

Identifying, deconstructing, and deimplementing low-value infection control and prevention interventions

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To the Editor —Infection control and prevention programs (ICPPs) are the cornerstone for combatting infectious disease threats in healthcare settings. Consisting of healthcare epidemiologists and infection preventionists, ICPPs are involved in the creation and implementation of interventions to prevent healthcare-associated infections (HAIs). ICPPs are a critical component of healthcare infrastructure. Although many ICPP interventions have been shown to be effective,¹ a natural inclination is to do more—implement more programs, use more personal protective equipment, and/or screen more often to detect early infection. Recently, however, we have learned that more is not always better or feasible. It is time to consider identifying and discontinuing, or de-implementing, low-value interventions.

Low-value interventions are interventions that are ineffective, cause harm to patients, waste resources without direct benefit to patients, or are no longer needed.² Low-value interventions are problematic because they can be resource and personnel time intensive, thereby limiting the availability of ICPPs for other concerns. Examples of interventions that have been called into question as potentially low value and relevant to IPPCs include the excessive use of urinary catheters, active screening for drug-resistant organisms, and antimicrobial prophylaxis for surgical-site infections in low-risk surgical procedures.³

Challenges surrounding coronavirus disease 2019 (COVID-19) substantiated the importance of robust ICPPs; however, pandemic-related supply chain disruptions and healthcare personnel shortages further emphasized the need to limit low-value interventions. ICPPs were often forced to make difficult decisions regarding which infection preventions were most critical and effective to preserve limited resources.³ In addition, multiple COVID-19 transmission mitigation strategies commonly utilized are now being re-evaluated as potentially low-value interventions, including the use of gowns and gloves, asymptomatic laboratory screening for COVID-19, and the role of negative pressure rooms for non-aerosol-generating procedures.^{4,5} As an example of a contested infection prevention practice in light of COVID-19 is active screening for methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant *Enterococci* (VRE). This screening practice includes testing for MRSA or VRE in patients with no signs of infection to detect asymptomatic colonization (carriage of an organism with no active infection). If found to be asymptotically colonized, some ICPPs will place the patient on contact isolation (ie, private room, gowns, gloves), which is immensely resource intensive. However, the data to support the use of contact isolation for asymptomatic MRSA and/or VRE

colonization are conflicting. Several studies conducted during the COVID-19 epidemic, when hospital rooms were scarce, reported no significant increase in rates of healthcare-associated VRE or MRSA transmission when contact isolation was discontinued.⁶ While we are not suggesting that an absence of evidence is sufficient to promote discontinuing a practice and recognize contact isolation is essential to prevent other types of HAIs, we do call for high-quality trials that test the effectiveness of these procedures and practices. Such policies and practices for which evidence is conflicting should be re-examined and evaluated for effectiveness to provide a scientific rationale for investing time, money, and resources.

In recognition of high costs and harm associated with low-value healthcare in the United States, many specialties and associated professional organizations have worked to identify and promote the discontinuation of low-value interventions, like the Choosing Wisely Initiative.⁷ It is time for ICPPs to join other specialties in this effort and focus on identifying and reducing low-value interventions. We outline three ways to advance this agenda: First, evaluating interventions, procedures, and standards of care that are untested or for which the evidence is mixed will ensure that they produce the intended effect and are indeed beneficial. Rather than debating interventions, high-quality science could provide more definitive answers regarding whether these practices are beneficial. Furthermore, scientific examination of these interventions will help determine whether they should be eliminated entirely, reduced so as to promote more targeted use in specific scenarios, or replaced altogether with practices that are more effective.⁸

Second, we should support the effort to reduce low-value care by identifying and prioritizing interventions. Available research methods, like Delphi methods,⁹ could be leveraged to identify interventions and generate consensus about which interventions should be prioritized along various dimensions such as the extent of potential harm an intervention causes or the waste it creates. Professional organizations among specialties have also been integral in identifying and prioritizing low-value interventions for communities of practice. To our knowledge, no similar efforts have been undertaken to identify or prioritize low-value interventions within ICPPs.

