COVID-19 WEEKLY EPIDEMIOLOGY BRIEF
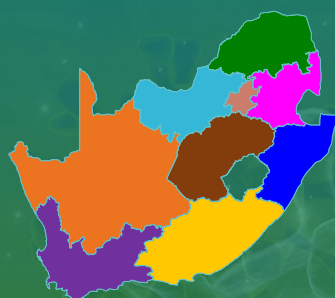
SOUTH AFRICA WEEK **46** 2021

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

CUMULATIVE DATA FROM

03 MARCH 2020 ▶ **20** NOVEMBER 2021

CASES

2 929 862 IN TOTAL

3 460 THIS WEEK**

PERSONS

4 914,0 INCIDENCE RISK*

39 MEDIAN AGE

PROVINCES AT A GLANCE

LIMPOPO
CASES 122 450 IN TOTAL — 2 092,2 /100,000*

NORTH WEST
CASES 151 038 IN TOTAL — 3 675,9 /100,000*

GAUTENG
CASES 923 379 IN TOTAL — 5 961,8 /100,000*

NORTHERN CAPE
CASES 92 997 IN TOTAL — 7 193,5 /100,000*

MPUMALANGA
CASES 152 395 IN TOTAL — 3 256,5 /100,000*

WESTERN CAPE
CASES 514 453 IN TOTAL — 7 343,3 /100,000*

KWAZULU-NATAL
CASES 516 470 IN TOTAL — 4 478,7 /100,000*

EASTERN CAPE
CASES 292 686 IN TOTAL — 4 346,4 /100,000*

FREE STATE
CASES 163 994 IN TOTAL — 5 599,2 /100,000*

* **Incidence risk** - cases per 100 000 persons
** based on samples collected/received in current reporting week

SUMMARY

Overview of report

Disease surveillance is a core function of the National Institute for Communicable Diseases (NICD), a division of the National Health Laboratory Service (NHLS). This report summarises data from a national laboratory-based surveillance system that is used to monitor the coronavirus disease 2019 (COVID-19) pandemic, caused by the SARS-CoV-2 virus, in South Africa. This report is based on data collected up to 20 November 2021 (week 46 of 2021). Note: Trends in numbers of new cases by province and age group may be affected by changes in testing practice and delays in testing of specimens and numbers are updated weekly as new data become available. The methods and data sources can be found at the end of the report. As of week 36 of 2021, the format of this report has been simplified, more detailed reports will be produced at regular interval.

Highlights

- As of 20 November 2021, a total of 2 929 862 laboratory-confirmed COVID-19 cases had been detected in South Africa. Of these, 3 923 were cases reported since the last report (week 45 of 2021). There was a 89.9% increase in the number of new cases detected in week 46 of 2021 (3 460) compared to the number of new cases detected in week 45 of 2021 (1 822).

- In the past week, the Gauteng Province reported the highest number of cases detected (2 326/3 460, 67.2%), and other provinces reported below 10% of all reported cases each.

- In the past week, four provinces, Gauteng, North West, Mpumalanga and Limpopo reported an increase in weekly incidence risk, and other provinces reported a decrease, compared to the previous week. The increase ranged from 0.5 cases per 100 000 persons (69.2% increase) in Limpopo Province to 11.1 cases per 100 000 persons (282.6% increase) in the Gauteng Province. Some of the reductions in weekly incidence risk maybe due to delayed reporting or decrease in testing.

- The increase in incidence risk in Gauteng, North West and Mpumalanga is linked to a cluster of cases in university students at Tshwane Institute of Technology. The cluster is currently being investigated and control measures implemented.

- In the past week, the Gauteng Province reported the highest weekly incidence risk (15.0 cases per 100 000 persons), followed by Northern Cape Province (10.4 cases per 100 000 persons), and other provinces reported below 5 cases per 100 000 persons.

- The highest weekly incidence risk among cases detected in week 46 of 2021 was reported in the 20-24-year age group (9.7 cases per 100 000 persons), and the lowest weekly incidence risk was in the 0-4-year age group (1.4 cases per 100 000 persons).

INCIDENCE RISK FOR CURRENT WEEK

5,8

CASES PER 100 000 PERSONS

67,2%

OF CASES REPORTED IN GAUTENG IN CURRENT WEEK

IN CURRENT WEEK, THE HIGHEST WEEKLY INCIDENCE RISK WAS IN CASES AGED 20-24 YEARS (9,7 CASES PER 100 000 PERSONS)
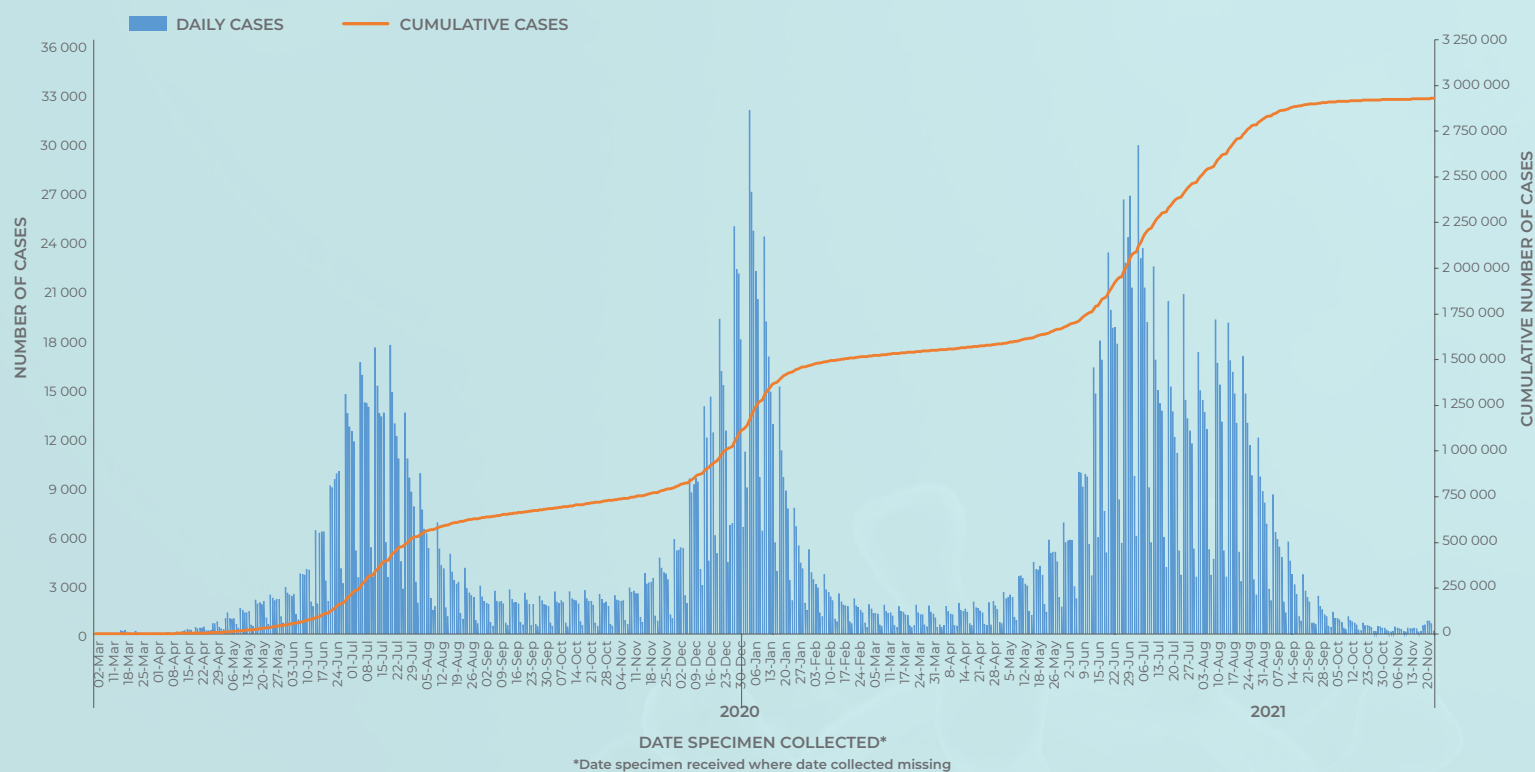
Figure 1. Number and cumulative number of laboratory-confirmed cases of COVID-19 by date of specimen collection, South Africa, 3 March 2020 –20 November (n=2 929 862)

Table 1. Number and cumulative/weekly incidence risk of laboratory-confirmed cases of COVID-19 and testing per 100 000 persons by province, South Africa, 3 March 2020 –20 November 2021 (n=2 929 862)

Province	Cumulative cases (n) (percentage, n/ total cases in South Africa)	New cases[1] detected in week 46 (14-20 Nov 2021), n (percentage[2], n/total)	Population in mid-2020[3], n	Cumulative incidence risk (cases per 100 000 persons)	Incidence risk of new cases detected in week 46 of 2021 (cases/100 000 persons)	Tests[4] per 100 000 persons, 14-20 Nov 2021
Eastern Cape	292 686 (10.0)	93	6 734 001	4 346.4	93 (2.7)	237.0
Free State	163 994 (5.6)	91	2 928 903	5 599.2	91 (2.6)	320.9
Gauteng	923 379 (31.5)	2 326	15 488 137	5 961.8	2 326 (67.2)	413.5
KwaZulu-Natal	516 470 (17.6)	223	11 531 628	4 478.7	223 (6.4)	298.9
Limpopo	122 450 (4.2)	66	5 852 553	2 092.2	66 (1.9)	58.3
Mpumalanga	152 395 (5.2)	131	4 679 786	3 256.5	131 (3.8)	179.2
North West	151 038 (5.2)	168	4 108 816	3 675.9	168 (4.9)	217.9
Northern Cape	92 997 (3.2)	134	1 292 786	7 193.5	134 (3.9)	349.2
Western Cape	514 453 (17.6)	228	7 005 741	7 343.3	228 (6.6)	385.4
Unknown						
Total	**2 929 862**	**3 460**	**59 622 350**	**4 914.0**	**3 460**	**295.4**

