

## Interim situation report, 18 January 2023 (Including data available up to 12 January 2023)

### Issued by the National Institute for Communicable Diseases based on laboratory testing data

From epidemiological week 40, 2022 (ending 8 October 2022) to mid-week 02, 2023 (ending 14 January 2023) the NICD has tested 3326 serum samples for measles of which 397 (11.9%) were confirmed measles cases (Table 1). The number of samples submitted, number, and % tested positive are shown in Figure 1. From epidemiological week 40 of 2022 to mid-week 02 of 2023, 382 laboratory-confirmed cases were reported from five provinces with declared measles outbreaks in Limpopo (145 cases), Mpumalanga (79 cases), North West (125 cases), Gauteng (18 cases), and Free State (15 cases) (Table 2). The geographical distribution of cases across South Africa from week 40 of 2022 until mid-week 02 of 2023 is shown in Figure 2. The number of cases continues to increase daily as blood and throat swabs are submitted to the NICD for measles serology and PCR testing.

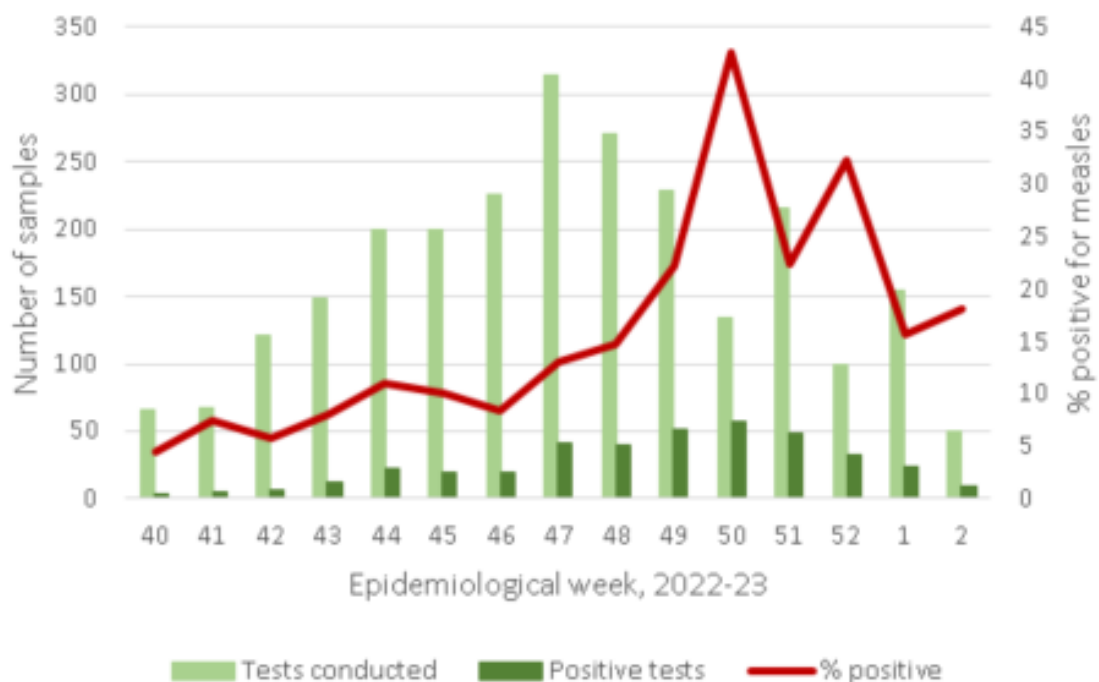


Figure 1. The number of serum samples submitted to the NICD for measles, week 40 2022, until midweek 2, 2023, and the number (dark green) and % tested positive (red line), by epidemiological week.

