



INTERIM SITUATION REPORT, 2 March 2023

(Based on laboratory testing data up until 25 February 2023)

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

Highlights

- The NICD has tested 4250 **serum** samples for measles since epidemiological week 40, 2022, of which 665 (15.6%) were confirmed positive. In outbreak-affected provinces, 641 cases have been reported since week 40, 2022. In the past weeks (week 07 up until mid-week 08, 2023), 72 laboratory-confirmed measles cases were detected across the country, of which 68 are from outbreak-affected provinces.
- The percentage of samples testing positive (PTP) increased slightly from 18% of 298 samples tested in week 06 to 20% of the 284 samples tested in week 07
- Since the declaration of the outbreak in the Western Cape in epidemiological week 7, no new cases have been reported.
- An outbreak has been declared in the Northern Cape Province following the detection of three laboratory-confirmed cases in the Francis Baard district. Three laboratory-confirmed measles cases were reported in a single facility in Kimberley on the 28th of February, taking the total number of cases to 4. The measles campaign began on the 6th of February 2023. *These cases are not reflected in this sitrep as they occurred outside this week's reporting interval.*
- In provinces where an outbreak has been declared, the most affected age groups are still the 5–9-year-olds (41%) with a considerable proportion of cases reported among the 1-4 (25%) and 10-14 age groups (20%). Vaccination campaigns should therefore also include children aged 10 to 14
- The majority of cases (72%) were reported from primary healthcare facilities, and the highest proportion of cases reported from hospitals (53%) was reported in children under the age of one.
- 13 specimens from Limpopo and North West Province during this outbreak had measles virus genotype D8 sequences, either identical or very closely related to the Zimbabwe 2022 outbreak strain.
- Members of the public are urged to ensure their children are vaccinated against measles

Outbreak overview

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

From epidemiological week 40, 2022 (ending 8 October 2022) to mid-week 08, 2023 (ending 25 February 2023) the NICD has tested 4250 serum samples for measles of which 665 (15.6%) 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 08 of 2023, 641 laboratory-confirmed cases were reported from six provinces with declared measles outbreaks; Limpopo (232 cases), Mpumalanga (100 cases), North West (185 cases), Gauteng (90 cases), and Free State (24 cases), Western Cape (10) (Table 1). The geographical distribution of cases across South Africa from week 40 of 2022 until week 08 of 2023 is shown in Figure 2. The number of measles cases continues to increase with the high number of blood samples and throat swabs submitted to the NICD for measles serology and PCR testing (Figure 3).

