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Implementation of the Human Papillomavirus (HPV) Vaccination Program to Enhance Primary Prevention of Cervical Cancer among the Academic Community and the Public at the Faculty of Medicine, Mitra Bunda Institute of Health Sciences

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A R T I C L E I N F O

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A B S T R A K

Human Papillomavirus (HPV) infection is a primary cause of cervical cancer, which remains a significant public health issue in Indonesia. Primary prevention efforts through HPV vaccination need to be continuously enhanced by engaging educational institutions as partners in health promotion. The activity was conducted from February 6–8, 2026, at the Faculty of Medicine, Mitra Bunda Health Institute, Batam, comprising stages of registration, health screening, education, vaccination, and observation for Adverse Events Following Immunization (AEFI). The target audience included students, the academic community, and the general public. A total of 400 participants registered, and 338 successfully received the HPV vaccine; no severe AEFIs were reported during the event. This program demonstrates that collaboration between educational institutions and healthcare professionals can support increased vaccination coverage and strengthen primary prevention efforts against cervical cancer through integrated education and healthcare services.

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INTRODUCTION

Cervical cancer remains a significant public health issue with a high disease burden, particularly in developing countries. The disease is largely caused by persistent Human Papillomavirus (HPV) infection, specifically high-risk types such as HPV-16 and HPV-18. The World Health Organization (WHO) reports that nearly all cases of cervical cancer are linked to HPV infection; consequently, prevention through vaccination is a primary strategy for reducing both the incidence of and mortality from the disease. In addition to vaccination, early detection through screening and raising public awareness are crucial components in achieving the goal of eliminating cervical cancer as a public health problem (International Agency for Research on Cancer, 2024; WHO, 2020).

In Indonesia, cervical cancer ranks second among the most common cancers in women, following breast cancer. This high incidence is driven by low HPV vaccination coverage, limited access to healthcare services in certain regions, and a lack of public knowledge regarding the benefits of immunization as a primary prevention measure (Bruni et al., 2023). The Indonesian government, through the Ministry of Health, has progressively incorporated the HPV vaccine into the national immunization program as part of its cervical cancer control strategy. However, the program's success relies heavily on support from various stakeholders, including educational institutions, healthcare professionals, and the general public (Kementerian Kesehatan Republik Indonesia, 2023; WHO, 2020).

HPV vaccination is a public health intervention proven effective in preventing HPV infections that cause cervical cancer and other HPV-related cancers. Research indicates that administering the vaccine prior to exposure to the virus provides strong protection against high-risk HPV types. Therefore, increasing vaccination coverage is a key indicator in supporting the WHO's goal of eliminating cervical cancer (Bruni et al., 2021; Drolet et al., 2019; WHO, 2020).

Higher education institutions, particularly those in the health sector, play a strategic role in supporting health promotion and prevention programs through community service activities. Beyond their core functions of education and research, these institutions are responsible for improving public health standards through education, healthcare services, and collaboration with various stakeholders. The administration of the HPV vaccine, combined with health education, represents a tangible implementation of the "Tri Dharma" (Three Pillars) of Higher Education—specifically the pillar of community service (WHO, 2020).

The Faculty of Medicine at Mitra Bunda Health Institute organized an HPV Vaccination Program to support primary prevention efforts against cervical cancer. The initiative encompassed not only the administration of the vaccine but also registration, health screening, pre-vaccination education, vaccination procedures adhering to standard operating protocols, and monitoring for Adverse Events Following Immunization (AEFI). Targeting students, the academic community, and the general public, the program aimed to improve access to the HPV vaccine while enhancing public understanding of the importance of cervical cancer prevention. A total of 400 participants registered,

and 338 successfully received the HPV vaccine; no severe adverse events were reported, demonstrating that the program was conducted safely and in accordance with established procedures (CDC, 2024b; WHO, 2020) .

