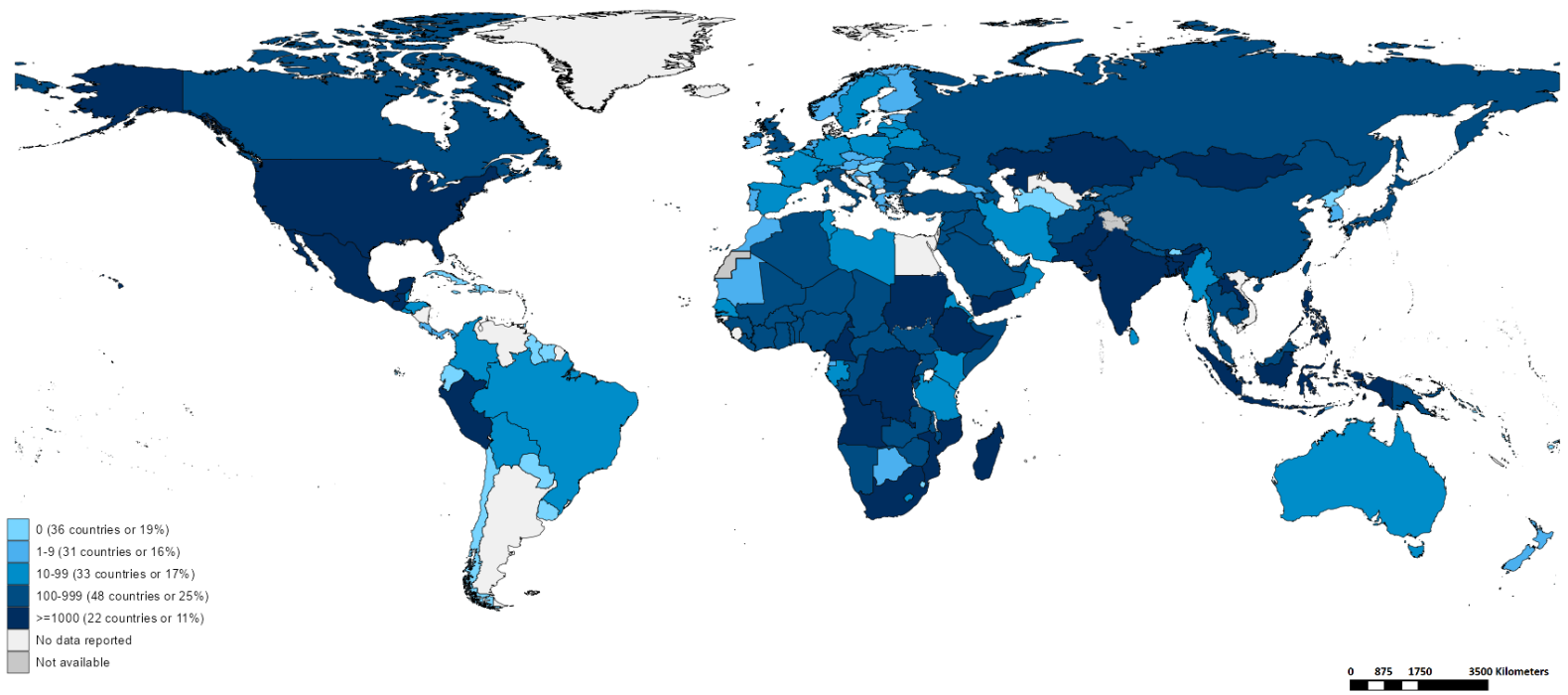
Measles in Lao PDR

Case Study
Australian Vaccinology Course
October 2026



World Health Organization

Map production: World Health Organization, 2026. All rights reserved
Data source: IVB Database

Disclaimer: The boundaries and names shown and the designations used on this map do notimply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted and dashed lines on maps represent approximate border lines for which there may not yet be full agreement.



2024: National Measles Campaign Lao PDR

World Health Organization | Western Pacific | Lao People's Democratic Republic

Health topics | Our work | News | Emergencies | About us

Home / News / Spotlights / Lao PDR makes significant strides in measles prevention – campaign reaches 95.2% of target

01 November 2024 | Spotlight

Lao PDR makes significant strides in measles prevention – campaign reaches 95.2% of target

- Measles cases are rising globally, including in the Western Pacific Region, driven in part by impacts from the COVID-19 pandemic.
- Lao PDR's Ministry of Health, with support from WHO, Gavi, the Vaccine Alliance, the Australian Government, and UNICEF, launched a Measles and Rubella Supplementary Immunization Activity (MR SIA) in May 2024.
- The extensive nationwide campaign targeted 633 849 children across all 148 districts, successfully reaching over 603 000 children, 95.2% of the target group.

Measles remains one of the world's most contagious diseases, capable of causing severe complications and death, particularly among children. While almost entirely preventable through a two-dose vaccine, a global resurgence of measles cases has been observed in recent years, including in WHO's Western Pacific Region.

"The Western Pacific Region had lower levels of measles infections in 2021, with 1080 cases, but in 2023 cases jumped to 5044, impacted by COVID-19 related disruptions," said WHO Lao PDR Representative Dr Tim Armstrong. "In Lao PDR, the COVID-19 pandemic disrupted routine immunization services, leading to a decline in measles vaccination coverage."

"A coverage rate of 95% is required to prevent measles outbreaks. Unfortunately, in 2022, rates in Lao PDR were 82% for the



Lao PDR's national measles–rubella supplementary immunisation campaign reached 95.2% of children aged 9 months to 5 years.

MR SIA 2024 - VACCINATION
ວສຊ ຫມາກເດ່ງ 2024 - ການໃຫ້ວັກຊີນ
NATIONAL & PROVINCIAL ທົ່ວປະເທດ ແລະ ຂັ້ນແຂວງ

Data as of
12/06/2024
Day 24, Wednesday
ວັນທີ 24, ວັນພຸດ

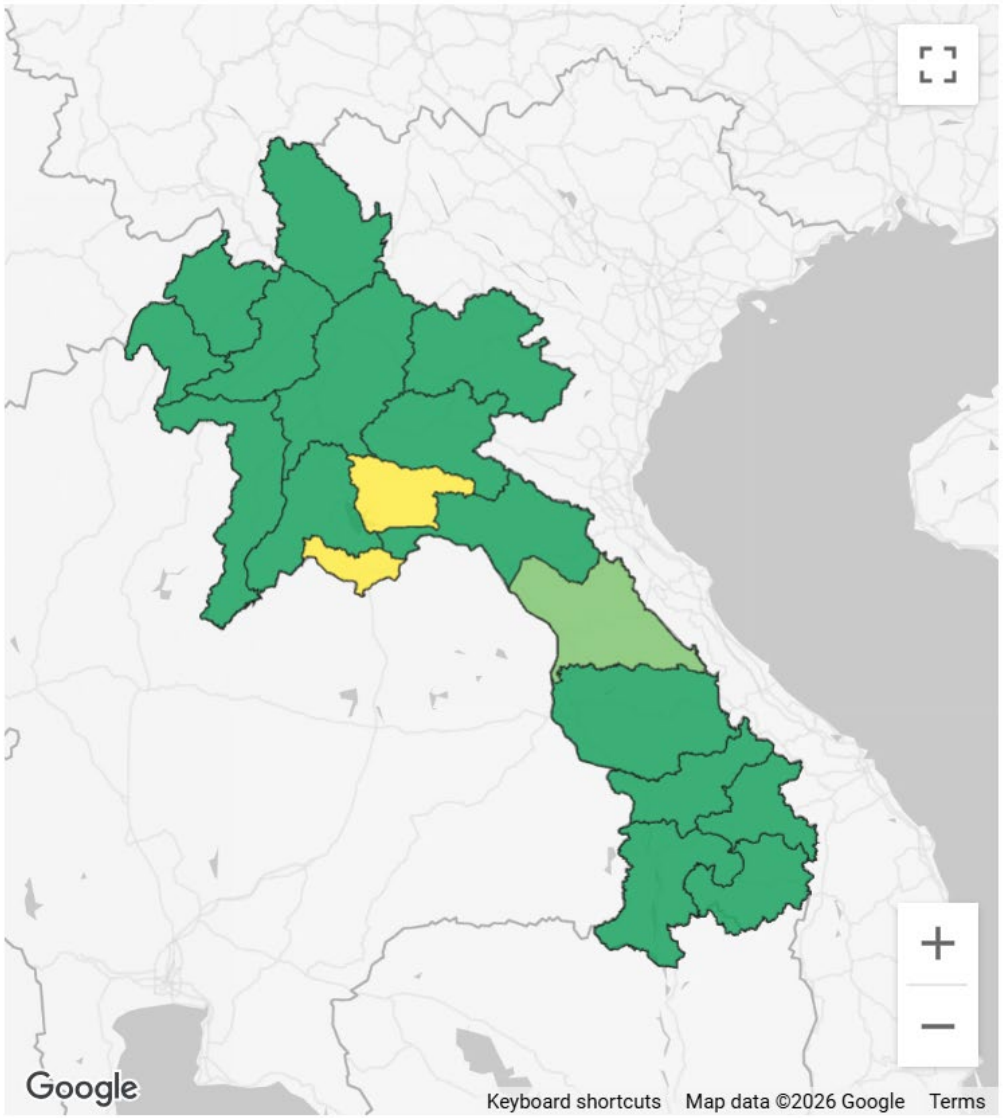
National summary ລາຍງານສັງລວມທົ່ວປະເທດ

Total provinces ທັງຫມົດ	Reported today ໄດ້ສົ່ງລາຍງານມື້ນີ້	Not reported today ບ່ໄດ້ສົ່ງລາຍງານມື້ນີ້
18	18	0

