

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 37 2020

OVERVIEW OF REPORT

This report summarises national laboratory testing for SARS-CoV-2, the virus causing COVID-19, in South Africa. This report is based on data for specimens reported up to 12 September 2020 (Week 37 of 2020).

HIGHLIGHTS

- In the period 1 March 2020 through 12 September 2020, 3,430,265 laboratory tests for SARS-CoV-2 have been conducted nationally
- Gauteng (30.7%), KwaZulu-Natal (18.9%) and Western Cape (16.0%) provinces performed the largest number of tests in week 37
- As has been observed since week 31, Northern Cape (376 per 100,000 persons) and Free State (287 per 100,000 persons) provinces had the highest testing rates
- The decreasing trend in percentage testing positive continued, from a peak of 31.4% in week 29 to 11.4% in week 37
- Percentages testing positive remained $\geq 20\%$ in Northern Cape and Free State, were between 10-19% in North West, Mpumalanga and Limpopo, and were $< 10\%$ in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape
- Compared to the previous week, the percentage testing positive decreased in four provinces (Eastern Cape, KwaZulu-Natal, Gauteng and Mpumalanga), and did not change in Western Cape, Northern Cape, Free State, North West and Limpopo provinces
- Laboratory turnaround times in week 37 were sustained at < 2 days in both the private and public sectors

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Methods

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed on 5th March 2020, testing was expanded to a larger network of private and NHLS laboratories. Laboratory testing was conducted for people meeting the case definition for persons under investigation (PUI).

This definition was updated several times over the reporting period but at different times included (i) symptomatic individuals seeking testing, (ii) hospitalized individuals for whom testing was done, (iii) individuals in high-risk occupations, (iv) individuals in outbreak settings, and (v) individuals identified through community screening and testing (CST) programmes which were implemented in April 2020 and was discontinued from the week beginning 17th May.

CST was implemented differently in different provinces, and ranged from mass screening approaches (including asymptomatic individuals) to screening of individuals in contact with a confirmed case to targeted testing of clusters of cases. Respiratory specimens were submitted to testing laboratories. Testing was performed using reverse transcriptase real-time PCR, which detects SARS-CoV-2 viral genetic material. Laboratories used any one of several in-house and commercial PCR assays to test for the presence of SARS-CoV-2 RNA.

Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate test results for an individual. Date of specimen receipt in the laboratory was used when date of specimen collection was missing.

Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 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 12 September 2020 (week 37).

Testing volumes and proportion testing positive

From 1 March through 12 September 2020, 3,430,265 laboratory tests for SARS-CoV-2 were performed. The number of tests performed increased to week 21, however decreased in weeks 22 and 23 due to a limited supply of extraction and testing kits. Increased volumes of tests were observed week on week from week 24 to week 28, with the highest number of tests performed in week 28 (n=272,729), but have subsequently decreased. In week 37, 89,637 tests were performed, similar to the previous week. All tests for samples collected in the previous week may not yet be reflected. Reduced testing volumes were observed over weekends and public holidays (Figure 1).

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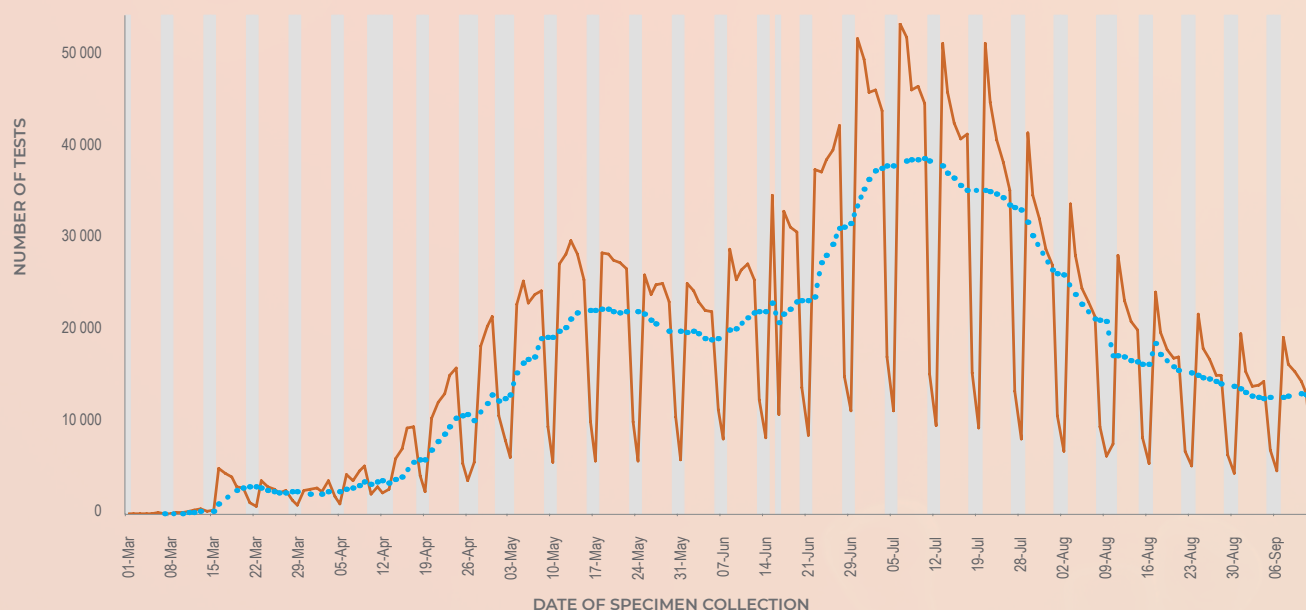


Figure 1. Number of laboratory tests conducted by date of specimen collection, South Africa, 1 March – 12 September 2020. Blue dotted line shows the 7-day moving average of the number of tests conducted. Grey bars highlight weekend days and public holidays.

The overall percentage testing positive from week 10 through 37 was 18.3% (Table 1). The percentage testing positive increased week on week from week 18 to a peak of 31.4% in week 29. Since week 29, there has been a 20.0% decrease in the percentage testing positive, with the percentage testing positive decreasing from 12.7% in week 36 to 11.4% in week 37 ($P < 0.001$) (Figure 2).

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Table 1. Weekly number of tests conducted and positive tests, South Africa, 1 March – 12 September 2020

| Week number | Week beginning | No. of tests n (%) | No. of positive tests | Percentage testing positive (%) |
|--------------|----------------|------------------------|-----------------------|---------------------------------|
| 10 | 01-Mar | 410 (0.0) | 9 | 2.2 |
| 11 | 08-Mar | 2328 (0.1) | 88 | 3.8 |
| 12 | 15-Mar | 21325 (0.6) | 826 | 3.9 |
| 13 | 22-Mar | 17042 (0.5) | 468 | 2.7 |
| 14 | 29-Mar | 17382 (0.5) | 395 | 2.3 |
| 15 | 05-Apr | 24607 (0.7) | 567 | 2.3 |
| 16 | 12-Apr | 41879 (1.2) | 1044 | 2.5 |
| 17 | 19-Apr | 75915 (2.2) | 1934 | 2.5 |
| 18 | 26-Apr | 89508 (2.6) | 2896 | 3.2 |
| 19 | 03-May | 136926 (4.0) | 5551 | 4.1 |
| 20 | 10-May | 157034 (4.6) | 7448 | 4.7 |
| 21 | 17-May | 156429 (4.6) | 10539 | 6.7 |
| 22 | 24-May | 141428 (4.1) | 11713 | 8.3 |
| 23 | 31-May | 135769 (4.0) | 13510 | 10.0 |
| 24 | 07-Jun | 156474 (4.6) | 20531 | 13.1 |
| 25 | 14-Jun | 164803 (4.8) | 29949 | 18.2 |
| 26 | 21-Jun | 221629 (6.5) | 50603 | 22.8 |
| 27 | 28-Jun | 268972 (7.8) | 69360 | 25.8 |
| 28 | 05-Jul | 272729 (8.0) | 79808 | 29.3 |
| 29 | 12-Jul | 250334 (7.3) | 78499 | 31.4 |
| 30 | 19-Jul | 236272 (6.9) | 72582 | 30.7 |
| 31 | 26-Jul | 185710 (5.4) | 53729 | 28.9 |
| 32 | 02-Aug | 149636 (4.4) | 36973 | 24.7 |
| 33 | 09-Aug | 116186 (3.4) | 23511 | 20.2 |
| 34 | 16-Aug | 109768 (3.2) | 19157 | 17.5 |
| 35 | 23-Aug | 99959 (2.9) | 14716 | 14.7 |
| 36 | 30-Aug | 90174 (2.6) | 11471 | 12.7 |
| 37 | 06-Sep | 89637 (2.6) | 10222 | 11.4 |
| Total | | 3430265 (100.0) | 628099 | 18.3 |

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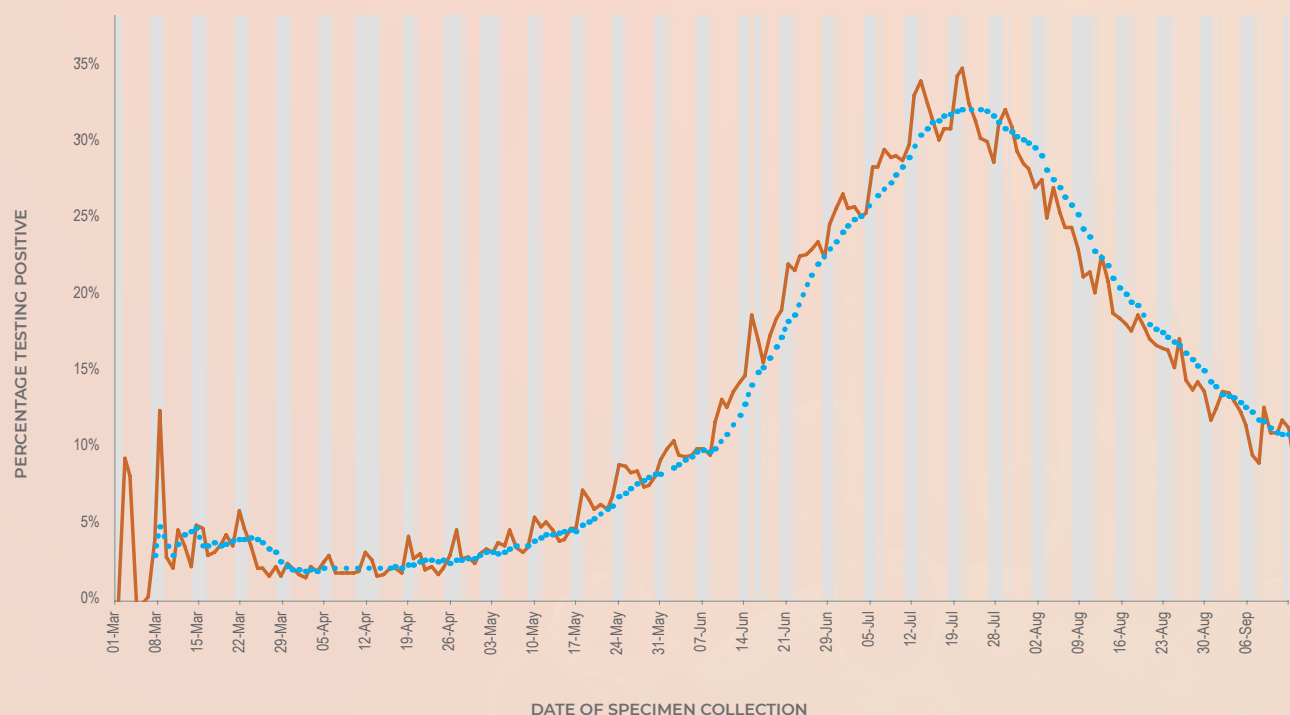


