

cluster investigations, we determined that 9 investigations merited follow-up. Collectively, these 9 investigations involved 21 patients and required 115 minutes to review in ISEpi and an additional 70 minutes of review outside of ISEpi. After review, 6 investigations were deemed unlikely to represent a transmission; the other 3 had potential to represent transmission for which interventions would be performed. **Conclusions:** This study offers an important framework for adaptation of existing infection control workflow strategies to leverage the utility of rapidly integrated clinical and WGS data. This workflow can also facilitate time-sensitive decisions regarding sequencing of specific pathogens given the preponderance of available clinical data supporting investigations. In this regard, our work sets a new standard of practice: precision infection prevention (PIP). Ongoing effort is aimed at development of AI-powered capabilities for enterprise-level quality and safety improvement initiatives.

Funding: Philips Healthcare provided support for this study.

Disclosures: Alan Doty and Juan Jose Carmona report salary from Philips Healthcare.

Doi:10.1017/ice.2020.1119

Presentation Type:

Poster Presentation

Qualitative Visual Assessment of Hand Hygiene Product Effectiveness

Mary Czaplicki, GOJO Industries; Shorook Attar, GOJO Industries; Kristen Green, GOJO Industries; Rachel Leslie, GOJO Industries

Background: Effective hand hygiene (HH) is an essential preventative measure for the reduction of hospital-acquired infections (HAIs). Commonly used HH products include alcohol-based hand rubs (ABHRs), antimicrobial soaps, and nonantimicrobial soaps. In vivo clinical studies have demonstrated that levels of bacterial reduction can vary based on the HH product type, formulation, and dose. It has been reported that ABHRs provide the greatest reduction in bacteria, followed by antimicrobial soaps.

Objective: We examined the effects of products representative of 3 HH categories on artificially soiled hands, using a hand-stamp procedure. The hand-stamp images provide a clear visualization of product effectiveness and can be used as an educational tool to promote the importance of proper hand hygiene using different product formats. **Method:** Three commercially available formulations were evaluated in this study, a mild nonantimicrobial soap, an antimicrobial soap containing chloroxylenol (PCMX), and an ABHR

containing 70% v/v ethanol. Prior to the hand stamp procedure, the participant's hands were prewashed with 5 mL of a nonantimicrobial soap and dried. An inoculum of *Serratia marcescens* containing $\sim 1 \times 10^9$ CFU/mL was prepared as described in ASTM E2755. A 0.2-mL aliquot of the inoculum was dispensed onto the palm of the subject's hand and spread by rubbing over the entire surface of both hands. Following a 30-second dry time, one of the subject's hands was gently pressed onto the surface of a large petri dish containing tryptic soy agar to obtain a baseline image. Following the baseline sample, 1 pump of the selected test product (~ 0.9 mL for soap or 1.1 mL for ABHR) was applied to the participant's hands. For soap applications, hands were vigorously rubbed for 30 seconds followed by a 30-second water rinse. For ABHR, product was rubbed by the user until dry. The hand-stamp procedure was repeated following product application using the participant's other hand. **Results:** Clear qualitative reductions in bacteria were observed with each of the HH interventions. The greatest reduction was observed following the application of ABHR. Antimicrobial soap was less effective than ABHR but more effective than nonantimicrobial soap. **Conclusions:** The qualitative visual model demonstrates the effectiveness of various HH interventions and correlates with log reductions observed in traditional efficacy test methods. Future efforts should explore hand-stamp repeatability and image utilization to support HH improvement efforts in healthcare systems.

Funding: GOJO Industries provided support for this study.

Disclosures: Mary Rose Czaplicki reports salary from GOJO Industries.

Doi:10.1017/ice.2020.1120

Presentation Type:

Poster Presentation

Rapid Ultrasensitive Detection of *Clostridioides difficile* Toxins in Stool Samples Using A Single-Molecule Counting Method

Don Straus, First Light Diagnostics, Inc.; Ann Zuniga, First Light Diagnostics, Inc.; Alejandra Garces, First Light Diagnostics, Inc.; Andrew Tempesta, First Light Diagnostics, Inc.; Adam Williams, First Light Diagnostics, Inc.; Bill Lauzier, First Light Diagnostics, Inc.; Jennifer Hickey, First Light Diagnostics, Inc.; Sadanand Gite, First Light Diagnostics, Inc.; Selina Clancy, First Light Diagnostics, Inc.; Yismel Rosario, First Light Diagnostics, Inc.; Bruce Walsh, First Light Diagnostics, Inc.; Jayson Bowers, First Light Diagnostics, Inc.

Background: *Clostridioides difficile* infection is considered an urgent antibiotic resistance threat by the CDC, accounting for



Fig. 1.