NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

Division of the National Health Laboratory Service

Measles and rubella surveillance and outbreaks update in South Africa,2022-March 2025

02 April 2025

Outline of the presentation

1. Data source: measles-rubella surveillance and outbreaks
2. Measles-rubella surveillance monitoring
3. Measles-rubella reporting

Measles and rubella surveillance and outbreak data

https://www.nicd.ac.za/measles-rubella-dashboard/; accessed 28 March 2025

Measles and rubella surveillance

Clinical surveillance

- Notifiable medical condition surveillance system(NMCSS)
  - NMC notification forms
- Case based surveillance of suspected and confirmed measles
  - Clinical cases-epidemiological linkage
  - Clinical compatible cases
    - Clinical diagnoses
    - No laboratory results for measles or rubella differential diagnosis
- Laboratory confirmed cases

Laboratory surveillance

- Suspected measles cases diagnosed by clinicians
  - IgM test for measles and rubella(gold standard test for surveillance)
  - Avidity test in patients with measles and rubella dual positive test outcome
  - Measles and rubella pcr test in some cases
    - Mostly IgM equivocal cases
- Measles genotype surveillance
  - Monitor measles genotype strains circulating in the country
  - Monitoring importation of measles strains from other countries
    - Need epidemiological data

Measles surveillance case definition

Clinical surveillance

- Measles suspected case
  - An illness in a patient with fever and generalized maculopapular (non-vesicular) rash, or in a patient whom a health care worker suspects has measles. Case based surveillance of suspected and confirmed measles
- Clinical measles cases
  - Any person in whom a clinician suspects measles infection; or
  - Any person with fever and maculopapular rash (i.e., non-vesicular) and:
    - cough, or
    - coryza (i.e., runny nose) or
    - conjunctivitis (i.e., red eyes).
  - Laboratory-confirmed measles case
  - Epidemiological case
  - n
  - Discareded case

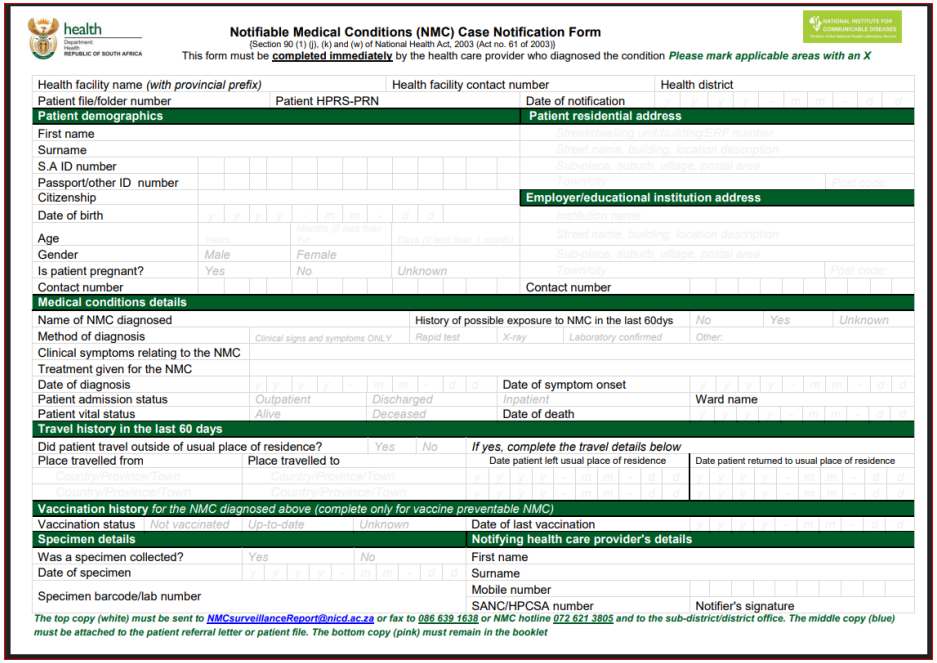
Final case classification

- Laboratory confirmed case
  - A suspected case of measles that has been confirmed positive by testing in a proficient laboratory, and vaccine-associated illness has been ruled out
- Epidemiologically linked case
  - A clinical case of measles that has not been confirmed by a laboratory, but was geographically and temporally related, with dates of rash onset occurring 7–21 days apart from a laboratory-confirmed case or another epidemiologically linked measles case.
- Discarded case

