

## Interim situation report, 16 March 2023

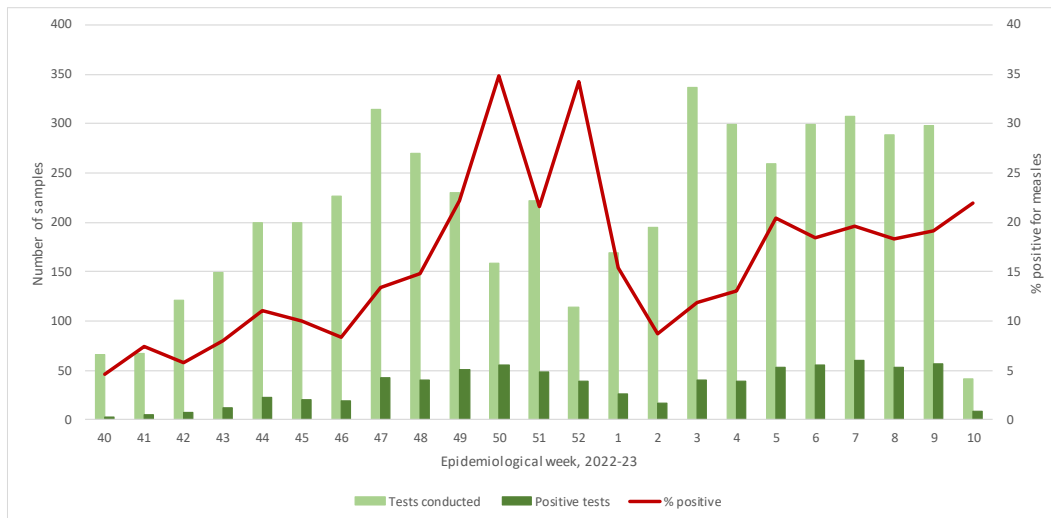
**Issued by the National Institute for Communicable Diseases, based on laboratory testing data up until 11 March 2023**

### Highlights

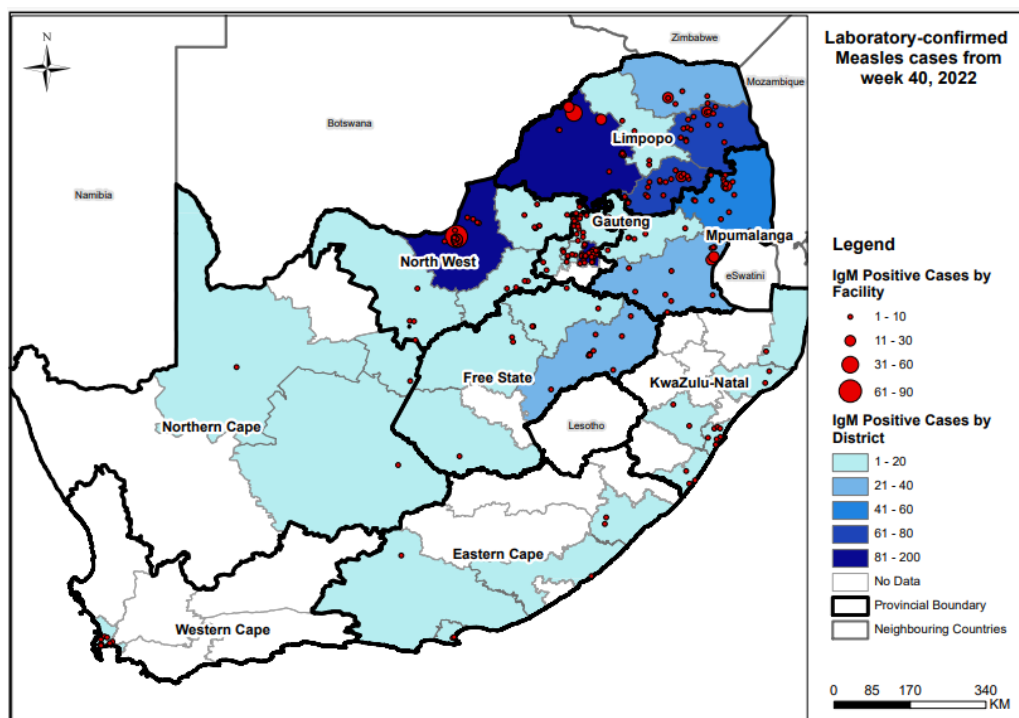
- The NICD has tested 4830 serum samples for measles since epidemiological week 40, 2022, of which 772 (16%) were confirmed positive. In outbreak-affected provinces, 766 cases have been reported since week 40, 2022. In the past weeks (week 09 up until week 10, 07/03/2023) there have been 66 laboratory-confirmed measles cases detected across the country all of which were from the outbreak-affected provinces.
- The percentage of samples testing positive (PTP) increased slightly from 18% of 289 samples tested in week 08 to 19% of the 298 samples tested in week 09.
- Measles outbreak has now been declared in all the provinces in South Africa except for the Eastern Cape.
- The measles strain detected in Limpopo province and North West province is genotype D8 which is similar to the strain in Zimbabwe in the 2022 outbreak.
- In the provinces where an outbreak has been declared, the most affected age groups are still the 5–9-year-olds (42%) with a considerable proportion of cases reported among the 1-4 (25%) and 10-14 age groups (19%). Vaccination campaigns should therefore also include children aged 10 to 14.
- The majority of cases (70%) were reported from primary healthcare facilities, and the highest proportion of cases reported from hospitals (57%) was reported in children under the age of one.
- Members of the public are urged to ensure their children are vaccinated against measles.

