

## Abstracts #5

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Factors that affect the frequency of use of hand hygiene products are addressed by the author. These are:

- Access
- Cost
- Acceptance

### ACCESS

It has been estimated in the literature that nurses wash their hands from 13 to as many as 44 times per day. With this rate of washing, experts believe that accessibility may in fact be an issue. It was determined in a study of intensive care units that nurses needed an average of 62 second to walk to a sink, wash and dry their hands, and return to the patient's bedside. If one factors in a total wash time of 10 seconds times 12 nurses working in the ICU, assuming full handwashing compliance, it would require 16 hours of nursing time, or two full time equivalents. When a waterless alcohol product is factored in, including drying time, that time requirement drops to 4 hours of nursing time.

Studies that look at relationship to sinks or dispensers are few, but reports show similar findings:

- One study that converted an ICU to an isolation unit (one sink for each bed) handwashing compliance increased from 16% to 30%
- Another ICU study compared sink:bed ratios—in a unit that was 1:4, compliance was 51%; when 1:1, compliance was 76%
- One study showed that location of a patient bed next to the sink reduced that patient's risk for infection 26%
- In the last study of an ICU: soap and water wash yielded a compliance rate of 25%; with the introduction of waterless handrubs with a 1:4 dispenser:bed ratio, the compliance rate was 41%; and finally with a 1:1 ratio compliance, it increased to 48%

### COST

Studies are rare that examine the cost issues of antiseptic hand hygiene agents.

- A study of a 450 bed hospital revealed their product mix of 2% CHG, plain soap, and an alcohol hand rinse ran \$20,000 or \$0.72 per patient per day. If they included clinics and non-patient care areas, cost was \$30,000 or \$1.00 per patient per day.

\*\*The author noted that the cost of one surgical site infection, lower respiratory tract infection, or bloodstream infection could cost the hospital more than their entire annual budget for antiseptic agents.

### ACCEPTANCE

Studies show healthcare practitioners acceptance of a hand hygiene product is closely tied to their experience associated with the use of the product. For those practitioners who experienced redness, drying or cracking, that product was the least preferred.

- In one study practitioners were asked to evaluate four 4% CHG products and rate them according to smell, texture, lather, ease of rinsing, and tendency to cause itching. One of the four rated the worst in terms of smell, texture and lather, but no difference from in the other products in the final two categories. It was found to be the least popular among those trialed.
- Larson et al asked individuals to rate the condition of their skin following use with bar soap versus three antiseptic agents. (numbered 1, 2 and 3). Bar soap and agent number three were rated the worst on self-assessment. In objective measurement of skin condition (trans-epidermal water loss) bar soap and agent number three produced the most skin damage. Clearly all preparations are not alike.



- In the US the prevailing attitude toward alcohol rubs is that they cause greater dryness and skin irritation. This, in fact, may be based on experiences with older preparations. Today's studies find that use of contemporary alcohol hand rubs after 2 weeks showed less damage to the skin
- A recent study assigned half of the nurses to wash with soap and water and the balance with an alcohol hand rub. These participants in the study were asked not to use any lotions during the study. After two weeks, the groups changed hand care products. Skin irritation and dryness were evaluated using three different methods including electrical capacitance measurements, self-assessment, and visual assessment by a study nurse. In all cases, those who used soap and water had greater dryness and skin irritation than those using the alcohol handrub. 88% of the participants found the alcohol handrub less drying and 92% agreed they would be willing to use the alcohol handrub routinely.

The study concludes by finding that ease of access and level of acceptance can affect compliance, although they were careful to note that maintaining educational and motivational efforts may be necessary for wide acceptance and frequent use of alcohol-based disinfectants. They do state that in addition to cost and antimicrobial efficacy, access and acceptance must be considered.

This summary of a published scientific paper has been compiled by Carolyn Twomey, Clinical Nurse Consultant, Regent Medical as a service to healthcare professionals. It does not contain the complete text, and Regent Medical makes no representation as to its completeness in addressing all issues in the paper. A reprint of the original paper may be obtained through Regent Medical by Email or direct from the publishers of the journal in which it appeared.



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