Data source measles and rubella surveillance and outbreaks

- NMC forms and CIFs available on the NICD website: https://www.nicd.ac.za/diseases-a-z-index/measles/

- Laboratory form must be accompanied by CIFs if received with specimen



health
Department: Health
REPUBLIC OF SOUTH AFRICA

Notifiable Medical Conditions (NMC) Case Notification Form
(Section 90 (1) (j), (k) and (w) of National Health Act, 2003 (Act no. 61 of 2003))
This form must be **completed immediately** by the health care provider who diagnosed the condition *Please mark applicable areas with an X*

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Health facility name *(with provincial prefix)*	Health facility contact number	Health district
Patient file/folder number	Patient HPRS-PRN	Date of notification

Patient demographics

First name
Surname
S.A ID number
Passport/other ID number
Citizenship
Date of birth
Age — Years / Months if less than 1 year / Days if less than 1 month
Gender — Male / Female
Is patient pregnant? — Yes / No / Unknown
Contact number

Patient residential address

Street/dwelling unit/building/ERF number
Street name, building, location description
Sub-place, suburb, village, postal area
Township
Post code

Employer/educational institution address

Institution name
Street name, building, location description
Sub-place, suburb, village, postal area
Township
Post code
Contact number

Medical conditions details

Name of NMC diagnosed
History of possible exposure to NMC in the last 60dys — No / Yes / Unknown
Method of diagnosis — Clinical signs and symptoms ONLY / Rapid test / X-ray / Laboratory confirmed / Other:
Clinical symptoms relating to the NMC
Treatment given for the NMC
Date of diagnosis
Date of symptom onset
Patient admission status — Outpatient / Discharged / Inpatient
Ward name
Patient vital status — Alive / Deceased
Date of death

Travel history in the last 60 days

Did patient travel outside of usual place of residence? Yes / No — *If yes, complete the travel details below*

Place travelled from	Place travelled to	Date patient left usual place of residence	Date patient returned to usual place of residence
Country/province/Town	Country/province/Town		

Vaccination history *for the NMC diagnosed above (complete only for vaccine preventable NMC)*

Vaccination status — Not vaccinated / Up-to-date / Unknown
Date of last vaccination