Figure 2. Percentage of laboratory tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March – 12 September 2020. Blue dotted line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

Testing in private and public sectors

From 1 March through 12 September, 1,567,837 laboratory tests were conducted in public sector laboratories, with 16.5% testing positive. Over this same period, private sector laboratories conducted 1,862,428 tests, with 19.8% testing positive (Table 2). Overall the public sector has conducted 45.7% of tests and accounted for 41.2% of positive tests. The peak percentage testing positive was observed in week 30 in the public sector (29.5%), and in week 29 in the private sector (32.9%). From week 36 to week 37, the percentage testing positive decreased by 1.0% in the public sector and 1.7% in the private sector, and in week 37 was higher in the public sector (12.7%) compared to the private sector (10.2%) ($P < 0.001$).

The mean turnaround time for tests conducted in week 37 was lower than the previous week (1.3 days overall; 1.6 days in the public sector and 1.0 days in the private sector), driven by a reduction in the private sector turnaround time (Figure 3). Turnaround times for public sector tests were < 2 days in all provinces except for the Northern Cape (2.6 days), although a reduction from 3.4 days in week 36 was observed in this province (Figure 4). Of the 28 NHLS laboratories performing testing for SARS-CoV-2, 25 (89%) had turnaround times ≤ 2 days, and all laboratories were < 3 days (Figure 5).

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Table 2. Weekly number of tests conducted and positive tests, by healthcare sector, South Africa, 1 March – 12 September 2020

| Week number | Week beginning | Public sector | | Private sector | | Public sector percentage of | | Ratio of PTP ^a |
|--------------|----------------|----------------|----------------------|----------------|----------------------|-----------------------------|-------------|---------------------------|
| | | Tests | Cases n (%) | Tests | Cases n (%) | Tests (%) | Cases (%) | |
| 10 | 01-Mar | 251 | 5 (2.0) | 159 | 4 (2.5) | 61.2 | 55.6 | 0.792 |
| 11 | 08-Mar | 350 | 12 (3.4) | 1978 | 76 (3.8) | 15.0 | 13.6 | 0.892 |
| 12 | 15-Mar | 1345 | 51 (3.8) | 19980 | 775 (3.9) | 6.3 | 6.2 | 0.978 |
| 13 | 22-Mar | 3358 | 124 (3.7) | 13684 | 344 (2.5) | 19.7 | 26.5 | 1.469 |
| 14 | 29-Mar | 5614 | 159 (2.8) | 11768 | 236 (2.0) | 32.3 | 40.3 | 1.412 |
| 15 | 05-Apr | 11343 | 319 (2.8) | 13264 | 248 (1.9) | 46.1 | 56.3 | 1.504 |
| 16 | 12-Apr | 23774 | 608 (2.6) | 18105 | 436 (2.4) | 56.8 | 58.2 | 1.062 |
| 17 | 19-Apr | 54178 | 1477 (2.7) | 21737 | 457 (2.1) | 71.4 | 76.4 | 1.297 |
| 18 | 26-Apr | 66236 | 2289 (3.5) | 23272 | 607 (2.6) | 74.0 | 79.0 | 1.325 |
| 19 | 03-May | 92351 | 4255 (4.6) | 44575 | 1296 (2.9) | 67.4 | 76.7 | 1.585 |
| 20 | 10-May | 104949 | 5107 (4.9) | 52085 | 2341 (4.5) | 66.8 | 68.6 | 1.083 |
| 21 | 17-May | 95457 | 6626 (6.9) | 60972 | 3913 (6.4) | 61.0 | 62.9 | 1.082 |
| 22 | 24-May | 74284 | 5958 (8.0) | 67144 | 5755 (8.6) | 52.5 | 50.9 | 0.936 |
| 23 | 31-May | 60281 | 6108 (10.1) | 75488 | 7402 (9.8) | 44.4 | 45.2 | 1.033 |
| 24 | 07-Jun | 60034 | 7361 (12.3) | 96440 | 13170 (13.7) | 38.4 | 35.9 | 0.898 |
| 25 | 14-Jun | 56042 | 11080 (19.8) | 108761 | 18869 (17.3) | 34.0 | 37.0 | 1.140 |
| 26 | 21-Jun | 82709 | 18885 (22.8) | 138920 | 31718 (22.8) | 37.3 | 37.3 | 1.000 |
| 27 | 28-Jun | 97407 | 25165 (25.8) | 171565 | 44195 (25.8) | 36.2 | 36.3 | 1.003 |
| 28 | 05-Jul | 108094 | 30302 (28.0) | 164635 | 49506 (30.1) | 39.6 | 38.0 | 0.932 |
| 29 | 12-Jul | 101420 | 29444 (29.0) | 148914 | 49055 (32.9) | 40.5 | 37.5 | 0.881 |
| 30 | 19-Jul | 96340 | 28461 (29.5) | 139932 | 44121 (31.5) | 40.8 | 39.2 | 0.937 |
| 31 | 26-Jul | 74023 | 21363 (28.9) | 111687 | 32366 (29.0) | 39.9 | 39.8 | 0.996 |
| 32 | 02-Aug | 64170 | 15767 (24.6) | 85466 | 21206 (24.8) | 42.9 | 42.6 | 0.990 |
| 33 | 09-Aug | 53728 | 10429 (19.4) | 62458 | 13082 (20.9) | 46.2 | 44.4 | 0.927 |
| 34 | 16-Aug | 50984 | 8965 (17.6) | 58784 | 10192 (17.3) | 46.4 | 46.8 | 1.014 |
| 35 | 23-Aug | 45567 | 7256 (15.9) | 54392 | 7460 (13.7) | 45.6 | 49.3 | 1.161 |
| 36 | 30-Aug | 40970 | 5622 (13.7) | 49204 | 5849 (11.9) | 45.4 | 49.0 | 1.154 |
| 37 | 06-Sep | 42578 | 5402 (12.7) | 47059 | 4820 (10.2) | 47.5 | 52.8 | 1.239 |
| Total | | 1567837 | 258600 (16.5) | 1862428 | 369499 (19.8) | 45.7 | 41.2 | 0.831 |

^aRatio of percentage testing positive (PTP) in the public sector to the private sector calculated as (no. of cases/total tests in public sector)/ (no. of cases/total tests in private sector)

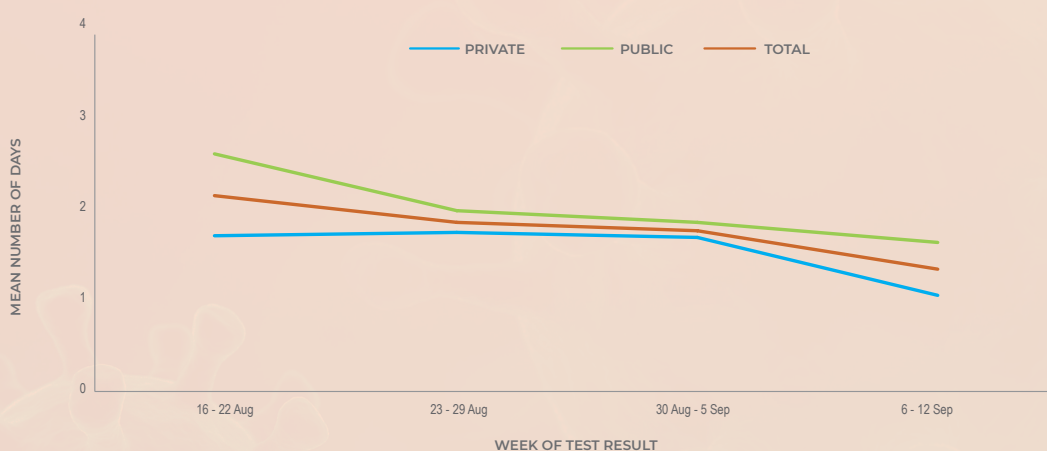


Figure 3. Mean number of days between date of specimen collection and date of test result, by week of test result, South Africa, 16 August – 12 September 2020

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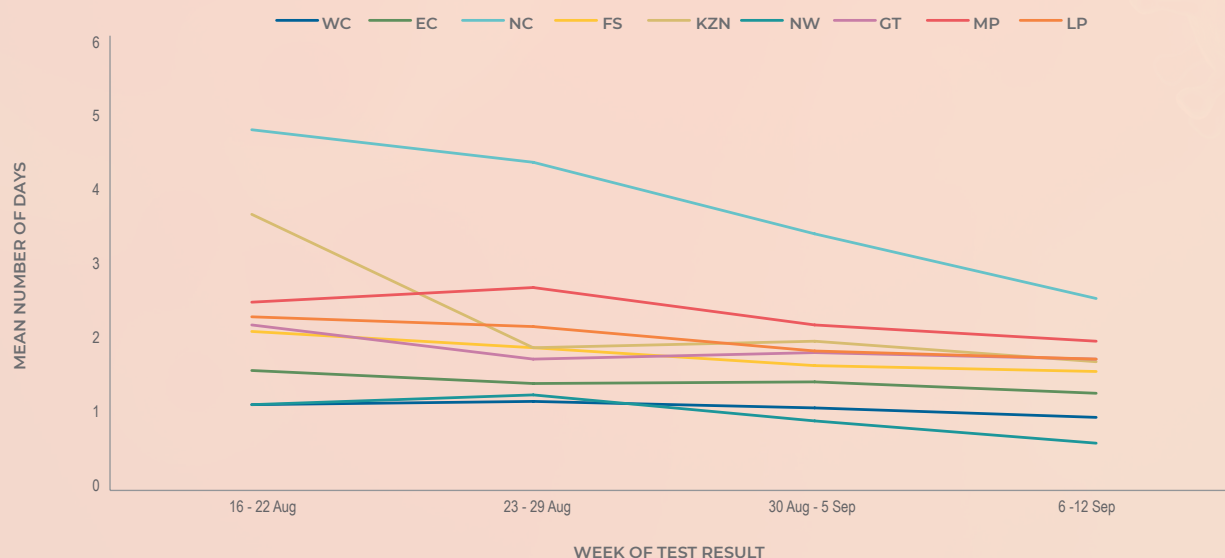


Figure 4. Mean number of days between date of specimen collection and date of test result, by week of test result and province, public sector, South Africa, 16 August – 12 September 2020. WC, Western Cape; EC, Eastern Cape; NC, Northern Cape; FS, Free State; KZN, KwaZulu-Natal; NW, North West; GT, Gauteng; MP, Mpumalanga; LP, Limpopo.

