

COVID-19 TESTING SUMMARY



NATIONAL INSTITUTE FOR
COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

SOUTH AFRICA WEEK 37 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 18 September 2021 (Week 37 of 2021).

HIGHLIGHTS

- The number of tests reported in week 37 of 2021 (n=238,423) was the lowest weekly number of tests reported since May 2021.
- In week 37 the testing rate decreased in all provinces, and was highest in the Northern Cape (682 per 100,000 persons) and lowest in Limpopo (78 per 100,000 persons).
- In week 37 the percentage testing positive was 9.2%, which was 4.1% lower than the previous week.
- In week 37 compared to the previous week, the percentage testing positive decreased in all provinces.
- The percentage testing positive in week 37 was highest in the Northern Cape (22.3%) Province. The percentage testing positive was between 10% and 15% in the Western Cape, Eastern Cape, Free State and North West provinces, and was less than 10% in KwaZulu-Natal, Gauteng, Mpumalanga and Limpopo provinces.
- The format of the weekly testing report has been simplified, and more detailed reports will be produced at regular intervals.

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Executive Summary:

- In the period 1 March 2020 through 18 September 2021, 17,253,280 tests for SARS-CoV-2 have been reported nationally: 15,008,613 PCR and 2,244,667 antigen tests.
- The number of tests reported in week 37 of 2021 (n=238,423: 199,593 PCR and 38,830 antigen tests) was the lowest weekly number of tests reported since May 2021. Gauteng reported the largest proportion of tests (29.3%), followed by KwaZulu-Natal (21.1%) and Western Cape (16.6%).
- The overall testing rate decreased from 477 per 100,000 persons in week 36 to 400 per 100,000 persons in week 37.
- In week 37 the testing rate decreased in all provinces, and was highest in the Northern Cape (682 per 100,000 persons) and lowest in Limpopo (78 per 100,000 persons).
- The testing rate in week 37 was highest in the ≥ 80 years age group (763 per 100,000 persons).
- In week 37 the percentage testing positive was 9.2%, which was 4.1% lower than the previous week (13.2%, $P < 0.001$).
- In the past week the percentage testing positive decreased by 4.4% in the public sector (15.9% in week 36 to 11.5% in week 37, $P < 0.001$) and by 3.4% in the private sector (10.3% in week 36 to 6.9% in week 37, $P < 0.001$).
- In week 37 compared to the previous week, the percentage testing positive continued to decrease in all provinces.
- The percentage testing positive in week 37 was highest in the Northern Cape (22.3%) Province. The percentage testing positive was between 10% and 15% in the Western Cape, Eastern Cape, Free State and North West provinces, and was less than 10% in KwaZulu-Natal, Gauteng, Mpumalanga and Limpopo provinces.
- The percentage testing positive was highest in individuals aged 15-19 years (12.8%), followed by 10-14 years (12.1%)
- Health sub-districts showing the highest percentage testing positive were concentrated in the Northern Cape (n=14), with four in the Western Cape, three in the North West and two in the Free State.
- Antigen tests accounted for 16.3% (38,830/238,423) of tests reported in week 37, however the number of antigen tests is likely underestimated due to under-reporting and delayed reporting of antigen tests.
- In week 37 the public sector accounted for 73.3% of antigen tests performed. The majority of antigen tests have been reported from KwaZulu-Natal (33.3%) and Gauteng (18.8%) provinces. In the past few weeks KwaZulu-Natal has reported the highest weekly number of antigen tests, although a decrease has been observed in recent weeks.
- The mean turnaround time for PCR tests reported in week 37 was 1.4 days; 1.8 days in the public sector and 0.9 days in the private sector. Turnaround times for public sector PCR tests were > 2 days in the Eastern Cape, Northern Cape, Free State and Mpumalanga provinces in the past week.
- The mean turnaround time for antigen tests reported in week 37 was 9.4 days in the public sector and 0.4 days in the private sector.

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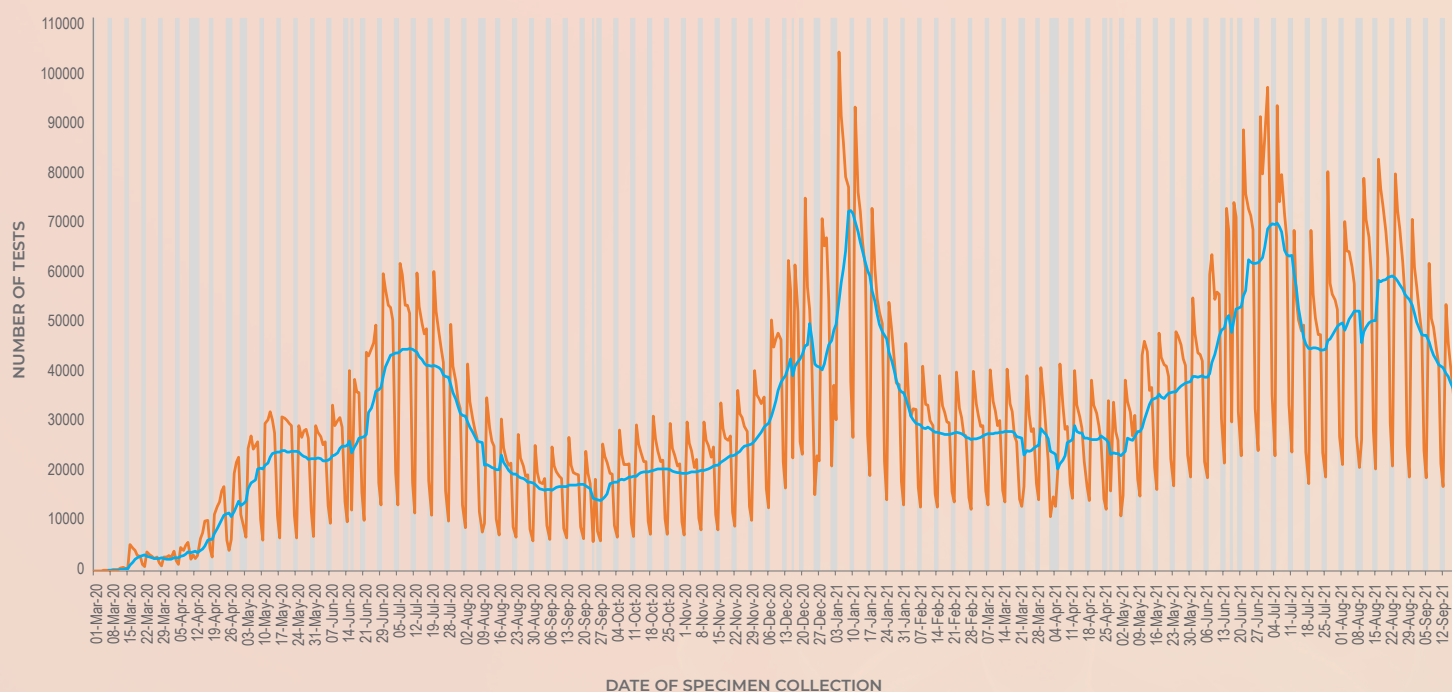


Figure 1. Number of SARS-CoV-2 tests reported by date of specimen collection, South Africa, 1 March 2020 – 18 September 2021. Blue line shows the 7-day moving average of the number of tests reported. Grey bars highlight weekend days and public holidays

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Table 1. Weekly number of SARS-CoV-2 tests and positive tests reported, South Africa, 3 January – 18 September 2021