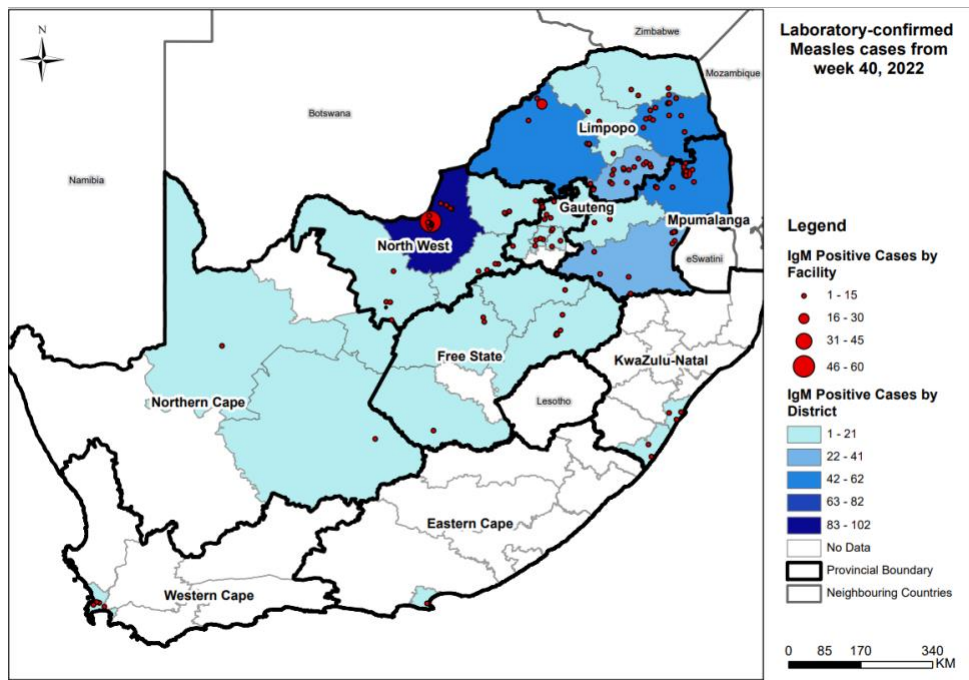


Figure 2. Distribution of laboratory-confirmed measles cases by testing site (red dots – the size of the dot indicates the number of cases from that facility) and district of South Africa (deepening colour of blue indicates the total number of cases by sub-district), from week 40 to mid-week 02, 2023.

Table 1. Cases of laboratory-confirmed measles tested by the NICD from all provinces in South Africa from epidemiological week 40, 2022 to mid-week 02, 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.

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	32			57
51, 2022		5	3	1	7	5	27			48
52, 2022		2	1		6	5	23	1		38
01, 2023		3	1		7	1	11		1	24
02, 2023			1		1	3	4			9
<b>Total</b>	<b>1</b>	<b>15</b>	<b>18</b>	<b>5</b>	<b>145</b>	<b>79</b>	<b>125</b>	<b>4</b>	<b>5</b>	<b>397</b>