### Outbreak overview

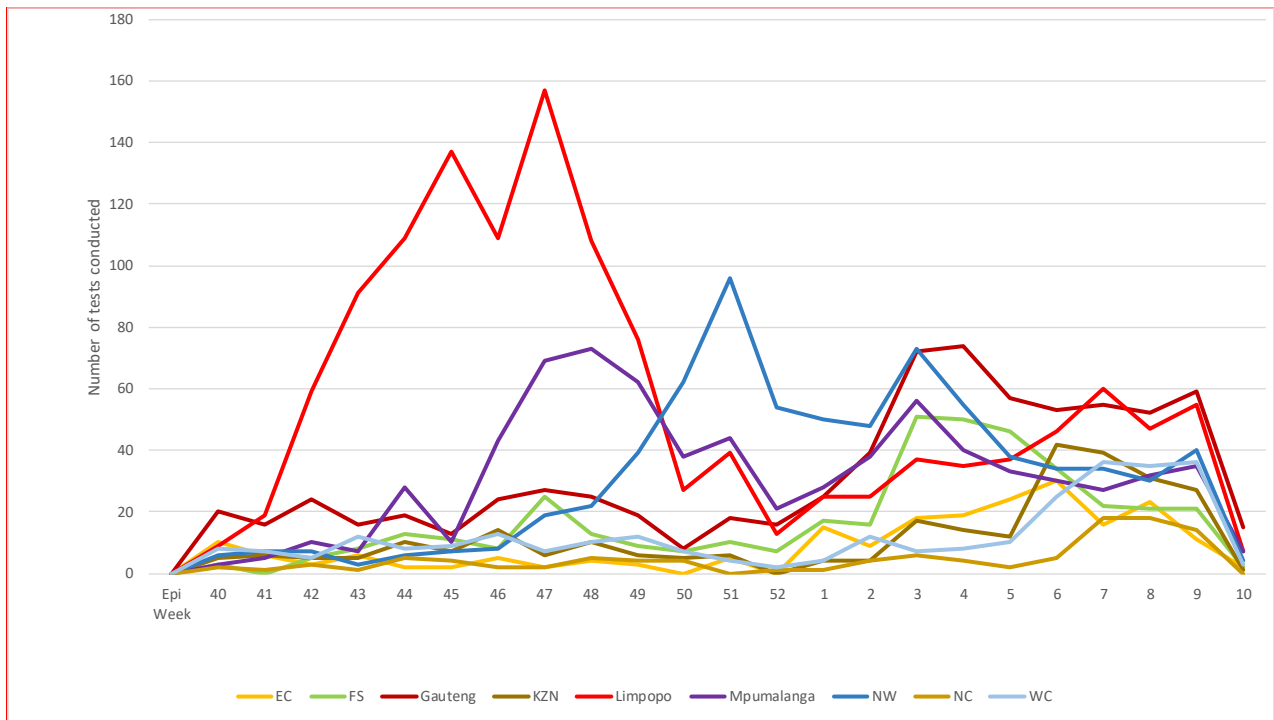
From epidemiological week 40, 2022 (ending 8 October 2022) to week 10, 2023 (ending 11 March 2023) the NICD has tested 4830 serum samples for measles of which 772 (16%) were confirmed measles cases. The number of samples submitted, and the percentage of laboratory-confirmed measles-positive cases are shown in Figure 1. From epidemiological week 40 of 2022 to week 10 of 2023, 766 laboratory-confirmed cases were reported from eight provinces with declared measles outbreaks; Limpopo (275 cases), Mpumalanga (106 cases), North West (198 cases), Gauteng (124 cases), Free State (28 cases), Western Cape (11), KwaZulu-Natal (17) and Northern Cape (7) (Table 1). The geographical distribution of cases across South Africa from week 40 of 2022 until week 10 of 2023 is shown in Figure 2. The number of blood samples and throat swabs submitted to the NICD for measles serology and PCR testing has decreased compared to previous weeks (Figure 3).



**Figure 1.** The number of serum samples submitted to the NICD for measles, week 40 2022, until week 10, 2023, and the number (dark green) and % tested positive (red line), by epidemiological week using the date the specimen was collected. \*Data from week 09 represent partial data and will be updated in next week's situation report when complete data from samples collected that week becomes available.



**Figure 2.** Distribution of laboratory-confirmed measles cases by the testing site (red dots – the size of the dot indicates the number of cases from that facility) and district of South Africa (deepening colour of blue indicates the total number of cases by sub-district), from week 40 to week 10, 2023.

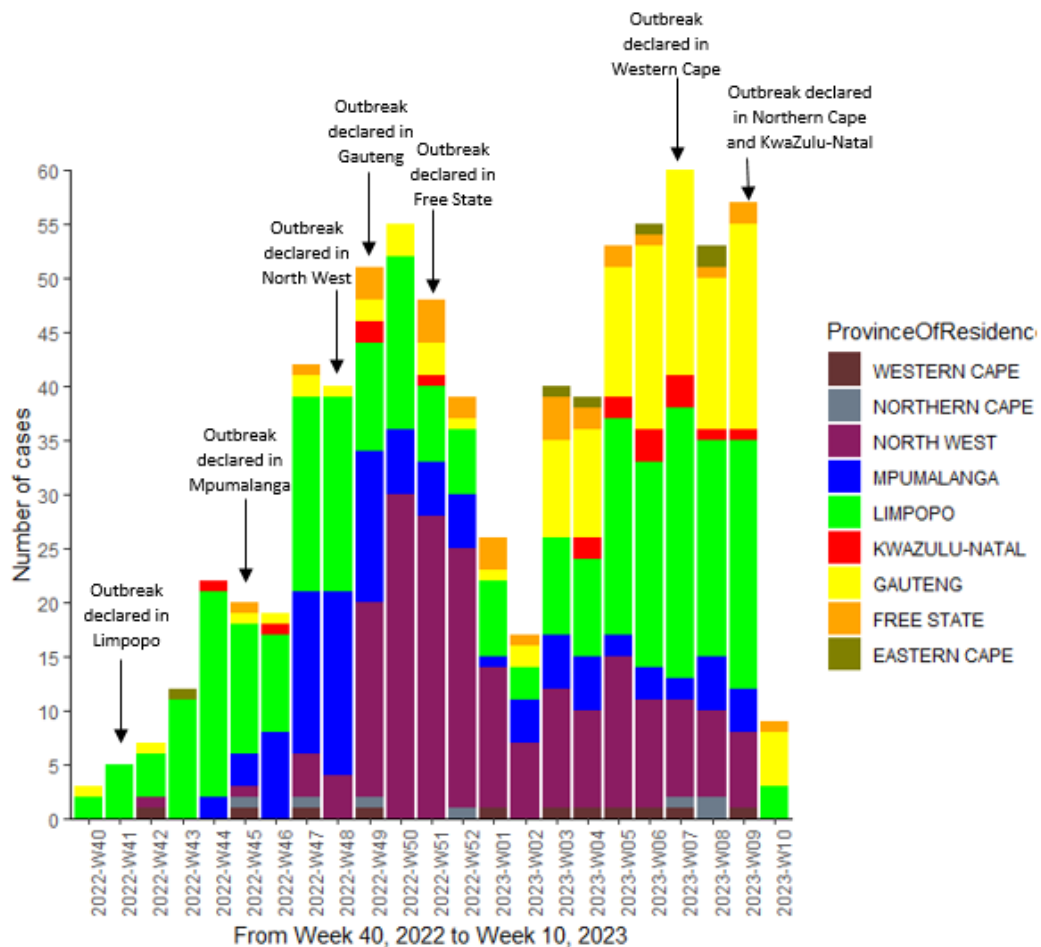


**Figure 3.** Number measles of tests conducted from week 40 2022, until week 10, 2023, by province and epidemiological week using the date the specimen was collected. \*Data from week 10 represent partial data and will be updated in next week's situation report when complete data from samples collected that week becomes available.