Week number	Week beginning	No. of tests n (%)	No. of positive tests	Percentage testing positive (%)
1	03-Jan-21	501171 (2.9)	151034	30.1
2	10-Jan-21	417952 (2.4)	104794	25.1
3	17-Jan-21	327387 (1.9)	63257	19.3
4	24-Jan-21	249503 (1.4)	34638	13.9
5	31-Jan-21	203643 (1.2)	22361	11.0
6	07-Feb-21	193279 (1.1)	16469	8.5
7	14-Feb-21	190633 (1.1)	12183	6.4
8	21-Feb-21	184652 (1.1)	10382	5.6
9	28-Feb-21	189427 (1.1)	8686	4.6
10	07-Mar-21	193370 (1.1)	8325	4.3
11	14-Mar-21	185478 (1.1)	8151	4.4
12	21-Mar-21	173001 (1.0)	7351	4.2
13	28-Mar-21	163923 (1.0)	7060	4.3
14	04-Apr-21	180775 (1.0)	7289	4.0
15	11-Apr-21	184605 (1.1)	8844	4.8
16	18-Apr-21	184843 (1.1)	9465	5.1
17	25-Apr-21	159975 (0.9)	9179	5.7
18	02-May-21	193823 (1.1)	13450	6.9
19	09-May-21	239822 (1.4)	19926	8.3
20	16-May-21	248397 (1.4)	24202	9.7
21	23-May-21	262007 (1.5)	29678	11.3
22	30-May-21	269852 (1.6)	35960	13.3
23	06-Jun-21	335186 (1.9)	58830	17.6
24	13-Jun-21	366003 (2.1)	86628	23.7
25	20-Jun-21	428062 (2.5)	116679	27.3
26	27-Jun-21	483080 (2.8)	143761	29.8
27	04-Jul-21	437864 (2.5)	139294	31.8
28	11-Jul-21	315400 (1.8)	99238	31.5
29	18-Jul-21	307477 (1.8)	86715	28.2
30	25-Jul-21	342945 (2.0)	86691	25.3
31	01-Aug-21	361816 (2.1)	86313	23.9
32	08-Aug-21	348415 (2.0)	81689	23.4
33	15-Aug-21	409809 (2.4)	93409	22.8
34	22-Aug-21	380411 (2.2)	76720	20.2
35	29-Aug-21	327397 (1.9)	53610	16.4
36	05-Sep-21	284678 (1.6)	37616	13.2
37	12-Sep-21	238423 (1.4)	21822	9.2
Total		17,253,280 (100.0)	3,066,609	

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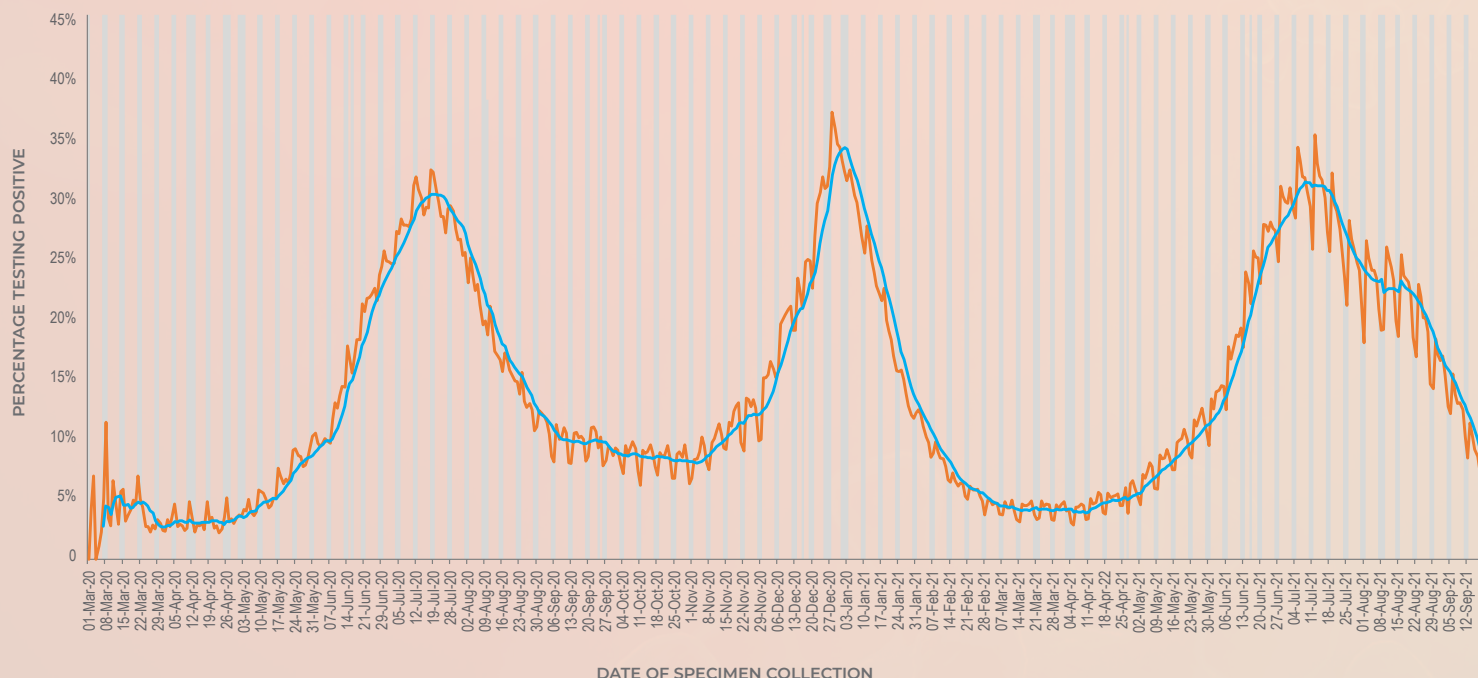


Figure 2. Percentage of tests positive for SARS-CoV-2 by date of specimen collection, South Africa, 1 March 2020 – 18 September 2021. Blue line shows the 7-day moving average of the percentage testing positive. Grey bars highlight weekend days and public holidays.

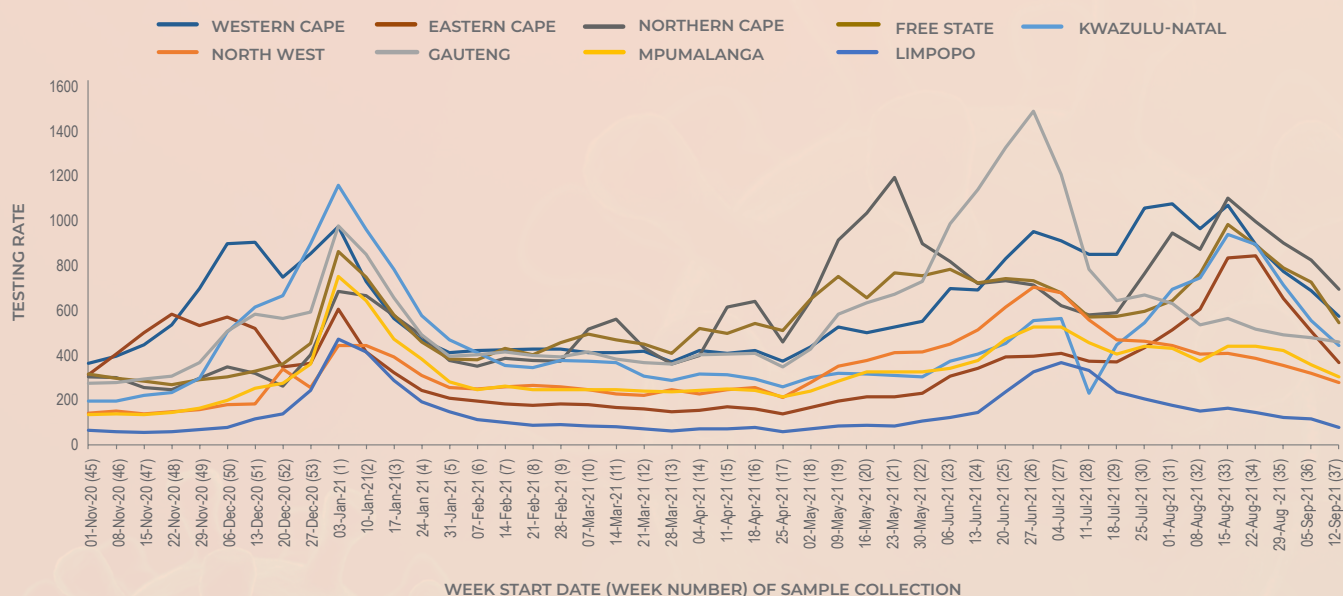


Figure 3. Testing rate per 100,000 persons by province and week of specimen collection, South Africa, 1 November 2020 – 18 September 2021

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Table 2. Weekly number of tests and positive tests reported by province, South Africa, 29 August – 18 September 2021

