COVID-19 TESTING SUMMARY

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

SOUTH AFRICA | WEEK 40 2021

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 9 October 2021 (Week 40 of 2021).

HIGHLIGHTS

- The number of tests reported in week 40 of 2021 (n=177 922) was the lowest weekly number of tests reported since early May 2021.
- In week 40 the testing rate decreased in all provinces, and was highest in the Northern Cape (420 per 100,000 persons) and lowest in Limpopo (66 per 100,000 persons).
- In week 40 the percentage testing positive was 3.3%, which was 1.4% lower than the previous week.
- In week 40 compared to the previous week, the percentage testing positive decreased in all provinces except in Mpumalanga, where it remained unchanged.
- The percentage testing positive in week 40 was highest in the Northern Cape (10.7%), and was less than 10% in all other provinces.

Executive Summary:

- In the period 1 March 2020 through 9 October 2021, 17,869,238 tests for SARS-CoV-2 have been reported nationally: 15,489,283 PCR and 2,379,955 antigen tests.
- The number of tests reported in week 40 of 2021 (n=177 922: 148 375 PCR and 29 547 antigen tests) was the lowest weekly number of tests reported since early May 2021. Gauteng reported the largest proportion of tests (35.5%), followed by KwaZulu-Natal (19.8%) and Western Cape (16.6%).
- The overall testing rate decreased from 330 per 100,000 persons in week 39 to 298 per 100,000 persons in week 40.
- In week 40 the testing rate decreased in all provinces, and was highest in the Western Cape (420 per 100,000 persons) and lowest in Limpopo (66 per 100,000 persons).
- The testing rate in week 40 was highest in the ≥80 years age group (660 per 100,000 persons).
- In week 40 the percentage testing positive was 3.3%, which was 1.4% lower than the previous week (4.7%, P<0.001).
- In the past week the percentage testing positive decreased by 1.6% in the public sector (6.2% in week 39 to 4.6% in week 40, P<0.001) and by 1.0% in the private sector (3.4% in week 39 to 2.4% in week 40, P<0.001).
- In week 40 compared to the previous week, the percentage testing positive continued to decrease in all provinces except in Mpumalanga, where it remained unchanged.
- The percentage testing positive in week 40 was highest in the Northern Cape (10.7%), and was less than 10% in all other provinces. The percentage testing positive was highest in individuals aged 10-14 years (6.2%), followed by 15-19 years (5.3%).
- Health sub-districts showing the highest percentage testing positive were concentrated in the Northern Cape (n=11), with four in the Eastern Cape, and three each in the Free State and Western Cape.
- Antigen tests accounted for 16.6% (29 547/ 177 922) of tests reported in week 40, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 40 the public sector accounted for 77.1% of antigen tests reported. The majority of antigen tests have been reported from KwaZulu-Natal (33.1%) and Gauteng (18.8%) provinces. In the past few weeks there has been a decrease in the number of antigen tests reported.
- The mean turnaround time for PCR tests reported in week 40 was 1.0 day; 1.4 days in the public sector and 0.7 days in the private sector. Turnaround times for public sector PCR tests increased from 2.2 to 4.1 days in Limpopo province in the past week.
- The mean turnaround time for antigen tests reported in week 40 was 13.4 days in the public sector and 0.1 days in the private sector.

COVID-19 TESTING SUMMARY

SOUTH AFRICA | WEEK **40** 2021

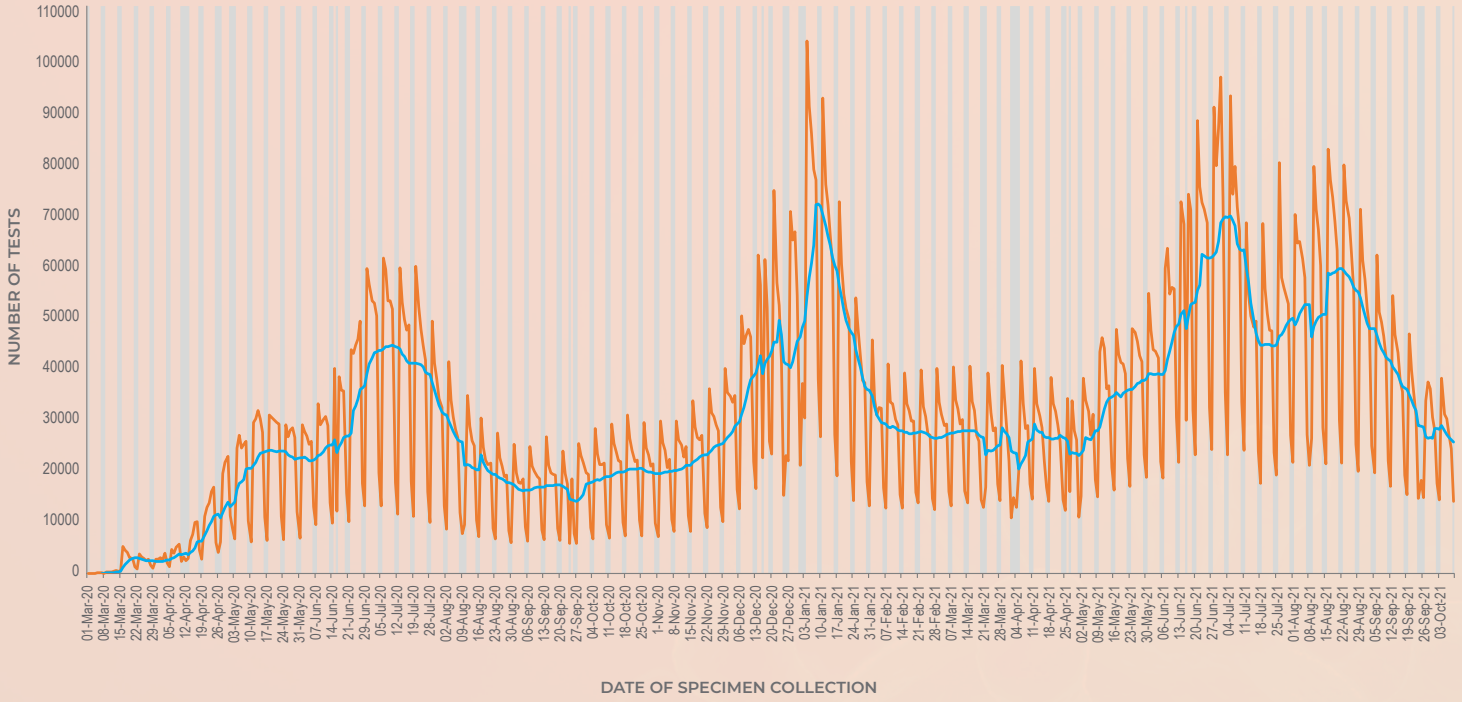

Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 9 October 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 9 October 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501253 (2.8)	151037	30.1
2	10-Jan-21	417960 (2.3)	104797	25.1
3	17-Jan-21	327397 (1.8)	63261	19.3
4	24-Jan-21	249512 (1.4)	34639	13.9
5	31-Jan-21	203653 (1.1)	22361	11.0
6	07-Feb-21	193283 (1.1)	16470	8.5
7	14-Feb-21	190637 (1.1)	12184	6.4
8	21-Feb-21	184661 (1.0)	10383	5.6
9	28-Feb-21	189624 (1.1)	8686	4.6
10	07-Mar-21	193378 (1.1)	8325	4.3
11	14-Mar-21	185493 (1.0)	8152	4.4
12	21-Mar-21	173006 (1.0)	7351	4.2
13	28-Mar-21	163931 (0.9)	7060	4.3
14	04-Apr-21	180814 (1.0)	7290	4.0
15	11-Apr-21	184612 (1.0)	8844	4.8
16	18-Apr-21	184858 (1.0)	9467	5.1
17	25-Apr-21	159985 (0.9)	9180	5.7
18	02-May-21	193843 (1.1)	13452	6.9
19	09-May-21	239948 (1.3)	19929	8.3
20	16-May-21	248424 (1.4)	24207	9.7
21	23-May-21	262314 (1.5)	29708	11.3
22	30-May-21	269903 (1.5)	35969	13.3
23	06-Jun-21	335678 (1.9)	58853	17.5
24	13-Jun-21	366399 (2.1)	86647	23.6
25	20-Jun-21	428374 (2.4)	116692	27.2
26	27-Jun-21	483482 (2.7)	143805	29.7
27	04-Jul-21	438539 (2.5)	139324	31.8
28	11-Jul-21	316211 (1.8)	99281	31.4
29	18-Jul-21	308336 (1.7)	86789	28.1
30	25-Jul-21	344311 (1.9)	86764	25.2
31	01-Aug-21	364845 (2.0)	86431	23.7
32	08-Aug-21	351281 (2.0)	81840	23.3
33	15-Aug-21	413203 (2.3)	93709	22.7
34	22-Aug-21	383800 (2.1)	76857	20.0
35	29-Aug-21	331891 (1.9)	53817	16.2
36	05-Sep-21	290575 (1.6)	37832	13.0
37	12-Sep-21	251289 (1.4)	23387	9.3
38	19-Sep-21	199315 (1.1)	13635	6.8
39	26-Sep-21	196446 (1.1)	9176	4.7
40	03-Oct-21	177922 (1.0)	5916	3.3
	Total	**17,869,238 (100.0)**	**3,098,419**	