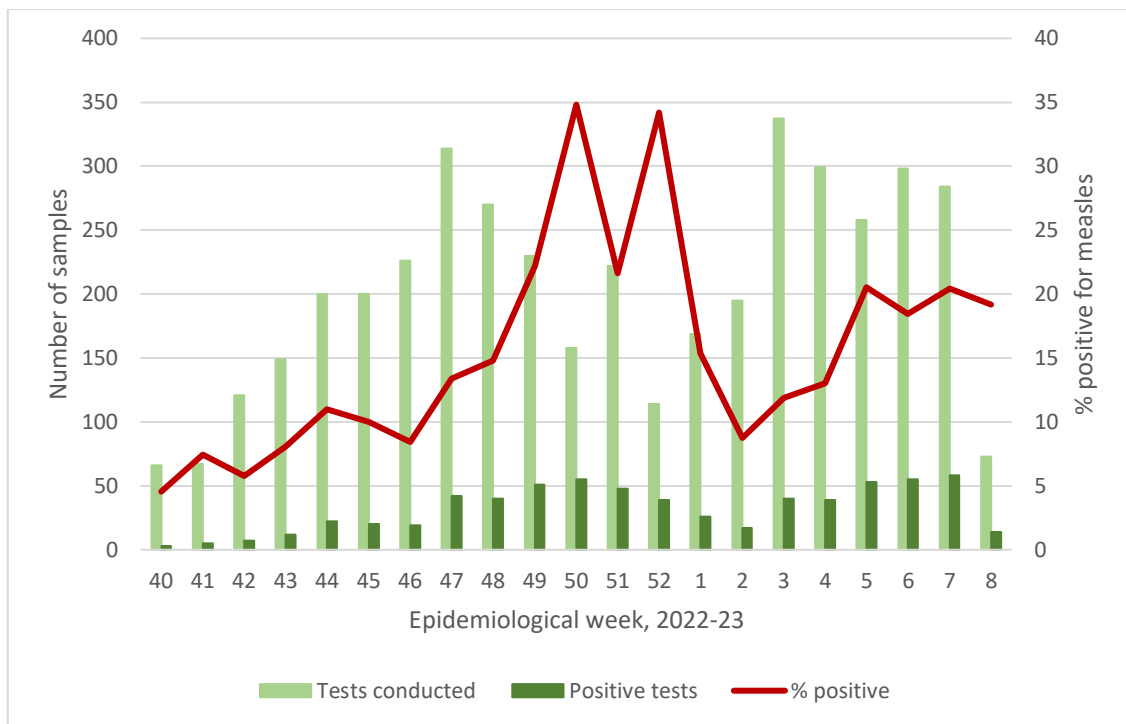


Figure 1. The number of serum samples submitted to the NICD for measles, week 40 2022, until week 08, 2023 and the number (dark green) and % tested positive (red line), by epidemiological week using the date the specimen was collected. *Data from week 08 represent partial data and will be updated in next week’s situation report when complete data from samples collected that week becomes available.

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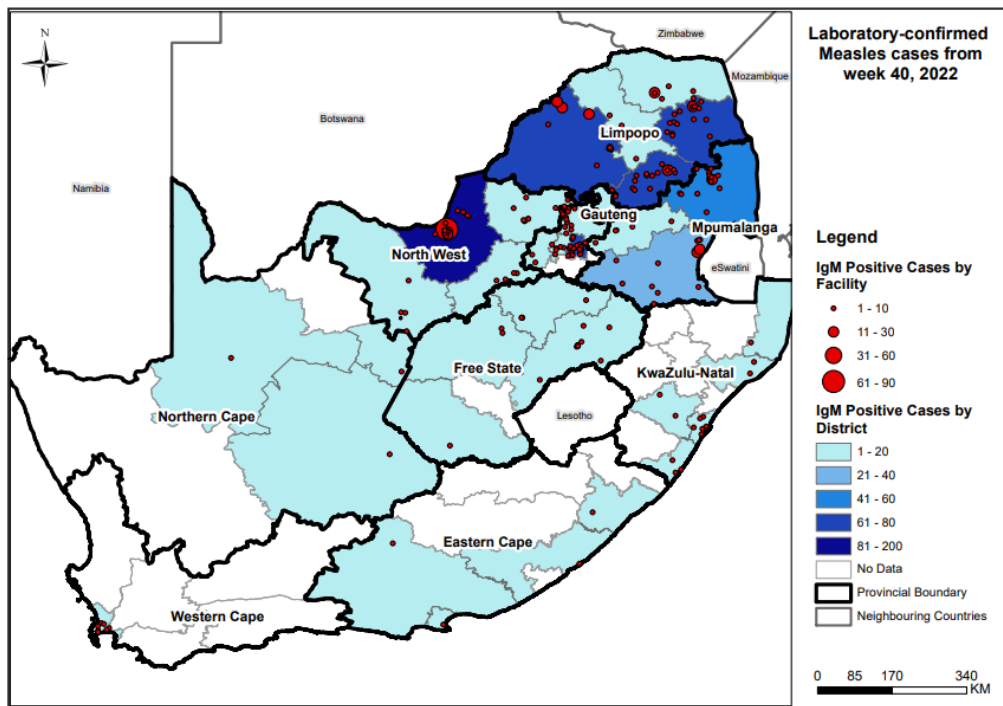


Figure 2. Distribution of laboratory-confirmed measles cases by the testing site (red dots – the size of the dot indicates the number of cases from that facility) and district of South Africa (deepening the colour of blue indicates the total number of cases by sub-district), from week 40 to week 08, 2023.

