EXPANDED PROGRAMME ON IMMUNISATION IN SOUTH AFRICA (EPI-SA)

WEBINAR

Measles and rubella outbreaks update in South Africa
Jan 2022 to March 2025

Date: 02 April 2025
Time: 10h00 – 12h00

health
Department:
Health
REPUBLIC OF SOUTH AFRICA

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

World Health Organization

2030 NDP

30 YEARS OF FREEDOM
South Africa 1994 - 2024

Presentation outline

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

Measles and rubella surveillance

Clinical surveillance

- Case-based surveillance of suspected and confirmed measles cases
- Notifiable medical condition surveillance system(NMCSS)
  - NMC notification forms
    - Clinical diagnoses
  - 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

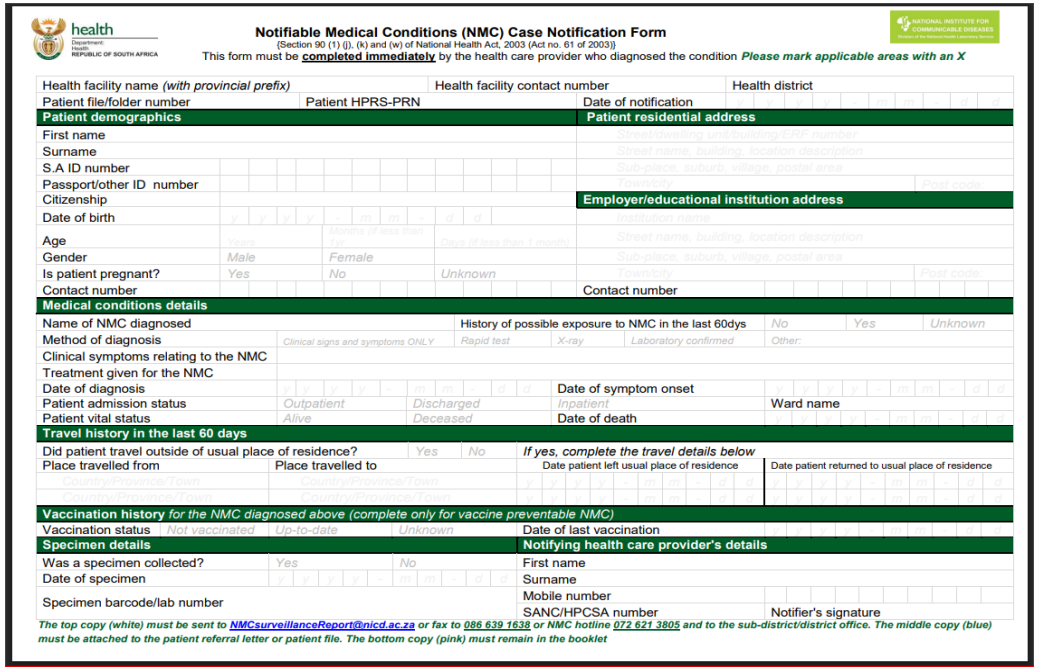
- Measles suspected case
  - An illness in a patient with fever and generalized maculopapular (non-vesicular) rash, or in a patient whom a health care worker suspects has measles. Case based surveillance of suspected and confirmed measles
- Clinical measles cases
  - Any person in whom a clinician suspects 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).

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
  - Non-measles and no rubella laboratory-confirmed case
  - or any case that did not meet the suspected measles

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 shipped with specimen at the primary laboratory



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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***

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES

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

Patient demographics			**Patient residential address**
First name			Street/dwelling unit/building/ERF number
Surname			Street name, building, location description
S.A ID number			Sub-place, suburb, village, postal area
Passport/other ID number			Town/city: Post code:
Citizenship			**Employer/educational institution address**
Date of birth	y y y y m m d d		Institution name
Age	Years	Months (if less than 1 year) / Days (if less than 1 month)	Street name, building, location description
Gender	Male	Female	Sub-place, suburb, village, postal area
Is patient pregnant?	Yes	No / Unknown	Town/city: Post code:
Contact number			Contact number

