

IMPLEMENTATION OF THE MEASLES RUBELLA IMMUNISATION MONTH (BIAS) PROGRAMME IN BANDAR LAMPUNG CITY

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ABSTRACT

Immunisation Month for School Children (BIAS) targets primary school-aged children. The types of immunisations given during BIAS are Measles Rubella, Tetanus and Diphtheria. Measles and rubella are infectious diseases with the potential to cause serious complications, especially in children. Measles Rubella (MR) immunisation is the main strategy in the elimination of this disease. Evaluate the implementation of the BIAS program on MR immunisation coverage and identify factors that influence its success in Bandar Lampung City. This study used a descriptive quantitative approach with secondary data collection from the Health Office and BIAS implementation report in 2023. Analysis was conducted on immunisation coverage, incidence of suspected measles cases, and supporting and inhibiting factors. MR immunisation coverage reached 93.67%, close to the national target. However, 4 suspected measles cases were still found. The inhibiting factors included lack of public knowledge, suboptimal coverage of the second dose, and limited surveillance and access to health services. The implementation of the BIAS programme in Bandar Lampung City has shown good results, but still requires strengthening in the aspects of community education, tracking of MR two-dose coverage, and case-based surveillance systems. Cross-sectoral efforts need to be increased to achieve complete measles elimination and rubella control.

Keywords: BIAS; immunisation coverage; measles rubella; MR immunisation

INTRODUCTION

Measles and rubella are highly airborne infectious diseases that can cause serious health impacts, especially in vulnerable groups such as children and pregnant women. Measles infection can lead to severe complications such as pneumonia, severe diarrhoea, and encephalitis. Meanwhile, rubella infection in pregnant women has a high risk of causing congenital rubella syndrome (SRC), which can result in lifelong disabilities such as congenital heart defects, hearing loss, and cataracts in the foetus (Chacko et al., 2023). The most effective prevention against these two diseases is through combined measles and rubella (MR) immunisation. However, global immunisation coverage levels are still insufficient. In 2023, the WHO recorded an estimated 10.3 million measles cases worldwide, accompanied by more than 107,000 deaths, most of which occurred in children under five years of age. Global coverage of second dose MR immunisation (MCV2) has only reached 74%, still far below the elimination target of $\geq 95\%$ (WHO, 2024).

In Indonesia, the COVID-19 pandemic has had a negative impact on basic immunisation coverage. The number of measles cases increased dramatically, from only 132 cases in 2021 to 3,341 cases in 2022. Meanwhile, in early 2023, more than 2,000 suspected measles cases were again reported (Chacko et al., 2023). The national MCV2 coverage rate is still relatively low, at 67% in 2022, which indicates the high potential for disease transmission in the community (Ramadhani et al., 2023). Similar conditions were also found in Lampung Province. Based on data from the local Health Office, MCV1 immunisation coverage reached 89.3%, but MCV2 coverage was only 51.5%, indicating an imbalance in immunisation protection (Lampung Provincial Health Office, 2023). Bandar Lampung City recorded the highest number of measles cases in the province, with

94 out of a total of 134 measles cases in 2022. Of the 136 suspected specimens examined, 7 cases were positive for measles, mostly in school-aged children and adolescents.

A number of local studies also support this data. Research by Nisa et al. (2022) found that children with incomplete immunisation status, living in dense environments, and a history of close contact were more at risk of measles in the Central Metro area of Lampung. Meanwhile, a study in Pesawaran district showed that low MR immunisation coverage and lack of education to the community contributed to the occurrence of measles outbreaks among primary school students (Handayani & Sitorus, 2024) . To increase the coverage of follow-up immunisation, the government runs the Month of Immunisation for School Children (BIAS) program. In 2023, Bandar Lampung City reached 94.4% of the target of 100% of primary school-aged children. And in 2024 it decreased to 93.67% (Health Office of Bandar Lampung City).

