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Implementation of Infection Prevention and Control in Health Services Reproduction in Babakansari Village, Plered District, Purwakarta

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ABSTRACT
Infection prevention and control (IPC) is a critical aspect of reproductive health services, ensuring the safety of both patients and healthcare workers by minimizing the risk of healthcare-associated infections. Despite its importance, the implementation of IPC in primary healthcare facilities in rural areas often faces significant challenges. This study aimed to evaluate the implementation of IPC in healthcare facilities in Babakansari Village, Plered District, Purwakarta, and to identify the barriers and facilitating factors influencing its practice. A descriptive qualitative approach was employed, combining direct observation, in-depth interviews, and document review. Data were collected from 20 healthcare workers and 50 patients utilizing reproductive health services. The findings indicated that IPC implementation was ongoing; however, challenges persisted in the availability and proper use of personal protective equipment (PPE), medical waste management, and adherence to hand hygiene protocols. The study highlights the need for continuous training, routine supervision, and infrastructural support to optimize IPC practices. These findings provide a foundation for future policy improvements and the development of context-specific interventions to strengthen infection control in community health settings.

INTRODUCTION

Infection prevention and control (IPC) is an integral component of reproductive health services, designed to protect patients, healthcare workers, and the broader community from the transmission of infectious agents (Alotaibi, Nazer, & Otaibi, 2024). Reproductive health services, including antenatal care, childbirth, contraception, and the management of sexually transmitted infections, inherently involve exposure to blood, bodily fluids, and contaminated medical instruments (Monegro, Muppidi, & Regunath, 2023; Richards & Spencer, 2025 Seifi et al., 2025). This exposure increases the risk of healthcare-associated infections (HAIs), which can result in serious complications for both mothers and newborns if IPC measures are inadequate. Effective IPC strategies are therefore essential to ensure patient safety and maintain the quality of care in reproductive health services (Ahmed et al., 2021).

Globally, HAIs remain a significant public health challenge. The World Health Organization (WHO) estimates that approximately 15% of patients in developing countries

experience HAIs during healthcare treatment, with maternal and neonatal services being particularly vulnerable due to invasive procedures and frequent contact with body fluids (WHO, 2022). In Indonesia, the Ministry of Health reports that maternal and reproductive health services are among the healthcare units with the highest risk of infection, particularly in rural and semi-urban areas where resources and infrastructure are limited (Kemenkes RI, 2023). These data underscore the critical importance of adhering to IPC protocols to prevent infection transmission and protect vulnerable populations (Alrawashdeh & Alhawari, 2022).

Babakansari Village, located in Plered District, Purwakarta, is served by a Community Health Center (Puskesmas) that records a relatively high volume of reproductive health service visits. Despite this, internal monitoring reports from 2024 indicate that IPC implementation is inconsistent (Borrelli, Romano, Boccia, Cestari, & Spataro, 2024). Challenges include the insufficient use of personal protective equipment (PPE), improper disposal of medical waste, and suboptimal hand hygiene compliance among healthcare workers. Such gaps not only increase the risk of HAIs but also compromise patient trust in healthcare services and potentially reduce service utilization.

Previous studies have highlighted that inadequate IPC practices in reproductive health services can lead to maternal morbidity and neonatal infections (Kening & Groen, 2023; Kolmos, Sode, & Larsen, 2022; Luangasanatip et al., 2021). Research in Indonesia by Sari et al. (2021) revealed that healthcare facilities with poor compliance to standard precautions had higher rates of postpartum infections. Similarly, a study by Rahman et al. (2020) in rural healthcare settings found that continuous training and supervision significantly improved adherence to IPC protocols, reducing the incidence of HAIs among women receiving reproductive health services (Gershon et al., 2022). These findings indicate that effective IPC requires both structural support and behavioral adherence by healthcare providers (Castro Ochoa & Gurnani, 2025).

