063)
Nyandeni	Eastern Cape	0.052 (0.011-0.092)	0.032 (0.001-0.063)
uMlalazi	KwaZulu-Natal	0.051 (0.021-0.080)	0.013 (0.000-0.027)
Nketoana	Free State	0.051 (0.000-0.147)	...
Greater Kokstad	KwaZulu-Natal	0.050 (0.000-0.145)	...
Tshwane 1	Gauteng	0.050 (0.014-0.085)	0.015 (0.005-0.026)
Renosterberg	Northern Cape	0.049 (0.000-0.144)	0.089 (0.030-0.148)
Tshwane 5	Gauteng	0.047 (0.000-0.137)	0.002 (0.000-0.006)

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Johannesburg D	Gauteng	0.046 (0.022-0.071)	0.025 (0.014-0.036)
Maletswai	Eastern Cape	0.045 (0.000-0.132)	...
//Khara Hais	Northern Cape	0.044 (0.000-0.127)	0.036 (0.000-0.104)
Ekurhuleni North 1	Gauteng	0.041 (0.009-0.073)	0.034 (0.013-0.055)
Oudtshoorn	Western Cape	0.033 (0.000-0.096)	0.020 (0.000-0.058)
Maluti a Phofung	Free State	0.033 (0.010-0.055)	...
Sundays River Valley	Eastern Cape	0.032 (0.000-0.093)	0.112 (0.000-0.232)
Ekurhuleni North 2	Gauteng	0.031 (0.004-0.058)	0.005 (0.000-0.014)
Newcastle	KwaZulu-Natal	0.030 (0.012-0.047)	0.016 (0.000-0.034)
Umsobomvu	Northern Cape	0.030 (0.001-0.058)	0.125 (0.052-0.198)

95% CI: 95% confidence interval; PTP: adjusted positive test proportion; CT: Cape Town; bold font indicates current week proportions that are significantly higher than the previous week

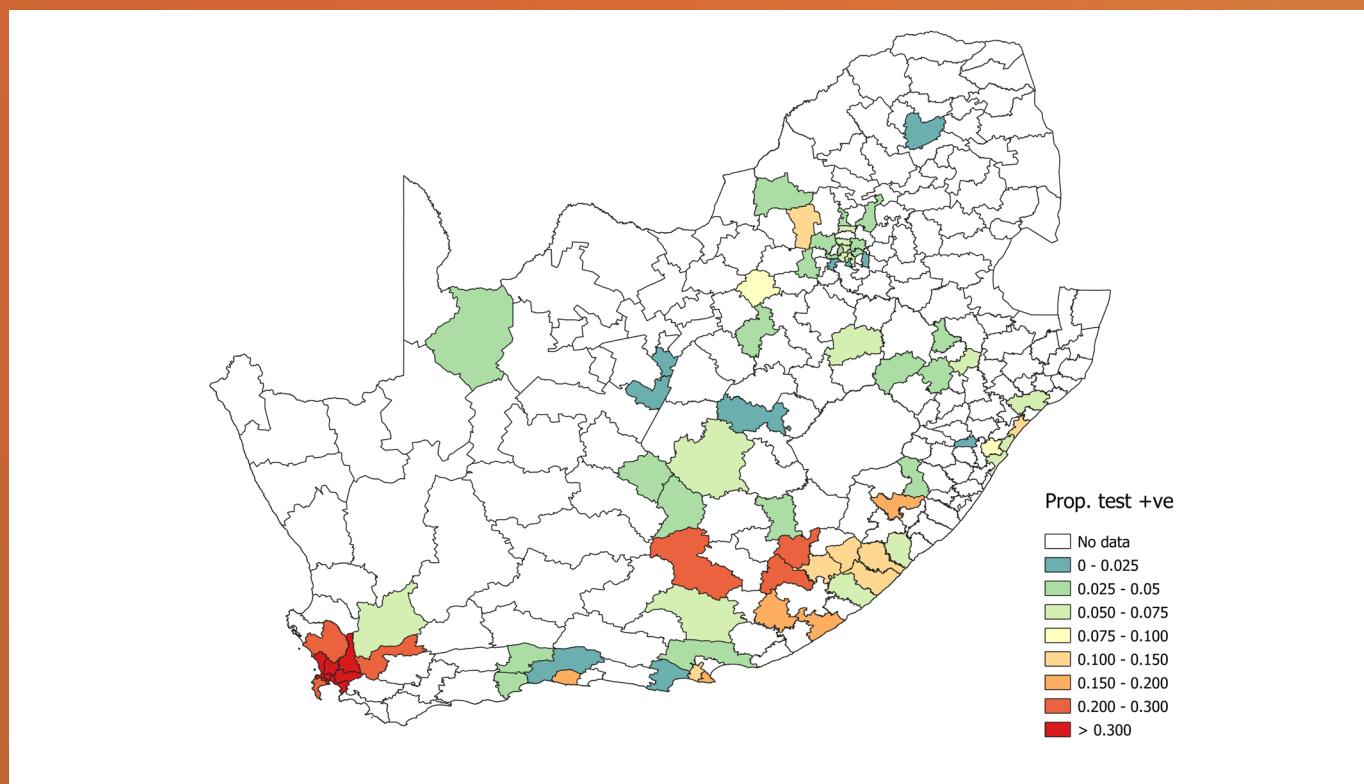


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 31 May – 6 June 2020, South Africa