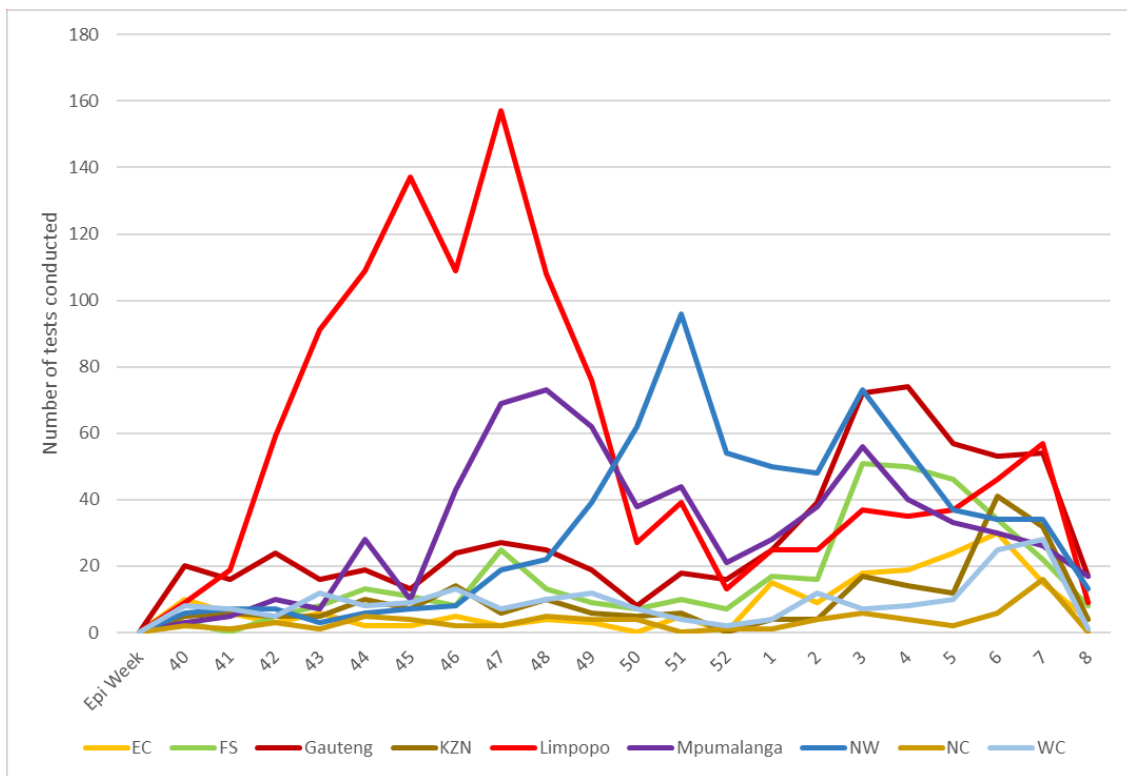


Figure 3. The number of tests conducted from week 40 2022, until week 08, 2023, by province and epidemiological week using the date the specimen was collected. *Data from week 08 represent partial data and will be updated in next week’s situation report when complete data from samples collected that week becomes available.

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Table 1. Cases of laboratory-confirmed measles tested by the NICD from all provinces in South Africa from epidemiological week 40, 2022 to week 08, 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 08 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		0	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			18	3	24	2	9	1	1	58
08, 2023			5		4	3	2			14
Total	4	24	90	15	232	100	185	5	10	665

*Inclusive of samples submitted up until week 08

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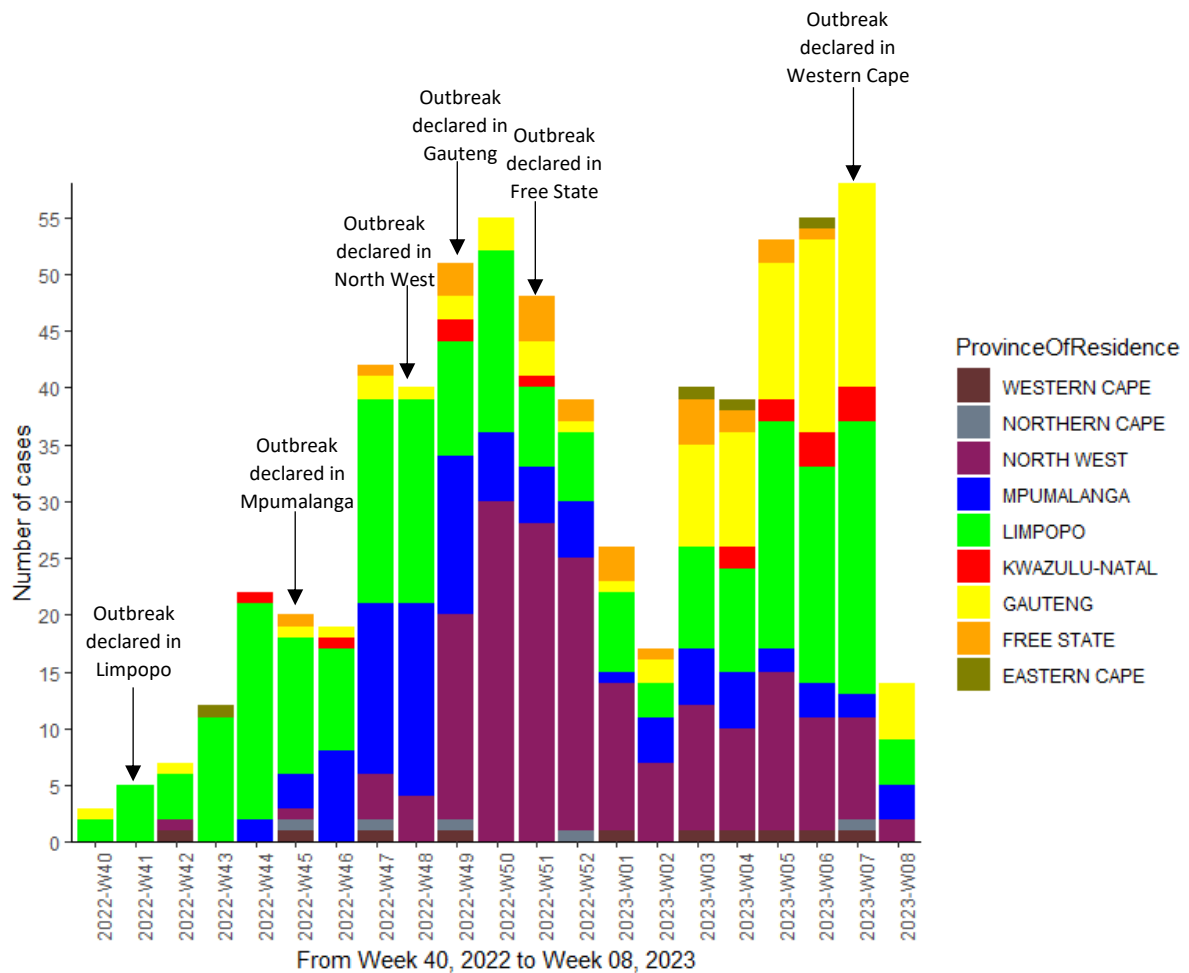


