

Healthcare waste management for hospitals in resource-constrained settings: What determines effective implementation?

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The effective management of healthcare waste is a critical component of a hospital's infection control program and is central to occupational safety for healthcare workers and the health of the environment and community. In low-income countries, where hospital administrators are burdened by resource constraints and struggle to maintain basic health services, healthcare waste management (HCWM) can be a significant challenge. There are, however, examples of hospitals in low-income countries that are effectively implementing HCWM systems that use new technology and practices and focus on reducing, reusing and recycling their waste.

This research aimed to identify the determinants of effective implementation of the HCWM systems in three such hospitals located in Kathmandu, Nepal. This study utilized a multiple case study design with a mixed methods approach. A conceptual model for implementation effectiveness of complex innovations in organizational settings was used to guide the study design.

The key findings from this study identified four determinants that facilitated effective implementation across all sites including 1) the presence of an innovation champion within the hospital who advocated for use of the system; 2) a strong perception of the primary users (nurses and ward attendants) that use of the system contributed to fulfillment of their group values such as doing no harm to patients and service to the community; 3) a partnership with a technical organization; and 4) strong implementation policies and practices. The study identified one determinant that acted as a barrier to effective implementation across all sites; hospital staff perceived that it was difficult for hospital visitors to comply fully with policies that required visitors to segregate all waste at source. There were differences in motivation to adopt and implement HCWM systems depending on the type of hospital (private, public, non-profit). The length of implementation and management engagement were also found to influence the level of implementation effectiveness.

The findings suggest that large hospitals in low-income countries like Nepal can effectively manage their waste through systems that minimize harm to the environment, hospital staff and surrounding communities. The study provides recommendations for the type of support and inputs needed for effective implementation.