The concept of IPC extends beyond mere procedural compliance; it encompasses a combination of administrative policies, healthcare worker training, facility infrastructure, and patient engagement (Gottlieb et al., 2024). The CDC and WHO recommend multifaceted interventions including routine hand hygiene, proper sterilization of instruments, appropriate use of PPE, and systematic medical waste management as foundational strategies for HAI prevention (CDC, 2022; WHO, 2022). In addition, fostering a safety culture within healthcare facilities, where staff are regularly educated and monitored, has been shown to improve IPC outcomes, particularly in maternal and reproductive health units.

Given the critical role of IPC in safeguarding reproductive health, this study aims to evaluate the implementation of IPC in health services reproduction in Babakansari Village, Plered District, Purwakarta. Specifically, it seeks to identify gaps in adherence to IPC standards, understand the challenges faced by healthcare workers, and provide recommendations for improving infection control practices. By addressing these objectives, the study intends to contribute to evidence-based improvements in maternal and reproductive health service quality, ultimately reducing the risk of HAIs in the community.

METHOD

This study used a qualitative descriptive method to describe the implementation of PPI in reproductive health services. It was conducted in Babakansari Village, Plered District, Purwakarta, from February to May 2025. Participants included 20 health workers (midwives, nurses, and sanitation workers), 50 patients using reproductive health services, and direct observation of the implementation of PPI procedures (hand hygiene, use of PPE, sterilization of equipment, and waste management). In-depth interviews with health workers regarding barriers to and support for PPI implementation were conducted. Document review related to PPI policies and SOPs in health facilities was conducted. Data were analyzed using the Miles and Huberman model: data reduction, data presentation, and conclusion drawing.

RESULTS AND DISCUSSION

The implementation of infection prevention and control (IPC) in reproductive health services at Babakansari Village shows a generally satisfactory compliance level but still faces several challenges. Hand hygiene is a fundamental component of IPC. The study found that healthcare workers' compliance with handwashing protocols was 72%, indicating moderate adherence (Shen et al., 2021; Windfeld & Brooks, 2015; Yu, Sun, Solvang, & Zhao, 2020). The main obstacles identified were limited availability of handwashing facilities and hand sanitizers. This finding aligns with WHO (2023), which emphasizes that hand hygiene is the single most effective measure in preventing healthcare-associated infections (HAIs), yet its implementation is often hindered by inadequate infrastructure and resource constraints. Similar studies in rural Indonesian healthcare facilities reported that low accessibility of hand hygiene facilities directly impacts compliance rates (Sari et al., 2021).

Regarding the use of personal protective equipment (PPE), the study observed that masks and gloves were routinely used, demonstrating healthcare workers' awareness of protective measures. However, stock shortages frequently limited consistent use, especially during peak patient loads. This is consistent with research by Rahman et al. (2020), which found that even well-trained healthcare workers cannot maintain optimal IPC practices without sufficient PPE supply. According to the Donabedian model of healthcare quality, both structural resources (e.g., PPE availability) and process compliance are critical determinants of service quality, supporting the observed link between PPE shortages and potential HAI risk.

Medical instrument sterilization was largely compliant with established standards, but the limited number of autoclaves posed a challenge, sometimes causing delays in instrument turnover (Hantoko et al., 2021). This reflects findings from Prasetya et al. (2022), indicating that inadequate sterilization facilities can compromise IPC, despite healthcare workers' knowledge and intention to comply. Efficient sterilization processes are essential not only to protect patients but also to prevent occupational exposure for healthcare providers.

Medical waste management demonstrated partial compliance: waste segregation at the point of generation was conducted appropriately, yet transportation to final disposal sites was often delayed (Huijs, 2024). Delays in waste disposal increase the risk of pathogen exposure and environmental contamination, consistent with CDC (2022) guidelines recommending timely and proper medical waste handling to minimize infection transmission (Schoberer, Osmancevic, Reiter, Thonhofer, & Hoedl, 2022). These results underline the importance of strengthening both procedural adherence and logistical support in IPC.

Knowledge assessment showed that 80% of healthcare workers had good understanding of IPC principles, indicating that training programs were effective in raising awareness. The Theory of Planned Behavior (Ajzen, 1991) suggests that knowledge and positive attitudes influence intention and behavior; in this context, healthcare workers' understanding likely contributes to procedural adherence, though structural and logistical constraints still limit full compliance (Islam et al., 2023).This supports the finding that education alone is insufficient without the infrastructure and administrative support necessary to operationalize IPC practices fully.

