

## Editorial

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## Vaccine Hesitancy in Sri Lanka: A Growing Threat to Public Health Gains

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### ABSTRACT

Vaccine hesitancy, identified by the World Health Organization as a top ten global health threat, poses a significant challenge to the public health gains achieved in Sri Lanka. While the country has historically maintained exceptional immunization coverage and eliminated measles in 2019, a resurgence of the disease in 2023–2024 underscores a growing vulnerability. This editorial explores the complex drivers of vaccine hesitancy within the Sri Lankan context, focusing on the "3 Cs" of complacency, convenience, and confidence. Despite a national birth cohort hesitancy rate of less than 0.5%, the clustering of unvaccinated families in specific districts, often driven by misinformation, socioeconomic barriers, and post-pandemic scepticism, has created pockets of susceptibility. The editorial article features a community case study to showcase the growing burden of vaccine-hesitant families in Kandy district, Sri Lanka. In addition, the article highlights the implementation of the Vaccine Acceptance Support Teams (VAST) initiative, which utilises medical students as community facilitators to provide socio-religiously sensitive counselling. This initiative is complemented by other measures taken at the national level to address vaccine hesitancy. By integrating VAST with evidence-informed interventions such as "Master Trainer" programmes and culturally contextualised materials, Sri Lanka can strengthen institutional trust and employ grassroots strategies necessary to address the evolving nature of vaccine refusal. This combined approach underscores the importance of community engagement, culturally sensitive communication, and institutional support in tackling vaccine hesitancy effectively.

**Keywords:** Vaccine hesitancy, Sri Lanka, Immunisation, measles outbreak, VAST initiative, public health, misinformation

### INTRODUCTION

Vaccine hesitancy is defined by the World Health Organization (WHO) as a delay in the acceptance or a refusal of vaccines despite the availability of vaccination services. It is a complex and rapidly changing global challenge that is context-specific, varying across different times, locations, and specific vaccines. The core factors influencing this

behaviour are often summarised by the "3 Cs": complacency, convenience, and confidence. Complacency occurs when the perceived risk of disease is low, convenience relates to the physical and financial accessibility of vaccines, and confidence involves trust in the safety of vaccines and the systems that deliver them [1]. Through the



Immunisation Agenda 2030 (IA2030), the WHO has set ambitious global targets, including 90% coverage for essential vaccines across the life course, such as the third dose of diphtheria, tetanus, and pertussis (DTP3), the third dose of pneumococcal conjugate vaccine (PCV3), the second dose of measles-containing vaccine (MCV2), and the complete human papillomavirus (HPV) series. Achieving these targets is vital not only to prevent the resurgence of vaccine-preventable diseases but also to foster resilient immunization systems that provide a robust platform for the introduction of new vaccines [2].

### **Global and Regional Scenario**

Historically, vaccination programmes have achieved spectacular reductions in global morbidity and mortality. A prime example of this success is the measles vaccine, which alone saved an estimated 20 million lives between 2000 and 2017. Despite these achievements, vaccine hesitancy has emerged as a critical challenge to global health, leading the WHO to identify it as one of the top ten global health threats in 2019. This movement has gained significant boost following the COVID-19 pandemic, driving a resurgence of infectious diseases that were previously under control [3]. Nations across the Global South, especially the eight member states of the South Asian Association for Regional Cooperation (SAARC), are facing the dangers of reduced vaccine uptake as their coverage rates have consistently dropped in recent years [4].

