Diphtheria-Measles-Rubella Webinar

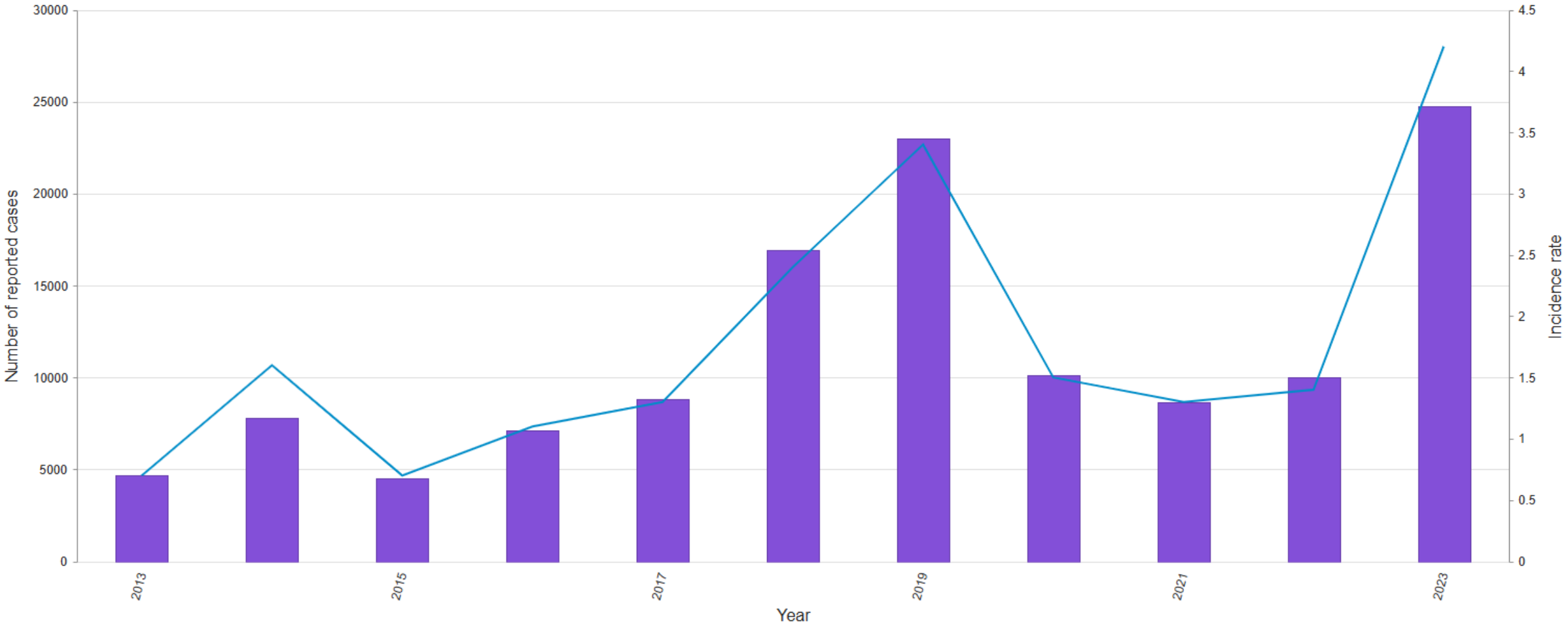
2nd April 2025

World Health Organization

Presentation outline

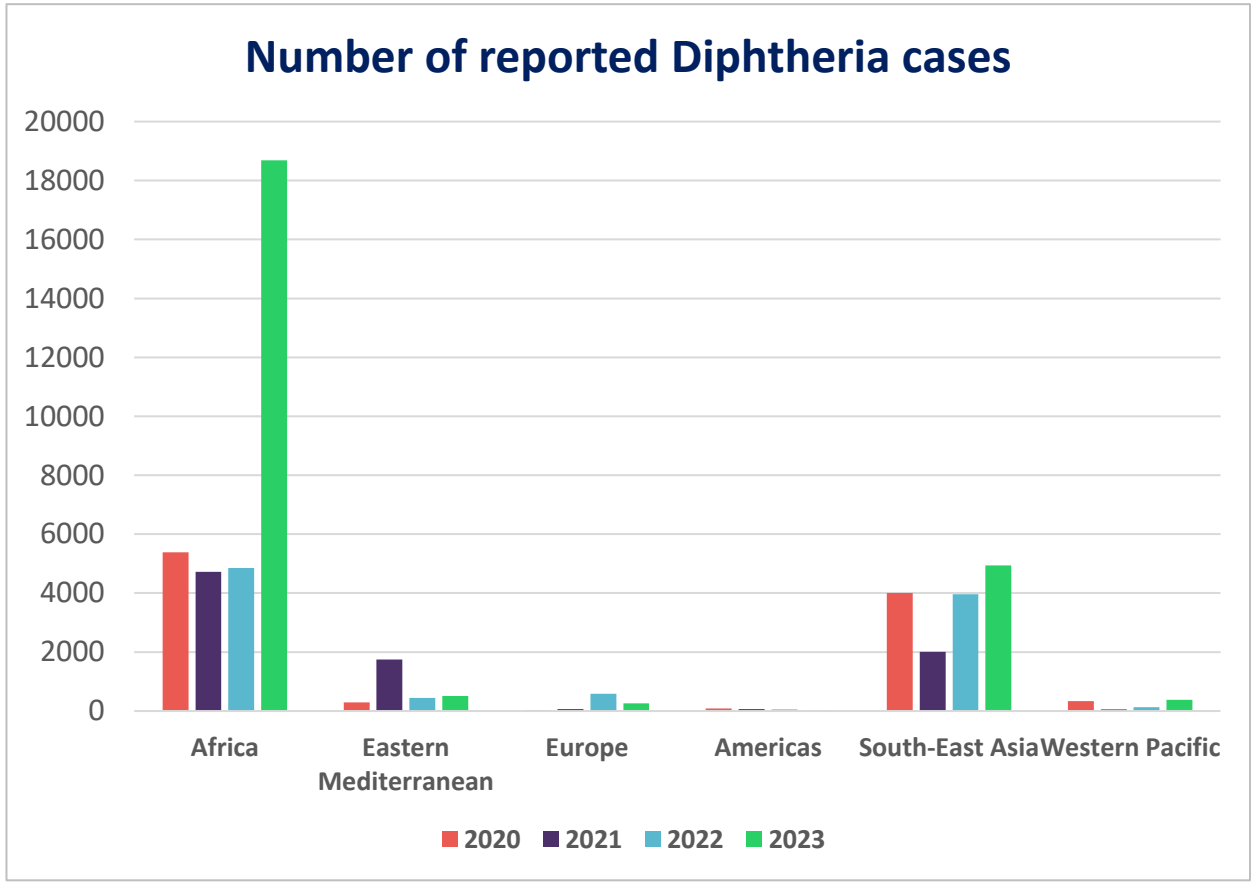
- Global diphtheria cases
- Africa, South Africa status of diphtheria cases
- DTP vaccination coverage for WHO regions
- Diphtheria outbreak
- Preliminary diphtheria vulnerability mapping in the WHO African Region (November 2023)
- WHO guidance

