

A photograph of an ICU room. In the center, there is a curved wooden vanity with a white countertop and a sink. A window with blinds is above the sink, and a person in blue scrubs is visible through it. To the right of the sink, there is a paper towel dispenser and a hand sanitizer dispenser. In the foreground, the head of a hospital bed with a white frame and a light-colored blanket is visible. The room has a light-colored wall and a drop ceiling with recessed lighting. A door with a window is on the left side of the frame.

IMPROVING THE QUALITY OF CARE

HOW WE REDUCED THE POTENTIAL FOR HAIs
AT A RECENT ICU





Post-discharge infections are one of the leading causes of readmissions.

Medicare payments typically make up 33-55% of annual hospital revenue, so even a relatively small hospital with \$100M in revenue could have more than \$10M at risk when you consider loss of payment and the cost of extended stays. And those figures do not include the significant costs of litigation arising from infections¹ or the fact that Medicaid and private payers are likely to follow suit, exacerbating the risk.

At a recently completed 12-bed ICU, we evaluated the inclusion of several design features intended to minimize the potential for Healthcare Associated Infections (HAIs). Following are the measures we implemented and our reasoning for those decisions.

¹ A.A. Boris, *A Revenue Leak Soon Turns to Flood: How Payment Penalties for High Infection Rates Could Drain Hospital Finance*. *Becker's Hospital Review*: 2013. <http://www.beckershospitalreview.com/finance/a-revenue-leak-soon-turns-to-flood-how-payment-penalties-for-high-infection-rates-could-drain-hospital-finances.html>



PROMINENT HANDWASH SINK PLACEMENT

It is well established that hand hygiene is the most important single measure for preventing the spread of pathogens in healthcare settings². Studies show that offering a multifaceted approach that incorporates both traditional sinks and alcohol-based hand-rub stations in close proximity to the patient significantly improves handwashing compliance.²

In this project, we installed alcohol-based hand-rub stations outside the patient doorway and inside the patient room adjacent to the bathroom door. Also, medical staff and Infection Control officers wanted to promote the act of care provider hand washing in the patient engagement process. We prominently located the in-room sink on a peninsula to enable providers to make eye contact and initiate conversation with the patient or care partner while washing their hands. This gives us the triple advantage of increasing hand washing compliance, letting the physician know that we are sensitive to their productivity, and displaying to the customer a commitment to high quality care.

INTEGRAL BLINDS IN LIEU OF CURTAINS

In 2013, a study published in the *American Journal of Infection Control* found that 37% of hospital facilities launder privacy curtains only when they are visibly soiled, however 92% of hospital privacy curtains are contaminated one week after laundering.³ And the research becomes more alarming when you consider the types of contaminants: 42% of hospital privacy curtains in the study were contaminated with vancomycin-resistant enterococci (VRE) and 22% with MRSA⁴.

Given that one MRSA infection costs \$47,000-53,000 on average, and a typical 200-bed hospital incurs \$1,779,283 in annual MRSA infection-related expenses per year,⁵ we suggested, and the hospital agreed, that the upfront building cost of integral blinds (\$5,083 per room) was worth the reduced risk of being curtain free. As clinical quality and safety move to the forefront of inpatient priorities under the Affordable Care Act, this feature is an excellent example of using evidence to guide investment.



VIRTUAL ROUNDING

The new ICU utilizes a state-of-the-art team theatre for virtual team rounding. Physician leadership sought to lessen the impact of educational rounding in this teaching hospital environment and requested a central room in which students virtually observe the immediate clinical team as they interact with the patient and family care providers. The medical team proposed that reducing the number of persons entering/exiting the patient care environment should reduce the introduction of germs.

At FreemanWhite we are committed to integrating data and research in our architectural solutions. This ICU will benefit from these enhancements both now and in the future as we deal with more complex germs in a 'drug resistant' era we live in.

- 1 *A.A. Boris, A Revenue Leak Soon Turns to Flood: How Payment Penalties for High Infection Rates Could Drain Hospital Finance. Becker's Hospital Review: 2013. <http://www.beckershospitalreview.com/finance/a-revenue-leak-soon-turns-to-flood-how-payment-penalties-for-high-infection-rates-could-drain-hospital-finances.html>*
- 2 *J.M. Boyce and D. Pittet, Guideline for hand hygiene in healthcare settings – Recommendations of the Healthcare Infection Control Practices Advisory Committee and the HICPAC/SHEA/APIC/IDSA Hand Hygiene Task Force. American Journal of Infection Control: 2002. <http://www.cdc.gov/mmwr/pdf/rr/rr5116.pdf>*
- 3 *D.L DeAngelis, R. Khakoo. Hospital Privacy Curtains: Cleaning and Changing Policies - Are We Doing Enough? AJIC: American Journal of Infection Control: 2013. [http://www.ajicjournal.org/article/S0196-6553\(13\)00359-3/fulltext](http://www.ajicjournal.org/article/S0196-6553(13)00359-3/fulltext)*
- 4 *F. Trillis, E.C. Eckstein, R. Budavich, M.J. Pultz, C.J. Donskey. Contamination of Hospital Curtains with Healthcare- Associated Pathogens. Infection Control and Hospital Epidemiology 2008: 29(11):1074-6. <http://www.ncbi.nlm.nih.gov/pubmed/18823274>*
- 5 *KL Cummings, DJ Anderson, KS Kaye. Hand hygiene noncompliance and the cost of hospital-acquired methicillin-resistant Staphylococcus aureus infection. Infection Control Hospital Epidemiology: 2010. <http://www.ncbi.nlm.nih.gov/pubmed/20184440>*



ABOUT THE AUTHOR

David Martin AIA LEED® AP BD+C
Principal

dfmartin@freemanwhite.com
704.586.2410

To David Martin, successful projects require not only thoughtful planning and preparation coupled with careful execution, but also a keen understanding of the project's operational needs, financial constraints, and schedules. David excels at complex endeavors, keeping multi-disciplinary teams in sync to perform at their peak. His talents include exceptional focus, organizational skills, and the ability to manage small details without losing sight of big-picture objectives.

Healthcare providers are currently facing a dizzying array of strategic and facilities challenges. At FreemanWhite, our approach integrates data, research, and best practices into our architectural solutions to help you balance cost and value.

