Impact of an Audit and Feedback Program on Environmental Cleaning and Disinfection in Critical Access Hospitals and Long-term Care Facilities

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BACKGROUND

- Environmental contamination increases healthcare-associated infection (HAI) risk.
- HAI risk can be reduced by effective cleaning and disinfection (C/D) practices of high-touch surfaces (HTS).
- Little is known about environmental C/D practices in critical access hospitals (CAH) and long-term care facilities (LTCF).
- We compared C/D practices in these facilities before and after implementing an objective audit and feedback program focused on HTS.

METHODS

- 2 LTCF and 2 CAH participated in the 16-week program (Table 1).
- Baseline marking of HTS in patient/resident rooms and in public areas was done with an invisible, UV-tagged gel (DAZO®, Ecolab, Figure 1) to assess thoroughness of cleaning by environmental services (EVS) professionals.
- Hands-on training of appropriate C/D practices of HTS was provided by the study team to EVS professionals in each facility following baseline assessment of cleaning thoroughness.
- Training provided to EVS leadership by the study team equipped them to implement the audit and feedback program using the UV-tagged gel.
  - ✓ Leaders conducted weekly audits of C/D practices, recorded audit data and sent data electronically to the study team for analyses.
  - ✓ The study team analyzed data and returned graphs displaying organizational aggregate and individual EVS professional performance.
  - ✓ Leaders provided regular one on one feedback and coaching to EVS professionals and posted aggregate performance graphs in common break areas to drive improved performance.
- The study team held two telephone-based coaching-sessions with EVS leaders in each facility to troubleshoot barriers during the study period.
- On-site marking of HTS was performed by the study team at the end of the study period to compare compliance with C/D of HTS pre- and post-intervention in each facility.
- Continuity-adjusted (corrected) chi-square or Fisher's exact test with two-tailed p-values were assessed and reported as appropriate, based on sample size.

Table 1. Facility Characteristics

	Type of Facility	Bed Size	Average Daily Census
Site A	CAH	25	4
Site B	CAH	16	6
Site C	LTCF	254	240
Site D	LTCF	127	120