Global Diphtheria reported cases and incidence by year



Source: WHO Immunization Data portal

Number of reported diphtheria cases in Who regions



Year	Global	Africa	South Africa
2023	24,782	18,684	17
2022	10,018	4,856	
2021	8,659	4,724	0
2020	10,137	5,387	9
2019	22,986	11,400	0
2018	16,911	1,971	4
2017	8,819	118	4
2016	7,102	2,870	0
2015	4,535	1,654	15

Source: WHO/UNICEF Joint Reporting Form on Immunization (JRF)
https://immunizationdata.who.int/global/wiise-detail-page/diphtheria-reported-cases-and-incidence

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DTP vaccination coverage for WHO regions

Country / Region	Antigen	Data source	2024	2023	2022	2021	2020	2019	2018	2017	2016
African Region	DTP-containing vaccine, 1st dose	WUENIC		83%	81%	81%	82%	83%	82%	81%	81%
	DTP-containing vaccine, 3rd dose	WUENIC		74%	73%	73%	74%	77%	75%	74%	73%
Eastern Mediterranean Region	DTP-containing vaccine, 1st dose	WUENIC		85%	87%	87%	86%	88%	88%	86%	85%
	DTP-containing vaccine, 3rd dose	WUENIC		79%	81%	80%	80%	84%	82%	81%	81%
European Region	DTP-containing vaccine, 1st dose	WUENIC		97%	97%	97%	97%	98%	97%	97%	96%
	DTP-containing vaccine, 3rd dose	WUENIC		95%	95%	94%	94%	95%	95%	94%	92%
Region of the Americas	DTP-containing vaccine, 1st dose	WUENIC		91%	90%	87%	88%	89%	92%	94%	96%
	DTP-containing vaccine, 3rd dose	WUENIC		86%	83%	81%	81%	84%	88%	87%	91%
South-East Asia Region	DTP-containing vaccine, 1st dose	WUENIC		92%	94%	86%	88%	94%	93%	93%	92%
	DTP-containing vaccine, 3rd dose	WUENIC		90%	92%	83%	86%	91%	90%	90%	89%
Western Pacific Region	DTP-containing vaccine, 1st dose	WUENIC		94%	96%	94%	96%	97%	96%	97%	97%
	DTP-containing vaccine, 3rd dose	WUENIC		92%	95%	93%	95%	96%	95%	96%	97%

- Since the end of the COVID-19 pandemic, outbreaks of diphtheria have been reported in Nigeria, Niger, Chad, Guinea, **South Africa,** Mauritania, Gabon, Cameroon
  - >70% in children < 14 years of age
  - 76% unvaccinated / partially vaccinated
- Contributing factors:
  - Declining routine immunisation coverage rates
  - Conflict and population displacement
  - Overcrowding

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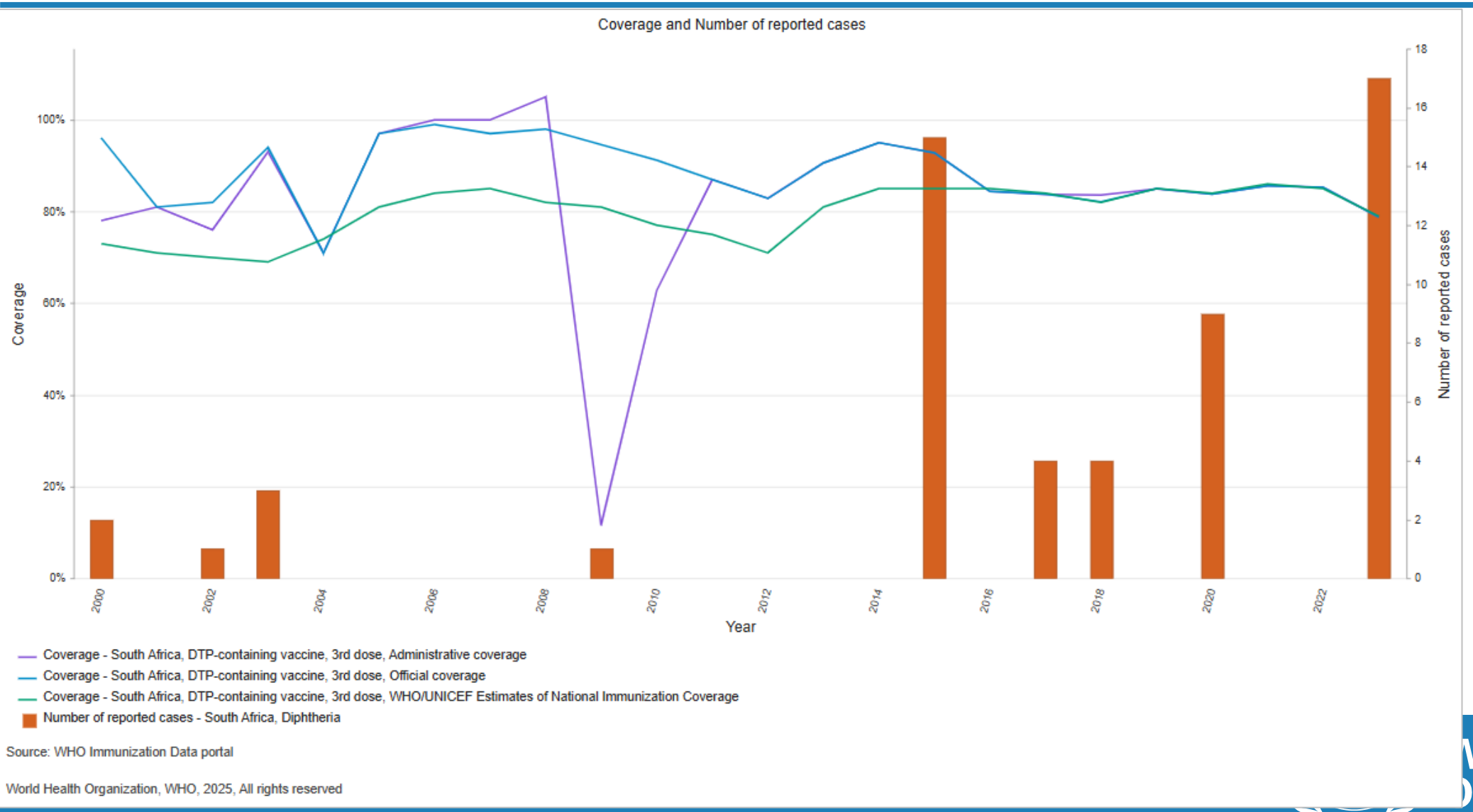
DTP 3 coverage and number of diphtheria cases in SA



Source: WHO Immunization Data portal

Accumulation of unvaccinated children increasing immunity gap

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Diphtheria Outbreak

- A **single laboratory-confirmed case of diphtheria should trigger a public health response**. Two epidemiologically linked cases, of which at least one is laboratory-confirmed, is considered an outbreak of diphtheria.

Factors observed to influence outbreaks:

- susceptible population (zero-dose (not vaccinated) and under-immunized children)
- change in biotype strain
- rapid urbanization (decreased hygiene and overcrowding)
- population movement increase (for example migration or refugee camps).