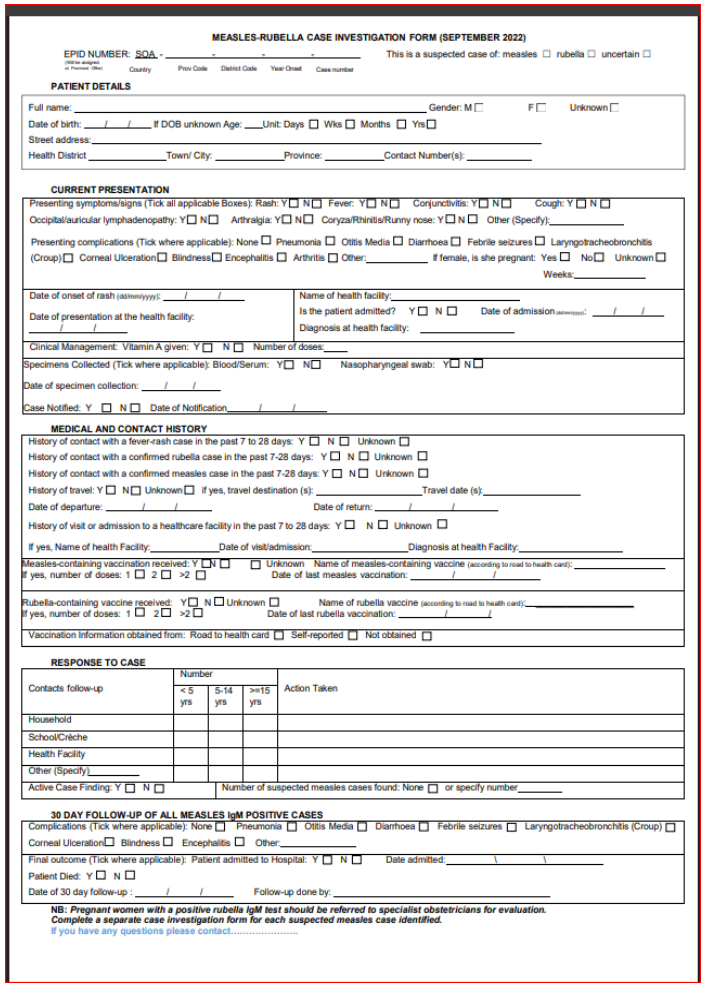
Medical conditions details					
Name of NMC diagnosed		History of possible exposure to NMC in the last 60dys		No	Yes / Unknown
Method of diagnosis	Clinical signs and symptoms ONLY	Rapid test	X-ray	Laboratory confirmed	Other:
Clinical symptoms relating to the NMC					
Treatment given for the NMC					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

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	y y y y m m d d	y y y y m m d d	
Country/Province/Town	Country/Province/Town	y y y y m m d d	y y y y m m d d	

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 y y y y m m d d

Specimen details		**Notifying health care provider's details**	
Was a specimen collected?	Yes / No	First name	
Date of specimen	y y y y m m d d	Surname	
Specimen barcode/lab number		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 ☐

(SIMS# assigned at Provincial Office) 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.....

Important information:

-date of onset
-travel history
-immunisation information

Measles and rubella surveillance data monitoring

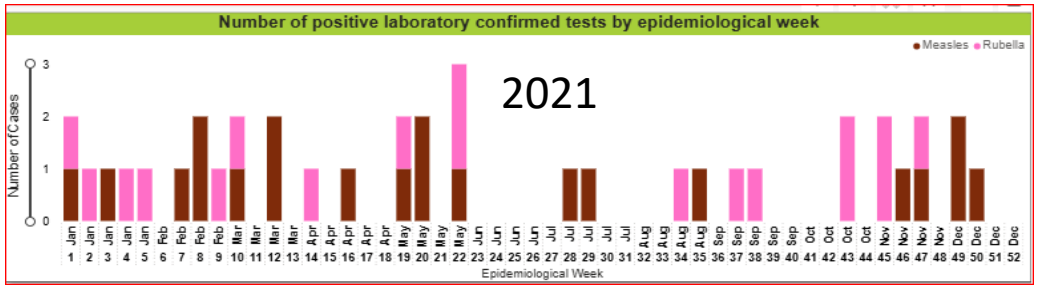
Measles and rubella surveillance in South Africa, 2022- March 2025