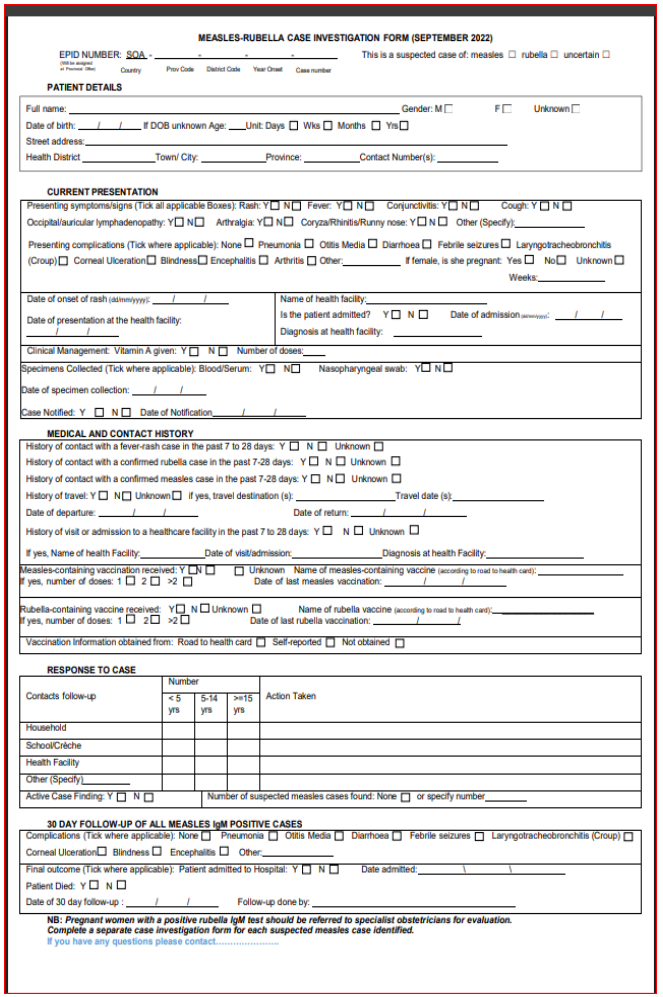
Specimen details

Was a specimen collected? Yes / No
Date of specimen
Specimen barcode/lab number

Notifying health care provider's details

First name
Surname
Mobile number
SANC/HPCSA number
Notifier's signature

The top copy (white) must be sent to NMCsurveillanceReport@nicd.ac.za or fax to 086 639 1638 or NMC hotline 072 621 3805 and to the sub-district/district office. The middle copy (blue) must be attached to the patient referral letter or patient file. The bottom copy (pink) must remain in the booklet



MEASLES-RUBELLA CASE INVESTIGATION FORM (SEPTEMBER 2022)

EPID NUMBER: SOA - ____ - ____ - ____ - ____ This is a suspected case of: measles ☐ rubella ☐ uncertain ☐
(Country, Prov Code, District Code, Year Onset, Case number)

PATIENT DETAILS

Full name: ____ Gender: M☐ F☐ Unknown☐
Date of birth: ___/___/___ If DOB unknown Age: ___ Unit: Days ☐ Wks ☐ Months ☐ Yrs ☐
Street address: ____
Health District ____ Town/ City: ____ Province: ____ Contact Number(s): ____

CURRENT PRESENTATION

Presenting symptoms/signs (Tick all applicable Boxes): Rash: Y☐ N☐ Fever: Y☐ N☐ Conjunctivitis: Y☐ N☐ Cough: Y☐ N☐
Occipital/auricular lymphadenopathy: Y☐ N☐ Arthralgia: Y☐ N☐ Coryza/Rhinitis/Runny nose: Y☐ N☐ Other (Specify): ____
Presenting complications (Tick where applicable): None ☐ Pneumonia ☐ Otitis Media ☐ Diarrhoea ☐ Febrile seizures ☐ Laryngotracheobronchitis (Croup) ☐ Corneal Ulceration ☐ Blindness ☐ Encephalitis ☐ Arthritis ☐ Other: ____ If female, is she pregnant: Yes ☐ No ☐ Unknown ☐ Weeks: ____
Date of onset of rash (dd/mm/yyyy): ___/___/___
Name of health facility: ____
Date of presentation at the health facility: ___/___/___
Is the patient admitted? Y☐ N☐ Date of admission (dd/mm/yyyy): ___/___/___
Diagnosis at health facility: ____
Clinical Management: Vitamin A given: Y☐ N☐ Number of doses: ____
Specimens Collected (Tick where applicable): Blood/Serum: Y☐ N☐ Nasopharyngeal swab: Y☐ N☐
Date of specimen collection: ___/___/___
Case Notified: Y☐ N☐ Date of Notification ___/___/___

MEDICAL AND CONTACT HISTORY

History of contact with a fever-rash case in the past 7 to 28 days: Y☐ N☐ Unknown☐
History of contact with a confirmed rubella case in the past 7-28 days: Y☐ N☐ Unknown☐
History of contact with a confirmed measles case in the past 7-28 days: Y☐ N☐ Unknown☐
History of travel: Y☐ N☐ Unknown☐ if yes, travel destination (s): ____ Travel date (s): ____
Date of departure: ___/___/___ Date of return: ___/___/___
History of visit or admission to a healthcare facility in the past 7 to 28 days: Y☐ N☐ Unknown☐
If yes, Name of health Facility: ____ Date of visit/admission: ____ Diagnosis at health Facility: ____
Measles-containing vaccination received: Y☐ N☐ ☐ Unknown Name of measles-containing vaccine (according to road to health card): ____
If yes, number of doses: 1☐ 2☐ >2☐ Date of last measles vaccination: ___/___/___
Rubella-containing vaccine received: Y☐ N☐ Unknown☐ Name of rubella vaccine (according to road to health card): ____
If yes, number of doses: 1☐ 2☐ >2☐ Date of last rubella vaccination: ___/___/___
Vaccination Information obtained from: Road to health card ☐ Self-reported ☐ Not obtained ☐

