

## **INTERIM SITUATION REPORT, 26 JANUARY 2023** **(Based on laboratory testing data up until 21st January 2023)**

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

### **Highlights**

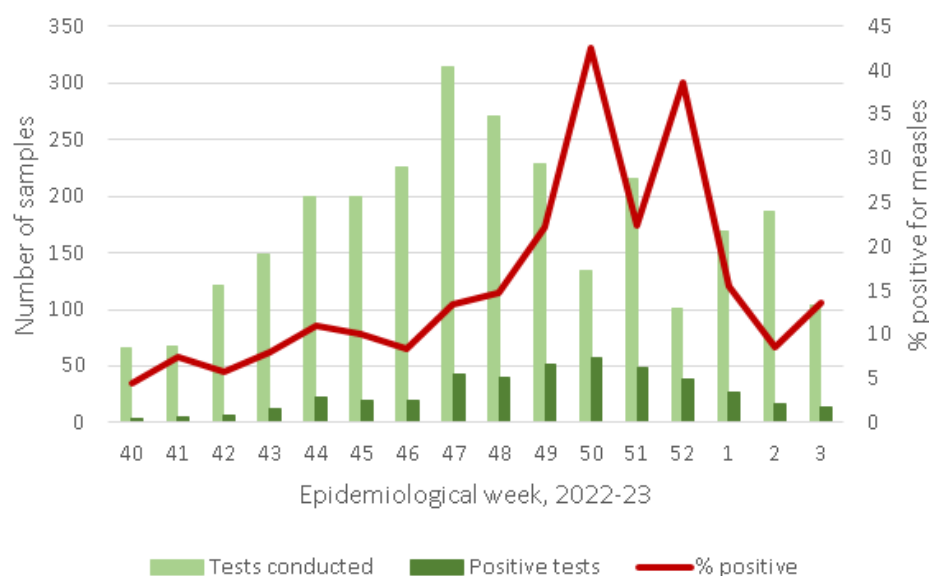
- Since the last Situation Report, 24 new laboratory-confirmed measles cases have been detected across the country according to data up until 21 January (mid-week-03, 2023). This brings the number of measles cases in South Africa since epidemiological week 40 of 2022 to 421.
- In outbreak-affected provinces, a total of 406 measles cases have been detected from week 40 of 2022 until mid-week 03 of 2023. In week 02, 2023, 16 cases were diagnosed, whilst to date, (mid-week through week 03), 14 cases have been identified.
- The percentage testing positive midway through epidemiological week 03 has risen to 14% (14 positive/103 specimens tested) from a low of 9% during epidemiological week 02 (16 positive / 186 tested).
- In week 03, 2023, the largest number of cases are from Gauteng Province, with 6 cases arising from clinics within a 2km radius in Ekurhuleni (3 from Daveyton Main clinic, two from Philip Moyo Clinic, one from Crystal Park Clinic and one from Bertha Nxowa Hospital). This focus of infection requires immediate action including a vaccination campaign to prevent exponential spread here, and within and beyond the province over the next few weeks.
- The age distribution and origin of cases remain largely unchanged with the majority of measles cases in outbreak-affected provinces being among the 5-9-year age group (160/406, 39%), and the highest proportion of cases arising from hospitals as opposed to primary health clinics in the under-1 year age group (15/27, 59%). However, significant numbers of cases in the 10-14 year age group continue to occur (65/406, 16%), justifying the need for a vaccination campaign to include this age group.
- Members of the public are urged to ensure their children are vaccinated against measles.