Figure 1. DAZO® environmental surface marking system

Figure 2. Critical Access Hospital - Patient Rooms

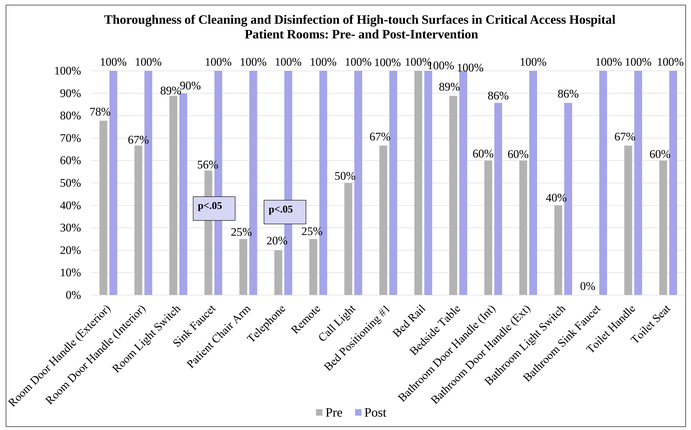

Figure 3. Critical Access Hospital - Public Areas

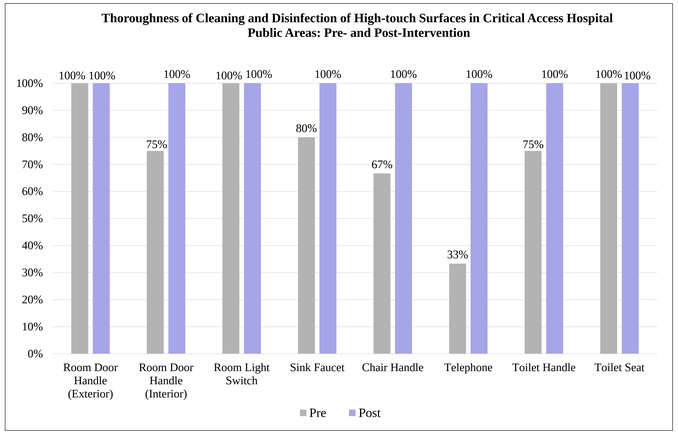

Figure 4. Long-term Care Facility - Resident Rooms

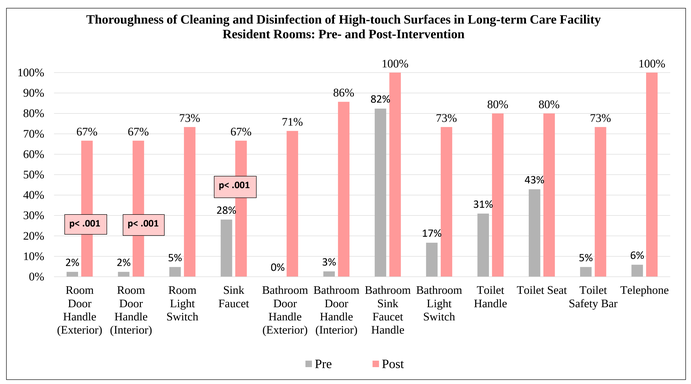

Figure 5. Long-term Care Facility - Public Areas

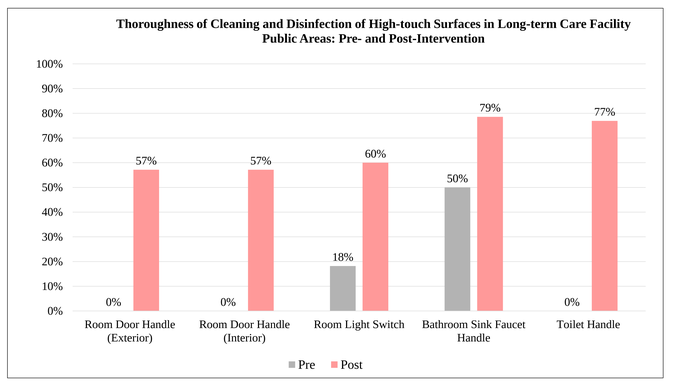

Table 2. Effectiveness of Cleaning and Disinfection of High-touch Surfaces, Pre- and Post-Intervention

Critical Access Hospitals			
	Baseline	**Post-Intervention**	***p*-value**
Observed	137	203	
Cleaned	88	199	
Compliance	64%	98%	<.001
Long-term Care Facilities			
	Baseline	**Post-Intervention**	
Observed	458	251	
Cleaned	78	183	
Compliance	17%	73%	<.001

RESULTS

- This audit and feedback program focused on HTS improved C/D practices significantly post-intervention as compared to baseline (Table 2).
- Thoroughness of cleaning and disinfection improved for all high touch surfaces (that had <100% compliance at baseline) in patient rooms and public areas both in CAH and LTCF and some of the differences were statistically significant (Figures 2, 3, 4, 5).

DISCUSSION

- Our study revealed the usefulness of an objective audit and feedback program in improving C/D of HTS using a UV-tagged marking gel in both CAH and LTCF.
- Challenges were identified with EVS professionals having difficulty with transferring the concept of HTS between patient/resident areas and public areas (i.e., improved C/D of patient room light switches, but stalled performance of C/D of public area light switches).
- Strategies such as posting laminated lists and pictures of HTS on EVS cleaning carts and in break rooms reinforced EVS professional knowledge and recognition of them, especially those for whom English was a second language.
- Larger studies are needed to identify strategies for sustaining audit and feedback programs focused on C/D practices of HTS in resource limited settings like CAH and LTCF.

DISCLOSURE

- Dr Carling is the inventor of DAZO® gel (Ecolab) and receives royalty payments from the manufacturer. All other authors have no relevant conflicts of interest with regard to the content of this poster.

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