### **Sri Lankan Scenario**

Sri Lanka has a robust immunisation legacy, beginning with the Vaccination Ordinance of 1886 to combat smallpox and the establishment of the Expanded Programme of Immunisation (EPI) in 1978. For decades, Sri Lanka has been a global exemplar of public health success, particularly through its National Programme on Immunisation (NPI). With a robust primary healthcare network, the nation achieved near-universal vaccination coverage, leading to the successful elimination of polio in 1993 and the interruption of endemic measles and rubella transmission in the year 2019 [5]. The country attained 80 per cent coverage among infants as early as 1989–1990. Universal vaccine coverage has largely been achieved since

2010 [6]. However, this hard-won legacy is currently facing a "silent threat": vaccine hesitancy. While historically a phenomenon of the West, the delay or refusal of vaccines despite their availability is increasingly permeating the Sri Lankan socio-cultural landscape, exacerbated by the digital age and the aftermath of the COVID-19 pandemic [7]. Despite its "measles-free" status, an outbreak re-emerged in May 2023, starting with an unvaccinated young male in the Colombo Municipal Council area. While cases began to dip toward the end of 2023 (51 cases in December), they rebounded sharply in January 2024 with 107 recorded cases [5, 8].

Vaccine hesitancy in Sri Lanka remains significantly low, impacting less than 0.5% of the annual birth cohort. These hesitant individuals are typically organized into localized clusters, frequently comprising families who are related or socially interconnected. As a result, recent disease transmission has been primarily confined to specific Medical Officer of Health (MOH) areas where these families are concentrated. This modern wave of hesitancy has been largely driven by misconceptions surrounding COVID-19 vaccines that emerged during the post-pandemic period [5, 8, 9].

According to the Consultant Epidemiologists in the Epidemiology Unit, Sri Lanka, the estimated number of vaccine-hesitant families across Sri Lanka amounts to 7500-10,000.

### **Community case study**

In the Kandy district alone, the identified number of vaccine-hesitant families is 583 (Table 1). The most striking finding is the heavy concentration of hesitancy in Akurana, which accounts for 318 families, i.e., more than 54% of the total hesitant population in the district. Such a high density of unvaccinated individuals creates a dangerous "pocket of susceptibility." When unvaccinated families are clustered together, herd immunity is locally compromised, making these areas high-risk zones for the rapid transmission of infectious diseases like measles. While Akurana is the primary concern, the data show that vaccine hesitancy is not isolated; it has spread across 17 out of 20 MOH areas. Areas like Wattegama (n=54), Kundasale (n=45), and Yatinuwara (n=32) represent secondary

hotspots. Because of the high mobility of people between MOH areas for work and trade, these clusters act as "reservoirs" for pathogens. Even areas currently reporting zero hesitant families, such as Thalathuoya or Gangawatakorale, remain at risk of imported infections from neighbouring high-resistance pockets.

**Table 1: Number of families with vaccine hesitancy, by MOH areas in the Kandy District**

| Medical Officer of Health (MOH) area | Number of vaccine-hesitant families (n) |
|--------------------------------------|-----------------------------------------|
| Akurana                              | 318                                     |
| Wattegama                            | 54                                      |
| Kundasale                            | 45                                      |
| Yatinuwara                           | 32                                      |
| Gampola                              | 26                                      |
| Pujapitiya                           | 25                                      |
| Medamahanuwara                       | 17                                      |
| Udunuwara                            | 15                                      |
| Galaha                               | 14                                      |
| Bambaradeniya                        | 11                                      |
| Galagedara                           | 8                                       |
| Menikhinna                           | 7                                       |
| Doluwa                               | 4                                       |
| Gangaihala/Kurundu                   | 3                                       |
| Harispattuwa                         | 2                                       |
| Minipe                               | 1                                       |
| Panvila                              | 1                                       |
| Thalathuoya                          | 0                                       |
| Hatharaliyadda                       | 0                                       |
| Gangawatakorale                      | 0                                       |
| <b>Total</b>                         | <b>583</b>                              |

**Source: Office of the Regional Director of Health Services, Kandy**

### **Factors contributing to vaccine hesitancy**

Vaccine hesitancy is a complex issue driven by numerous individual and societal factors. It is not a binary state of being "pro-vaccine" or "anti-vaccine," but rather a spectrum of attitudes and behaviours.

