Hand Hygiene in Healthcare: The Role of the Patient

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Abstract

Background: It is estimated that the number of healthcare associated infections (HAIs) in the United States is reported to vary between 1.7 and 1.2 million employees every year. Pathogens such as Staphylococcus aureus and Enterococcus faecalis are present on the hands of healthcare workers at all levels of care and are responsible for the transmission of infection to patients. The purpose of this study was to determine the prevalence and nature of hand contamination by healthcare providers, patients, and visitors, and to establish the role of hand hygiene practices in the prevention of HAIs.

Methods: A randomized, controlled study was conducted at the George D. Tompkins Surgical Pavilion of the Summa Health System. At random, 600 hand samples (300 pairs) were obtained by clinicians for patients and visitors and 150 hand samples were obtained by nurses for patients in an acute care hospital. Contaminated samples were screened for the presence of six pathogens: Staphylococcus aureus, coagulase negative staphylococci, Enterococcus faecalis, Clostridium difficile, Acinetobacter, and Vancomycin-resistant Enterococci (VRE).

Results: Pathogen Detection

Pathogen Detection: Hand samples were plated for total aerobic counts and onto selective media for pathogenic marker organisms, including Methicillin-resistant Staphylococcus aureus (MRSA), Clostridium difficile, Acinetobacter, Vancomycin-resistant Enterococci (VRE), and total gram-negative organisms. Using standard hand washing technique, patients and visitors had at least 100 times more organisms on their hands than the nurses. The prevalence of MRSA was 9.0% and Enterococci 39.0% in patients and visitors, and 2.0% and 3.0% in nurses. The prevalence of C. difficile was 11.0% in patients and visitors, and 2.0% in nurses.

Conclusions: A large proportion of patients tested positive for organisms associated with substantial morbidity and mortality 48 or more hours after admission. The data obtained in this pilot study will be used to design further studies, including a randomized trial testing various patient hand hygiene protocols.

References