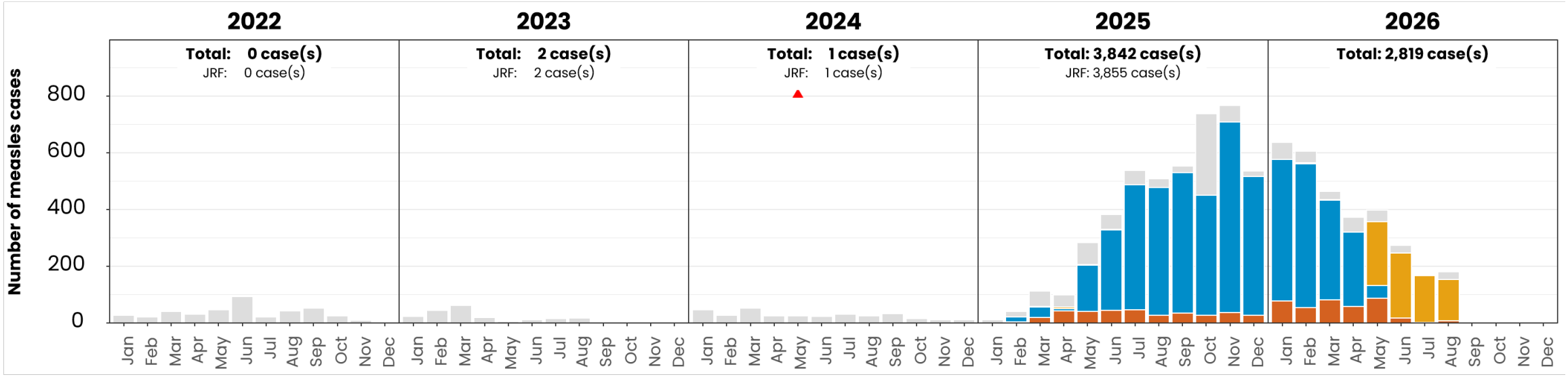
Coverage ອັດຕາປົກຄຸມ	Target ກຸ່ມເປົ້າຫມາຍ	Vaccinated ໄດ້ຮັບວັກຊີນ	Missed ພາດໂອກາດ	AEFI cases ກໍລະນີ ຫປພຊ
95.2%	633,849	603,135	30,714	40

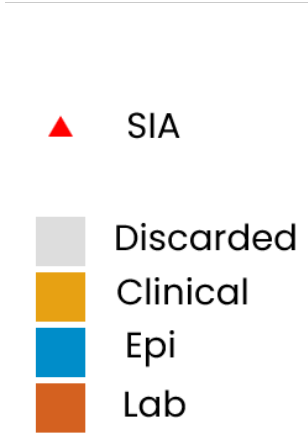
https://datastudio.google.com/u/0/reporting/046c5645-883a-4122-8c10-9f433d58356f/page/p_o6qlfrr3fd

Vaccination coverage by province (4 categories)
ອັດຕາປົກຄຸມການໃຫ້ວັກຊີນ ຂັ້ນແຂວງ (4 ລະດັບ)



2025: Measles outbreak, Lao PDR





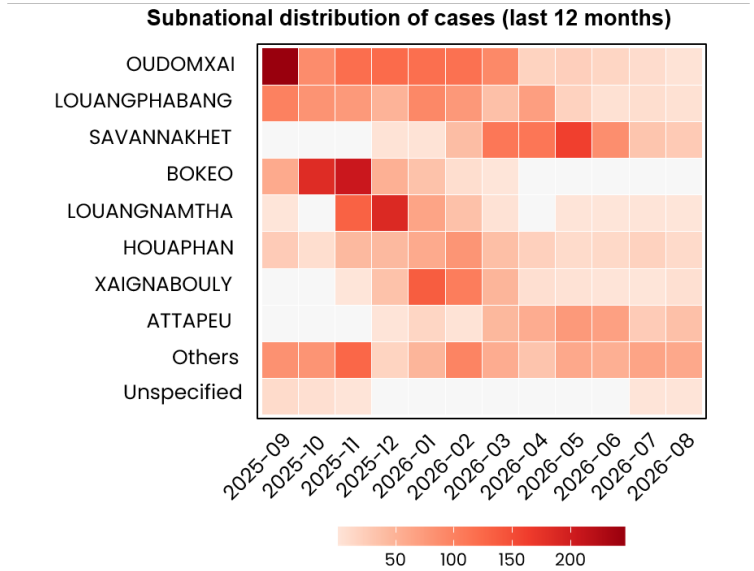


Table discussion, 10–15 minutes

1. What are the most likely drivers of this outbreak?

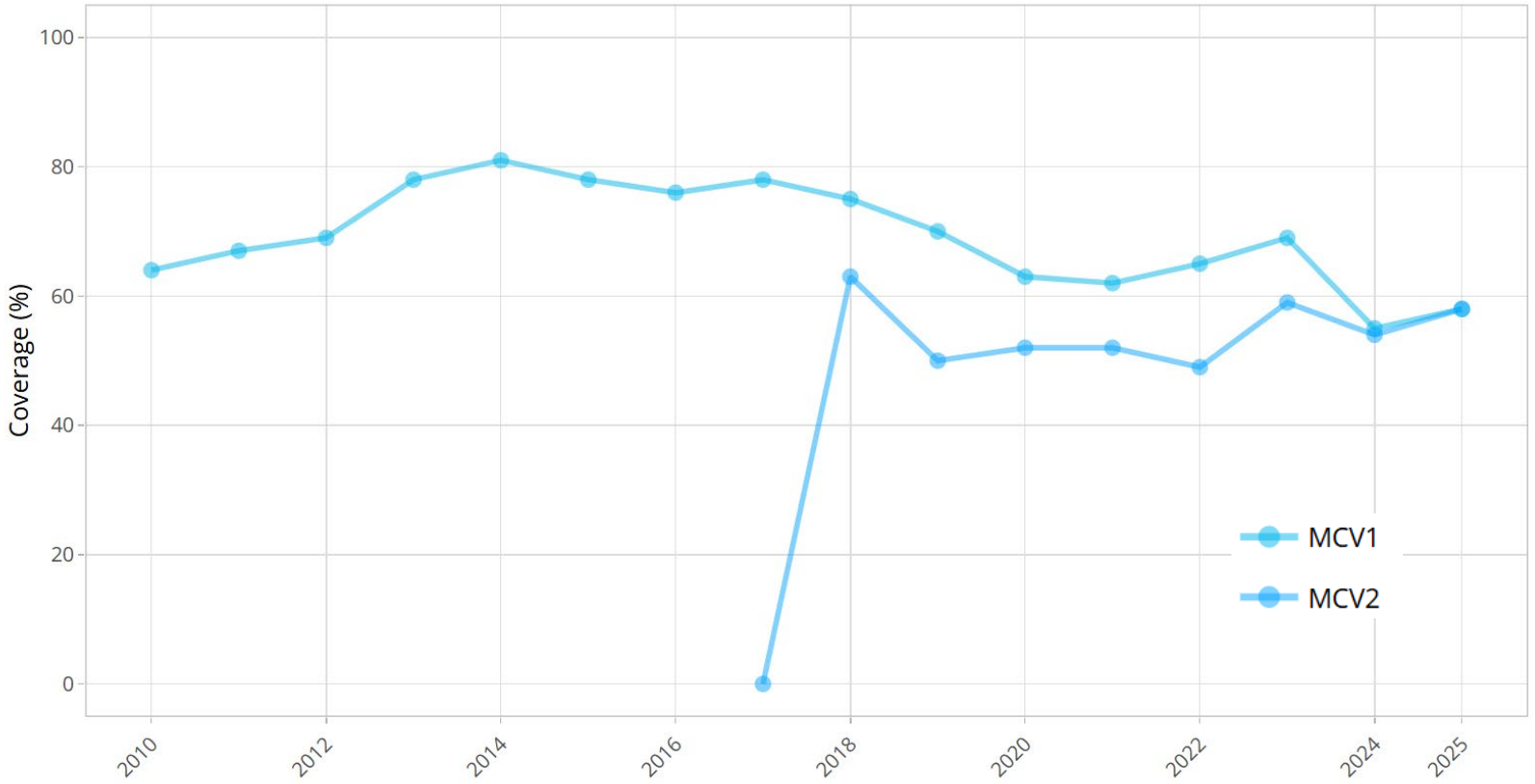
2. What one action would you prioritise for the next 12 months, beyond the immediate outbreak response?