Figure 4. The epidemiological curve showing the number of laboratory-confirmed measles cases in South Africa from week 40, 2022 to week 08, 2023 (ending 08 October 2022 – ending 25 February 2023) by specimen collection dates and by province, indicating the weeks in which outbreaks were declared in Limpopo, 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 five provinces ranges from two months to 60 years (Table 2). The majority of cases 260, (41%) were in the 5-9-year age group, followed by 157 (25%) in the 1-4-year age group and 126 (20%) in the 10-14-year age group. The attack rates are highest among age groups 1-4 and 5-9 (Table 2). Of the 641 cases in the provinces where the measles outbreak has been declared, the vaccination status of 133 (21%) was known, of whom 53 (40%) were vaccinated (Table 3). Whilst the NICD is presently not able to provide data on hospital admission rates nor 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 seen at hospitals may not necessarily be admitted, this proportion indicates 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.

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Table 2. Age distribution of laboratory-confirmed measles cases from epidemiological week 40, 2022 to week 08, 2023, in provinces with a declared measles outbreak with age-specific attack rates.

Age group	FS		GP		LP		MP		NW		WC		Total	
	# Cases	AR	# Cases	AR	# Cases	AR	# Cases	AR	# Cases	AR	# Cases	AR	# Cases	AR
<1 year	2	3.76	11	4.17	11	8.33	5	5.52	7	8.66	1	0.83	37	5.00
1-4 years	10	4.76	16	1.54	53	9.94	29	8.31	49	15.57	5	1.07	162	5.56
5-9 years	10	3.74	37	2.95	93	13.96	34	7.95	86	21.96	0	0	260	7.28
10-14 years	2	0.69	18	1.47	54	8.09	21	4.54	31	7.60	2	0.34	128	3.52
≥15 years	0	0.00	8	0.06	21	0.53	11	0.32	12	0.40	2	0.04	54	0.18
Total	24	0.82	90	0.56	232	3.90	100	2.12	185	4.42	10	0.14	641	1.56

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 08, 2023 in provinces with a declared measles outbreak.

Vaccination status		FS	GP	LP	MP	NW	WC	Total
Vaccination status known		9	13	45	30	32	4	133
Vaccination status unknown		15	77	187	70	153	6	508
Vaccinated cases (% of known status)		6	5	14	12	12	4	53(40%)
Age distribution of vaccinated persons	<1 year	1	2	1	0	0	1	4
	1-4 years	2	0	7	1	3	3	13
	5-9 years	1	3	5	7	8	0	24
	10-14 years	2	0	1	4	1	0	8
	≥15 years	0	0	0	0	0	0	0
Total		24	90	232	100	185	10	641

Table 4. The facility type where laboratory-confirmed measles cases have been identified, for epidemiological week 40, 2022 to week 08, 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	17	116	194	95	39	461
From a hospital (%)	20 (54)	46 (28)	66 (25)	33 (26)	15 (28)	180 (28)
Total	37	162	260	128	54	641

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An overview of the outbreak in the Limpopo Province

In total, 232 cases of laboratory-confirmed measles were reported between epidemiological week 40, 2022 to week 08, 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 08 of 2023 in Limpopo province. Mopani district reported the highest number of measles cases which is 74 cases, Waterberg district reported 72 cases, Greater Sekhukhune district reported 62 cases, Vhembe district reported 19 cases and Capricorn district reported five cases. Dilokong hospital reported 26 cases out of the 62 from Greater Sekhukhune. Amongst the 19 cases reported from the Vhembe district, 16 cases originated from Makhado (Louis Trichardt Hospital and Clinic). The age of measles cases across Limpopo ranged from 4 months to 42 years. In the Waterberg district, 28 cases of 72 have been reported from Witpoort Hospital in Lephalale.