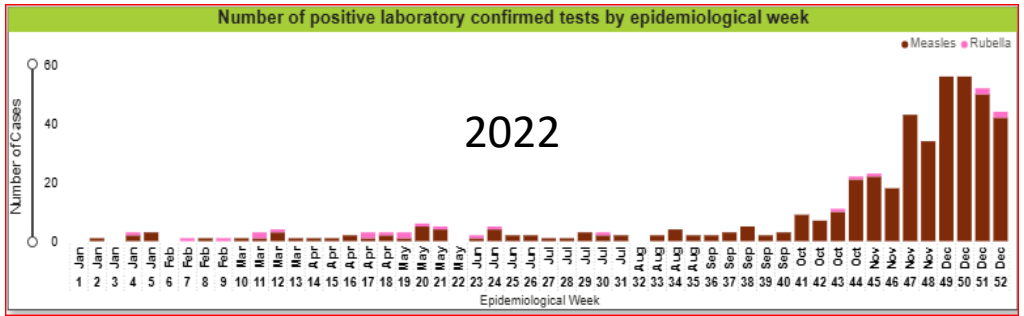
Measles –rubella case based surveillance data

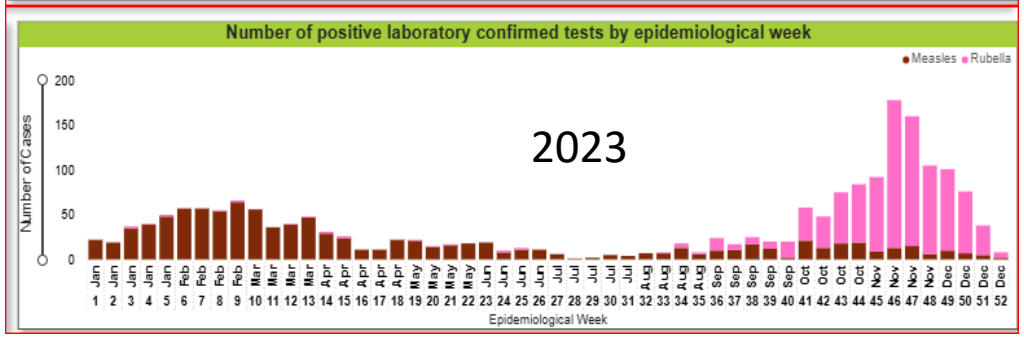
- Measles and rubella notification is monitored weekly and monthly
- Measles cases are notified in real time after laboratory confirmation through NMCSS
- Measles and Rubella data are accessible from the facility level in the NMCSS
- National level and NICD data is analysed and shared with relevant stakeholders

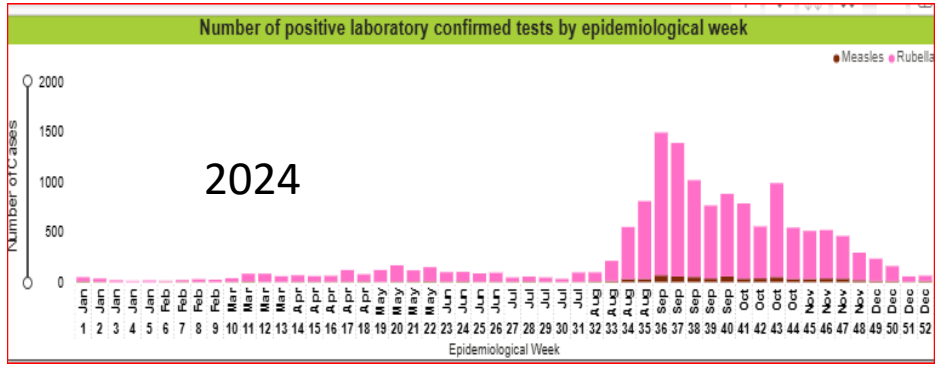
Year	No. of Measles IgM tests	Measles Positive tests	Measles testing Positivity rate(%)	No. of Rubella IgM tests	Rubella Positive tests	Rubella testing Positivity rate(%)
2021	741	21	2,76 %	741	18	2,37%
2022	3395	439	9,90 %	3395	23	0,57%
2023	7296	1029	12,36 %	7296	986	11,71%
2024	24374	830	3,29%	24381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