[1]New cases refer to cases whose samples were collected or received in the current reporting week; [2]Percentage=n/total number of new cases (specimen collected or received in current reporting week); [3]2020 Mid-year population Statistics South Africa [4]Data on number of tests conducted sourced from COVID-19 weekly testing report of the same reporting week
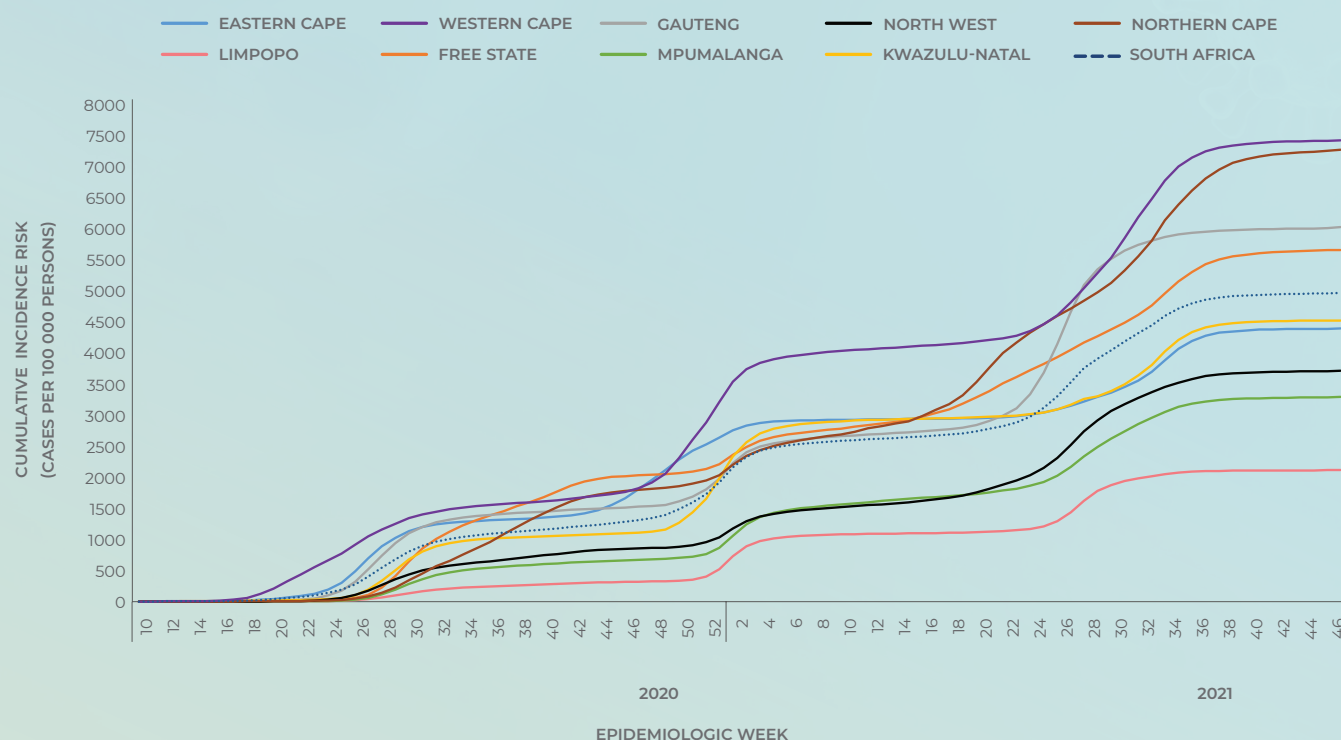
Figure 2. Cumulative incidence risk of laboratory-confirmed cases of COVID-19 by province and epidemiologic week, South Africa, 3 March 2020 –20 November 2021 (n=2 929 862)
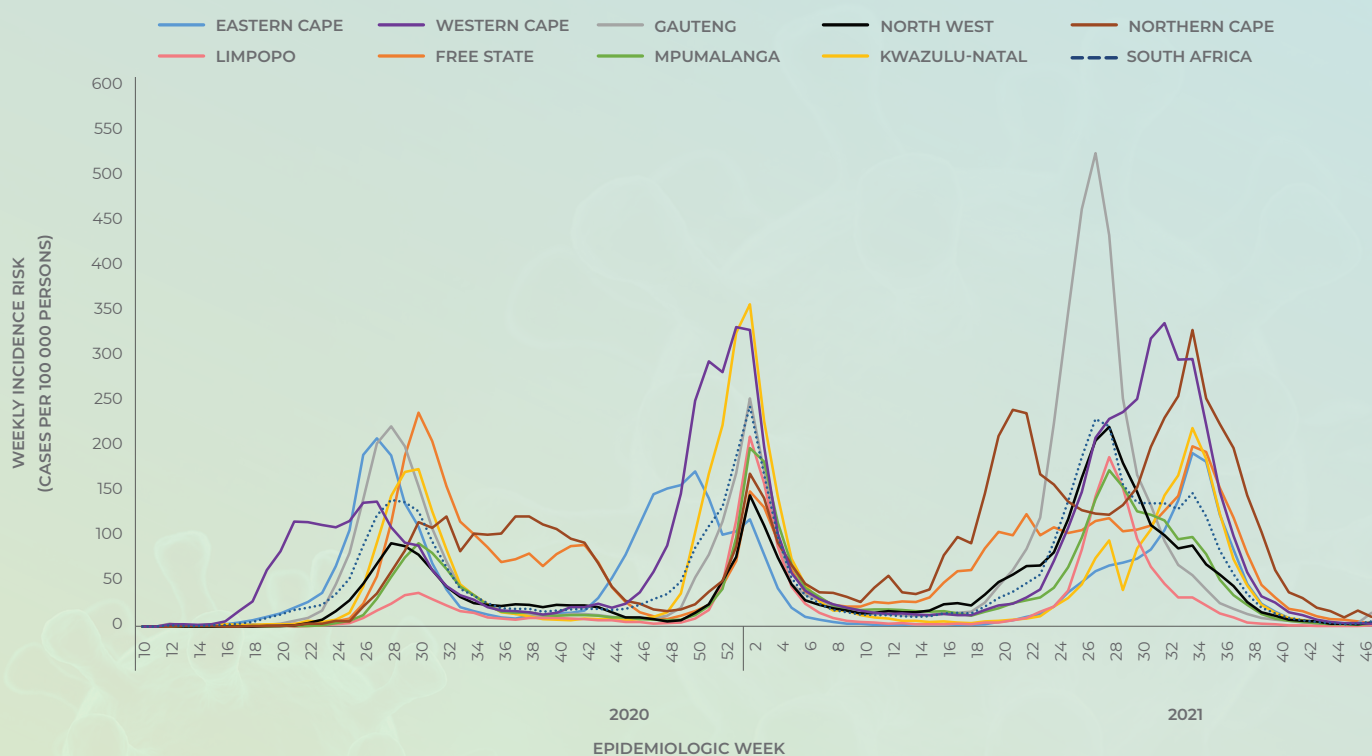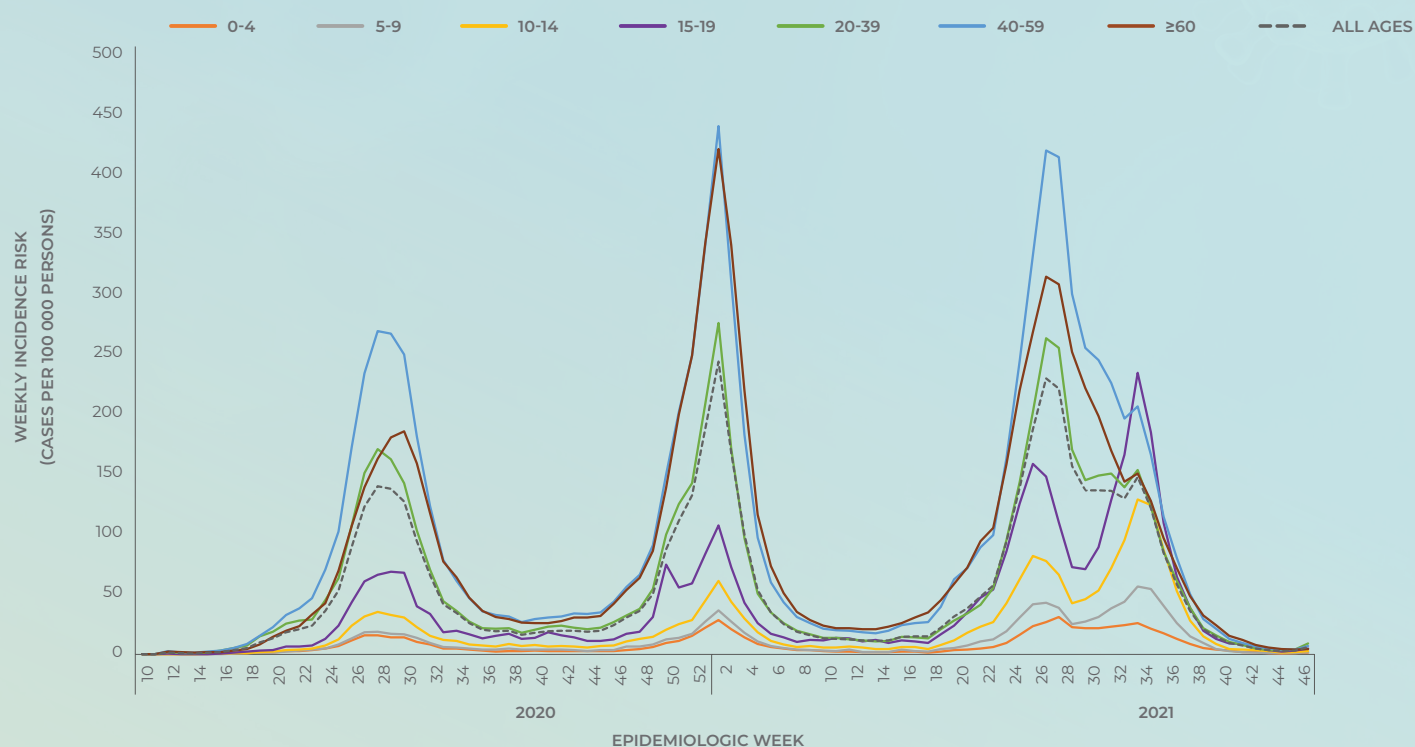

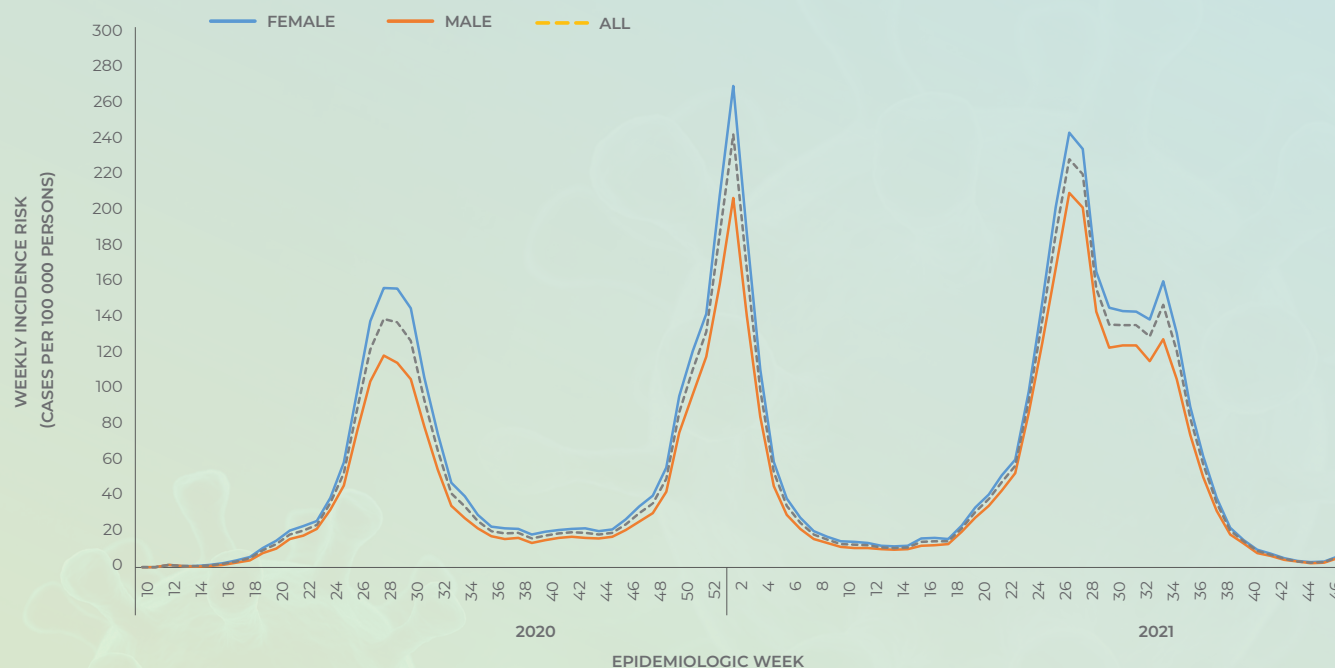**Figure 3.** Weekly incidence risk of laboratory-confirmed cases of COVID-19 by province and epidemiologic week, South Africa, 3 March 2020 –20 November 2021 (n=2 929 862)