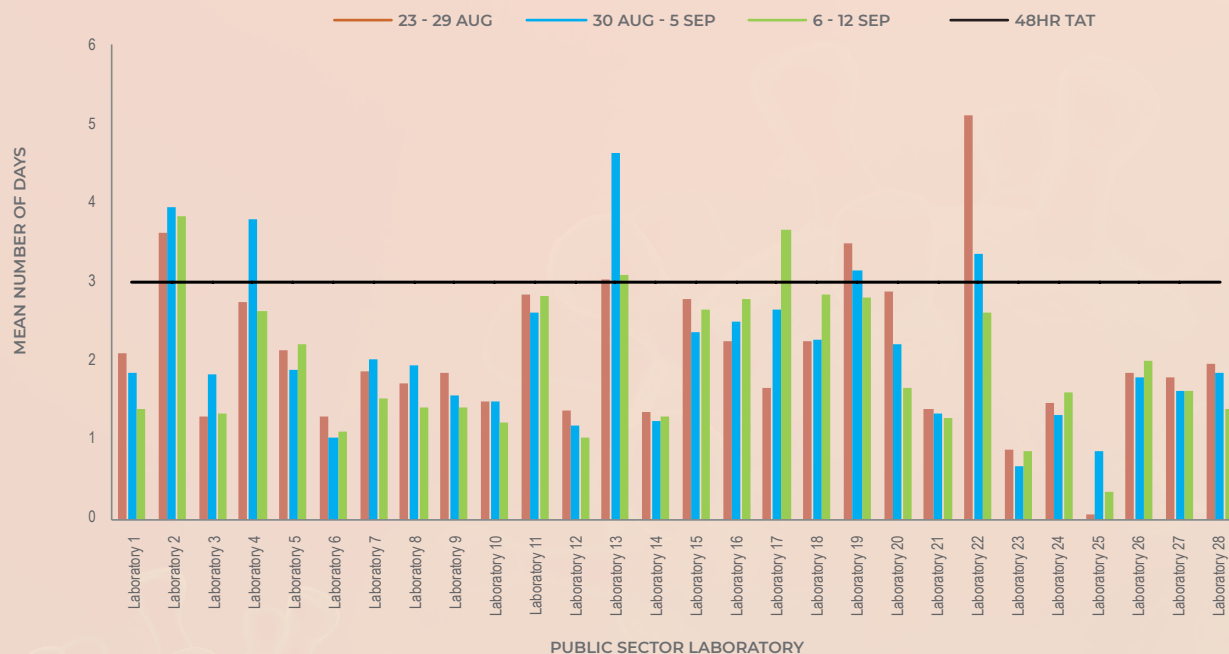


Figure 5. Mean number of days between date of specimen collection and date of test result, by public sector laboratory, 23 August–12 September 2020. The horizontal black line indicates 48-hour turnaround time (TAT).

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Testing by province

Gauteng (30.7%), KwaZulu-Natal (18.9%) and Western Cape (16.0%) provinces performed the largest number of tests in week 37 (Table 3). All other provinces conducted <10,000 tests in week 37. As has been observed since week 31, Northern Cape (376 per 100,000 persons) and Free State (287 per 100,000 persons) provinces had the highest testing rates in week 37 (Figure 6). Testing rates have decreased in all provinces since peak testing rates were observed between week 21 (Western Cape) and week 31 (Northern Cape) in the respective provinces. Testing rates in week 37 were similar to the previous week.

Percentages testing positive remained $\geq 20\%$ in Northern Cape (28.2%) and Free State (24.2%), were between 10-19% in North West, Mpumalanga and Limpopo, and were <10% in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape in week 37 (Figure 7). Compared to the previous week, the percentage testing positive decreased in four provinces (Eastern Cape ($P < 0.001$), KwaZulu-Natal ($P < 0.001$), Gauteng ($P < 0.001$) and Mpumalanga ($P = 0.040$)). The percentage testing positive in week 37 compared to week 36 did not change in Western Cape ($P = 0.061$), Northern Cape ($P = 0.055$), Free State ($P = 0.208$), North West ($P = 0.221$) and Limpopo ($P = 0.471$) provinces. The percentage testing positive was higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 7).

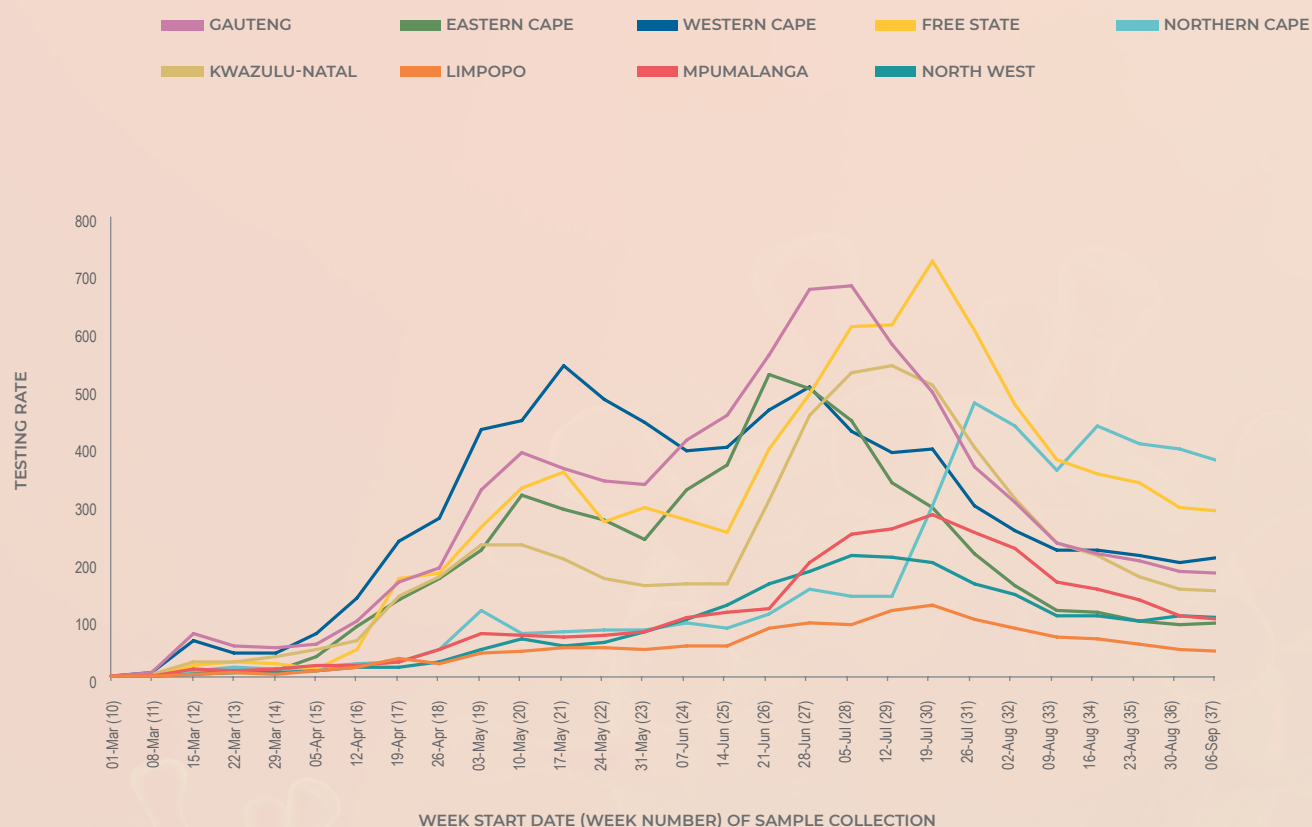


Figure 6. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 March – 12 September 2020

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Table 3. Weekly number of tests performed and positive tests, by province, South Africa, 23 August – 12 September 2020

| Province | Population ^a | 23-29 Aug | | 30 Aug-5 Sep | | 6-12 Sep | | Tests per 100,000 persons | Change in percentage positive ^b |
|---------------|-------------------------|--------------|------------------------|--------------|------------------------|--------------|------------------------|---------------------------|--|
| | | No. of tests | No. positive tests (%) | No. of tests | No. positive tests (%) | No. of tests | No. positive tests (%) | | |
| Western Cape | 6844272 | 14436 | 1378 (9.5) | 13616 | 1125 (8.3) | 14317 | 1096 (7.7) | 209 | -0.6% |
| Eastern Cape | 6712276 | 6600 | 820 (12.4) | 6094 | 619 (10.2) | 6220 | 498 (8.0) | 93 | -2.2% |
| Northern Cape | 1263875 | 5105 | 1327 (26.0) | 5001 | 1324 (26.5) | 4750 | 1340 (28.2) | 376 | 1.7% |
| Free State | 2887465 | 9761 | 2424 (24.8) | 8466 | 1978 (23.4) | 8288 | 2005 (24.2) | 287 | 0.8% |
| KwaZulu-Natal | 11289086 | 19759 | 2721 (13.8) | 17112 | 1733 (10.1) | 16975 | 1395 (8.2) | 150 | -1.9% |
| North West | 4027160 | 3884 | 784 (20.2) | 4262 | 798 (18.7) | 4136 | 818 (19.8) | 103 | 1.1% |
| Gauteng | 15176115 | 30749 | 3607 (11.7) | 27702 | 2654 (9.6) | 27540 | 1992 (7.2) | 181 | -2.3% |
| Mpumalanga | 4592187 | 6125 | 1125 (18.4) | 4885 | 787 (16.1) | 4666 | 681 (14.6) | 102 | -1.5% |
| Limpopo | 5982584 | 3432 | 516 (15.0) | 2910 | 444 (15.3) | 2670 | 389 (14.6) | 45 | -0.7% |
| Unknown | | 108 | 14 (13.0) | 126 | 9 (7.1) | 75 | 8 (10.7) | | 3.5% |
| Total | 58750220 | 99959 | 14716 (14.7) | 90174 | 11471 (12.7) | 89637 | 10222 (11.4) | 153 | -1.3% |