Province	Population ^a	29 Aug – 4 Sep 2021		5-11 Sep 2021		12-18 Sep 2021		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	7005741	53284	11063 (20.8)	47448	7611 (16.0)	39482	4383 (11.1)	564	-4.9%
Eastern Cape	6734001	43232	8658 (20.0)	33556	6189 (18.4)	24323	3123 (12.8)	361	-5.6%
Northern Cape	1292786	11462	3052 (26.6)	10502	2673 (25.5)	8815	1970 (22.3)	682	-3.1%
Free State	2928903	22735	4952 (21.8)	20971	3914 (18.7)	15744	2318 (14.7)	538	-3.9%
KwaZulu-Natal	11531628	80849	15209 (18.8)	62917	9247 (14.7)	50278	4990 (9.9)	436	-4.8%
North West	4108816	14331	2456 (17.1)	12939	1857 (14.4)	11238	1128 (10.0)	274	-4.3%
Gauteng	15488137	75019	4737 (6.3)	73132	3639 (5.0)	69969	2558 (3.7)	452	-1.3%
Mpumalanga	4679786	19460	2575 (13.2)	16444	1815 (11.0)	14005	1098 (7.8)	299	-3.2%
Limpopo	5852553	7002	904 (12.9)	6745	670 (9.9)	4554	253 (5.6)	78	-4.4%
Unknown		23	4 (17.4)	24	1 (4.2)	15	1 (6.7)		
Total	59622350	327397	53610 (16.4)	284678	37616 (13.2)	238423	21822 (9.2)	400	-4.1%

^a 2020 Mid-year population Statistics SA

^b Current week compared to previous week

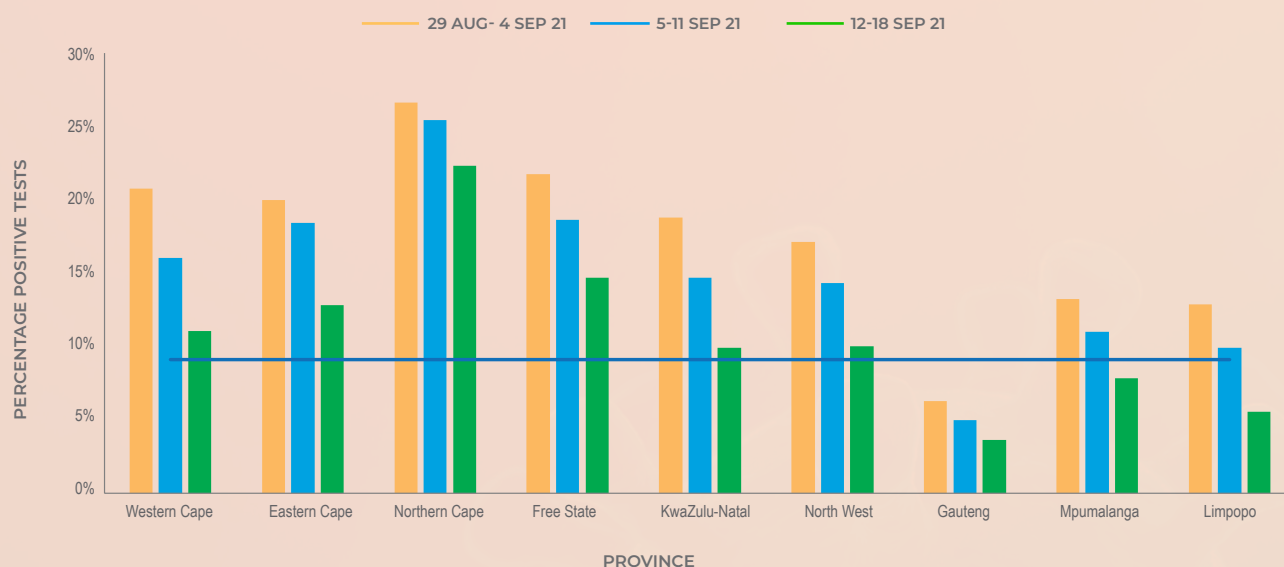


Figure 4. Weekly percentage testing positive by province, South Africa, 29 August – 18 September 2021. The horizontal blue line shows the national mean for week 37, beginning 12 September 2021

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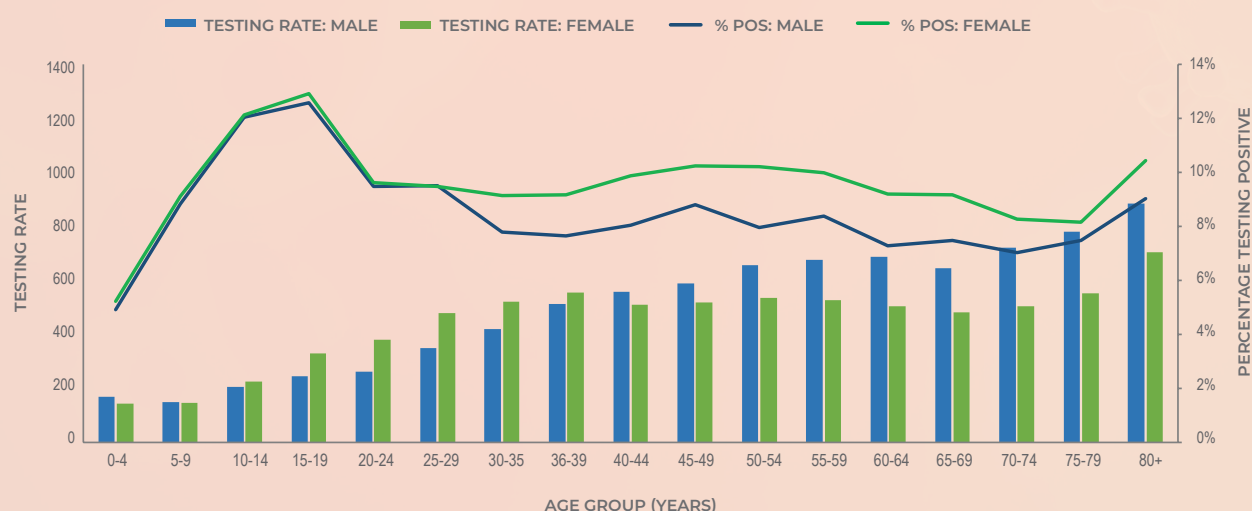


Figure 5. Testing rates per 100,000 persons and percentage testing positive by age group and sex, South Africa, week 37, 12-18 September 2021

Table 3. Health sub-districts with the highest proportion testing positive based on public and private sector data for the week of 12-18 September 2021

Health district or sub-district	Province	PTP (95% CI)	Previous week
Cederberg	Western Cape	0.327 (0.241-0.412)	0.346 (0.278-0.415)
Maquassi Hills	North West	0.319 (0.278-0.360)	0.352 (0.316-0.388)
Kamiesberg	Northern Cape	0.310 (0.202-0.418)	0.215 (0.151-0.278)
Great Kei	Eastern Cape	0.306 (0.200-0.413)	0.204 (0.142-0.266)
Ga-Segonyana	Northern Cape	0.306 (0.249-0.363)	0.304 (0.254-0.354)
Masilonyana	Free State	0.306 (0.203-0.408)	0.249 (0.145-0.352)
Hantam	Northern Cape	0.301 (0.245-0.356)	0.297 (0.252-0.343)
Kareeberg	Northern Cape	0.300 (0.173-0.428)	0.469 (0.341-0.596)
Bitou	Western Cape	0.299 (0.251-0.346)	0.325 (0.282-0.369)
Letsemeng	Free State	0.296 (0.173-0.420)	0.258 (0.191-0.324)
Tsantsabane	Northern Cape	0.289 (0.217-0.362)	0.265 (0.217-0.312)
Camagara	Northern Cape	0.288 (0.250-0.325)	0.283 (0.248-0.318)
Nama Khoi	Northern Cape	0.282 (0.246-0.318)	0.263 (0.234-0.292)
Siyathemba	Northern Cape	0.279 (0.226-0.332)	0.288 (0.231-0.344)
Greater Taung	North West	0.278 (0.183-0.373)	0.396 (0.272-0.520)
Kai Garib	Northern Cape	0.275 (0.214-0.335)	0.398 (0.335-0.462)
Joe Morolong	Northern Cape	0.272 (0.197-0.347)	0.243 (0.180-0.306)
Ubuntu	Northern Cape	0.270 (0.153-0.387)	0.430 (0.329-0.531)
Richtersveld	Northern Cape	0.267 (0.192-0.343)	0.189 (0.131-0.248)
Ezingoleni	KwaZulu-Natal	0.267 (0.151-0.384)	0.187 (0.087-0.288)
Ratlou	North West	0.263 (0.151-0.374)	0.400 (0.272-0.527)
Swellendam	Western Cape	0.260 (0.203-0.317)	0.203 (0.154-0.251)
Hessequa	Western Cape	0.253 (0.197-0.310)	0.301 (0.249-0.354)
Siyancuma	Northern Cape	0.251 (0.201-0.301)	0.228 (0.177-0.280)
Magareng	Northern Cape	0.242 (0.163-0.321)	0.321 (0.248-0.393)

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.