### **Outbreak overview**

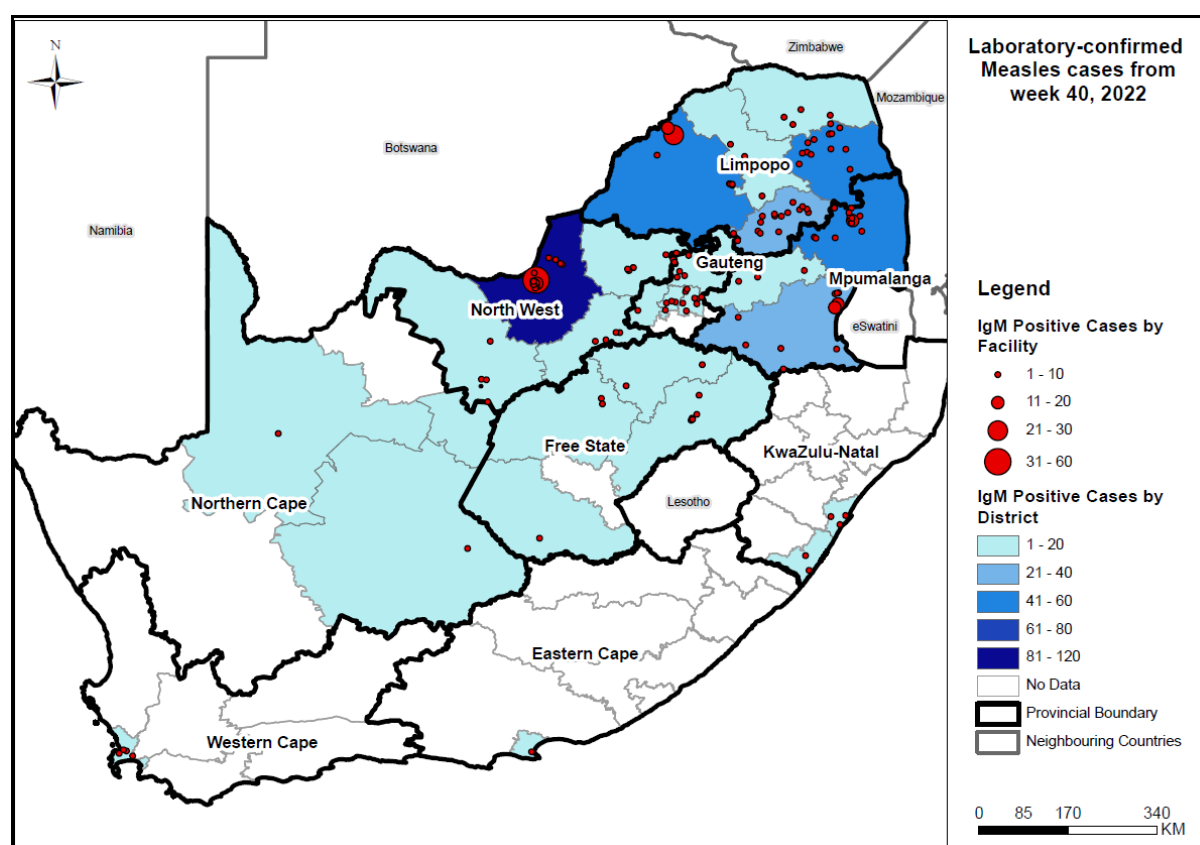
From epidemiological week 40, 2022 (ending 8 October 2022) to mid-week 03, 2023 (ending 21 January 2023) the NICD has tested 2750<sup>1</sup> serum samples for measles of which 421 (15,3%) were confirmed measles cases (Table 1). The number of samples submitted, number and % tested positive are shown in Figure 1. From epidemiological week 40 of 2022 to week 03 of 2023, 406 laboratory-confirmed cases were reported from five provinces with declared measles outbreaks in Limpopo (149 cases), Mpumalanga (81 cases), North West (133 cases), Gauteng (25 cases), and Free State (18 cases) (Table 2). The geographical distribution of cases across South Africa from week 40 of 2022 until mid-week 03 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.

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<sup>1</sup> This number has been revised downward following review and cleaning of data



**Figure 1.** The number of serum samples submitted to the NICD for measles, week 40 2022, until midweek 3, 2023 and the number (dark green) and % tested positive (red line), by epidemiological week.