Measles virus infection affected mostly the age group 5-9 years (Table 2), with an attack rate of 13.96 per 100,000 persons. This was followed by the 1-4 age group with an attack rate of 9.94 per 100,000 persons. Of the 232 measles cases in Limpopo province, 187 (81%) had an unknown vaccination status, 14 (6%) were vaccinated, and 31 (13%) were unvaccinated (Table 3).

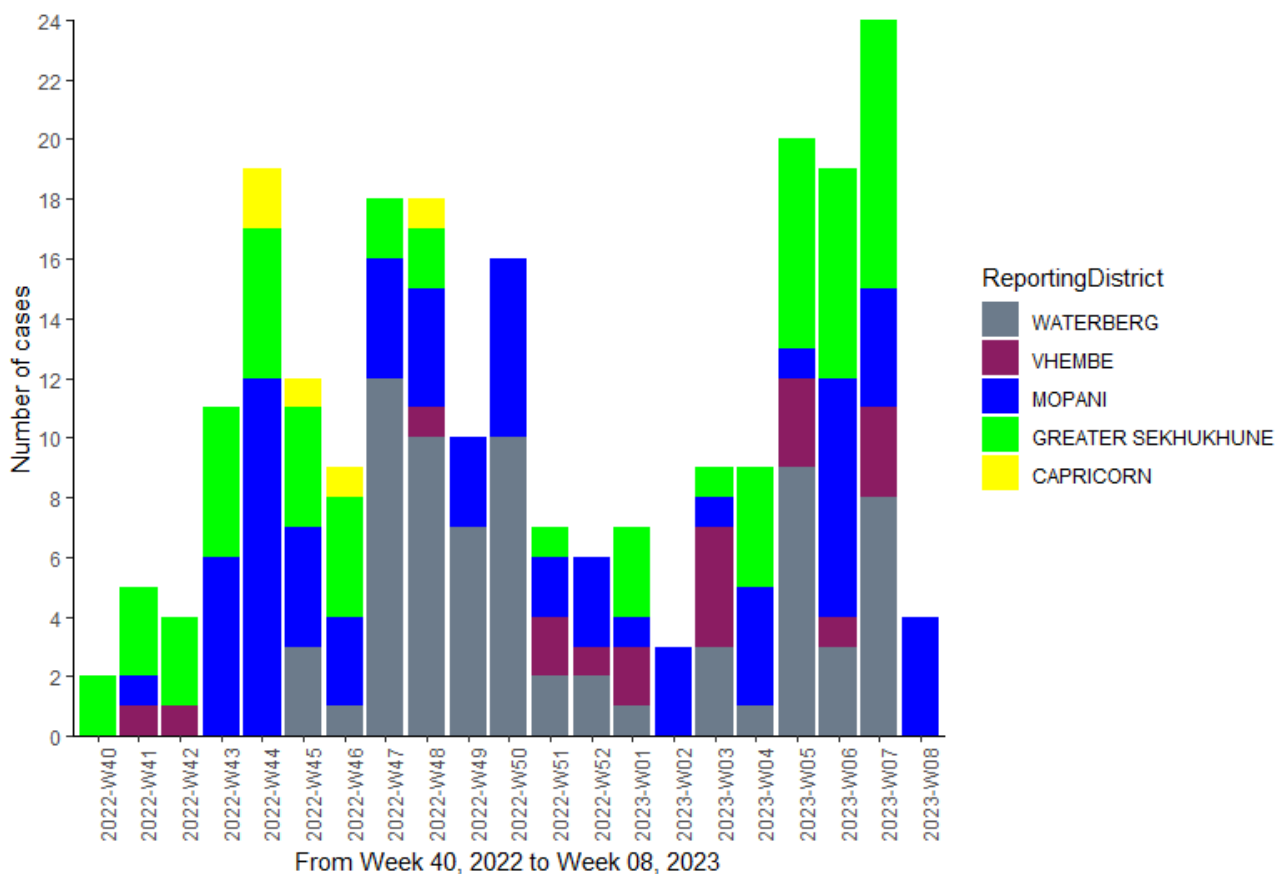


Figure 5. The epidemiological curve showing the number of laboratory-confirmed measles cases by districts of Limpopo Province from epidemiological week 40, 2022 to week 08, 2023 by specimen collection dates

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Mpumalanga

In total, 100 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 08, 2023, with Ehlanzeni and Gert Sibande districts reporting the majority of cases, 46 and 41, respectively. Dwarsloop clinic reported 17 of the 46 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 1-4 years (Table 2), with an attack rate of 8.31 per 100,000 persons. Of the 100 cases, 70 had an unknown vaccination status, 12 were vaccinated and 18 were unvaccinated (Table 3).