3. How could one have prevented this?

Pre 2025 outbreak

Measles Vaccination, Lao PDR

WUENIC data, 2025



- MCV1 introduced in 2 provinces in 1984, national roll-out 1994
- MR1 in 2011
- MR2 was included at the age of 12 to 18 months in 2017
- SIA in 2001, 2007, 2011, 2014, 2017, 2024… and 2027

Immunization coverage in children aged 12-35 months, Lao PDR, 2019

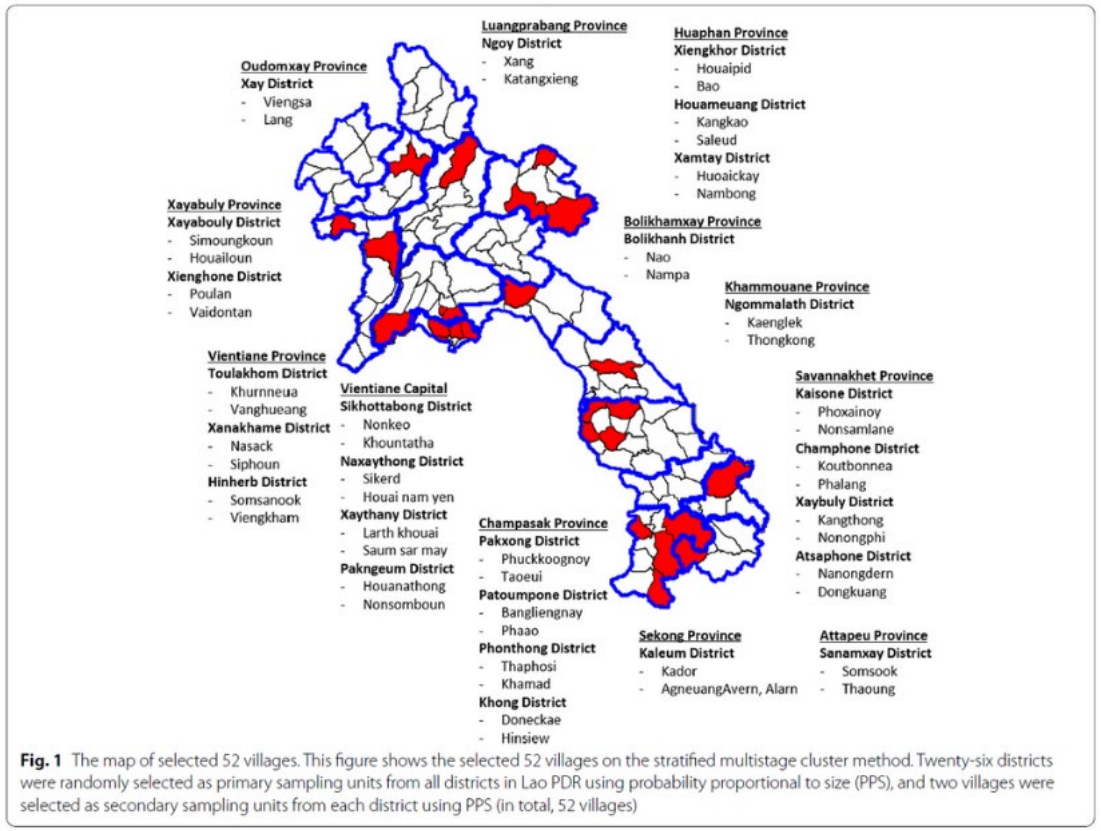


Fig. 1 The map of selected 52 villages. This figure shows the selected 52 villages on the stratified multistage cluster method. Twenty-six districts were randomly selected as primary sampling units from all districts in Lao PDR using probability proportional to size (PPS), and two villages were selected as secondary sampling units from each district using PPS (in total, 52 villages)

- 67.6% fully vaccinated
  - Positive factors
    - Fixed site residence (OR: 3.61, 95% CI: 1.64–7.95)
    - Childbirth (OR: 8.70, 95% CI: 5.30–14.28) and immunization at hospitals or health facilities (OR: 2.75, 95% CI: 1.14–6.68)
  - Negative factors
    - Village outreach immunization (OR: 0.46, 95% CI: 0.22–0.94, p-value: 0.03)
- 32.4% partially vaccinated

Ichimura et al, 2022, BMC, The determinants of immunization coverage among children aged between 12 and 35 months: a nationwide cross-sectional study in Lao People's Democratic Republic

Measles and rubella surveillance performance indicators, WPR, 2023–2024

Country/Area	2023				2024			
	Discarded non-measles rate per 100 000 pop	Second level units with ≥ 2 discarded cases per 100 000 pop [annualized][1]	Suspected cases with adequate investigation	Suspected cases with adequate specimens for laboratory confirmation [2]	Discarded non-measles rate per 100 000 pop	Second level units with ≥ 2 discarded cases per 100 000 pop [annualized][1]	Suspected cases with adequate investigation	Suspected cases with adequate specimens for laboratory confirmation [2]
	≥ 2	≥ 80%	≥ 80%	≥ 80%	≥ 2	≥ 80%	≥ 80%	≥ 80%
Australia[3]	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data	Insufficient data
Brunei Darussalam	5.3	Not applicable	100.0%	100.0%	4.4	Not applicable	100.0%	95.0%
China, Hong Kong SAR	0.0	Not applicable	100.0%	83.3%	0.3	Not applicable	87.9%	87.9%
China, Macao SAR	2.3	Not applicable	100.0%	100.0%	3.5	Not applicable	95.8%	100.0%
Japan	0.4	0.0%	Insufficient data	Insufficient data	0.6	0.0%	Insufficient data	Insufficient data
New Zealand	8.9	85.0%	Insufficient data	Insufficient data	4.7	65.0%	Insufficient data	Insufficient data
Republic of Korea	0.5	5.9%	95.8%	96.2%	0.9	11.8%	96.9%	95.1%
Singapore	0.1	Not applicable	100.0%	68.8%	0.3	Not applicable	92.9%	85.7%
Cambodia	5.7	84.0%	93.4%	99.7%	2.9	28.0%	93.2%	98.3%
China	2.3	74.2%	99.3%	98.5%	2.4	90.3%	99.4%	98.4%
Lao People's Democratic Republic	2.6	55.6%	18.6%	17.5%	4.3	44.4%	6.6%	6.6%
Malaysia	25.2	87.5%	86.2%	97.9%	28.2	100.0%	89.4%	98.1%
Mongolia	3.2	45.5%	100.0%	100.0%	6.2	54.5%	94.7%	98.2%
Papua New Guinea	1.5	25.0%	69.2%	74.0%	0.5	10.0%	Insufficient data	Insufficient data
Philippines	1.9	44.4%	44.4%	45.4%	2.4	44.4%	52.5%	55.6%
Viet Nam	0.4	9.5%	3.3%	31.5%	0.7	15.9%	Insufficient data	49.2%
Pacific island countries and areas[4]	5.7	10.0%	97.4%	95.2%	6.8	10.0%	90.2%	93.9%
Western Pacific Region	2.6	36.9%	88.1%	90.3%	2.6	33.9%	79.5%	86.7%

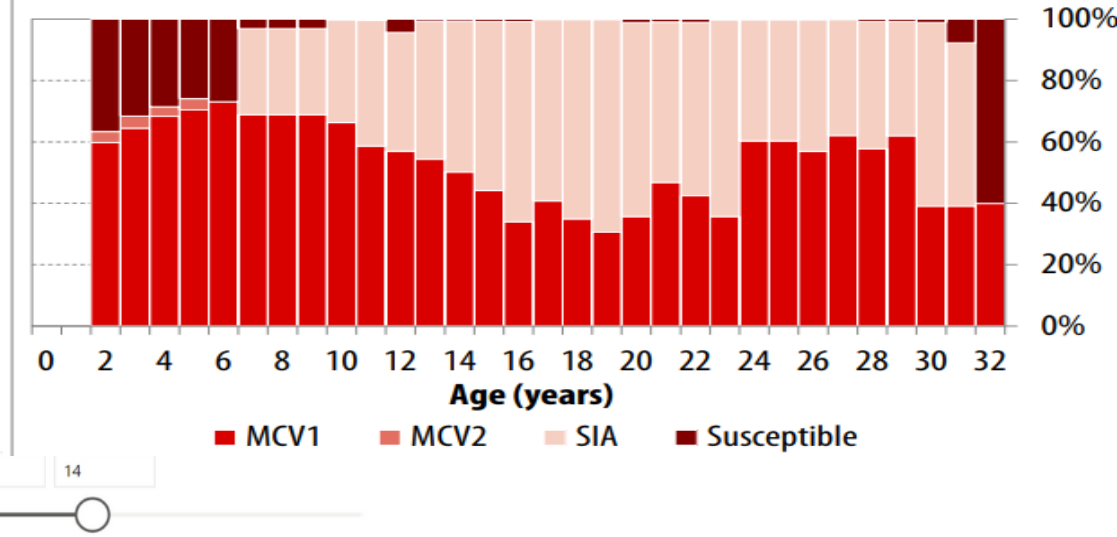
[1] This indicator is not applicable for countries which have no second-level administrative units
[2] Adequate specimen defined as blood specimen collected within 28 days of rash onset or other specimen (throat swab, nasopharyngeal swab, cerebrospinal fluid, urine) collected within 5 days of rash onset; excludes epidemiologically-linked cases
[3] Reports only confirmed cases
[4] Surveillance performance indicators refer to all the Pacific island countries and areas as one epidemiological bloc; each country is considered as second level unit