While countries like Bangladesh and Nepal face extreme poverty rates of 14% to 19%, Sri Lanka maintains a much lower rate (below 3%). This suggests that the "extreme poverty" barrier to vaccination, particularly to non-COVID vaccines, is less prevalent in Sri Lanka than in its neighbouring

countries [4]. Furthermore, research suggests that nearly 37.8% of surveyed individuals in certain cohorts have expressed some degree of hesitancy, often driven by a "panic in the pandemic" fuelled by social media rumours on COVID vaccination and a lack of scientific literacy [7].

Societal and contextual factors play a critical role in shaping vaccine acceptance, particularly through the rapid dissemination of misinformation. As highlighted in current literature, the digital "infodemic" allows fake news to spread farther and faster than scientific truth, often trapping individuals in social media echo chambers that reinforce conspiratorial beliefs. In Sri Lanka, recent data indicate a troubling shift towards vaccine hesitancy due to myths, misconceptions, and misinformation [10-12]. During the 2024–2025 Measles-Rubella (MR) supplemental immunisation campaigns, health authorities observed pockets of resistance among young adults and high-risk occupational groups due to perceived low risk and misinformation regarding side effects [5]. Influence via social media, particularly in the post-COVID era, may play a big role in this context.

The assertion that the Measles, Mumps, and Rubella (MMR) vaccine causes autism originated from a 1998 paper published in *The Lancet* by Andrew Wakefield [13]. However, that study was later found to be fundamentally flawed and fraudulent, and this association is one of the most extensively researched and subsequently debunked myths in medical history. Numerous high-quality systematic reviews and large-scale epidemiological studies consistently found no link between the vaccine and the development of autism [14]. Despite the total scientific disapproval of this claim, the myth continues to be a primary driver of vaccine hesitancy, contributing to the resurgence of measles outbreaks globally. Contrary to the misconception that childhood immunisation increases the risk of allergies in later life, evidence from a pooled analysis of randomised controlled trials and cohort studies suggests that BCG and measles vaccinations are actually associated with a reduced risk of developing eczema [15].

In the Sri Lankan context, conspiracy theories have become a significant barrier to vaccine acceptance, often undermining the foundation of trust required for successful public health initiatives. Trust serves

as a primary driver of vaccine uptake globally, as confidence in government institutions, health systems, and scientific evidence decisively influences individual decisions regarding COVID-19 vaccination. Research consistently demonstrates that higher vaccination acceptability is directly associated with greater trust in the healthcare system and monitoring of vaccine safety [16]. When conspiracy theories spread, they erode this trust, replacing evidence-based confidence with scepticism toward the vaccine manufacturers, the government, and the authorities responsible for the procurement of vaccines. healthcare workers, as well as the processes involved. In Sri Lanka, where the dengue vaccine has yet to be introduced, research conducted in Kandy found that paediatric caregivers' willingness to vaccinate their children with DENGIVAXIA® is significantly influenced by trust in physicians, maternal education levels, and general attitudes toward immunisation [17]. These findings emphasise a call to action that is necessary not only to reinforce perceptions of vaccine safety prior to the introduction of new vaccines into the NIP but also to maintain the continued acceptability of the twelve vaccines currently included in the national schedule.

Beyond the digital landscape, socioeconomic barriers such as time constraints, language gaps, and limited health literacy can lead to vaccine underutilisation that is often mischaracterised as intentional refusal. Furthermore, the influence of political and religious leaders remains a powerful force because these figures can either serve as essential public health advocates or as sources of scepticism that deeply align hesitancy with cultural identity and distrust in government-mandated interventions. In the Sri Lankan context, research suggests a correlation between ethnicity and levels of vaccine hesitancy. Specifically, a study on COVID-19 vaccination trends found that the Sinhalese population reported significantly lower odds of hesitancy compared to Tamil and Sri Lankan Moor communities [18].