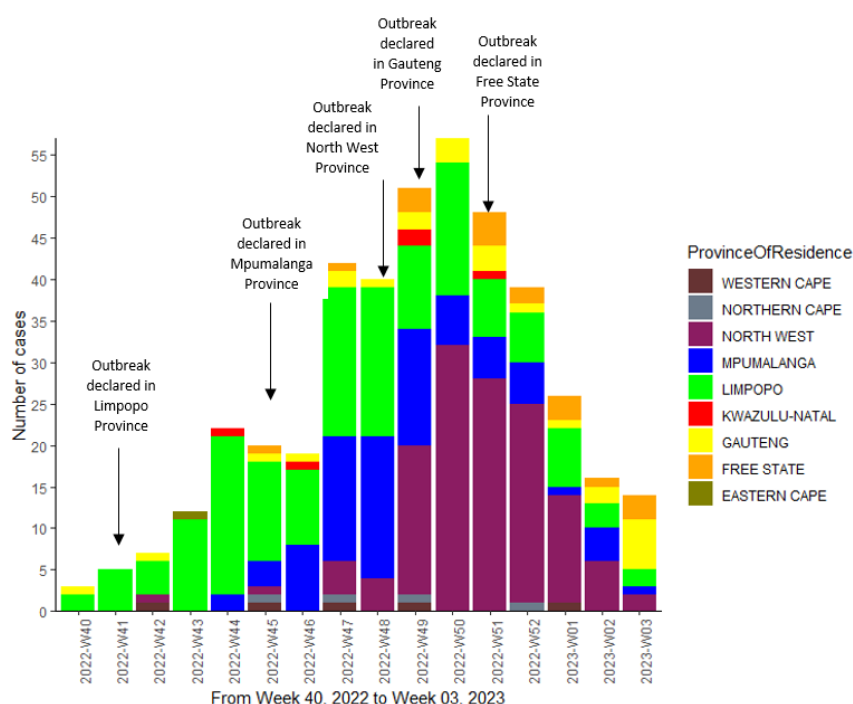
**Figure 2.** Distribution of laboratory-confirmed measles cases by testing site (red dots – the size of the dot indicates the number of cases from that facility) and district of South Africa (deepening colour of blue indicates the total number of cases by sub-district), from week 40 to mid-week 03, 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 03, 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        |          | 39         |
| 01, 2023     |          | 3         | 1         |          | 7          | 1         | 11         |          | 1        | 26         |
| 02, 2023     |          |           | 1         |          | 1          | 3         | 4          |          |          | 16         |
| 03, 2023*    |          | 3         | 6         |          | 2          | 1         | 2          |          |          | 14         |
| <b>Total</b> | <b>1</b> | <b>18</b> | <b>25</b> | <b>5</b> | <b>149</b> | <b>81</b> | <b>133</b> | <b>4</b> | <b>5</b> | <b>421</b> |

\*inclusive of samples submitted up until mid-week 03



**Figure 3.** The epidemiological curve showing the number of laboratory-confirmed measles cases in South Africa from week 40, 2022 to mid-week 03, 2023 (ending 08 October 2022 – ending 21 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 1-4 and 5-9 (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 03, 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      | 1         | 1.88        | 5         | 1.90        | 9          | 6.82        | 5         | 5.52        | 7          | 8.66        | 27         | 4.35        |
| 1-4 years    | 8         | 3.81        | 6         | 0.58        | 45         | 8.44        | 22        | 6.30        | 38         | 12.07       | 119        | 4.86        |
| 5-9 years    | 7         | 2.62        | 8         | 0.64        | 55         | 8.25        | 29        | 6.78        | 61         | 15.58       | 160        | 5.32        |
| 10-14 years  | 2         | 0.69        | 1         | 0.08        | 26         | 3.90        | 17        | 3.67        | 19         | 4.66        | 65         | 2.13        |
| ≥15 years    | 0         | 0           | 5         | 0.12        | 14         | 0.36        | 8         | 0.24        | 8          | 0.27        | 35         | 0.14        |
| <b>Total</b> | <b>18</b> | <b>0.62</b> | <b>25</b> | <b>0.16</b> | <b>149</b> | <b>2.51</b> | <b>81</b> | <b>1.72</b> | <b>133</b> | <b>3.18</b> | <b>406</b> | <b>1.20</b> |

FS= Free State; GT= 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 mid-week 03, and 2023 in provinces with a declared measles outbreak.