Source: National measles and rubella monthly reports to the Western Pacific Regional Office by 20 January 2025

Green	Reached or surpassed target
Yellow	Nearly reached target: 1.0–1.9 for non-measles suspected case rate; 60.0–79.9% for other indicators
Red	Substantially below target

Measles Rubella Bulletin: https://iris.who.int/items/e9578bfe-580a-4849-a284-967698c061c6

Population immunity & susceptibility profile, Lao PDR, Dec 2023



Country name

Lao People's Democratic Republic

Profile date

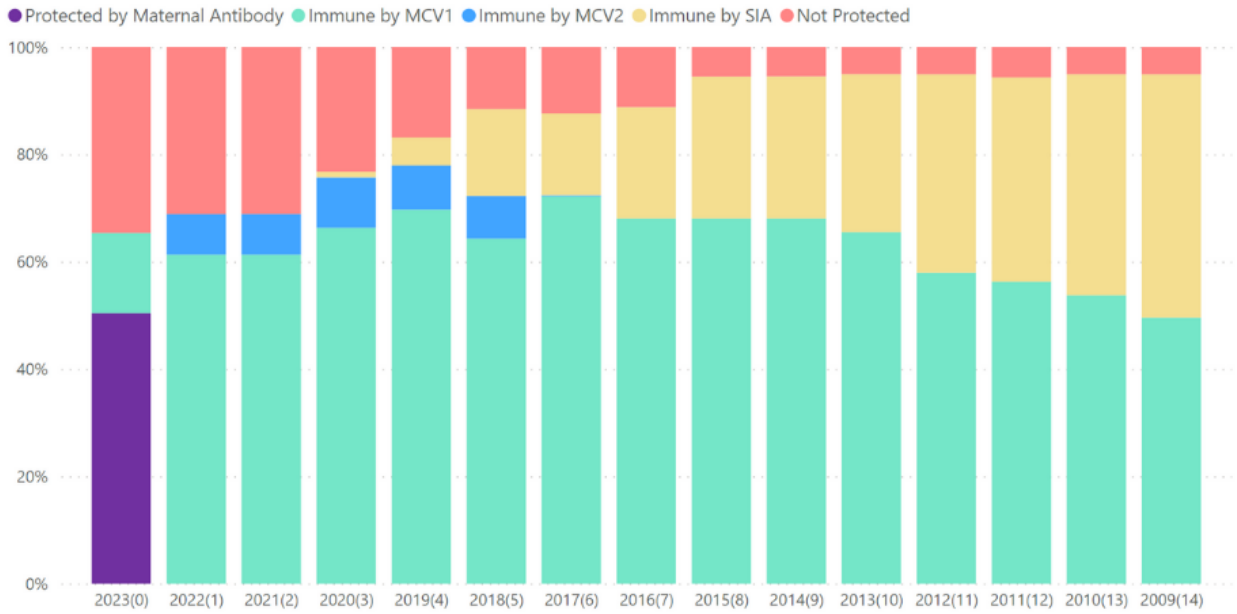
12/31/2023

12/31/2024

Age

0 14

Immunity by birth cohort assuming MCV2 and SIAs first reach previously vaccinated children (fully dependent assumption)



Number of susceptible under 5

214.74K

Ratio of <5 susceptible to one birth cohort

1.37

Number of susceptible under 15

325.16K

Ratio of <15 susceptible to one birth cohort

1.85

MCV1 (%) in 2021

73

MCV2 (%) in 2021

50

Year	ISO	Activity	Intervention	Extent	Age group	Start date	End date	Implementation status
2022	LAO	Campaign	MR	National	9-59 M	11/1/2022		planned
2022	LAO	FollowUp	MR	Sub-National	9-59 M	5/1/2022		planned
2020	LAO	SNIDs	MR	Sub-National	9-59 M	11/20/2020	12/10/2020	done
2019	LAO	Campaign	MR	Sub-National	6 M-<10 Y	4/24/2019	5/16/2019	done
2017	LAO	FollowUp	MR	National	9 M-<5 Y	1/16/2017	1/22/2017	done

Routine immunization schedule

MCV1	MCV2
M9	M12

Data sources:
Immunization coverage is based on the WHO/UNICEF Estimates of National Immunization Coverage.
SIA data are based on the public dataset on WHO Headquarters' website.

Assumptions:
The fully dependent assumption is used: MCV2 and SIA doses were assumed to be first given to children who have been vaccinated; if there's a surplus, the doses are given to unvaccinated children.
In the independent scenario, children in one country have equal chance of being vaccinated, regardless of previous vaccination status.
The vaccine effectiveness is dependent on age: 58% for

MR SIA 2024 - VACCINATION
ວສຊ ໝາກແດງ 2024 - ການໃຫ້ວັກຊີນ
NATIONAL & PROVINCIAL ທ່ວປະເທດ ແລະ ຂັ້ນແຂວງ

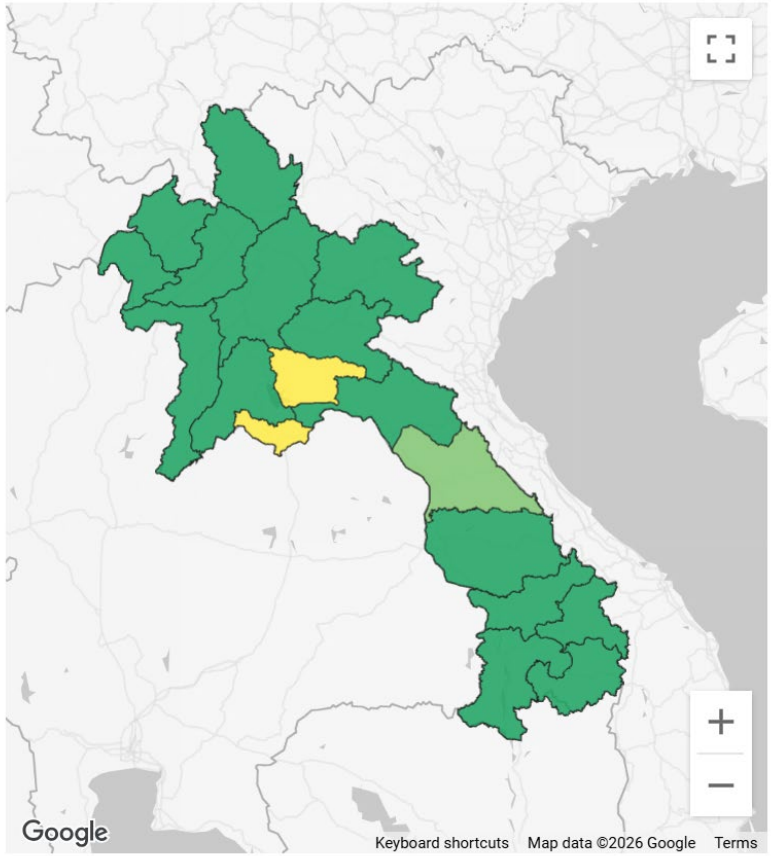
Data as of
12/06/2024
Day 24, Wednesday
ວັນທີ 24, ວັນພຸດ

