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Staff Knowledge and Utilization Rates in Technology-Based Disease Surveillance Platforms at South African Mining Sites: A Longitudinal Study,

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Abstract

Technology-based disease surveillance platforms have become integral tools in monitoring infectious diseases within healthcare facilities. In South African mining sites, these systems are employed to enhance disease detection and response protocols. A longitudinal study design was employed with semi-structured interviews conducted annually between and . A total of 50 mining sites were selected for the study, representing a diverse sample of South African mining operations. Data collection involved gathering quantitative information on staff knowledge via structured questionnaires. The analysis revealed that while approximately 85% of respondents had basic understanding of technology-based disease surveillance platforms, only 40% reported consistently using these systems for routine monitoring and reporting purposes. Staff identified training needs as a primary barrier to full utilization. Despite initial knowledge gaps, the study establishes a baseline from which future interventions can be developed to enhance staff proficiency and platform adoption rates at South African mining sites. Immediate measures should focus on targeted training programmes tailored for specific skills deficiencies identified in the study. Additionally, continuous support via regular updates and user-friendly interfaces is recommended to improve long-term utilization of surveillance platforms. Mining Sites, Technology Surveillance Platforms, Staff Knowledge, Utilization Rates, South Africa Treatment effect was estimated with $text{ logit }(\pi)=beta 0+\vec{\beta} p X_{i}$, and uncertainty reported using confidence-interval based inference.

Keywords: *African geography, longitudinal study, knowledge utilization, technology adoption, eHealth systems, informatics, health information management*

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