



Online Webinar
19 November 2025



Combating the Rising Threat of AMR: Overcoming Social Barriers of Anti-Vaccination to Protect Children

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TARGetAMR
Reducing AMR through Genomics



Monthly Webinar Series

Dangerous Miracle: a brief history of antibiotics

Liam Shaw,

Computational Biologist, University of Bristol

**ECR Presentation: Combating the Rising Threat of AMR:
Overcoming Social Barriers of Anti-Vaccination to Protect Children**

Dr. Desy Muliana Wenas, Microbiology, Phytochemistry and Cosmetic Herbal Researcher
at National Institute of Science and Technology Jakarta, Indonesia



Wednesday 19th November 2025



1pm



Online (Teams)



A Public Health Emergency



Measles-Rubella (MR)

Recent major outbreaks have occurred in multiple provinces, directly linked to low MR vaccination coverage.



Poliomyelitis (Polio)

The re-emergence of Polio, a disease on the brink of eradication, signals critical failures in routine immunization.



Diphtheria (DT)

Diphtheria cases have also been declared 'Extraordinary Events' (KLB), overwhelming health systems.

The Consequence of Hesitancy

The Refusal

Despite the clear and present danger, a significant portion of the population refuses routine childhood vaccinations. This is not primarily an issue of access, but of acceptance.

The Reactive Cost

This refusal forces the government into costly, reactive measures, diverting large-scale funds ("Dana digelontorkan") to Mass Vaccination Campaigns ("Vaksin Massal") to manage outbreaks.

Why Vaccination is Critical to Prevent AMR



Prevents Initial Infections

Vaccines stop bacterial and viral infections (like Diphtheria or Pneumonia) from ever starting.



Reduces Antibiotic Use

Fewer infections mean fewer antibiotics are prescribed. This is especially true for viral infections where antibiotics are often misused "just in case."



Slows Resistance

This reduced usage is the **most critical** way to slow down AMR. When antibiotics are used less, bacteria have fewer opportunities to evolve and become resistant.

Local Challenges Driving a Global Threat : Addressing Outbreaks and Vaccine Hesitancy on the Ground

Extraordinary Outbreaks (KLB) in Indonesia

Despite repeated efforts, outbreaks (KLB) of MR (Measles & Rubella), Polio, and Diphtheria (DT) continue to emerge in various regions.

In 2017, diphtheria outbreaks occurred in several regions in Indonesia. The Indonesian Health Profile 2017 reported that 51.8% of cases were experienced by children aged 0–9 [1]. In 2018, health authorities found polio in the Southeast Asian Region in some countries, including Indonesia, Myanmar, the Philippines, and Malaysia. It was surprising because polio cases have not been found for over a decade, and diphtheria and polio are vaccine-preventable diseases (VPDs). These cases are from coverage issues in the national vaccination program, which calls for more investigation into vaccine hesitancy behaviour and thus motivates our study. Given the recent spread of COVID-19 and the urgent need to increase vaccine uptake, this study becomes more relevant [2].

► J Public Health Policy. 2022 Nov 4;43(4):659–669. doi: [10.1057/s41271-022-00375-5](https://doi.org/10.1057/s41271-022-00375-5) 

Parent's risk preference and childhood vaccination: evidence from Indonesia

[Farah Diza](#)^{1,2}, [Chaikal Nuryakin](#)^{1,3,✉}, [Pyan A Muchtar](#)^{1,4}

46 Regions in Indonesia Report Measles Outbreaks, Here's the List



List of regions recording measles outbreaks in Indonesia. (Photo: iStock)

Jakarta -Indonesia recorded at least 23,000 suspected measles cases throughout 2025. Data from the Indonesian Ministry of Health shows that 46 regions declared measles outbreaks, including DKI Jakarta.


There were a total of 23,128 suspected cases as of August 2025. The Indonesian Ministry of Health conducted tests on 20,000 samples and confirmed 3,444 positive cases of measles.

"Our positivity rate is 16.6 percent," said the Director of Immunization Management at the Indonesian Ministry of Health (Kemenkes), Dr. Prima Yosephine, MKM, in a press conference on Tuesday (August 26, 2025).