Unlike many vaccination initiatives that focus solely on administering the immunization, this program integrated health education, medical screening, vaccination services, and post-immunization monitoring into a comprehensive service package. This approach was designed not only to increase vaccination coverage but also to strengthen public health literacy regarding cervical cancer prevention through safe, evidence-based immunization.

In addition to expanding HPV vaccination coverage, documenting the implementation of integrated community service programs in higher education settings is important to provide practical experience that may support similar preventive health initiatives in other institutions. Therefore, reporting this community service activity is expected to contribute to the dissemination of good practices in implementing HPV vaccination programs that integrate health education, medical screening, vaccination services, and post-immunization observation.

Against this backdrop, this community service activity aims to describe the implementation of the Human Papillomavirus (HPV) Vaccination Program—intended to enhance primary prevention of cervical cancer among the academic community and the public at the Mitra Bunda Health Institute Faculty of Medicine—and to evaluate the program's execution as a means of supporting improved access to preventive healthcare services.

IMPLEMENTATION AND METHOD

Location and Schedule

This community service activity will be held at the Faculty of Medicine, Mitra Bunda Institute of Health, Batam City, from February 6 to 8, 2026. The location was selected based on the institution's commitment to supporting health promotion and prevention programs by providing healthcare services that involve both the academic community and the general public. The activity will take place from 09:00 to 16:00 WIB in the Faculty of Medicine Hall at the Mitra Bunda Institute of Health.

Activity Targets

The activity was conducted through collaboration between the Faculty of Medicine, Mitra Bunda Institute of Health Sciences, and Ngabila Care Clinic. Health education and program coordination were organized by the Faculty of Medicine, while HPV vaccines and vaccination services were provided by the medical team from Ngabila Care Clinic. All activities were carried out in accordance with national immunization standards and patient safety protocols.

Implementation Method

The activity is conducted using an approach that integrates education, prevention, and healthcare services. The educational component involves providing information on HPV infection, the benefits of vaccination, vaccine

indications and contraindications, and the importance of primary prevention for cervical cancer (CDC, 2024b). The preventive aspect is implemented by administering the HPV vaccine to participants deemed eligible based on health screening results. The entire series of activities is carried out by the medical team from the Faculty of Medicine at the Mitra Bunda Institute of Health, in accordance with standards for vaccination services and patient safety.

The activity was carried out in several stages, as follows:

1. Preparation

The preparation stage involved forming the organizing committee, coordinating with faculty leadership and Ngabila Care Clinic, drafting the activity schedule, preparing the service venue, arranging the availability of HPV vaccines and medical equipment, and assigning tasks to the implementation team. This stage also included designing the service workflow to ensure the entire process operated effectively and in accordance with established procedures.

2. Participant Registration

Participants registered by providing their personal details and a brief medical history. The data collected served as the administrative basis for the service and facilitated the pre-vaccination screening process.

3. Health Screening

Before receiving the vaccine, each participant underwent a brief medical history review and a vital signs check conducted by medical personnel. The screening aimed to assess the participants' health status, rule out contraindications for vaccination, and enhance the safety of the immunization process.

4. Pre-Vaccination Education

Participants received information regarding HPV infection, the benefits of vaccination, potential post-immunization reactions, and the importance of maintaining a healthy lifestyle as part of cervical cancer prevention. This stage also provided an opportunity for participants to consult with healthcare professionals, thereby improving their understanding and addressing any concerns regarding vaccination.

5. Vaccination Administration

The HPV vaccine was administered by qualified physicians and healthcare professionals from Ngabila Care Clinic in accordance with standard operating procedures for immunization services. Participants received the vaccine only after being declared eligible based on the health screening results. The entire vaccination process adhered to patient safety principles and aseptic techniques, and included recording vaccine batch numbers as part of the activity reporting system.

