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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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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At the onset of the COVID-19 pandemic, it was assumed that droplets and fomites were the primary transmission routes due to SARS-CoV-2 lower basic reproduction number, estimated at 2–3.[1] This assumption was based on a longstanding belief that all airborne diseases have high basic reproduction numbers and, therefore, are highly contagious.[2] Experimental models, including airflow simulations, suggest that respiratory transmission is the primary mode of SARS-CoV-2 spread. Although surface transmission is possible, epidemiological data and environmental studies suggest that it poses a low risk and is not the predominant mode of transmission. Quantitative microbial risk assessments show that the likelihood of contracting SARS-CoV-2 via fomites and secondary transmission is <1 in 10,000.[3].

Furthermore, the study of real-life indoor superspreading events provides more evidence that implicates aerosols as the most likely mode of transmission over fomites.[2] It is highly improbable that most people at these events would touch the same contaminated surface or be exposed to droplets produced by an infected individual at close range with a sufficient viral load to result in secondary transmission. However, the shared air in a poorly ventilated indoor setting is the common factor among all people in superspreader events.[2] In healthcare facilities, the use of administrative (eg, vaccination requirements, hand hygiene monitoring) and engineering controls (enhanced ventilation) are generally considered more effective than reliance on personal protective equipment.[4]

What does the evidence say?

To our knowledge, no randomized trials have tested the effectiveness of contact precautions to prevent the nosocomial transmission of SARS-CoV-2. Observational studies have found a weak association between contact precautions for the care of patients with COVID-19 with lower risk of contracting the disease.[5]

Several investigations have studied the contamination and stability of SARS-CoV-2 on environmental surfaces. Under ideal experimental conditions, SARS-CoV-2 has been shown to remain viable for up to 28 days after surface inoculation.[6] In clinical settings, SARS-CoV-2 RNA has been recovered from patients' rooms up to 28 days after admission. However, not all environmental samples resulted in viable virus, with 0 to 33% of samples producing detectable cytopathic changes, mainly within the first week of illness onset.[6–9] In one study, contamination of personal protective equipment (PPE), such as isolation gowns, was rare during the management of COVID-19 patients, especially if the contact with the patient was brief (≤30 minutes).[10]

Potential adverse effects of contact precautions for COVID-19

The mental health of healthcare professionals was affected soon after the COVID-19 pandemic began. The constant use of PPE and the repeated donning and doffing procedures can lead to what is known as "PPE fatigue."[11] This condition results in physical exhaustion and mental stress, making it difficult for healthcare workers to cope with the increased workload and long working hours. As a result, the use of contact precautions may have a negative impact on the mental health of healthcare workers, potentially contributing to burnout, anxiety, and depression, as well as exacerbating claustrophobia, which has been reported with respirators but can be worsened with greater levels of personal protection, especially when the user is fully enclosed in the PPE.[12]

The use of isolation gowns can also cause physical side effects. Prolonged use of these gowns can lead to skin irritation, itching, and moisture-associated skin damage. Overheating and dehydration are also common side effects of wearing isolation gowns for extended periods of time, which can further exacerbate the physical and mental strain on healthcare workers.[13]

Additionally, the increased use of polypropylene PPE has led to significant environmental impacts, such as increased global waste and pollution. Medical waste has increased by 350%–500% in many countries, with >4 million metric tons of polypropylene PPE waste leaked into the environment since the pandemic began.[14] The long persistence of polypropylene in the environment for up to 450 years poses a risk to wildlife and contributes to environmental pollution.[15] The incineration of PPE waste in developing nations releases harmful gases, heavy metals, and polychlorinated biphenyls, further worsening ecological repercussions.[14,15]

Revision and deimplementation of infection prevention strategies

When a novel respiratory virus emerges, it is important to take a comprehensive and holistic approach to understanding all possible modes of transmission, including airborne, droplet, and fomite. By acknowledging all potential routes of transmission, appropriate measures can be implemented to effectively mitigate the risk of spread and prevent transmission. As additional information emerges, it is crucial to reassess the efficacy of the measures that have been implemented. Measures that are not effective should be deimplemented, such as the use of contact precautions in preventing the transmission of SARS-CoV-2. This will allow healthcare workers to focus on measures that are more effective in preventing transmission and reduce the burden of unnecessary PPE use. Efforts then should be directed toward mitigating the dominant route of transmission, which in the case of SARS-CoV-2, is predominantly respiratory.

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Caution on mandatory public reporting

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To the Editor—Gonzalo Bearman's otherwise excellent commentary suggests that mandatory public reporting of risk-adjusted patient infections offers important value, citing 2 references.[1] Having run one state's mandatory program as a research opportunity, I feel compelled to raise a yellow card on that score. Mandatory public HAI reporting to accelerate safety improvement is a noble experiment, but it remains of unproven value and cost-effectiveness. One of Bearman's 2 references, a systematic review with meta-analysis,[2] derives its statistical significance from cardiac surgery mortality reporting but includes only 1 study regarding HAI, a study that finds no impact of public reporting on hospital infection rates. His other reference[3] finds that hospitals in states newly enacting HAI reporting mandates soon demonstrated greater reduction in CLABSI rates but later no greater reduction than what was seen in states without mandates. Given the cliché that "data unites, theories divide," there are 3 possible interpretations. First, legislative mandate could motivate change. For example, Marsteller et al[3] notes that at baseline hospitals in states with new or impending legislation started with higher CLABSI rates than hospitals in states without a mandate and were more likely to then adopt well-known prevention strategies. Second, legislative mandates do not impact performance. Several studies fail to find statistically significant association, so a single positive signal could be the result of random chance variation or bias. Third, some could appear to be doing better than others simply due to widely ranging rates of underreporting. Standardized methods that are practical, sustainable, and internationally credible for ongoing assurance of reliable quality exist that can be used for annual validation to confirm hospitals meet predefined sensitivity and specificity requirements in their data reporting, but the vast majority of American state HAI programs have performed no credible ongoing validation.[4]

Together with colleagues across the 10 academic domains needed to address a sequence of research questions leading to understand what works, for whom, in what settings (Fig. 1), we used one state's mandatory HAI program to seek answers.[5] Essentially, all participating hospitals continued to exceed our annual validation requirements for high-quality reporting, and all maintained low HAI rates, which were not affected by adding reporting requirements. Risk-stratified rates were more meaningful and accurate indicators of performance than risk-adjusted ratios.[4,6] And as others have reported about public reporting websites, the general public showed little evidence of using such websites to actually influence their care decisions.[7] Today, as before, "More research is needed to better understand what health care consumers need on the WWW to support their decision making involving HAIs."[8]

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