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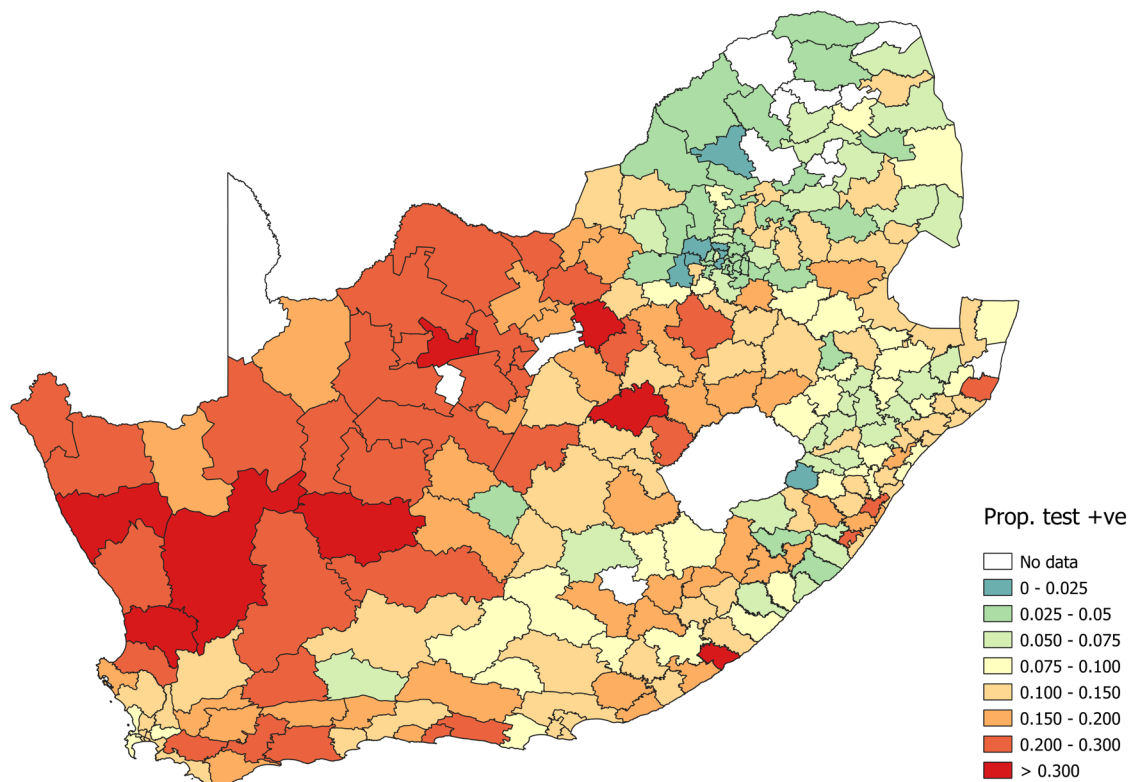


Figure 6. Proportion testing positive by health sub-district in South Africa for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

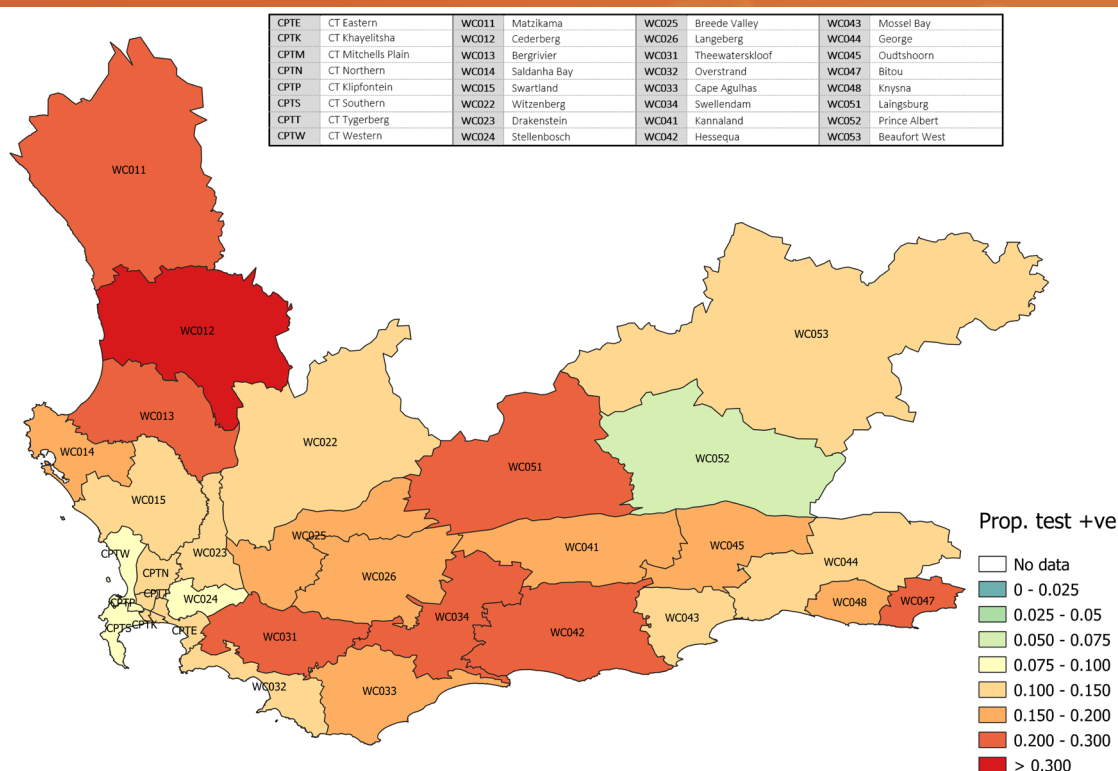


Figure 7. Proportion testing positive by health sub-district in the Western Cape Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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BUF	Buffalo City	EC122	Mnquma	EC135	Intsika Yethu	EC155	Nyandereni
EC101	Camdeboo	EC123	Great Kei	EC136	Emalahleni	EC156	Mhlontlo
EC102	Blue Crane Route	EC124	Amahlathi	EC137	Engobo	EC157	Xing Sabata Dalindyebo
EC103	Ikwedi	EC126	Ngqushwa	EC138	Sakhisizwe	EC441	Matatiele
EC104	Makana	EC127	Nkonkobe	EC141	Ehundi	EC442	Umtzimvubu
EC105	Ndlambe	EC128	Nxuba	EC142	Senqu	EC443	Mbizana
EC106	Sundays River Valley	EC131	Inxuba Yethemba	EC143	Maletswai	EC444	Ntabankulu
EC107	Baviaans	EC132	Tsolwana	EC144	Gariep	NMAA	Nelson Mandela Bay A
EC108	Kogga	EC133	Inkwanca	EC153	Nquthu Hill	NMAB	Nelson Mandela Bay B
EC109	Kou-Famma	EC134	Lukani	EC154	Port St Johns	NMAC	Nelson Mandela Bay C
EC121	Mthashe						