Preliminary diphtheria vulnerability mapping in the WHO African Region (November 2023)

WHO conducted a diphtheria vulnerability mapping and prioritized countries taking into consideration the diphtheria risk, including

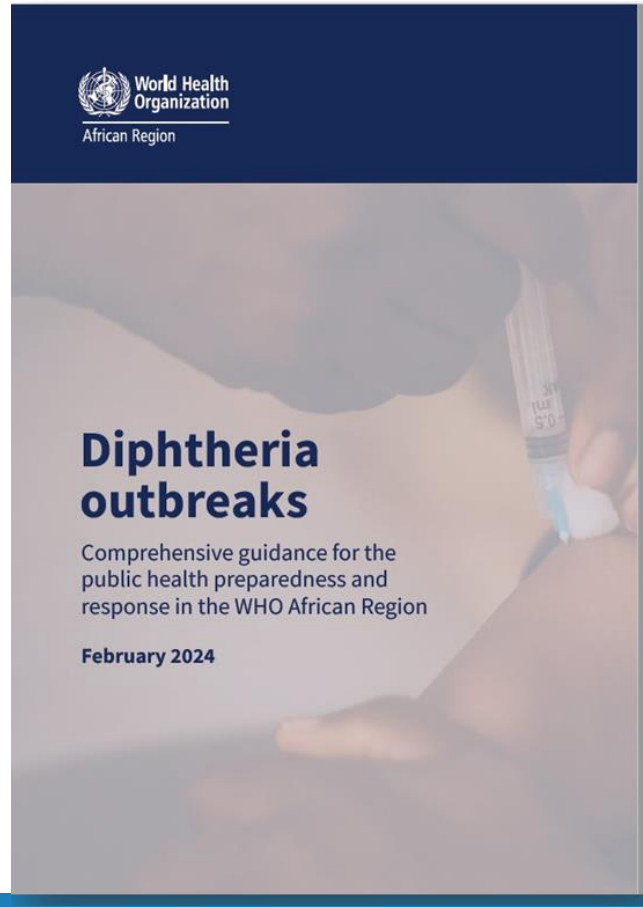
- active outbreaks with low vaccination coverage
- countries bordering an outbreak country and any
- countries with subnational 'hotspots'

- **Tier 1. Emergency Response**–active outbreaks, including ongoing diphtheria outbreaks, and low vaccination coverage: **Guinea, Mauritania, Niger, Nigeria and South Africa.**

- **Tier 2. High priority readiness/"response mode"–**very low coverage or likely multiple subnational hotspots with low coverage:

- **Tier 3. Medium priority readiness**–low vaccination coverage:**.**

- **Tier 4. Preparedness**:



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WHO guidance – 1

- Control of diphtheria is based on the
  - **primary prevention** of disease by ensuring **high population immunity** through vaccination and
  - **secondary prevention** of spread by the **rapid investigation** of close contacts to ensure prompt treatment (antibiotics) of those infected.
- **Epidemiological surveillance** ensuring early detection of diphtheria outbreaks should be in place, and all countries should have **access to laboratory facilities** for reliable identification of toxigenic C. diphtheriae.
- Adequate clinical management involves **administering antibiotics and DAT** to neutralize the toxin and reducing complications and mortality.
- Vaccination is key to preventing cases and outbreaks.

WHO guidance – 2

- Implement **infection prevention and control measures** in health care settings.
- Effective **coordination and community engagement are crucial** for a successful response to the outbreak.
- For travellers going to areas with diphtheria outbreaks to be appropriately vaccinated in accordance with the national vaccination schedule. **A booster dose** is recommended if more than 5 years have elapsed since their last dose.

Measles and rubella elimination in AFR

WHO AFRO

April 2025

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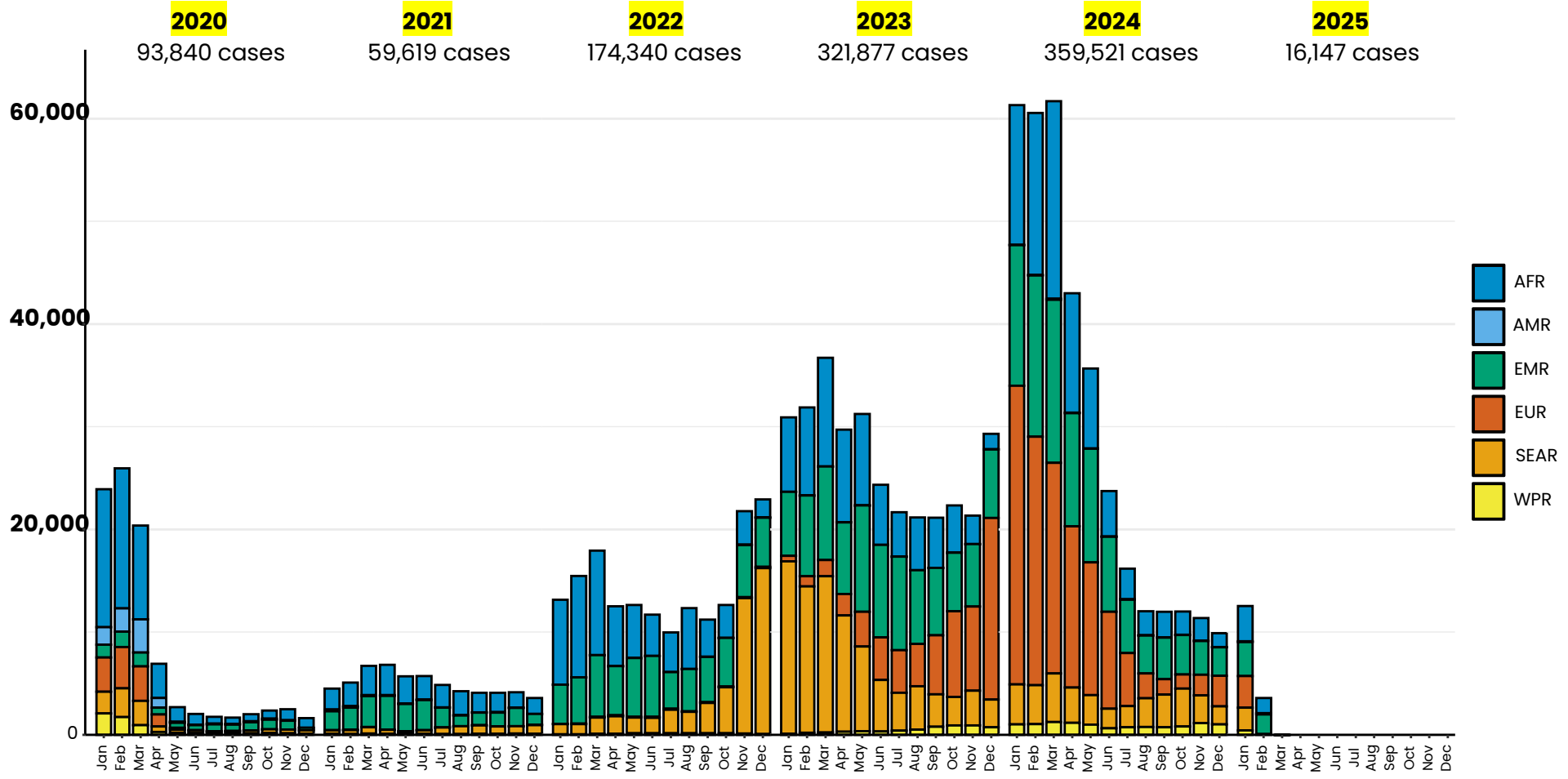
Outline

