

A Novel Curriculum using Simulation to Teach and Assess Indications and Technique of Handwashing to GME Learners

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INTRODUCTION

Proficiency in the clinical skill of effective hand washing is integral to high quality health care. Studies at our hospital revealed that in 2008, of 1215 direct, anonymous, observations of residents and attendings, only 53.3% washed their hands correctly during clinical activities. Medical students in fiscal year 2009 (July 1, 2008- June 30 2009) had a 52% compliance rate from 109 observations. This data prompted our hospital to work with the faculty of the University Clinical Skills and Simulation Center (UCSSC) to develop a module on the indications and technique of effective handwashing. This intervention, using multimedia simulation was introduced to our interns during their orientation program.

METHODS

The Jeff Players production group of the UCSSC developed and produced a 5 minute videoclip that provides an entertaining description of the indications for, and technique of, handwashing using either soap and water or an alcohol-based cleaning agent. This was followed by a direct observation by faculty of their handwashing technique using a guideline-specific checklist. The handwashing module was a part of the mandatory skills sessions for incoming



interns during June, 2009. Prior to the intervention, we gave the interns a written pretest with questions on the indications and technique of handwashing; we also asked each their self-assessed proficiency in hand washing, using a Likert-scale (1-Strongly disagree to 5-strongly agree) in response to the statement, "I am confident in my proficiency in handwashing technique". After the intervention, a survey was administered which asked if they had received formal handwashing training during their undergraduate medical education. Subsequently, data was collected by the hospital on compliance with handwashing by random direct observation of handwashing by residents who were then identified.

RESULTS

In June, 2009, all 127 incoming interns completed this handwashing module during orientation. All interns watched the multi-media presentation and successfully demonstrated effective and appropriate handwashing technique during the orientation. The results of the preorientation evaluation showed that 78% stated that they had received formal handwashing training

during their undergraduate medical education. Their self-reported proficiency in handwashing was 2.43. In the pre-intervention test, 78% (99/127) interns answered correctly that the duration of handwashing is >15 seconds; however, 22% (28/127) answered this incorrectly. The post-intervention survey was completed by 99/127 interns. Ninety-seven per cent of these correctly answered the question about the duration of handwashing after the intervention. Between July 1, 2009 and Dec 15 2009, interns were 65% compliant with hand hygiene in 38 of 58 observations, which is increased over the baseline level for residents and students.

Hand washing observations by 6 month intervals:

	07/08 - 12/08	07/08 - 12/08	01/09 - 06/09	01/09 - 06/09	07/09 - 12/09	07/09 - 12/09
	%	Obs	%	Obs	%	Obs
MS4	45%	49	55%	60	70%	54
Intern	41%	56	59%	83	68%	62
Resident	52%	137	61%	160	74%	121
Attending	50%	361	70%	394	78%	340

This hand washing table show the percent compliance (hand wash in and hand wash out - alcohol cleanser counts except after leaving a C Diff room) and the total number of the group observed. The handwashing intervention occurred prior to the 07/09-12/09 interval, and was given to the group labeled "intern" during that interval. MS4 is 4th year med students.

DISCUSSION/CONCLUSIONS

We present a novel multimedia module to reinforce the indications and technique for handwashing. This module is easily exported and can be used in other teaching venues and, to other groups of learners. Although every intern successfully performed correct handwashing technique after the intervention, we will continue to follow the direct observed rates at the hospital to demonstrate improvement in the clinical setting. Our hospital rates have improved simultaneously thus it is unclear how much of the improved interns rates can be attributed to the module alone. However, the module improved interns understanding of correct hand hygiene and reinforces hand hygiene's importance. The latter is a critical part of changing culture to improve hand hygiene performance .

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