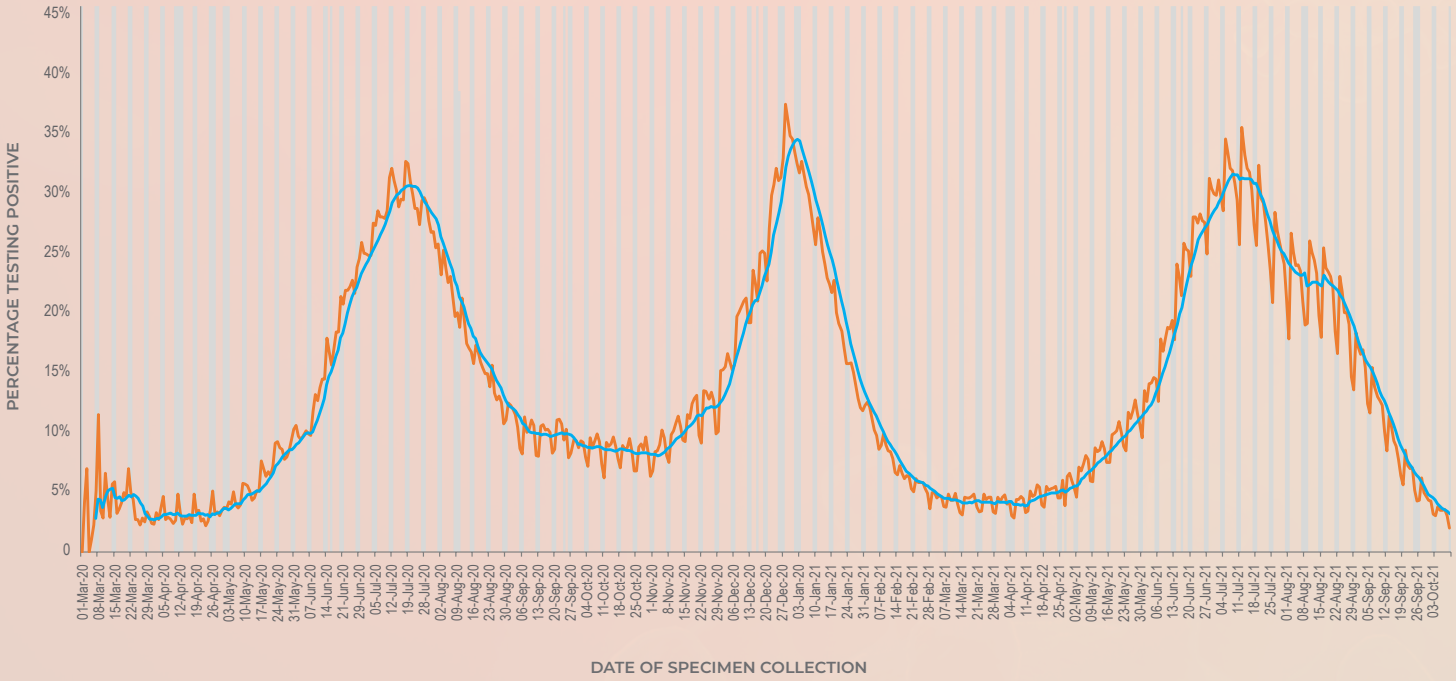

Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 9 October 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

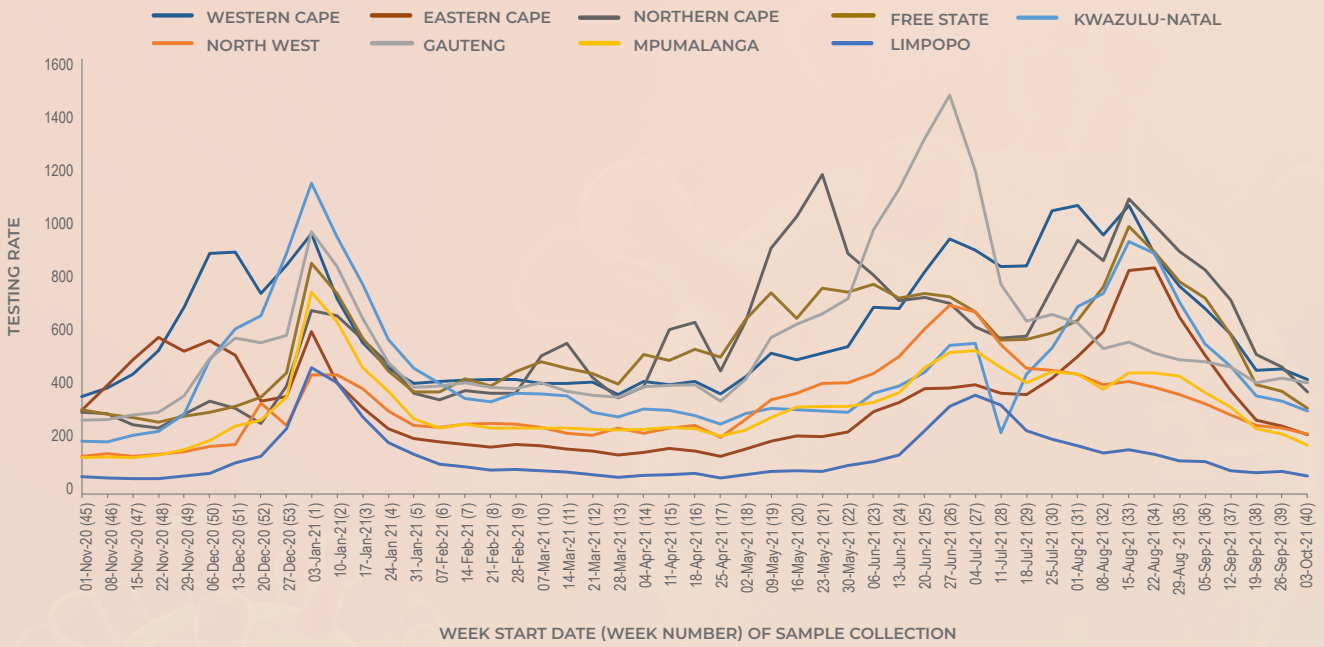

Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 9 October 2021

Table 2. Weekly number of tests and positive tests reported by province, South Africa, 19 September - 9 October 2021

		19-25 Sep 2021		26 Sep - 2 Oct 2021		3-9 Oct 2021			
Province	**Population[a]**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**No. of tests**	**No. positive tests (%)**	**Tests per 100,000 persons**	**Change in percentage positive[b]**
Western Cape	7005741	31861	2592 (8.1)	32240	2005 (6.2)	29453	1214 (4.1)	420	-2.1%
Eastern Cape	6734001	18265	1742 (9.5)	16871	1090 (6.5)	14627	674 (4.6)	217	-1.9%
Northern Cape	1292786	6616	1417 (21.4)	6040	844 (14.0)	4850	517 (10.7)	375	-3.3%
Free State	2928903	11786	1523 (12.9)	11057	1013 (9.2)	9206	607 (6.6)	314	-2.6%
KwaZulu-Natal	11531628	41507	3048 (7.3)	39341	1834 (4.7)	35225	1115 (3.2)	305	-1.5%
North West	4108816	10352	667 (6.4)	9966	492 (4.9)	9063	314 (3.5)	221	-1.5%
Gauteng	15488137	63199	1733 (2.7)	65817	1330 (2.0)	63200	1088 (1.7)	408	-0.3%
Mpumalanga	4679786	11198	724 (6.5)	10307	433 (4.2)	8431	315 (3.7)	180	-0.5%
Limpopo	5852553	4525	189 (4.2)	4800	134 (2.8)	3861	72 (1.9)	66	-0.9%
Unknown		6	0 (0.0)	7	1 (14.3)	6	0 (0.0)		
Total	**59622350**	**199315**	**13635 (6.8)**	**196446**	**9176 (4.7)**	**177922**	**5916 (3.3)**	**298**	**-1.4%**

