South African Measles Outbreak 2022-2023

Interim situation report, 05 January 2023

(including data available up to 31 December 2022)

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

Since week 40, 2022 NICD has tested 2252 serum samples for measles antibodies, of which 318 (14%) have tested positive. The positivity rate has exceeded 20% for weeks 49 and 50 of 2022. Numbers of positive specimens collected from epidemiological week 40 (ending 8 October 2022) to epidemiological week 52 (ending 31 December 2022) across all provinces are depicted in Table 1. From epidemiological week 40 to 52, 2022, a total of 305 laboratory confirmed cases were reported from five provinces with declared measles outbreaks in Limpopo (131 cases), Mpumalanga (69 cases), North West (80 cases), Gauteng (14 cases), and Free State (11 cases) (Table 1). The geographical distribution of cases across South Africa from week 40 until week 52 is shown in Figure 1. The number of cases continue to increase daily as blood and throat swabs are submitted to the NICD for measles serology and PCR testing.

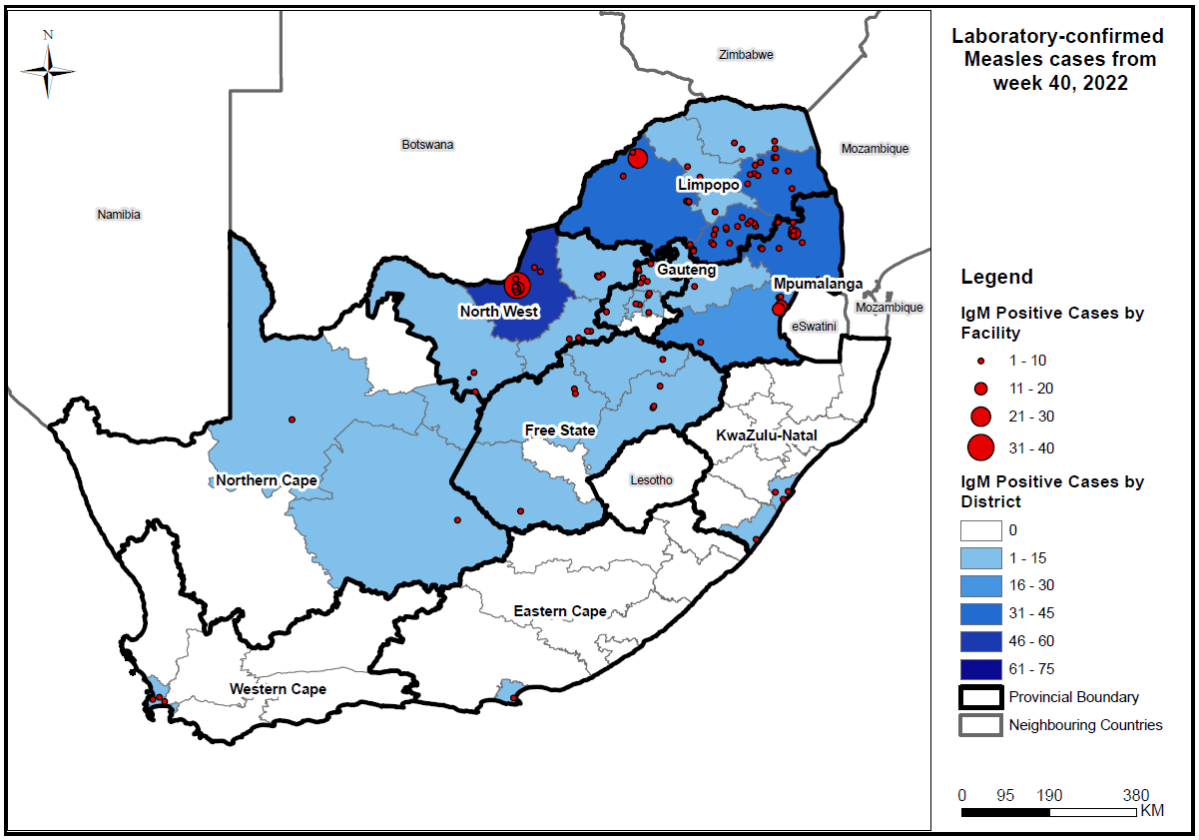

Figure 1. Distribution of laboratory-confirmed measles cases by testing site (red dots – size of dot indicates the number of cases from that facility) and district of South Africa (deepening color of blue indicates the total number of cases by subdistrict), from week 40 to mid-week 52, 2022.