6. Post-Immunization Observation

After receiving the vaccine, participants remained under observation for 15–30 minutes to monitor for any potential Adverse Events Following Immunization (AEFI). Healthcare professionals from Ngabila Care Clinic monitored participants for 15–30 minutes after vaccination to identify any potential Adverse Events Following Immunization (AEFI). No severe AEFIs occurred during the activity; a few participants experienced only mild local

reactions—such as pain at the injection site and slight dizziness—which were managed through observation.

Activity Evaluation

An evaluation was conducted via an internal committee meeting following the conclusion of the entire series of activities. The evaluation covered the smoothness of the service workflow, coordination among personnel, participant turnout, the delivery of educational sessions, and the reporting of Adverse Events Following Immunization (AEFI). The results indicated that the activities proceeded according to plan with effective team coordination, enabling the vaccination program to be carried out safely, orderly, and effectively as a form of community service.

RESULTS AND DISCUSSION

A Higher Education-Based HPV Vaccination Program Implementation Model

The implementation of the Human Papillomavirus (HPV) vaccination program at the Faculty of Medicine, Mitra Bunda Health Institute, goes beyond the mere administration of vaccines; it employs an integrated healthcare service approach that combines education, health screening, vaccination, post-immunization observation, and program evaluation. This approach enables participants to receive comprehensive care while enhancing their understanding of the importance of primary prevention against cervical cancer. The service model aligns with the higher education institution's role in fulfilling the *Tri Dharma* (Three Pillars of Higher Education)—specifically community service—through health promotion and disease prevention activities.

The strength of this model lies in the involvement of various stakeholders—ranging from faculty leadership, lecturers, medical personnel, and students to administrative staff—within a coordinated service system. This multidisciplinary collaboration not only ensures the smooth execution of activities but also provides valuable learning experiences for students and strengthens the relationship between the educational institution and the community.

Program Achievements

The program saw 400 registered participants, with 338 successfully receiving the HPV vaccine following a health screening process. Consequently, service coverage reached 84.5% of all registered participants. This figure indicates that the majority of participants met the medical requirements and were willing to undergo vaccination as a form of protection against HPV infection.

Table 1. Program Implementation Achievements

Indikator	Jumlah	Persentase
Peserta terdaftar	400	100%
Peserta tervaksinasi	338	84,5%
Belum tervaksinasi	62	15,5%
KIPI berat	0	0%

This achievement demonstrates that university-based vaccination programs are capable of providing the public with good access to services. The high success rate of the vaccination drive was likely influenced by convenient location access, effective coordination by the organizing committee, and the educational efforts undertaken prior to vaccine administration.