- Global situation and elimination verification status
- Regional goal
- Routine measles immunisation coverage
- African Regional goal
- Measles and rubella incidence in AFR
- Challenges and WHO guidance

Measles case distribution by month WHO Region (2020-2025)



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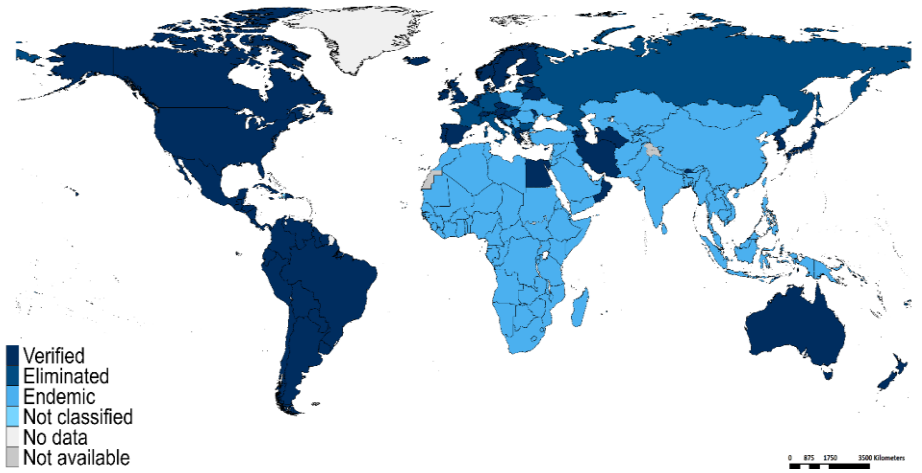
Measles/rubella verification of elimination status Feb 2025

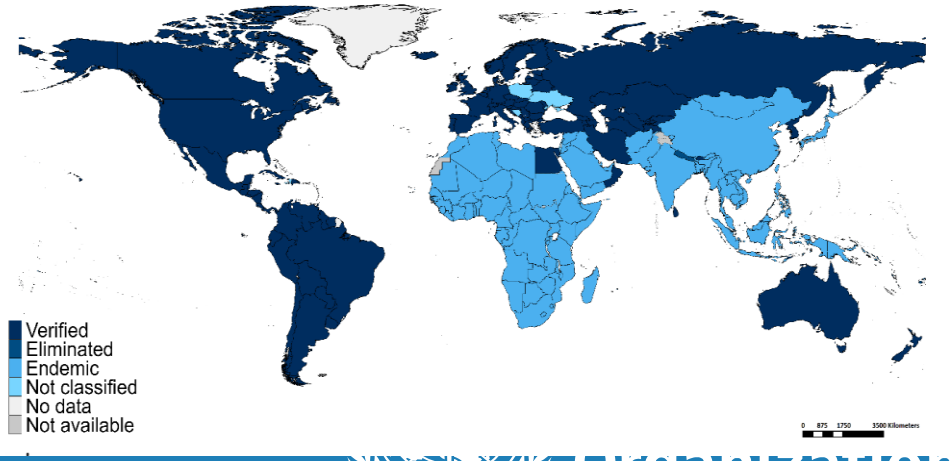
- Measles

Region	Member States	Verified	% Verified	Eliminated	Endemic	Not classified
AFR	47	0	0	0	47	0
AMR	35	34	97	0	0	1
EMR	21	4	19	0	17	0
EUR	53	33	62	8	11	1
SEAR	11	4	36	0	7	0
WPR	27	6	22	13	8	0
GLOBAL	**194**	**81**	**42**	**21**	**90**	**2**



- Rubella

Region	Member States	Verified	% Verified	Eliminated	Endemic	Not classified
AFR	47	0	0	0	47	0
AMR	35	34	97	0	0	1
EMR	21	4	19	0	17	0
EUR	53	49	92	0	0	4
SEAR	11	5	45	1	5	0
WPR	27	5	19	13	9	0
GLOBAL	**194**	**97**	**50**	**14**	**78**	**5**



African Regional goal: ≥ 80% countries attain measles and rubella elimination by 2030

- **≥95% MCV1 and MCV2 coverage** at national and district levels
- **≥ 95% coverage in Supplemental Immunisation Activities**
- **incidence of < 1 case / million** population /year (excluding imported cases).
- Achieve the **surveillance performance targets**:

  ≥ 80% districts investigating one or more suspected measles cases /year,
  a non measles febrile rash illness rate of ≥ 2 per 100 000 population at national level.