Table 1. Cases of laboratory-confirmed measles tested by the NICD from all provinces in South Africa from epidemiological week 40 to 52, 2022. Outbreak-associated cases are contained within the red bordered cells* (EC=Eastern Cape; FS=Free State; GT=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 onset of disease, in a district.

Epi Week	EC	FS	GT	KZN	LP	MP	NW	NC	WC	Total
40			1		2					3
41					5					5
42			1		4		1		1	7
43	1				11					12
44				1	19	2				22
45		1	1		12	3	1	1	1	20
46			1	1	9	8				19
47		1	2		18	15	4	1	1	42
48			1		18	17	3			39
49		3	2	3	10	14	18	1	1	52
50			3		16	6	32			57
51		5	2		7	4	20			38
52		1					1			2
Total	**1**	**11**	**14**	**5**	**131**	**69**	**80**	**3**	**4**	**318**

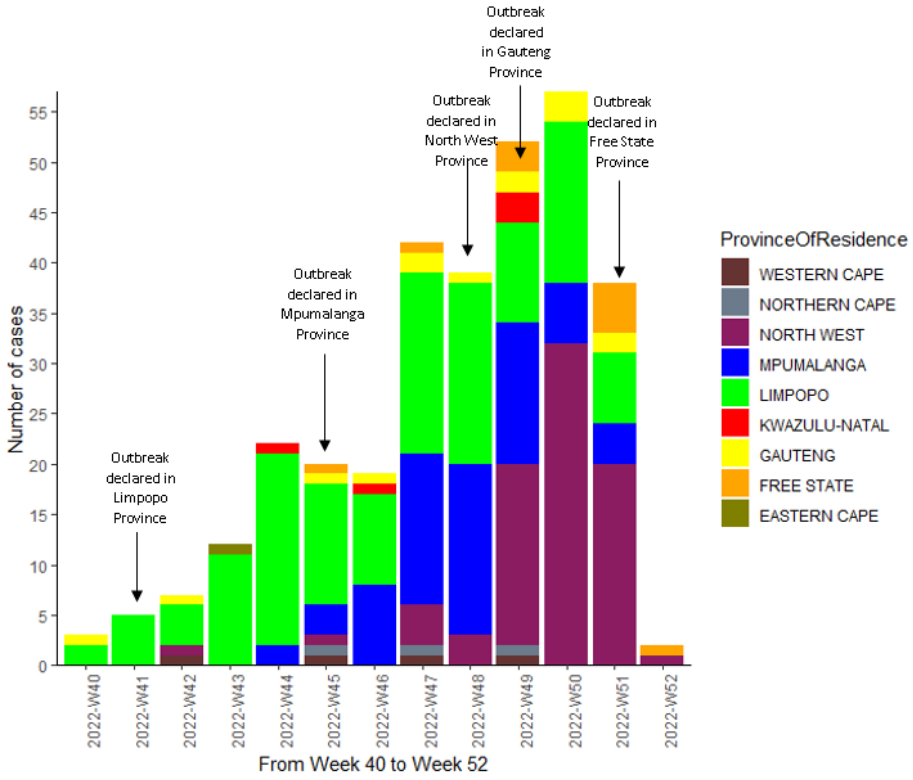

Figure 2. The epidemiological curve showing the number of laboratory-confirmed measles cases in South Africa from week 40 to week 52 (ending October 08 – ending December 31), 2022 by specimen collection dates and by province, indicating the weeks in which outbreaks were declared in Limpopo, Mpumalanga, North West, Gauteng and Free State provinces

The age of laboratory-confirmed cases across the five provinces ranges from two months to 42 years (Table 2). The majority of cases 127, (42%) were in the 5-9-year age group, followed by 90 (30%) in the 1-4 year age group and 47 (15%) in the 10-14-year age group. Of the 305 cases, the vaccination status of 71 (23%) was known, of whom 28 (39%) 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 private health care facilities. Whilst cases that are seen at hospitals may not necessarily be admitted, this figure gives us an indication of the severity of illness, as patients consulted tertiary care facility. 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 to mid-week 52, 2022, in provinces with a declared measles outbreak