**Table 1.** Cases of laboratory-confirmed measles tested by the NICD from all provinces in South Africa from epidemiological week 40, 2022 to week 10, 2023. Outbreak-associated cases are contained within the red bordered cells\* (EC=Eastern Cape; FS=Free State; GP=Gauteng; KZN=KwaZulu-Natal; LP=Limpopo; MP=Mpumalanga NW=North West; NC=Northern Cape). \* A measles outbreak is classified as three or more confirmed laboratory measles cases reported within 30 days of the onset of disease, in a district. \*Data from week 09 represent partial data and will be updated in next week's situation report when complete data from samples collected that week becomes available.

Epi Week	EC	FS	GP	KZN	LP	MP	NW	NC	WC	Total
40, 2022			1		2					3
41, 2022					5					5
42, 2022			1		4		1		1	7
43, 2022	1				11					12
44, 2022				1	19	2				22
45, 2022		1	1		12	3	1	1	1	20
46, 2022			1	1	9	8				19
47, 2022		1	2		18	15	4	1	1	42
48, 2022			1		18	17	4			40
49, 2022		3	2	2	10	14	18	1	1	51
50, 2022			3		16	6	30			55
51, 2022		4	3	1	7	5	28			48
52, 2022		2	1		6	5	24	1		39
01, 2023		3	1		7	1	13		1	26
02, 2023		1	2		3	4	7			17
03, 2023	1	4	9		9	5	11		1	40
04, 2023	1	2	10	2	9	5	9		1	39
05, 2023		2	12	2	20	2	14		1	53
06, 2023	1	1	17	3	19	3	10		1	55
07, 2023			19	3	25	2	9	1	1	60
08, 2023	2	1	14	1	20	5	8	2		53
09, 2023		2	19	1	23	4	7		1	57
10, 2023		1	5		3					9
<b>Total</b>	<b>6</b>	<b>28</b>	<b>124</b>	<b>17</b>	<b>275</b>	<b>106</b>	<b>198</b>	<b>7</b>	<b>11</b>	<b>772</b>

\*Inclusive of samples submitted up until week 10



**Figure 4.** The epidemiological curve of the number of laboratory-confirmed measles cases in South Africa from week 40, 2022 to week 10, 2023 (ending 09 October 2022 – ending 11 March, 2023) by specimen collection dates and by province, indicating the weeks in which outbreaks were declared in Limpopo, Mpumalanga, North West, Gauteng, Free State provinces and Western Cape. \*Data from week 08 represent partial data, and will be updated in next week's situation report, when complete data from samples collected that week becomes available.

The age of laboratory-confirmed cases across the eight provinces ranges from two months to 60 years (Table 2). The majority of cases 324, (42%) were in the 5-9-year age group, followed by 188 (25%) in the 1-4-year age group and 148 (19%) in the 10-14-year age group. The attack rates are highest among age groups 1-4 and 5-9 (Table 2). In the provinces where a measles outbreak has been declared, 80 (10.4%) of the 766 cases were vaccinated, 92 (12%) were unvaccinated, and the vaccination status of 594 (77.5%) is unknown (Table 3). The age groups with the highest number of vaccinated cases are those aged 1-4 years and those aged 5-9 years (Table 4). Whilst the NICD is presently not able to provide data on hospital admission rates nor measles mortality rates, Table 5 reflects the number and proportion of laboratory-confirmed measles cases that originate from hospitals as opposed to primary healthcare facilities. Whilst cases that are seen at hospitals may not necessarily be admitted, this proportion gives us an indication of the severity of illness, as patients consulted tertiary care facilities. Admitted patients will be a subset of these cases. Presently it is not possible to determine measles admission rates and mortality. The NICD is working on data systems to collect this information.

**Table 2.** Age distribution of laboratory-confirmed measles cases from epidemiological week 40, 2022 to week 10, 2023, in provinces with a declared measles outbreak with age-specific attack rates.

Age group	FS		GP		LP		MP		NW		WC		NC		KZN		Total	
	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR
<b>&lt;1 year</b>	3	5.63	13	4.93	13	9.85	5	5.52	8	9.90	1	0.83	0	0.00	1	0.41	44	4.36
<b>1-4 years</b>	10	4.76	21	2.02	59	11.06	31	8.88	54	17.16	5	1.07	2	1.97	6	0.62	188	4.72
<b>5-9 years</b>	12	4.49	56	4.46	115	17.26	38	8.89	91	23.24	1	0.18	3	2.38	8	0.67	324	6.64
<b>10-14 years</b>	3	1.04	21	1.71	65	9.74	21	4.54	33	8.09	2	0.34	2	1.59	1	0.08	148	2.98
<b>≥15 years</b>	0	0.00	13	0.11	23	0.58	11	0.32	12	0.40	2	0.04	0	0.00	1	0.01	62	0.16
<b>Total</b>	<b>28</b>	<b>0.96</b>	<b>124</b>	<b>0.77</b>	<b>275</b>	<b>4.63</b>	<b>106</b>	<b>2.25</b>	<b>198</b>	<b>4.73</b>	<b>11</b>	<b>0.15</b>	<b>7</b>	<b>0.53</b>	<b>17</b>	<b>0.15</b>	<b>766</b>	<b>1.42</b>

FS= Free State; GP= Gauteng; KZN=KwaZulu-Natal; LP=Limpopo; NW=North West; AR = attack rate per 100,000 children within the age band, denominators from mid-year population estimates, 2022, StatsSA

**Table 3.** Vaccination status for laboratory-confirmed measles cases from epidemiological week 40, 2022 to week 10, 2023 in provinces with a declared measles outbreak.

Vaccination status	FS	GP	LP	MP	NW	WC	NC	KZN	Total
Vaccinated	8	8	22	15	14	5	3	5	80 (10.4%)
Unvaccinated	3	10	35	18	25	0	0	1	92 (12%)
Unknown	17	106	218	73	159	6	4	11	594 (77.5%)
<b>Total</b>	<b>28</b>	<b>124</b>	<b>275</b>	<b>106</b>	<b>199</b>	<b>11</b>	<b>7</b>	<b>17</b>	<b>766</b>

**Table 4:** Age distribution of vaccinated persons from epidemiological week 40, 2022 to week 10, 2023 in provinces with a declared measles outbreak.