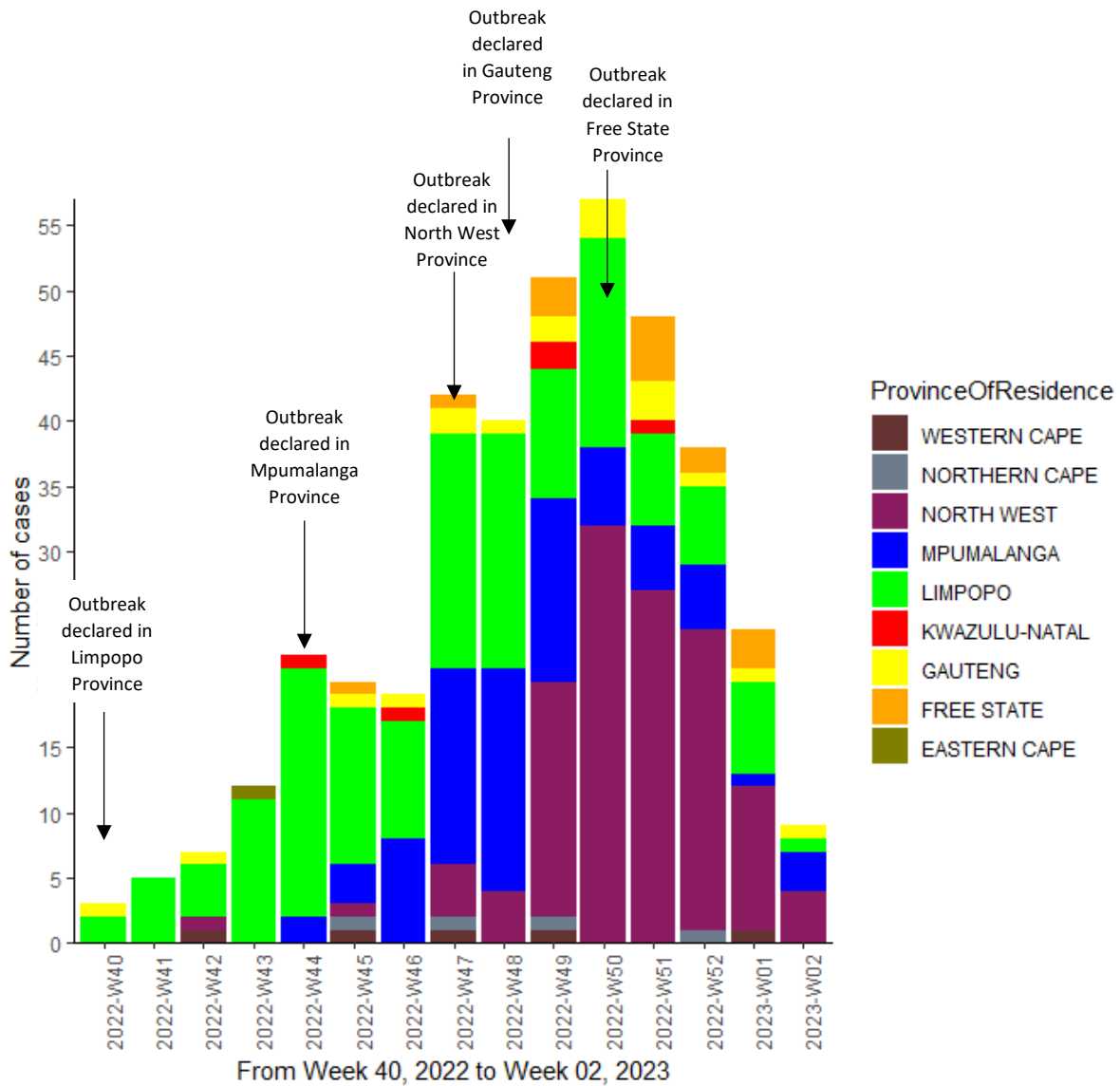


Figure 3. The epidemiological curve showing the number of laboratory-confirmed measles cases in South Africa from week 40, 2022 to mid-week 02, 2023 (ending 08 October 2022 – ending 14 January 2023) by specimen collection dates and by province, indicating the weeks in which outbreaks were declared in Limpopo, Mpumalanga, North West, Gauteng, and Free State provinces

The age of laboratory-confirmed cases across the five provinces ranges from two months to 60 years (Table 2). The majority of cases 153, (40%) were in the 5-9-year age group, followed by 112 (29%) in the 1-4 year age group and 64 (17%) in the 10-14-year age group. The attack rates are highest among age groups 5-9 and 1-4 (Table 2). Of the 382 cases in the provinces where the measles outbreak has been declared, the vaccination status of 75 (20%) was known, of whom 31 (41%) were vaccinated (Table 3). Whilst the NICD is presently not able to provide data on hospital admission rates nor on measles mortality rates, Table 4 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, the highest proportion of cases seen at tertiary facilities occurs amongst the cases that are <1 year of age, reflecting the increased severity of illness amongst this age group.

