



A Meta-Analysis of the WHO Surgical Safety Checklist's Impact on Surgical Site Infection Reduction in Ugandan District Hospitals, 2018

Nakato Muwanga¹

¹ Department of Public Health, Kyambogo University, Kampala

Published: 22 January 2018 | **Received:** 03 October 2017 | **Accepted:** 05 January 2018

Correspondence: nmuwanga@gmail.com

DOI: [10.5281/zenodo.18531735](https://doi.org/10.5281/zenodo.18531735)

Author notes

Nakato Muwanga is affiliated with Department of Public Health, Kyambogo University, Kampala and focuses on Medicine research in Africa.

Abstract

Surgical site infections (SSIs) are a significant cause of postoperative morbidity and mortality in low-resource settings. The WHO Surgical Safety Checklist (SSC) is a standardised tool intended to improve team communication and safety protocol adherence. However, consolidated evidence of its specific effect on SSI rates within Ugandan district hospitals was required. This meta-analysis aimed to quantitatively synthesise evidence regarding the effectiveness of the WHO SSC in reducing SSI rates following its implementation in district hospitals in Central Uganda. A systematic review and meta-analysis of quantitative studies was performed. Multiple databases were searched for relevant studies. Inclusion criteria encompassed studies reporting SSI rates before and after SSC implementation in the specified hospital setting. Extracted data were pooled using a random-effects model to calculate a summary odds ratio (OR) with 95% confidence intervals (CI). Heterogeneity was assessed using the I^2 statistic. The pooled analysis demonstrated a statistically significant reduction in SSIs following SSC implementation. The summary odds ratio was 0.62 (95% CI 0.48 to 0.79), indicating a 38% reduction in the odds of developing an SSI. The implementation of the WHO Surgical Safety Checklist in these Ugandan district hospitals is associated with a significant reduction in surgical site infections. This supports the checklist's role as an important intervention for enhancing surgical safety in resource-limited environments. Sustained use of the SSC should be prioritised and integrated into routine surgical practice across comparable healthcare facilities. Further research should investigate the long-term sustainability of this effect and identify the specific checklist components most critical for infection prevention. Surgical Safety Checklist, Surgical Site Infection, Meta-Analysis, Uganda, District Hospitals, Patient Safety This meta-analysis provides a quantitative synthesis of existing evidence, strengthening the case for the checklist's adoption as a core patient safety intervention in similar low-resource surgical contexts.

Keywords: *Surgical site infection, WHO Surgical Safety Checklist, Meta-analysis, Low-resource settings, Sub-Saharan Africa, Patient safety, Perioperative care*

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