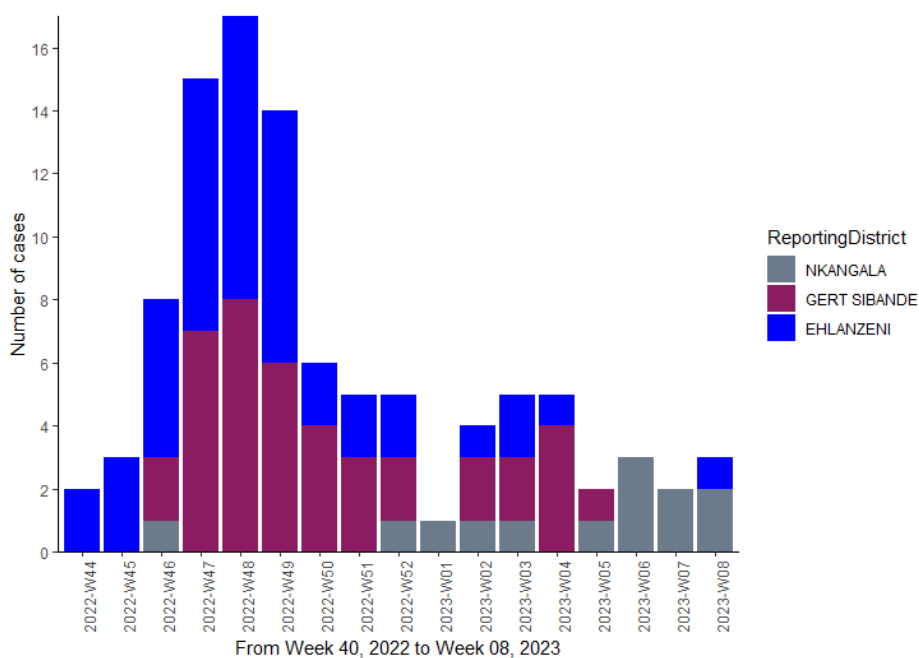


Figure 6. The epidemiological curve shows the number of laboratory-confirmed measles cases in districts of Mpumalanga Province from epidemiological week 44, 2022 to week 08, 2023 by specimen collection dates.

North West

A total of 185 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 86 cases and an attack rate of 21.96 per 100,000 persons, followed by those aged 1-4 years with 49 cases, with an attack rate of 15.57 per 100,000 persons (Table 2). A total of 12 of the 185 cases were vaccinated and 153 had unknown vaccination status (Table 3). Of these 185 cases, the majority (153) were reported from the Ngaka Modiri Molema district, with 69 cases reported from a single clinic, Lonely Park Clinic in Mahikeng.