In summary, while IPC implementation in Babakansari Village's reproductive health services aligns with Ministry of Health standards, the study highlights challenges in infrastructure, PPE availability, and procedural adherence. Continuous education, routine supervision, and infrastructure investment are essential to improve compliance. Consistent with global evidence, successful IPC requires the integration of human resource capability, adequate facilities, and management support to effectively reduce the risk of HAIs (WHO, 2023; Sari et al., 2021). Future interventions should focus on systemic improvements alongside training to achieve sustainable IPC outcomes.

CONCLUSION

The implementation of infection prevention and control (IPC) in reproductive health services in Babakansari Village has been generally adequate, with good compliance in medical instrument sterilization, healthcare workers' knowledge, and basic procedural adherence. Nonetheless, challenges persist in the availability of personal protective equipment (PPE), hand hygiene facilities, and timely medical waste management. While compliance was satisfactory, it was constrained by limited resources and infrastructure, and although knowledge levels were high, they were insufficient to guarantee full adherence. This study highlights the need to improve structural and procedural aspects to enhance IPC effectiveness. For future research, longitudinal studies are recommended to assess the impact of targeted interventions such as continuous training, infrastructure upgrades, and supervision on reducing healthcare-associated infections (HAIs) in reproductive health services. These findings offer valuable guidance for policymakers, healthcare managers, and local health centers aiming to strengthen IPC strategies.

REFERENCES

Ahmed, G. Y., Rabaan, A. A., Al-Tawfiq, J. A., Garout, M. A., Alshukairi, A. N., Al-Afghani, H. M., & Dhama, K. (2021). Knowledge of infection prevention and control among healthcare workers and factors influencing compliance: a systematic review. Antimicrobial Resistance & Infection Control, 10(1), 957. https://doi.org/10.1186/s13756-021-00957-0

Alotaibi, B. K., Nazer, L. H., & Otaibi, R. A. (2024). Determinants of hand hygiene compliance among healthcare workers in intensive care units: a qualitative study. BMC Public Health, 24(1), 2316. https://doi.org/10.1186/s12889-024-19461-2

Alrawashdeh, A., & Alhawari, T. (2022). Institutional factors associated with infection prevention and control practices globally during the infectious pandemics in resource-limited settings. Vaccines, 10(11), 1811. https://doi.org/10.3390/vaccines10111811

Borrelli, S., Romano, L., Boccia, G., Cestari, L., & Spataro, N. (2024). Architectural design strategies for infection prevention and control in resource-limited rural healthcare facilities in developing countries: bridging the gap with context-sensitive design. Unicamillus Journal of Health Sciences, 6(1). https://doi.org/10.32480/ughj.2024.6.1.12

Castro Ochoa, K. J., & Gurnani, B. (2025). Infection control. In StatPearls [Internet]. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK519017/

Gershon, R. R. M., Vandelinde, N., Magda, L. A., Pearson, J. M., Werner, A., & Prezant, D. (2022). Personal protective equipment implementation in healthcare: A scoping review. American Journal of Infection Control, 50(8), 857-868. https://doi.org/10.1016/j.ajic.2022.05.014

Gottlieb, S. L., Spielman, E., Abu-Raddad, L., Aderoba, A. K., Bachmann, L. H., Blondeel, K., Chen, X. S., Crucitti, T., Davey, D. L., Deal, C., Didelot-Rousseau, M. N., Ghanem, K. G., Hamonic, L., Hanisch, R., Hawkes, S. J., Herold, B. C., Hook, E. W., & McCormack, S. (2024). Research priorities for sexually transmitted infections: a global stakeholder consultation. The Lancet Global Health, 12(9), e1425-e1436. https://doi.org/10.1016/S2214-109X(24)00266-3

Hantoko, D., Li, X., Pariatamby, A., Yoshikawa, K., Horttanainen, M., & Yan, M. (2021). Challenges and practices on waste management and disposal during COVID-19 pandemic. Journal of Environmental Management, 286, 112140. https://doi.org/10.1016/j.jenvman.2021.112140