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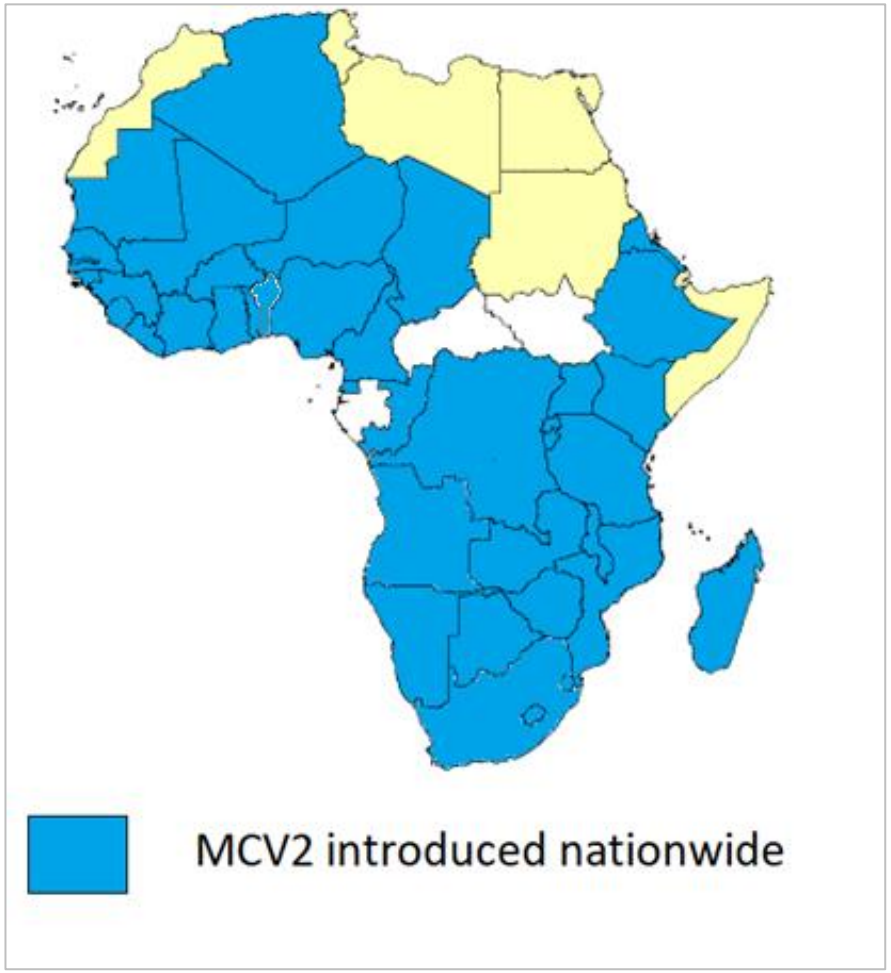
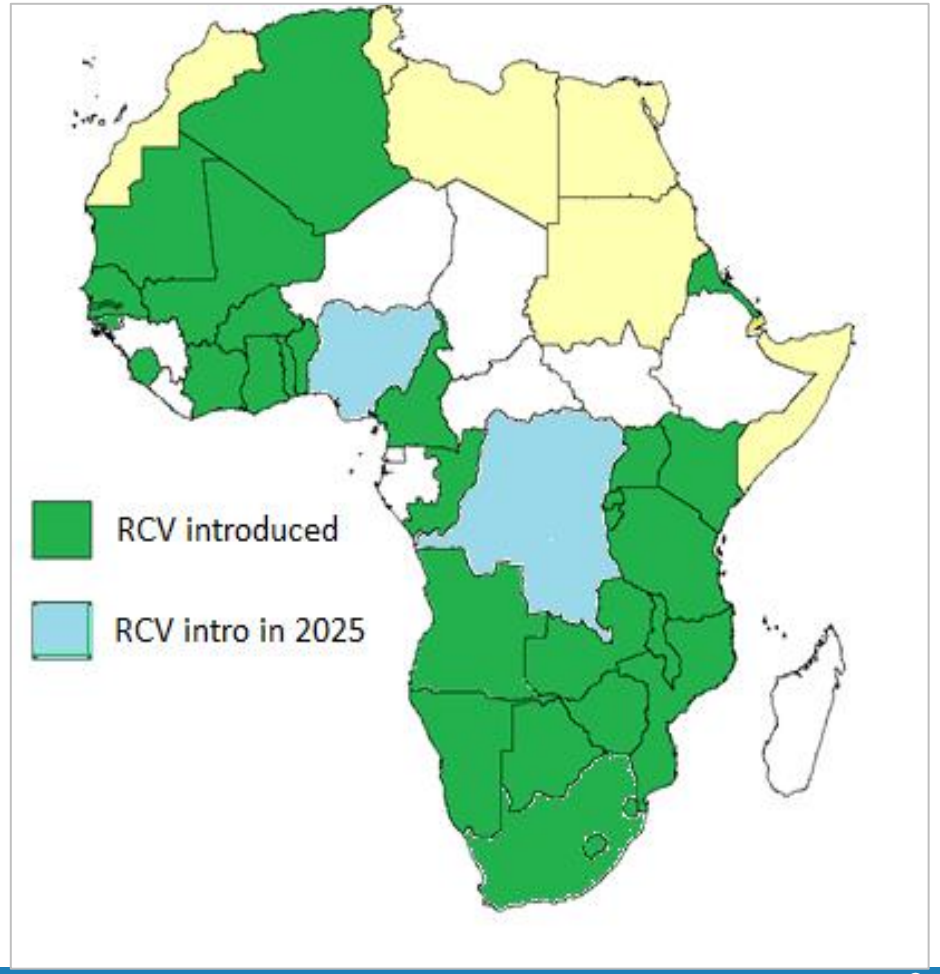
Second dose of measles vaccine (MCV2) and rubella vaccine (RCV) introduction in Africa - Dec 2024





- 35 / 47 countries introduced RCV in AFR

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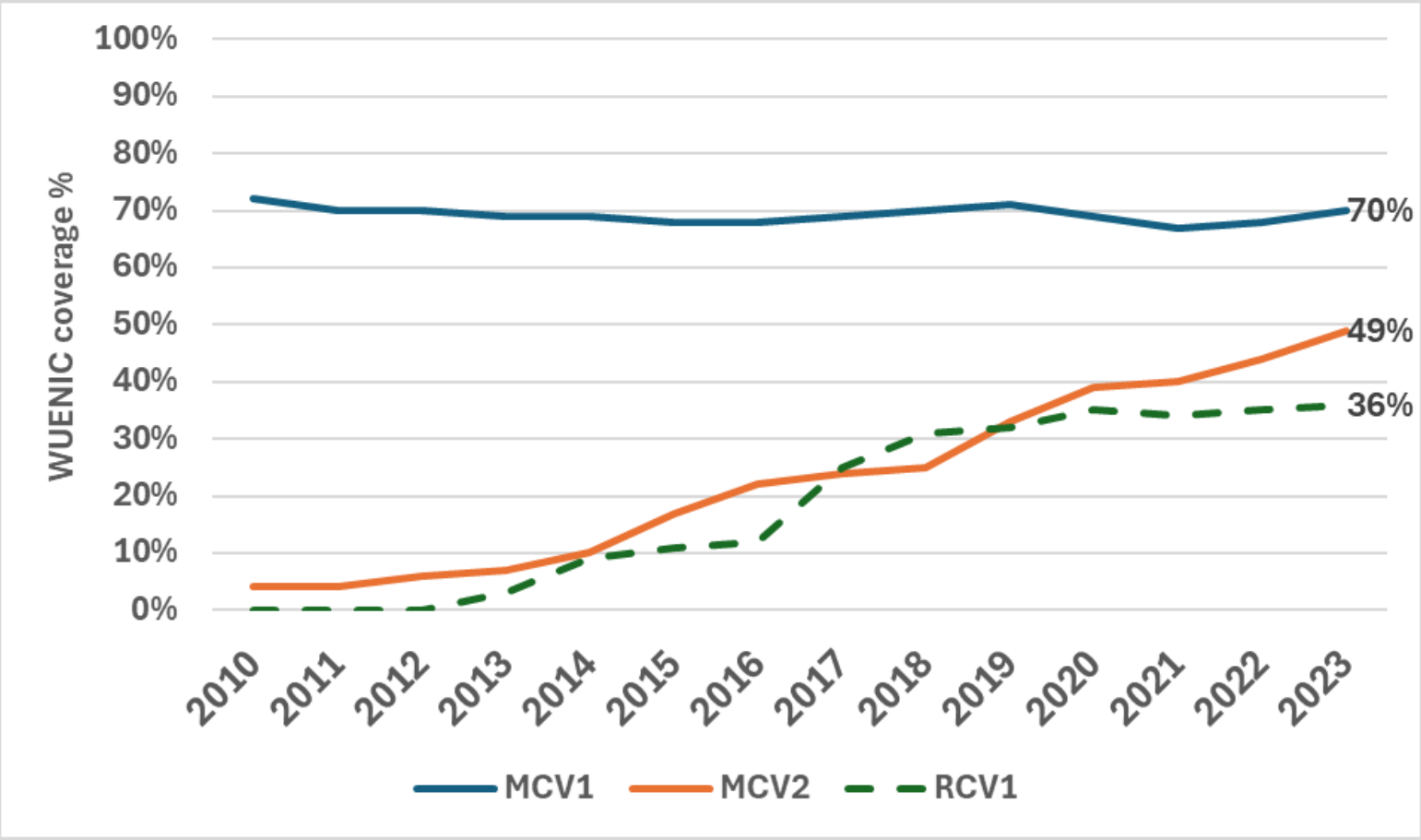
Measles and rubella immunisation coverage. African Region. WUENIC. 2014 - 2023