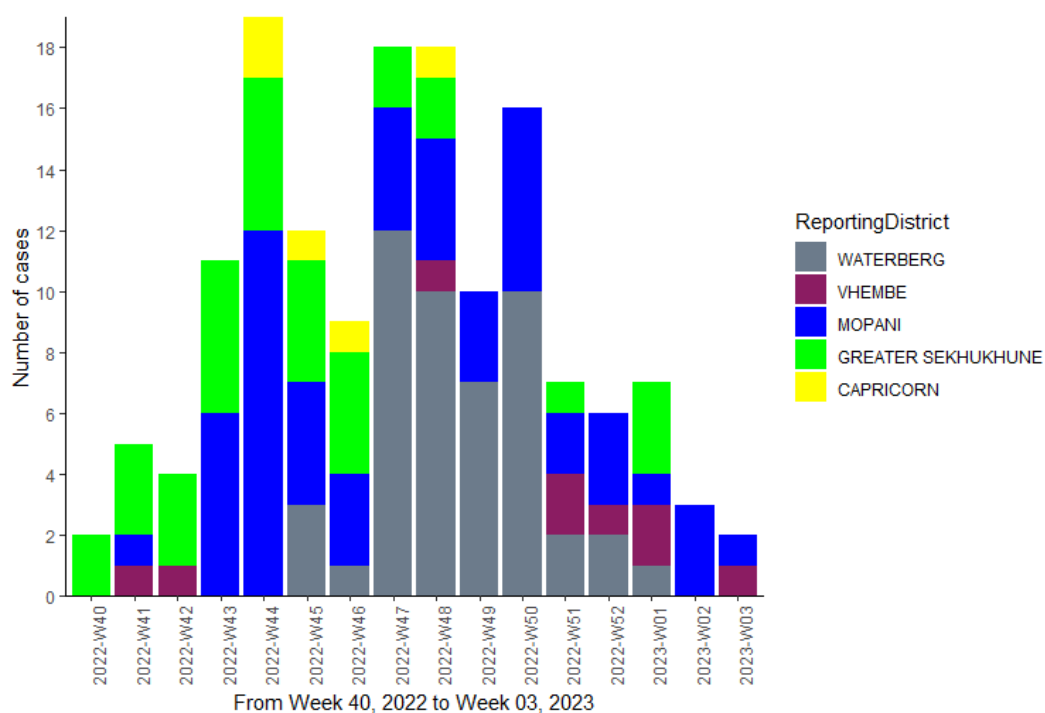
| Vaccination status                     |             | FS        | GP        | LP         | MP        | NW         | Total      |
|----------------------------------------|-------------|-----------|-----------|------------|-----------|------------|------------|
| Vaccination status known               |             | 7         | 2         | 28         | 26        | 17         | 80         |
| Vaccination status unknown             |             | 11        | 23        | 121        | 55        | 116        | 326        |
| Vaccinated cases (% of known status)   |             | 4         | 2         | 14         | 9         | 6          | 35 (44%)   |
| Age distribution of vaccinated persons | <1 year     | 1         | 2         | 1          | 0         | 0          | 4          |
|                                        | 1-4 years   | 1         | 0         | 7          | 1         | 3          | 12         |
|                                        | 5-9 years   | 0         | 0         | 5          | 5         | 3          | 12         |
|                                        | 10-14 years | 2         | 0         | 1          | 3         | 3          | 9          |
|                                        | ≥15 years   | 0         | 0         | 0          | 0         | 0          | 0          |
| <b>Total</b>                           |             | <b>18</b> | <b>25</b> | <b>149</b> | <b>81</b> | <b>133</b> | <b>406</b> |

**Table 4.** The facility type where laboratory-confirmed measles cases have been identified, for epidemiological week 40, 2022 to mid-week 03, 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        | 12        | 86         | 115        | 48          | 26        | 287         |
| From a hospital (%)       | 15 (56)   | 33(28)     | 45(28)     | 17 (26)     | 9(29)     | 119<br>(29) |
| <b>Total</b>              | <b>27</b> | <b>119</b> | <b>160</b> | <b>65</b>   | <b>35</b> | <b>406</b>  |