Characteristics of COVID-19 cases in South Africa by age and sex

Figure 4. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, South Africa, 3 March 2020 -20 November 2021 (n=2 902 404, 27 458 missing age)

Figure 5. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by sex and epidemiologic week, South Africa, 3 March 2020 –20 November 2021 (n=2 897 621, sex missing for 32 241)

Table 2. Number of laboratory-confirmed cases of COVID-19 and cumulative/weekly incidence risk by age group, South Africa, 3 March 2020 –20 November 2021, (n=2 902 404, 27 458 missing age)

Age group (years)	Cumulative cases (n) (percentage, n/total cases in South Africa)	New cases[1] detected in week 46 (14-20 Nov 2021), n (percentage[2], n/total)	Population in mid-2020[3], n	Cumulative incidence risk (cases per 100 000 persons)	Incidence risk of new cases detected in week 46 of 2021 (cases/100 000 persons)
0-4	38 712 (1.3)	82 (2.4)	5 743 450	674.0	1.4
5-9	57 137 (2.0)	108 (3.2)	5 715 952	999.6	1.9
10-14	105 904 (3.6)	156 (4.6)	5 591 553	1 894.0	2.8
15-19	161 837 (5.6)	221 (6.5)	4 774 579	3 389.6	4.6
20-24	186 212 (6.4)	470 (13.8)	4 823 367	3 860.6	9.7
25-29	273 740 (9.4)	505 (14.8)	5 420 754	5 049.9	9.3
30-34	320 781 (11.1)	451 (13.2)	5 641 750	5 685.8	8.0
35-39	330 118 (11.4)	389 (11.4)	4 798 293	6 879.9	8.1
40-44	283 502 (9.8)	282 (8.3)	3 733 942	7 592.6	7.6
45-49	274 244 (9.4)	222 (6.5)	3 169 648	8 652.2	7.0
50-54	249 875 (8.6)	167 (4.9)	2 571 263	9 718.0	6.5
55-59	208 858 (7.2)	124 (3.6)	2 211 309	9 445.0	5.6
60-64	143 670 (5.0)	83 (2.4)	1 796 316	7 998.0	4.6
65-69	98 122 (3.4)	60 (1.8)	1 408 665	6 965.6	4.3
70-74	70 764 (2.4)	34 (1.0)	1 007 174	7 026.0	3.4
75-79	45 507 (1.6)	26 (0.8)	637 062	7 143.3	4.1
≥80	53 421 (1.8)	33 (1.0)	577 273	9 254.0	5.7
Unknown	27 458	47			
Total	**2 929 862**	**3 460**	**59 622 350**	**4 914.0**	**5.8**

[1]New cases refer to cases whose samples were collected or received in the current reporting week; [2]Percentage=n/total number of new cases (specimen collected or received in current reporting week); [3]2020 Mid-year population Statistics South Africa

Provincial trends of COVID-19 cases
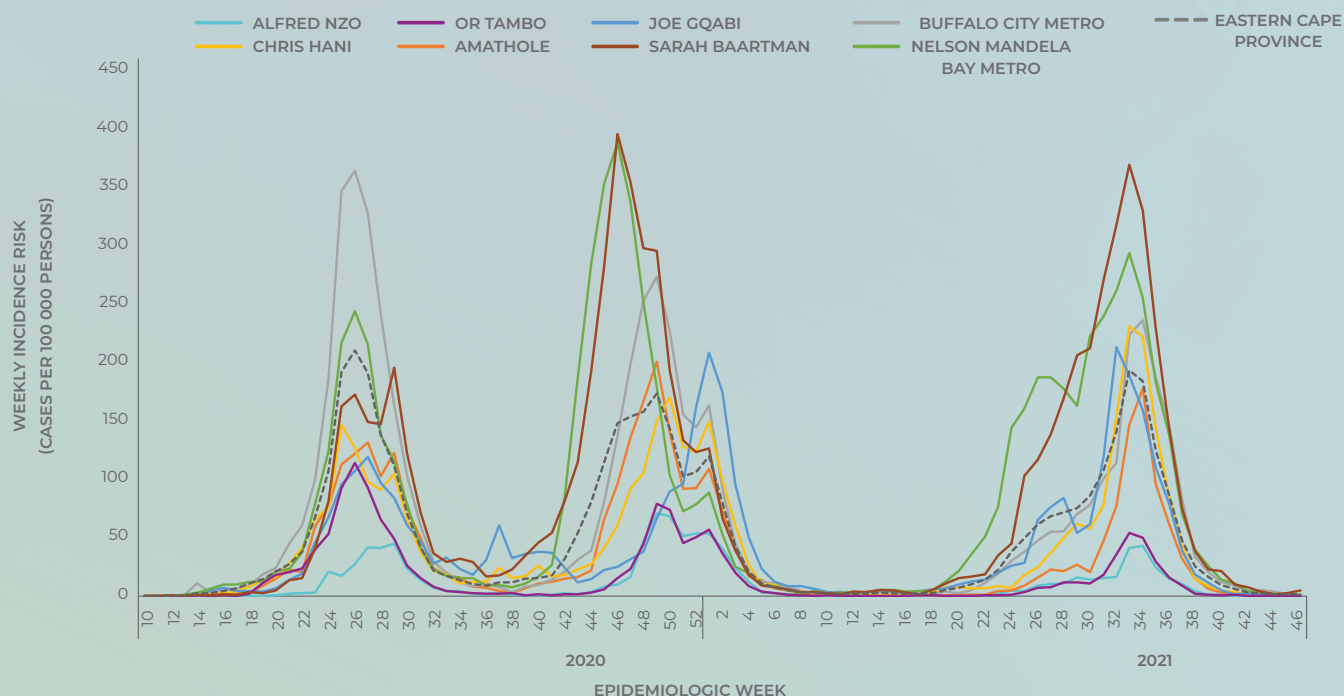
Eastern Cape Province

