

care. Inadequate HH supplies in a resource-constrained setting like Bangladesh demonstrates a lack of leadership in prioritizing, promoting, and investing in infection prevention and control. The findings of this study might help to motivate and design interventions for HH compliance, which will help reduce HAIs in the hospital setting.

**Funding:** None

**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s46–s47

doi:10.1017/ash.2022.145

**Presentation Type:**

Poster Presentation - Poster Presentation

**Subject Category:** Hand Hygiene

**Electronic hand hygiene monitoring systems: Perceptions and behaviors**

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**Background:** Electronic hand hygiene monitoring systems (EHHMSs) are being increasingly utilized to improve hand hygiene outcomes. Following the implementation of an EHHMS at a large, academic medical center, an interdisciplinary team developed a web-based survey to gather information on employee's perceptions and behaviors surrounding the EHHMS. **Methods:** In total, 1,273 complete responses were collected. Responses were analyzed using Stata version 16 statistical software with 2-tailed tests and .05 significance level. Multivariate logistic regression models were constructed to examine factors associated with negative perceptions of the EHHMS and of wearing the EHHMS radiofrequency identification (RFID) badge. Supporting qualitative analysis was performed using Atlas.ti version 9 software. **Results:** The general sentiment toward the monitoring system was neutral (38%) to negative (37%). The same was true for respondents' sentiments toward wearing the RFID badge. Of respondents who interact with the system, 48% feel that the system does not capture hand hygiene data accurately. The EHHMS had limited influence on employee's hand hygiene habits: 27% significant influence and 54% little-to-no influence. Respondents of younger age, those employed as a registered nurse, scientist, physician, or master's level clinician, and those working at the satellite hospital were significantly more likely to have negative perceptions of the EHHMS. Negative perceptions were also significantly more likely among respondents familiar with the institution's hand hygiene policy and those who had a negative opinion of seeing the hand hygiene data of others. Negative perceptions of the EHHMS RFID badge were significantly more likely among respondents of younger age, those employed as a registered nurse, scientist, physician, or master's level clinician, those working at the satellite hospital, and those with a negative perception of seeing the hand hygiene data of others. Employment in a role providing direct patient care and those employed at the institution for >1 year were also significantly more likely to have a negative perception. **Conclusions:** Negative and neutral opinions dominate perceptions of the EHHMS considered in this analysis. Respondents expressed concerns with accuracy of the EHHMS data collection. The system's limited influence is likely a result of limited familiarity, limited performance feedback, and employee frustration and concerns. These findings provide opportunities for improvement in future implementation of EHHMS. Based on these results, implementation of EHHMS would be best supported by coordinated backing from administration and leadership, advanced planning and education, and frequent, effective communication. Additional research and evaluation are required to optimize implementation of electronic hand hygiene monitoring systems, with the goal of improving hand hygiene outcomes.

**Funding:** None

**Disclosures:** None

*Antimicrobial Stewardship & Healthcare Epidemiology* 2022;2(Suppl. S1):s47

doi:10.1017/ash.2022.146

**Presentation Type:**

Poster Presentation - Poster Presentation

**Subject Category:** Hand Hygiene

**Local production of alcohol-based hand rub to optimize hand hygiene facility in healthcare settings during COVID-19**

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**Background:** Hand hygiene (HH) remains arguably the most effective way to prevent healthcare-associated infections (HAIs) and ultimately improve the prospect of patient safety. Studies have shown that as many as 50%–70% of infections are transmitted through hands due to poor HH practices. HH with use of alcohol-based hand rub (ABHR) is preferred over handwashing with soap and water because of its wide microbial efficacy, time efficiency, and improved skin tolerance. It is also well known that ABHR can be used as an effective prevention measure during disease outbreaks. Before and during the COVID-19 pandemic, health facilities in Sierra Leone have been challenged with HH infrastructural problems such as lack of sinks with constant running water. Before Sierra Leone recorded its first case of COVID-19 in March 2020, the consumption of ABHR in the health facilities was estimated to be 24,000 L per year, which doubled during the COVID-19 pandemic. The demand for commercially available ABHR increased, leading to acute shortages. The estimated cost of the locally produced ABHR ~\$2–3 per 500 mL, although it may cost up to \$10 for 500 mL when buying imported ABHR products from the local market. **Methods:** All ingredients were procured locally, and ABHR production was based on WHO formula 1. The production was set for 12 months to cover the estimated annual consumption of ABHR, with periodic monitoring to ensure effective distribution and availability at the point of care. Analysis of assessment results in 12 hospitals from the pre-

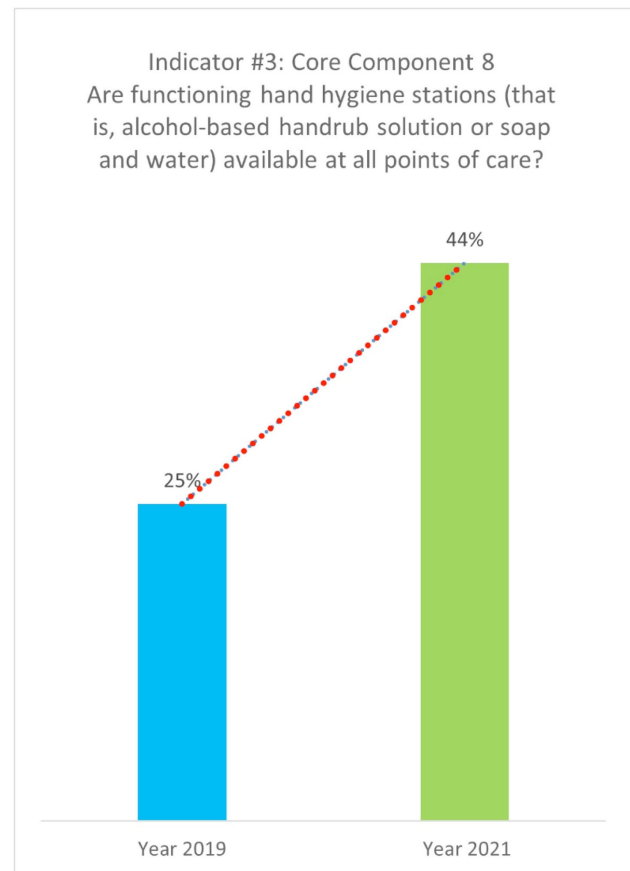


Fig. 1.