Table 2. Age distribution of laboratory-confirmed measles cases from epidemiological week 40, 2022 to mid-week 02, 2023, in provinces with a declared measles outbreak with age-specific attack rates.

Age group	FS		GP		LP		MP		NW		Total	
	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR	# cases	AR
<1 year	2	3.76	3	1.14	8	6.06	5	5.51	7	8.66	25	4.03
1-4 years	6	2.86	5	0.48	44	8.25	21	6.01	36	11.44	112	4.58
5-9 years	5	1.87	8	0.64	53	7.95	29	6.78	58	14.81	153	5.09
10-14 years	2	0.69	1	0.08	26	3.90	17	3.67	18	4.41	64	2.09
≥15 years	0	0	1	0.01	14	0.36	7	0.21	6	0.20	28	0.11
<b>Total</b>	<b>15</b>	<b>0.51</b>	<b>18</b>	<b>0.11</b>	<b>145</b>	<b>2.44</b>	<b>79</b>	<b>1.67</b>	<b>125</b>	<b>2.99</b>	<b>382</b>	<b>1.13</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, Stats SA

Table 3. Vaccination status for laboratory-confirmed measles cases from epidemiological week 40, 2022 to mid-week 02, and 2023 in provinces with a declared measles outbreak.

Vaccination status		FS	GP	LP	MP	NW	Total
Vaccination status known		5	1	27	26	16	75
Vaccination status unknown		10	17	118	53	109	307
Vaccinated cases (% of known status)		3 (60%)	1 (100%)	13 (48%)	9 (35%)	5 (31%)	31 (41%)
Age distribution of vaccinated persons	<1 year	1	1	0	0	0	1
	1-4 years	0	0	7	1	2	9
	5-9 years	0	0	5	5	3	12
	10-14 years	2	0	1	3	0	5
	≥15 years	0	0	0	0	0	0
<b>Total</b>		<b>15</b>	<b>18</b>	<b>145</b>	<b>79</b>	<b>125</b>	<b>382</b>

Table 4. The facility type where laboratory-confirmed measles cases have been identified, for epidemiological week 40, 2022 to mid-week 02, 2023, South Africa. Submission of a specimen from a hospital may suggest (but is not firm evidence) that the patient was admitted.

Reporting Health Facility	<1 year	1-4 years	5-9 years	10-14 years	≥15 years	Total
From PHC/CHC/other	11	80	111	48	20	270
From a hospital (%)	14 (56)	32(29)	42 (27)	16 (25)	8(29)	112 (29)
<b>Total</b>	<b>25</b>	<b>112</b>	<b>153</b>	<b>64</b>	<b>28</b>	<b>382</b>

### An overview of the outbreak in the Limpopo Province

In total, 145 cases of laboratory-confirmed measles were reported between epidemiological weeks 40, 2022 to mid-week 02, 2023 with the majority of the measles cases reported in the Greater Sekhukhune, Mopani, and Waterberg districts. An outbreak of measles was declared in Limpopo on 11 October 2022 (epidemiological week 41, 2022). Figure 4 displays an epidemiological curve from week 40, 2022 to mid-week 02 of 2023 in Limpopo province. Mopani district reported 50 cases, Waterberg district reported 48 cases, Greater Sekhukhune district reported 34 cases, and Vhembe district reported eight cases. 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 7.95 per 100,000 persons. However, the 1-4 age group had the highest attack rate (8, 25/100,000). Of the 145 measles cases in Limpopo province, 118 (81%) had an unknown vaccination status, 13 (8%) were vaccinated, and 14 (10%) were unvaccinated (Table 3). In the Waterberg district, 26 cases of 48 have been reported from Witpoort Hospital in Lephalale.