a 2020 Mid-year population Statistics SA

b Current week compared to previous week

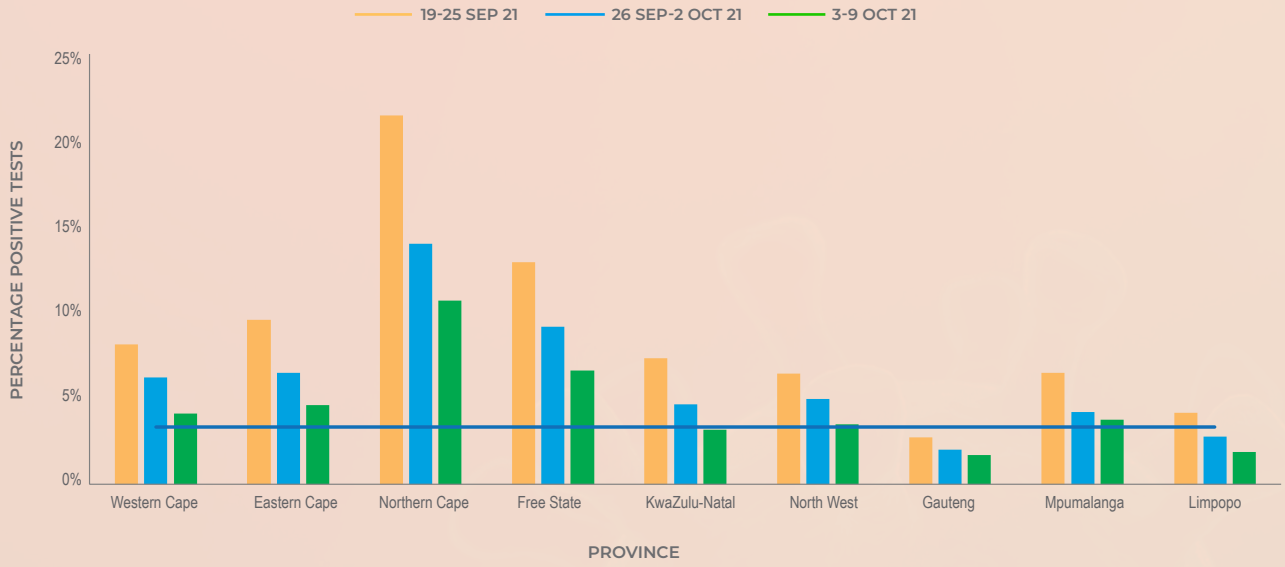

Figure 4. Weekly percentage testing positive by province, South Africa, 19 September – 9 October 2021. The horizontal blue line shows the national mean for week 40, beginning 3 October 2021

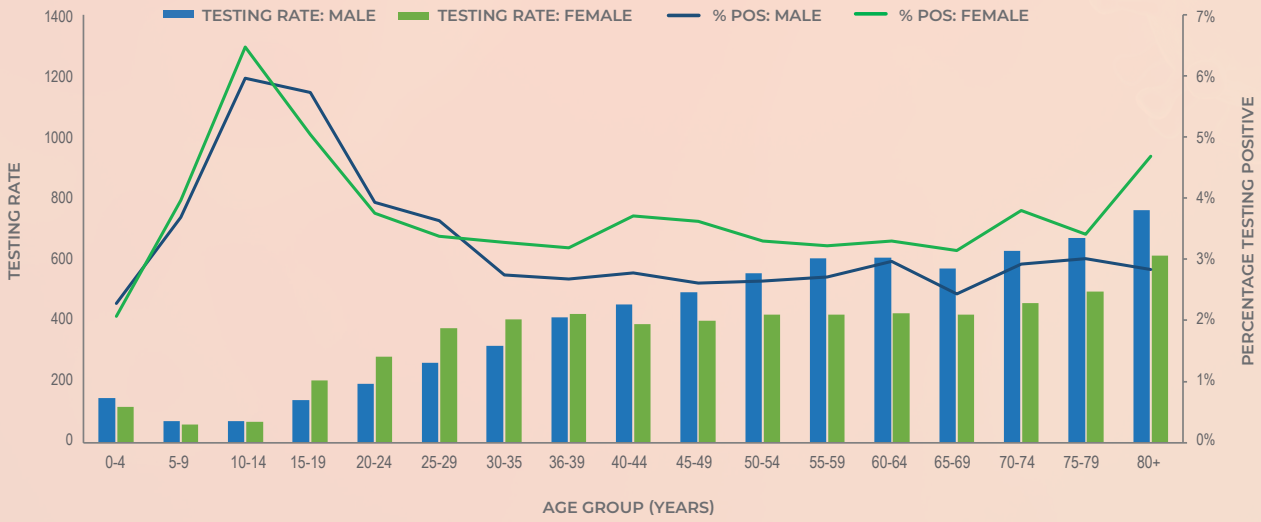

Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 40, 3-9 October 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 3-9 October 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Baviaans	Eastern Cape	0.351 (0.201-0.500)	...
Dikgatlong	Northern Cape	0.238 (0.124-0.353)	0.239 (0.095-0.383)
Karoo Hoogland	Northern Cape	0.213 (0.129-0.297)	0.252 (0.141-0.362)
Lekwa-Teemane	North West	0.209 (0.087-0.331)	0.150 (0.028-0.271)
Hantam	Northern Cape	0.208 (0.150-0.266)	0.201 (0.135-0.266)
Ubuntu	Northern Cape	0.207 (0.057-0.357)	...
Letsemeng	Free State	0.205 (0.100-0.310)	0.119 (0.060-0.177)
Siyathemba	Northern Cape	0.203 (0.103-0.304)	0.109 (0.055-0.163)
Ga-Segonyana	Northern Cape	0.196 (0.144-0.247)	0.187 (0.137-0.237)
Greater Taung	North West	0.185 (0.097-0.273)	0.227 (0.129-0.324)
Theewaterskloof	Western Cape	0.171 (0.114-0.228)	0.102 (0.059-0.144)
Siyancuma	Northern Cape	0.169 (0.111-0.227)	0.192 (0.135-0.248)
Kou-Kamma	Eastern Cape	0.167 (0.105-0.228)	0.221 (0.156-0.286)
Mtubatuba	KwaZulu-Natal	0.154 (0.076-0.232)	0.087 (0.025-0.149)
Kopanong	Free State	0.151 (0.085-0.218)	0.135 (0.084-0.187)
Bergrivier	Western Cape	0.144 (0.056-0.231)	0.247 (0.145-0.349)
Kamiesberg	Northern Cape	0.140 (0.013-0.268)	0.154 (0.061-0.248)
Tsantsabane	Northern Cape	0.137 (0.064-0.209)	0.117 (0.062-0.171)
Phokwane	Northern Cape	0.131 (0.073-0.190)	0.153 (0.096-0.209)
Sakhisizwe	Eastern Cape	0.130 (0.051-0.209)	0.110 (0.038-0.182)
Joe Morolong	Northern Cape	0.124 (0.038-0.210)	0.206 (0.144-0.269)
Elundini	Eastern Cape	0.123 (0.031-0.216)	0.147 (0.038-0.256)
Kannaland	Western Cape	0.122 (0.009-0.236)	0.148 (0.047-0.250)
Dipaleseng	Mpumalanga	0.121 (0.009-0.233)	...
Mohokare	Free State	0.119 (0.041-0.197)	0.223 (0.131-0.314)

95% CI: 95% confidence interval; PTP: adjusted positive test proportion; Elements marked in red have current week proportions testing positive that are higher than, and CIs that do not overlap with, the previous week proportions and CIs. Elements marked in blue have current week proportions testing positive that are lower than, and CIs that do not overlap with, the previous week proportions and CIs.