Age group	FS	GP	LP	MP	NW	WC	NC	KZN	Total
< 1 year	1	2	1	0	0	1	0	0	5
1 – 4 years	2	1	8	2	4	3	0	2	22
5 – 9 years	2	5	11	9	9	1	2	3	42
10 – 14 years	3	0	2	4	1	0	1	0	11
≥15 years	0	0	0	0	0	0	0	0	0
<b>Total</b>	<b>8</b>	<b>8</b>	<b>22</b>	<b>15</b>	<b>14</b>	<b>5</b>	<b>3</b>	<b>5</b>	<b>80</b>

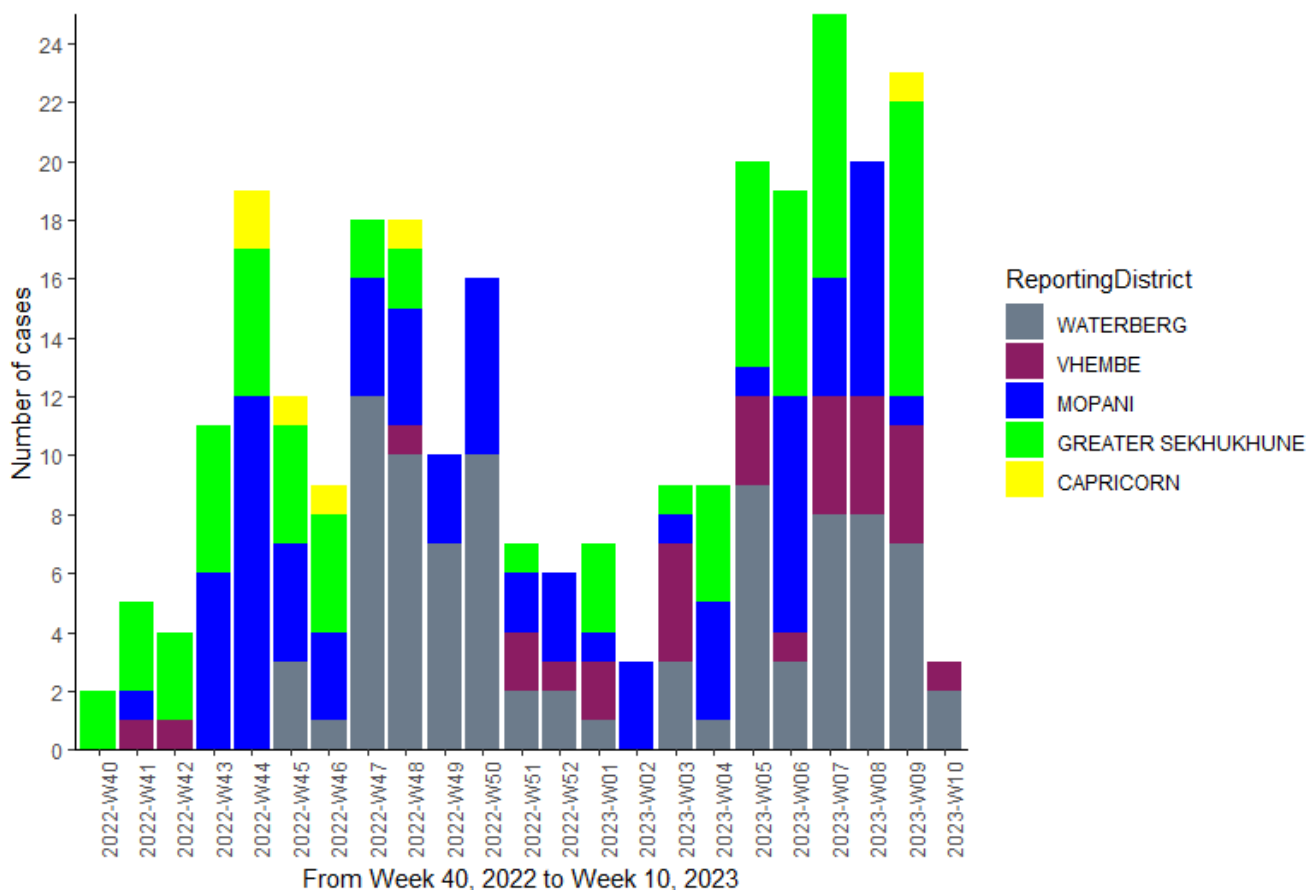
**Table 5.** The facility types where laboratory-confirmed measles cases have been identified, for epidemiological week 40, 2022 to week 10, 2023, South Africa. Submission of a specimen from a hospital may suggest (but is not firm evidence) that the patient was admitted. The number of admissions will be lower than the number of cases reported from hospitals.

Reporting Health Facility	<1 year	1-4 years	5-9 years	10-14 years	≥15 years	Total
From PHC/CHC/other	19	130	235	107	46	537
From a hospital (%)	25 (57)	58 (31)	89 (27)	41 (28)	16 (26)	229 (30)
<b>Total</b>	<b>44</b>	<b>188</b>	<b>324</b>	<b>148</b>	<b>62</b>	<b>766</b>

## An overview of the outbreak in the Limpopo Province

In total, 275 cases of laboratory-confirmed measles were reported between epidemiological week 40, 2022 to week 10, 2023 with the majority of the measles cases reported in the Greater Sekhukhune, Mopani and Waterberg districts. Figure 5 shows an epidemiological curve from week 40, 2022 to week 10 of 2023 in Limpopo province. Waterberg district reported the highest number of measles cases which is 89 cases, Mopani district reported 79 cases, Greater Sekhukhune district reported 72 cases, Vhembe district reported 29 cases and Capricorn district reported six cases. Dilokong hospital reported 32 cases out of the 72 from Greater Sekhukhune. Amongst the 29 cases reported from the Vhembe district, 26 cases originated from Makhado (Louis Trichardt Hospital and Clinic). In the Waterberg district, 35 cases of 89 have been reported from Witpoort Hospital in Lephalale. The age of measles cases across Limpopo ranged from 4 months to 42 years.

Measles virus infection affected mostly the age group 5-9 years (Table 2), with an attack rate of 17.26 per 100,000 persons. This was followed by the 1-4 age group with an attack rate of 11.06 per 100,000 persons. Of the 275 measles cases in Limpopo province, 218 (79%) had an unknown vaccination status, 22 (8%) were vaccinated, and 35 (13%) were unvaccinated (Table 3).