^a2019 Mid-year population Statistics SA

^bCurrent week compared to previous week

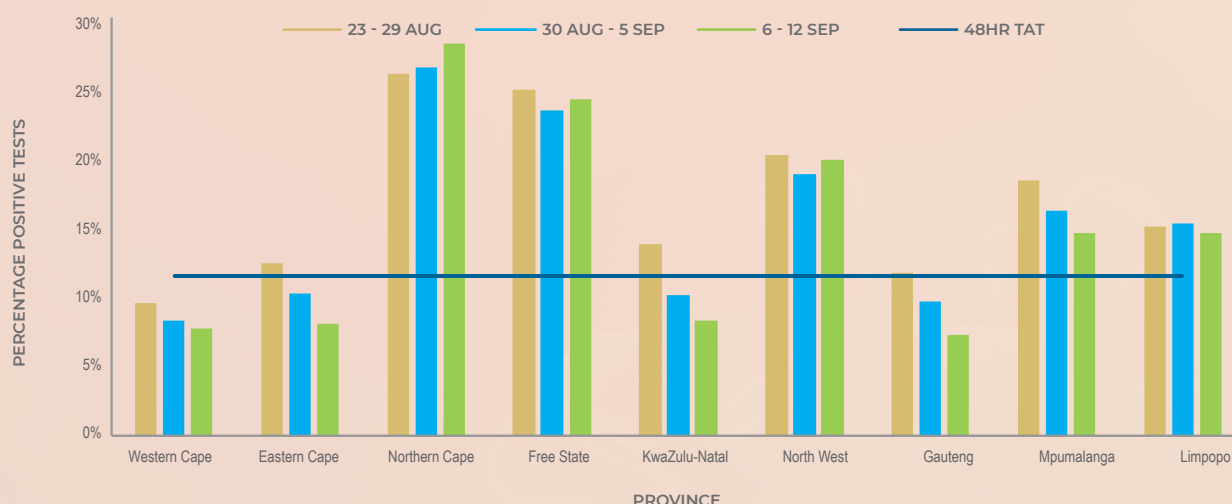


Figure 7. Weekly percentage testing positive, by province, South Africa, 23 August – 12 September 2020. The horizontal blue line shows the national mean for week 37, beginning 6 September 2020.

Testing in the public sector

In the public sector, the percentage testing positive continued to decrease from 13.7% in week 36 to 12.7% in week 37 ($P < 0.001$) (Table 4). The percentage testing positive in week 37 was highest in Northern

Cape (27.5%), North West (25.7%) and Free State (23.7%) provinces. The percentage testing positive in the public sector remains higher than the national average, not weighted for population size, in the Northern Cape, Free State, North West, Mpumalanga and Limpopo provinces (Figure 8).

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Table 4. Weekly number of tests conducted and positive tests in the public sector, by province, South Africa, 23 August – 12 September 2020

| Province | 23-29 Aug | | 30 Aug-5 Sep | | 6-12 Sep | |
|---------------|--------------|------------------------|--------------|------------------------|--------------|------------------------|
| | No. of tests | No. positive tests (%) | No. of tests | No. positive tests (%) | No. of tests | No. positive tests (%) |
| Western Cape | 6269 | 678 (10.8) | 5988 | 531 (8.9) | 6716 | 597 (8.9) |
| Eastern Cape | 4078 | 589 (14.4) | 3638 | 403 (11.1) | 4071 | 350 (8.6) |
| Northern Cape | 2811 | 703 (25.0) | 2859 | 725 (25.4) | 2604 | 717 (27.5) |
| Free State | 5382 | 1326 (24.6) | 4552 | 1077 (23.7) | 4756 | 1129 (23.7) |
| KwaZulu-Natal | 9989 | 1489 (14.9) | 9294 | 983 (10.6) | 9424 | 847 (9.0) |
| North West | 1473 | 378 (25.7) | 1664 | 413 (24.8) | 1838 | 472 (25.7) |
| Gauteng | 11930 | 1446 (12.1) | 10180 | 1038 (10.2) | 10715 | 885 (8.3) |
| Mpumalanga | 2033 | 398 (19.6) | 1525 | 255 (16.7) | 1400 | 251 (17.9) |
| Limpopo | 1602 | 249 (15.5) | 1270 | 197 (15.5) | 1054 | 154 (14.6) |
| Unknown | 0 | 0 (0.0) | 0 | 0 (0.0) | 0 | 0 (0.0) |
| Total | 45567 | 7256 (15.9) | 40970 | 5622 (13.7) | 42578 | 5402 (12.7) |

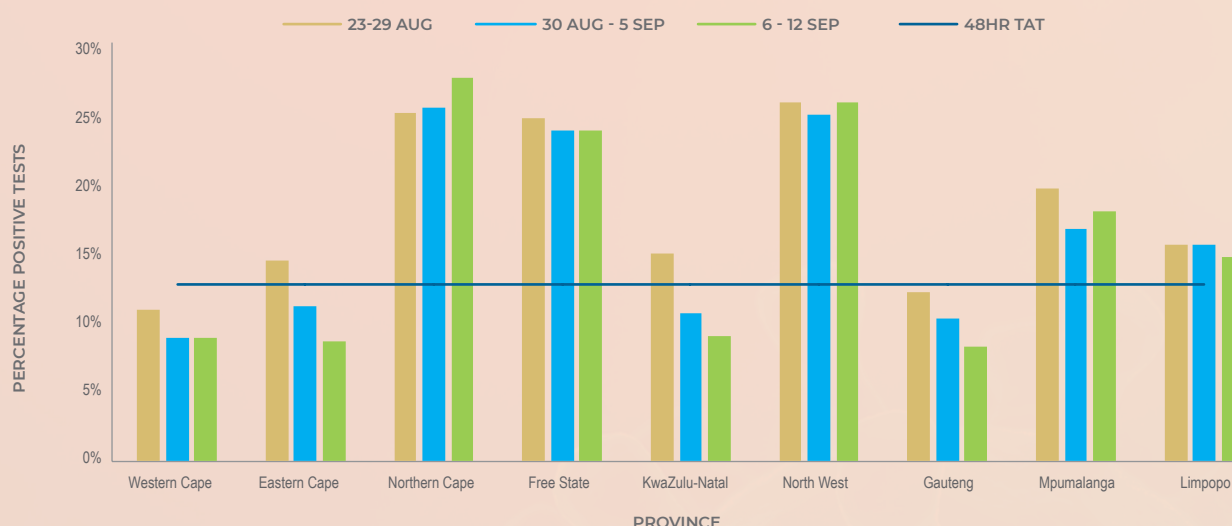


Figure 8. Weekly percentage testing positive in the public sector, by province, South Africa, 23 August – 12 September 2020. The horizontal blue line shows the national mean for week 37, beginning 6 September 2020.

Public facilities with high proportions testing positive

Table 5 shows the 25 public clinics, hospitals and testing laboratories (where specimens were not tied to a particular facility), that had 25 or more specimens tested and at least five positive results in the week of

6 - 12 September, with the highest proportion testing positive nationally.

This week's list is dominated by facilities in the Northern Cape (7), North West (6) and Free State (6). There are two facilities in each of the Eastern Cape, Mpumalanga and Western Cape.

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Table 5. Public healthcare facilities with a high proportion testing positive, 6 - 12 September 2020.

| Facility Name | Province | Tests | PTP (95% CI) |
|---------------|---------------|-------|---------------------|
| Facility 1 | North West | 26 | 0.731 (0.560;0.901) |
| Facility 2 | Northern Cape | 57 | 0.579 (0.451;0.707) |
| Facility 3 | North West | 28 | 0.536 (0.351;0.720) |
| Facility 4 | Northern Cape | 25 | 0.520 (0.324;0.716) |
| Facility 5 | North West | 44 | 0.500 (0.352;0.648) |
| Facility 6 | Northern Cape | 79 | 0.481 (0.371;0.591) |
| Facility 7 | Free State | 26 | 0.462 (0.270;0.653) |
| Facility 8 | Free State | 58 | 0.448 (0.320;0.576) |
| Facility 9 | Free State | 26 | 0.423 (0.233;0.613) |
| Facility 10 | Eastern Cape | 31 | 0.419 (0.246;0.593) |
| Facility 11 | North West | 79 | 0.418 (0.309;0.526) |
| Facility 12 | Free State | 27 | 0.407 (0.222;0.593) |
| Facility 13 | Northern Cape | 81 | 0.383 (0.277;0.489) |
| Facility 14 | Mpumalanga | 29 | 0.379 (0.203;0.556) |
| Facility 15 | Northern Cape | 35 | 0.371 (0.211;0.532) |
| Facility 16 | Mpumalanga | 35 | 0.371 (0.211;0.532) |
| Facility 17 | Western Cape | 38 | 0.368 (0.215;0.522) |
| Facility 18 | North West | 30 | 0.367 (0.194;0.539) |
| Facility 19 | Free State | 243 | 0.366 (0.306;0.427) |
| Facility 20 | North West | 167 | 0.347 (0.275;0.420) |
| Facility 21 | Eastern Cape | 32 | 0.344 (0.179;0.508) |
| Facility 22 | Western Cape | 33 | 0.333 (0.172;0.494) |
| Facility 23 | Northern Cape | 547 | 0.333 (0.293;0.372) |
| Facility 24 | Free State | 181 | 0.331 (0.263;0.400) |
| Facility 25 | Northern Cape | 52 | 0.327 (0.199;0.454) |

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

Public sector testing: Health district-level results

The results for the 25 municipalities and metropolitan health sub-districts showing the greatest proportions testing positive in the week of 6 – 12 September 2020 are shown in Table 6. The list of districts is dominated by those in the Northern Cape (7), North West (6), and three each in Free State, Mpumalanga, and

Western Cape. Three districts showed a proportion testing positive greater than 40%, with a further 6 having a proportion testing positive greater than 30%. Significant increases were observed in two of these 25 districts – Greater Taung in the North West, and Thembelihle in Northern Cape. A statistically significant decrease was recorded in Northern Cape's Sol Plaatjie district.