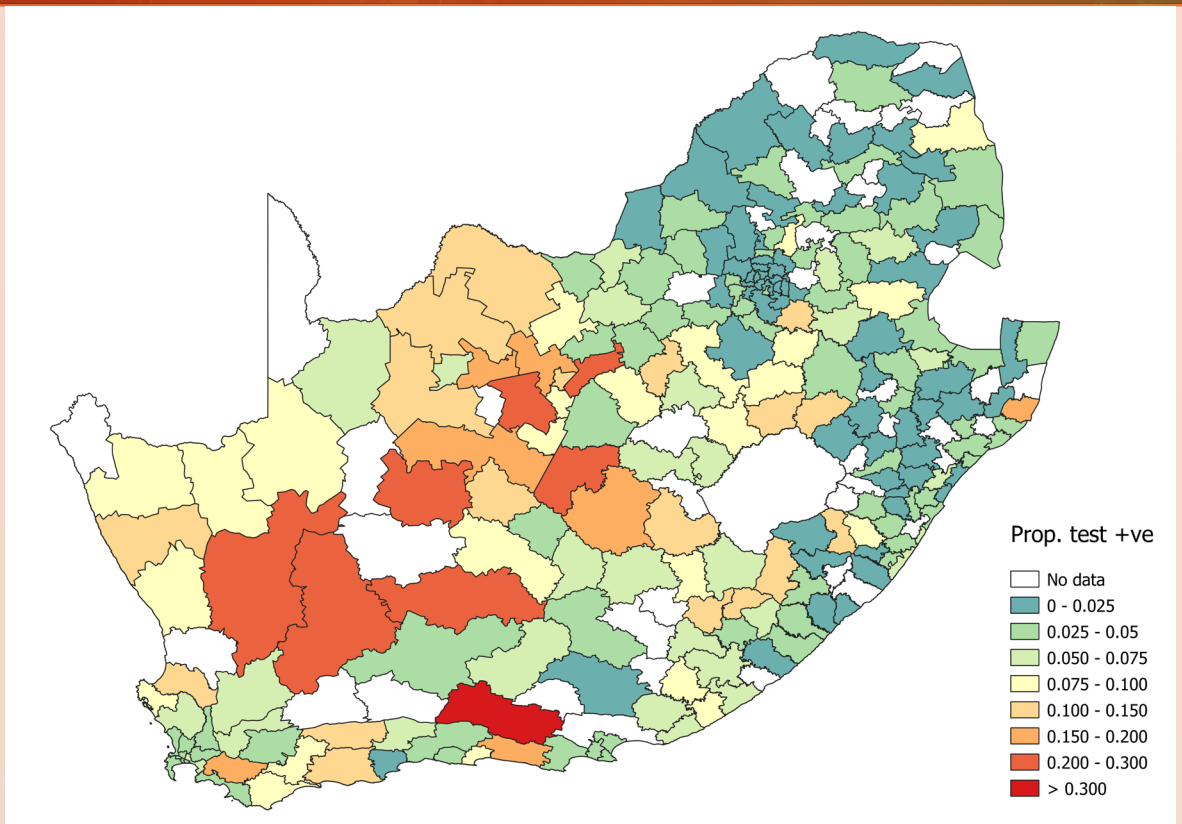

Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

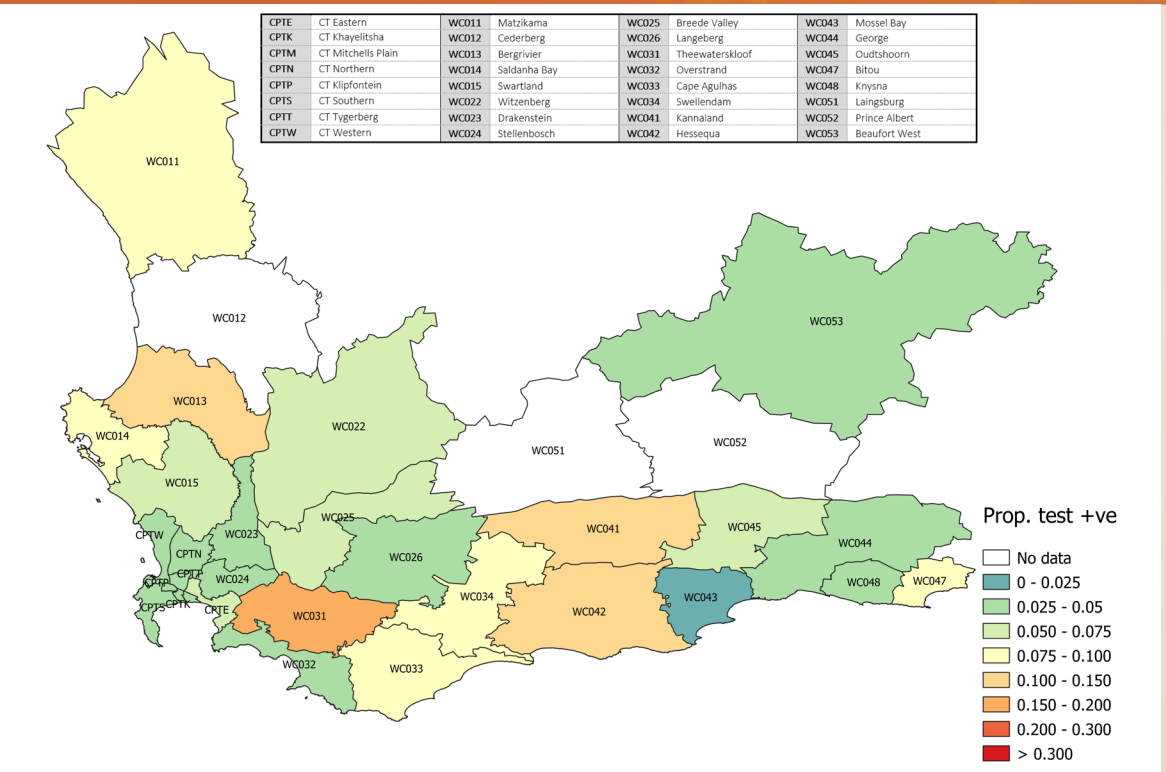

Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%

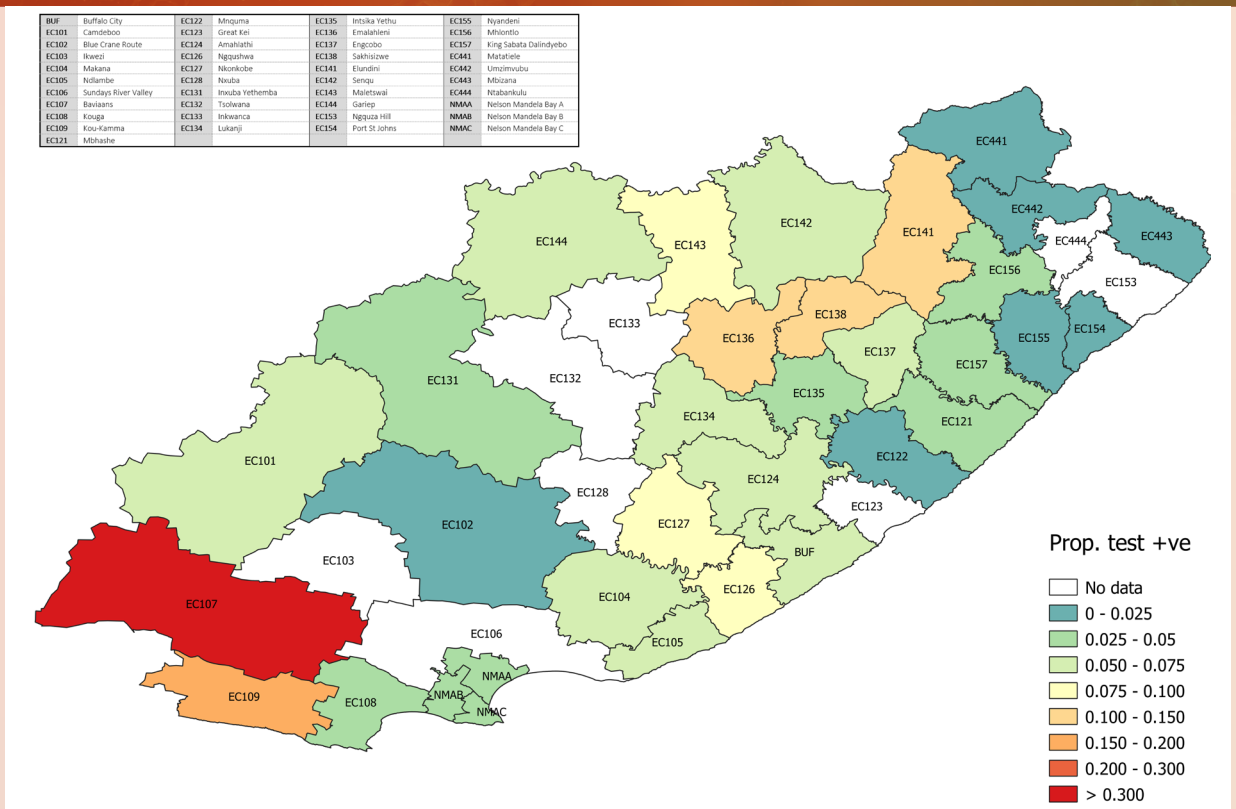

Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

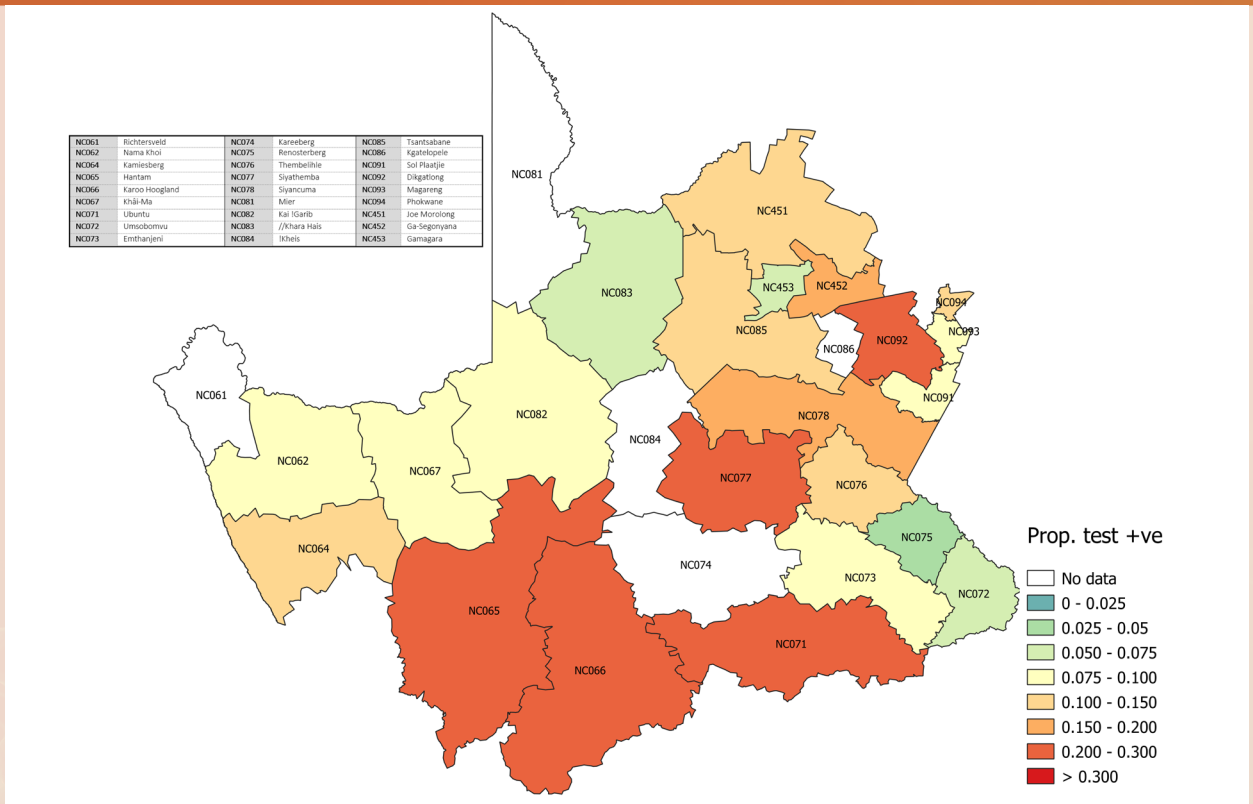

Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

MAN	Mangaung	FS181	Masilonyana	FS191	Setsoto	FS196	Mantsopa
FS161	Letsemeng	FS182	Tokologo	FS192	Dihlabeng	FS201	Moqhaka
FS162	Kopanong	FS183	Tswelopele	FS193	Nketoana	FS203	Ngwathe
FS163	Mohokare	FS184	Matjhabeng	FS194	Maluti a Phofung	FS204	Metsimaholo
FS164	Naledi	FS185	Nala	FS195	Phumelela	FS205	Mafube

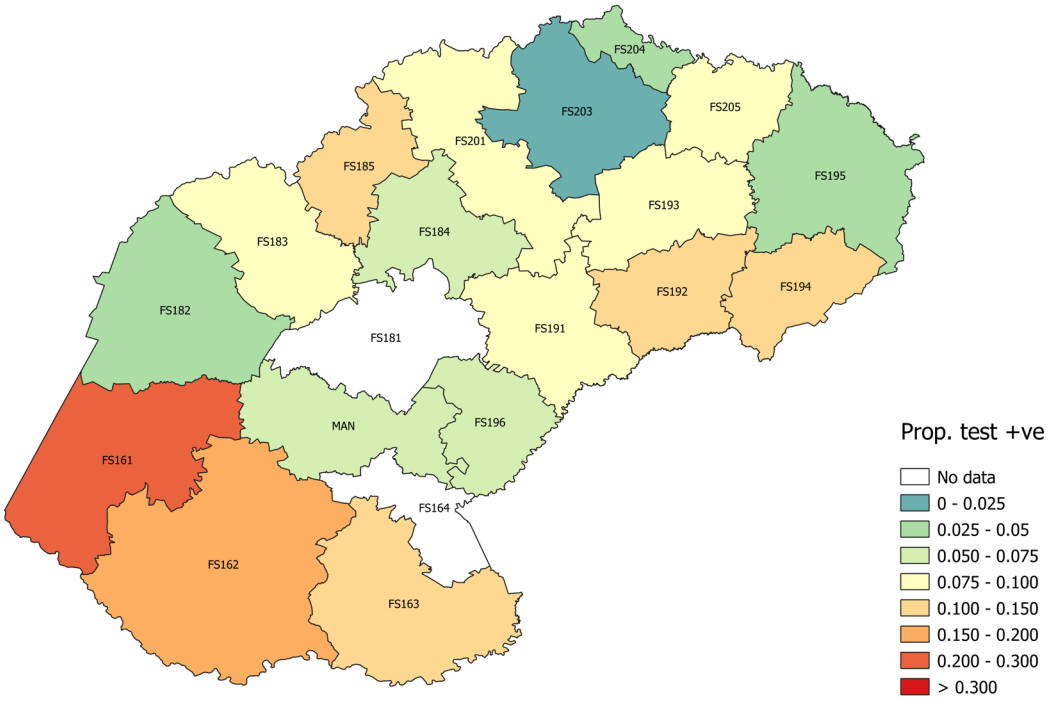

Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

ETHN	eThekwini North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekwini South	KZN234	Umtshezi	KZN274	Hlabisa
ETHS	eThekwini South	KZN235	Okhahlamba	KZN275	Mtubatuba
ETHW	eThekwini West	KZN236	Imbabazane	KZN281	Mfolozi
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMhlathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umzumbe	KZN244	Msinga	KZN284	uMlalazi
KZN214	uMuziwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingoleni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hibiscus Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMshwathi	KZN254	Dannhauser	KZN292	KwaDukuza
KZN222	uMngeni	KZN261	eDumbe	KZN293	Ndwedwe
KZN223	Mpofana	KZN262	uPhongolo	KZN294	Maphumulo
KZN224	Impendle	KZN263	Abaqulusi	KZN431	Ingwe
KZN225	The Msunduzi	KZN265	Nongoma	KZN432	Kwa Sani
KZN226	Mkhambathini	KZN266	Ulundi	KZN433	Greater Kokstad
KZN227	Richmond	KZN271	Umhlabuyalingana	KZN434	Ubuhlebezwe
KZN232	Emnambithi/Ladysmith	KZN272	Jozini	KZN435	Umzimkhulu