National summary ລາຍງານສັງລວມທ່ວປະເທດ

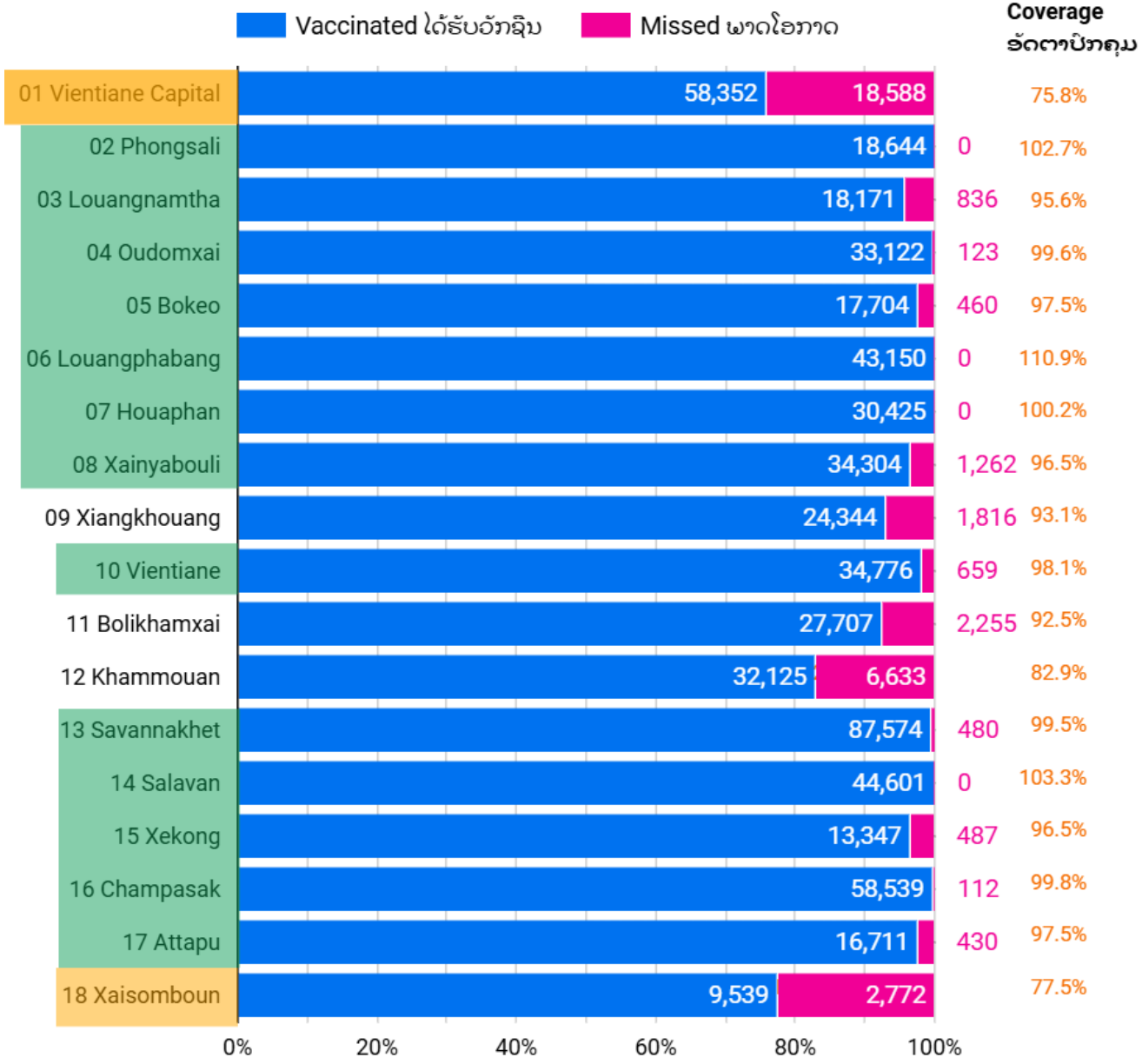
Total provinces ທັງໝົດ	Reported today ໄດ້ສົ່ງລາຍງານມື້ນີ້	Not reported today ບ່ໄດ້ສົ່ງລາຍງານມື້ນີ້
18	18	0

Coverage ອັດຕາປົກຄຸມ	Target ກຸ່ມເປົ້າໝາຍ	Vaccinated ໄດ້ຮັບວັກຊີນ	Missed ພາດໂອກາດ	AEFI cases ກໍລະນີ ຫປພຊ
95.2%	633,849	603,135	30,714	40

Vaccination coverage by province (4 categories)
ອັດຕາປົກຄຸມການໃຫ້ວັກຊີນ ຂັ້ນແຂວງ (4 ລະດັບ)



Vaccinationed and missed children by province (total as of now)
ອັດຕາສ່ວນ ເດັກທີ່ໄດ້ຮັບວັກຊີນ ແລະ ພາດໂອກາດ ຂັ້ນແຂວງ (ຈຳນວນ ທັງໝົດ ຮອດປະຈຸບັນ)



2025-2026 measles outbreak

Measles virus exportations – shared risks



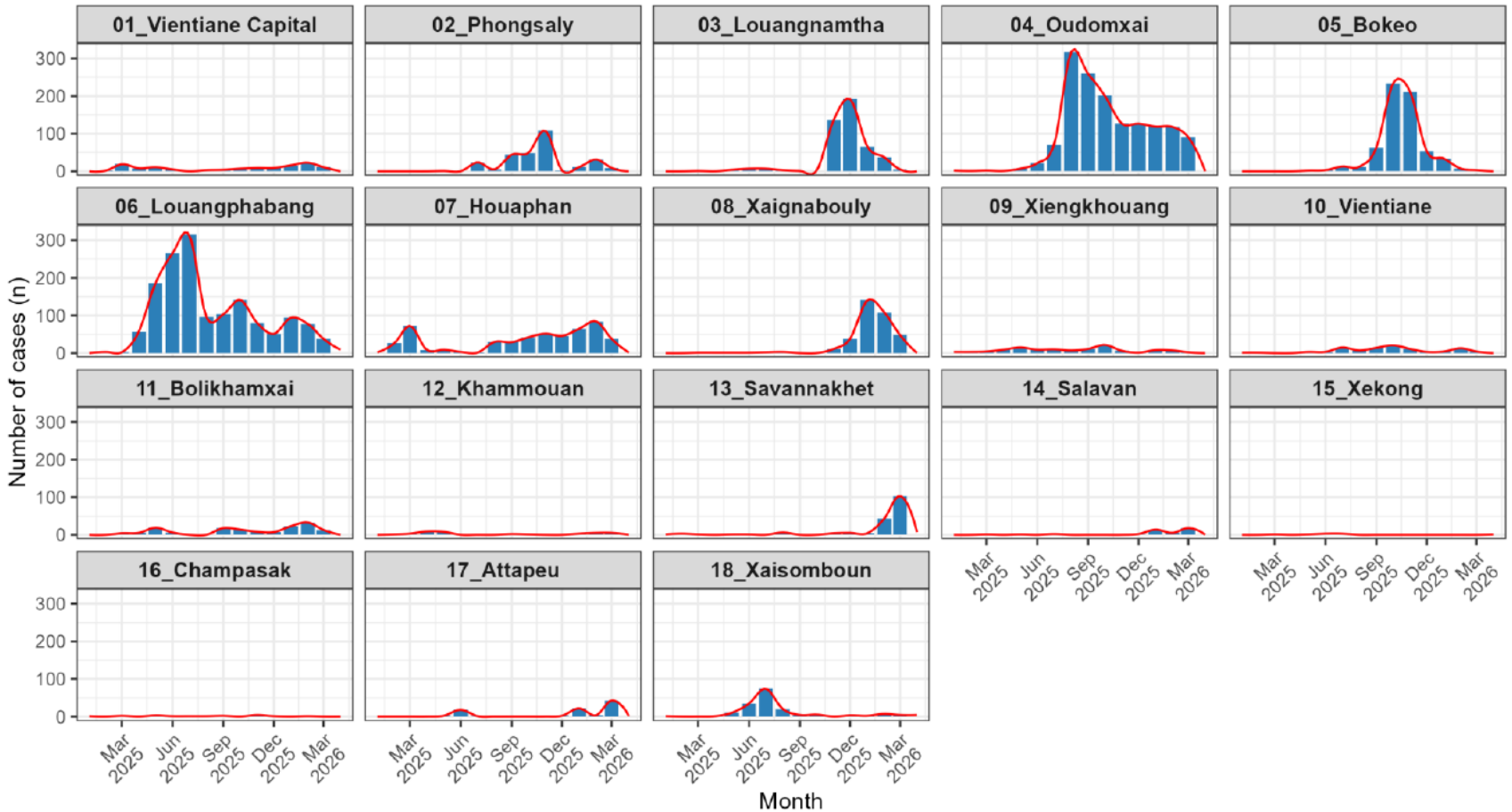
Measles Virus Exportations and Importations Within and Beyond the Western Pacific Region, 2024