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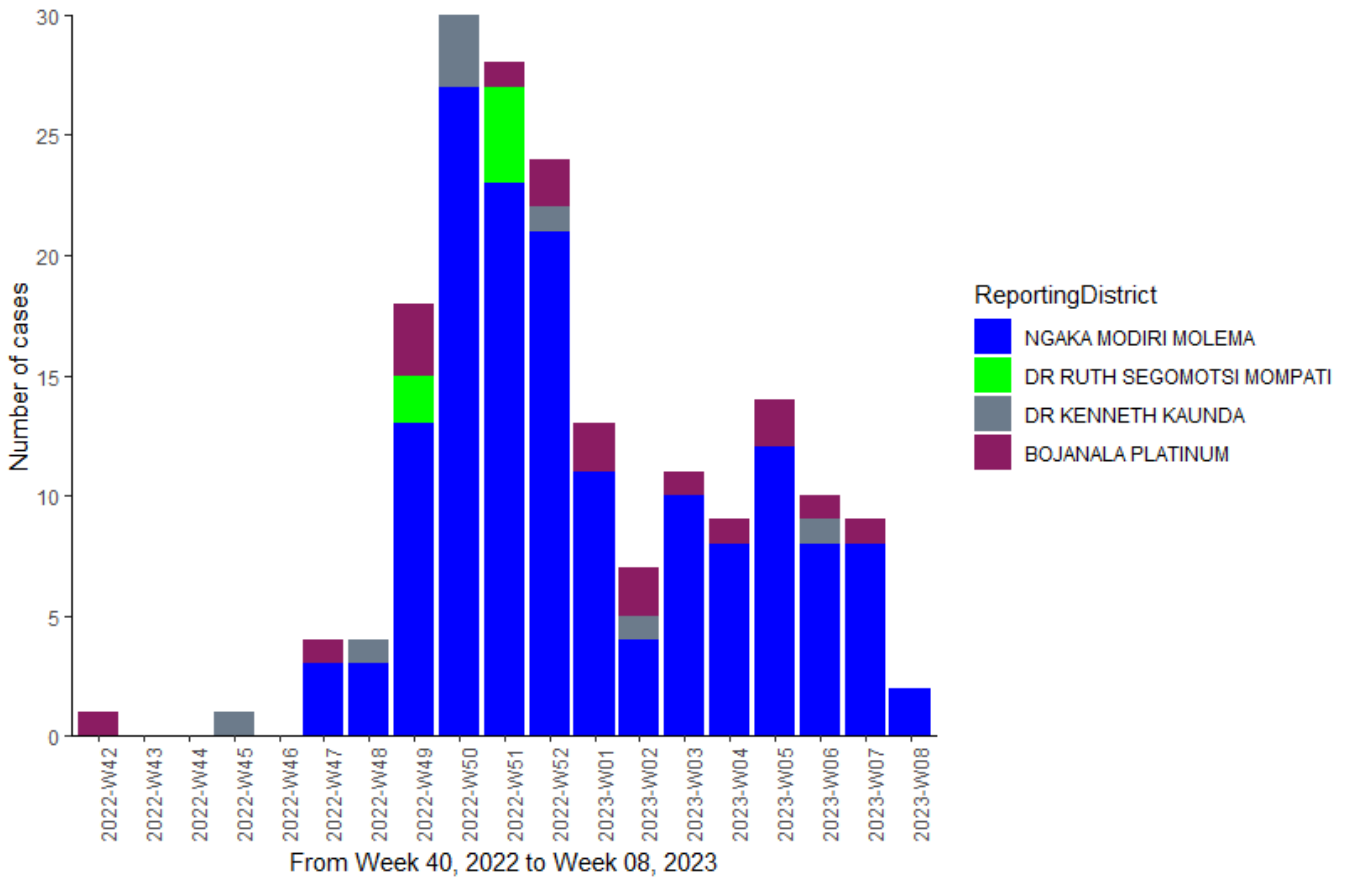


Figure 7. The epidemiological curve showing the number of measles cases in districts of North West Province from epidemiological week 42, 2022 to week 08, 2023 by specimen collection dates

Gauteng

A total of 90 laboratory-confirmed measles cases have been reported from epidemiological week 40, 2022 to week 08, 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, 65, have been reported from the City of Ekurhuleni, 13 from the City of Tshwane and eight cases from the City of Johannesburg. Amongst these cases, 77 have unknown vaccination status while five cases were vaccinated (Table 3). Of the 90 cases, 10 were identified at Daveyton’s main clinic in Ekurhuleni.

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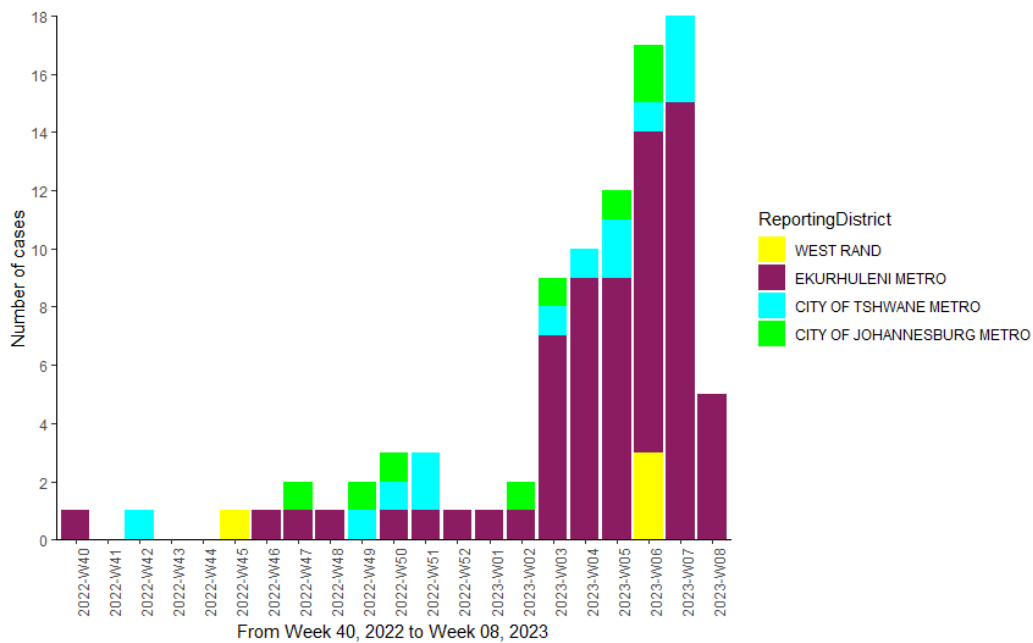