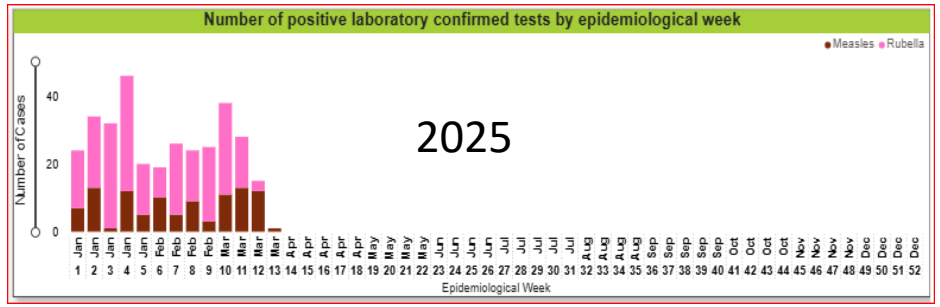
Laboratory-confirmed measles and rubella cases, 2022 to week 13, 2025









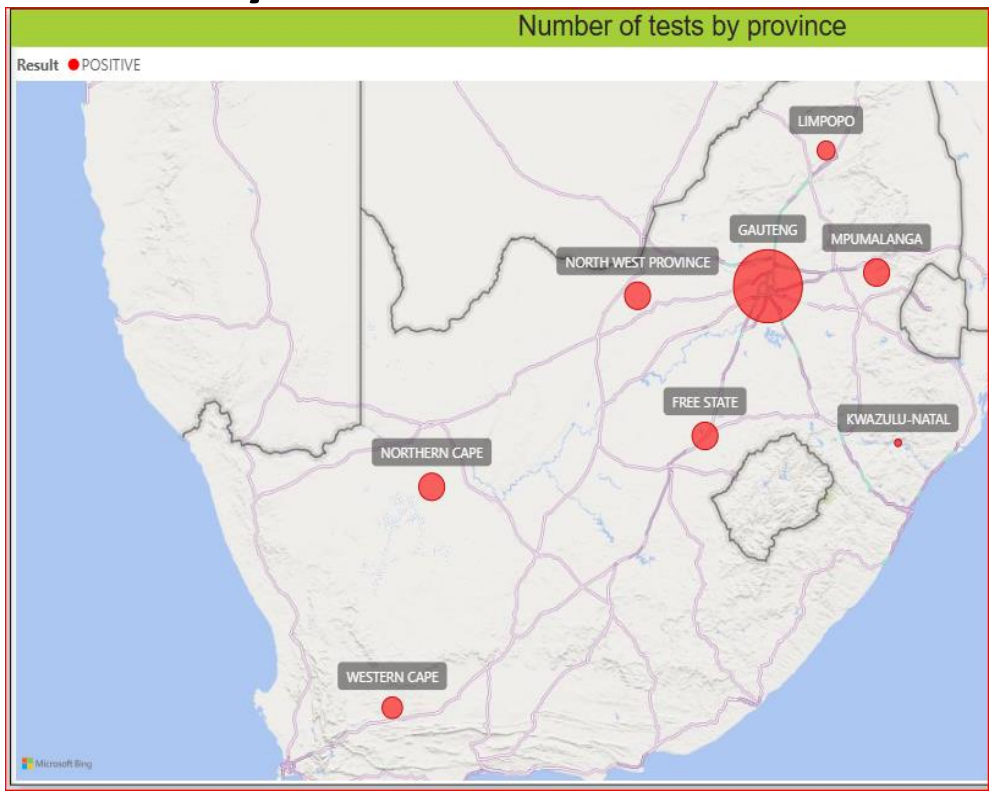


- Measles outbreak started in September 2022
  - Inland provinces, Limpopo, Mpumalanga, North West and Gauteng were affected first
- Increase in rubella cases started in March 2023
  - Coastal provinces Western Cape, Northern Cape and Eastern Cape provinces were affected before spreading countrywide