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Table 6. Health sub-districts with the highest proportion testing positive based on public sector data for the week of 6 September – 12 September 2020.

| Health district or sub-district | Province | PTP (95% CI) | Previous week |
|---------------------------------|---------------|---------------------|---------------------|
| Greater Taung | North West | 0.470 (0.332-0.608) | 0.223 (0.150-0.297) |
| Phokwane | Northern Cape | 0.414 (0.338-0.491) | 0.352 (0.281-0.424) |
| Nketoana | Free State | 0.404 (0.260-0.549) | 0.262 (0.170-0.353) |
| Ramotshere Moiloa | North West | 0.390 (0.291-0.489) | 0.221 (0.148-0.293) |
| Mafikeng | North West | 0.352 (0.287-0.418) | 0.296 (0.229-0.362) |
| Thembelihle | Northern Cape | 0.346 (0.247-0.444) | 0.185 (0.129-0.241) |
| Renosterberg | Northern Cape | 0.336 (0.194-0.479) | ... |
| Setsoto | Free State | 0.318 (0.229-0.407) | 0.219 (0.147-0.291) |
| Maquassi Hills | North West | 0.315 (0.238-0.392) | 0.216 (0.106-0.327) |
| Sol Plaatjie | Northern Cape | 0.294 (0.264-0.325) | 0.369 (0.329-0.408) |
| Siyancoma | Northern Cape | 0.286 (0.163-0.409) | 0.148 (0.082-0.214) |
| Naledi | North West | 0.281 (0.223-0.338) | ... |
| Lepele-Nkumpi | Limpopo | 0.278 (0.130-0.427) | 0.190 (0.062-0.318) |
| Beaufort West | Western Cape | 0.278 (0.193-0.363) | 0.306 (0.196-0.416) |
| Tlokwe City Council | North West | 0.263 (0.179-0.347) | 0.171 (0.083-0.260) |
| Emalahleni | Mpumalanga | 0.262 (0.151-0.372) | ... |
| //Khara Hais | Northern Cape | 0.257 (0.222-0.293) | 0.279 (0.235-0.322) |
| Msukaligwa | Mpumalanga | 0.257 (0.184-0.330) | 0.131 (0.074-0.187) |
| Mangaung | Free State | 0.256 (0.238-0.274) | 0.238 (0.221-0.256) |
| Inxuba Yethemba | Eastern Cape | 0.248 (0.169-0.327) | 0.125 (0.048-0.201) |
| Kai !Garib | Northern Cape | 0.247 (0.138-0.356) | 0.164 (0.092-0.235) |
| Ba-Phalaborwa | Limpopo | 0.246 (0.137-0.355) | 0.273 (0.164-0.381) |
| Lekwa | Mpumalanga | 0.245 (0.125-0.366) | 0.099 (0.007-0.192) |
| Oudtshoorn | Western Cape | 0.238 (0.183-0.293) | 0.185 (0.137-0.232) |
| Matzikama | Western Cape | 0.235 (0.167-0.302) | 0.221 (0.149-0.294) |

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

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

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 37 2020

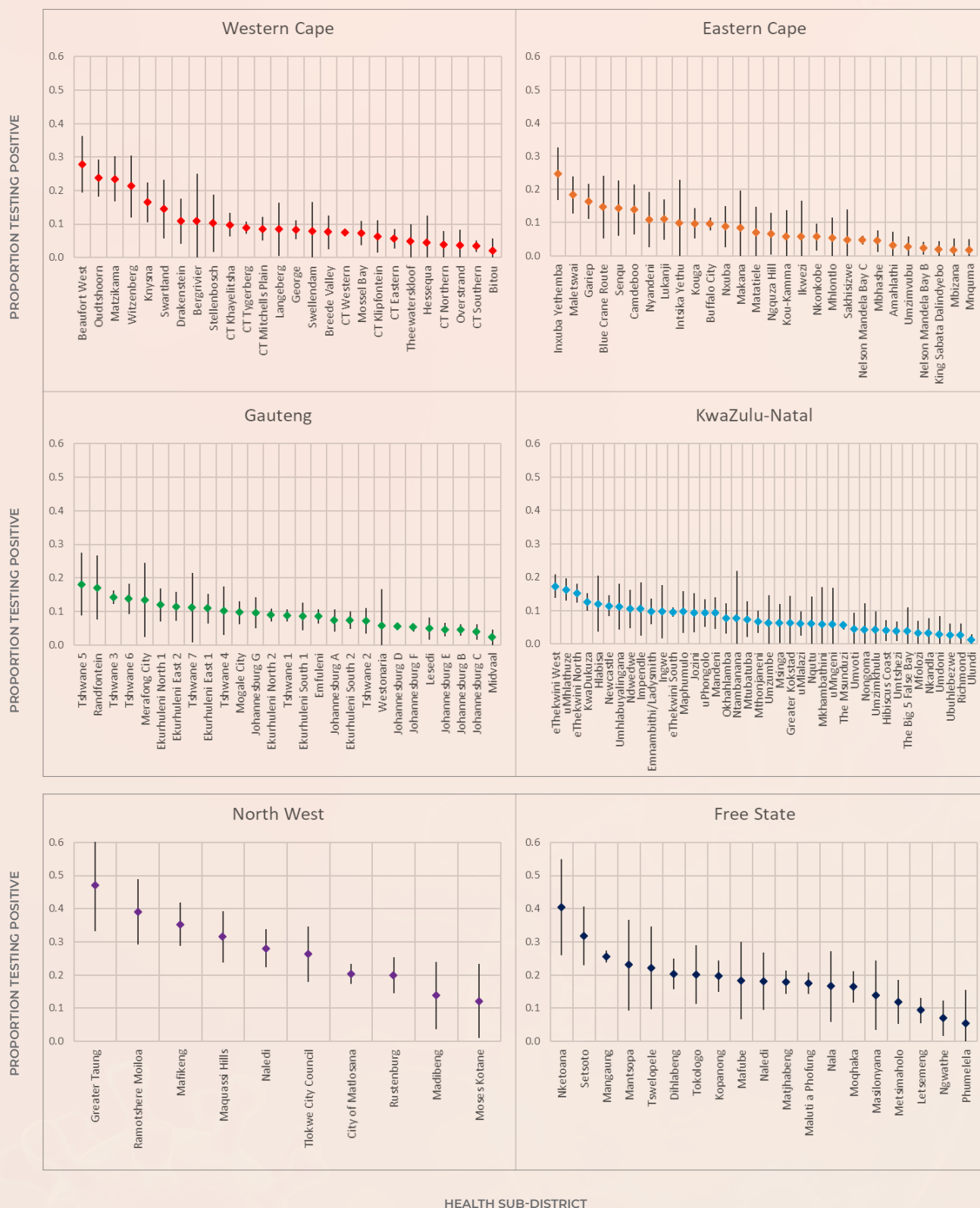


Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 6 – 12 September 2020.

COVID-19 TESTING SUMMARY

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Figure 9. Proportions testing positive by health sub-districts in Western Cape, Eastern Cape, Gauteng, KwaZulu-Natal, North West, Free State, Limpopo, Mpumalanga and Northern Cape provinces based on public sector data for the week of 6 – 12 September 2020.

The spatial pattern of adjusted proportions testing positive in public facilities by health district and sub-district are shown for South Africa (Figure 10), Western Cape (Figure 11), Eastern Cape (Figure 12), Northern

Cape (Figure 13), Free State (Figure 14), KwaZulu-Natal (Figure 15), North West (Figure 16), Gauteng (Figure 17), Mpumalanga (Figure 18) and Limpopo (Figure 19).

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

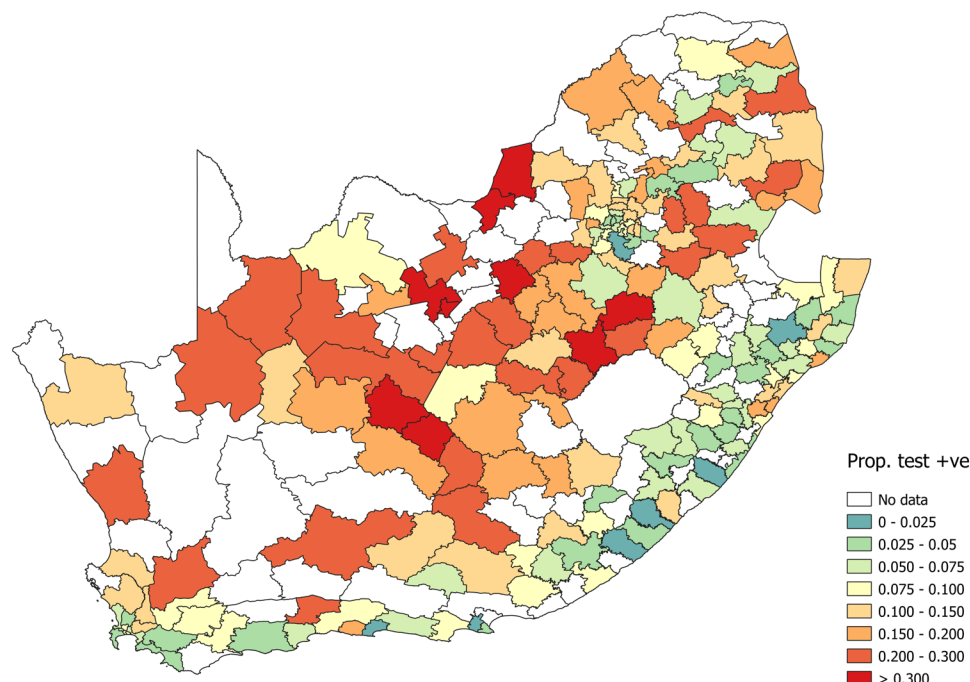


Figure 10. Proportion testing positive by health sub-district based on public sector data for the week of 6-12 September 2020, South Africa. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

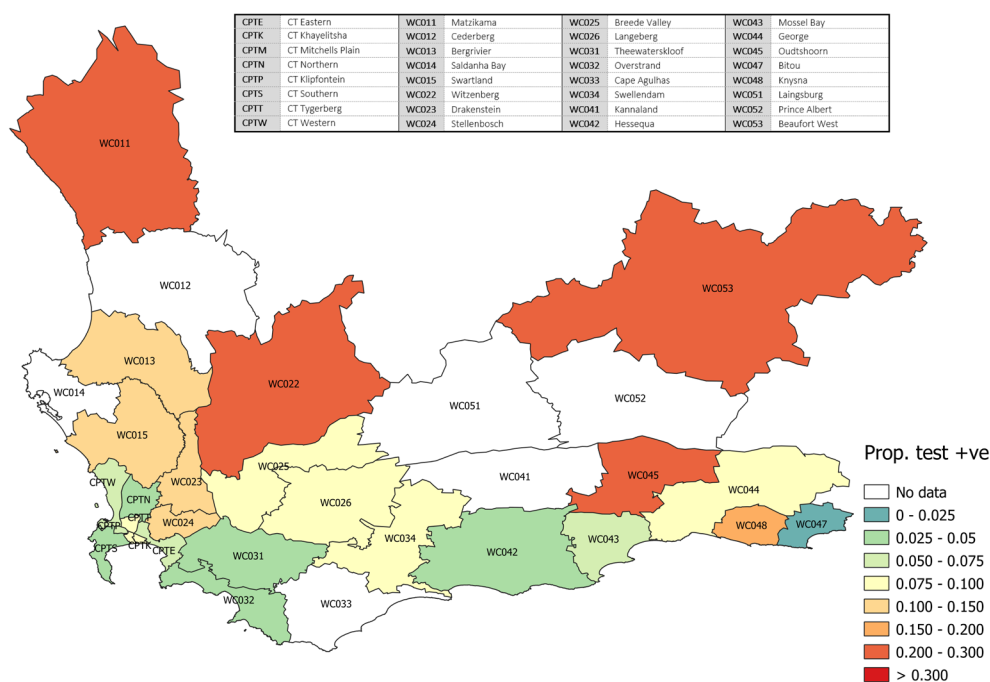


Figure 11. Health sub-districts in the Western Cape province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

