

Hand Hygiene in the Pharmacy:

Where Patient Safety Begins

By Keith H. St. John, MT(ASCP), MS, CIC

“SO THEY SHALL WASH THEIR HANDS THAT THEY DIE NOT, AND IT SHALL BE A STATUTE FOREVER TO THEM, EVEN TO THEM AND TO THEIR SEED THROUGHOUT ALL GENERATIONS.”
—EXODUS 30:21

Hand Hygiene in History

As early as 1822, a French pharmacist demonstrated that solutions containing chlorides of lime or soda could eradicate the foul odors associated with human corpses and be used as disinfectants and antiseptics. In a paper published in 1825, this pharmacist stated that physicians and other persons attending patients with contagious diseases would benefit from moistening their hands with a liquid chloride solution.¹ Hence, the notion of hand hygiene using an antiseptic agent was born from the simple observations of a pharmacist. Unfortunately, this discovery fell upon deaf ears at the time, only to be rediscovered decades later as the most effective measure to prevent the transmission of the microorganisms that cause infections.

It wasn't until 1961 that the US Public Health Service produced its first training film demonstrating hand-washing techniques recommended for use by health-care workers (HCWs). The CDC and others published a series of guidelines on hand-washing practices in the 1970's and through the 1990's. Although the majority of U.S. hospitals adopted these guidelines, health-care worker adherence remained poor, as reported in the scientific literature.

In October 2002, the CDC, along with stakeholder organizations, published the most comprehensive and scientific evidence-based guideline for hand hygiene in health-care settings in the history of medicine.² JCAHO soon adopted these guidelines as a National Patient Safety Goal and requires full compliance on the part of HCWs.³

To maximize the patient-safety benefits of hand antisepsis, attempt to remove transient flora from the hands and then maintain decolonization of the skin for the longest time possible.

Hand Hygiene Today

Pharmacies face a challenge: They must require hand hygiene of their staff, while maintaining a high level of productivity in the delivery of medications and nutritional fluids to patients. Therefore, pharmacy supervisors must make decisions regarding appropriate hand-hygiene product selection and placement of these products to facilitate their use within the pharmacy work area.

The importance of performing proper hand hygiene in the preparation of pharmaceutical products cannot be over-emphasized. Total bacterial

counts on the hands of medical personnel have ranged from 39×10^3 colony forming units/cm² to 46×10^5 .⁴ Bacteria recovered from the hands are divided into two categories: transient and resident. Transient flora colonizes the superficial layers of the skin, and is relatively easy to remove during routine hand-washing procedures. They are often acquired by HCWs during direct contact with people or contaminated environmental surfaces. Transient flora is most frequently associated with contaminated

preparations and health care-associated infections, in general. Resident flora attaches to deeper layers of the skin and are more resistant to removal. Although the number of transient and resident flora varies considerably from person to person, investigators have documented that the number is often relatively constant for any one person.

Hand-Hygiene Product Selection

When it comes to the selection of proper hand-hygiene products, choose products that have low irritancy potential, and solicit input from your staff regarding the feel, fragrance, and skin tolerance of any products under consideration. The cost of hand-hygiene products should not be the primary factor influencing product selection. Also, before making purchase decisions, solicit information from manufacturers regarding any known interactions between their products and the types of gloves used in your pharmacy, and ensure that their dispensers deliver an appropriate volume of product. The pharmacy should never add soap to a partially empty soap dispenser as this practice of “topping off” can lead to bacterial contamination. Products that include emollients should minimize the occurrence of irritant contact dermatitis associated with hand antisepsis or hand-washing.

Hand-Hygiene Procedures

When hands are visibly soiled or contaminated with foreign materials, washing hands with either a non-antimicrobial soap and water or an antimicrobial soap and water for at least 15 seconds is recommended. Hands must also be washed before eating and after using the bathroom. At all other times, when hands are not visibly soiled, use of an alcohol-based hand rub, following the manufacturer's instructions, for the routine disinfecting of the hands is the preferred way of performing hand hygiene.

When the pharmacy worker is directly involved in the compounding of sterile preparations, a more stringent practice may be prudent to maximize the cleansing and decolonization of the hands: follow an initial prolonged soap-and-water hand wash (30 seconds or more) with the proper manufacturer-recommended application of an alcohol-based surgical hand scrub with persistent activity. In certain published studies, for example, alcohol-based surgical scrub preparations containing 0.5% or 1% chlorhexidine gluconate have demon-

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HAND HYGIENE (Continued from page 4)

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strated persistent activity that has equaled or exceeded that of chlorhexidine gluconate-containing soaps.⁵ To maximize the patient-safety benefits of hand antisepsis, attempt to remove transient flora from the hands and then maintain decolonization of the skin for the longest time possible. Certainly one of the recognized critical areas where maximum hand antisepsis should occur is the sterile compounding area of the pharmacy.

of this basic hygiene measure for over a century, we now need to apply evidence-based science into our everyday work practices. The message is clear: The simple act of properly performing hand hygiene in the pharmacy at every appropriate occasion is where patient safety and the delivery of quality patient care begin. **FR&P**

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Guidelines for Nail Care and Jewelry

Natural nails should be kept less than 1/2 inch in length, while artificial fingernails or extenders should not be worn at all by those involved in the preparation of pharmaceutical products. These artificial nails and extenders have been shown to harbor bacteria and fungi that are close to impossible to remove and could lead to the contamination of sterile products. In addition, they can pose a puncture problem for those attempting to don gloves. Keep jewelry to a minimum, and always remove jewelry from the hands and store it in a safe place prior to performing hand hygiene.

For generations, washing one's hands with soap and water has been considered a measure of personal hygiene. Having known the importance

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