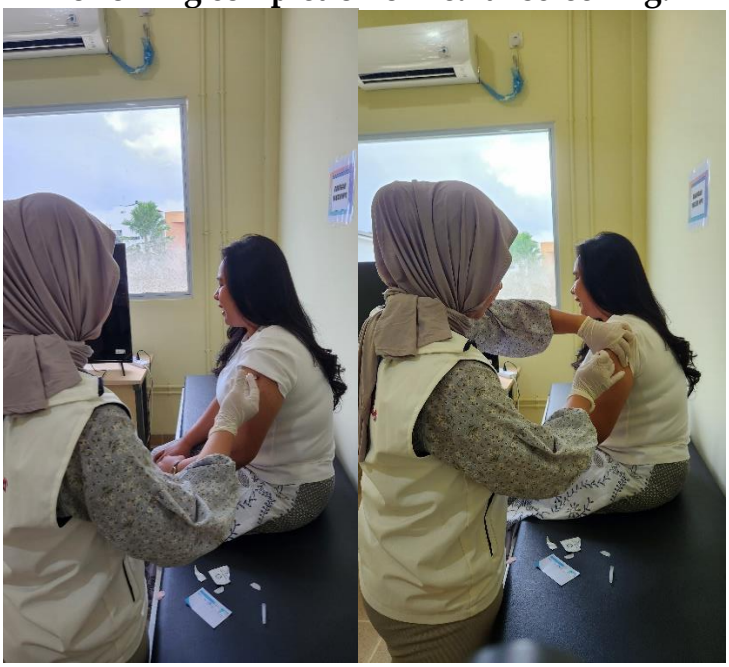
Documentation of Program Implementation

The implementation of the HPV vaccination program was carried out in a structured sequence consisting of participant registration, pre-vaccination health screening, vaccine administration, and post-service observation. Each stage was conducted in accordance with the established standard operating procedures to ensure participant safety, service quality, and compliance with immunization guidelines. Documentation of these activities was collected as supporting evidence of program implementation and reflects the active involvement of healthcare personnel, organizing committee members, and participants throughout the community service activity.

Figure 1. Participant registration and administrative verification before the HPV vaccination program.

Figure 2. Pre-vaccination health screening, including blood pressure assessment, to determine participants' eligibility for HPV vaccination.

Figure 3. Administration of the Human Papillomavirus (HPV) vaccine following completion of health screening.



DISCUSSION

The HPV vaccination program implemented at the Faculty of Medicine, Mitra Bunda Institute of Health Sciences demonstrated that an integrated community service approach can effectively improve access to preventive healthcare services. Of the 400 registered participants, 338 successfully received the HPV vaccine, resulting in a vaccination coverage of 84.5%. This high participation rate suggests that integrating health education, medical screening, and vaccination services into a single program may increase participants' acceptance of HPV vaccination. Previous studies have similarly reported that combining educational interventions with accessible vaccination services improves vaccine uptake and strengthens public confidence in HPV immunization programs (Bruni et al., 2021; Sushil Kumar et al., 2015)

The implementation model adopted in this program also highlights the important role of higher education institutions in supporting public health initiatives. Beyond their educational and research responsibilities, universities can serve as strategic partners in disease prevention through collaboration with healthcare providers and community stakeholders. In this program, the collaboration between the Faculty of Medicine, Mitra Bunda Institute of Health Sciences and Ngabila Care Clinic enabled the integration of health promotion, participant screening, vaccination services, and post-immunization monitoring into a comprehensive community-based healthcare service. Such multidisciplinary collaboration is consistent with the World Health Organization's recommendation that effective community engagement and multisectoral partnerships are essential for expanding immunization coverage and achieving sustainable public health outcomes (WHO, 2020)

Another important finding of this community service activity was the absence of severe Adverse Events Following Immunization (AEFI). Although

several participants experienced mild local reactions, such as pain at the injection site and transient dizziness, these symptoms resolved during the observation period without requiring advanced medical treatment. This finding supports the established safety profile of HPV vaccines when administered according to standard immunization procedures and accompanied by appropriate post-vaccination observation. The World Health Organization emphasizes that systematic AEFI monitoring is an essential component of vaccination programs because it ensures participant safety while maintaining public trust in immunization services (CDC, 2024a). Therefore, the implementation model presented in this program may serve as a practical reference for other higher education institutions seeking to develop integrated HPV vaccination programs as part of community service activities.

CONCLUSIONS AND RECOMMENDATIO

The implementation of the Human Papillomavirus (HPV) Vaccination Program at Mitra Bunda Institute of Health Sciences was successfully carried out through an integrated service model consisting of participant registration, health screening, health education, vaccine administration, and post-immunization observation. Of the 400 registered participants, 338 successfully received the HPV vaccine, and no severe Adverse Events Following Immunization (AEFI) were reported. The program demonstrated that collaboration between higher education institutions and healthcare professionals can improve access to HPV vaccination while supporting primary prevention of cervical cancer through comprehensive and safe community-based healthcare services.

Future community service programs are encouraged to expand HPV vaccination coverage by involving additional educational institutions, healthcare facilities, and local government agencies. Strengthening public education regarding HPV vaccination and conducting follow-up evaluations of participants' knowledge and vaccination completion are also recommended to enhance the long-term impact of cervical cancer prevention programs.

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