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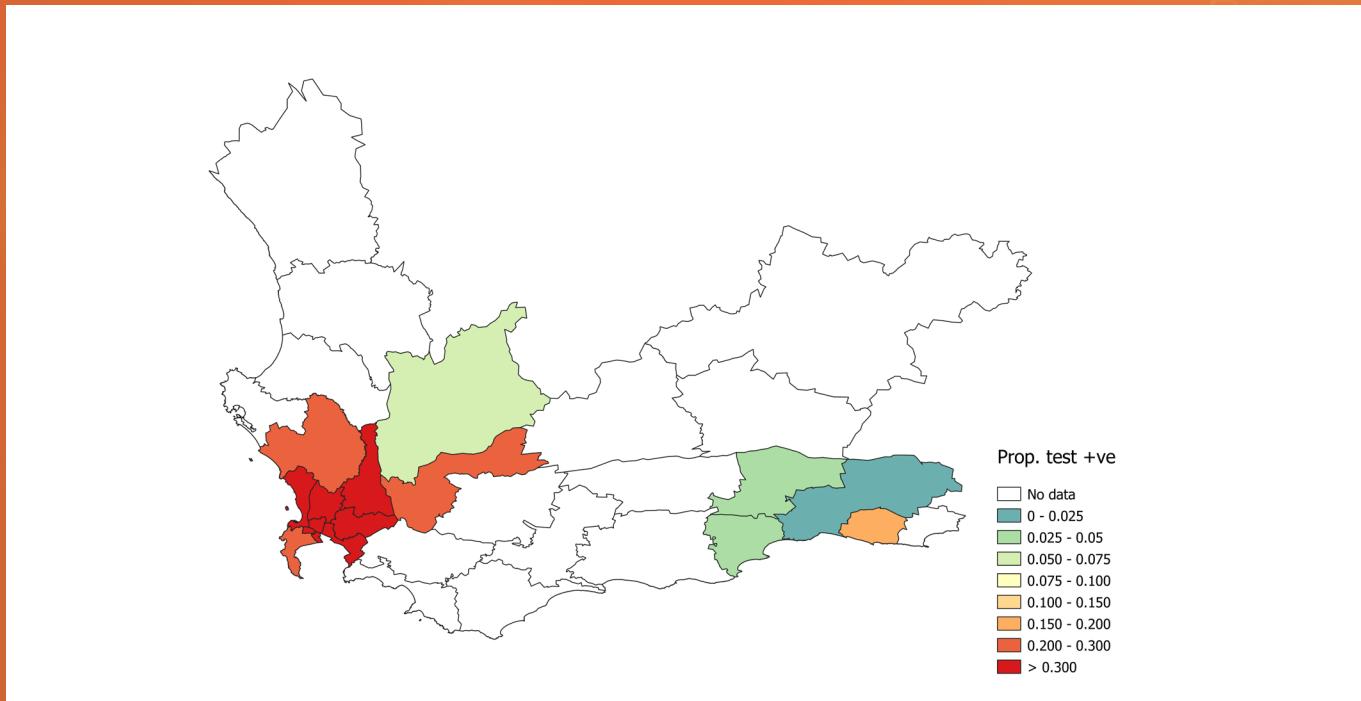


Figure 11. Health sub-districts in the Western Cape Province with a high proportion testing positive based on public sector data for the week of 31 May – 6 June 2020

