

The Hidden Costs of Convenience: Why Reusing Needles in Healthcare Remains Common Practice Despite Known Risks

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ARTICLE INFO	ABSTRACT
<p>Article type: Short Communication</p> <hr/> <p>Article History: Received: 10 Jan 2025 Accepted: 08 Feb 2025</p> <hr/> <p>Keywords: Patient safety, Needle use, System change, Quality improvement</p>	<p>The reuse of needles in healthcare settings persists despite well-documented risks, posing significant threats to patient safety and public health. Studies indicate that reusing needles increases the likelihood of contamination, transmission of bloodborne pathogens, and local complications. This practice is fueled by resource constraints, lack of awareness, systemic inefficiencies, and cultural normalization of unsafe practices. For example, reusing needles in procedures such as Botox injections or repeated IV insertions, while seemingly cost-effective, leads to higher long-term costs due to complications and the need for additional treatments. This paper reviews the risks associated with needle reuse, highlights the factors contributing to its persistence, and explores comprehensive strategies for mitigating these risks. Recommendations include enhancing education and training for healthcare workers, implementing safety-engineered devices, adhering strictly to infection control guidelines, improving infrastructure, and fostering regulatory oversight. By addressing these issues, healthcare systems can promote safer injection practices and ensure the well-being of both patients and healthcare providers.</p>
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Introduction

There is substantial evidence supporting that needles should not be used more than once on the same person. Reusing needles can lead to significant contamination and bioburden, even after reprocessing attempts. A study published in *Digestive Endoscopy* found that reprocessed endoscopic ultrasound needles had significant bioburden, with 94.3% of needles showing detectable contamination on the surface and 82.9% inside the lumen. This indicates that sterilization efforts are often insufficient to eliminate microbial contamination, posing a risk of infection (1).

Additionally, the *American Journal of Infection Control* highlighted that improper injection practices, including needle reuse, have resulted in patient-to-patient transmission of bloodborne pathogens such as hepatitis C virus. This underscores the critical need for single-use practices to prevent cross-contamination and infection (2). The Association of peri Operative Registered Nurses also recommends against the reuse of needles due to the risk of viral contamination and transmission of bloodborne diseases (3).

In summary, needles should not be reused between people or on the same person due to the high risk of contamination and infection, as supported by multiple studies and guidelines from professional associations. Reusing needles on the same person poses significant health risks, starting with the potential for infection transmission. Residual blood in reused needles can harbor bloodborne pathogens such as hepatitis B virus, hepatitis C virus, and human immunodeficiency virus, facilitating their transmission (4-7). Additionally, there is a heightened risk of bacterial infections, including invasive *Staphylococcus aureus* infections. Documented outbreaks have linked these infections to improper injection practices like needle reuse (4). Local complications are another concern. Reusing needles can cause lipohypertrophy, nodules, and skin infections due to repeated trauma and contamination at the injection site (8).

Moreover, patients may experience increased pain and bruising from the use of a dull needle tip, which can cause more

tissue damage upon subsequent use (9). Even when needles are reused on the same individual, there is a risk of cross-contamination between different injection sites. This can lead to localized infections and other complications that further compromise patient safety (10). In summary, the risks of reusing needles on the same person include the transmission of bloodborne pathogens, bacterial infections, local complications, increased pain and bruising, and cross-contamination. These significant hazards highlight the critical importance of adhering to safe injection practices and using needles only once.

Despite the documented risks associated with reusing needles on the same individual, this practice is commonplace in healthcare. For example, when botox is injected, the same needle and syringe is typically used to inject at multiple points, and when multiple attempts are made to insert an IV, the same needle may be used until the attempt is successful. So why, despite the significant known risks, do these practices persist in healthcare settings?

Persistence of Use

The practice of reusing needles in healthcare settings persists despite well-documented risks, driven by several interconnected factors. Resource constraints are a significant issue, especially in developing countries where limited resources and budget restrictions often lead to the reuse of needles and other single-use devices. In healthcare systems operating on tight budgets, the reuse of needles may be perceived as a cost-saving measure. While the price of single-use needles might seem negligible individually, it can add up significantly across high-volume practices or resource-limited environments. However, this perceived financial benefit is a false economy, as the costs of treating complications from needle reuse far outweigh the savings (11).

