A Point of Care Educational Intervention to Improve Hand-Hygiene compliance in Enhanced-Contact Precautions

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Background

- Enhanced-Contact Precautions (ECP) are instructions to prevent the spread of infectious diseases that are resistant to routine measures.
- The spore-forming bacteria *Clostridium difficile* is resistant to alcohol-based solutions and requires soap and water to perform adequate hand hygiene (HH) which is one of the instructions of ECP.
- HH is the most impactful intervention to prevent health-care acquired infections (1). Studies have shown that even the location of a sink can impact HH behavior (2). The COVID-19 pandemic has increased the use of alcohol-based solutions worldwide (3).
- We suspect that this shift may impact how health-care providers
 (HCP) perform HH when managing patients with ECP and developed
 an intervention to encourage soap and water instead.

Quality Improvement Objectives

- Identify baseline rates of appropriate HH in ECP (soap and water use).
- Create an intervention that encourages an increase in the use of soap and water among healthcare professionals (HCP) at Ascension Providence Rochester Hospital.
- Engage all hospital departments in the initiative.
- **SMART Goal:** Increase rates of appropriate HH in ECP by 50% in six months as measured by direct observation of HCP.

Methods

- Data was collected on ECP HH compliance by direct observation of all ECP patient rooms.
- A list of patients with a known infection from *Clostridium difficile* was generated by the infection control team daily and shared with our QI team. A member of the team would position themselves in direct view of the door of these patient rooms and record all HCP entering and leaving the room, as well as which type of HH they employed.
- Intervention: HCP who used inadequate HH were stopped and educated at the point of care. The education was provided by the authors listed and medical students and included reminding the staff member of the correct ECP HH techniques, how they work and why they are important.

Results

- Data was collected on ECP HH compliance from 10/22 10/28/2022 and 02/16 – 02/28/2023 by direct observation of all ECP patient rooms during these time periods
- 149 HH observations were performed pre-intervention and 62 post-intervention. The majority were on nursing staff, nurse assistants and physicians.
- HH compliance was defined as the use of alcohol rub OR soap and water before entering the patient room, but only soap and water qualified as compliant when leaving the patient room.
- Point-of-care education when leaving the patient room was administered to staff who were found to be noncomplaint with HH.
- HH compliance unfortunately decreased from 48% pre-intervention to 29% post-intervention during this study. During this time period, however, there was a decrease in the percentage of HCPs who completed no HH, 42% and 38% respectively.
- Use of alcohol rub increased, from 28% to 61% respectively.

Department	Pre- Intervention (Count)	Pre- Intervention (%)	Post- Intervention (Count)	Post- Intervention (%)
Nurse	59	39.6	31	50
Nurse Assistant	38	25.5	4	6.4
Physician	6	4	4	6.4
Food and Nutrition	0	0	11	17.7
Physical/ Occupational Therapy	2	1.3	4	6.4
Respiratory Therapy	6	4	4	6.4
Nusre Student	18	12.1	0	0
Transportation	6	4	2	3.2
Pharmacy	2	1.3	0	0
Lab	0	0	1	1.6
Environmental Services	9	6	1	1.6
Case Management	3	2	0	0