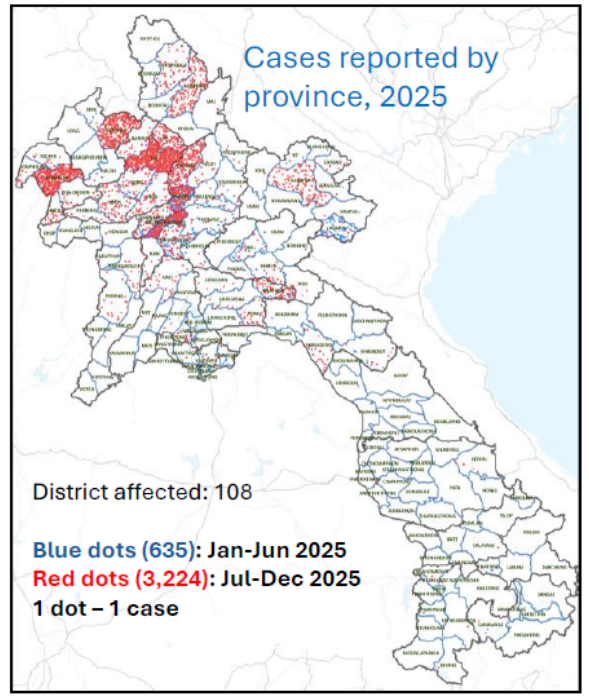
Slide credit WHO WPRO

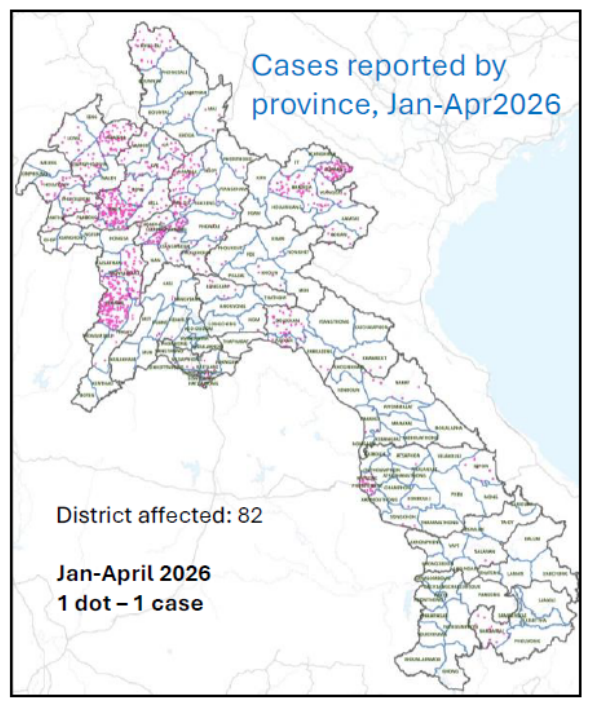
DISCLAIMER: The boundaries and names shown and the designations used on this map do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. © WHO Regional Office for the Western Pacific 2026. All rights reserved

Monthly suspected measles cases by province

Jan 2025 – Apr 2026



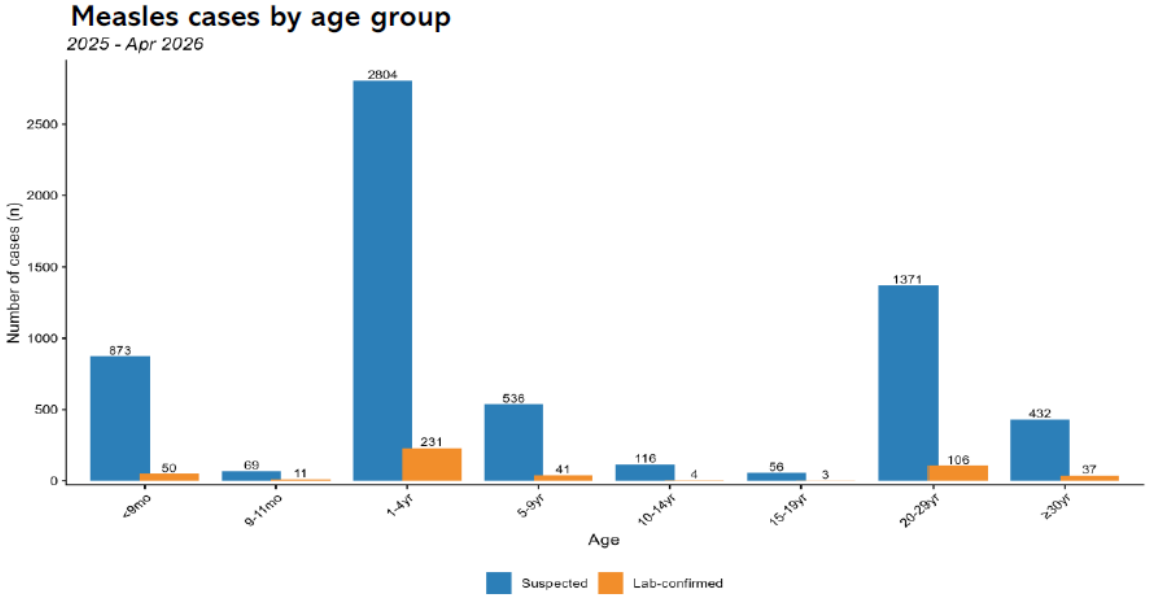


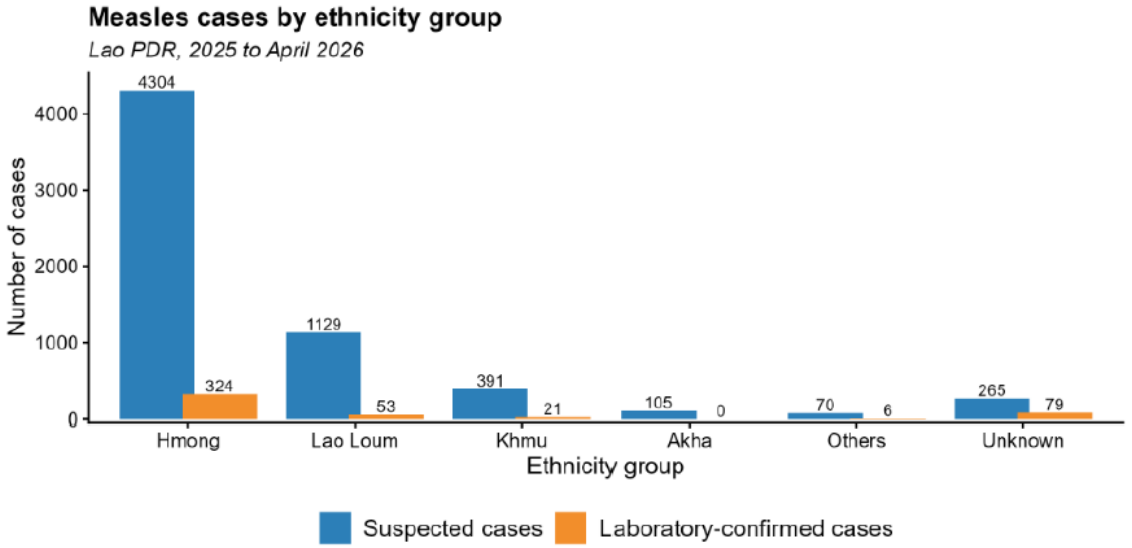


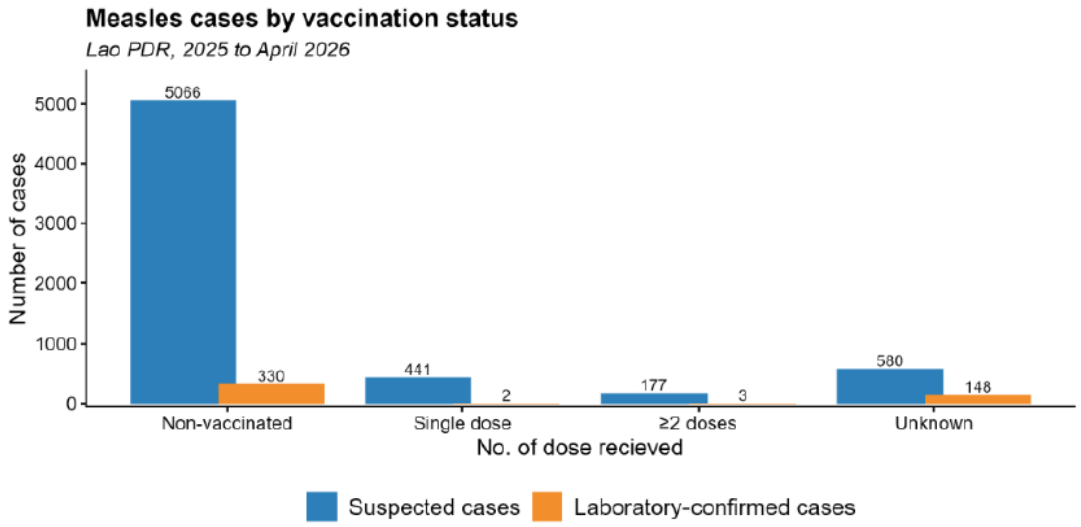
- High case reporting : **Central-Northern part**
- 12 death cases: **Northern part**
- Ongoing provinces: **LPB, HP, ODX, XK**
- Surge in early 2026: **XYBL, SVNK, BLKX, KM, ATP, SRV**