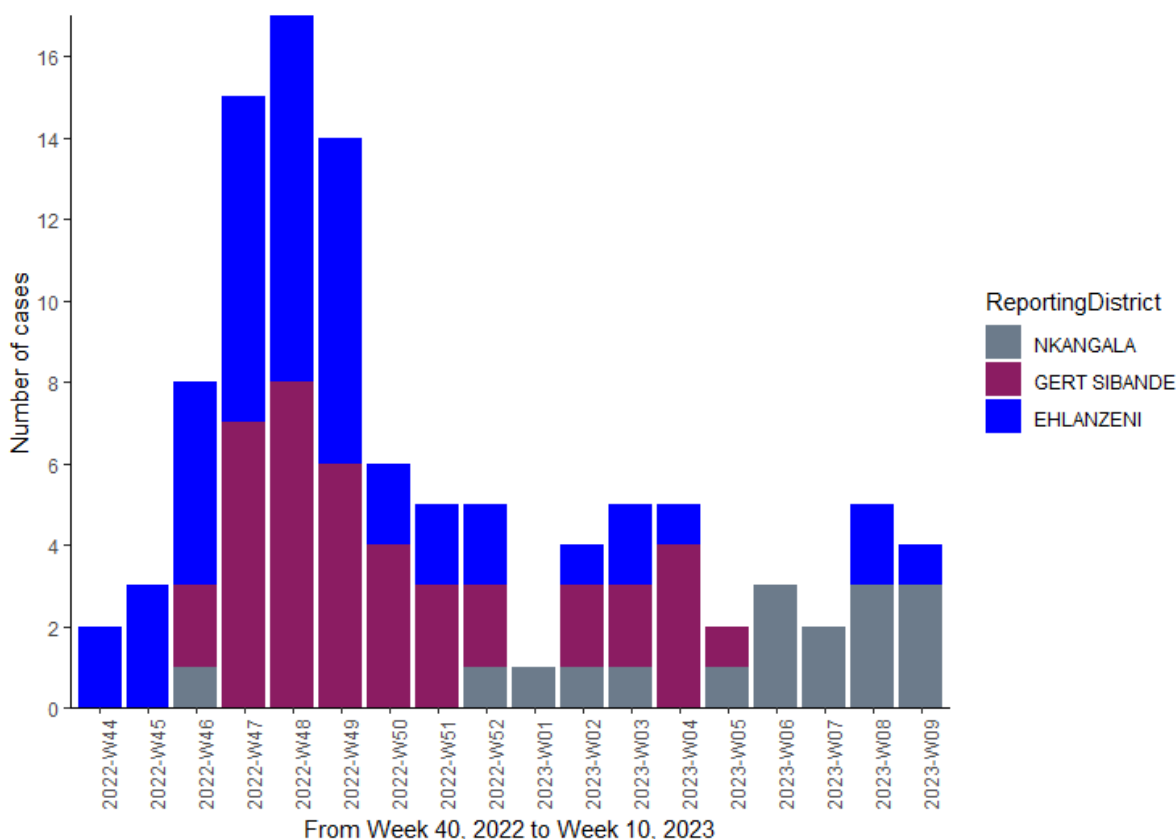
**Figure 5.** The epidemiological curve of the number of laboratory-confirmed measles cases by districts of Limpopo Province from epidemiological week 40, 2022 to week 10, 2023 by specimen collection dates



## Mpumalanga

In total, 106 cases of laboratory-confirmed measles have been reported since epidemiological week 40, 2022. The measles outbreak was declared in Mpumalanga province on 11 November 2022 (epidemiological week 45, 2022). Figure 6 shows an epidemiological curve for Mpumalanga province from week 44, 2022 to week 10, 2023, with Ehlanzeni and Gert Sibande districts reporting the majority of cases, 48 and 41, respectively. Dwarsloop clinic reported 18 of the 48 cases from the Ehlanzeni district, while Dundonald clinic reported 12 out of the 41 cases from the Gert Sibande district.

The age of cases across Mpumalanga ranged from 4 months to 60 years. The most affected age group by the measles outbreak is 5-9 years (Table 2), with an attack rate of 8.89 per 100,000 persons. Of the 106 cases, 73 had an unknown vaccination status, 15 were vaccinated and 18 were unvaccinated (Table 3).

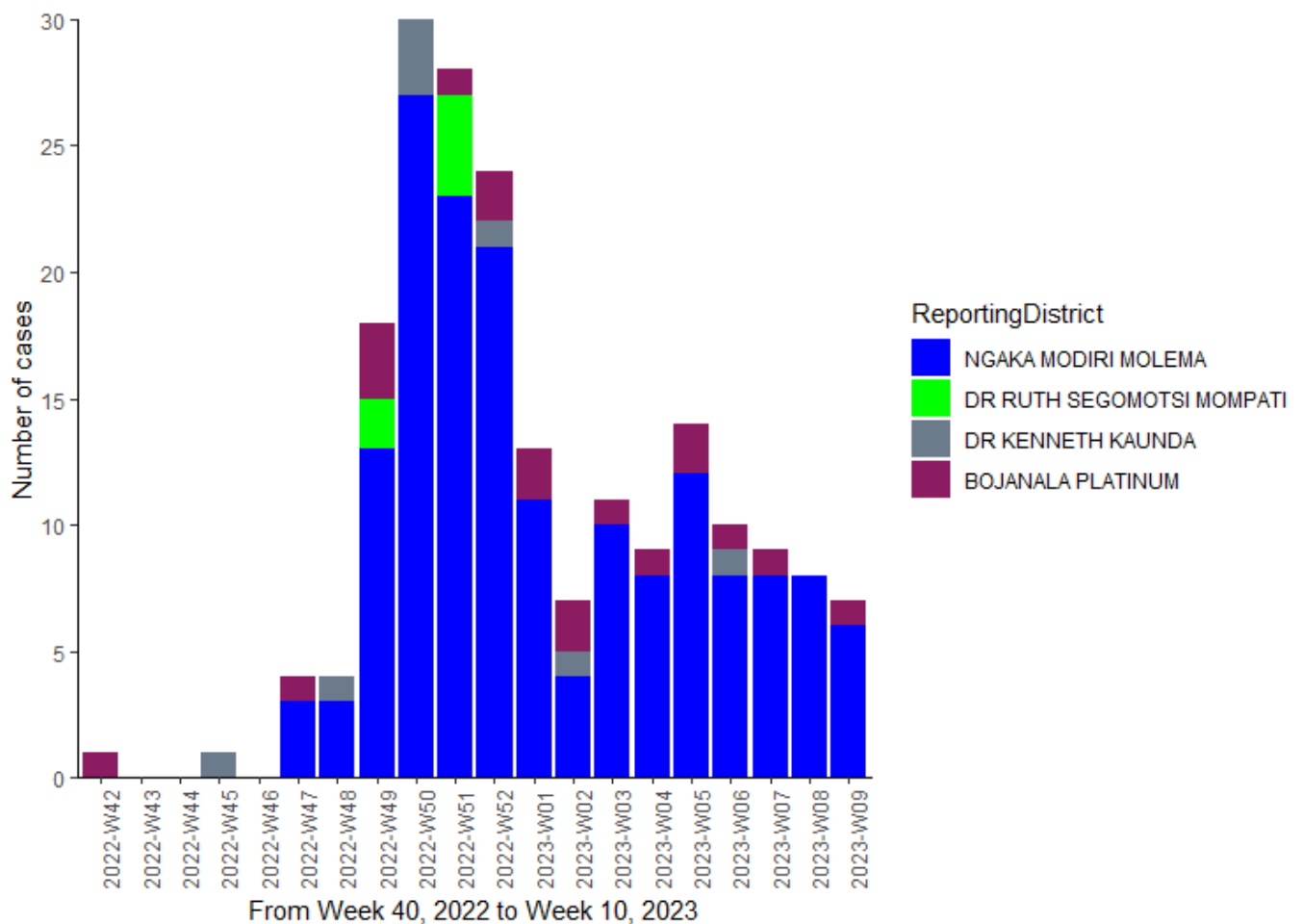


**Figure 6.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of Mpumalanga Province from epidemiological week 44, 2022 to week 10, 2023 by specimen collection dates. \*No cases were reported in week 10.