RESPONSE TO CASE

Contacts follow-up	Number < 5 yrs	Number 5-14 yrs	Number >=15 yrs	Action Taken
Household				
School/Crèche				
Health Facility				
Other (Specify): ____				

Active Case Finding: Y☐ N☐ Number of suspected measles cases found: None ☐ or specify number ____

30 DAY FOLLOW-UP OF ALL MEASLES IgM POSITIVE CASES

Complications (Tick where applicable): None ☐ Pneumonia ☐ Otitis Media ☐ Diarrhoea ☐ Febrile seizures ☐ Laryngotracheobronchitis (Croup) ☐ Corneal Ulceration ☐ Blindness ☐ Encephalitis ☐ Other: ____
Final outcome (Tick where applicable): Patient admitted to Hospital: Y☐ N☐ Date admitted: _________
Patient Died: Y☐ N☐
Date of 30 day follow-up: ___/___/___ Follow-up done by: ____

NB: ***Pregnant women with a positive rubella IgM test should be referred to specialist obstetricians for evaluation. Complete a separate case investigation form for each suspected measles case identified.***
If you have any questions please contact.....

Measles and rubella surveillance monitoring

Measles and rubella surveillance in South Africa, 2022- March 2025

NMC Data

- Measles and rubella notification can be monitored daily, weekly and monthly
- Measles cases are notified in real time after laboratory confirmation through NMCSS
- Measles and Rubella data is accessible from facility level in the NMCSS
- National level and NICD data is analysed and shared with relevant stakeholders

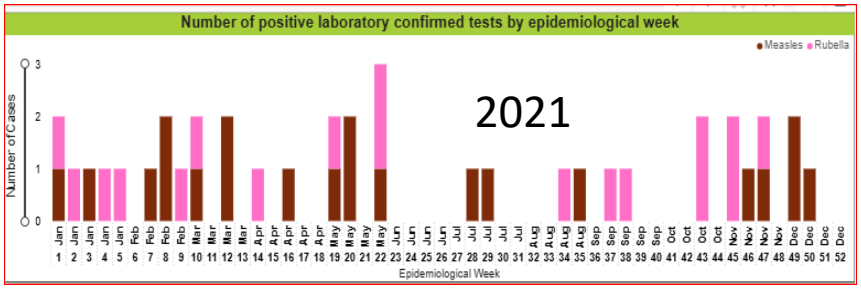
Year	No. of Measles IgM tests	Measles Positive tests	Measles testing Positivity rate(%)	No. of Rubella IgM tests	Rubella Positive tests	Rubella testing Positivity rate(%)
2021	741	21	2,76 %	741	18	2,37%
2022	3395	439	9,90 %	3395	23	0,57%
2023	7296	1029	12,36 %	7296	986	11,71%
2024	24374	830	3,29%	24381	13 632	35,86%
2025	1016	102	9,12%	1016	230	18,46%

