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Barriers, Perceptions and Compliance: Hand Hygiene in the Operating Room & Endoscopy Suite

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Background

- Non-surgical scrub hand hygiene (HH) practices, including alcohol-based antiseptic hand rubs, provide a simple yet effective intervention in preventing the spread of infection
- Nevertheless, HH compliance is low in the operating room (OR) with 2% and 8% compliance of foaming in/out respectively¹
- Endoscopy procedure rooms (EPR) exhibit an overall baseline compliance of 21.4%³
- In 2011 there were 1.9 surgical site infections (SSI) per 100 surgeries in the US²
- VCU Medical Center's operating room exhibits a foaming in/out compliance rate of 11% (19/166)

Objective

- We examined the barriers and perceptions of HH in the OR and EPR

Methods

- Two separate but similar IRB approved voluntary, anonymous surveys containing 25 Likert-scale and 1 free response questions were distributed to health care personnel at medical conferences and in common work areas in both the OR and EPR
- Resultant data was analyzed using Statistical Analysis Software (SAS version 9.4)
- Pearson chi square and Fisher's exact tests were performed using two-way and three-way contingency tables

Results

- A total of 271 (36%, n=774) OR and 29 (33%, n=89) EPR surveys were collected
- Total self reporting of foaming in/out compliance was 73% (n=392) in the OR and 95% (n=40) in the EPR
- The greatest barrier to HH in OR was inconvenience (49%, n=187)
- The greatest barriers to HH in the EPR were inconvenience and forgetfulness (20%, 20% n=20)
- OR environmental services (EVS) personnel were aware of the HH policies (100%, n=14)
- The importance of HH was emphasized in EVS training (80%, n=15)

Table 1. OR Personnel Survey Responses

Self reported questionnaire (yes or agree/strongly agree unless specified)	Licensed ⁴ Providers	Nurses and Technicians ⁵	Students ⁶	P value
Aware of HH policies for the OR at VCUHS	89% 91/102	99% 97/98	88% 30/34	<.0001
Direct supervisors role model HH	58% 43/74	89% 70/79	79% 26/33	<.0001
There is adequate HH practice in the OR at VCUHS	81% 68/84	68% 56/82	88% 28/32	.0452
Increasing HH compliance in the OR would reduce the number of HAIs	71% 49/69	92% 77/84	86% 25/29	.0029
Increasing HH compliance in the OR would reduce the number of SSIs	71% 50/70	91% 70/77	89% 24/27	.0050
Comfortable addressing a supervisor's HH compliance	53% 39/73	76% 62/82	19% 6/31	<.0001
Comfortable addressing a non-supervisor's HH compliance	83% 63/76	90% 78/87	46% 13/28	<.0001
Without prior scrubbing, how often do you foam in	68% 50/73	85% 69/81	86% 24/28	.0253
Without prior scrubbing, how often do you foam out	50% 39/78	79% 63/80	74% 20/27	.0004
How often do you see supervisors comply with HH practices	66% 38/58	85% 55/65	84% 21/25	.0006
How often do you see non supervisors comply with HH practices	69% 40/58	74% 43/58	96% 25/26	.0237
Have you ever felt pressured to practice HH (Once or More)	43% 42/97	35% 34/97	74% 26/35	.0003
Have you ever felt pressured to not practice HH (Once or More)	7.0% 7/100	4.1% 4/97	8.6% 3/35	<.0001

Conclusions and Implications

- Despite poor observed HH compliance, the majority of OR and EPR respondents are aware of HH policies and the benefits in reducing HAIs
- There is adequate access to foam in the OR/EPR and it is physically tolerated
- Although HH practices are encouraged in both areas, OR/EPR managers poorly role model HH
- OR nurses are empowered HH advocates, knowledgeable of the benefits of HH and may serve as change agents to improve HH compliance
- Hospitals promoting HH in the OR/EPR should:
 - Be knowledgeable of perceptions and barriers across services
 - Increase the awareness/education of HH to all providers
 - Empower employees to address colleagues' HH
 - Remind supervisors to lead by example
 - Measure HH compliance with feedback to managers and frontline providers

4. Licensed providers: MD and CRNA

5. Nurses and Technicians: RNs, Care Partners, Surgical Technicians and Anesthesia Technicians

6. Students: Medical Students and CRNA Students

7. Nurses and Technicians: RNs and GI Technicians

Table 2. EPR Personnel Survey Responses

Self reported questionnaire (yes or agree/strongly agree unless specified)	MDs	Nurses and Technicians ⁷	P value
Aware of HH policies for the EPR at VCUHS	100% 10/10	100% 17/17	N/A
Direct supervisors role model HH	50% 4/8	93% 14/15	.0329
HH compliance is important for provider safety in the EPR	100% 10/10	100% 17/17	N/A
HH compliance is important for patient safety in the EPR	100% 9/9	100% 17/17	N/A
Importance of HH was emphasized in training for working in the EPR	86% 6/7	94% 15/16	.5257
There is adequate HH practice in the EPR at VCUHS	43% 3/7	79% 11/14	.1564
Increasing HH in the EPR would reduce the number of HAIs	80% 8/10	100% 14/14	.1630
Increasing HH compliance in the EPR would reduce the number of procedure related infections	63% 7/9	100% 12/12	.1714
Comfortable addressing a supervisor's HH compliance	70% 7/10	100% 15/15	.0522
Comfortable addressing a non-supervisor's HH compliance	90% 9/10	100% 15/15	.4000
There is adequate access to foam in the EPR	100% 10/10	100% 17/17	N/A
The provided foam irritates skin (Most of the Time/Always)	22% 2/9	6.7% 1/15	.5331
How often do you see supervisors comply with HH practices (Most of the Time/Always)	75% 3/4	91% 10/11	.4762
How often do you see non-supervisors comply with HH practices (Most of the Time/Always)	86% 6/7	100% 10/10	.4118
Have you ever felt pressured to practice HH (Once or More)	70% 7/10	41% 7/17	.2365
Have you ever felt pressured to not practice HH (Once or More)	0% 0/10	0% 0/16	N/A

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