### **Addressing vaccine hesitancy**

To successfully address vaccine hesitancy, it is necessary to understand the magnitude of the problem and diagnose its root causes within specific populations. The WHO categorizes the determinants of hesitancy into three areas: contextual, individual and group, and vaccine-

specific influences. Contextual influences include broader factors such as media environment, influential leaders, historical experiences, and political policies. Individual and group influences arise from personal perceptions, beliefs about health, and social norms. Vaccine-specific issues relate directly to the vaccine itself, including its risk/benefit profile, the mode of administration, and the reliability of the supply chain [1, 9].

Effective intervention strategies are rarely "one-size-fits-all" and instead require multi-component approaches that are dialogue-based and targeted at specific populations. Recommended strategies include engaging religious or influential leaders, social mobilization, and improving the convenience of vaccination services. Healthcare workers are identified as critical role models for their patients, making it essential to address any hesitant behaviours within the health workforce itself. Countries are encouraged to provide communications training for healthcare workers and integrate education on vaccine hesitancy into academic medical and nursing curricula to empower professionals to address patient concerns [1].

A qualitative study by the University of Colombo's Department of Sociology identified the root causes of vaccine hesitancy, leading to the implementation of targeted, evidence-informed interventions. These strategies, which are being implemented by the Epidemiology unit, focus on enhancing grassroots engagement through the training of "Master Trainers" in interpersonal communication and the deployment of medical students as community facilitators. To ensure cultural relevance, the programme developed contextualized information materials such as animated videos and flashcards, while establishing Vaccine Acceptance Support Teams (VASTs) at the district and MOH levels. Furthermore, the initiative utilises cascade-style advocacy by engaging religious leaders to build trust and promote immunisation within their respective communities [19].

The engagement of medical students as community facilitators is a cornerstone of the VAST initiative currently implemented in Sri Lanka. This approach leverages the clinical knowledge and social standing of medical students to bridge the gap between the healthcare system and vaccine-

hesitant clusters. The Vaccine Acceptance Support Teams (VAST) initiative effectively deploys medical students as frontline facilitators at the district and MOH levels to bridge gaps in immunisation coverage. Acting as trusted intermediaries, these medical students translate complex scientific data into accessible, community-friendly information while providing socio-religiously sensitive, personalised counselling to the small percentage of hesitant families. This approach allows for the addressing of post-pandemic misconceptions without the "authority pressure" often associated with senior officials. Furthermore, medical students enhance data accuracy by maintaining meticulous line lists and logbooks, while providing vital support to field health staff in managing high-resistance pockets during supplemental immunisation campaigns.

Apart from VAST, at the national level, addressing vaccine hesitancy requires a multi-sectoral approach, engaging Mawlawis (Muslim religious scholars), school principals, and mosque trustees who serve as vital community liaisons. This strategy also integrates General Practitioners and grassroots public health workers to ensure that clinical expertise is coupled with localised, culturally sensitive advocacy.

Good immunisation programme practice involves measuring hesitancy and using diagnostic tools like the Guide to Tailoring Immunisation Programmes (TIP) to design evidence-informed responses. However, in settings where a lack of available services is the primary barrier to vaccination, addressing hesitancy should not be the priority focus of resources. [1, 9]. While addressing hesitancy may not be a resource priority in regions where a lack of available services remains the primary barrier to vaccination, this exception does not apply to Sri Lanka, where the infrastructure is robust, and the focus must remain on overcoming psychological and informational resistance. In conclusion, if left unaddressed, vaccine hesitancy threatens to erode herd immunity within vaccine-hesitant clusters, leaving them vulnerable to outbreaks of previously controlled diseases. Such localised flare-ups, in turn, pose a significant risk to the broader population. It is no longer enough to rely on the historical "trust" in the public health system; there is an urgent need for an urgent call to action for advocacy, to modernise risk

communication, engage community leaders, strengthen the VAST initiative, and address the specific socio-demographic drivers of hesitancy before these silent gaps become public health crises.

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