Figure 6. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Eastern Cape Province, 3 March 2020 –20 November 2021 (n=256 184, 36 502 missing district)
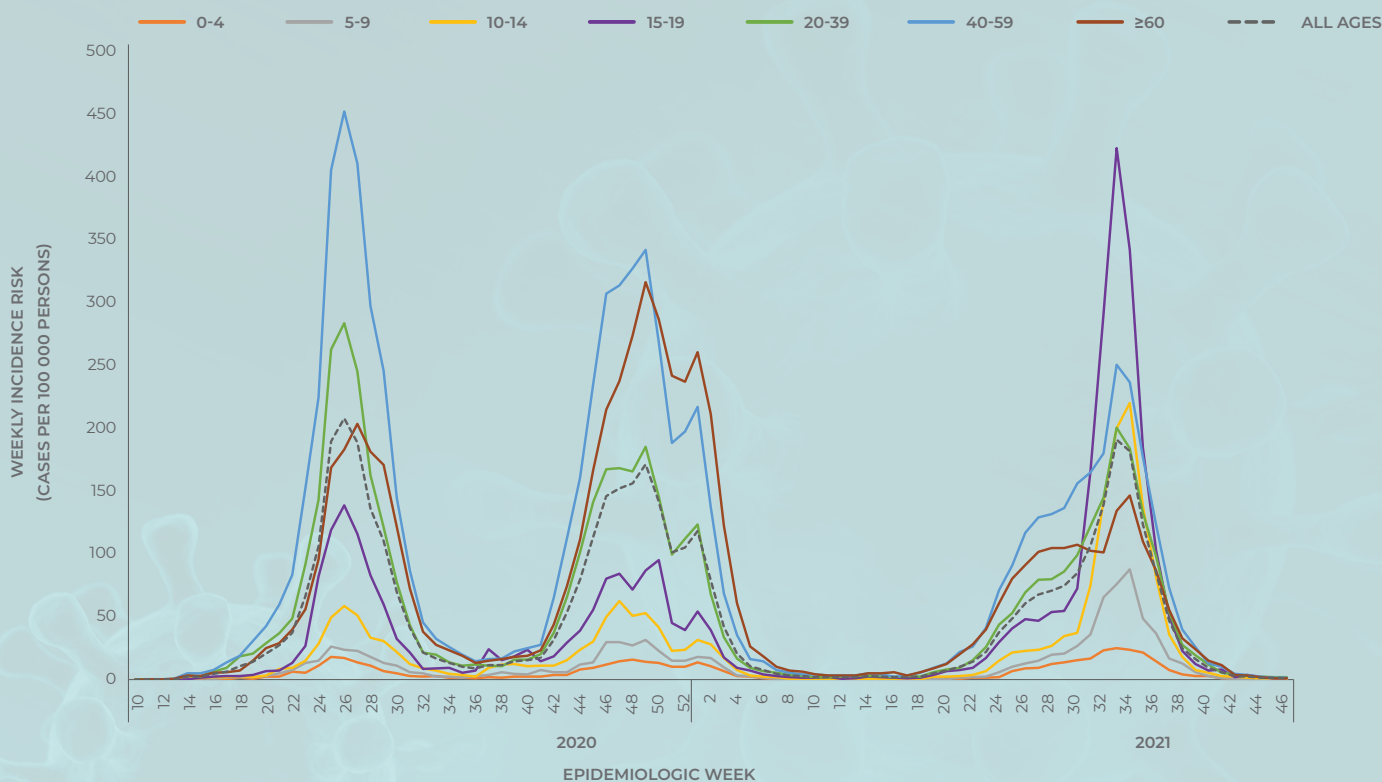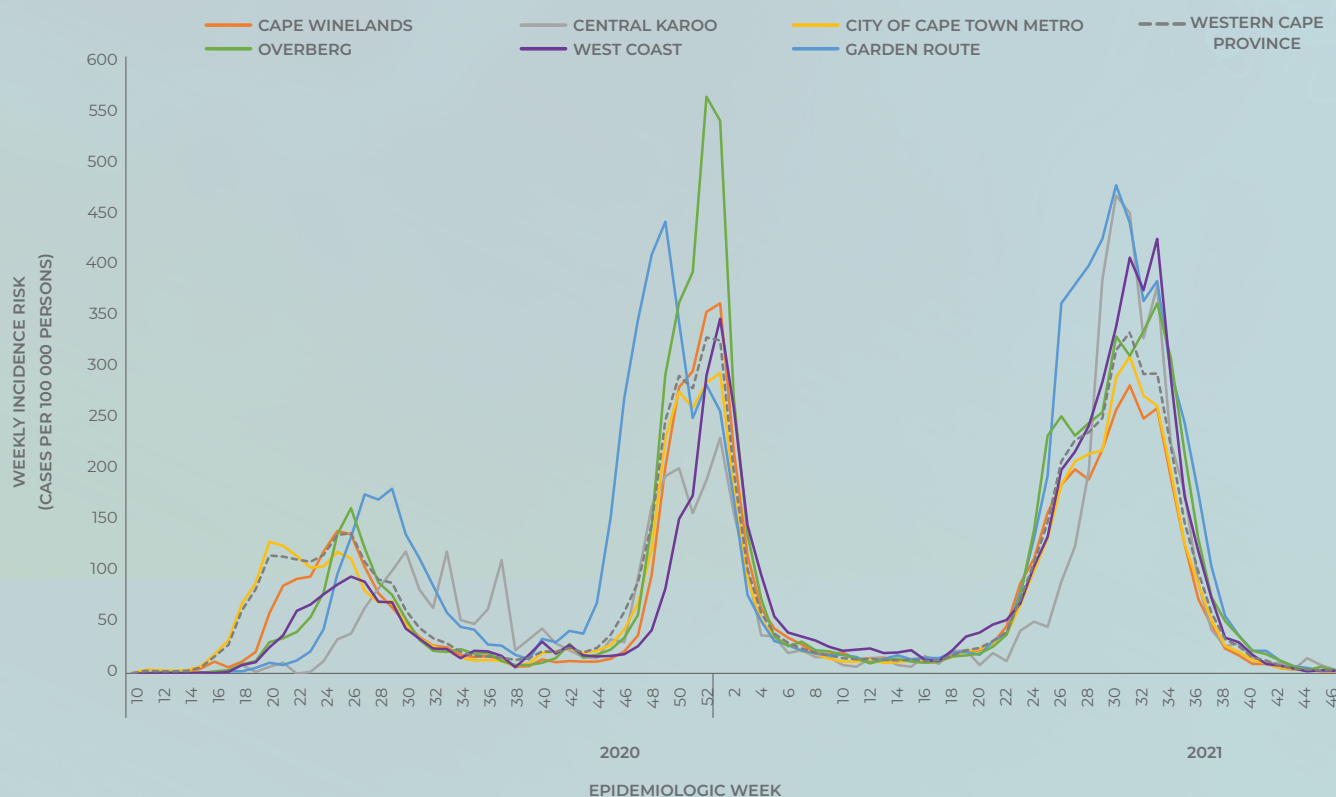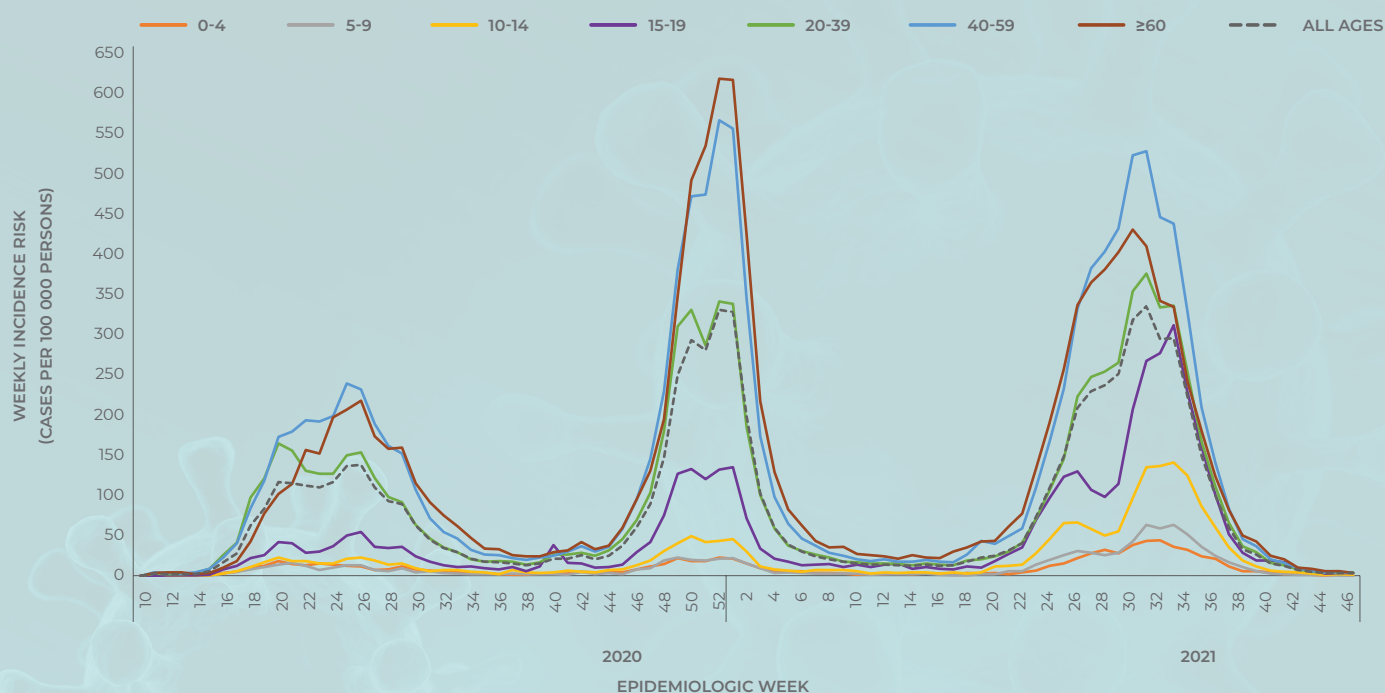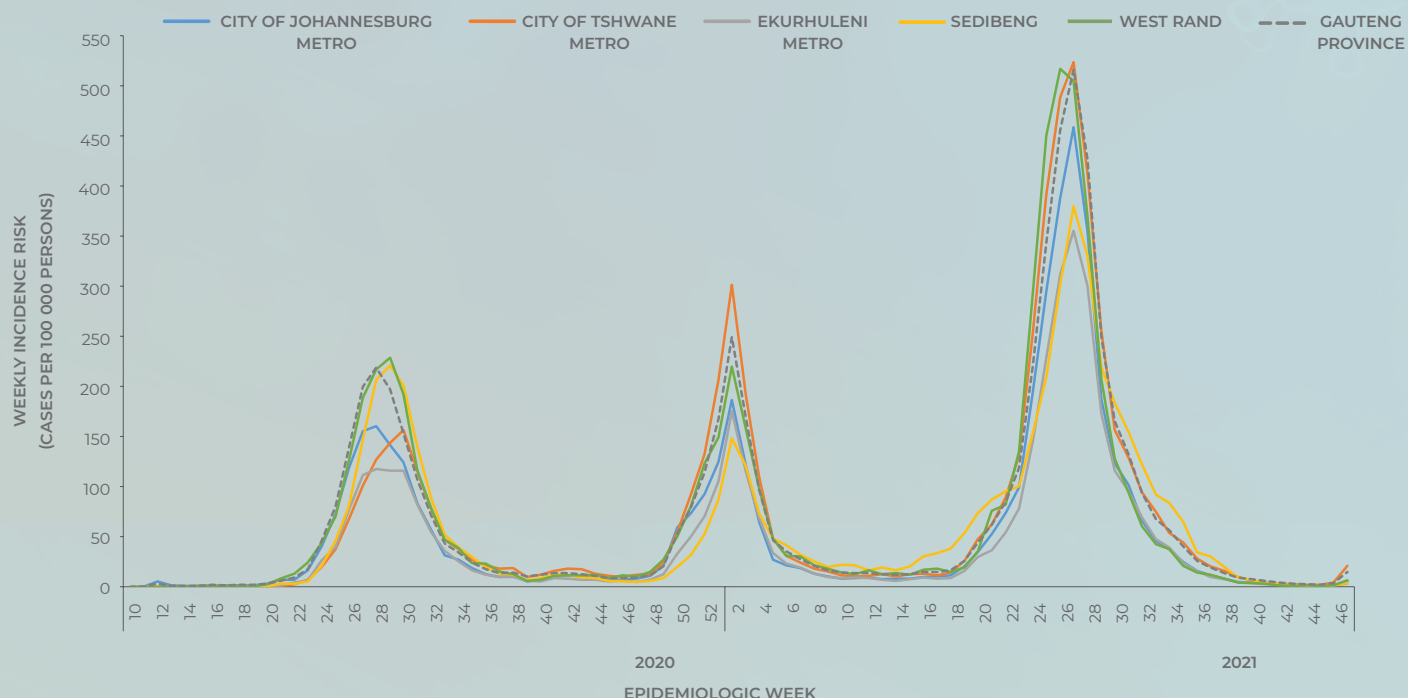

Figure 7. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Eastern Cape Province, 3 March 2020 –20 November 2021 (n=289 595, 3 091 missing age)

Western Cape Province

Figure 8. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Western Cape Province, 3 March 2020 –20 November 2021 (n=485 462, 28 991 missing district)

Figure 9. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Western Cape Province, 3 March 2020 –20 November 2021 (n=512 968, 1 485 missing age)