Another major factor is the lack of awareness and training among healthcare workers. Some HCWs are either unaware of or inadequately trained in safe injection practices. The Healthcare Infection Control Practices Advisory Committee has identified that breaches in infection control practices,

including needle reuse, often result from a lack of understanding or adherence to aseptic techniques (12).

Adding to this is a misconception about safety—the belief that reusing a needle on the same person is harmless if proper sterilization protocols are followed. Studies, however, show that sterilization methods can fail, and needles degrade after a single use, losing their sharpness and increasing the likelihood of harm. Improper handling and contamination during reuse further amplify these risks, even in controlled environments.

Cultural and systemic issues also contribute to the persistence of unsafe practices. In certain healthcare environments, there may be a culture of cutting corners or systemic pressures that prioritize speed and efficiency over safety. For instance, in busy clinical settings, practitioners may feel pressure to maximize efficiency, and preparing a new needle for every injection can be viewed as time-consuming. This pressure is often compounded by inadequate staffing levels and high patient volumes, further normalizing unsafe practices (13).

Moreover, in some cultures, reusing medical equipment, including needles, may be rationalized as “waste reduction,” overlooking the ethical obligation to prioritize patient safety.

In addition, inadequate oversight and enforcement of infection control policies perpetuate unsafe practices. Studies have shown that insufficient monitoring and follow-up on reported breaches in infection control enable these behaviors to continue unchecked. Practitioners may develop habitual practices passed down through informal training or influenced by systemic inefficiencies, leading to the normalization of needle reuse despite existing guidelines (12,14). Lastly, misconceptions and attitudes about needle reuse continue to play a role. Some healthcare workers mistakenly believe that reusing needles on the same patient carries minimal risk. Surveys have indicated that a small but significant proportion of clinicians engage in unsafe injection practices due to these erroneous beliefs (13,14). In summary, the reuse of needles in healthcare settings is influenced

by resource limitations, insufficient training, systemic inefficiencies, weak enforcement of guidelines, flawed perceptions of safety, and cultural normalization of unsafe practices.

Recommendations for Improvement and Change. Effective policies and interventions are critical to minimizing the reuse of needles in healthcare settings and mitigating associated risks. One of the most impactful strategies is education and training. Regular and comprehensive training programs for healthcare workers on safe injection practices have been shown to significantly improve compliance with aseptic techniques and reduce unsafe practices. These training sessions should be updated annually to ensure healthcare workers remain informed about the latest guidelines and best practices (15). The implementation of safety-engineered devices is another key measure. Devices equipped with safety features can reduce the risk of needlestick injuries and discourage reuse. However, the effectiveness of these devices relies heavily on proper training to ensure they are used correctly (16). Ensuring strict adherence to guidelines is equally important. Established guidelines, such as those from the Centers for Disease Control and Prevention (CDC), emphasize single-use syringes and proper disposal methods. Initiatives like the CDC's "One & Only Campaign" promote these practices to prevent contamination and the transmission of infections (17). Infrastructure improvements within healthcare facilities can also play a significant role in supporting safe injection practices. For example, providing sharps disposal containers in all patient care areas and designing spaces to minimize contamination risks can be important steps. The Kidney Disease: Improving Global Outcomes guidelines recommend creating separate rooms for medication preparation and increasing staff-to-patient ratios as part of broader infection control measures (17). Monitoring and surveillance are also essential for maintaining compliance with safe injection practices. Regular audits can identify breaches and areas requiring improvement, while a robust surveillance system can provide data to guide further interventions and ensure ongoing adherence to safety protocols (18).

In tandem, regulatory and policy interventions are another effective approach. Enforcing regulations mandating the use of single-use needles and syringes, alongside penalizing non-compliance, can drive systemic change. Policies that improve the availability and accessibility of sterile injection equipment are also critical to reducing unsafe practices (19). Lastly, introducing innovative disposal solutions can significantly reduce needle reuse and needlestick injuries, particularly in resource-limited settings. Cost-effective measures such as needle removers and dedicated disposal pits have proven effective in addressing these challenges (20). In summary, reducing needle reuse in healthcare environments requires a multifaceted approach. Education and training, safety-engineered devices, strict adherence to guidelines, infrastructure improvements, monitoring and surveillance, regulatory interventions, and innovative disposal solutions are all vital measures. Together, these strategies can effectively mitigate the risks associated with needle reuse and improve patient and healthcare worker safety.

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