- Overall, the region has not reached the vaccination coverage
- Gradual increase of MCV2 and RCV1

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Periodic Supplemental Immunisation Activities

- A total of 164.8 million children were vaccinated in 28 preventive campaigns and 6 outbreak response campaigns in the years 2023 and 2024
- SA SIA in 2023

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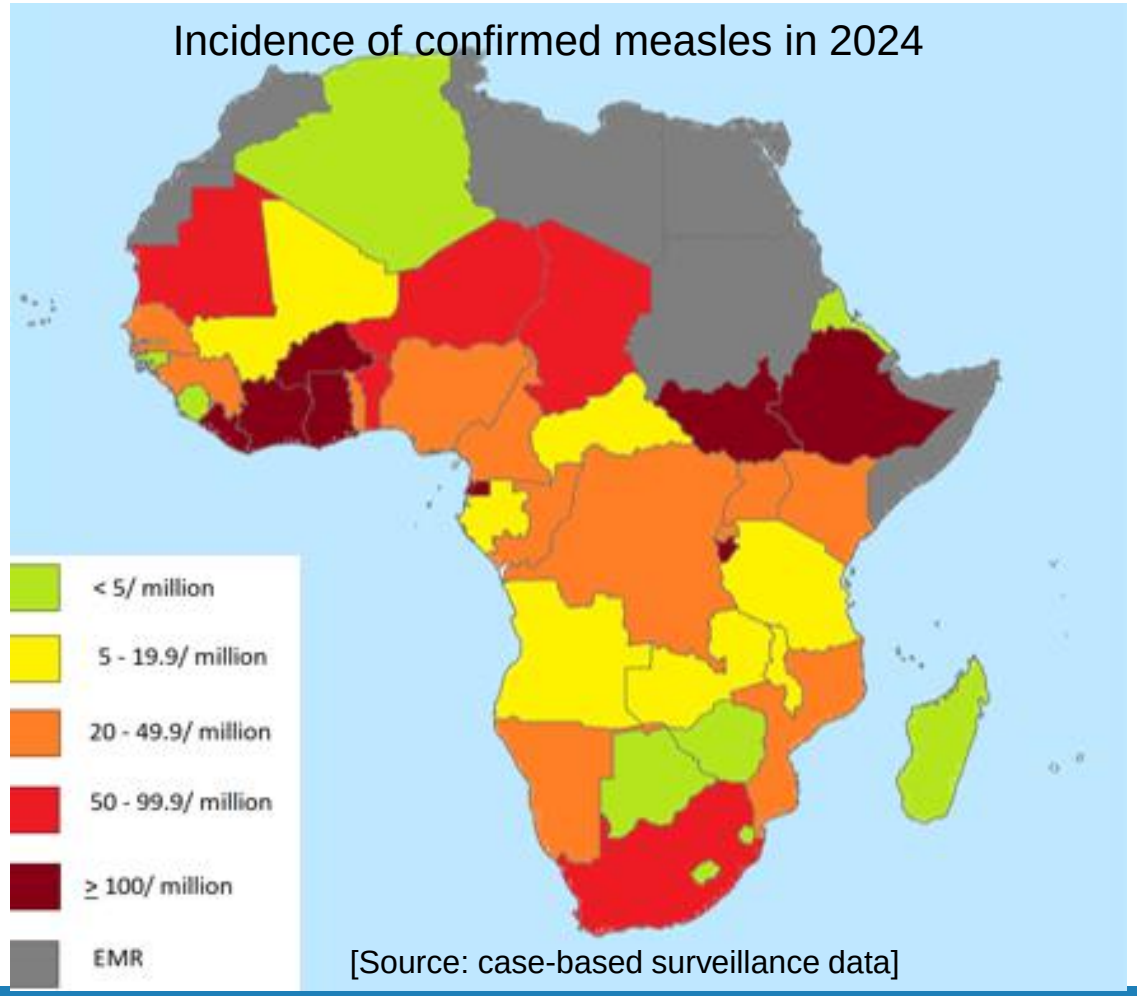
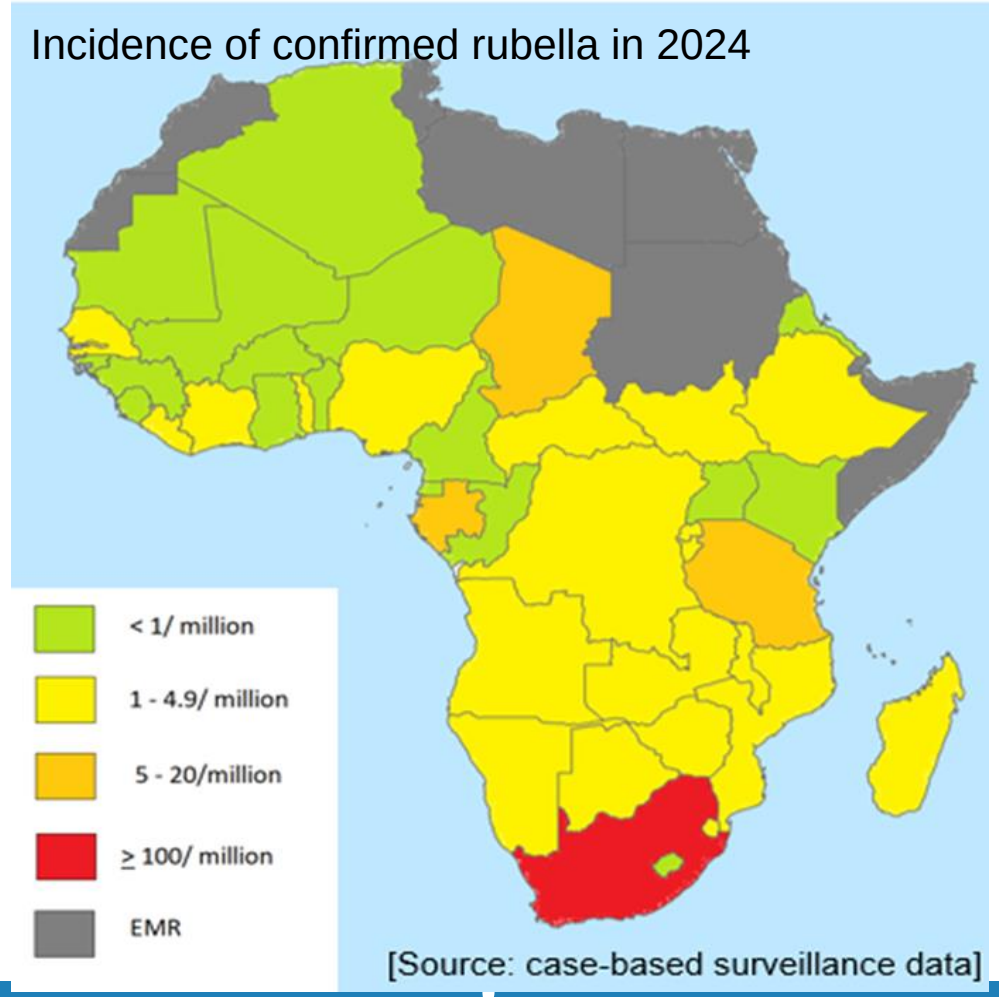
Measles surveillance performance in AFR. (2022 – 2024). Data Source: Case based surveillance system