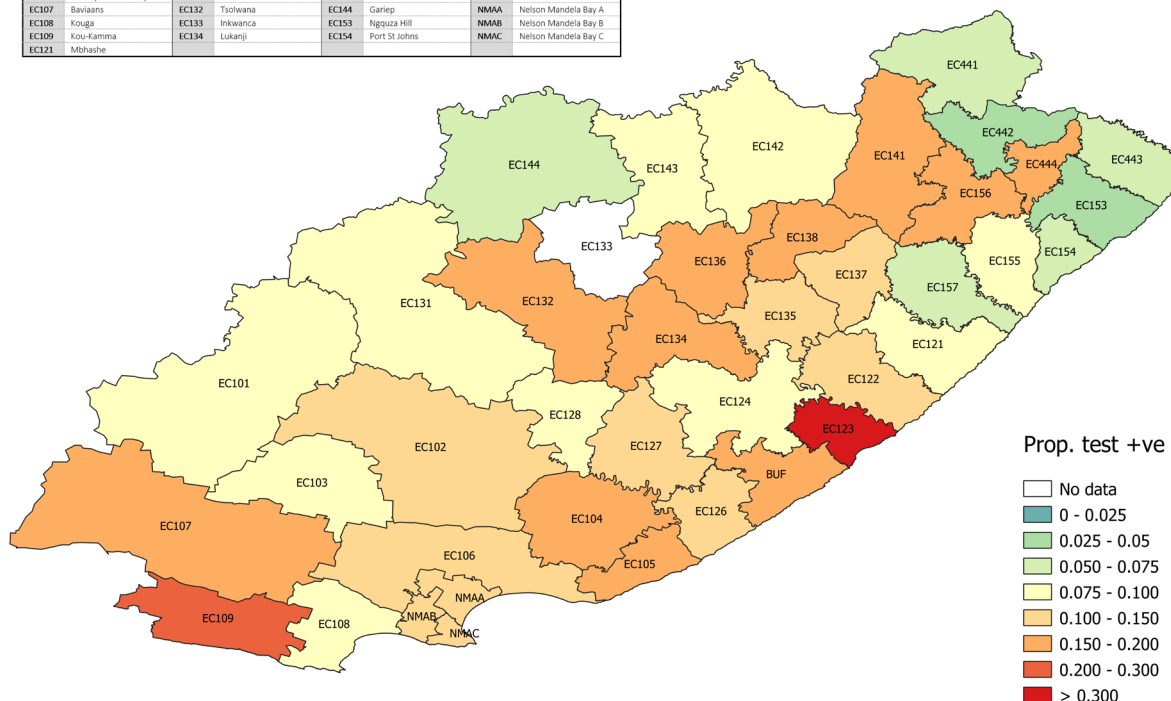


Figure 8. Proportion testing positive by health sub-district in the Eastern Cape Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

NC061	Richtersveld	NC074	Kareeberg	NC085	Tsantabane
NC062	Nama Khoi	NC075	Renosterberg	NC086	Igalatlopele
NC064	Kamiesberg	NC076	Themboshile	NC091	Sol Plaatje
NC065	Hartam	NC077	Sydenhamb	NC092	Okapietong
NC066	Karoo Hoogland	NC078	Siyancuma	NC093	Magareng
NC067	Khâ-Ma	NC081	Miller	NC094	Phokwana
NC071	Ukuma	NC082	Kai Ikarib	NC451	Sie Morosong
NC072	Umsotomvu	NC083	//Kharas Hais	NC452	Ga-Segonyana
NC073	Emtharjeni	NC084	Ikheis	NC453	Gamagara

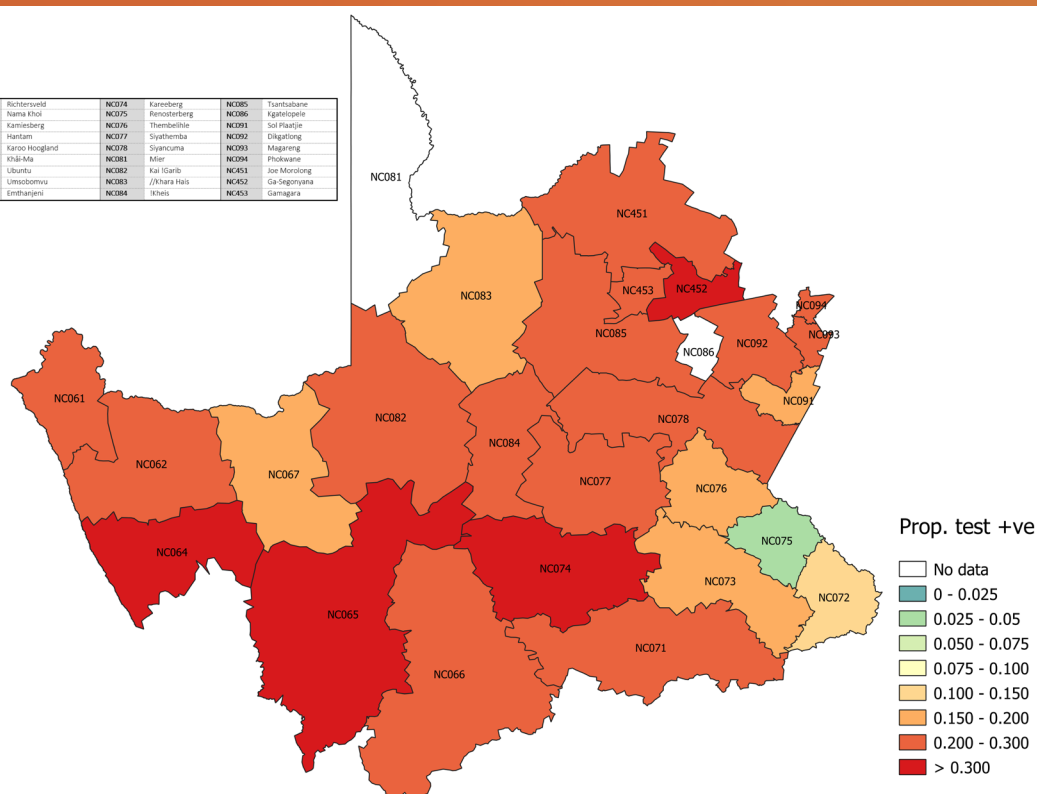


Figure 9. Proportion testing positive by health sub-district in Northern Cape Province for the week of 12-18 September. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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

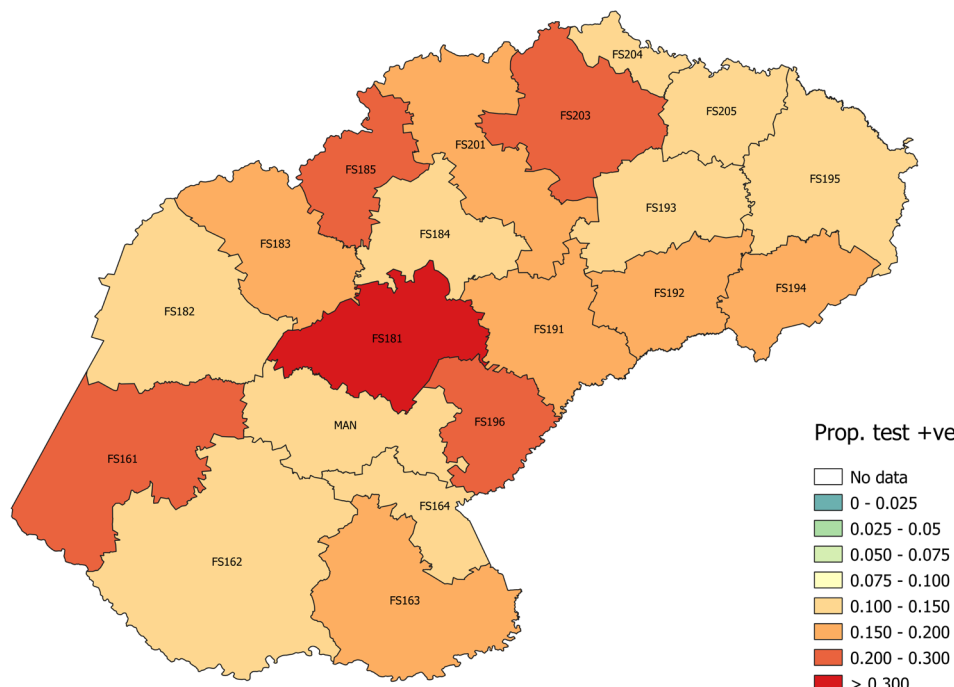


Figure 10. Proportion testing positive by health sub-district in Free State Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

ETHN	eThekweni North	KZN233	Indaka	KZN273	The Big 5 False Bay
ETHS	eThekweni South	KZN234	Umtshazi	KZN274	Hlabisa
ETHS	eThekweni South	KZN235	Okhahlamba	KZN275	Mtubatuba
ETHW	eThekweni West	KZN236	Imbabazane	KZN281	Mfotzi
KZN211	Vulamehlo	KZN241	Endumeni	KZN282	uMkhathuze
KZN212	Umdoni	KZN242	Nqutu	KZN283	Ntambanana
KZN213	Umtsheni	KZN244	Mzinga	KZN284	uMhlali
KZN214	uMuzwabantu	KZN245	Umvoti	KZN285	Mthonjaneni
KZN215	Ezingweni	KZN252	Newcastle	KZN286	Nkandla
KZN216	Hibiscus Coast	KZN253	Emadlangeni	KZN291	Mandeni
KZN221	uMshwathi	KZN254	Dannhauser	KZN292	KwaDukuza
KZN222	uMngeni	KZN261	eDumbe	KZN293	Nolwede
KZN223	Mporofana	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	Umlabuyalingana	KZN434	Ubuhlebezwe
KZN232	Ennambithi/Ladysmith	KZN272	Jozini	KZN435	Umpikmthulu