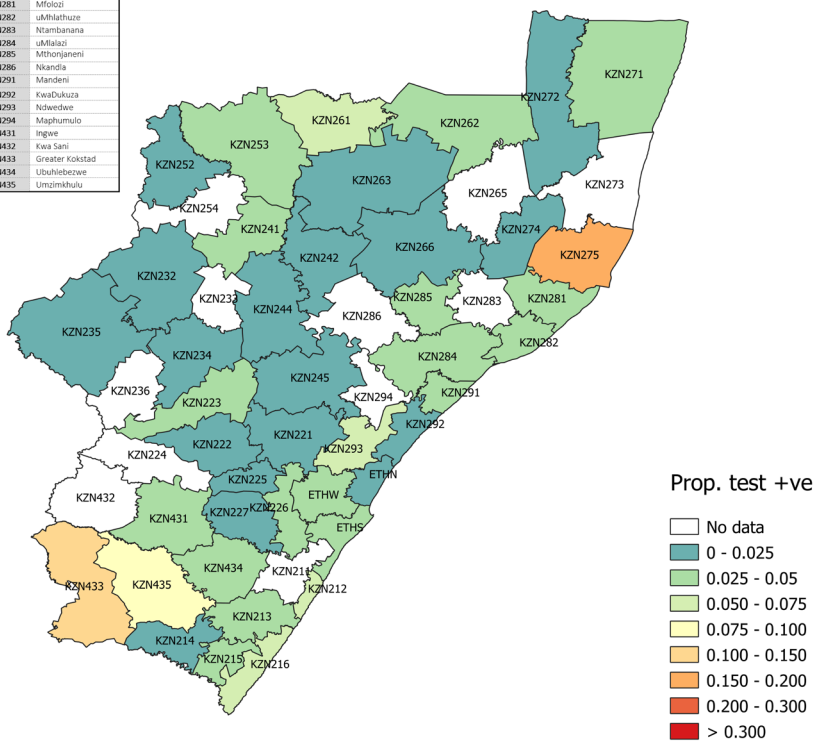

Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

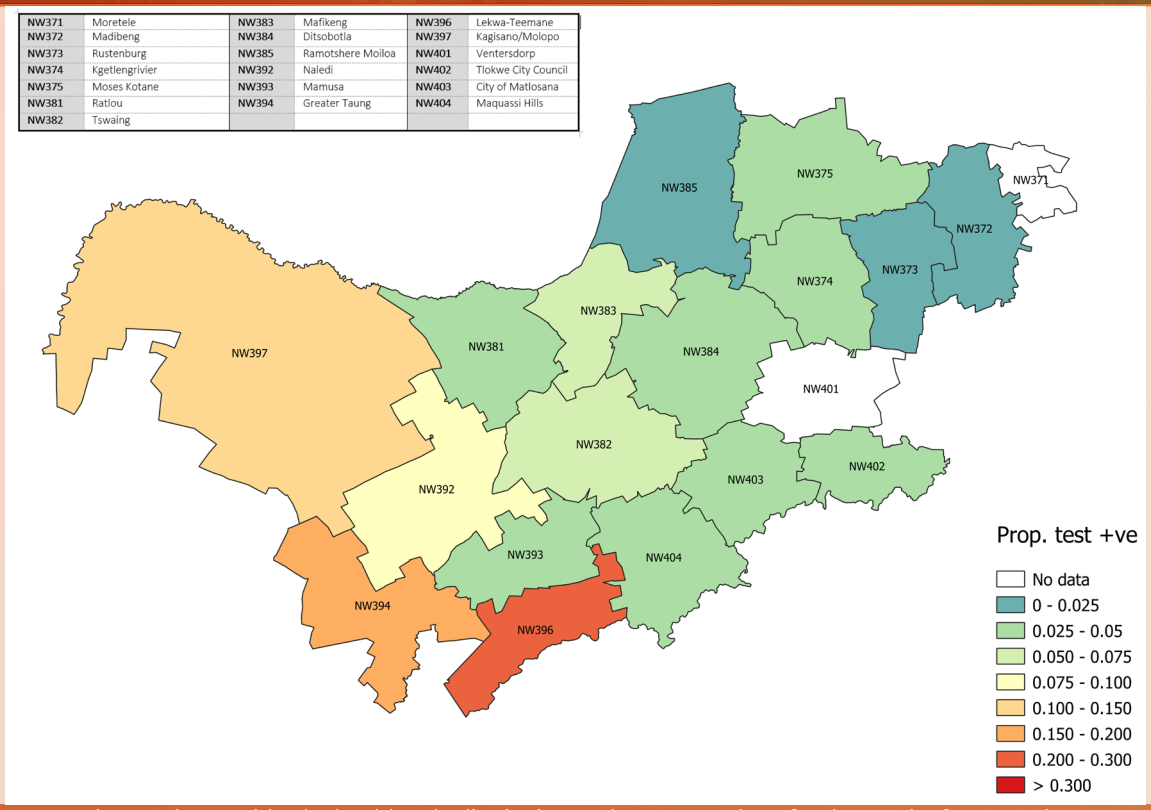

Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

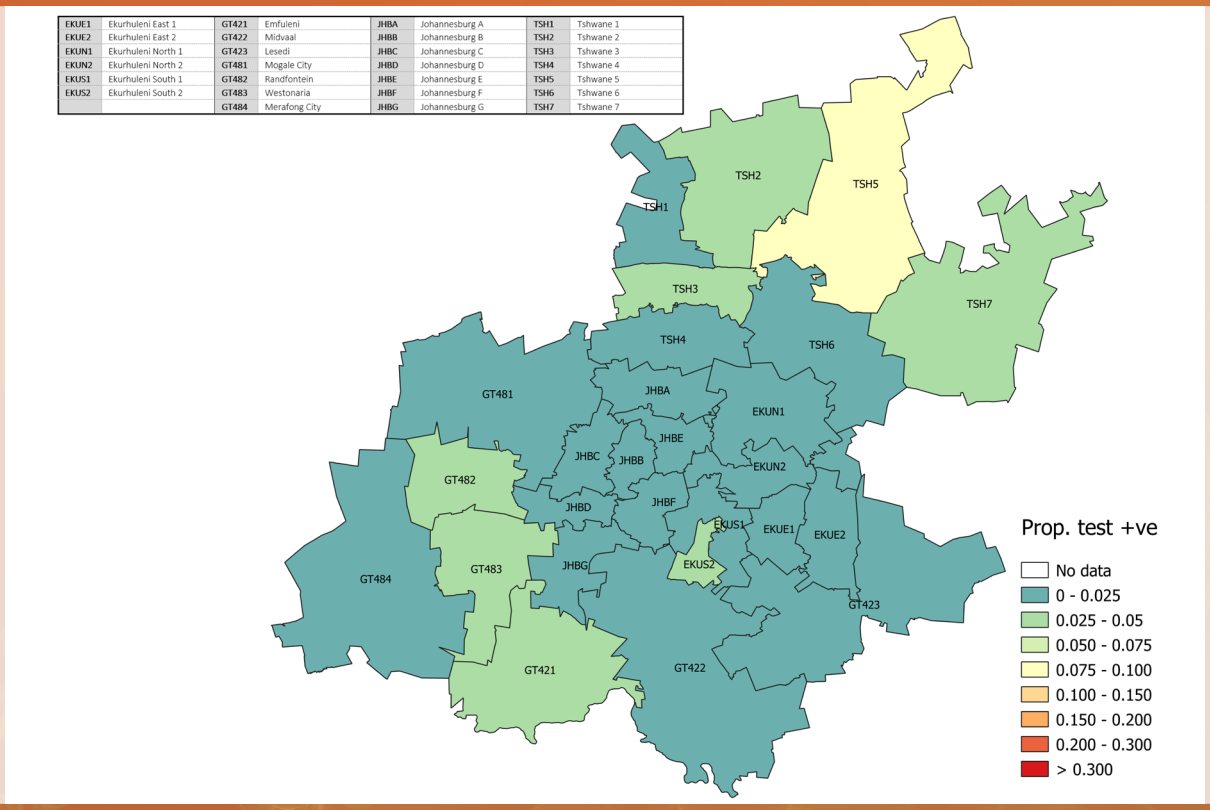

Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

MP301	Albert Luthuli	MP307	Govan Mbeki	MP316	Dr JS Moroka
MP302	Msukaligwa	MP311	Victor Khanye	MP321	Thaba Chweu
MP303	Mkhondo	MP312	Emalahleni	MP322	Mbombela
MP304	Pixley Ka Seme	MP313	Steve Tshwete	MP323	Umjindi
MP305	Lekwa	MP314	Emakhazeni	MP324	Nkomazi
MP306	Dipaleseng	MP315	Thembisile	MP325	Bushbuckridge