Indicator	2022	2023	2024
Total **suspected measles** cases	114,347	125,957	147,564
Total **lab specimens collected**	73,457	77,998	95,588
Total **confirmed rubella** cases	4,319	4,805	**14,340**
Incidence of confirmed rubella per million population	3.6	4.0	**11.4**
Total **confirmed measles** cases	52,231	73,094	77,698
Incidence of confirmed measles per million population	51.3	60.3	71

Incidence of confirmed measles/rubella in 2024. African Region.





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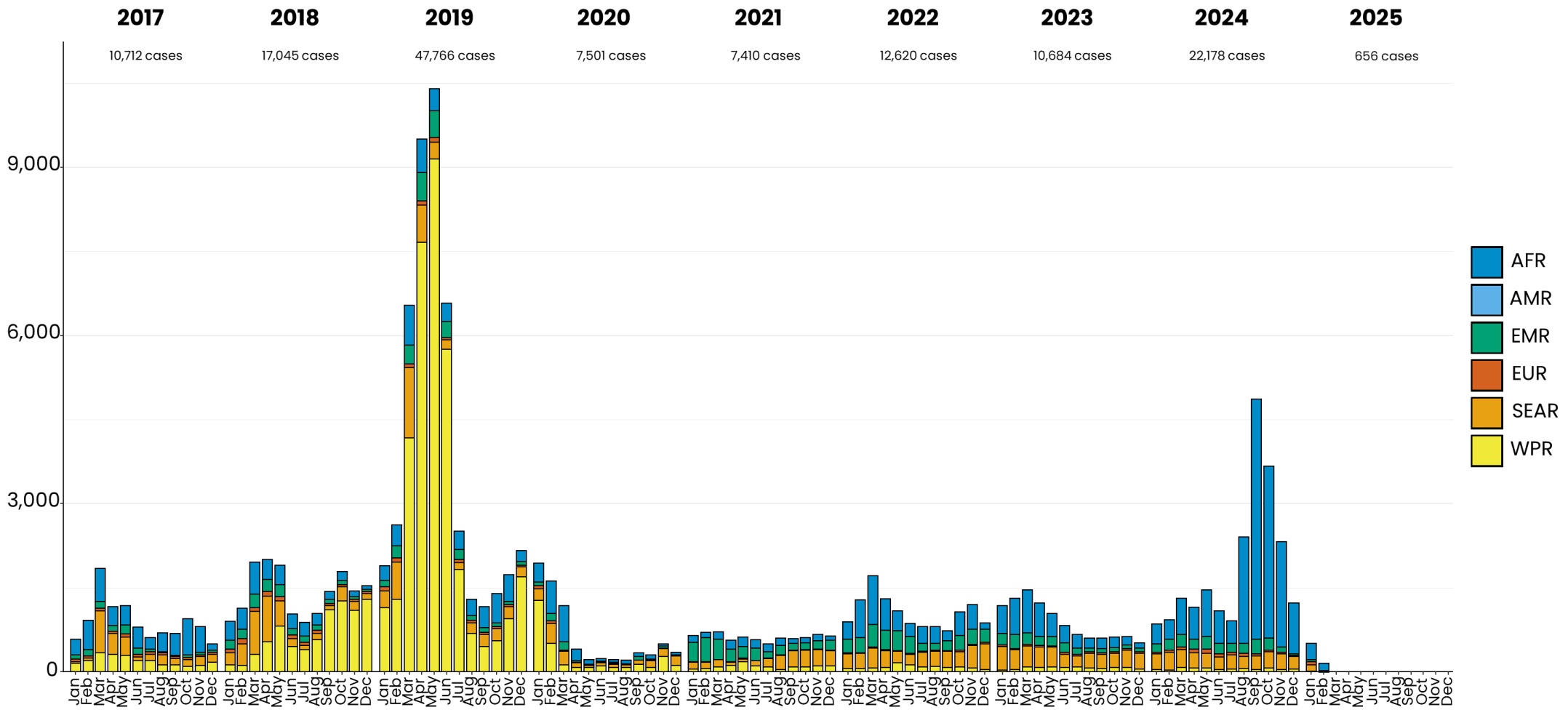
Rubella case distribution by month and WHO Region (2017-2025)



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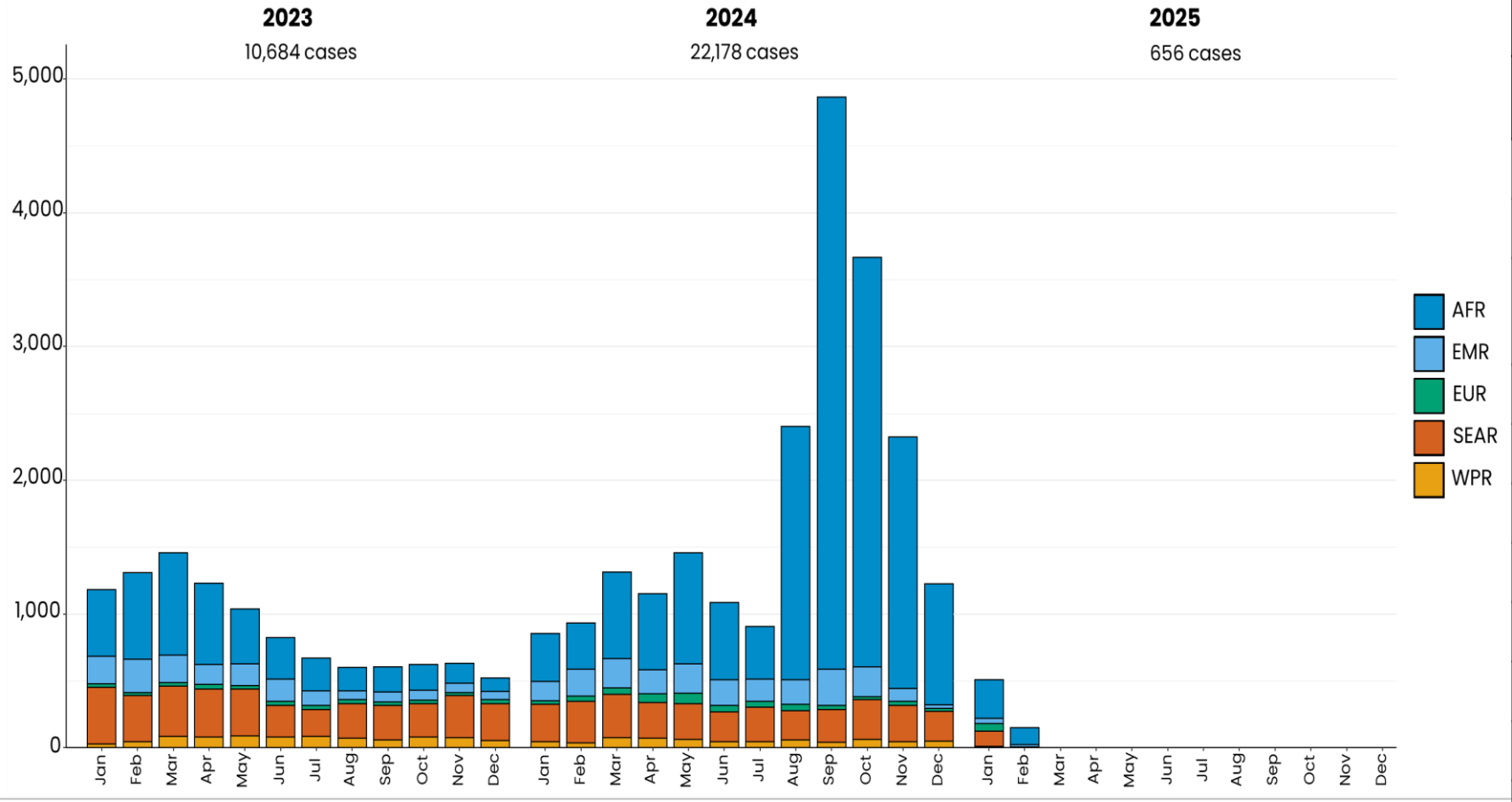
Rubella case distribution by month and WHO Region (2023-2025)