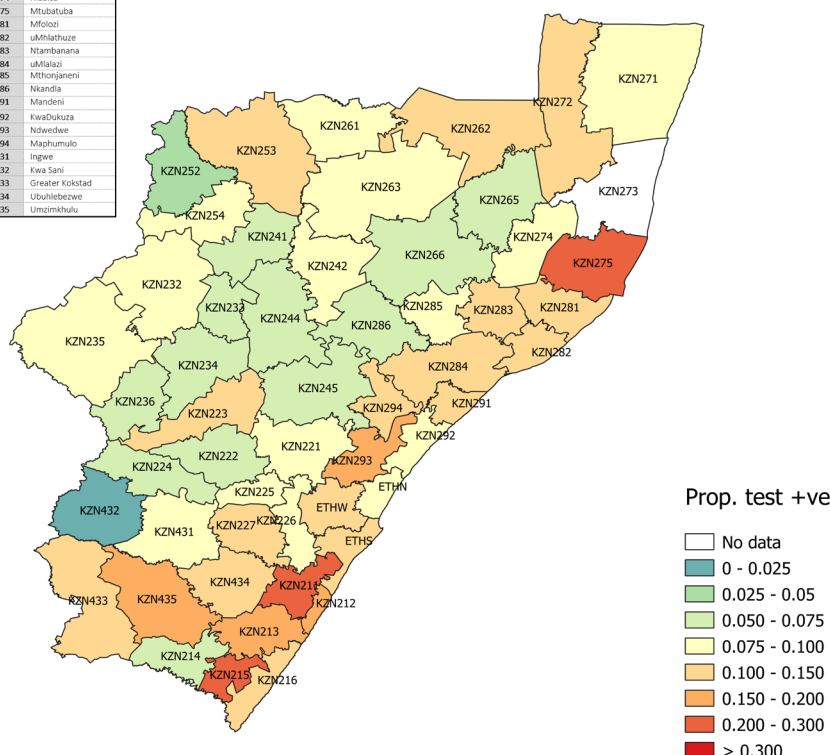


Figure 11. Proportion testing positive by health sub-district in KwaZulu-Natal Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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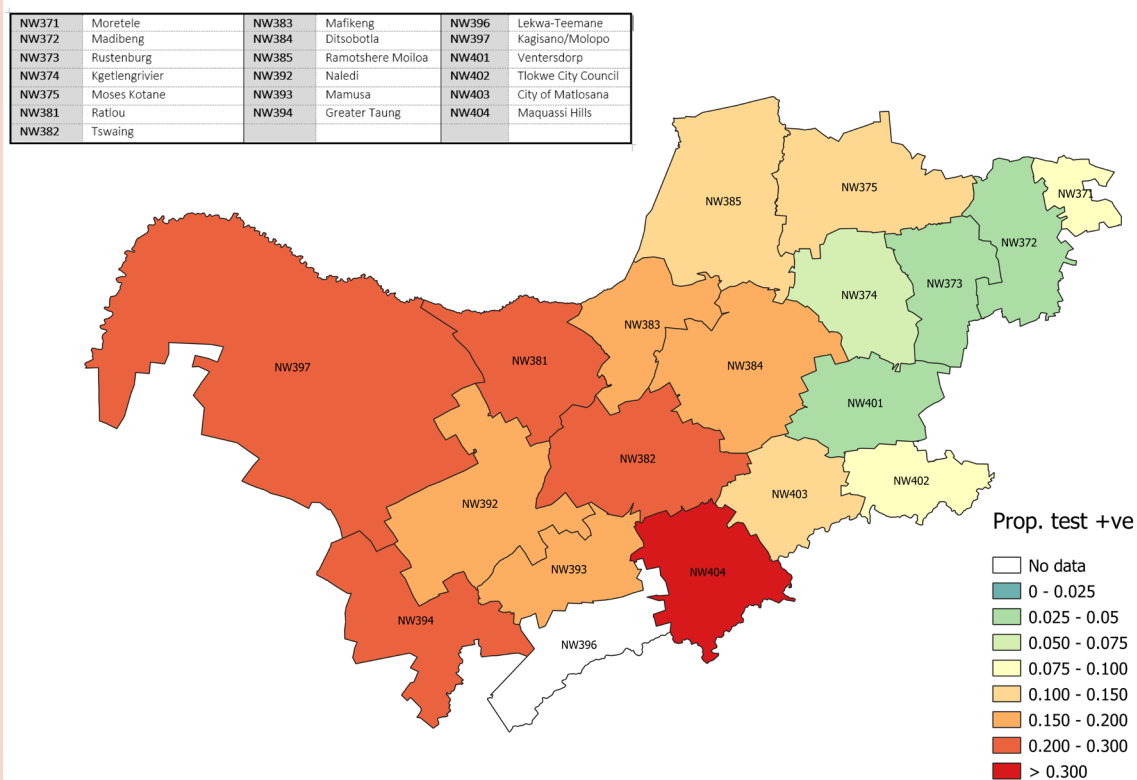


Figure 12. Proportion testing positive by health sub-district in North West Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