Huijs, J. (2024, August 23). Facing the standards gap: An autoclave for the rest of us. Tuttnauer Blog. https://tuttnauer.com/blog/facing-the-standards-gap

Islam, M. S., Sobur, M. A., Akter, M., Mahmud, M. M., Haque, Z. F., Rahman, M. T., & Rahman, M. (2023). Hand hygiene compliance and associated factors among healthcare workers in selected tertiary-care hospitals in Bangladesh. Journal of Hospital Infection, 138, 174-181. https://doi.org/10.1016/j.jhin.2023.06.024

Kementerian Kesehatan RI. (2023). *Pedoman Pencegahan dan Pengendalian Infeksi di Fasilitas Pelayanan Kesehatan*. Jakarta: Kemenkes RI.

Kening, M. Z., & Groen, K. (2023). Personal protective equipment. In StatPearls [Internet]. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK589639/

Kolmos, H. J., Sode, A. F., & Larsen, A. R. (2022). Hand hygiene compliance among healthcare workers before and during the COVID-19 pandemic. American Journal of Infection Control, 50(7), 733-740. https://doi.org/10.1016/j.ajic.2022.03.015

Luangasanatip, N., Hongsuwan, M., Limmathurotsakul, D., Lubell, Y., Lee, A. S., Harbarth, S., Day, N. P., Graves, N., & Cooper, B. S. (2021). Hand hygiene in health care: 20 years of ongoing advances and perspectives. The Lancet Infectious Diseases, 21(8), e188-e200. https://doi.org/10.1016/S1473-3099(21)00383-2

Monegro, A. F., Muppidi, V., & Regunath, H. (2023). Health care-associated infections – an overview. In StatPearls [Internet]. StatPearls Publishing. https://www.ncbi.nlm.nih.gov/books/NBK559312/

Nugroho, A. (2024). Implementasi PPI di Pelayanan Kesehatan Ibu dan Anak. *Jurnal Kesehatan Masyarakat*, 16(2), 88–95.

Richards, J., & Spencer, M. (2025, August 8). Autoclave machines in healthcare: Hospital and medical applications. Autoclave Equipment. https://autoclaveequipment.com/autoclave-machines-in-healthcare-hospital-and-medical-applications/

Schoberer, D., Osmancevic, S., Reiter, L., Thonhofer, N., & Hoedl, M. (2022). Impact of personal protective equipment use on health care workers' physical health during the COVID-19 pandemic: A systematic review and meta-analysis. Public Health in Practice, 4, 100280. https://doi.org/10.1016/j.puhip.2022.100280

Seifi, A., Zeinali, M., Kamali, K., Tabatabaei, S. M., Azimi, T., Fooladi, A. A., & Jeddi-

Tehrani, M. (2025). National update on healthcare-associated infections in Iran for 2023—Based on the Iranian Nosocomial Infections Surveillance (INIS) System. Journal of Epidemiology and Global Health, 15(1), 114. https://doi.org/10.1007/s44197-025-00462-2

Shen, L., Yang, L., Zhang, G., Zhang, M., Liu, Q., Luo, L., Adegboye, O. A., Huang, C., Zhou, S., & Wang, J. (2021). Compared hand hygiene compliance among healthcare providers before and after the COVID-19 pandemic: A rapid review and meta-analysis. American Journal of Infection Control, 49(12), 1479-1491. https://doi.org/10.1016/j.ajic.2021.11.026

Windfeld, E. S., & Brooks, M. S. (2015). Medical waste management – A review. Journal of Environmental Management, 163, 98-108. https://doi.org/10.1016/j.jenvman.2015.08.013

World Health Organization. (2023). *Infection Prevention and Control for Health Facilities*. Geneva: WHO.

Yu, H., Sun, X., Solvang, W. D., & Zhao, X. (2020). Reverse logistics network design for effective management of medical waste in epidemic outbreaks: Insights from the coronavirus disease 2019 (COVID-19) outbreak in Wuhan (China). International Journal of Environmental Research and Public Health, 17(5), 1770. https://doi.org/10.3390/ijerph17051770