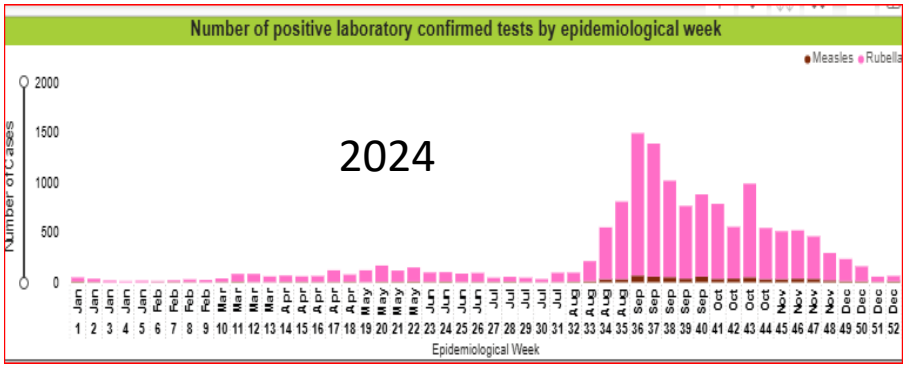
Laboratory surveillance

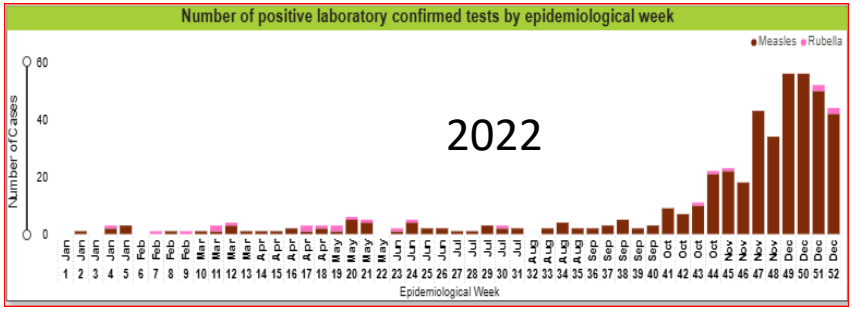
- Measles laboratory data is monitored on daily basis
- Laboratory confirmed cases are available to the clinicians on the laboratory information system by requested clinician at facility level
- Laboratory confirmed cases are shared with department of health at national, provincial and district level

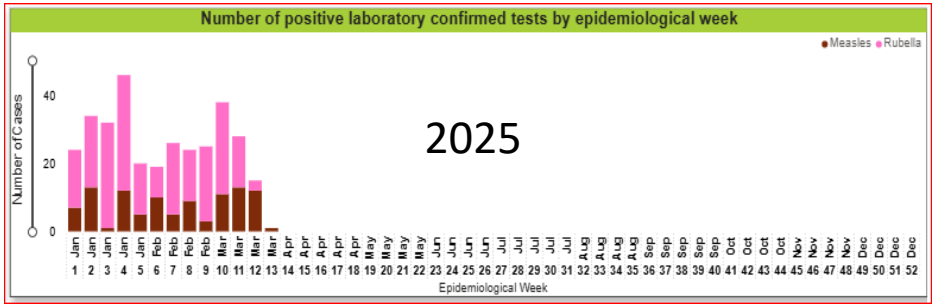
- Measles and rubella surveillance case base contains both NMC and laboratory cases

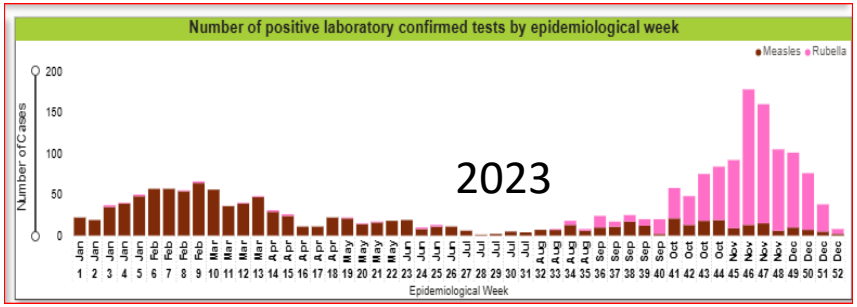
Laboratory-confirmed measles and rubella cases, 2022 to week 13, 2025