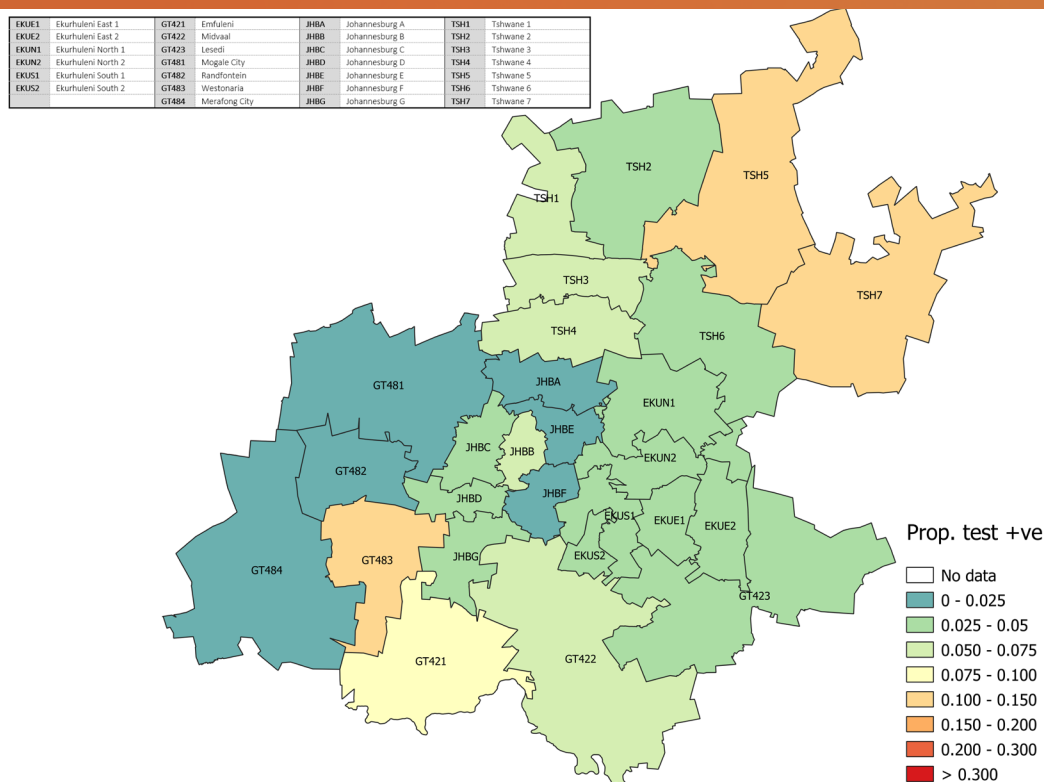


Figure 13. Proportion testing positive by health sub-district in Gauteng Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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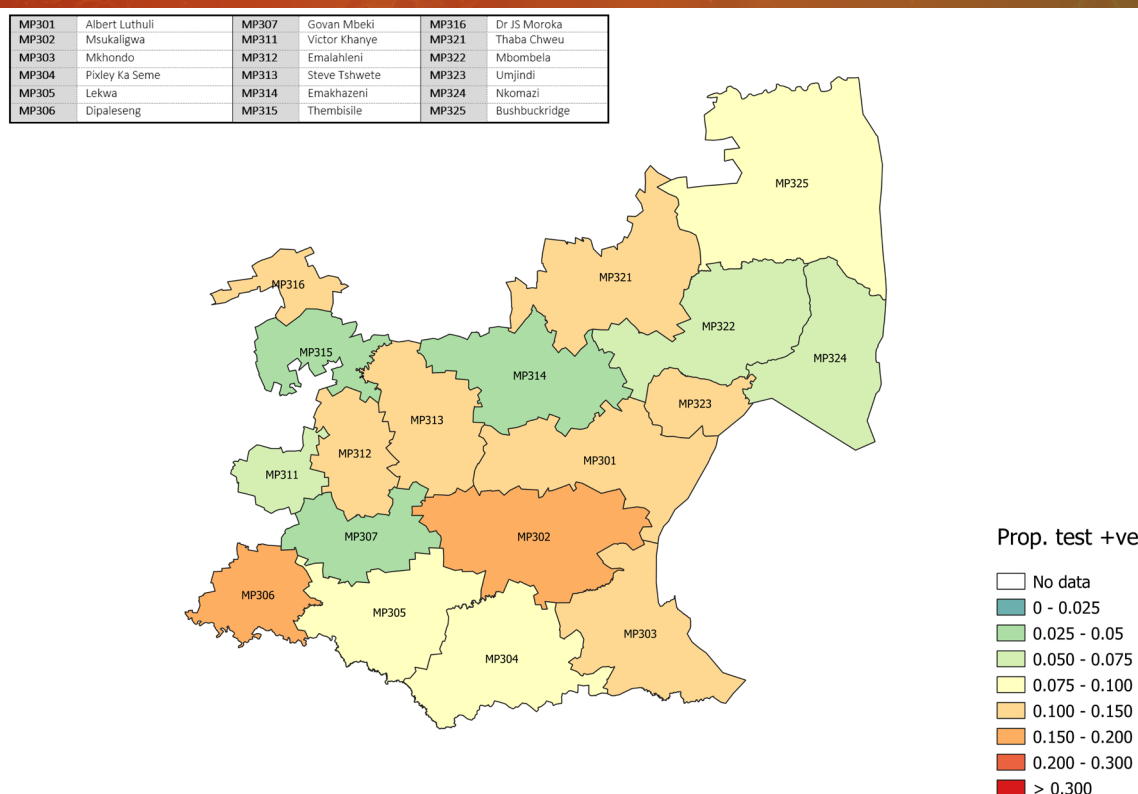


Figure 14. Proportion testing positive by health sub-district in Mpumalanga Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

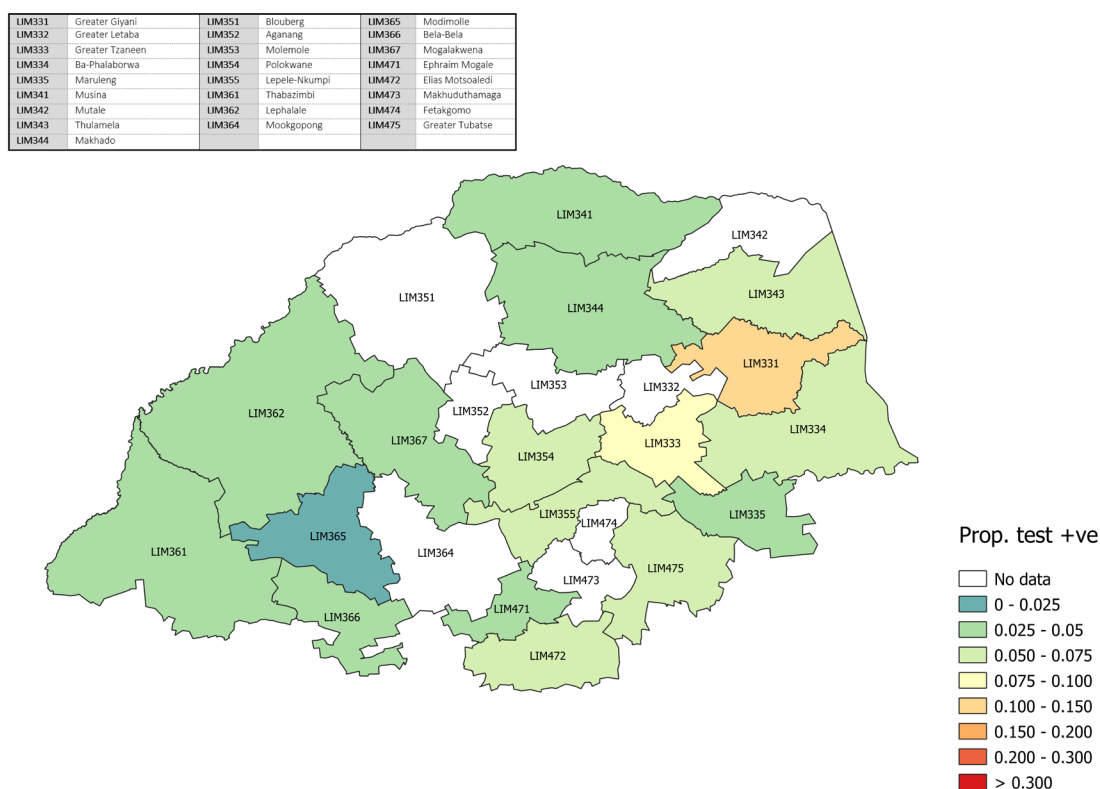


Figure 15. Proportion testing positive by health sub-district in Limpopo Province for the week of 12-18 September 2021. Areas shaded white represent districts in which either (i) no tests were reported (ii) all tests were negative or (iii) the confidence interval exceeded 30%.

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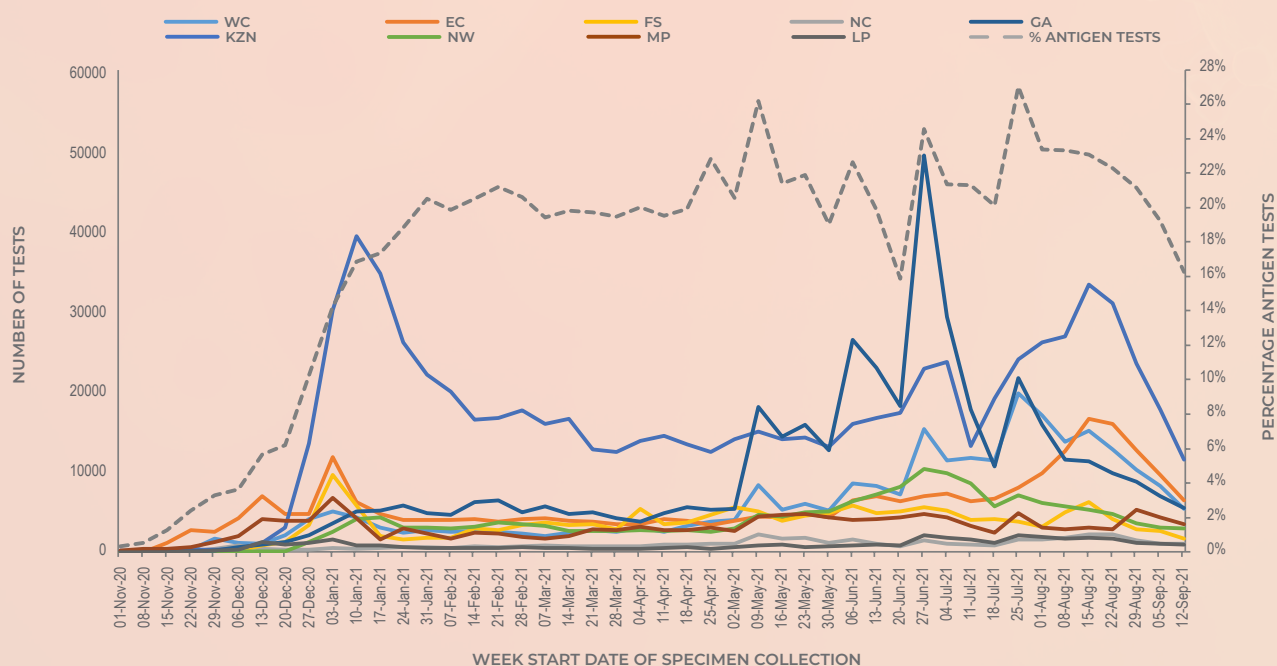


Figure 16. Number of antigen tests by province and overall percentage antigen tests, South Africa, 1 November 2020 – 18 September 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GA Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