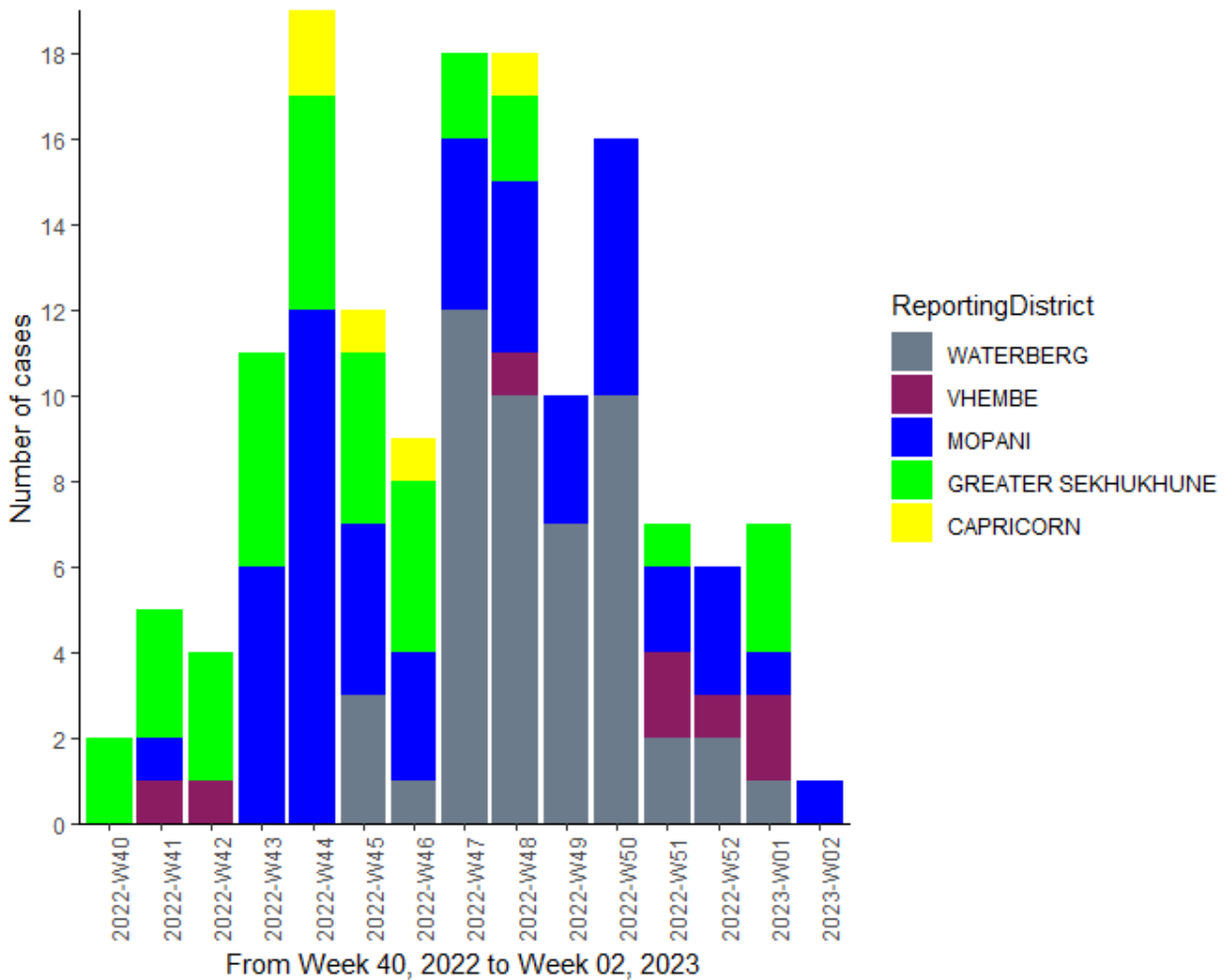


Figure 4. The epidemiological curve showing the number of measles cases by districts of Limpopo Province from epidemiological week 40, 2022 to mid-week 02, 2023 by specimen collection dates