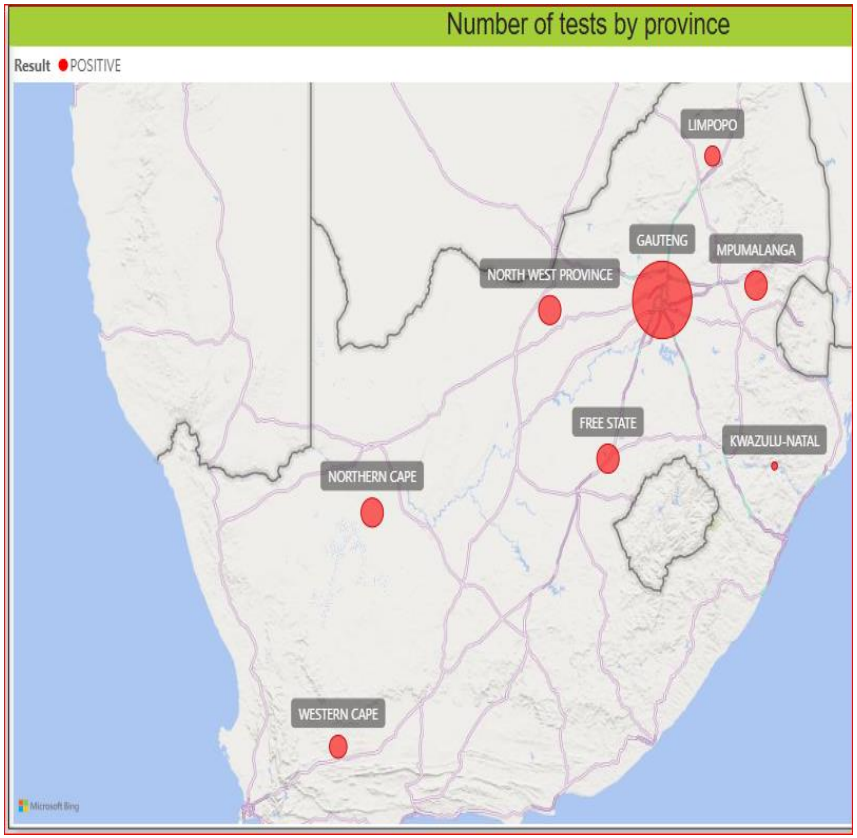




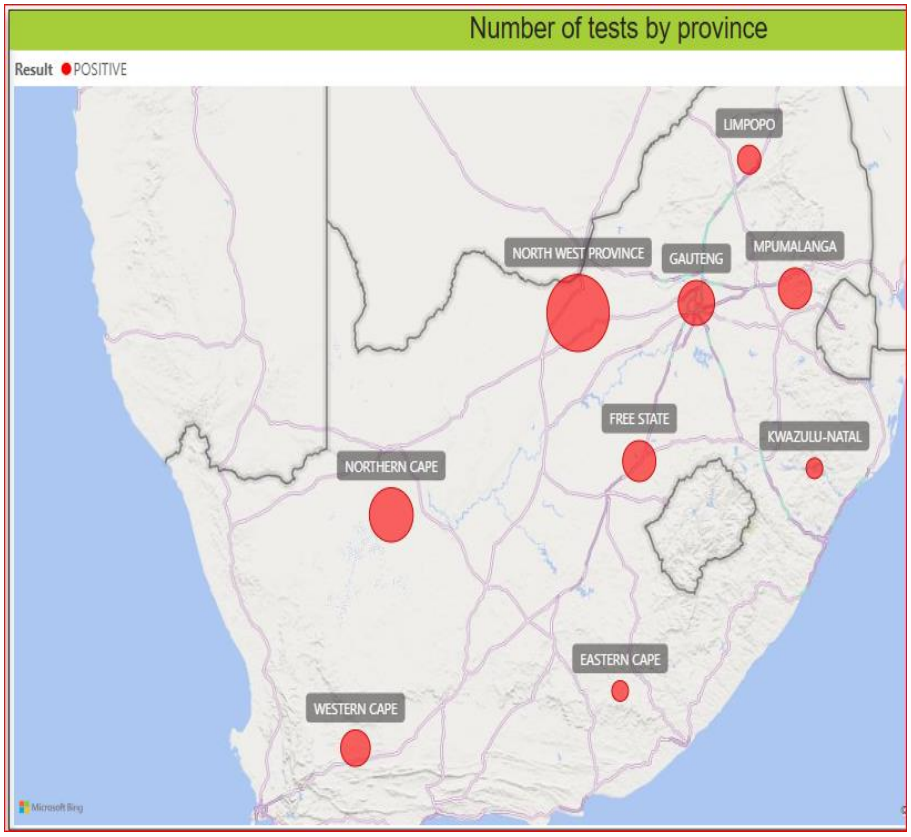
https://www.nicd.ac.za/measles-rubella-dashboard/; accessed 28 March 2025