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

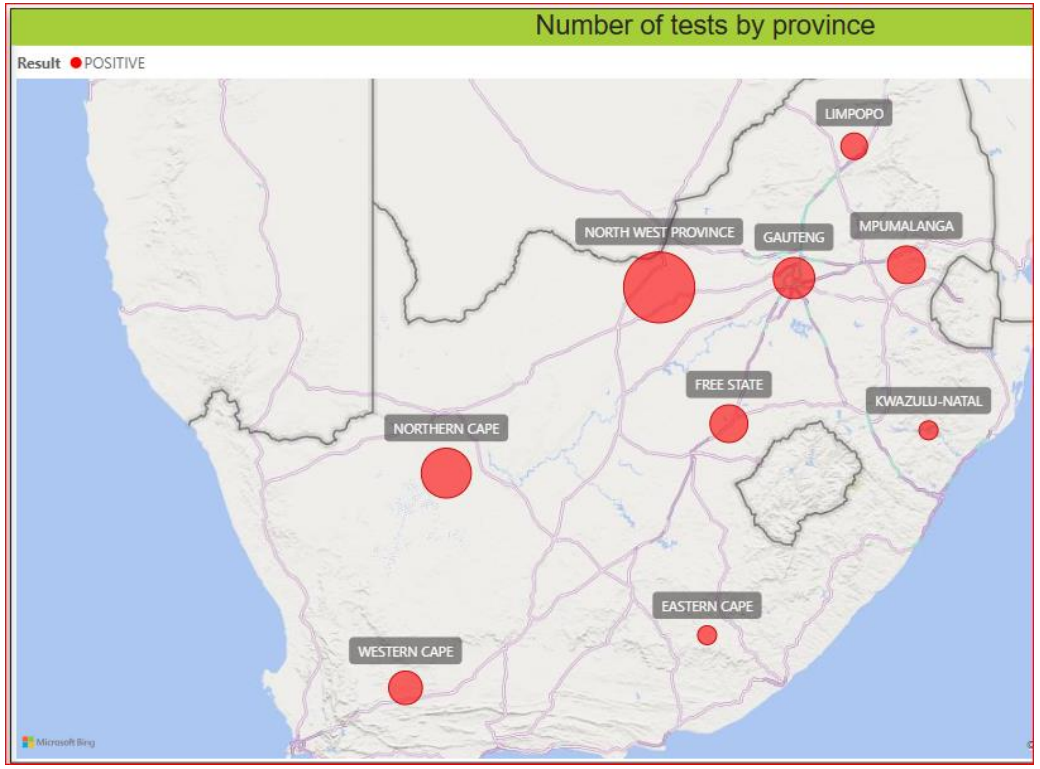
Laboratory confirmed measles cases



Clusters of measles cases are still detected in Gauteng province

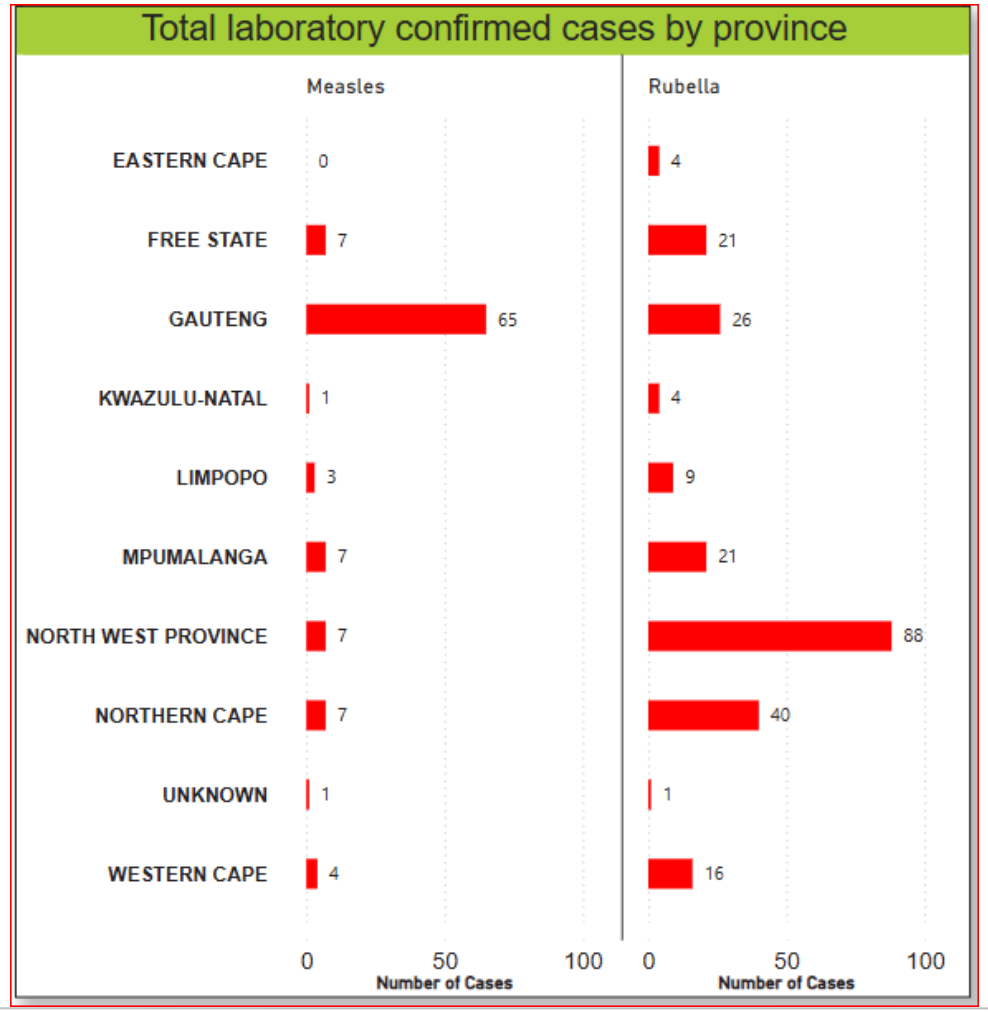
https://www.nicd.ac.za/measles-rubella-dashboard/; accessed 28 March 2025