Age group	FS	GT	LP	MP	NW	Total
<1 year	1	3	8	2	4	18
1-4 years	6	3	39	18	24	90
5-9 years	3	6	49	27	42	127
10-14 years	1	1	22	16	7	47
≥15 years	0	1	13	6	3	23
Total	**11**	**14**	**131**	**69**	**80**	**305**

FS= Free State; GT= Gauteng; KZN=KwaZulu-Natal; LP=Limpopo; NW=North West

Table 3. Vaccination status for laboratory-confirmed measles cases from epidemiological week 40 to mid-week 52, 2022 in provinces with a declared measles outbreak.

Vaccination status	FS	GT	LP	MP	NW	Total
Not vaccinated	2	0	14	17	10	43
Total vaccinated	1	1	12	9	5	28
Vaccinated category: <1 year	0	1	0	0	0	1
1-4 years	0	0	7	1	2	10
5-9 years	0	0	4	5	3	12
10-14 years	1	0	1	3	0	5
≥15 years	0	0	0	0	0	0
Unknown	8	13	105	43	65	234
Total	**11**	**14**	**131**	**69**	**80**	**305**

Table 4. The facility type where laboratory-confirmed measles cases have been identified, for epidemiological week 40 to mid-week 52, 2022, 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 years	1-4 years	5-9 years	10-14 years	≥15 years	Total
From PHC/CHC/other	9	62	89	36	19	215
From a hospital (%)	9 (50)	27 (30)	38 (30)	11 (23)	4 (17)	89 (41)
Total	**18**	**89**	**127**	**47**	**23**	**304***

*It was not possible to determine the age of one case from a hospitalised patient which was tested at a private laboratory group.

An overview of the outbreak in Limpopo Province

In total, 131 cases of laboratory-confirmed measles were reported between epidemiological week 40 to mid-week 52, 2022 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 the 11th October, 2022 (epidemiological week 41, 2022). Figure 2 displays an epidemiological curve from week 40 to week 52 of 2022 in Limpopo province. Mopani and Waterberg each reported 45 cases, while Greater Sekhukhune district reported 30 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). Of the 131 measles cases, 105 (80%) had an unknown vaccination status, 12 (9%) were vaccinated, and 14 (11%) were unvaccinated (Table 3). In the Waterberg district, 25 cases of 45 have been reported from Witpoort Hospital in Lephalale.