Gauteng Province

Figure 10. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Gauteng Province, 3 March 2020 –20 November 2021 (n=759 254, 164 125 missing district)
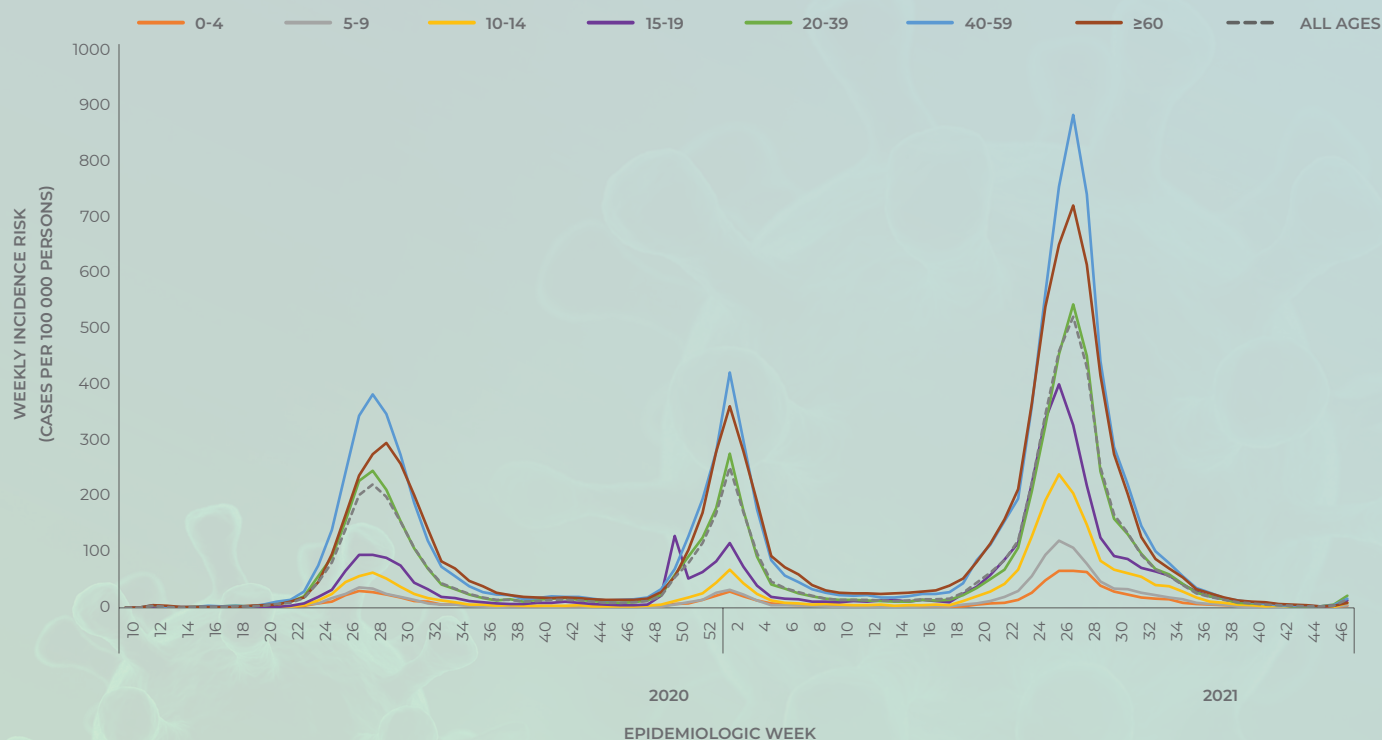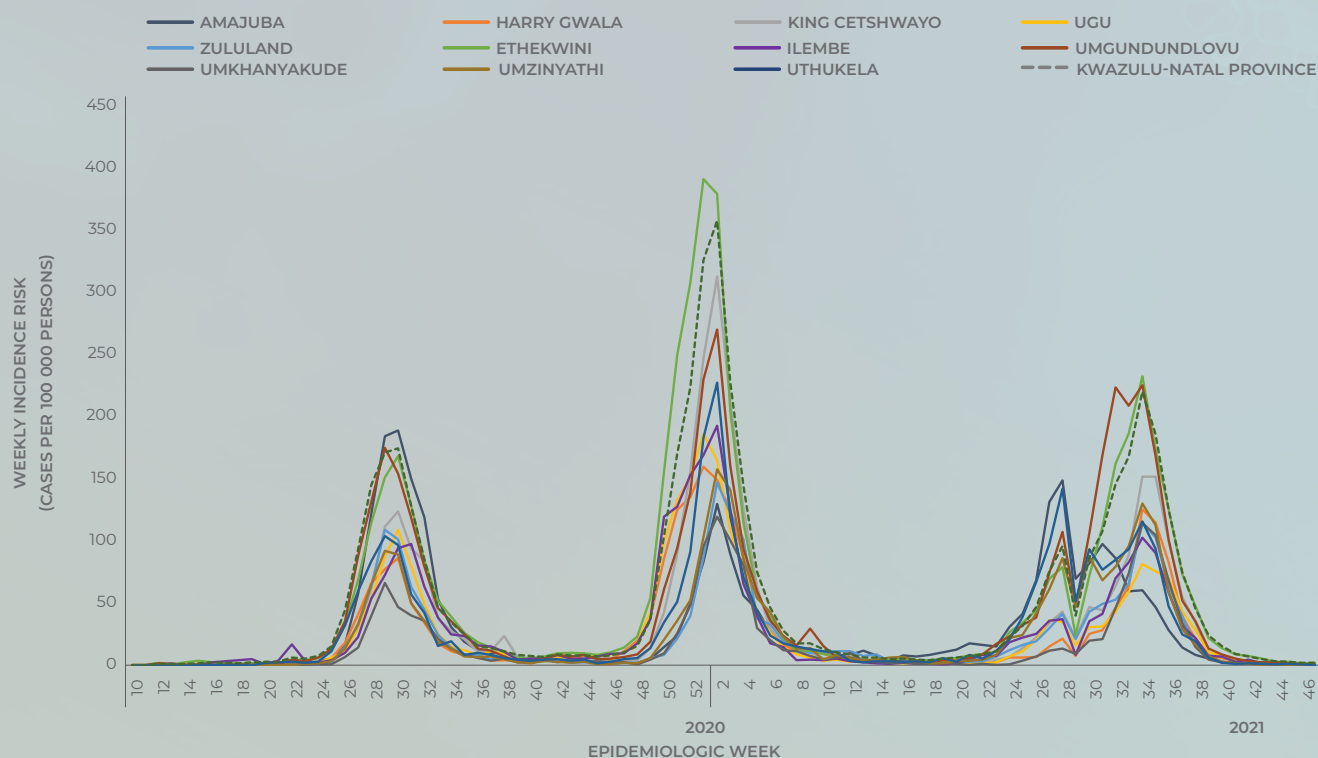

Figure 11. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Gauteng Province, 3 March 2020 -20 November 2021 (n=913 988, 9 391 missing age)

KwaZulu-Natal Province

Figure 12. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, KwaZulu-Natal Province, 3 March 2020 –20 November 2021 (n=376 993, 139 477 missing district)
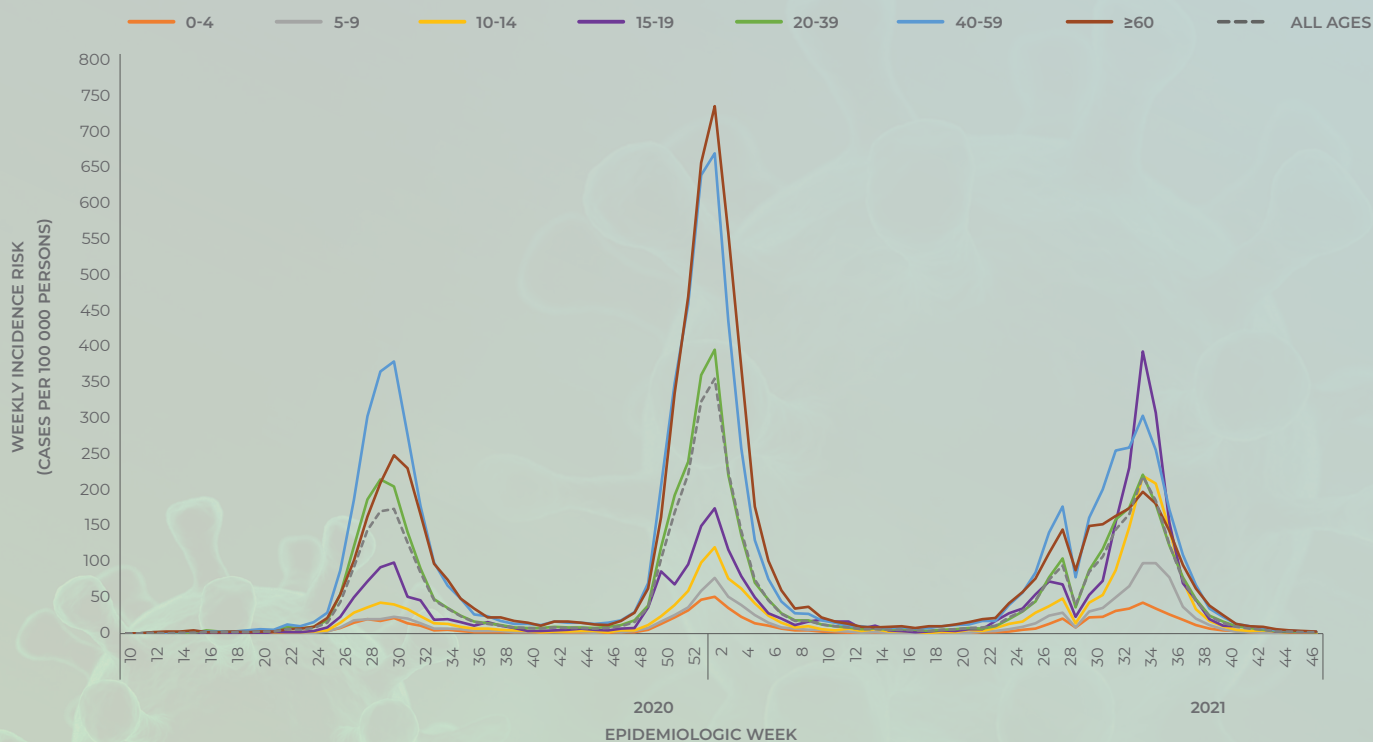

Figure 13. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, KwaZulu-Natal Province, 3 March 2020 –20 November 2021 (n=510 104, 6 366 missing age)
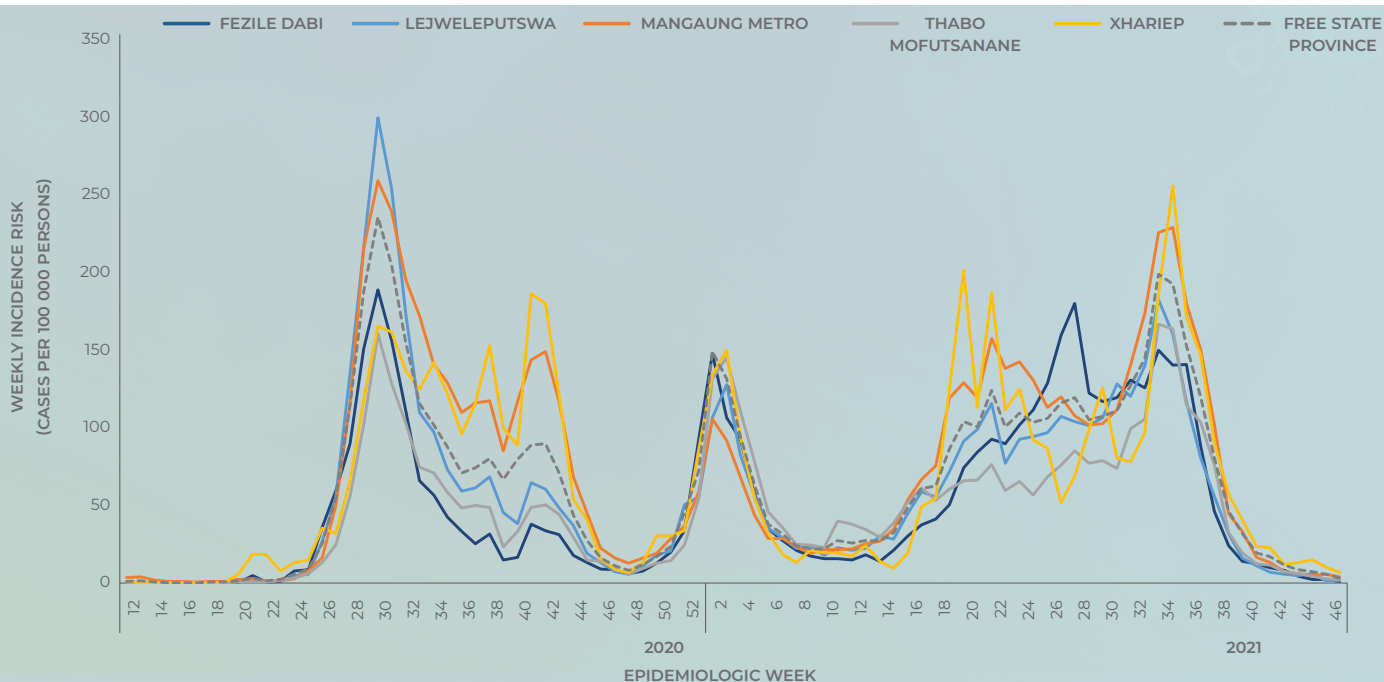
Free State Province