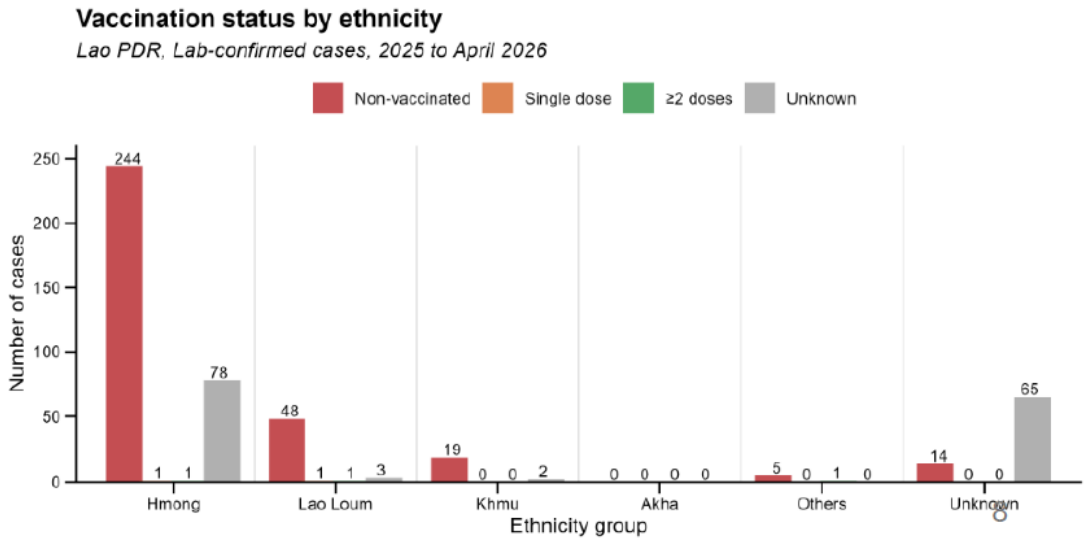
Source: MRSRS, WPR, as of 20th April 2026