## North West

A total of 198 laboratory-confirmed measles cases have been reported in North West Province since epidemiological week 40, 2022 (Figure 7). An outbreak was declared in North West province on 02 December 2022 (epidemiological week 48, 2022) after three laboratory-confirmed cases were reported in Ngaka Modiri Molema district. The majority of the laboratory-confirmed cases are among children aged 5-9 years, with 91 cases and an attack rate of 23.24 per 100,000 persons, followed by those aged 1-4 years with 54 cases, with an attack rate of

17.16 per 100,000 persons (Table 2). A total of 14 of the 198 cases were vaccinated and 159 had unknown vaccination status (Table 3). Of these 198 cases, the majority (165) were reported from the Ngaka Modiri Molema district, with 72 cases reported from a single clinic, Lonely Park Clinic in Mahikeng.



**Figure 7.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of North West Province from epidemiological week 42, 2022 to week 10, 2023 by specimen collection date. \*No cases were reported in week 10.

### Gauteng

A total of 124 laboratory-confirmed measles cases have been reported from epidemiological week 40, 2022 to week 10, 2023 in Gauteng Province displayed in Figure 8. An outbreak was declared on 06 December 2022 (epidemiological week 49, 2022) after three laboratory-confirmed measles cases were reported at a single health facility, Ethafeni clinic in the City of Ekurhuleni Metropolitan Municipality. To date, the majority of cases, 85, have been reported from the City of Ekurhuleni, 18 from the City of Tshwane 14 cases from the City of Johannesburg and seven cases from West Rand. Amongst these 124 cases, 106 have unknown vaccination status while eight cases were vaccinated (Table 3). Of the 124 cases, 12 were identified at Daveyton's main clinic in Ekurhuleni.

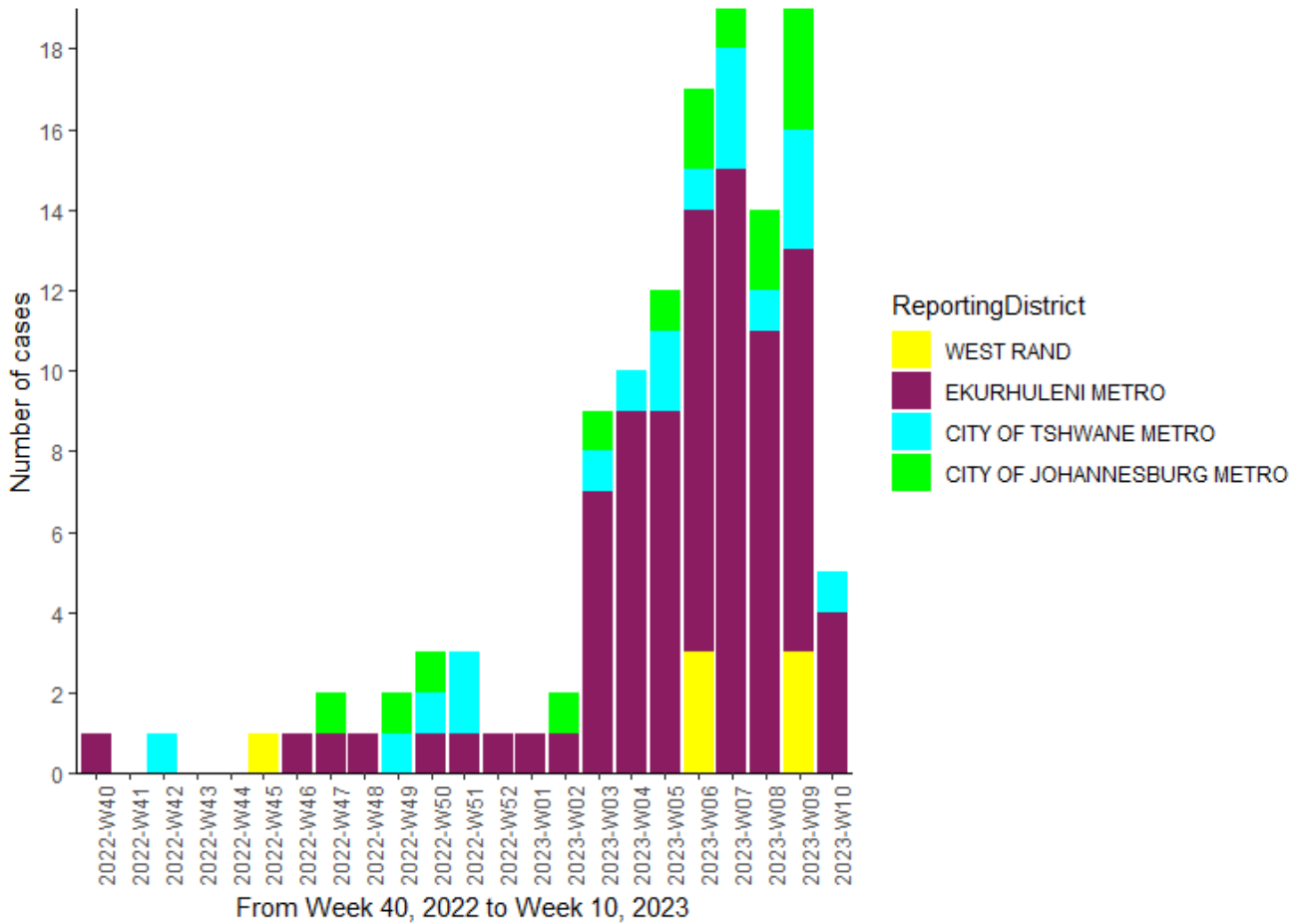
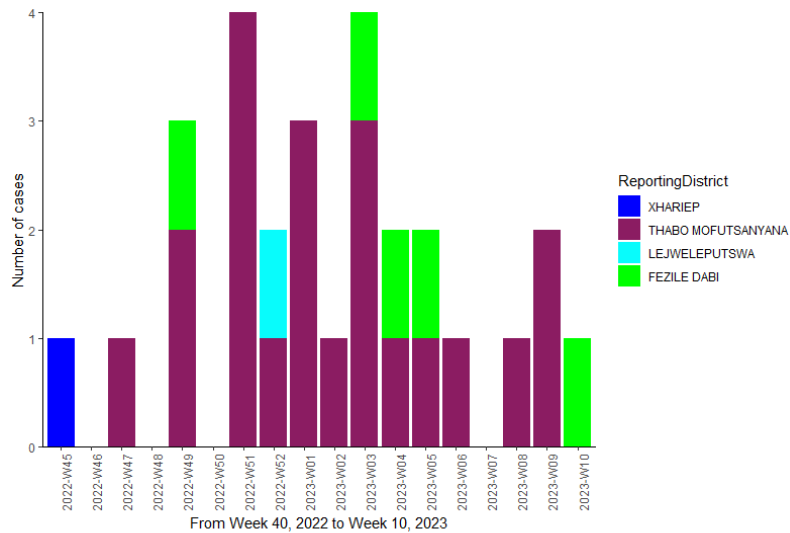