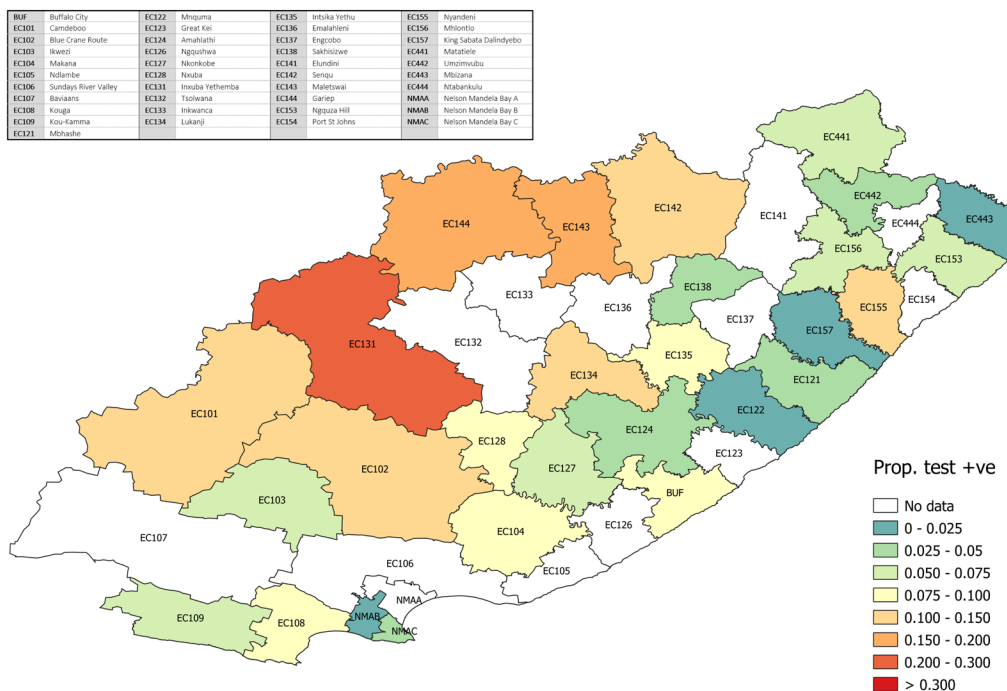


Figure 12. Health sub-districts in the Eastern Cape province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

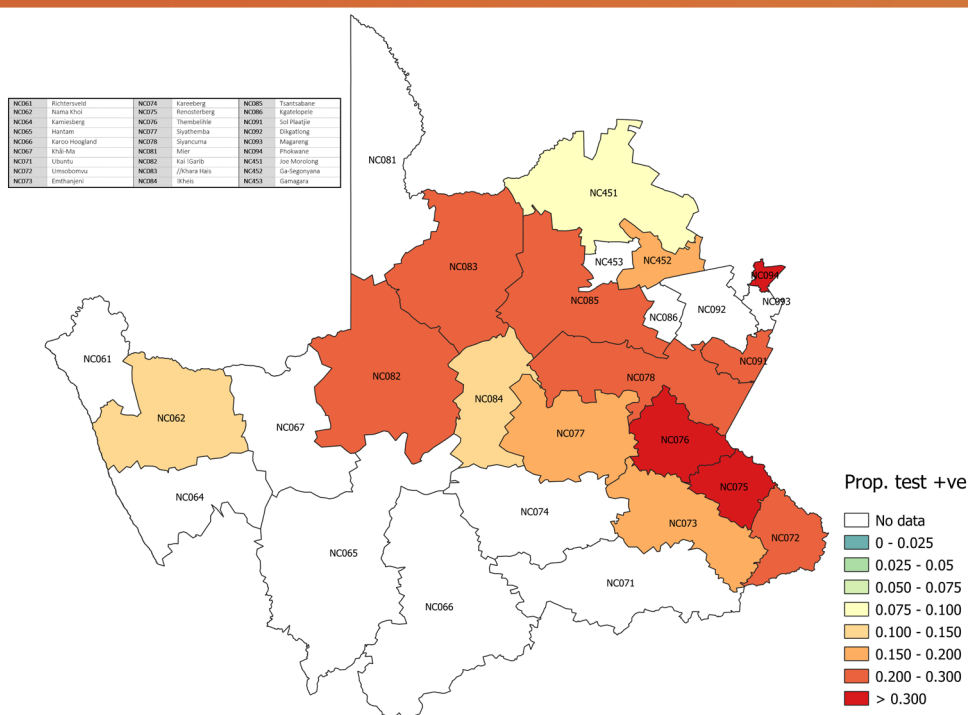


Figure 13. Health sub-districts in Northern Cape Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 37 2020

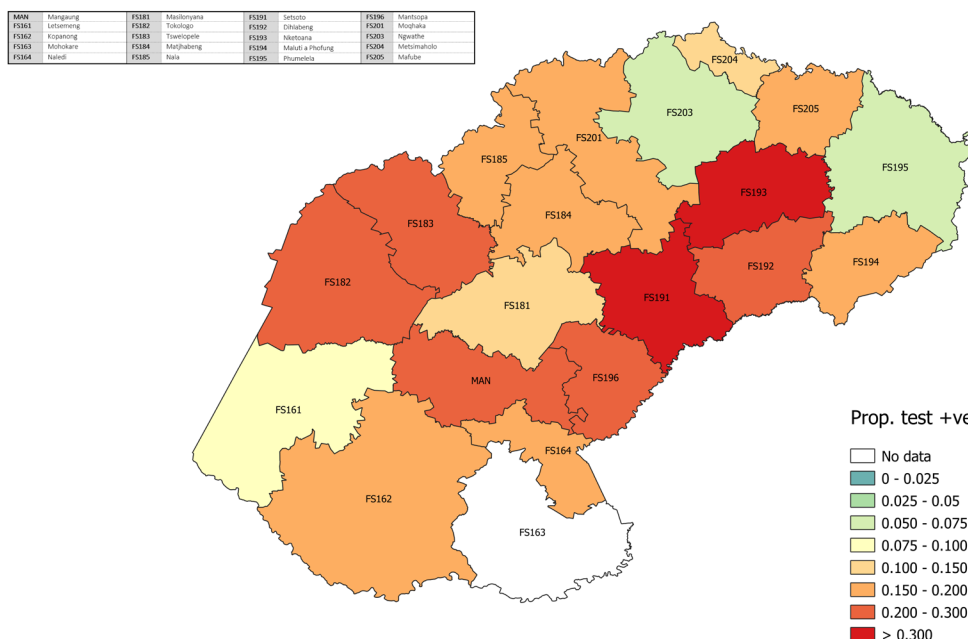
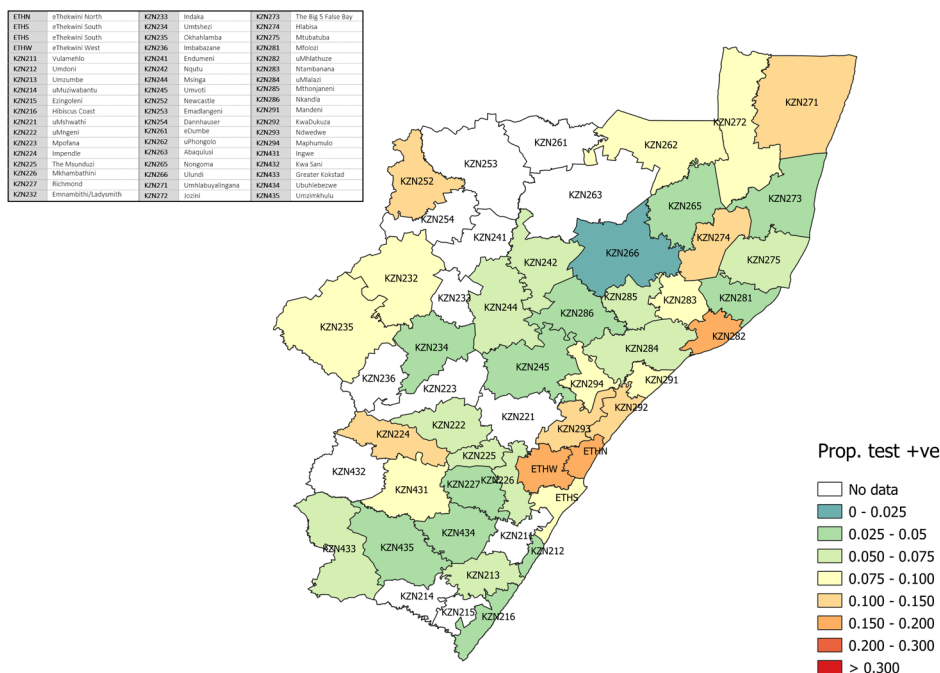


Figure 14. Health sub-districts in Free State Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.



SOUTH AFRICA WEEK **37** 2020

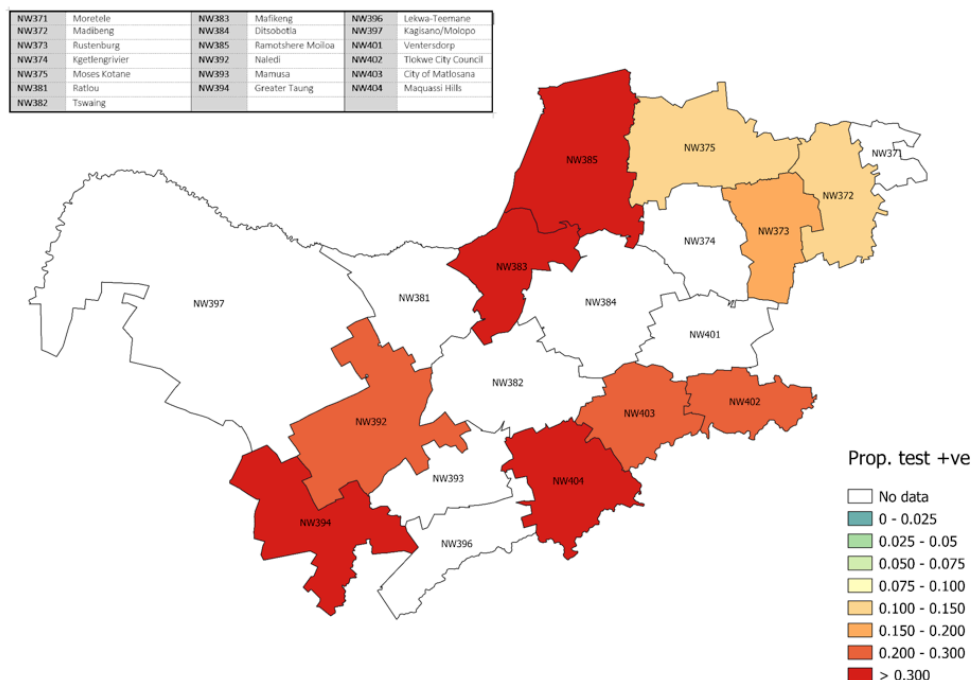


Figure 16. Health sub-districts in North West Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