### Mpumalanga

In total, 79 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 5 shows an epidemiological curve for Mpumalanga province from week 44, 2022 to mid-week 02, 2023, with Ehlanzeni and Gert Sibande districts reporting the majority of cases, 42 and 34, respectively. Dwarloop clinic reported 17 of the 42 cases from the Ehlanzeni district, while Dundonald clinic reported 12 out of the 34 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 6.78 per 100,000 persons. Of the 79 cases, 53 had an unknown vaccination status, nine were vaccinated and 17 were unvaccinated (Table 3).

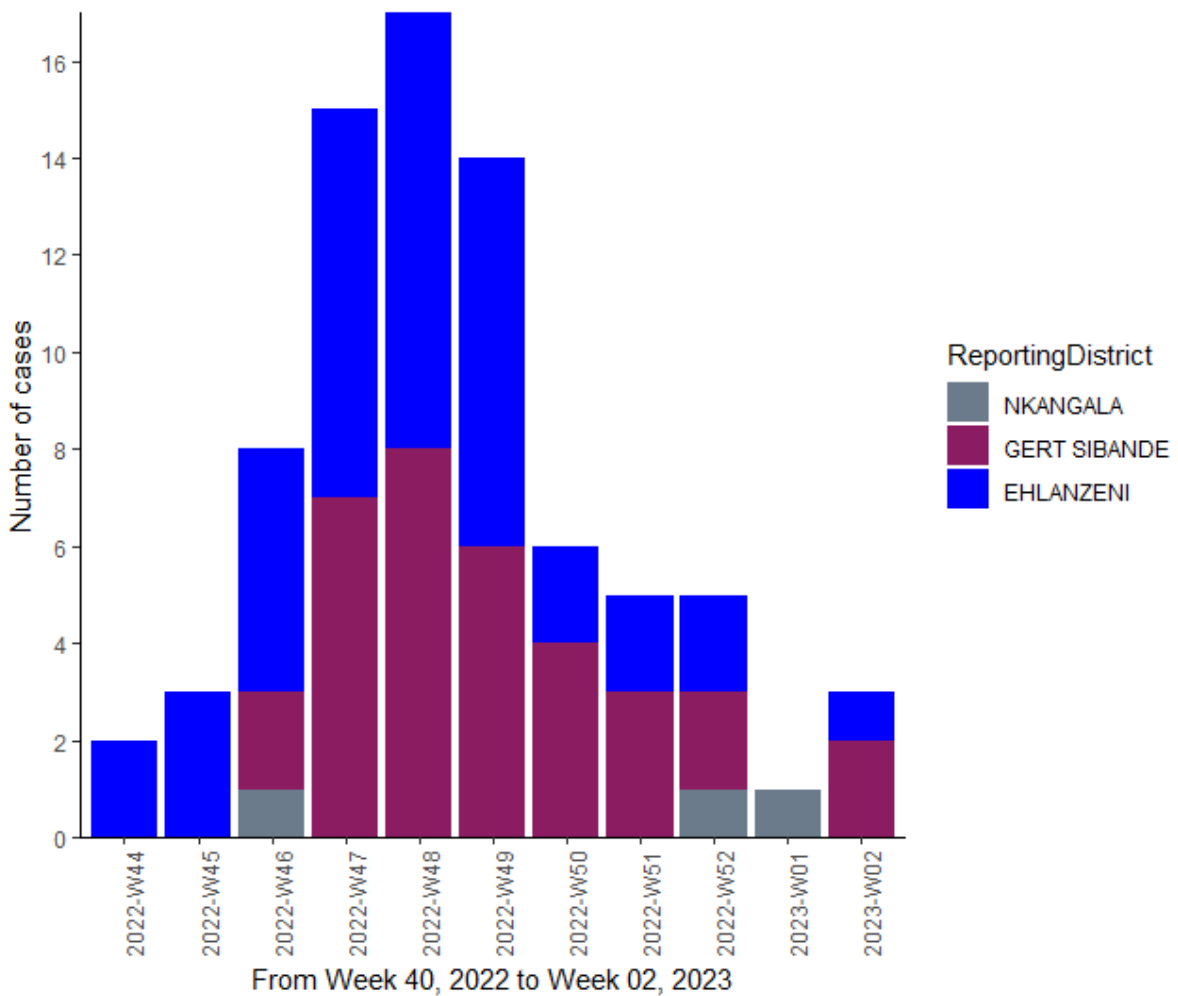


Figure 5. The epidemiological curve shows the number of measles cases in districts of Mpumalanga Province from epidemiological week 44, 2022 to mid-week 02, 2023 by specimen collection dates.

**North West**

A total of 125 cases have been reported in North West Province since epidemiological week 40, 2022 (Figure 6). An outbreak was declared in North West province on 02 December 2022 after three laboratory-confirmed cases were reported in Ngaka Modiri Molema district. Most of the laboratory-confirmed cases are among children aged 5-9 years, with an attack rate of 14.81 per 100,000 persons, followed by those aged 1-4 years, with an attack rate of 11.44 per 100,000 persons (Table 2). Five of the 125 cases were vaccinated and 109 had unknown vaccination status (Table 3). Of these 125 cases, 102 were reported from the Ngaka Modiri Molema district, with 57 cases reported from a single clinic, Lonely Park Clinic in Mahikeng.

