

# Oncology Care Setting Design and Planning Part II: Designing Healthcare Settings to Prevent Fungal Infections and Improve Handwashing

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This is the second in a two-part series on designing healthcare settings to improve patient safety. Part I addressed concepts of error theory and evidence-based practice as they relate to planning safe care environments (Sheridan-Leos, 2008). Part II describes the design and planning of oncology care settings to prevent fungal infections and improve provider handwashing.

There is currently an explosion of healthcare construction and remodeling in the United States; as the oncology population will soon be increasing, oncology care settings are part of the building boom. Given the number of organizations that are adding or planning to add care facilities, the time is now for nursing's input into the design of healthcare facilities.

The design of healthcare facilities has an impact on patient safety issues relating to nosocomial infection. A white paper on nursing-sensitive patient outcomes published by the Oncology Nursing Society recognizes prevention of infection as an important safety outcome that is sensitive to nursing interventions (Given & Sherwood, 2005). Additionally, 3 of the 15 outcomes endorsed by the National Quality Forum (2007) as nursing-sensitive performance measures are related to infection. Oncology nurses need to be part of the planning, design, and demolition phases of constructing and remodeling healthcare facilities to mitigate risks for patients with cancer. The objectives of this article are to: (a) describe the im-

port of healthcare-associated infections on patients with cancer and (b) describe evidence-based design of healthcare environments to prevent fungal infections and promote handwashing.

## The Impact of Healthcare-Associated Infections

Klevens et al. (2007) estimated that approximately 1.7 million healthcare-associated infections occurred in U.S. hospitals in 2002, and the infections were associated with approximately 99,000 deaths. Factors that have led to the increasing infection rate are: (a) low handwashing rates by staff between patient contacts, (b) patients who are sicker and immunocompromised, (c) infrastructure repairs and renovations of aging hospitals, and (d) new construction on existing campuses creating the risk of airborne fungal disease (Joseph, 2006). Emerging evidence in healthcare design indicates that if infectious environmental transmission routes are considered in the design of healthcare facilities, healthcare-acquired infections can be reduced (Joseph).

If a patient acquires a healthcare-associated infection, the additional cost

of treating the infection will no longer be paid by Medicare, effective October 1, 2008. The specific healthcare-associated infections that no longer will be covered by Medicare include vascular catheter-associated infection and catheter-associated urinary tract infections (unless they were present on admission). Instead, charges will have to be absorbed by the organization and the organization will not be allowed to charge the patient the additional cost of treatment (Paddock, 2007). Additionally, in 2003, the Joint Commission issued a sentinel event alert regarding the prevention of nosocomial infection and reporting of nosocomial-related deaths.

## Reducing the Risk of Infection by Preconstruction Planning

The importance of containing airborne and surface contaminants during new construction and remodeling projects is now better understood. The American Institute of Architects ([AIA], 2006), the Centers for Disease Control and Prevention (2003), and the Joint Commission (2003) have published guidelines for the design and construction of hospitals

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