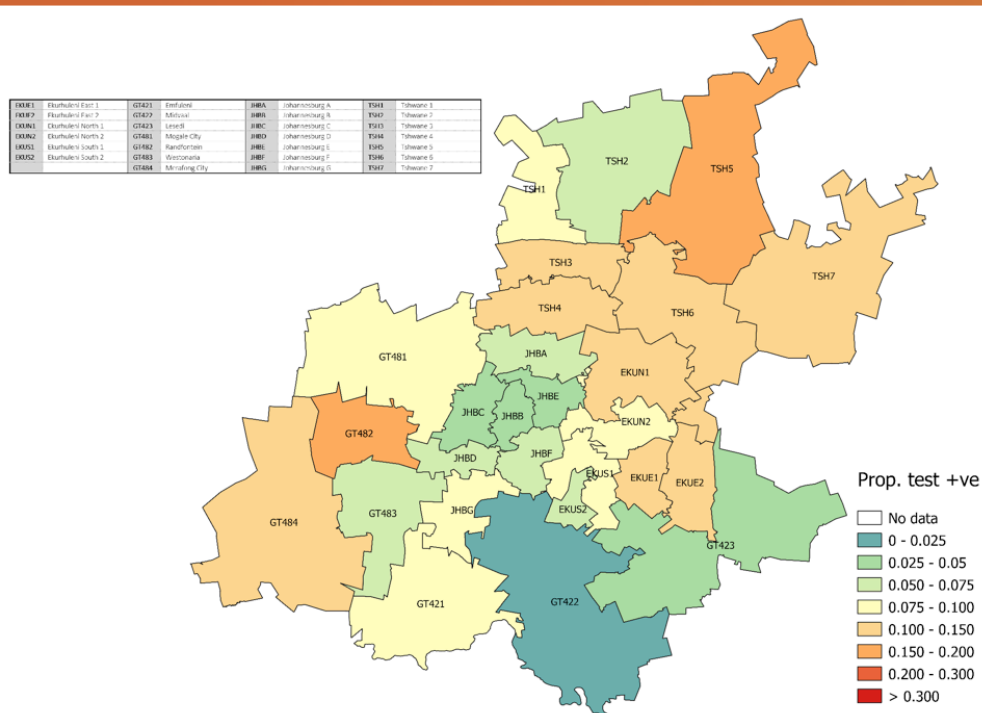


Figure 17. Health sub-districts in Gauteng Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA

WEEK 37 2020

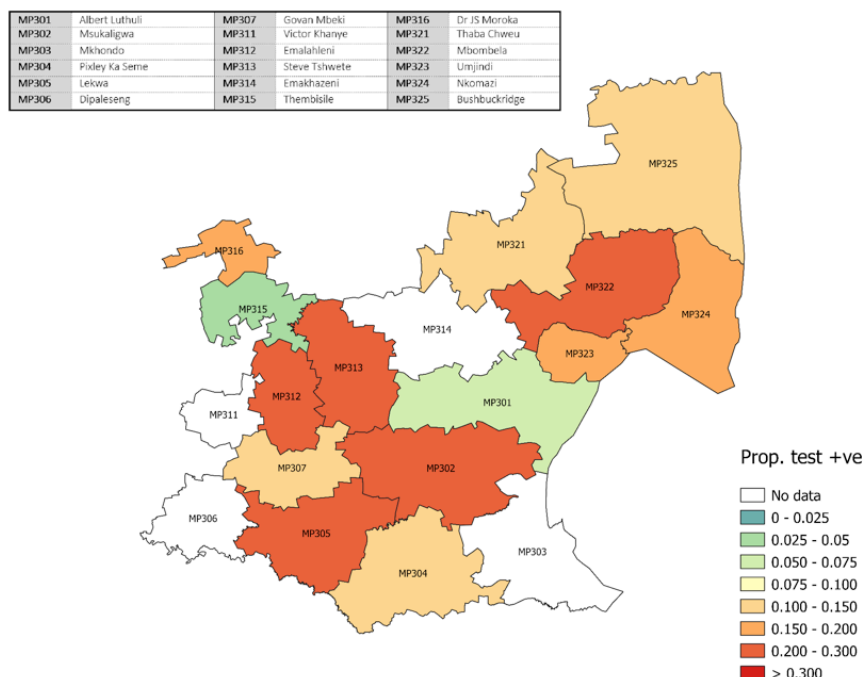


Figure 18. Health sub-districts in Mpumalanga Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

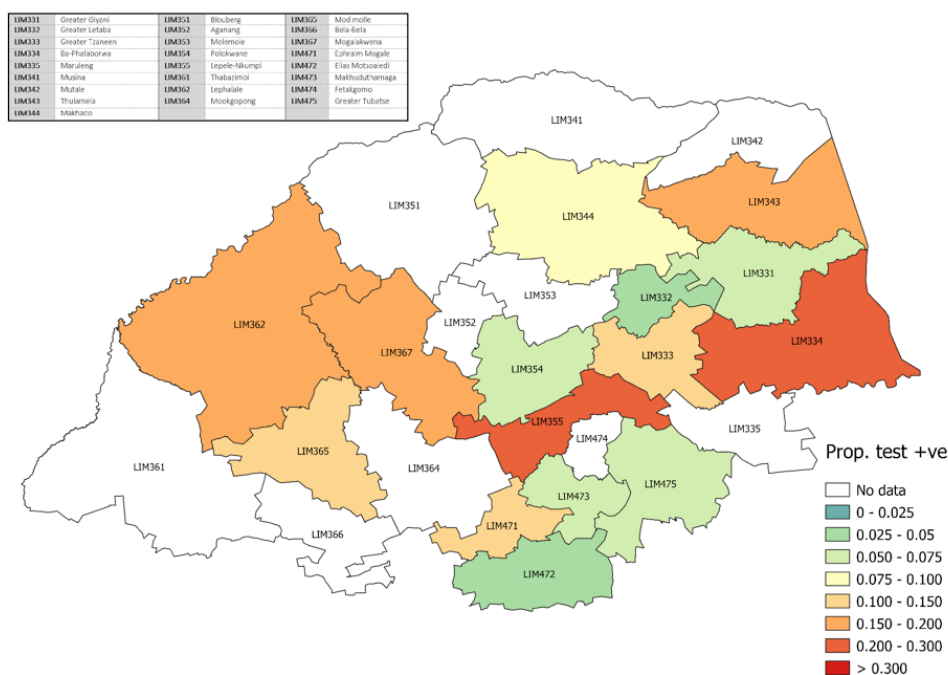


Figure 19. Health sub-districts in Limpopo Province with a high proportion testing positive based on public sector data for the week of 6-12 September 2020. Areas shaded white represent districts in which either (i) no tests were conducted, (ii) all tests were negative, or (iii) the confidence interval exceeded 30%.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

Testing by patient admission status

In week 37, 28.7% of tests in the public sector were performed for hospitalised patients (Figure 20). The proportion of inpatient tests was highest in Gauteng (34.8%), Northern Cape (34.0%), Western Cape (33.0%) and KwaZulu-Natal (31.7%) provinces. The proportion of inpatient tests increased in the

past week in Northern Cape, Mpumalanga and Limpopo. The percentage testing positive in week 37 remained lower among inpatients (10.5%) compared to outpatients (14.1%), with the percentage in both groups continuing to decrease in the past week (Figure 21). In the public sector in week 37 the mean laboratory turnaround time was similar for inpatients (1.6 days) and outpatients (1.8 days) (Figure 22).

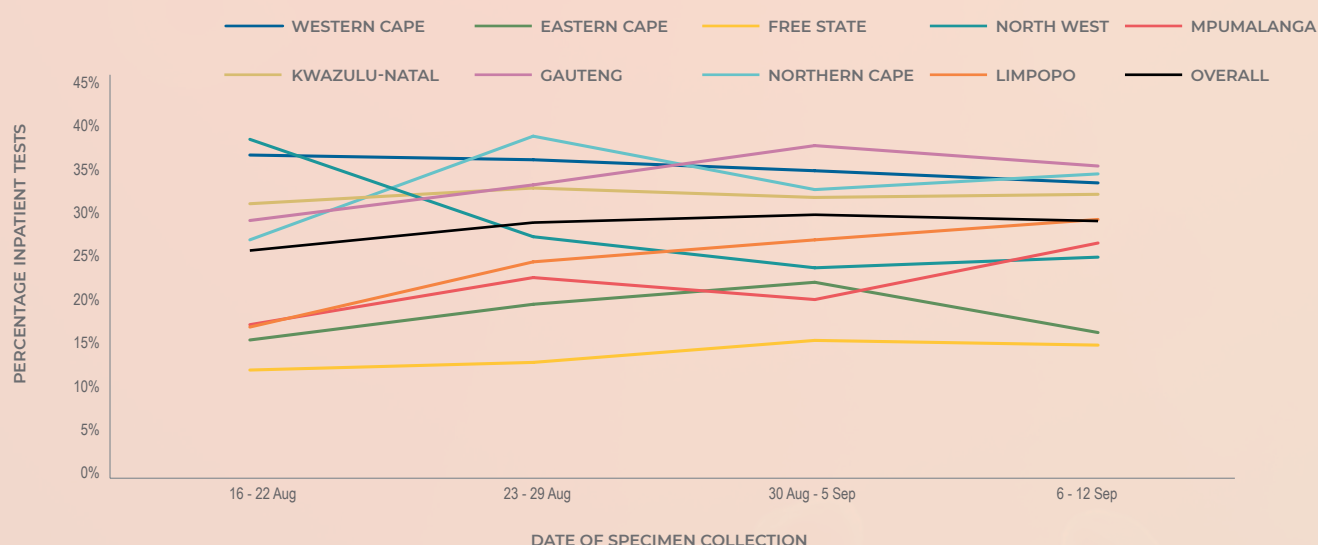


Figure 20. Percentage of inpatient tests performed in the public sector by province, 16 August - 12 September 2020.

