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## ABSTRACT

**Title of Abstract** : Assessing the Efficiency of Plastic Waste Management at Universitas Gadjah Mada Academic Hospital  
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**Background** : Plastic waste from infusion bottles and hemodialysis solution containers constitutes a major component of hospital-generated hazardous waste (B3). Effective management of this material is essential to reduce environmental impact and promote sustainable hospital practices. The Universitas Gadjah Mada Academic Hospital (RSA UGM) has implemented a systematic approach to optimize its handling and utilization.

**Objective** : This study aims to evaluate the utilization and effectiveness of managing infusion bottle waste and used hemodialysis solution containers at RSA UGM in terms of cost efficiency and microbial reduction.

**Research Methods/ Implementation Methods** : This descriptive observational study applied a cross-sectional design. Primary data were obtained through observation and in-depth interviews, while secondary data were collected from hospital documents. Data collection was conducted between September and November 2021. The analysis focused on process efficiency, cost-effectiveness, and microbiological safety.

**Results** : From January 2020 to October 2021, RSA UGM produced 16,467.17 kg of infusion and hemodialysis plastic waste, consisting of 76% infusion bottles and 24% jerrycans. The management process involved segregation, washing, chlorine disinfection, shredding, and licensed disposal. Microbial analysis indicated a substantial decrease in contamination levels—from  $1.2 \times 10^4$  cfu/g before to  $2.2 \times 10^2$  cfu/g after decontamination.

**Conclusion/Lesson Learned** : The waste management system implemented at RSA UGM demonstrated microbiological effectiveness, indicating that structured handling and recycling of medical plastic waste can significantly support environmentally sustainable healthcare operations.

**Keyword** : medical plastic waste, waste management, sustainability