Therefore, a thorough evaluation of the implementation of the BIAS program is needed to assess its effectiveness in preventing measles and rubella transmission, as well as increasing the coverage of continued immunisation in a sustainable manner, especially in areas with high prevalence of cases such as Bandar Lampung City.

METHODS

This study used a quantitative descriptive design with a documentation study approach. Secondary data were obtained from the Bandar Lampung City Health Office and related health centres, specifically the BIAS programme implementation report for 2023. Analysis included MR immunisation coverage, number of suspected measles cases, and identification of supporting and inhibiting factors based on the Edward III policy implementation model.

RESULT AND DISCUSSION

Immunisation is an effort to actively induce or increase a person's immunity to a disease (Budiyono, 2019). Based on the Minister of Health Regulation No. 12/2017 on the Implementation of Immunisation, the implementation of immunisation in school children is given to elementary / MI / equivalent children in grade 1 (Measles Rubella and DT), grade 2 (Td) and grade 5 (Td) (Indonesian Health Profile, 2019). In 2023, MR immunisation coverage through the BIAS program in Bandar Lampung City reached 93.67%. However, 266 suspected measles cases were still found with an incidence rate of 24 per 100,000 children under five.

Table 1
implementation of BIAS in Bandar Lampung City

Indicator	Value
Target school children	171,799 children
Children immunised (MR)	198.922
MR immunisation coverage	93,67
Measles suspected cases	266 cases
Confirmed measles cases	7 cases
Measles incidence rate (IR)	24/100.000

Supporting factors: cross-sectoral coordination, availability of immunisation officers, implementation of sweeping.

Hindering factors: hoaxes and misinformation about vaccines, lack of public understanding, and not optimal real-time recording.

The Immunisation Month for School Children (BIAS) program is one of the national strategies to

increase the coverage of complete basic immunisation, especially the Measles-Rubella (MR) vaccine. The results showed that the implementation of BIAS in Bandar Lampung City in 2023 managed to achieve 93.67% coverage. Although this figure is quite high, the coverage still does not reach the herd immunity threshold recommended by the World Health Organization (WHO), which is at least 95% to prevent the transmission of measles and rubella viruses in the community (Chacko et al., 2023) .

Despite high immunisation coverage, there were still 266 suspected measles cases, with an incidence rate of 24 per 100,000 children under five. This suggests that immunisation coverage has not been evenly distributed across all sub-districts. Inequality in immunisation distribution can be caused by various factors, such as suboptimal access to health services, lack of public health literacy, and refusal of immunisation (Maulida et al., 2019; Laksono et al., 2022) .

Previous studies confirm that immunisation success is strongly influenced by socio-demographic characteristics, especially maternal education, level of knowledge about immunisation, and support from family (Syam et al., n.d.) . Low public knowledge, especially regarding the importance of two doses of MR vaccine, is one of the obstacles in achieving optimal coverage. In addition, hoaxes and disinformation spread through social media also strengthen public doubts about the safety and halalness of the MR vaccine (Handayani & Sitorus, 2024) ; (Cossard et al., 2020) . This finding is in line with research (Schmidt et al., 2018) and (Alatas et al., 2019) , which states that negative information on social media can reinforce confirmation bias and form an echo chamber that is difficult to penetrate by evidence-based information. Therefore, a community-based risk communication and education approach is very important, especially involving religious leaders, teachers, and trusted community leaders.

In terms of health service systems, the use of Electronic Immunisation Registry (EIR) such as the ASIK application (Aplikasi Sehat IndonesiaKu) has begun to be implemented to strengthen the immunisation recording and reporting system. However, the implementation has not been optimal in all health centres. Some of the obstacles found include limited digital infrastructure, uneven training of officers, and delays in data input (Aisyah et al., 2025 ; Pertiwi et al., 2024) . In the context of policy implementation, these findings can be analysed using the Edward III model approach which emphasises four main components, namely communication, resources, implementer disposition, and bureaucratic structure. Communication between policy stakeholders is quite good, but has not fully reached the community on a massive scale. Human resources are available in sufficient numbers, but still require further training in the utilisation of information technology. The disposition of implementers (health workers, teachers, cadres) shows good enthusiasm, but active community participation still needs to be improved. The bureaucratic structure is relatively supportive, but cross-sectoral coordination needs to be further strengthened, especially in the aspects of monitoring and evaluation (Wahyuni et al., 2020).