Figure 8. The epidemiological curve of the number of laboratory-confirmed measles cases in districts of Gauteng Province from epidemiological week 40, 2022 to week 10, 2023 by specimen collection dates.

### Free State

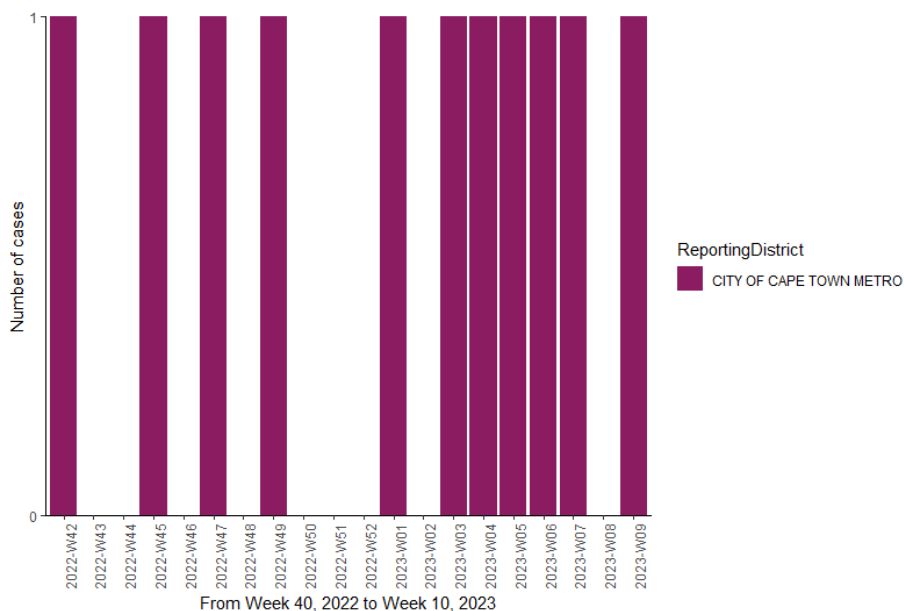
There are currently 28 laboratory-confirmed measles cases in this province since epidemiological week 40, 2022 (Figure 9). An outbreak was declared on 20 December 2022 (epidemiological week 51, 2022) in Free State province after three laboratory-confirmed measles cases were reported in the Thabo Mofutsanyana district. Of the 28 cases, 21 have been reported from the Thabo Mofutsanyana district, five from the Fezile Dabi district, and one each from the Lejweleputswa and Xhariep districts. Of these 21 cases reported from Thabo Mafutsanyana district, eight were reported by Bethlehem clinic. The vaccination status of 17 cases is unknown, whereas three cases were not vaccinated, and eight were (Table 3).



**Figure 9.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of Free State Province from epidemiological week 40, 2022 to week 10, 2023 by specimen collection dates.

**Western Cape**

An outbreak was declared in the Western Cape Province on 20 February 2023 (epidemiological week 08, 2023) following the detection of four laboratory-confirmed measles in the City of Cape Town (Figure 10). Since epidemiological week 40, 2022, a total of 11 measles cases have been reported from the Western Cape, with all of the cases coming from the City of Cape Town. Five of these cases have been vaccinated, while the vaccination status of the remaining six is unknown (Table 3).