Third, once identified, we should support evidence-based approaches to reducing or eliminating prioritized low-value interventions. The emerging field of implementation science, which also focuses on the de-implementation or discontinuation of low-value interventions, offers both scientific rigor and a scientific basis for de-implementation efforts. Central to this field is comprehensively identifying factors that contribute to the continued delivery of low-value care at the patient, clinician, and institutional levels.¹⁰ From these factors, stem points of intervention that may stimulate change, as well as identifying interventions that help reduce their delivery among practitioners.¹¹ Many

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effective interventions may be transferable to ICPP clinicians or clinicians within the hospital using low-value interventions relevant to ICPPs.

It is time to identify and reduce low-value interventions so we can focus on the most effective interventions and advance the science behind infection prevention. Identifying and prioritizing low-value infection prevention interventions is necessary to create a strategic approach to reducing waste of both resources and the efforts of healthcare providers. De-implementation within implementation science can provide a rigorous pathway to identifying and eliminating ineffective, high-resource practices.

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References

- García R, Barnes S, Boukidjian R, *et al.* Recommendations for change in infection prevention programs and practice. *Am J Infect Control* 2022;50:1281–1295.
- McKay VR, Morshed AB, Brownson RC, Proctor EK, Prusaczyk B. Letting go: Conceptualizing intervention de-implementation in public health and social service settings. *Am J Community Psychol* 2018;62:189–202.
- Sreeramou P. Recent advances in understanding the epidemiology of healthcare-associated infections. *F1000Res* 2019;8.
- Schoberer D, Osmancevic S, Reiter L, Thonhofer N, Hoedl M. Rapid review and meta-analysis of the effectiveness of personal protective equipment for healthcare workers during the COVID-19 pandemic. *Public Health Pract (Oxf)* 2022;4:100280.
- Klompas M, Ye S, Vaidya V, *et al.* Association Between airborne infection isolation room utilization rates and healthcare worker severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infections in 2 academic hospitals. *Clin Infect Dis* 2022;74:2230–2233.
- Larrosa MN, Almirante B. Isolation strategy for controlling the spread of multidrug-resistant organisms: Is this still an essential option in hospitals? *Enferm Infect Microbiol Clin (Engl Ed)* 2021;39:425–428.
- American Board of Internal Medicine (ABIM) Foundation. Choosing Wisely: promoting conversations between patients and clinicians. Choosing Wisely website. <https://www.choosingwisely.org/>. Published 2022. Accessed November 28, 2022.
- Norton WE, Chambers DA. Unpacking the complexities of de-implementation in inappropriate health interventions. *Implement Sci* 2020;15:1–7.
- Okoli C, Pawlowski SD. The Delphi method as a research tool: an example, design considerations and applications. *Inf Manag* 2004;42:15–29.
- Augustsson H, Ingvarsson S, Nilsen P, *et al.* Determinants for the use and de-implementation of low-value care in health care: a scoping review. *Implement Sci Commun* 2021;2:1–17.
- Colla CH, Mainor AJ, Hargreaves C, Sequist T, Morden N. Interventions aimed at reducing use of low-value health services: a systematic review. *Med Care Res Rev* 2017;74:507–550.

Reconsidering the routine use of contact precautions in preventing the transmission of severe acute respiratory coronavirus virus 2 (SARS-CoV-2) in healthcare settings

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To the Editor—The predominant mode of transmission of severe acute respiratory coronavirus virus 2 (SARS-CoV-2) has been the subject of debate since the start of the coronavirus disease 2019 (COVID-19) pandemic. Initially, droplets and contaminated fomites were believed to be the primary modes of transmission. However, a growing body of evidence indicates that the dominant mode of transmission of SARS-CoV-2 is likely to be the respiratory route. Despite this, infection prevention and control recommendations for healthcare workers have not been fully adapted to the new knowledge of SARS-CoV-2 transmission. We believe that, while

maintaining respiratory protection, the routine use of contact precautions should be replaced by standard precautions in healthcare settings: using barrier protection in situations when exposure to larger droplets and splashes is likely.

Risk and transmission of SARS-CoV-2

Healthcare workers are at increased risk of acquiring and transmitting SARS-CoV-2. Contact precautions are implemented to safeguard patients and healthcare workers from the transmission of microorganisms through direct or indirect contact with skin, clothing, environment, blood, or other body fluids. In the context of respiratory viruses, protective clothing is intended to minimize the spread of droplets or bodily fluids to the skin and clothing of healthcare workers, thereby reducing the risk of secondary transmission to hands and subsequently to mucous membranes.

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