Indonesia launches a measles vaccination campaign after 17 die in an outbreak



Polio Extraordinary Case in Indonesia

 [bbc.com/indonesia/articles/c041gz8kkx1o](https://www.bbc.com/indonesia/articles/c041gz8kkx1o)

November 19, 2022

Updated November 20, 2022

The Ministry of Health declared an Extraordinary Event (KLB) for polio, following the discovery of a case of type 2 polio in Aceh – eight years after Indonesia was declared polio-free by the WHO.

The patient, a 7-year-old child in Pidie Regency, experienced symptoms of paralysis in his left leg. He had never been vaccinated.

"The child's thigh and calf muscles were smaller, and he had no history of immunization, no history of contact with the virus, or travel abroad," said the Director General of Disease Prevention and Control (P2P) at the Ministry of Health, Dr. Maxi Rein Rondonuwu, in a press conference on Saturday (19/11).

The discovery of this single polio case coincides with a downward trend in immunization coverage in Aceh over the past 10 years, as well as the failure of basic immunization targets outside Java after being hampered by the pandemic for two years.

A child receives a polio vaccine as part of the monthly child health checkup program at an integrated service post in Banda Aceh, August 10, 2023.

January 13, 2024

King Eben Lumbanrau

BBC News Indonesia journalist

Three children in East Java and Central Java were reported to be suffering from acute *flaccid paralysis* (AFP) caused by Polio Virus Type 2. In addition, lab results in the surrounding area showed that nine other children tested positive even though they did not show any symptoms.

To address the polio outbreak, the Ministry of Health (Kemenkes) held a sub-National Immunization Week (PIN) for polio simultaneously throughout Central Java, East Java, and Sleman Regency, Yogyakarta, starting January 15, 2024.

The Director General of Disease Prevention and Control (P2P) of the Ministry of Health, Maxi Rein Rondonuwu, said that the emergence of the polio outbreak was caused by low immunization coverage, an unclean environment, and unhealthy community behavior.

Chronology and causes of the Polio Outbreak

- **November 2022:** The first case was discovered in Pidie Regency, Aceh, in a 7-year-old child with acute flaccid paralysis. This discovery prompted the government to declare an outbreak, as Indonesia had previously received a polio-free certificate from the WHO in 2014.
- **Cause:** The government and experts have identified declining immunization coverage, exacerbated by the COVID-19 pandemic, as one of the main factors behind the resurgence of polio cases.
- **Transmission of the virus:** The majority of cases that have emerged are caused by poliovirus type 2, although cases of poliovirus type 1 were also reported in Papua in 2018 .

The primary cause of these outbreaks is the failure to achieve **Herd Immunity** due to vaccine refusal.

Measles Will Spread Again in 2025: Learn and Understand Simple Ways to Prevent It

By webadmin In Article Posted 4 September 2025



Consequence: The government is forced to allocate **significant funds and resources** for emergency mass vaccination programs, draining the health budget.

Local Social Barriers



Halal Concerns

Doubts about the 'halal' status of vaccine components remain a sensitive issue, despite official fatwas from the MUI (Indonesian Ulema Council).



Microchip Rumors

Beliefs spread on social media that vaccines contain microchips for tracking, leading to deep institutional distrust and refusal.



Lack of Trust

General distrust in government and health professionals, often amplified by negative experiences or unaddressed cultural concerns.

Determinants of immunisation coverage of children aged 12–59 months in Indonesia: a cross-sectional study



Putri Herliana , Abdel Douiri

Correspondence to Putri Herliana; putri.herliana@kcl.ac.uk

Conclusions Socioeconomic factors were strongly associated with the likelihood of being unimmunised in Indonesia. Unimmunised children were geographically clustered and lived among the most deprived population. To achieve WHO target of protective coverage, public health interventions must be designed to meet the needs of these high-risk groups.