Figure 8. The epidemiological curve showing the number of measles cases in districts of Gauteng Province from epidemiological week 40, 2022 to week 08, 2023 by specimen collection dates

Free State

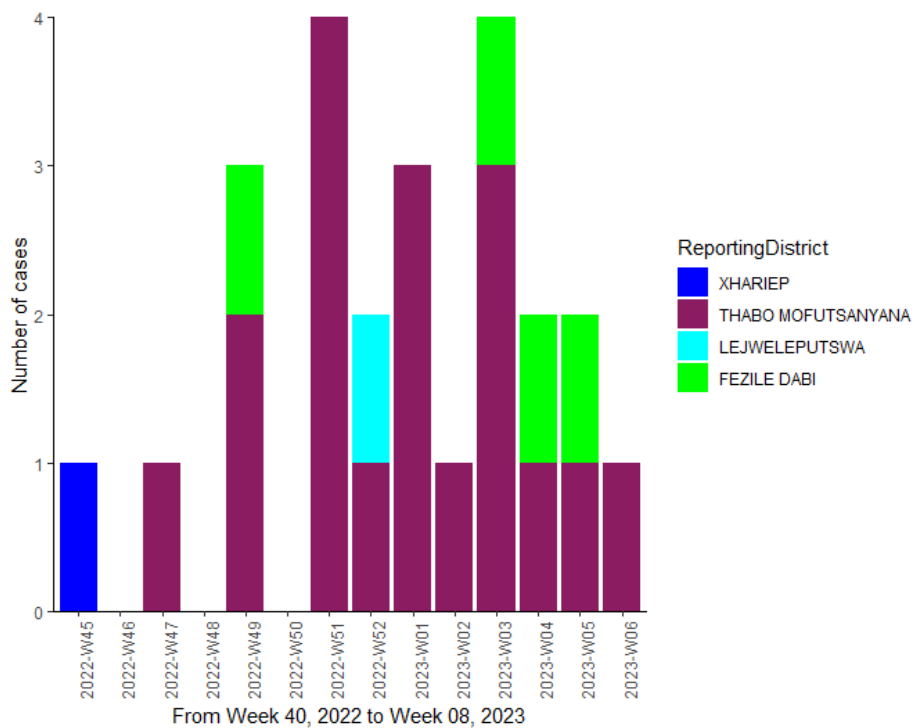


Figure 9. The epidemiological curve showing the number of measles cases in districts of Free State Province from epidemiological week 40, 2022 to week 08, 2023 by specimen collection dates

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There are currently 24 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 24 cases, 18 have been reported from the Thabo Mofutsanyana district, four from the Fezile Dabi district, and one each from the Lejweleputswa and Xhariep districts. Of these 18 cases reported from Thabo Mafutsanyana district, six were reported by Bethlehem clinic. The vaccination status of 15 cases is unknown, whereas three cases were not vaccinated, and six were (Table 3).

Western Cape

An outbreak has been declared in the Western Cape Province following the detection of four laboratory-confirmed measles in the City of Cape Town between 24 January 2023 to 17 February 2023. All cases are epidemiologically unlinked; however, two cases aged 2 and 4 years, are from the Southern sub-district and presented at facilities only 4km from each other (Grassy Park and Sea Winds CHC). The third case (10 years old) is from Khayelitsha and the fourth is likely a sporadic case in a 58-year-old commercial pilot. The Western Cape commenced with their vaccination campaign targeting 0-15 year-olds on 6th February 2023.

Conclusion

The total number of laboratory-confirmed measles cases continues to increase. The number of specimens submitted for testing has also increased. Continuous surveillance for measles cases is recommended. The NICD continues to support the planned vaccination campaigns as these are the only way to prevent measles transmission and further morbidity and mortality. 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 over the age of 6 months to 15 years are targeted in the National supplemental immunization campaign being rolled out in all provinces currently. 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/>.

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