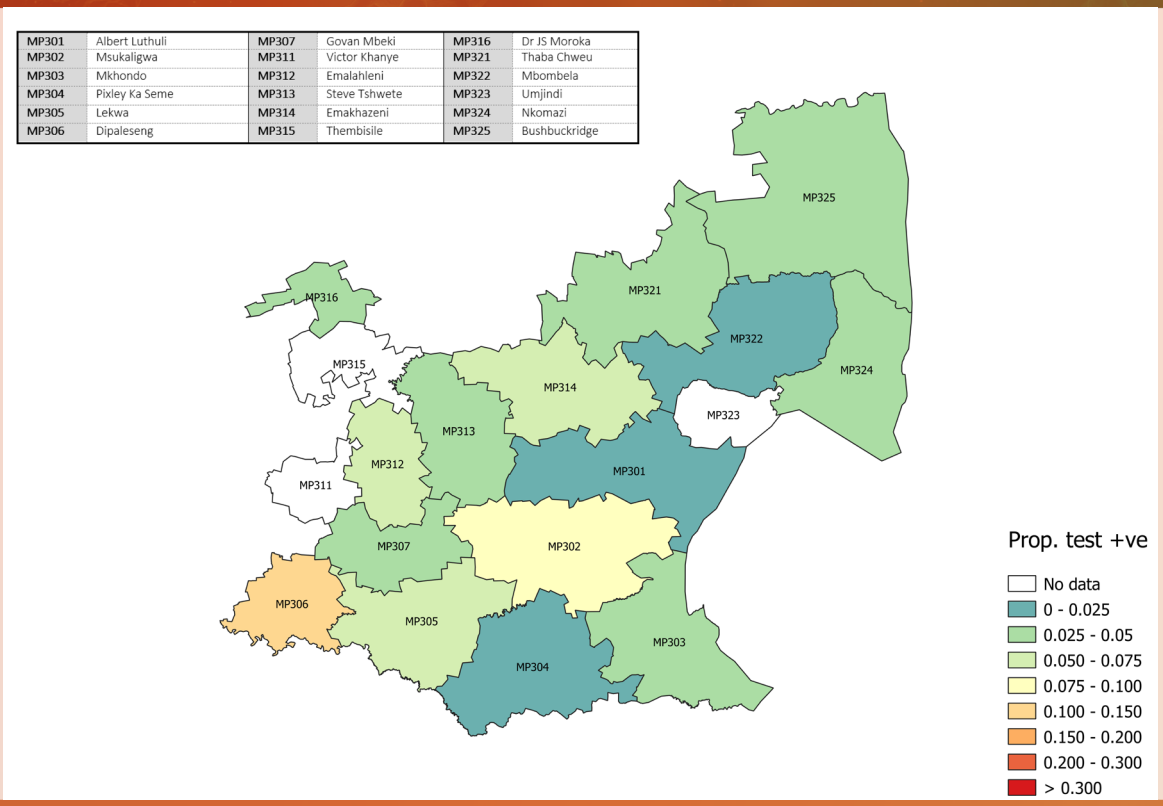

Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

LIM331	Greater Giyani	LIM351	Blouberg	LIM365	Modimolle
LIM332	Greater Letaba	LIM352	Aganang	LIM366	Bela-Bela
LIM333	Greater Tzaneen	LIM353	Molemole	LIM367	Mogalakwena
LIM334	Ba-Phalaborwa	LIM354	Polokwane	LIM471	Ephraim Mogale
LIM335	Maruleng	LIM355	Lepele-Nkumpi	LIM472	Elias Motsoaledi
LIM341	Musina	LIM361	Thabazimbi	LIM473	Makhuduthamaga
LIM342	Mutale	LIM362	Lephalale	LIM474	Fetakgomo
LIM343	Thulamela	LIM364	Mookgopong	LIM475	Greater Tubatse
LIM344	Makhado				

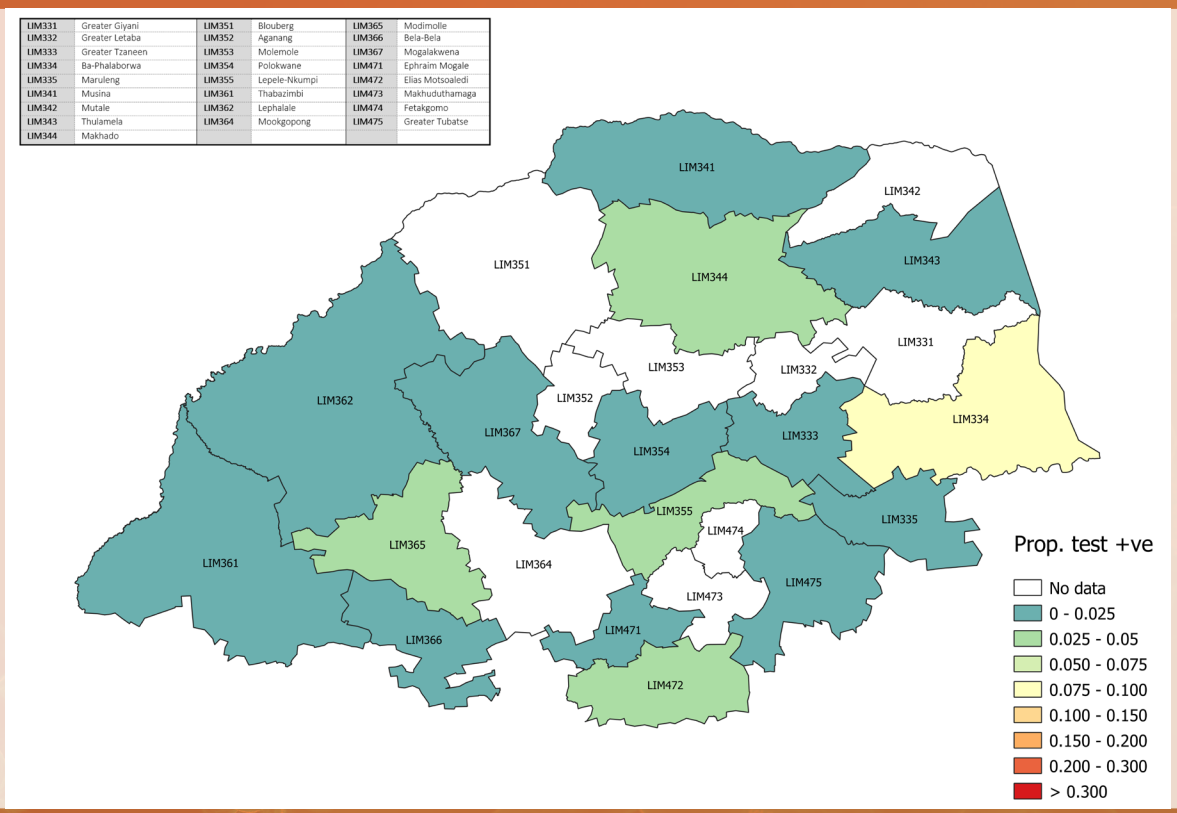

Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 3-9 October 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

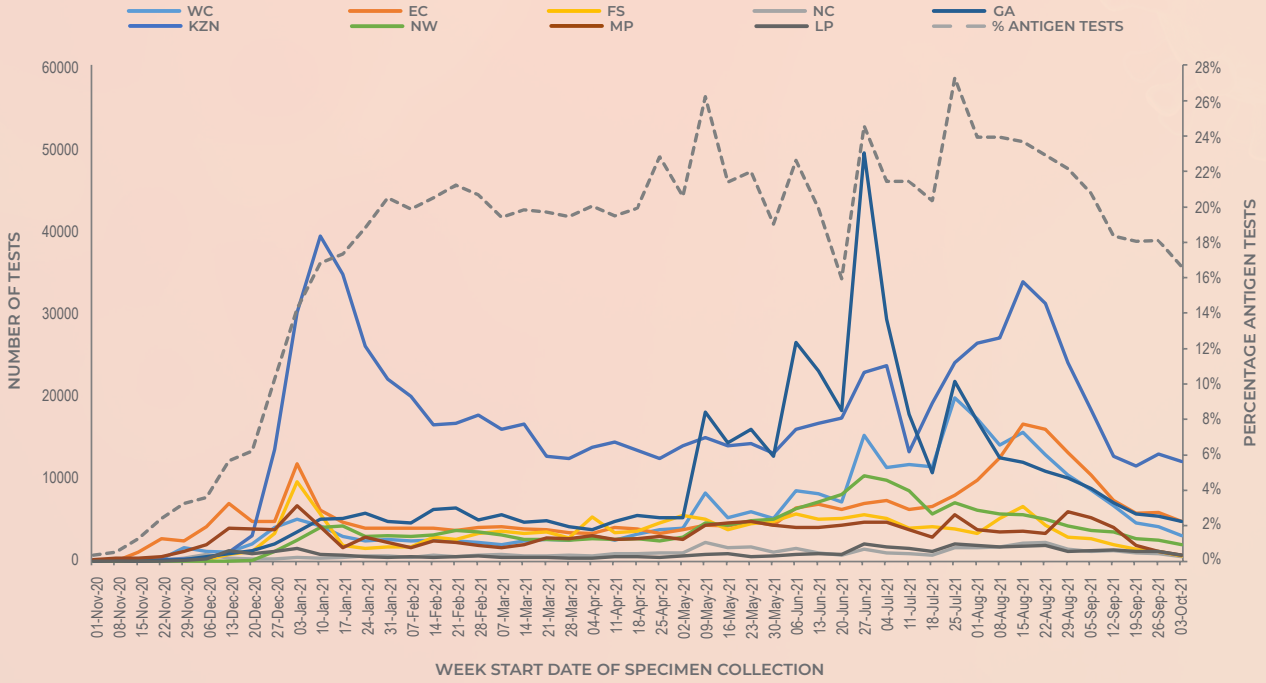

Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 9 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