Laboratory confirmed rubella cases



Rubella virus circulation has decreased with high number of cases in North west province and Northern Cape province

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



- Measles surveillance update
  - Laboratory confirmed cases detected 103
  - 67 measles cases were from Gauteng province
    - City of Johannesburg -40 cases
      - Johannesburg B(14 cases) and F(15)
    - City of Tshwane -19 cases
    - Genotype B3
- 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

Measles cases by age group, January to March 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 detected in the older age group
- Suggest an immunity gap in older group and impacts on Supplementary Immunisation activities
- Measles supplementary immunisation campaigns in low measles vaccination coverage:
  - Usually target under 5 years or under 15 years

Rubella cases by age group, January to March 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

- Previously, the rubella-containing vaccine was not included in the public immunisation schedule
- Concern: infections in pregnant women in the first trimester pose a risk of having congenital rubella syndrome child
- Where possibl,e the patient needs to be followed up until they give birth

Measles and rubella surveillance reports and during outbreaks

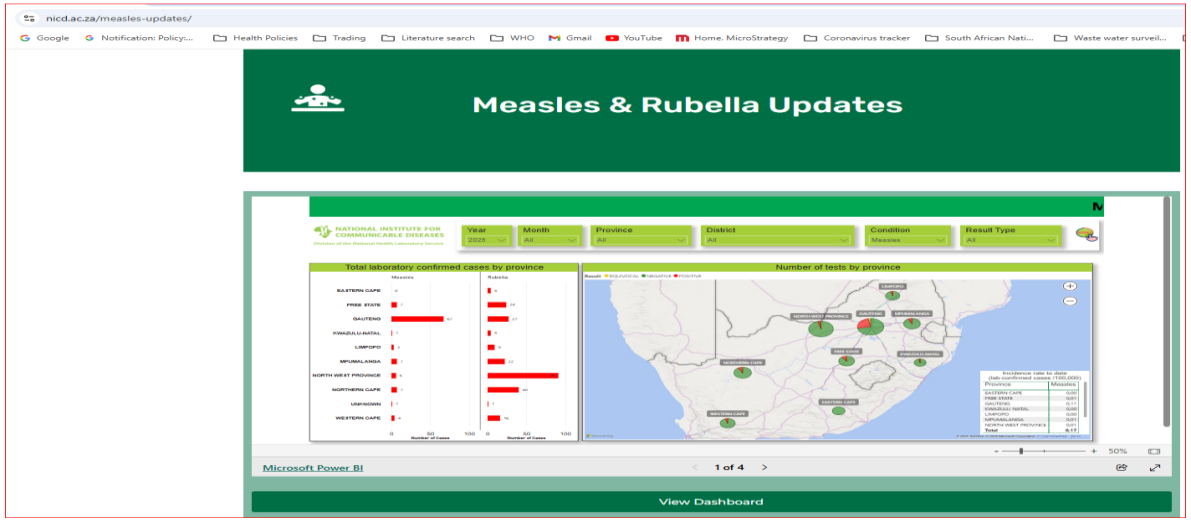
Measles and rubella Data sharing and reporting for public health response

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 available at:

www.nicd.ac.za



Conclusion

- Measles outbreak is ongoing in Gauteng province
- Rubella circulation has decreased nationally
- 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
  - Update measles and rubella vaccination, surveillance and outbreak response plans