

For IV Antibiotics Nurses Urged to Ditch Gloves

Nurses commonly wear nonsterile gloves while preparing [antimicrobial injections](#) for intravenous use and giving these shots to patients. However, this practice is not supported by specific evidence-based guidelines.



Study

While general guidelines exist for using nonsterile gloves, there are no guidelines directing their specific use in this area. The review notes that such [glove use](#) is widespread but largely habitual and ritualistic rather than evidence-based. Improper use of nonsterile gloves has been associated with reduced compliance with correct hand hygiene practices, potentially increasing healthcare-associated infections. It also drives up healthcare costs. Still, this practice is common among nurses.

Nonsterile glove use became common with the need for universal precautions when HIV caused an epidemic. Nowadays, it is part of standard precautions and is often taught during nursing training as part of routine [clinical skills](#). This practice is partly driven by scientific reports stating that wearing nonsterile gloves reduces the risk of transferring pathogens between healthcare workers and patients, prevents microorganisms from briefly colonizing the hands, and avoids adverse effects like skin allergy or irritation due to hazardous or irritant chemicals.

According to the World Health Organisation, seven and fifteen percent of hospitalized patients in high-income and low-and-middle-income countries will have a healthcare-associated [infection](#) before discharge. This is usually due to cross-contamination caused by failures in hand hygiene and not changing gloves between patients and between procedures.

Hand hygiene has long been recognized as the primary step in preventing and controlling infection. It reduces healthcare-associated infections and antimicrobial resistance. Despite this, healthcare workers worldwide often refuse to follow hand [hygiene](#) protocols.

This increases the odds of transferring microbes between surfaces and patients, between patients, and between the [healthcare worker](#) and patients, increasing infection risks. This enhances the chances of complications and of death and pushes up healthcare costs. It also drives antimicrobial resistance.

Additionally, incorrect nonsterile glove use increases medical waste and impacts the environment at every step in manufacturing and [disposal](#). Vinyl and nitrile gloves are not biodegradable; thus, glove overuse contributes to environmental waste and carbon emissions. Their disposal releases hazardous chemicals, heavy metals, and microplastics into the air, soil, and water when incinerated.

While this WHO estimate is cited as a broader context, it was not part of the study's data. However, nurses have no apparent reason to use nonsterile gloves up to half the time they interact with patients, including while preparing or administering [intravenous](#) antimicrobials.

These observations explain the need for the current study. The investigators conducted a rigorous scoping review to identify the significant concepts of nonsterile glove use while preparing and administering antimicrobials, find the types of studies performed in this area, including [gray literature](#), and identify research gaps.

Results

After searching five major databases and gray literature (up to February 2024), the researchers found only three relevant studies. Only one of 24 selected in the preliminary round met the inclusion criteria. All others were either [conference abstracts](#) or did not deal with glove use.

The other two came from gray literature including various handbooks and guidelines by official organizations. None of them provided direct evidence of how [nonsterile gloves](#) would be used in clinical settings for making up and administering intravenous antimicrobials.

One study showed that nonsterile glove use's main situations included cleaning, mobilizing patients, handling linen, handling devices, [toileting](#), personal hygiene, attending to the patient, and in 5% of cases, for any task. It reported that 59% of nonsterile glove use was not indicated. Copying others' practices without question, misconceptions about the hygiene of glove use compared to hand hygiene, and disgust or fear about germs and dirt, drove such use.

The WHO has described "five moments of hand hygiene." The same study showed that cross-contamination occurs in most cases after or before touching a patient, after a procedure, or after exposure to body fluid. It also reported that nurses were less likely to wash or sanitize their hands after removing their gloves than other [healthcare](#) professionals.

Two studies, without any evidence from their own research, suggested that nonsterile glove use was only appropriate if there was likely to be exposure to body fluids or [mucous membranes](#). One explicitly stated that gloves should not be used for intravenous antibiotic preparation and administration.

Surprisingly, no original sources were found to support the few citations in these studies, even after tracing the [citation chain](#) backwards until 2000. This process turned up eight articles, none of which provided any evidence in this area. Moreover, many of the limited number of articles were by the same three researchers, indicating that this area has been little studied.

The third study did not discuss nonsterile glove use at all in the context of [antibiotic preparation](#) and administration.

Many professional guidelines across the world support this practice in the absence of any supporting evidence. (Notably, many steps in administering intravenous antibiotics involve potential exposure to [blood](#).)

The review also notes that this limited [evidence](#) base is partly due to the small, overlapping group of researchers studying glove use, underscoring the need for broader research participation.

A shift is emerging in clinical practice that emphasizes proper hand hygiene and removing gloves between patients to prevent [cross-contamination](#). One included study also reported direct financial and environmental benefits from reducing glove use through educational programs.

Conclusion

The study showed that misusing nonsterile gloves to prepare and administer intravenous antimicrobials may hinder correct hand hygiene, predisposing to cross-contamination and healthcare-associated infections and worsening patient [health outcomes](#).

The review found no direct studies that evaluated infection outcomes or microbial transmission related to glove use during [IV antimicrobial preparation](#), emphasizing the complete absence of empirical evidence in this area. In addition, it drove up the cost of healthcare and increased the amount of healthcare waste and related environmental pollution.

“We found no evidence to support the use of non-sterile gloves in intravenous antimicrobial preparation.” This crucial gap in evidence highlights the need for urgent research using a rigorous framework to create clear guidelines in this area and nonsterile glove use in overall nursing practice. This would strengthen evidence-based clinical practices, enhance [nursing education](#), improve patient health, and reduce healthcare costs and sustainability.

Source:

<https://www.news-medical.net/news/20251013/Nurses-urged-to-ditch-gloves-for-IV-antibiotics.aspx>