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

In total, 149 cases of laboratory-confirmed measles were reported between epidemiological week 40, 2022 to mid-week 03, 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 03 of 2023 in Limpopo province. Mopani district reported 53 cases, Waterberg district reported 48 cases, Greater Sekhukhune district reported 34 cases, and Vhembe district reported eight cases while Capricorn district reported five 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 8.25 per 100,000 persons. However, the 1-4 age group had the highest attack rate (8, 44/100,000). Of the 149 measles cases in Limpopo province, 121 (81%) had an unknown vaccination status, 14 (9%) were vaccinated, and 14 (9%) were unvaccinated (Table 3). In the Waterberg district, 26 cases of 48 have been reported from Witpoort Hospital in Lephalale.



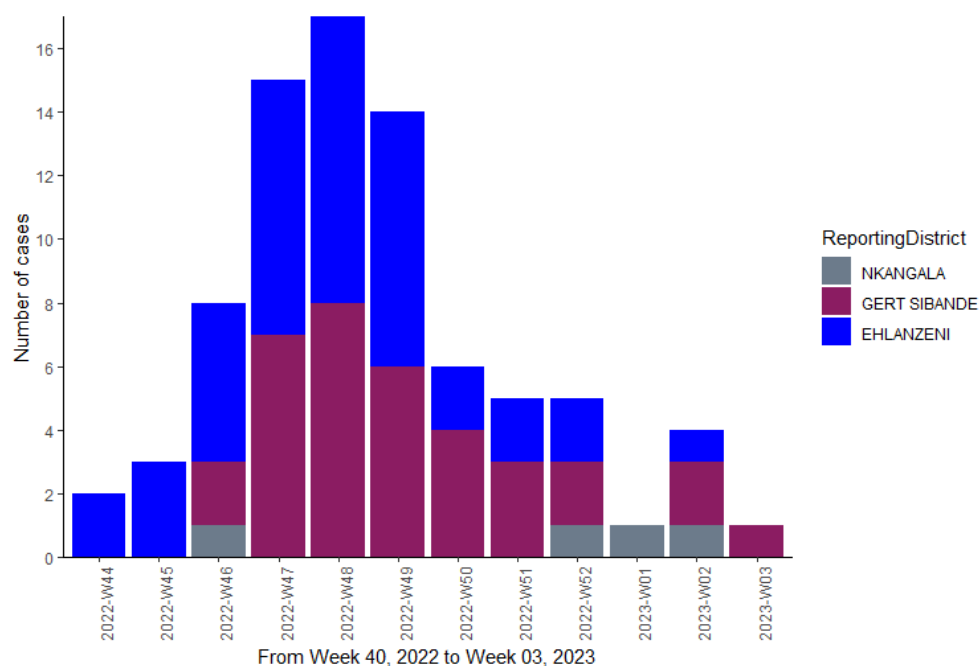
**Figure 4.** The epidemiological curve showing the number of measles cases by districts of Limpopo Province from epidemiological week 40, 2022 to mid-week 03, 2023 by specimen collection dates

### Mpumalanga

In total, 81 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 03, 2023, with Ehlanzeni and Gert Sibande districts reporting the majority of cases, 42 and 35, respectively. Dwarsloop clinic reported 17 of the 42 cases from the Ehlanzeni district, while Dundonald clinic reported 12 out of the 35 cases from the Gert Sibande district.