Laboratory-confirmed measles and rubella cases by province week 1 to 13, 2025

Laboratory confirmed measles cases



Laboratory confirmed rubella cases



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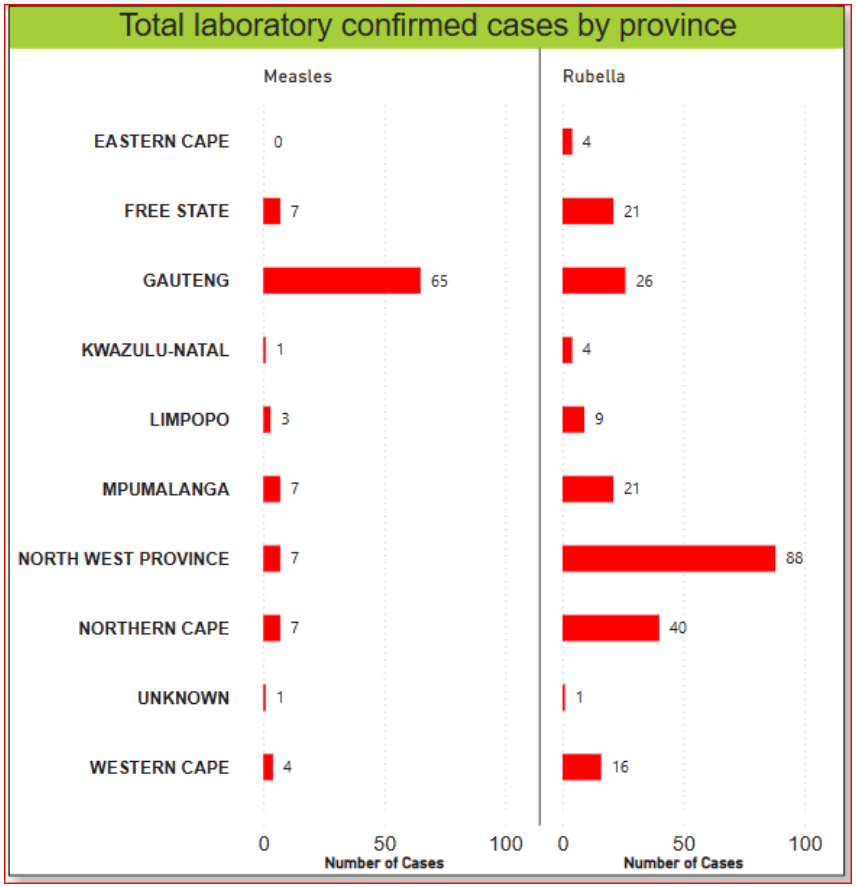
Laboratory-confirmed measles and rubella cases, Week1 to week 13, 2025



- Measles surveillance update
  - Laboratory confirmed cases detected 103
  - 67 measles were from Gauteng province
    - City of Johannesburg -40 cases
      - Johannesburg B(14 cases) and F(15)
    - City of Tshwane -19 cases
- Rubella surveillance update
  - Laboratory confirmed cases detected 238
  - Most affected districts are:
    - Ngaka Modiri Molema in North West province- 70 cases
    - Namakwa district in Northern Cape province -28

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Measles cases by age group 2025,

PROVINCE	0-6 Months	7-11 Months	1-4 Years	5-9 Years	10-14 Years	15-49 Years	>= 50 Years	Total
Eastern Cape	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
FREE STATE	0	0	0	3	0	1	0	**4**
GAUTENG	8	5	14	17	7	12	0	**63**
LIMPOPO	0	0	1	1	0	1	0	**3**
MPUMALANGA	0	0	1	2	2	2	0	**7**
NORTH WEST	0	0	1	5	1	0	0	**7**
NORTHERN CAPE	1	0	1	1	1	1	0	**5**
WESTERN CAPE	2	0	0	0	0	2	1	**5**
South Africa	**11**	**5**	**18**	**29**	**11**	**19**	**1**	**94**