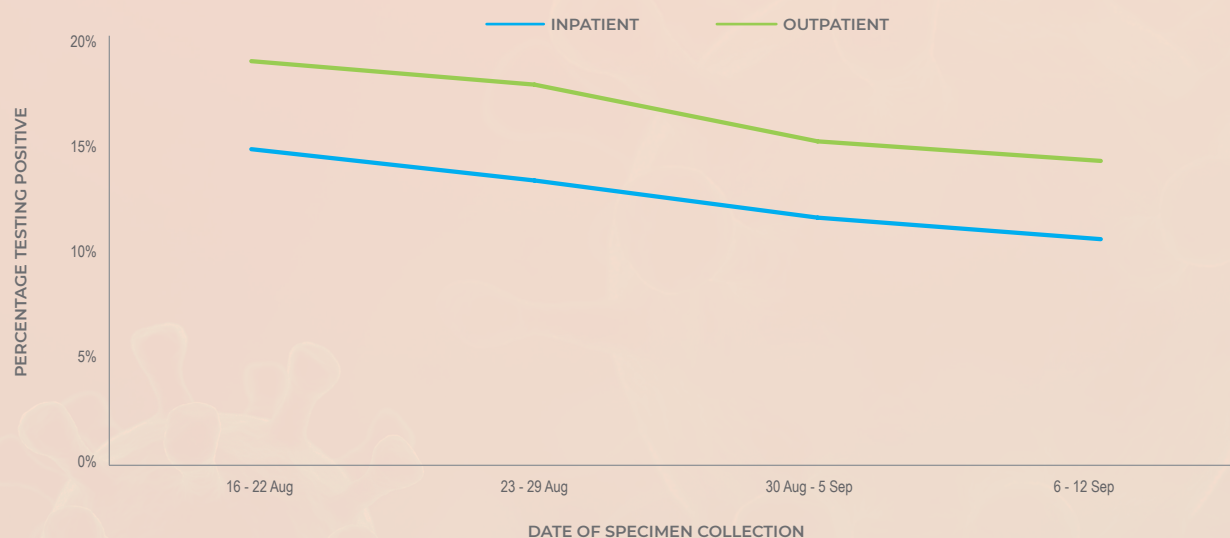


Figure 21. Percentage testing positive by patient admission status in the public sector, 16 August - 12 September 2020.

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

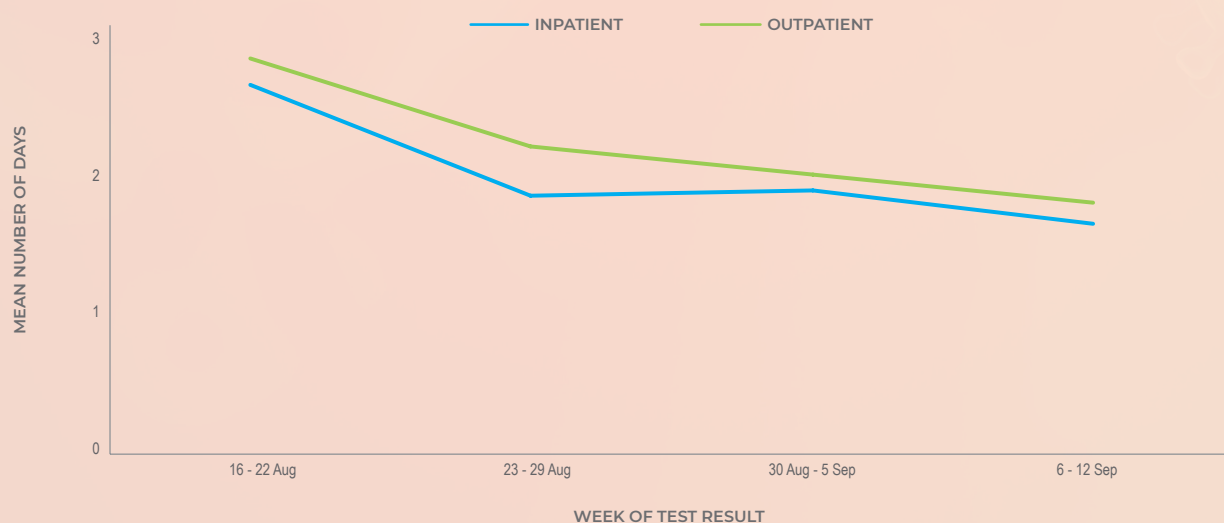


Figure 22. Mean number of days between date of specimen collection and date of test result, by patient admission status and date of test result in the public sector, South Africa, 16 August - 12 September 2020.

Testing by age and sex

The mean age of individuals tested in week 37 was 39.0 years, similar to the previous weeks. The mean age of individuals with a positive test in week 37 was 40.3 years, and was similar in males (40.3 years) and females (40.5 years, $P=0.788$) (Table 7). The sex ratio

(the number of males per 100 females) of individuals with a positive test decreased compared to previous weeks and was 69.0 in week 37. For both sexes, the proportion testing positive in week 37 was similar to or lower than the previous two weeks across all age groups (Figure 23).

Table 7. Mean age and sex ratio of individuals tested, South Africa, 16 August - 12 September 2020.

| Week number | Week beginning | Mean age of tested (years) | | Mean age of positive tests (years) | | Sex ratios (males / 100 females) | |
|-------------|----------------|----------------------------|---------|------------------------------------|---------|----------------------------------|----------------|
| | | Males | Females | Males | Females | Tested | Positive tests |
| 34 | 16 August | 39.5 | 40.1 | 41.8 | 42.2 | 76.8 | 66.3 |
| 35 | 23 August | 39.3 | 40.0 | 41.3 | 41.9 | 79.8 | 71.2 |
| 36 | 30 August | 39.3 | 39.7 | 41.0 | 41.3 | 82.6 | 73.3 |
| 37 | 6 September | 38.5 | 39.4 | 40.3 | 40.5 | 81.4 | 69.0 |

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

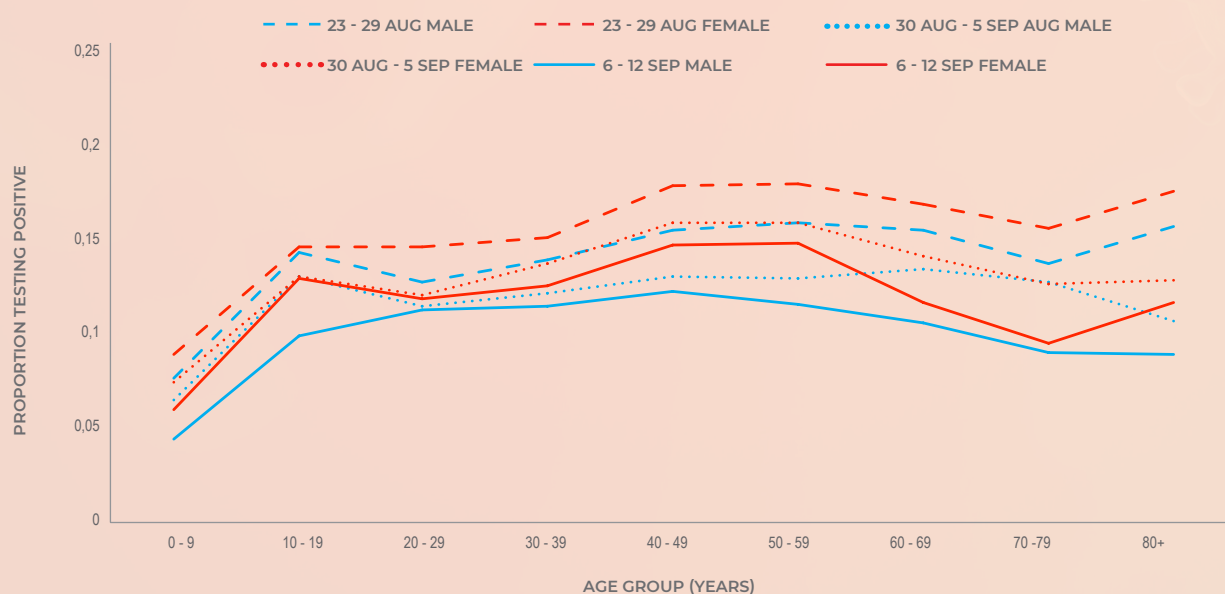


Figure 23. Weekly proportion testing positive by age group and sex, South Africa, 23 August-12 September 2020.

From week 34 to week 37, the percentage testing positive decreased 5.7% in males (from 16.1% to 10.4%) and 6.3% in females (from 18.6% to 12.3%) (Table 8). In week 37 the percentage testing positive

was higher in females compared to males in the 0-19 years ($P<0.001$), 20-39 years ($P=0.014$) and 40-59 years ($P<0.001$) age groups, and did not differ in the older age groups.

Table 8. Percentage testing positive by sex and week, South Africa, 16 August – 12 September 2020

| Age (years) | 16-22 Aug | | 23-29 Aug | | 30 Aug-5 Sep | | 6-12 Sep | |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| | Male | Female | Male | Female | Male | Female | Male | Female |
| 0-19 | 12.3% | 15.5% | 11.1% | 12.4% | 9.9% | 10.8% | 7.2% | 10.2% |
| 20-39 | 15.2% | 17.1% | 13.2% | 14.6% | 11.7% | 12.8% | 11.2% | 12.1% |
| 40-59 | 18.0% | 20.8% | 15.4% | 17.6% | 12.8% | 15.6% | 11.7% | 14.5% |
| 60-69 | 18.1% | 20.3% | 15.2% | 16.6% | 13.2% | 13.9% | 10.4% | 11.5% |
| 70+ | 17.4% | 20.7% | 14.0% | 16.0% | 12.0% | 12.5% | 8.9% | 10.1% |
| Total | 16.1% | 18.6% | 13.8% | 15.5% | 11.9% | 13.4% | 10.4% | 12.3% |

COVID-19 TESTING SUMMARY

SOUTH AFRICA WEEK 37 2020

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.
- Different and changing testing strategies (targeted vs. mass testing) used by different provinces makes percentage testing positive difficult to interpret and compare.
- Health district and sub-district level results included public-sector data only and were mapped based on the testing facility and not place of residence.
- Patient admission status was categorised based on the reported patient facility, which was only available for public sector data and may not reflect whether the patient was actually admitted to hospital.
- Province was determined based on the location of the laboratory where the specimen was registered, which may have resulted in misallocation of tests if the sample was registered in a different province to the patient residence.

CONCLUSIONS

Weekly testing volumes have decreased since a peak in week 28, and the number of tests performed in week 37 were similar to the previous week. Gauteng (30.7%), KwaZulu-Natal (18.9%) and Western Cape (16.0%) provinces performed the largest number of tests in the past week. As has been observed since week 31, Northern Cape (376 per 100,000 persons) and Free State (287 per 100,000 persons) provinces had the highest testing rates in week 37. Testing rates have decreased in all provinces since peak testing rates were observed between week 21 (Western Cape) and week 31 (Northern Cape) in the respective provinces. Laboratory turnaround times in week 37 were sustained at <2 days in both the private and public sectors.

The decreasing trend in percentage testing positive continued, since a peak of 31.4% in week 29 to 11.4% in week 37. Similar levels of percentage testing positive were last observed in week 24, beginning 7th June 2020. Percentages testing positive remained $\geq 20\%$ in Northern Cape and Free State, were between 10-19% in North West, Mpumalanga and Limpopo, and were <10% in Gauteng, KwaZulu-Natal, Western Cape and Eastern Cape in week 37. Compared to the previous week, the percentage testing positive decreased in four provinces (Eastern Cape, KwaZulu-Natal, Gauteng and Mpumalanga), and did not change in Western Cape, Northern Cape, Free State, North West and Limpopo provinces. Of the 25 sub-districts with the highest proportion testing positive in the past week, 7 were in the Northern Cape and 6 were in the North West province.