Figure 14. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Free State Province, 3 March 2020–20 November 2021 (n=151 189, 12 805 missing district)
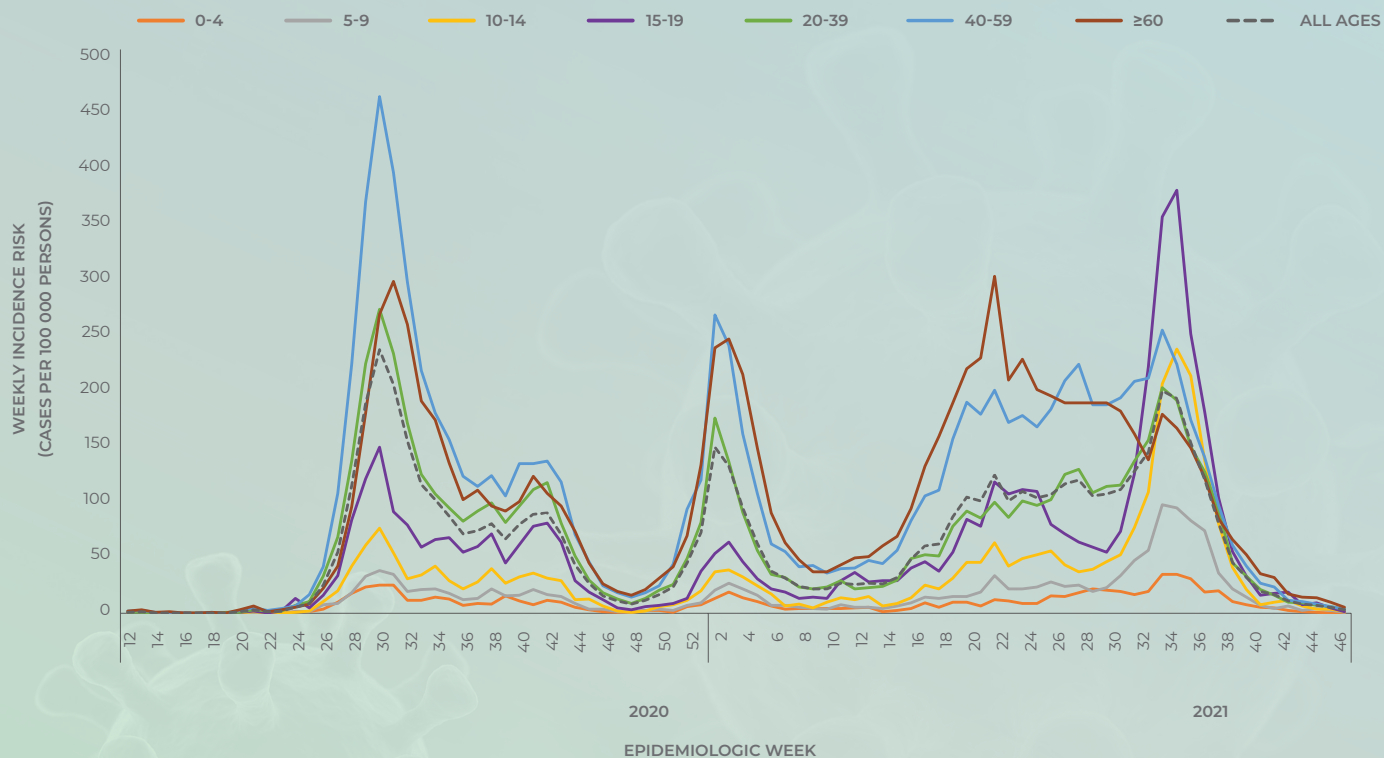

Figure 15. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Free State Province, 3 March 2020–20 November 2021 (n=163 337, 657 missing age)
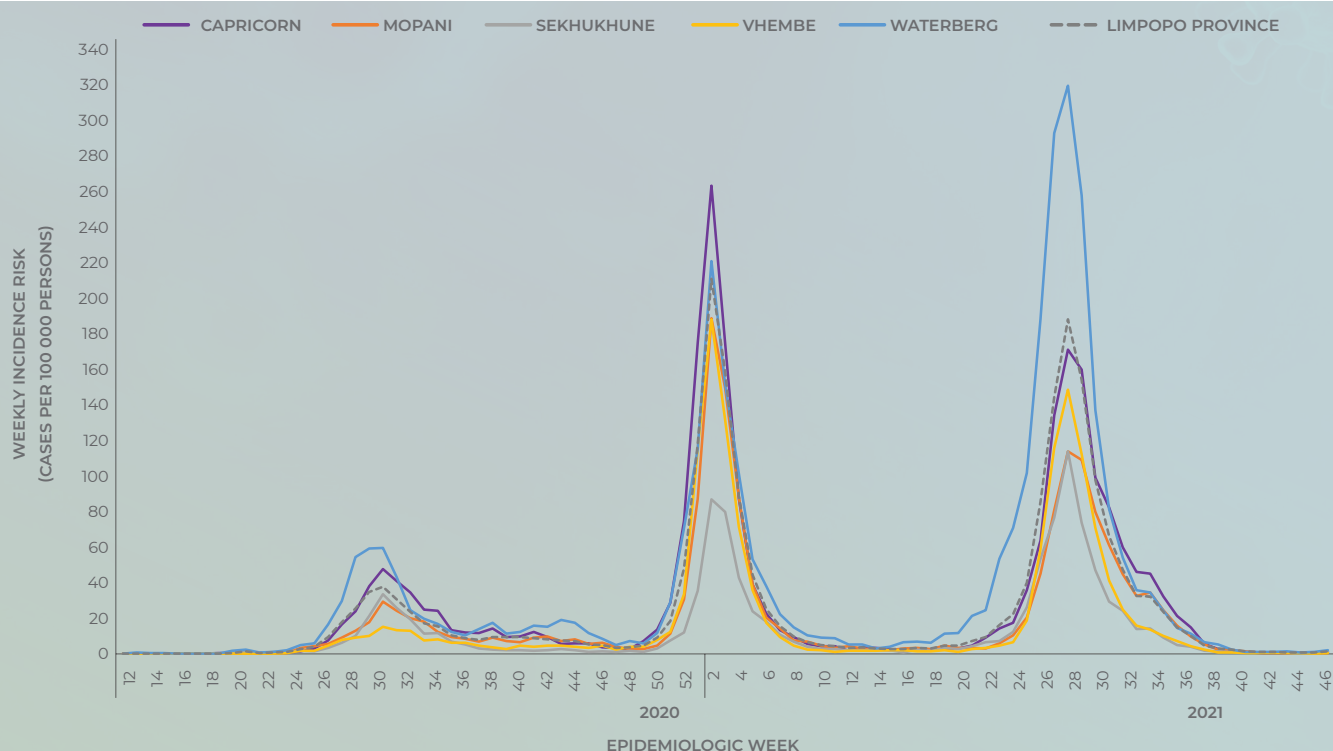
Limpopo Province

Figure 16. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Limpopo Province, 3 March 2020 –20 November 2021 (n=105 595, 16 855 missing district)
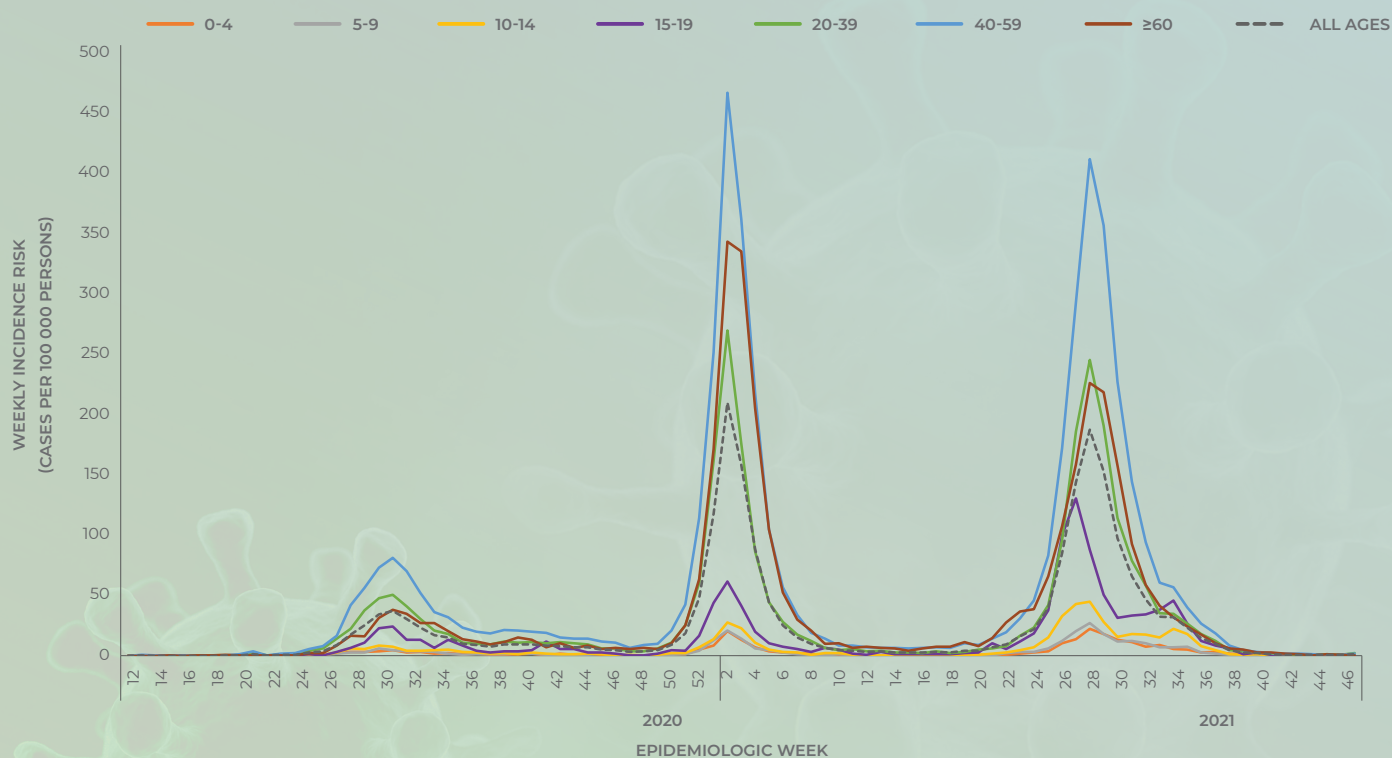

Figure 17. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Limpopo Province, 3 March 2020 –20 November 2021 (n=121 771, 679 missing age)
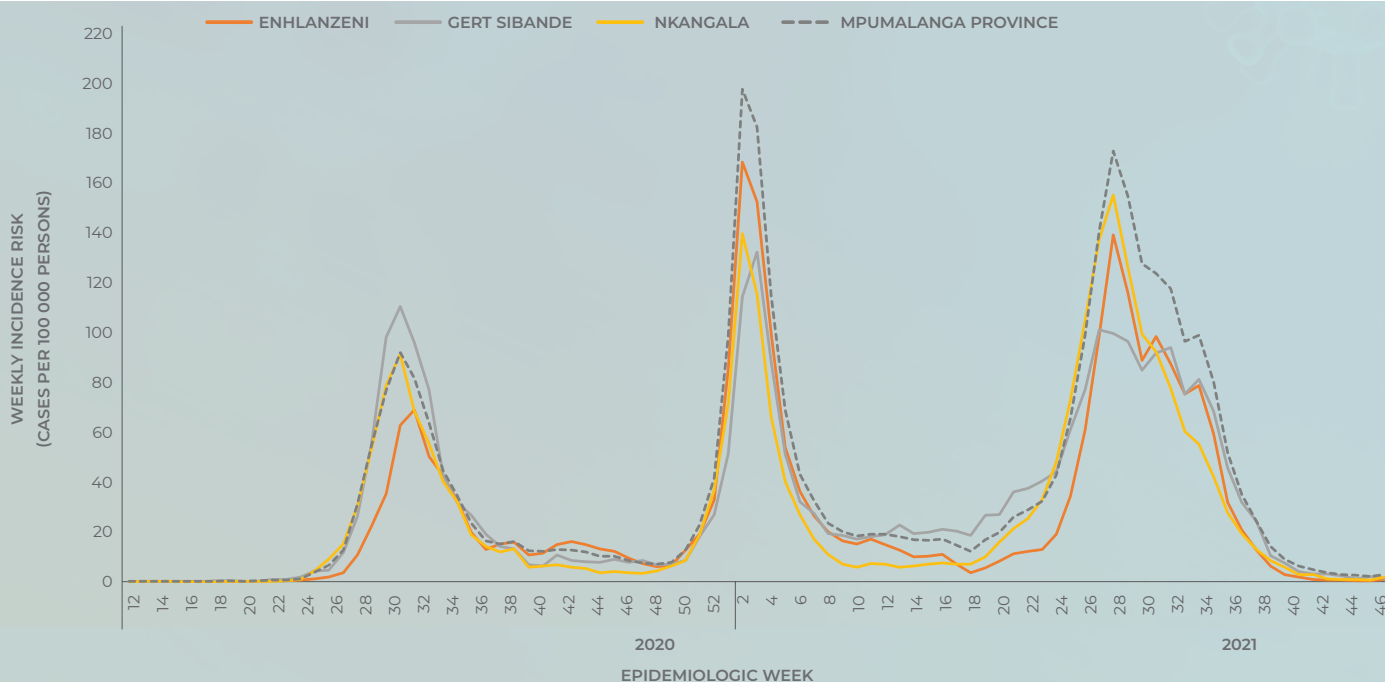
Mpumalanga Province