Top 10 countries (2024)			
Country	**RCV in RI**	**Cases**	**% of Total**
South Africa	No	13506	87
Nigeria	No	534	3
United Republic of Tanzania	2014	300	2
DR Congo	No	255	2
Others	-	248	2
Ethiopia	No	247	2
Chad	No	129	1
Madagascar	No	108	1
Malawi	2017	49	0
Gabon	No	40	0
Uganda	2019	35	0

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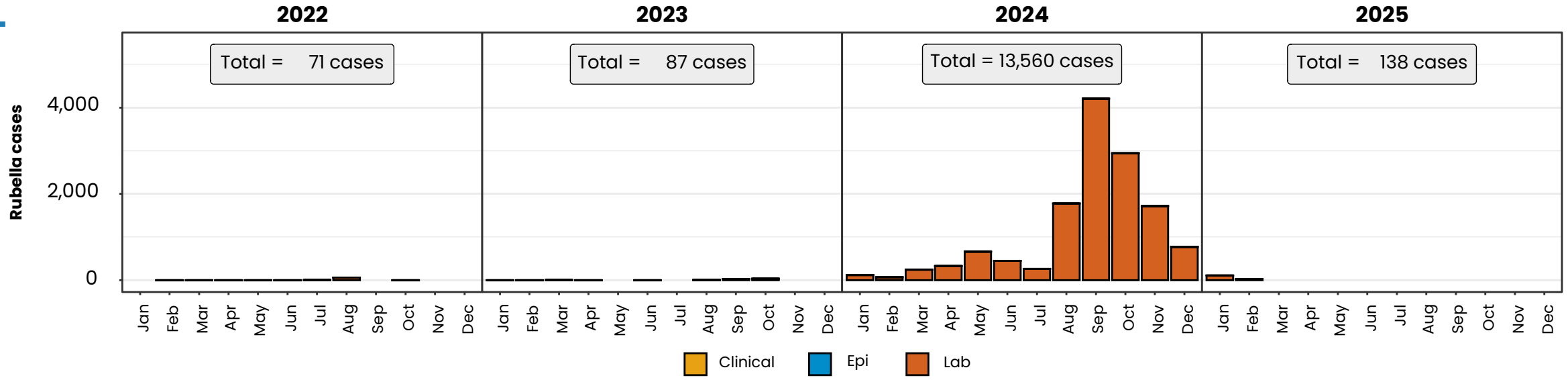
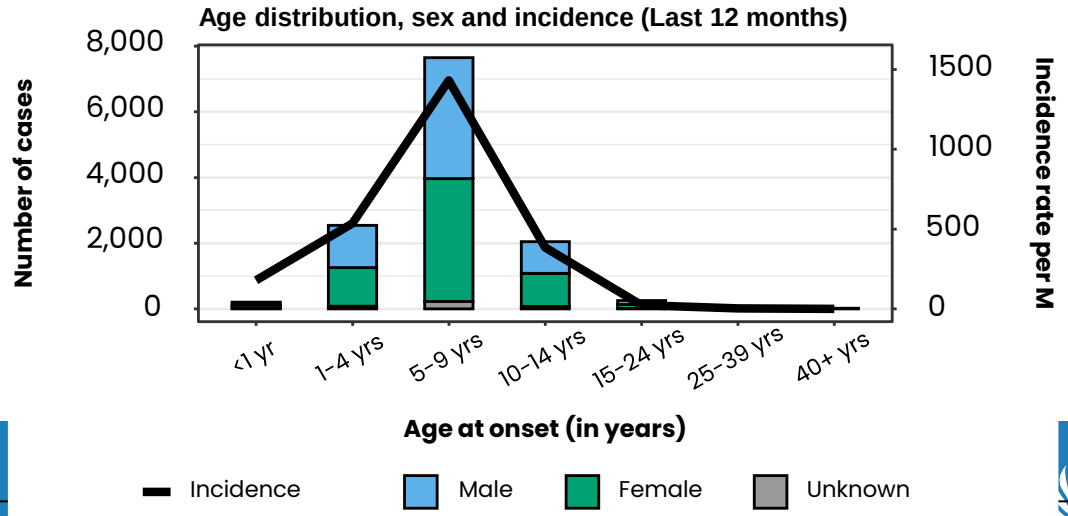
Rubella cases: South Africa

ELIMINATION STATUS: **ENDEMIC**





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Challenges contributing to measles/rubella outbreaks

- Chronically low routine immunisation coverage
- Vaccine stock-outs
- Humanitarian contexts with population displacements
- Delays in implementing periodic SIAs
- Failure to fund SIAs in middle-income countries
- Measles susceptibility in school age groups and older ages while periodic campaigns tend to be limited to under 5s

STRATEGIC PRIORITY 5
Outbreaks and Emergencies

Objective: Ensure **outbreak preparedness** for timely detection and effective response to limit the spread of measles and rubella and reduce related morbidity and mortality.

Key Focus Areas:

- Develop **stronger linkages** between measles and rubella elimination and control efforts and the International Health Regulations and related processes.
- Strengthen national and subnational **capacity for outbreak preparedness** and response in collaboration with other disease programmes.
- Harness **the expertise of CSOs**.
- Strengthen **capacity for outbreak investigations to identify root causes** of outbreaks and inform corrective actions to improve health systems and routine immunization programmes

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Conclusion

Responding to outbreaks

- Interrupt measles virus transmission.
- Reduce measles morbidity, mortality, complications and sequelae.
- Identify root causes so that immunity gaps and/or system weaknesses can be addressed to reduce the risk of future outbreaks.

THANK YOU

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