

Surgical Instruments Reprocessing

Surgical infections are a major cause of morbidity and mortality in low- and middle-income countries (LMICs). Inadequately reprocessed surgical instruments can be a vector for pathogens. Little has been published on the current state of surgical instrument reprocessing in LMICs.

We performed a scoping review of English-language articles in PubMed, Web of Science, and Google Scholar databases describing current methods, policies, and barriers to surgical instrument reprocessing in LMICs. We conducted qualitative analysis of all studies to categorize existing practices and barriers to successful surgical instrument reprocessing. Barriers were non-exclusively categorized by theme: training/education, resource availability, environment, and policies/procedures. Studies associating surgical infections with existing practices were separately evaluated to assess this relationship.

Nine hundred seventy-two abstracts were identified. Forty studies met criteria for qualitative analysis and three studies associated patient outcomes with surgical instrument reprocessing. Most studies (n = 28, 70%) discussed institution-specific policies/procedures; half discussed shortcomings in staff training. Sterilization (n = 38, 95%), verification of sterilization (n = 19, 48%), and instrument cleaning and decontamination (n = 16, 40%) were the most common instrument reprocessing practices examined. Poor resource availability and the lack of effective education/training and appropriate policies/procedures were cited as the common barriers. Of the case series investigating surgical instrument reprocessing with patient outcomes, improperly cleaned and sterilized neurosurgical instruments and contaminated rinse water were linked to *Pseudomonas aeruginosa ventriculitis* and *Mycobacterium* port site infections, respectively.

Large gaps exist between instrument reprocessing practices in LMICs and recommended policies/procedures. Identified areas for improvement include instrument cleaning and decontamination, sterilization aspects of instrument reprocessing, and verification of sterilization. Education and training of staff responsible for reprocessing instruments and realistic, defined policies and procedures are critical, and lend themselves to improvement interventions ¹⁾.

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Forrester JA, Powell BL, Forrester JD, Fast C, Weiser TG. Surgical Instrument Reprocessing in Resource-Constrained Countries: A Scoping Review of Existing Methods, Policies, and Barriers. *Surg Infect* (Larchmt). 2018 Aug/Sep;19(6):593-602. doi: 10.1089/sur.2018.078. Review. PubMed PMID: 30156997.

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