Figure 18. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Mpumalanga Province, 3 March 2020 -20 November 2021 (n=116 962, 35 433 missing district)
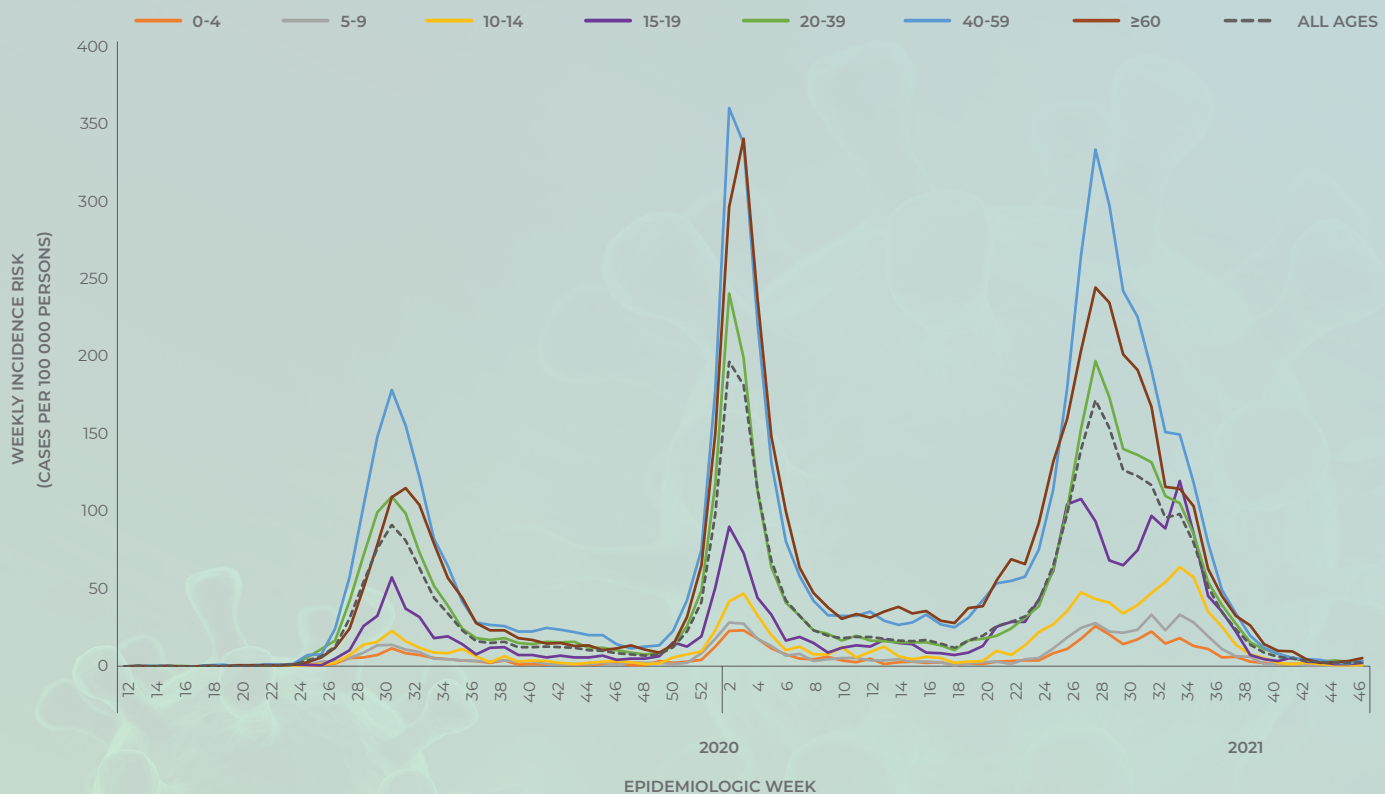

Figure 19. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group and epidemiologic week, Mpumalanga Province, 3 March 2020-20 November 2021 (n=149 227, 3 168 missing age)

COVID-19 WEEKLY EPIDEMIOLOGY BRIEF
WEEK 46 2021

North West Province

Figure 20. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, North West Province, 3 March 2020 -20 November 2021 (n=121 861, 29 177 missing district)

Figure 21. Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, North West Province, 3 March 2020 –20 November 2021 (n=149 045, 1 993 missing age)
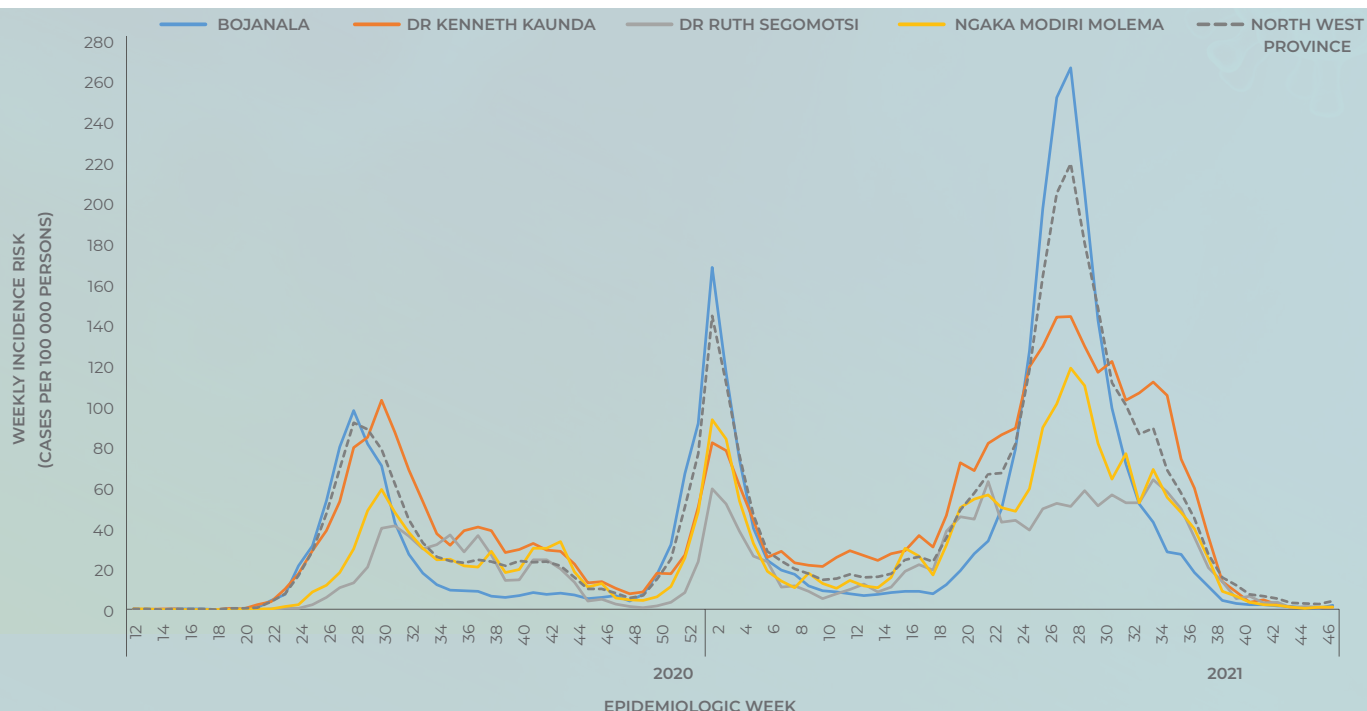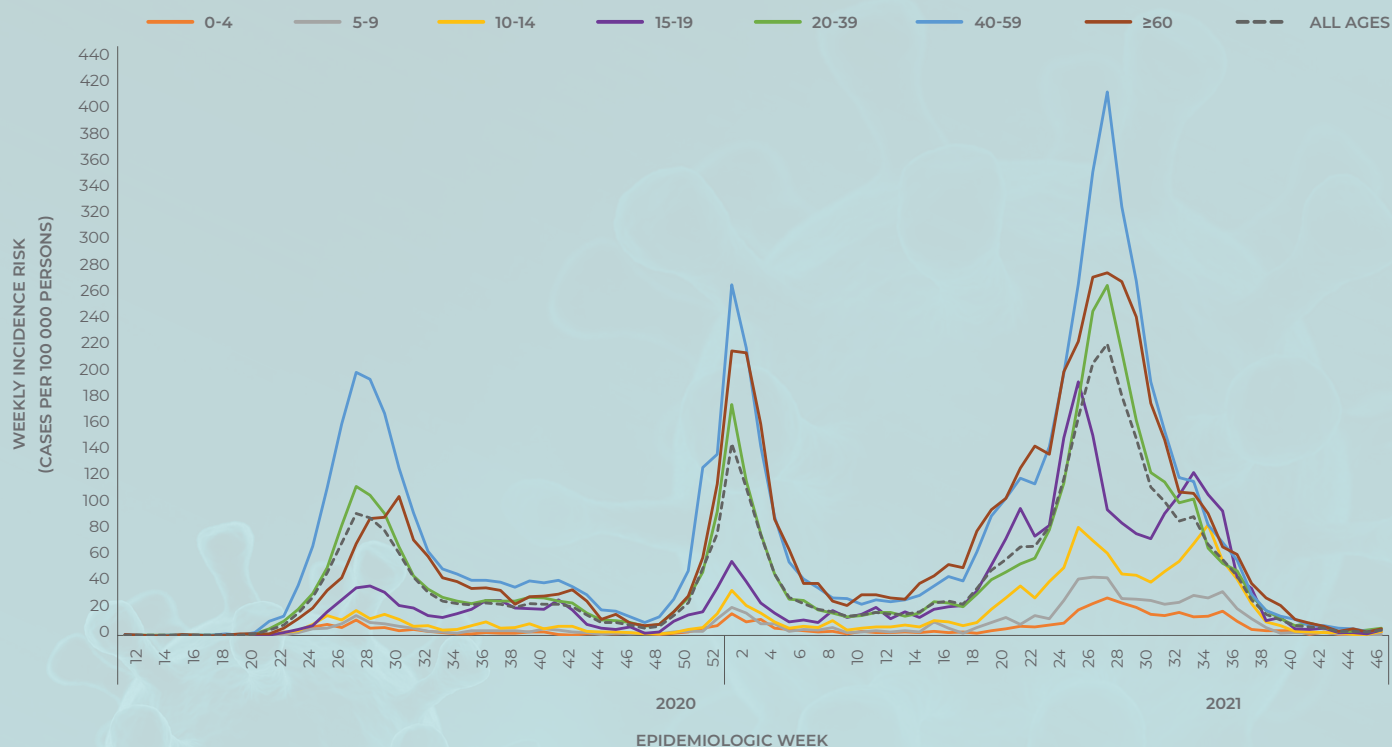
Northern Cape Province