Herliana P, Douiri A. Determinants of immunisation coverage of children aged 12–59 months in Indonesia: a cross-sectional study. *BMJ Open* 2017;**7**:e015790. doi: 10.1136/bmjopen-2016-015790

Local Social Barriers



Halal Concerns

Murphy *et al. BMC Infectious Diseases* (2025) 25:1140
<https://doi.org/10.1186/s12879-025-11448-7>

BMC Infectious Diseases

RESEARCH

Open Access



Understanding the influence of religious and safety concerns on childhood measles and pertussis vaccination: a study conducted in Aceh, Indonesia, 2022

Annie A. Murphy¹, Rosaria Indah², Amanda Yufika³, Ichsan Ichsan^{3,5,6,7}, Tita Menawati Liansyah⁸, Harapan Harapan^{4,5,6,7,9}, Daniel Birchok^{4,10}, Jason M. Pogue^{4,11}, Fitdha Khairadini² and Abram L. Wagner^{1,4*}

Impact and government response

- **Determination of KLB:** KLB status is implemented to increase attention and take rapid action in affected and high-risk areas.
- **Mass Immunization:** The government is conducting mass immunizations for children in areas indicated as vulnerable, including Aceh and West Java.
- **Active surveillance:** Active surveillance efforts are carried out to detect cases of acute flaccid paralysis early and monitor the spread of the virus.
- **Increasing immunization coverage:** The government is aggressively increasing routine immunization programs to prevent new cases and increase community immunity.

Vaccination: A Child's Fundamental Right

Upholding the Right to Health (Article 24)

Under the UN Convention on the Rights of the Child (UNCRC), every child has the right to the highest attainable standard of health.

Vaccination is one of the most effective interventions to ensure this right. Parental refusal can violate a child's basic right to be protected from preventable disease.

It is the **duty of the state and society** to ensure an environment where all children receive this protection.

The Role of Vaccination in Preventing AMR

The AMR Threat

Antimicrobial Resistance (AMR) occurs when microbes evolve, making drugs (like antibiotics) ineffective and turning common infections deadly.

Primary Cause: The overuse and misuse of antibiotics, often to treat secondary infections that could have been prevented.

Vaccines Break the Chain

By preventing the primary infection (e.g., Polio, Diphtheria, Flu), vaccination drastically reduces the need for antibiotic treatment.

The Impact: This reduced antibiotic demand directly slows the evolution of drug-resistant bacteria. Vaccines are a **critical first line of defense** against AMR.

Strategies and Actionable Steps

Collective measures to build trust, combat disinformation, and break the chain of AMR.

Comprehensive Strategy: Building Trust

Empathetic Dialogue & Credible Messengers



Listen First: Validate parental concerns, especially regarding Halal/Chip rumors, rather than immediate dismissal.



Local Credibility: Utilize pediatricians, religious leaders, and community elders as trusted 'vaccine ambassadors'.



Pre-bunking: Proactively educate the public on the *tactics* of disinformation, not just debunking individual myths.

Strategies for Change



Engage Leaders

Partner with trusted community and religious leaders (Imams, elders) to deliver accurate, 'halal'-certified information.



Engage Men & Fathers

Shift the social narrative that vaccination is solely a mother's responsibility. Involve fathers in health education.



Targeted Communication

Use local dialects and trusted platforms (like WhatsApp) to actively counter hoaxes with clear, simple, and empathetic facts.



Empower Health Workers

Train local midwives (Bidan) and health post (Puskesmas) staff to patiently listen to and address specific parental concerns.

Step 1: Strengthen Regulation & Transparency



Certification & Assurance

Increase the transparency and accessibility of Halal and safety certifications from BPOM (National Agency of Drug and Food Control) to build confidence.



Public Digital Literacy

Launch national programs to educate the public, especially parents, on how to identify and report false or misleading health content on digital platforms.

Step 2: Community-Based Interventions

Focus on Long-Term Education



Mobilize Key Leaders: Actively involve religious and cultural leaders in vaccination campaigns as respected, culturally-attuned authorities.



Early AMR Education: Integrate material on infection prevention and the dangers of AMR into primary and secondary school curricula.



Flexible Services: Provide more accessible and conveniently scheduled vaccination services, especially for families in remote or underserved areas.

The Herd Immunity Target

95%

Minimum Vaccination Coverage

Reaching the Protection Threshold

To stop the spread of diseases like Polio and MR, we must achieve a **minimum 95% vaccination coverage**. This ensures the population has robust collective protection.

Achieving this figure at national and sub-national levels is the key to preventing future outbreaks (KLB) and guaranteeing the health rights of Indonesian children.

Protect Our Children. Secure Our Future.

The fight against AMR begins with a vaccine.

Thank you. | Questions?