Experiences from other countries such as Nepal, Malaysia and the Philippines show that the use of SMS reminders, community engagement and involvement of local leaders in immunisation promotion can significantly increase vaccine coverage (Handayani & Sitorus, 2024) . Therefore, efforts to empower communities through cultural and religious-based education are key strategies that can be applied in Indonesia, especially in areas where coverage is not optimal.

Immunisation is an important step in providing artificial immunity to protect individuals, especially

children, from the risk of infection and transmission of diseases such as measles (Rianita et al., 2024). When immunisation coverage is high, the potential for transmission in the community decreases significantly, and if infection occurs, symptoms tend to be milder. Several studies have shown that immunisation status is strongly associated with measles incidence. Syam et al., n.d. reported that primary school-aged children who were not immunised against measles through the BIAS program had a 13.716 times higher chance of being infected compared to immunised children. Other studies by Riantina et al., (2024), Insani & Prakoso (n.d.), and Sitepu et al. (2020) also identified immunisation status as a significant risk factor for measles incidence, with Odds Ratio (OR) values varying from 7.8 to 19.12.

One of the main determinants of child immunisation status is maternal knowledge. Mothers' level of understanding about the importance of immunisation greatly influences their decision to vaccinate their children. Mothers with good knowledge and positive attitudes towards immunisation tend to come from educational backgrounds, occupations, and ages that support acceptance of vaccination (Aulia Janna et al., n.d.; Khasanah & Daramusseng, n.d.). When mothers understand the risk of transmission and serious complications from measles, they will be more motivated to ensure their children are immunised according to the schedule recommended by the Ministry of Health. Improved maternal knowledge is therefore expected to contribute to increased immunisation participation, which in turn will accelerate the achievement of the national measles elimination target.

Overall, although the BIAS programme in Bandar Lampung City has shown good achievements, a comprehensive strategy is still needed that includes continuous education, strengthening surveillance and electronic recording systems, and improving access to services in low-coverage areas. Adaptive, participatory, and evidence-based interventions are key to achieving sustainable measles elimination and rubella control.

CONCLUSIONS

The implementation of the Month of Immunisation for School Children (BIAS) program in Bandar Lampung City showed good achievements, with a Measles-Rubella (MR) immunisation coverage rate of 93.7%. This figure is close to the minimum standard of measles and rubella elimination set by the World Health Organization (WHO), which is $\geq 95\%$. However, 266 suspected measles cases were still found in the region. This indicates that the success of the programme has not been fully equitable and indicates a gap in coverage of the two doses of MR that should be given in full. This highlights the importance of strengthening community-based prevention strategies that are more inclusive and comprehensive.

The successful implementation of the BIAS programme is influenced by a number of key factors, including cross-sectoral support, the availability of adequate health workers, and the implementation of immunisation sweeping activities for unvaccinated children. On the other hand, the program also faces internal challenges that cannot be ignored, such as public doubts about vaccine safety, the spread of misinformation or hoaxes on social media, limitations in the electronic recording system, and less than optimal continuous health education to the community. These findings underline that the effectiveness of immunisation programs is not only determined by the availability of vaccines and health service facilities, but is also strongly influenced by non-medical factors such as effective communication, the level of public health literacy, the quality of disease

surveillance, and the adoption of digital technology in immunisation recording systems.

Thus, a holistic and integrated approach is needed to strengthen the achievement of measles elimination and rubella control goals. This approach includes increased collaboration between sectors, the use of information technology in immunisation reporting and monitoring, and improved evidence-based public education. These efforts are expected to ensure that immunisation coverage is not only high in numbers, but also equitable and sustainable systemically throughout Bandar Lampung City.

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