- Measles cases are detected in older age group
- Suggest immunity gap in ages not target by supplementary measles immunisation campaigns

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Rubella cases by age group 2025

PROVINCE	0-6 Months	7-11 Months	1-4 Years	5-9 Years	10-14 Years	15-49 Years	>= 50 Years	Total
EASTERN CAPE	0	0	0	1	2	1	0	4
FREE STATE	0	0	4	16	0	1	0	21
GAUTENG	1	2	8	9	1	5	0	26
KWAZULU-NATAL	1	0	1	2	0	0	0	4
LIMPOPO	0	0	3	4	2	0	0	9
MPUMALANGA	0	0	3	12	5	1	0	21
NORTH WEST	0	0	15	50	23	0	0	88
NORTHERN CAPE	0	0	3	24	6	6	0	39
WESTERN CAPE	2	0	5	4	4	0	0	15
South Africa	4	2	42	122	43	14	0	227

- Rubella infection in females of age child bearing a risk of having a congenital rubella syndrome baby if infected in the first trimester of pregnancy
- Where possible the patient needs to be followed up until they give birth

https://www.nicd.ac.za/measles-rubella-dashboard/; accessed 28 March 2025

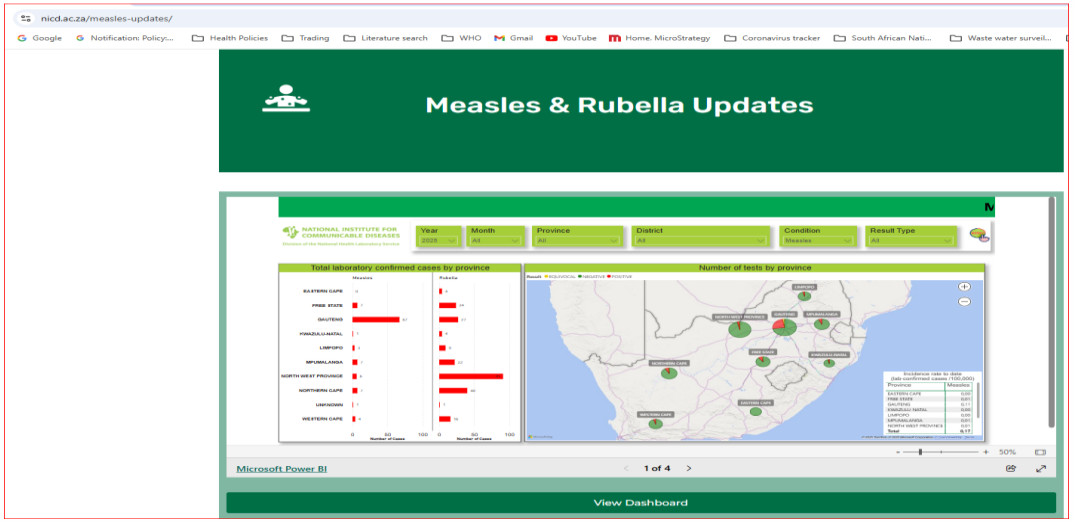
Measles and rubella surveillance reports and during outbreaks

Data sharing for public health response

Different types of reports are shared for public health response

- Measles alerts for detected outbreaks
- Measles and rubella situation reports
  - Depending on the period of the outbreak
    - Daily, weekly, monthly

NICD developed a measles and rubella dashboard to monitor measles and rubella circulation



Conclusion

- Monitoring of measles and rubella assists in:
  - Understanding where (place) is the outbreak, who is affected and when did the outbreak start
  - Monitoring the effectiveness of the vaccination programme
  - Guide in developing public health response strategies during outbreak response
    - Vaccination plans
    - Risk communication plans
- After action review need to be done to assess
  - Gaps that let to measles and rubella outbreak
  - Review how the measles and rubella surveillance and outbreak response plans