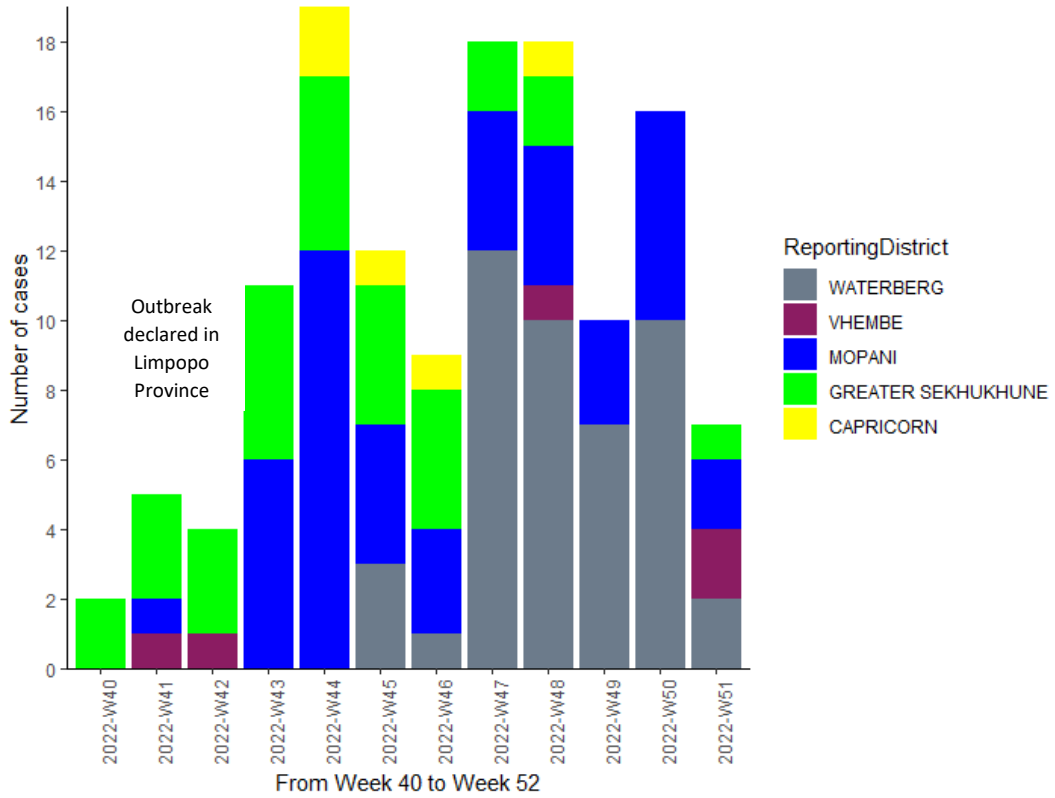

Figure 2. The epidemiological curve showing the number of measles cases by districts of Limpopo Province from epidemiological week 40 to mid-week 52, 2022 (02 October – ending 31 December), 2022*by specimen collection date

Mpumalanga

In total, 69 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 3 shows an epidemiological curve for Mpumalanga province from week 44 to mid-week 52, 2022, with Ehlanzeni and Gert Sibande reporting the majority of cases, 38 and 30, respectively. Dwarsloop clinic reported 16 of the 38 cases from the Ehlanzeni district, while Dundonald clinic reported 12 out of the 30 cases from the Gert Sibande district.

The age of cases across Mpumalanga ranged from 4 months to 28 years. The most affected age group by the measles outbreak is 5-9 years (Table 2). Of the 69 cases, 43 had an unknown vaccination status, 9 were vaccinated and 17 were unvaccinated (Table 3).

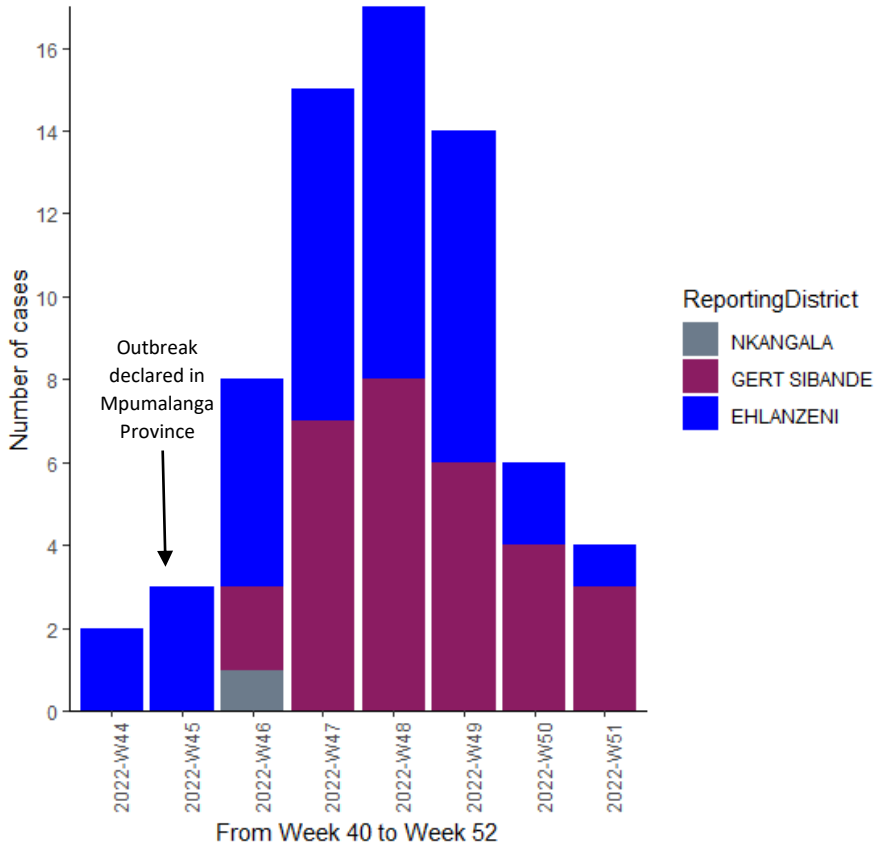

Figure 4. The epidemiological curve showing the number of measles cases in districts of Mpumalanga Province from epidemiological week 44 to mid-week 52 by specimen collection date.