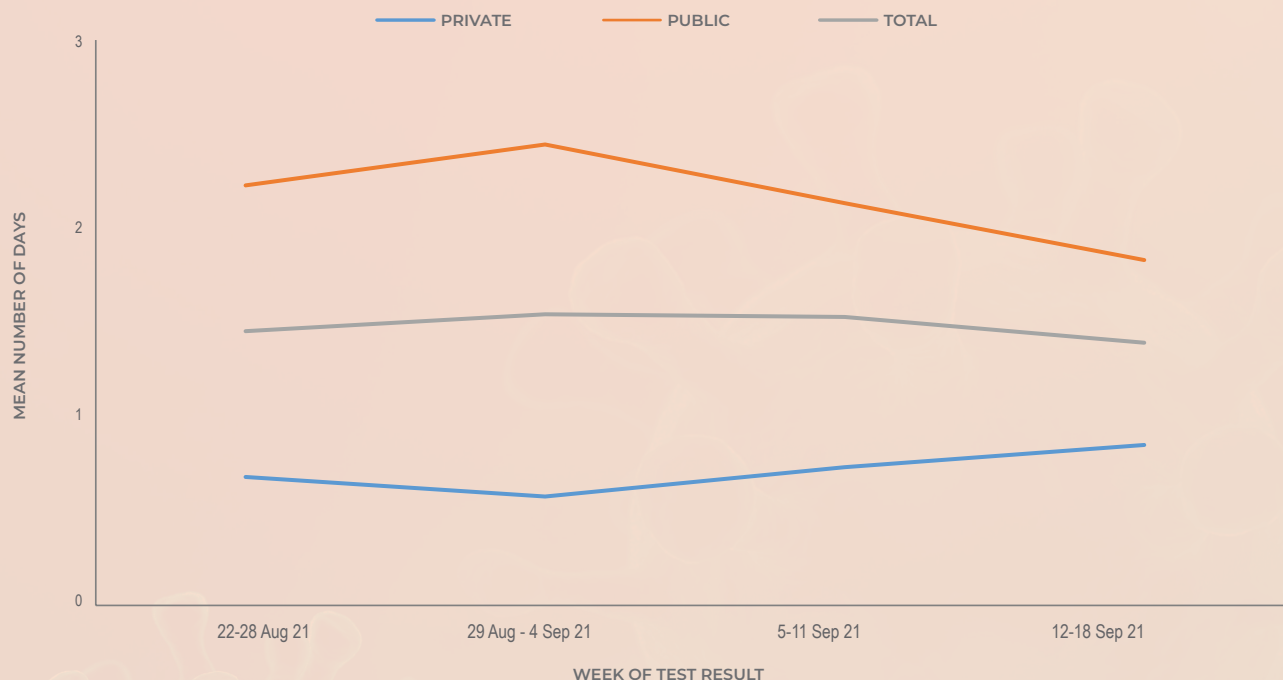


Figure 17. Mean number of days between date of specimen collection and date of test result for PCR tests by week of test result, South Africa, 22 August – 18 September 2021

*Excluding Ampath Laboratories

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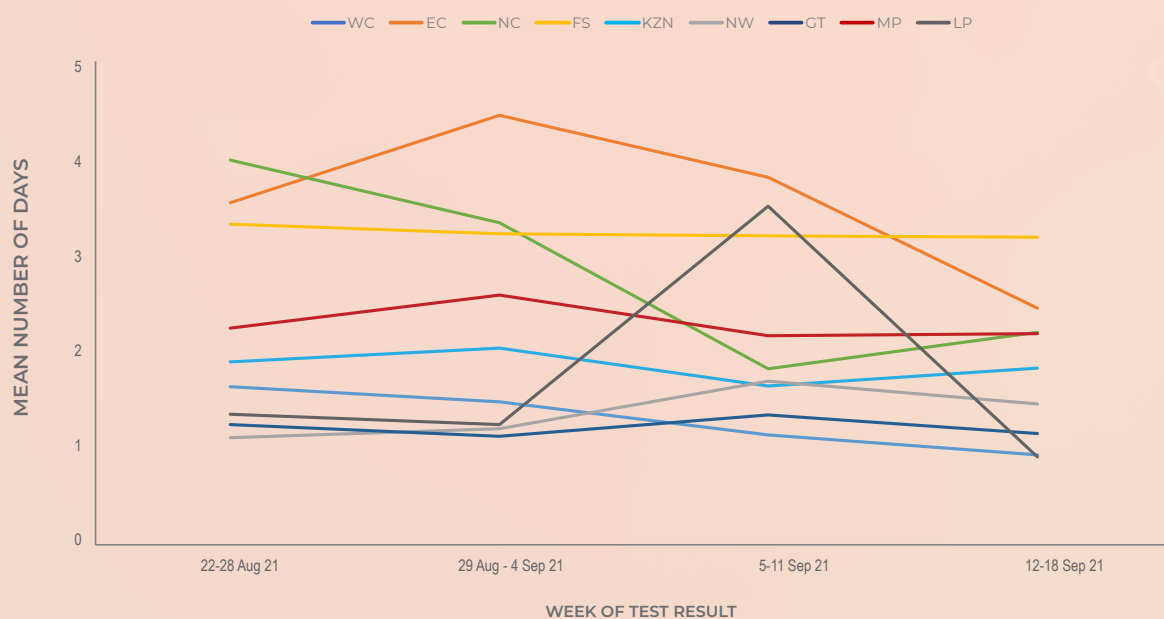


Figure 18. Mean number of days between date of specimen collection and date of test result for PCR tests in the public sector by week of test result and province, South Africa, 22 August – 18 September 2021. WC Western Cape; EC Eastern Cape; FS Free State; KZN KwaZulu-Natal; GT Gauteng; NC Northern Cape; NW North West; MP Mpumalanga; LP Limpopo

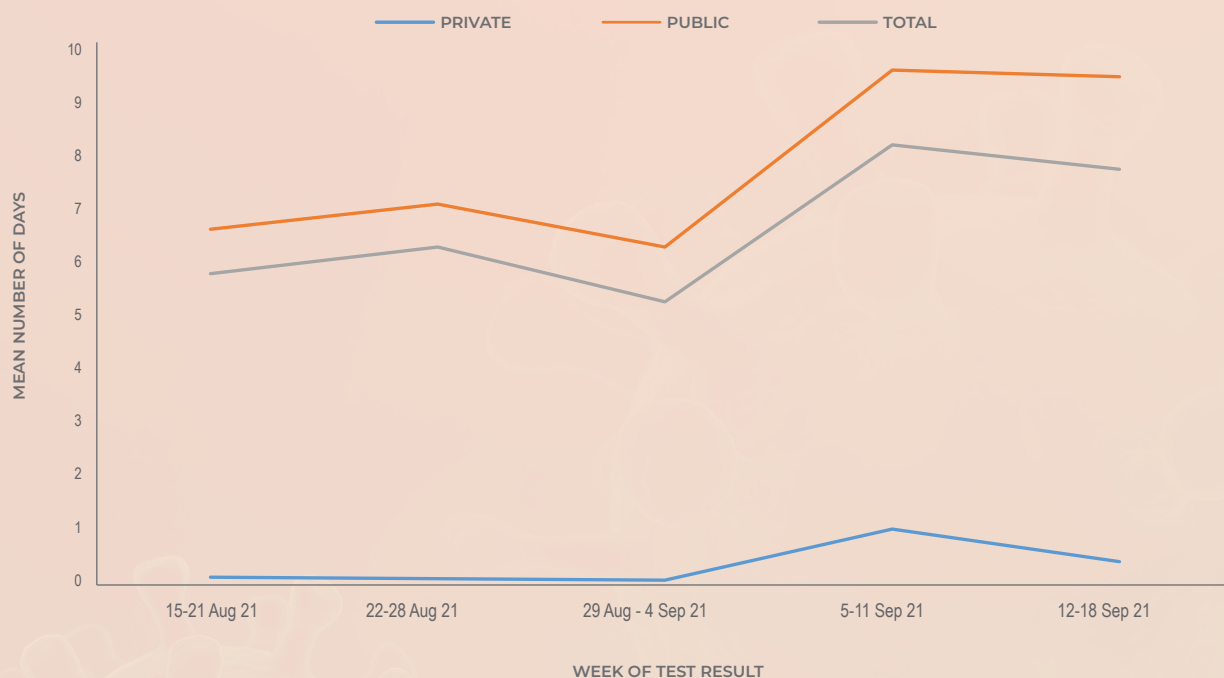


Figure 19. Mean number of days between date of specimen collection and date of test result for antigen tests by week of test result, South Africa, 15 August – 18 September 2021

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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) 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 85% 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.