SYNOPSIS

KEY POINT SUMMARY

OBJECTIVES

To review design features and behaviors in and around hospital sinks that contributed to outbreaks of infection, and to suggest strategies for future prevention.

Sink-Related Outbreaks and Mitigation Strategies in Healthcare Facilities

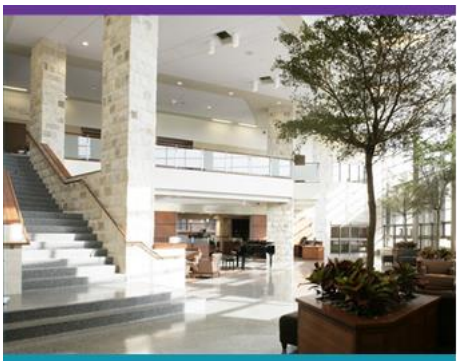
Parkes, L. O., Hota, S. S. 2018 /*Current Infectious Disease Reports, Volume 20, Issue 10, Pages 42*

Key Concepts/Context

Hand hygiene activities, such as simple handwashing procedures within designated sinks, have been regarded as an effective way to prevent infections for over a century. As hospitals increase in size and are expected to provide treatment to increasingly large patient populations in the future, hand hygiene protocols and sink designs should be continually assessed so that rates of infection remain as minimal as possible. The authors note that as of the time of this article's publication (2017), there is no widespread surveillance strategy for monitoring hospital-associated infections (HAIs) originating from hospital sinks, especially with regard to multidrug-resistance organisms (MDROs). Sink designs such as aerated faucets, overflow holes, sink rubbers, and plastic traps have been found in many instances to actually promote the growth of dangerous bacteria. Other sink designs and handwashing methods that were found to promote the spread of bacteria through previous research are also carefully evaluated in this literature review.

Methods

Focusing largely on research published within the last decade, the authors review several studies that identified specific hospital sink features and hand hygiene practices that contributed to the transmission of infection. All review findings are broken down into the following categories: 'Design Features that Promote Sink-Related Infections,' 'Healthcare Provider Behaviors that Contribute to Infection Transmission from Sinks,' 'Infection Control Strategies Used During Sink-Related Outbreaks,' and lastly 'Investigational Strategies to Mitigate the Risk of Sink-Related Infections.' Hypotheses for best practices are drawn from these studies, and highlighted in the 'Lessons Learned' section.



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Findings

The authors posit that their literature review shows how common "reactionary" approaches to halting hospital sink colonization are ineffective and can even promote bacterial transmission in some cases. These ineffective "reactionary" approaches include: cleaning sinks with saline flushes that are prepared near contaminated sinks, redesigning faucet and piping systems in response to outbreaks while subsequently promoting bacterial growth through the new designs, installing point-of-use filters without properly cleaning them, and replacing entire sink fixtures without ensuring that reservoirs of bacteria aren't still present prior to reinstallation. Studies of staff behavior and hand hygiene routines found that simply relegating all handwashing to one sink is not nearly enough to help curb transmission.

Limitations

As this study presents a review of previously published research, no original quantitative or qualitative data are gathered or described. The review focuses largely on design and behavioral errors, with less emphasis on solutions. This is nonetheless helpful in revealing which designs and behaviors should be avoided, and further highlights the need for the development of more modern sink designs and hand hygiene protocols.

Design Implications

Modern hospital sink designs that discourage the creation of biofilm, reduce aerosolization of water from sink drains and traps, and that generally discourage high-risk hand hygiene behaviors may help reduce the risk of bacterial transmission. While the specific sink components that can help accomplish these ends may be found through a wider body of literature that exceeds the scope of this article, the authors note that there are no established standards for ideal sink construction to date. Thus, designers might carefully consider how each sink component might contribute to bacterial build-up, and ensure that modern components are implemented.