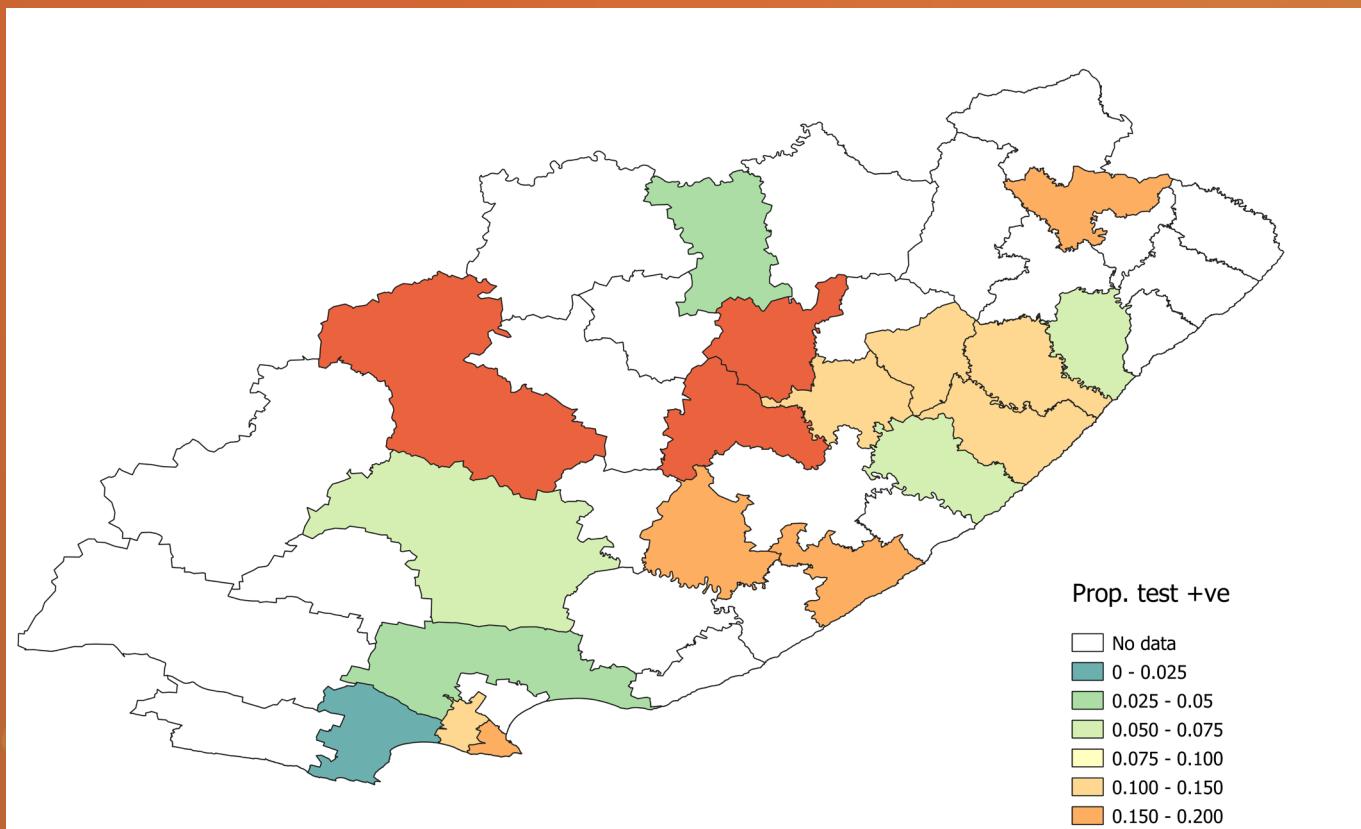


Figure 12. Health sub-districts in the Eastern Cape Province with a high proportion testing positive based on public sector data for the week of 31 May – 6 June 2020

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TESTING BY AGE AND SEX

The mean age of individuals tested decreased from 42.0 to 40.5 years in males and from 42.4 to 40.8 in females over the past 4 weeks. The mean age of females tested (40.8 years) was higher than for males (40.5 years) in the past week ($P=0.003$). The mean age of cases in week 23 did not differ between males (41.4 years) and females (41.8) ($P=0.213$) (Table 7). The sex ratio (the number of males per 100 females) of cases has increased over the past four weeks from 66.8 in week 20 to 80.9 in week 23. An increased proportion testing positive was observed for both males and females ≥ 30 years in week 23 compared to the previous week (Figure 13).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 10 May – 6 June 2020

Week number	Week beginning	Mean age of tested (years)		Mean age of cases (years)		Sex ratios (males / 100 females)	
		Males	Females	Males	Females	Tested	Cases
20	10 May	42.0	42.4	39.6	39.5	78.8	66.8
21	17 May	41.2	41.6	39.9	39.7	82.9	74.8
22	24 May	40.3	40.7	39.9	40.0	78.3	75.0
23	31 May	40.5	40.8	41.4	41.8	80.8	80.9

