

New Study Raises Questions About Foam Hand Sanitizers' Antimicrobial Efficacy in a Practical Clinical Setting

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The way 62 percent ethanol foam hand sanitizers are used in a practical clinical setting most likely means they do not provide any more bacterial reduction than simply washing with the same quantity of water alone, says a new study presented at the Fifth Decennial International Conference on HAIs. The study results confirm preliminary data first presented by lead author Dr. Günter Kampf at Medline Industries, Inc.'s Prevention Above All conference late last year.

The study, "Efficacy of ethanol-based hand foams using clinically relevant amounts: a cross-over controlled study among healthy volunteers," was performed according to the EN1500 standards and found that the applied volume of 62 percent alcohol foam healthcare workers used so that their hands would dry in 30 seconds was small -- only 1.6 grams. Compared to published data, even a simple hand wash using 1.6 grams of water alone has similar or better antimicrobial efficacy than the same amount of 62 percent alcohol foam sanitizer. Furthermore, to reach desirable bactericidal levels would require approximately twice the practical amount of product, extending evaporation times upward of 90 to 120 seconds per application - something that is not practical in a clinical setting given the patient care responsibilities healthcare workers face on a daily basis.

"The data suggests we have a false sense of security with regard to the level of bacterial reduction provided when using 62 percent foam hand sanitizers," said Kampf, who is a member of the German Association for Infection Control and a lecturer at the Ernst Moritz University in Germany. "Practically, it is very difficult to use these appropriately, so we may be fooling ourselves a bit with regard to hand hygiene efforts when using such products. This should be a wake up call to the infection prevention community."

Considering that a single healthcare worker has at least 20 opportunities to clean their hands in every hour of patient care*, understanding the amount of foam product used in a practical scenario and the bactericidal effect of that quantity is critical. The study authors concluded that clinicians would not apply hand hygiene agents to their hands for more than 30 seconds per opportunity, as they simply do not have the time to go beyond that and still provide quality patient care.(1) Even at a 30 second application time, 10 minutes of every hour would be spent practicing good hand hygiene. To expect any more than that from the healthcare worker is unlikely.(1)

"It is more than in-vitro science - it is real life in a practical setting that we must consider," said Kampf. "How much time do our healthcare workers have? More effective hand hygiene agents are needed if reducing hospital-acquired infections is our objective."

The study also noted the lack of objective application instruction for foam products, with some instructions suggesting the use of a "golf ball sized" amount of foam and others suggesting simply to "apply product and rub hands until dry." Such vagueness, the study notes, can lead to application amounts that are subjective and that vary by individual.

"We found the subjects in our study all had a rather different understanding of how large a golf ball might be," remarked Kampf. "Based on our data, the amount of foam recommended on product labels should be more precise and address both the efficacy and a clinically acceptable time for drying after application."

According to Marc Lessem, Medline's vice president of professional hand hygiene, the study also emphasizes the importance of proper education in product utilization and the role industry can have in that effort.

"While 62 percent foam sanitizers are not entirely ineffective, it is incumbent upon us to educate regarding proper technique," commented Lessem. "If proper application technique is unattainable due to the practical considerations of the healthcare worker's daily job responsibilities, then other product options should be considered."

Reference: 1. Pittet D, et al. *Annals Intern Med* 1999;130:126.