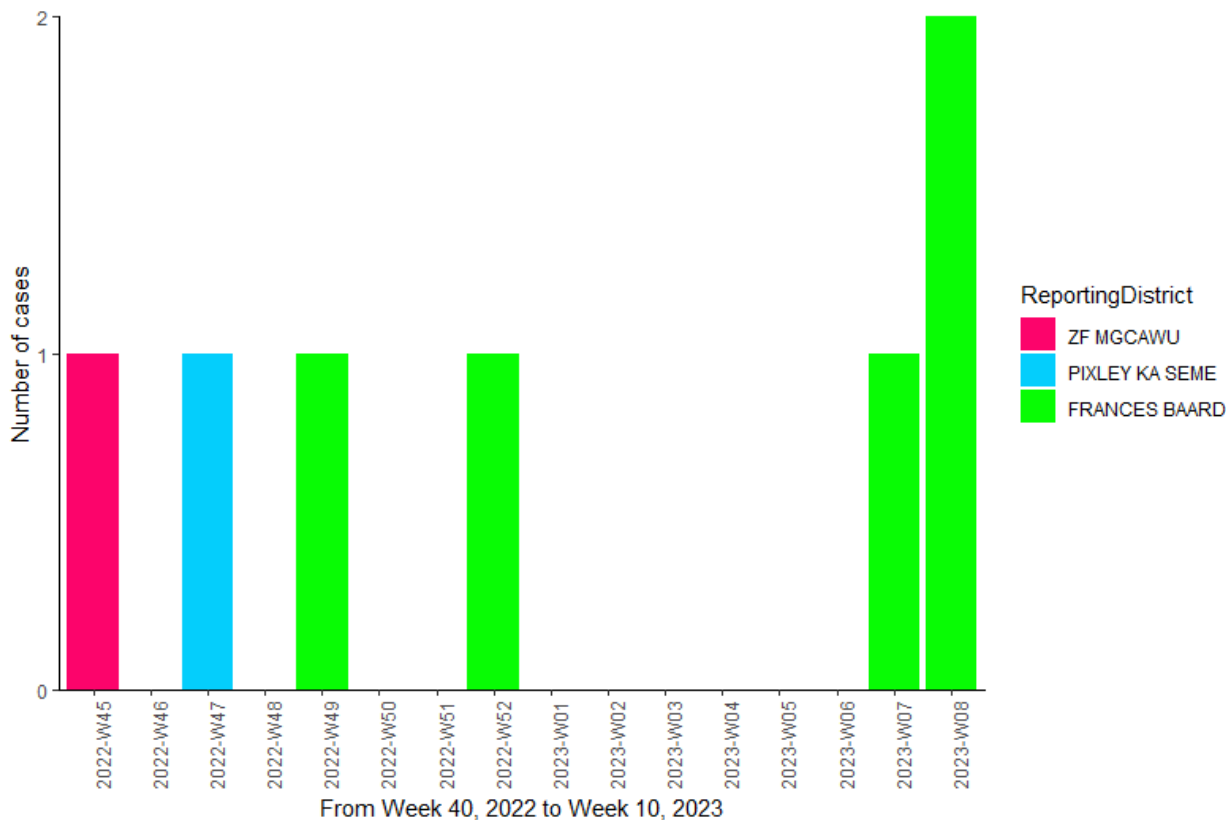


**Figure 10.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of Western Cape Province from epidemiological week 40, 2022 to week 10, 2023 by specimen collection dates. \*No cases were reported in week 10.

\*Note: Data is subject to change as new results are added or updated. Please contact Mr Tshepo Motsamai ([tshepom@nicd.ac.za](mailto:tshepom@nicd.ac.za)) to update data elements

## Northern Cape

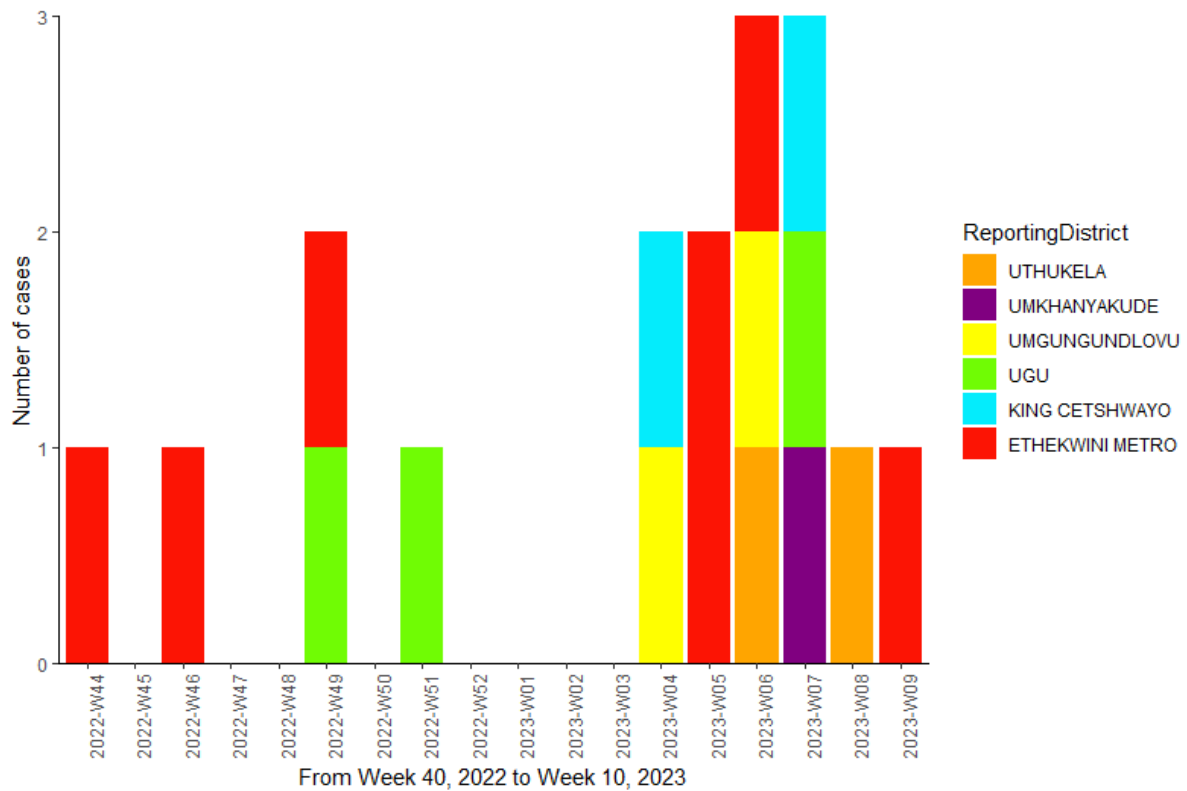
A measles outbreak was declared in the Northern Cape province after three laboratory-confirmed measles cases were reported in one facility in Kimberley on 28 February 2023. There are seven cases in this province as of week 10 of 2023 (Figure 11). Five of the cases are from the Frances Baard district, with one from Pixley Ka Seme and one from ZF Mgcawu. Three of the seven cases in this province have been vaccinated, while the vaccination status of the remaining four is unknown (Table 3).



**Figure 11.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of Northern Cape Province from epidemiological week 45, 2022 to week 10, 2023 by specimen collection dates. \*No cases were reported in weeks 9 and 10.

## KwaZulu-Natal

A measles outbreak was declared on 1 March 2023 (epidemiological week 09, 2023) in KwaZulu-Natal province after four laboratory-confirmed measles cases were reported in the Ethekwini. There are 17 cases in this province as of week 10 of 2023 (Figure 12). Five of these cases were vaccinated, while the status of the remaining 11 cases is unknown (Table 3).



**Figure 12.** The epidemiological curve of the number of laboratory-confirmed measles cases in districts of KwaZulu-Natal Province from epidemiological week 44, 2022 to week 10, 2023 by specimen collection dates. \*No cases were reported in week 10.

## Conclusion

The total number of laboratory-confirmed measles cases continues to increase and the outbreak has moved to eight of the nine provinces in South Africa. The number of specimens submitted for testing has decreased when compared to previous weeks. Continuous surveillance for measles cases is recommended. Prevention and control of measles outbreaks can only be achieved through vaccination. It is never too late to vaccinate – children over the age of 6 months to 15 years are targeted in the National supplemental immunization campaign rolled out in all provinces since 06 Feb 2023. The NICD continues to report on a large number of cases with unknown vaccination status. We urge the district and province to complete the vaccine status on the investigation forms for the completeness of data. Clinicians across the country are urged to be on the lookout for measles cases. For more information about measles, case definition, notification, investigation and guidelines for measles management including vaccination, please refer to our website: <https://www.nicd.ac.za/diseases-a-z-index/measles/>. Healthcare workers are encouraged to submit reports on any adverse events following immunization (AEFI) through the Med Safety application (<https://medsafety.sahpra.org.za/>) or through submitting a case reporting form to their district surveillance officer.