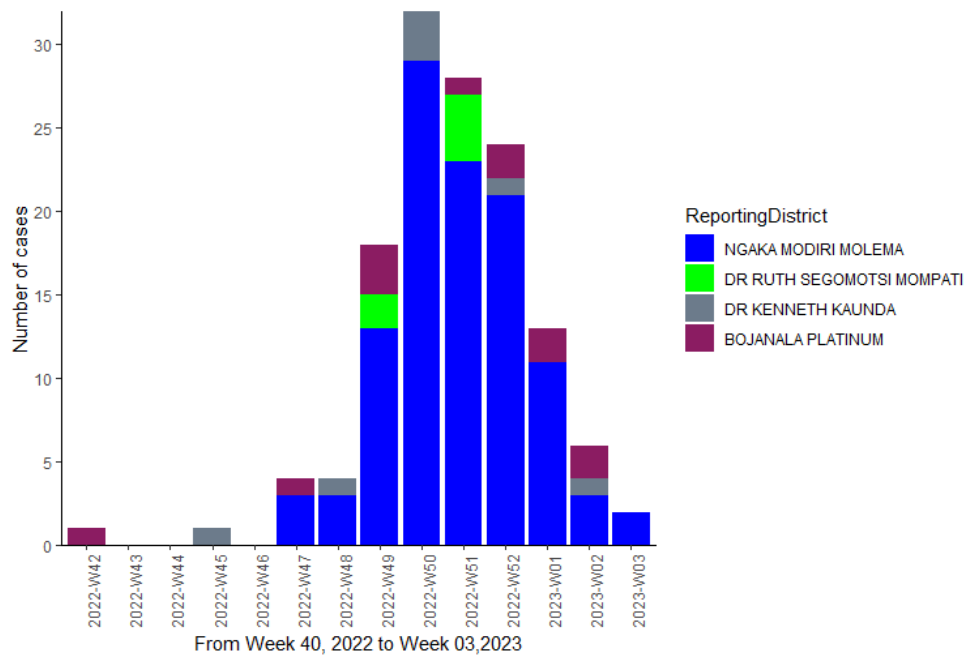
The age of cases across Mpumalanga ranged from 4 months to 60 years. The most affected age group by the measles outbreak is 5-9 years (Table 2), with an attack rate of 6.78 per 100,000 persons. Of the 81 cases, 55 had an unknown vaccination status, nine were vaccinated and 17 were unvaccinated (Table 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 03 and 2023 by specimen collection dates.

## North West

A total of 133 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 15.98 per 100,000 persons, followed by those aged 1-4 years, with an attack rate of 12.07 per 100,000 persons (Table 2). Six of the 133 cases were vaccinated and 116 had unknown vaccination status (Table 3). Of these 133 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 03, 2023 by specimen collection dates

## Gauteng

A total of 25 laboratory-confirmed cases have been reported from epidemiological week 40, 2022 to mid-week 03, 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. To date, 15 cases have been reported from the City of Ekurhuleni, five from the City of Tshwane and four cases from the City of Johannesburg. Amongst these cases, 23 have unknown vaccination status while two cases were vaccinated (Table 3). Within the last epidemiological week (03, 2023), 6 cases have been reported from Ekurhuleni of which 5 originate from in and around Daveyton (3 from Daveyton Main clinic, two from Philip Moyo Clinic and one from Crystal park Clinic). This represents a focus on the infection that is likely to spread within the District unless rapid and immediate vaccination takes place.

## Free State

There are currently 18 laboratory-confirmed cases in this province since epidemiological week 40, 2022. An outbreak was declared on 20 December 2022 in Free State province after three laboratory-confirmed cases were reported in the Thabo Mofutsanyana district. Fourteen cases have been reported from the Thabo Mofutsanyana district, two from the Fezile Dabi district, and one each from the Lejweleputswa and Xhariep districts. Six of these 14 cases reported from Thabo Mafutsanyana district were reported by Bethlehem clinic. The vaccination status of 11 cases is unknown, whereas three cases were not vaccinated, and four were (Table 3).

## Conclusion

The total number of laboratory-confirmed measles cases continues to increase. The number of specimens submitted for testing has increased, and compared with week 02, 2023, we have observed an increase in the proportion testing positive. This indicates that case-finding has increased, and that awareness amongst clinicians of measles is higher. With inland schools having returned during epidemiological week 02, 2023, it remains critical to detecting cases over the next 2-3 weeks, as the incubation period of measles is 9-14 days. 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 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/>.