

Fig. 2.

COVID-19 era (2019) to the COVID-19 era (2021) was performed based on the WHO IPC Assessment Framework (IPCAF) indicator. **Results:** With an average monthly production of 3,482 L, a total of 41,780 L ABHR was produced and packaged in branded 500-mL containers for distribution to healthcare facilities. This quantity exceeded the estimated demand for ABHR during the COVID-19 pandemic. The data show a considerable increase (from 25% to 44%) in the number of available and functioning HH stations with mainly locally produced ABHR. Results from the monitoring of 575 peripheral health units (PHUs) in 2021 also showed that >67% of PHUs had HH facilities in all clinical areas and that the locally produced ABHR was used in 79% of these HH stations. **Conclusions:** Locally produced ABHR has shown to be a cost-effective and evidence-based intervention to optimize HH at the point of care. Therefore, localities are encouraged to undertake this realistic and sustainable approach to address issues of acute shortage of ABHR, especially during a global pandemic.

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### Presentation Type:

Poster Presentation - Poster Presentation

**Subject Category:** Hand Hygiene

**A pilot study of using thermal imaging to assess hand hygiene technique**

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**Background:** Although substantial efforts have been made to improve hand hygiene (HH) compliance among healthcare personnel (HCP), much less attention has been devoted to improving HH technique. To date, no standard method for assessing HH technique has been widely adopted by hospitals. Because applying an alcohol-based hand sanitizer (ABHS) transiently reduces adjacent skin temperature, we explored the feasibility of using thermal imaging to determine whether ABHS has been applied to fingertips and thumbs, areas often missed by HCP. **Methods:** A convenience sample of 12 Quality and Safety staff volunteered for the study. A FLIR One Pro thermal camera attached to an iPhone was used to obtain thermal images of the palmar aspect of each volunteer's dominant hand before applying ~1.8 mL ABHS gel, immediately after hands felt dry, and at 1 minute and 2 minutes later. Spot temperature readings of the mid-palm area and middle finger were recorded at each time point. The sex and estimated hand surface area (HSA in cm<sup>2</sup>) of each volunteer were recorded. **Results:** In 11 of 12 volunteers, thermal imaging showed a significant decrease in mid-palm and middle finger skin temperatures after performing HH (paired *t* test *P* < .01 for both), especially for the fingers and thumb, indicating that ABHS was applied to these areas (Fig. 1). When HH was performed with ABHS and the thumb was purposefully excluded, the lack of colorimetric change in the thumb was visible (Fig. 2). The palmar area showed the least drop in temperature and reverted to normal temperature more quickly. Immediate post-HH mid-palm temperature change ranged from +0.5 to -2.7°C, with a significantly greater mean temperature drop with small or medium hands than with large hands (Mann-Whitney

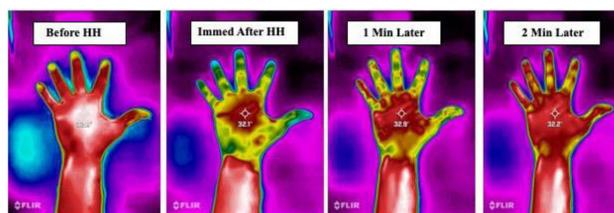


Figure 1. Thermal images of a volunteer's hand before, immediately after HH, and 1 and 2 minutes later



Figure 2. Thermal images illustrating HH using ABHS where the thumb was purposefully excluded

*U* test *P* = .048). With some volunteers, the color changes lasted 1 minute or longer. However, for persons with “cold” fingers at baseline, it was more difficult to draw conclusions from the gross assessment for colorimetric change. **Conclusions:** Thermal imaging of HH performance shows promise as an HH assessment technique and may be useful to determine whether HCP have applied ABHS to their fingertips and thumbs. Additional studies involving a much larger number of HCP under varying conditions are needed to determine whether thermal imaging can be a practical modality for teaching HH technique, for routinely monitoring HH technique, or as a research tool for studying the dynamics of HH using ABHS.

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### Presentation Type:

Poster Presentation - Poster Presentation

**Subject Category:** Infection Control in Low and Middle-Income Countries  
**Prescribing of common outpatient antibiotics for respiratory infections in adults amid the COVID-19 pandemic in Brazil**

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**Background:** Inappropriate antibiotic use for SARS-CoV-2 infection has the potential to increase the burden of antibiotic resistance. Brazil experienced spread of a new SARS-CoV-2 variant in the fourth quarter (Q4) of 2020, resulting in the highest case counts in Latin America, raising concerns of antibiotic overuse. To better understand antibiotic use during the COVID-19 pandemic, we evaluated prescribing changes in antibiotics commonly used for outpatient respiratory infections (amoxicillin-clavulanate, azithromycin, and levofloxacin or moxifloxacin [AALM]) among adults aged ≥20 years in Brazil in 2020 versus 2019. **Methods:** We analyzed the IQVIA MIDAS medical data set for AALM prescribing by age group (20–39, 40–59, 60–64, 65–74, ≥75 years), comparing Q4 2020 rates to those in Q4 2019. We estimated crude rate ratios and 95% CIs using prescription number as the numerator (assuming Poisson counts) and age-adjusted population as the denominator. We also determined the most common prescribing specialties for each antibiotic across both time points. **Results:** Compared to Q4 2019, Q4 2020 azithromycin prescribing increased among all ages, ranging from 90.7% (95% CI, 90.0%–91.4%) in those aged 20–39 years to 927.2% (95% CI, 912.9%–941.7%) in those aged 65–74 years (Fig. 1). Amoxicillin-clavulanate prescribing decreased for most ages, ranging from -78.4% (95% CI, -78.7% to -78.1%) in those aged 60–64 years to -25.8% (95% CI, -26.6% to -25.0%) in those