Measles cases by age group, ethnicity and vaccination status, 2025-2026



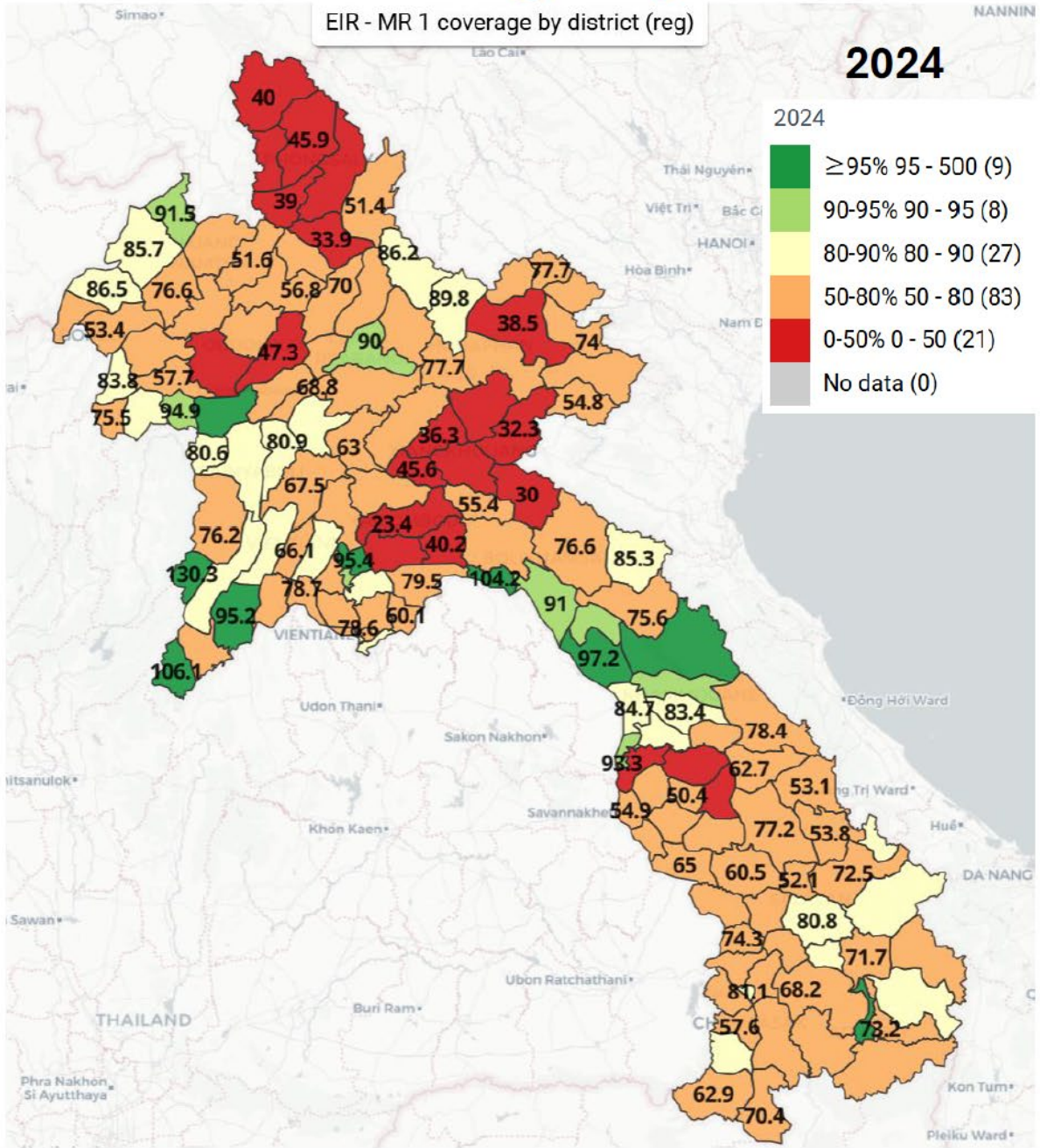


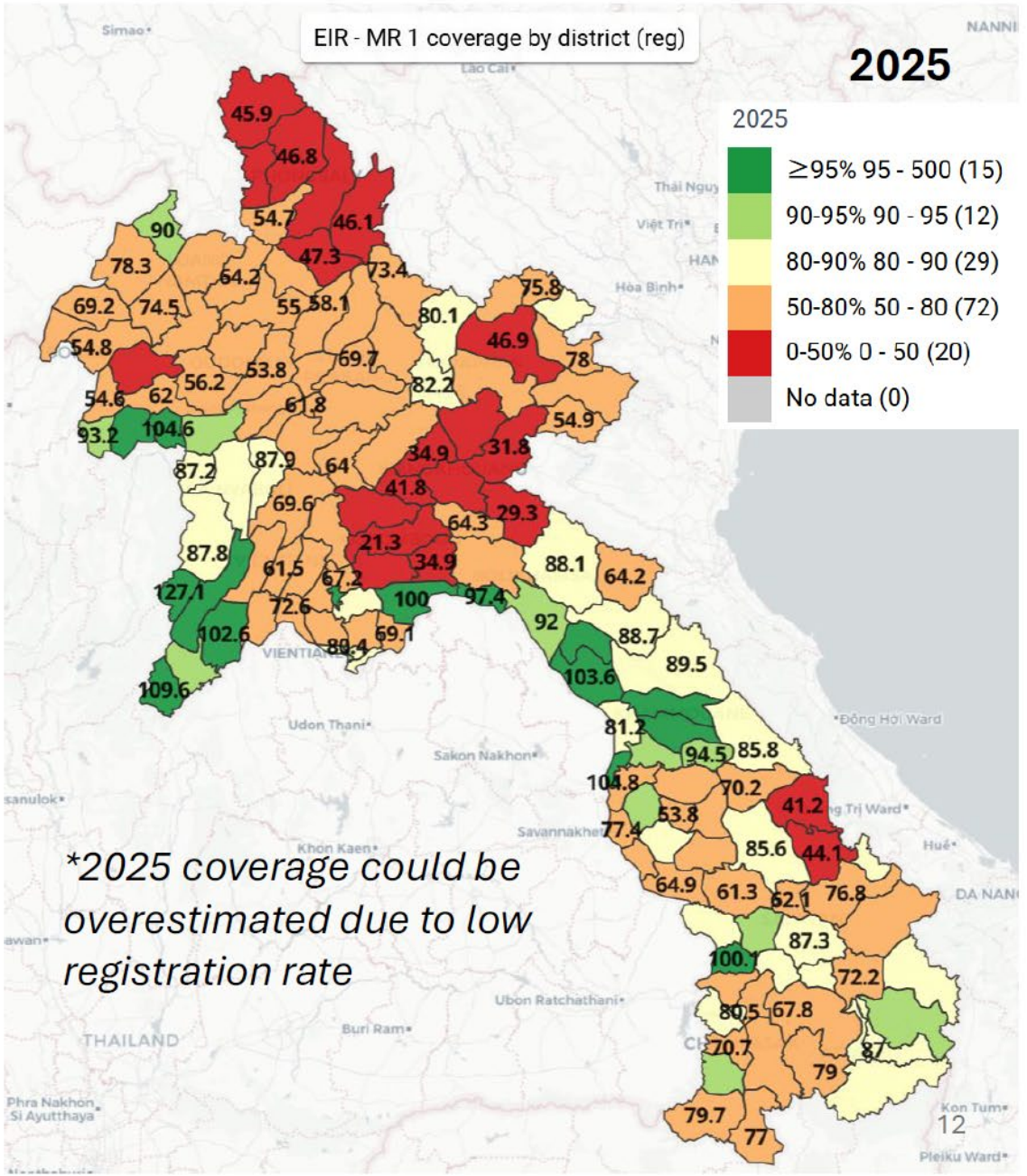




MR1 Coverage by district

Denominator: EIR registrations

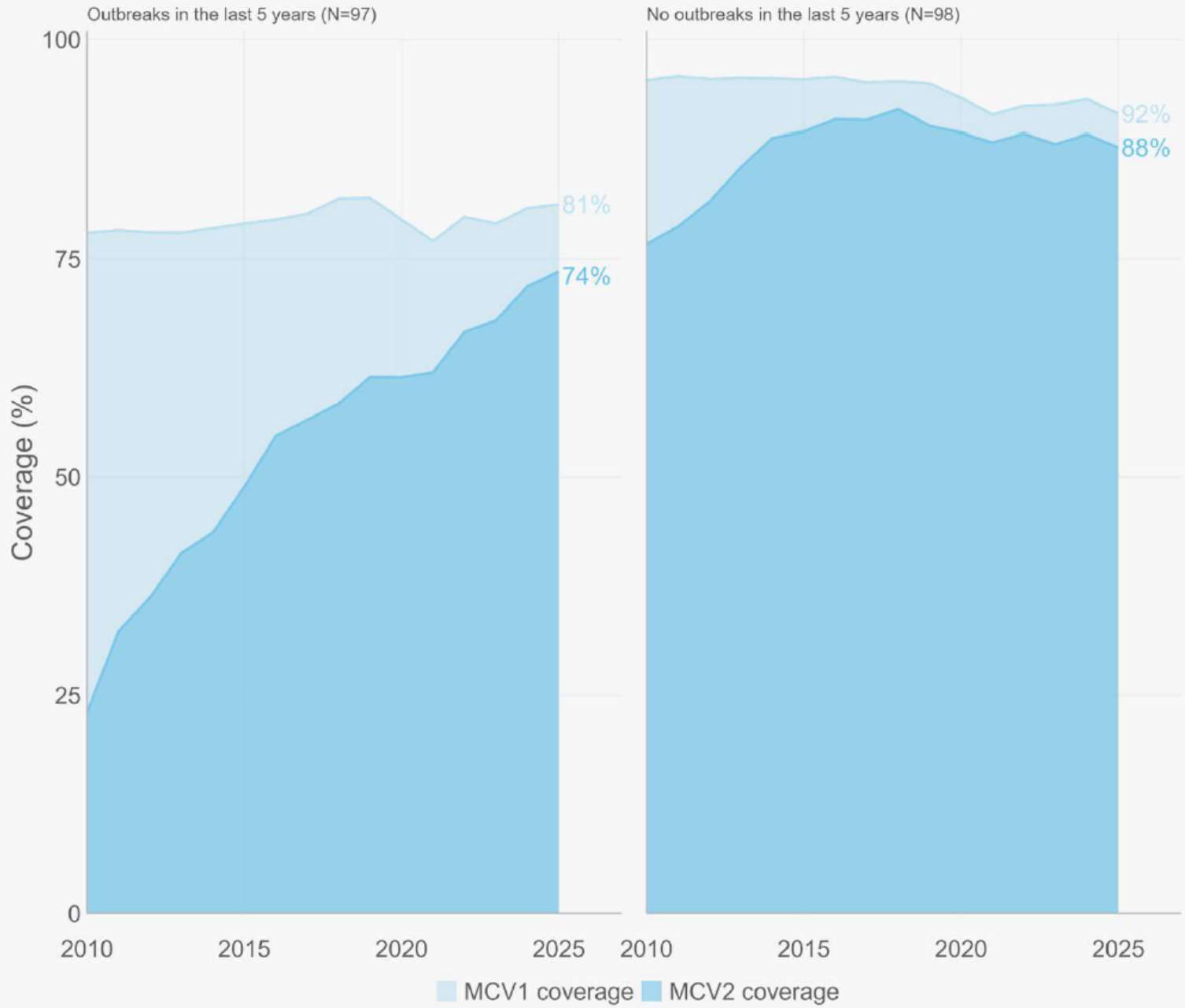




Countries with large or disruptive measles outbreaks achieve coverage well below the required levels for disease control

97 countries experienced large or disruptive Measles outbreaks in the last 5 years. They represent 74% of total surviving infants and achieve substantially lower routine immunization coverage than the group of countries that avoided outbreaks.

This finding illustrates that achieving high routine coverage remains the best way to avoid outbreaks.



The University of Sydney

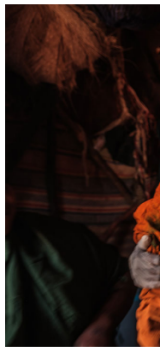
Prevention and response of measles outbreak response, Lao PDR

Use Registries to monitor, drive uptake & coverage



Use of measles RDT to strengthen surveillance

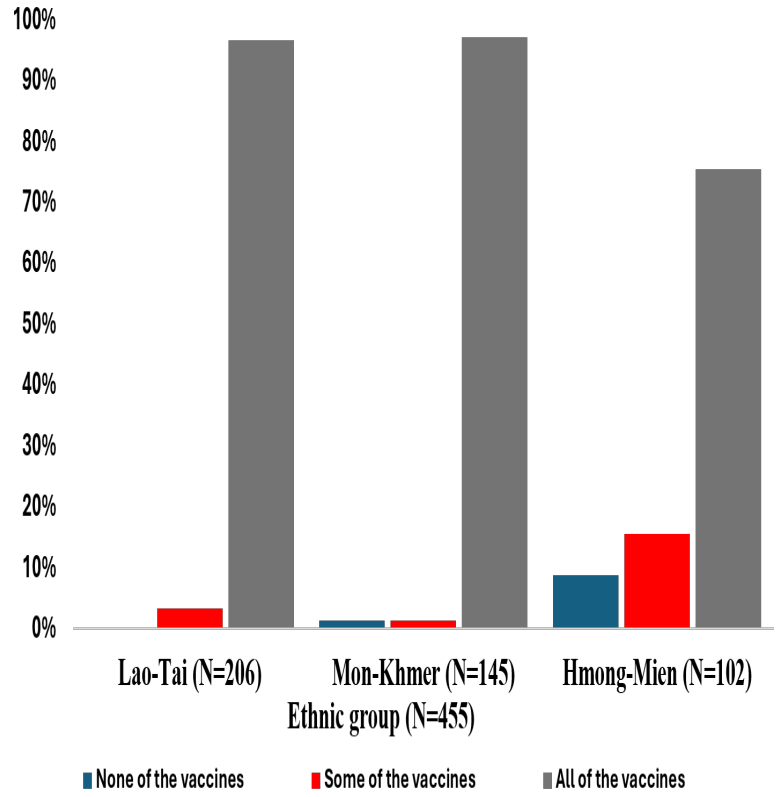
Made in Africa: New measles rapid diagnostic tests mark breakthrough for vaccination efforts



- First-of-their-kind rapid measles diagnostic tests will support targeted vaccination during outbreaks and identification of priorities for preventive vaccination efforts.
- Deployment of tests, financed by Gavi and manufactured by DIATROPIX in Senegal, represents an important milestone for African manufacturing.

Measure drivers of vaccination

Intention to vaccinate



Summary

What happened

- Long lagging routine immunisation system – reliance on outreach, which is not always consistent
- SIAs are helpful to close immunity gap but did not reach the target population
  - Denominator issues? 2015 census and EIR registration
  - Only really work when baseline immunity is higher
- Outbreak seeded from Vietnam, amongst under vaccinated banana plantation workers (mostly Hmong populations).
  - Historically not mobile. More internal migration?
  - Measles has a high force infection.
- Slow detection, challenges with case investigation and sample collection
- Other ongoing outbreaks: diphtheria, polio (vdpv)

What to do next

- Focus strengthening routine immunisation delivery and surveillance systems
  - Consider outbreak dose at 6 months
  - Sero-prevalence study, 2026
  - Rapid Diagnostic Tests
- Address vaccines access, trust and other socio-behavioral issues
- EIRs can help deliver targeted vaccination but relies on sub-national analysis and complete registration
- Strengthen financing, comprehensive resource mobilization and sustainability plan

Thank you



Sunset over the Mekong River, Vientiane, Lao PDR