North West

A total of 80 cases have been reported in North West since epidemiological week 40, 2022. 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-to-9 years, followed by those aged 1-to-4 years (Table 2). Amongst the 80 cases, 10 were vaccinated and 65 had unknown vaccination status (Table 3). Of these 80 cases, 68 were reported from the Ngaka Modiri Molema district, with 38 cases reported from a single clinic, Lonely Park Clinic in Mahikeng.

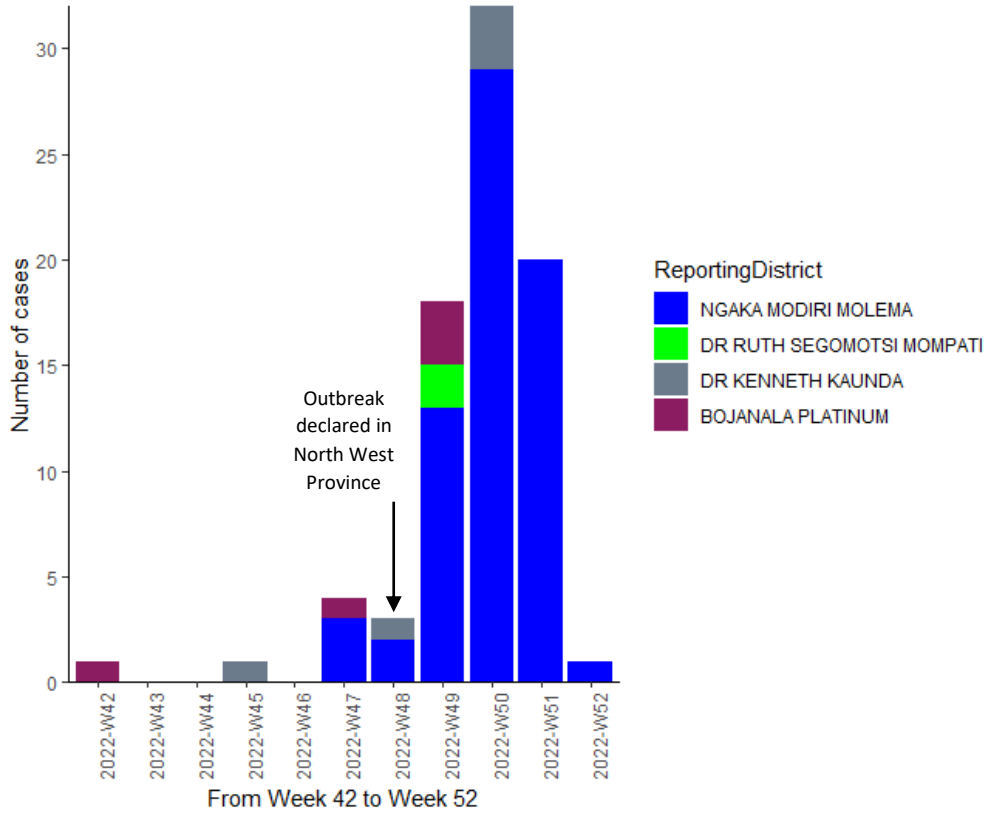

Figure 5. The epidemiological curve showing the number of measles cases in districts of North West Province from epidemiological week 42 to mid-week 52, 2022 by specimen collection dates)

Gauteng

A total of 14 laboratory-confirmed cases have been reported from epidemiological week 40 to week 52, 2022 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 City of Ekurhuleni Metropolitan Municipality Five cases originated in the Ekurhuleni district and five from the City of Tshwane. Amongst these cases, 13 have unknown vaccination status while one was vaccinated (Table 3).

Free State

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

Conclusion

The number of measles cases in the country continues to rise. 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 measles vaccine. It is never too late to vaccinate – children who have not been vaccinated may receive 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/.