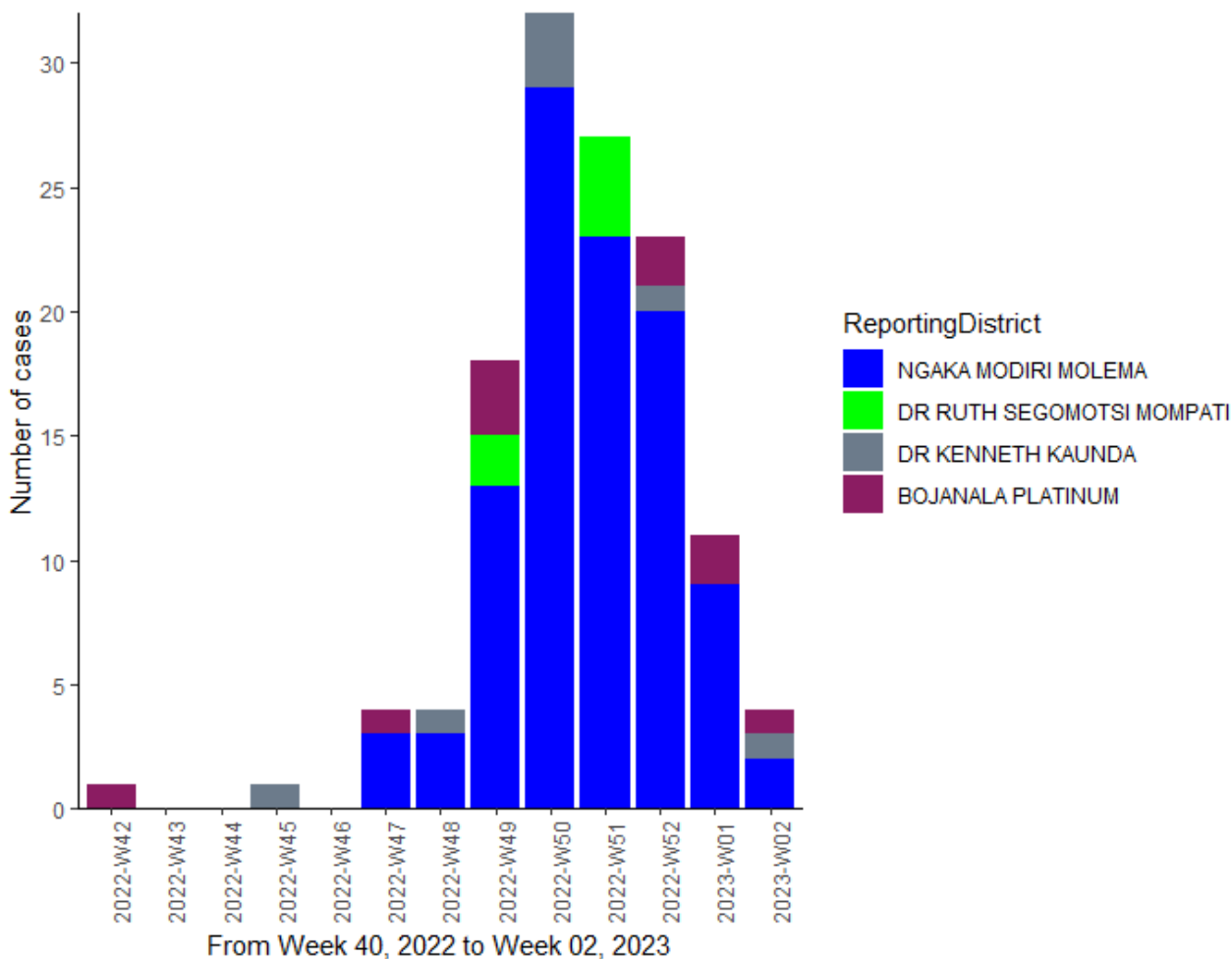


Figure 6. The epidemiological curve showing the number of measles cases in districts of North West Province from epidemiological week 42, 2022 to mid-week 02, 2023 by specimen collection dates

**Gauteng**

A total of 18 laboratory-confirmed cases have been reported from epidemiological week 40, 2022 to mid-week 02, and 2023 in Gauteng Province. An outbreak was declared on 06 December 2022 after three laboratory-confirmed cases were reported at a single health facility, Ethafeni clinic in the City of Ekurhuleni Metropolitan Municipality. Eight cases originated in the City of Ekurhuleni and five from the City of Tshwane. Amongst these cases, 17 have unknown vaccination status while one was vaccinated (Table 3).

### **Free State**

There are currently 15 laboratory-confirmed cases in this province since epidemiological week 40, 2022, in Free State Province. An outbreak was declared on 20 December 2022 in Free State province after three laboratory-confirmed cases were reported in the Thabo Mofutsanyana district. Eleven cases were reported from the Thabo Mofutsanyana district, two from the Lejweleputswa district, and one each from the Fezile Dabi and Xhariep districts. Bethlehem clinic reported six of the 11 cases reported from the Thabo Mafutsanyana district. The vaccination status of 10 cases is unknown; two cases were not vaccinated, and three were (Table 3).

### **Conclusion**

The total number of laboratory-confirmed measles cases and the total number of samples submitted for testing has decreased for the third consecutive week. Whilst this may signify decreasing transmission rates, other reasons for the decline in cases may have arisen through decreased health-seeking behaviour and/or decreased submission of tests from clinicians. Clinicians should be on high alert as the opening of schools may lead to localised outbreaks where vaccination rates are sub-optimal. As indicated in our previous situation report, the NICD advises that the planned vaccination campaigns should continue with the same urgency, as the presence of the outbreak implies low vaccination coverage.

Prevention and control of measles outbreaks can only be achieved through vaccination. Caregivers and parents are advised to review their child's vaccination records and confirm that they have received the measles vaccine. It is never too late to vaccinate – children who have not been vaccinated may receive the measles vaccine at any age over 6 months, and free of charge at primary health services. Clinicians across the country are urged to be on the lookout for measles cases. It is understood that the health departments in the respective provinces have commenced with or are planning immunisation campaigns. 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/>.