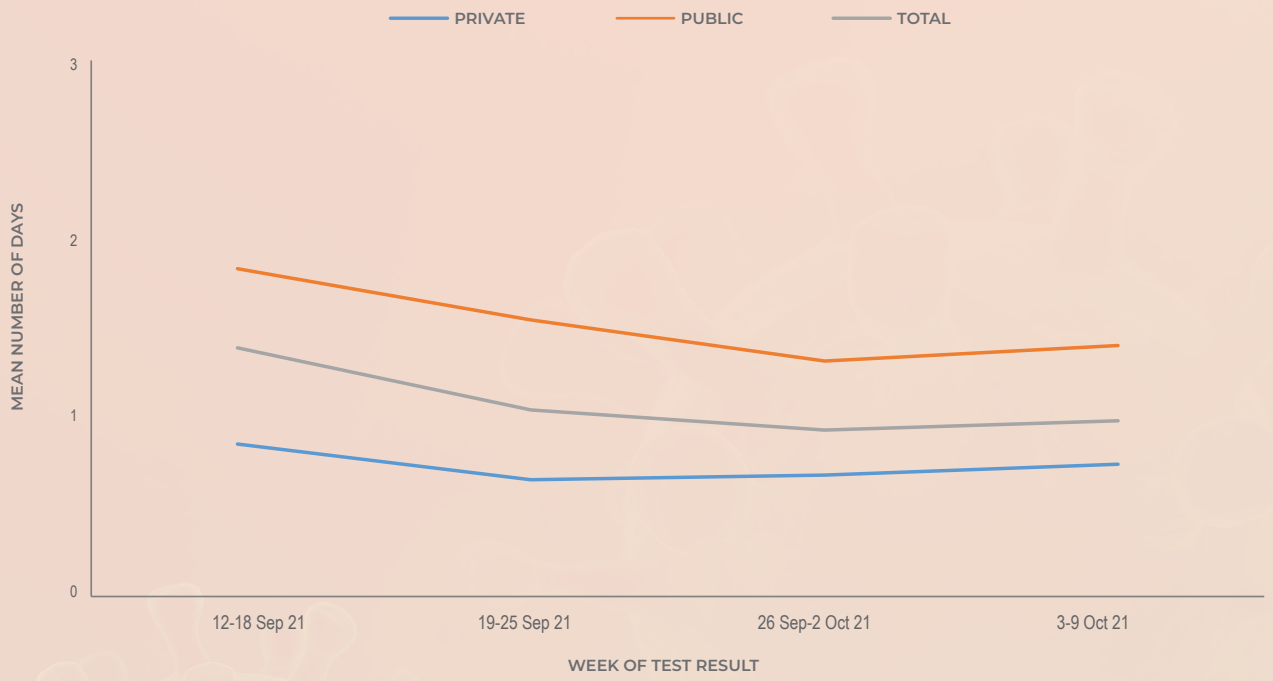

Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 12 September – 9 October 2021

*Excluding Ampath Laboratories for week 37

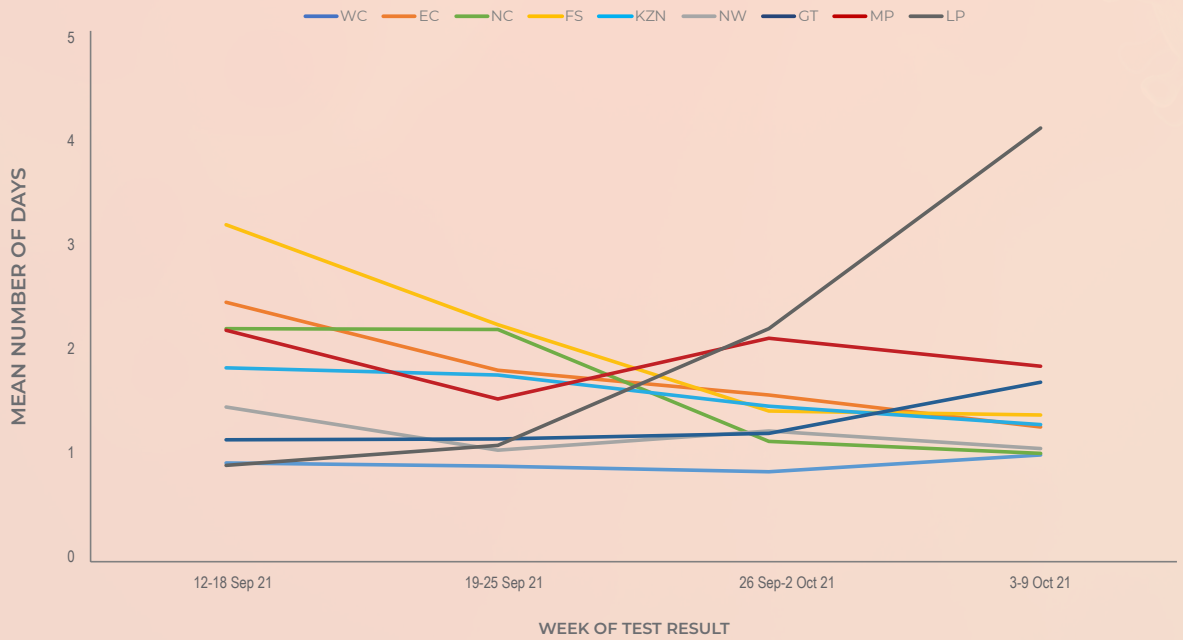

Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 12 September – 9 October 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

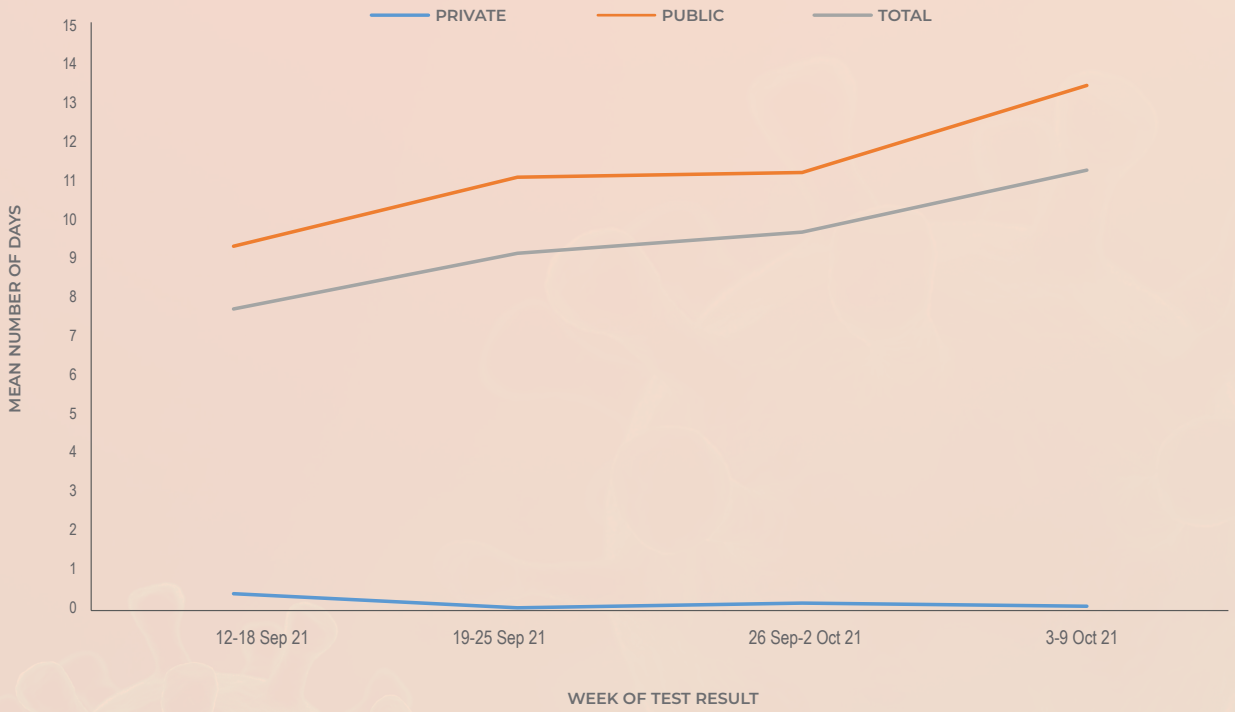

Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 12 September – 9 October 2021

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) hospitalised 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. Testing for SARS-CoV-2 using rapid antigen-based tests was implemented towards the end of October 2020. Results of reported rapid antigen-based tests are included in this report, however data are incomplete and efforts are ongoing to improve data completeness.

Test results were automatically fed into a data warehouse after result authorisation. We excluded specimens collected outside South Africa and duplicate entries of the same test for an individual. From week 48 of 2020 onwards, test data were reported from the Notifiable Medical Conditions Surveillance System (NMCSS). Date of specimen receipt in the laboratory was used when date of specimen collection was missing. Proportion testing positive (PTP) was calculated as the number of positive tests/total number of tests and presented as percentage by multiplying with 100. We used 2020 mid-year population estimates from Statistics South Africa to calculate the testing rate, expressed as tests per 100,000 persons. 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, with a P-value<0.05 considered statistically significant.

Health district and sub-district (in the metros) level results were mapped based on geo-locatable public (almost every public sector facility in the country) and private (approximately 84% of private testing facilities) sector testing facilities. Estimates of overall prevalence were derived using regression techniques. Estimates were adjusted to produce district-specific positive test prevalences based on the national average age and sex profile of testing for that week. This adjustment allows more accurate comparison of the proportion testing positive across districts. Districts with fewer than 20 tests reported during the week have been excluded from the analysis.

Limitations

- A backlog in testing of samples by laboratories affects the reported number of tests. 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, PCR vs. antigen-based tests or prioritisation of severe or at-risk cases during epidemic waves) used by different provinces makes percentage testing positive and number of reported tests difficult to interpret and compare.
- Health district and sub-district level were mapped based on the testing facility and not place of residence.
- Patient admission status was categorised based on the reported patient facility and may not reflect whether the patient was actually admitted to hospital.
- Antigen tests may be underestimated as they are used in a number of different settings and results may not be reported.