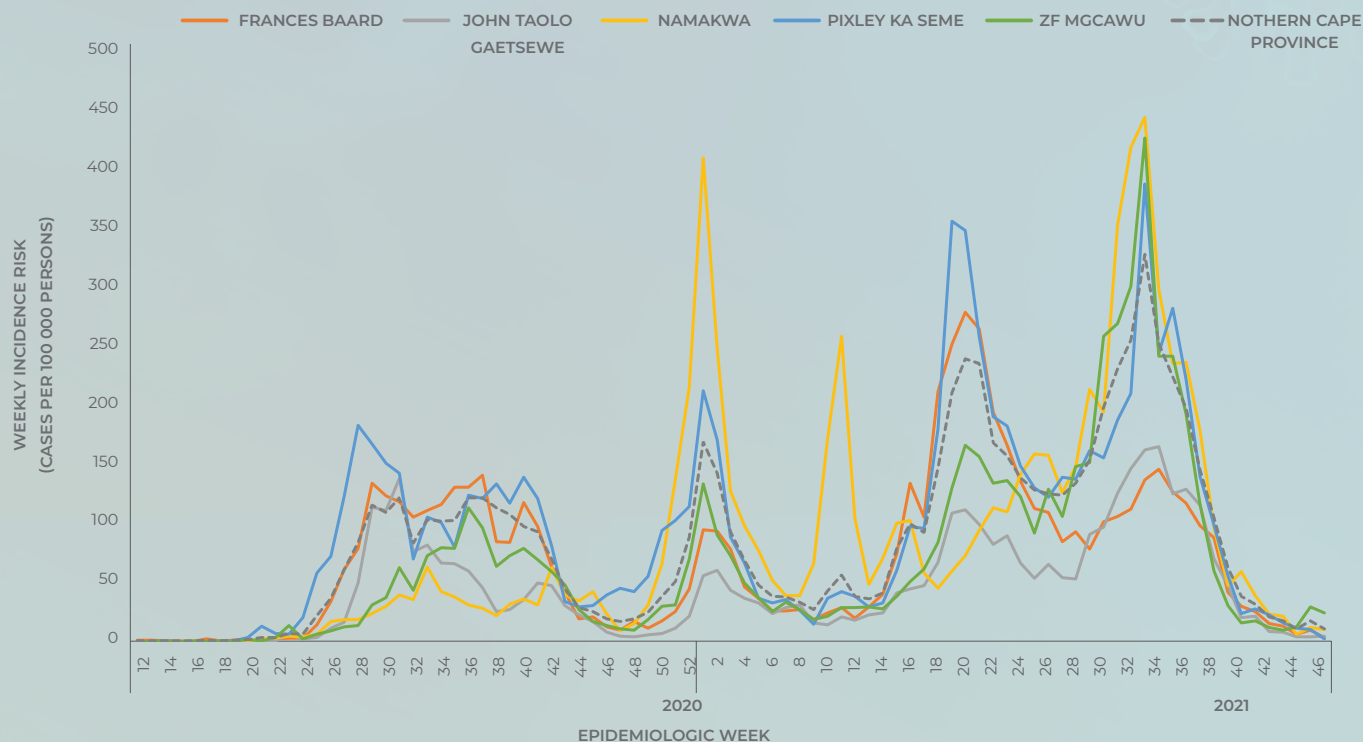**Figure 22.** Weekly incidence risk of laboratory-confirmed cases of COVID-19 by district and epidemiologic week, Northern Cape Province, 3 March 2020-20 November 2021 (n=77 030, 15 967 missing district)
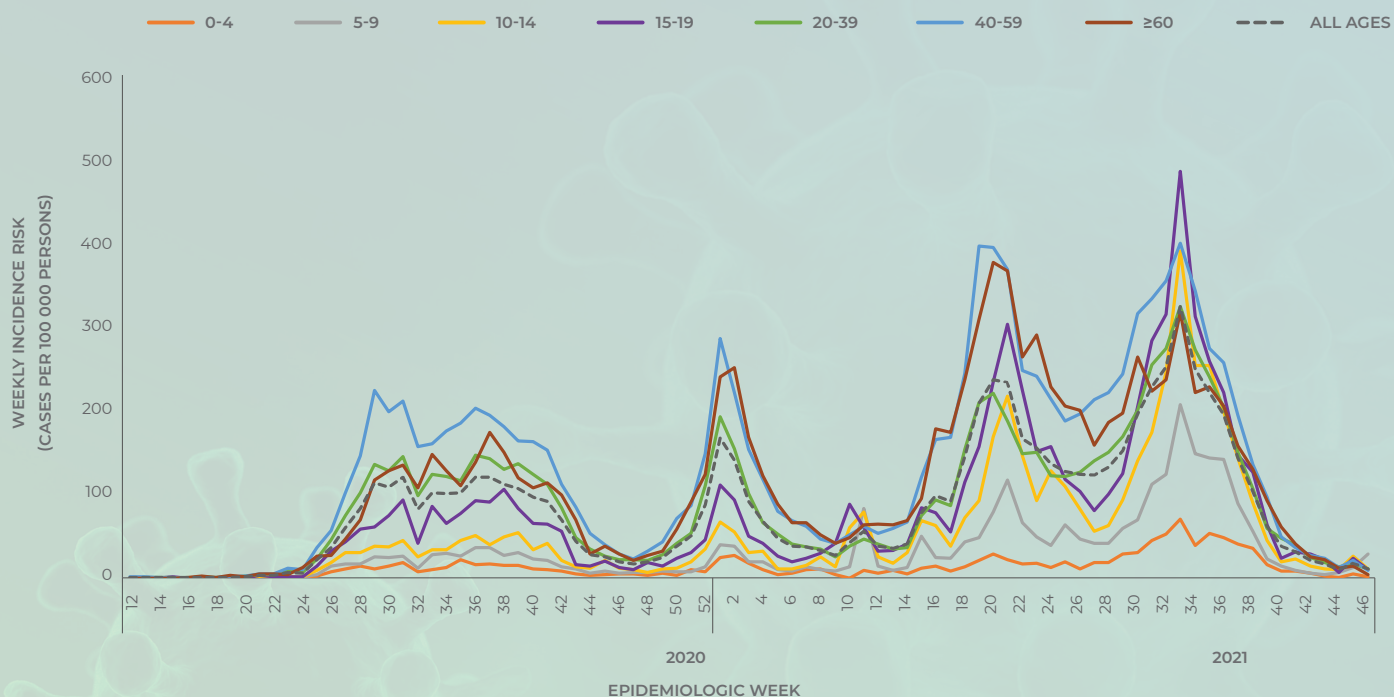

Figure 23 Weekly incidence risk of laboratory-confirmed cases of COVID-19 by age group in years and epidemiologic week, Northern Cape Province, 3 March 2020 –20 November 2021 (n=92 369, 628 missing age)

Methods

Testing for SARS-CoV-2 began on 28 January 2020 at the NICD and after the first case was confirmed in early March 2020, testing was expanded to a larger network of private and NHLS laboratories. Respiratory specimens were submitted from persons under investigation (PUI). Initially, tested individuals were those who had travelled to countries with COVID-19 transmission but the PUI definition was changed over time. Community symptom screening and referral for PCR testing was implemented in April 2020 but the strategy was changed to a more targeted approach in May 2020. Community screening was largely discontinued and testing efforts then focussed on areas identified as hot spots and on investigating clusters. Contacts of cases were traced and tested if symptomatic. In some provinces and in certain circumstances (e.g. closed settings, workplaces), asymptomatic contacts were tested. In recent weeks, testing has been prioritised for healthcare workers and hospitalised patients. 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 during November 2020. We excluded specimens collected outside South Africa. Date of specimen receipt in the laboratory was used when date of specimen collection was missing. A case of COVID-19 was defined as any person, resident in South Africa, with a single positive SARS-CoV-2 PCR or antigen test. For reports published from week 41 of 2020 onwards we used mid-year population estimates from Statistics South Africa for 2020 to calculate the incidence risk (cumulative or weekly incidence), expressed as cases per 100 000 persons. In historical reports published from epidemiologic week 10 (during the start of COVID-19 epidemic in South Africa) to week 40 of 2020, 2019 mid-year population estimates were used. Aggregate data on the number of deaths by province were obtained from the Department of Health. Data on number of tests conducted in the past week as reported in the simultaneously-published COVID-19 weekly testing report was used to calculate tests conducted per 100 000 population. Data on province and district allocation was based on geocoding algorithm using in order of priority (i) completeness of patient data, (ii) submitting doctor's address, (iii) registering doctor's address and as final option, (iv) the guarantor's address data. The geocoding algorithm used the most complete data for assigning data on province and district where adequate information was provided on the lab request form at the time of sample collection. Data on district allocation may lag resulting in number of cases in recent weeks missing district allocation. Prevalence and incidence risk by districts should be interpreted with caution.

We estimated the time-varying (weekly) doubling time of the COVID-19 epidemic for the provinces with sufficient data and from weeks with sufficient number of cases and complete data (week 12 to the week before the current reporting period). The unit of analysis (epidemiological week) was defined from Sunday to the following Saturday. We first estimated the weekly growth rate of the epidemic by fitting a linear regression model to the logarithm of the daily cumulative number of laboratory-confirmed COVID-19 cases. We then estimated the doubling time for each week using the following formula log(2)/gr (where gr is the estimated weekly growth rate). An increase in the doubling time may suggest a slowing of transmission but this may also be affected by changes in testing strategy or care seeking. Until the week 29 report, new cases were defined as all cases reported since the last report, irrespective of when the sample was collected. Subsequent to the week 29 of 2020 report, new cases are now defined as cases detected in the past epidemiologic week based on date of sample collection or sample receipt. It is therefore possible for numbers reported as new cases for the current reporting week not to tally with total additional cases reported since the last report. This will be the case when there was a delay in reporting of cases.

Limitations

This report is based on laboratory-based surveillance of laboratory-confirmed cases. The number of reported cases is heavily dependent on testing practices. Although trends over time and comparisons by geographic area are presented in this report, changes in testing practices over time or differences by region may partially explain the results. The crude CFR (number of deaths/number of diagnosed cases) reported here is subject to numerous limitations: it is likely to be an underestimation as reporting of deaths may be delayed because deaths are delayed in relation to cases, as case numbers decrease rapidly, the crude CFR may increase as a result of a more rapid reduction in the denominator compared to the numerator. CFR may be an underestimate as deaths in hospital are more likely to be reported than deaths out of hospital. In addition, occurrence and reporting of deaths may be delayed to several weeks after case diagnoses. Differences in health-seeking behaviour by age group and sex could also contribute to the observed differences in case numbers between groups. The reported doubling time estimates are affected by the number of tests conducted; if fewer tests are performed, this will also increase the doubling time estimate. Delays in reporting may result in incomplete data for recent weeks, leading to an apparent reduction in number of cases. Changes in testing strategy during the different times of the epidemic may also affect the number of cases reported, leading to a decrease in number of positive cases if testing is only conducted for severe cases or certain risk groups.