Table 1. Count of Observed HCP and Department

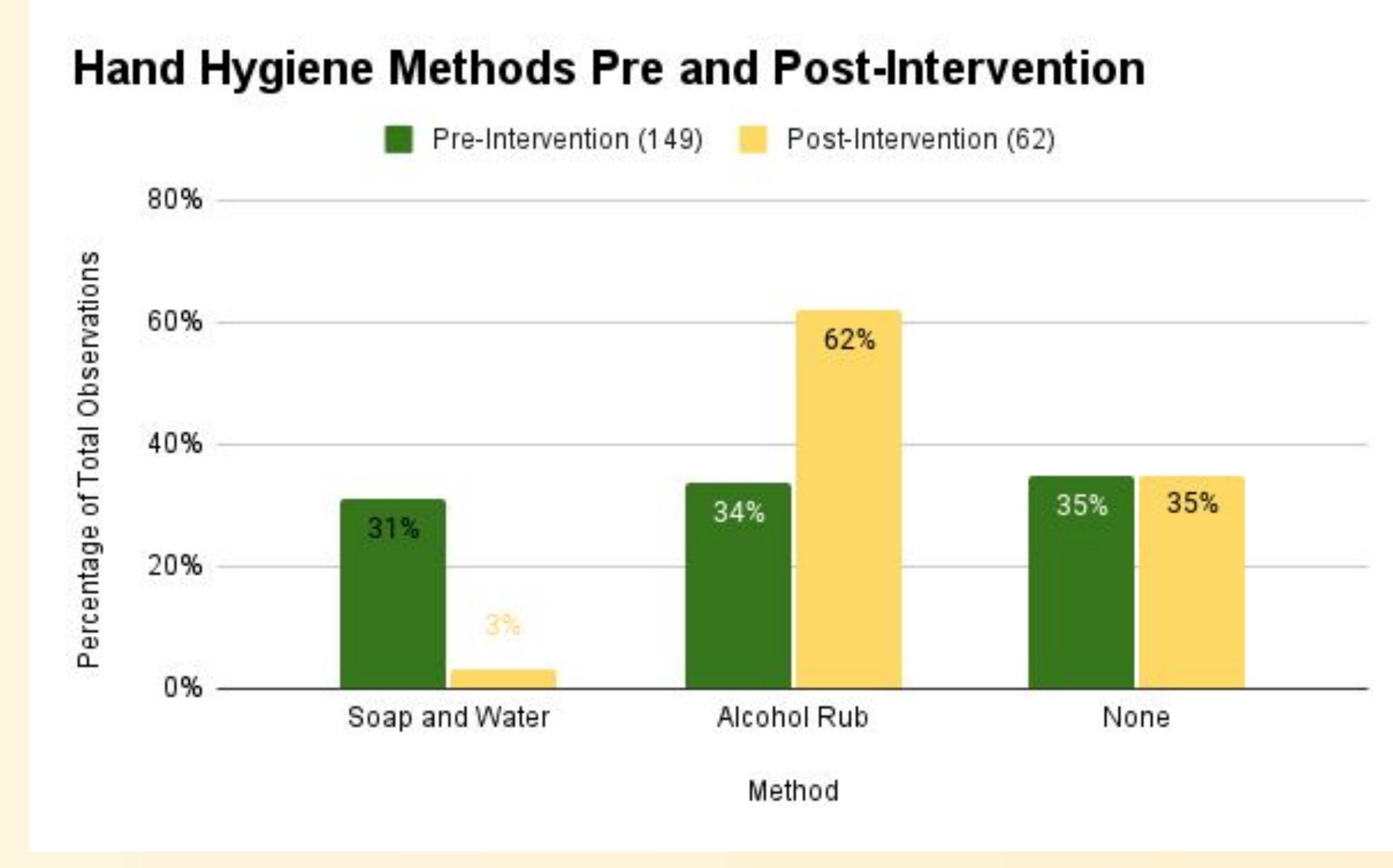


Figure 2. Hand Hygiene Methods Pre and Post-Intervention

Discussion

- We speculate that the seasonal change in compliance may be related to COVID-19 surges, regionally. Looking at the three weeks leading up to each session of observation we see a 65% increase in daily COVID cases between October 2022 and February 2023 in Oakland county (4).
- We hypothesize that during and after COVID surges, HCPs are more inclined to engage in HH but favor alcohol-based rubs which would be appropriate for COVID but inadequate for ECP.
- Based on our findings, for future investigations, we would like to survey HCPs on knowledge and barriers regarding ECP and keep hospital-specific data on the relationship to COVID-19 cases.

Public Health Implications

- Appropriate HH can mitigate the transmission of preventable infections like *Clostridium difficile* which is a public health issue, especially when cases are contracted within our hospital systems.
- Systematic and repetitive educational interventions may help to encourage appropriate HH and prevent this potentially deadly outcome. The COVID-19 pandemic has brought a focus on preventing spread of COVID-19 but may have had an impact on Clostridium difficile infections that are not susceptible to the same precautions.

Citatio

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