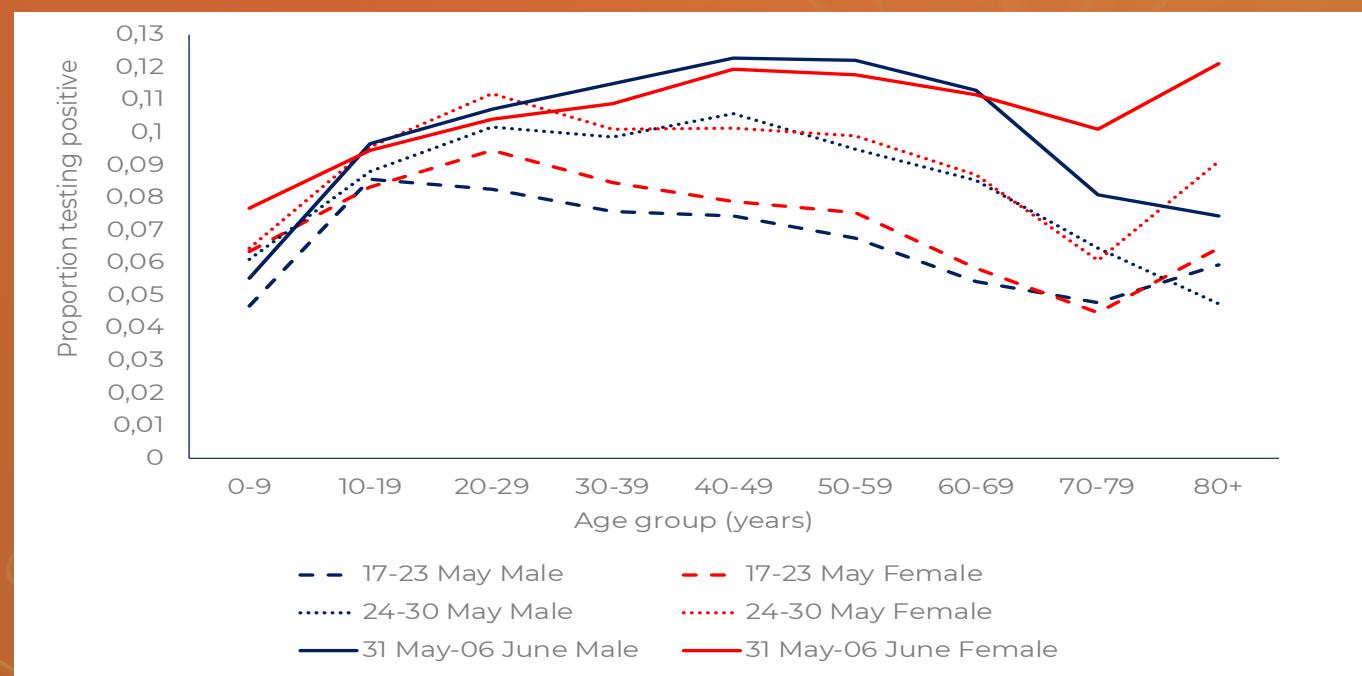


Figure 13. Weekly proportion testing positive by age group and sex, South Africa, 17 May-6 June 2020

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From week 20 (10-16 May) to week 23 (31 May – 6 June), the proportion testing positive increased significantly from 4.7% to 11.0% in males ($P<0.001$) and from 5.5% to 11.0% in females ($P<0.001$) (Table 8). In week 23, the proportion testing positive was higher in females than males in the <20-year ($P=0.037$) and ≥ 70 -year (0.001) age groups. The proportion testing positive was highest in the 40-59-year age groups for both males and females.

Table 8. Proportion testing positive by sex and week, South Africa, 10 May – 6 June 2020

Age (years)	10-16 May		17-23 May		24-30 May		31 May-06 June	
	Male	Female	Male	Female	Male	Female	Male	Female
0-19	4.6%	4.8%	6.5%	7.5%	7.3%	8.2%	7.4%	8.6%
20-39	5.3%	6.7%	7.8%	8.9%	10.0%	10.5%	11.2%	10.7%
40-59	4.6%	5.1%	7.1%	7.7%	10.1%	10.0%	12.3%	11.9%
60-69	3.7%	3.4%	5.4%	5.8%	8.5%	8.7%	11.3%	11.2%
70+	2.5%	3.6%	5.1%	5.2%	5.9%	7.2%	7.9%	10.9%
Total	4.7%	5.5%	7.1%	7.9%	9.5%	9.9%	11.0%	11.0%

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.

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CONCLUSIONS

There has been a decrease in the volume of tests conducted over the past three weeks, likely due to limited availability of extraction and testing kits and possibly also reflecting the revised testing strategy. The overall proportion testing positive continued to increase to 11.0% in week 23, with increases observed in both the public and private sectors. While the Western Cape (23.5%) and Eastern Cape (15.0%) provinces continued to have the highest proportion testing positive, the proportion testing positive increased in 8 of the 9 provinces over the past three weeks. A reduction in the proportion of public sector tests attributed to community screening was observed over the past three weeks, likely reflecting the discontinuation of mass screening and testing approaches. Increasing turnaround times as a result of testing backlogged specimens in the public sector laboratories impacts the analysis of testing data as results for a portion of samples collected in the past week are not yet reflected in this report.