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It is everyday practice to utilize aseptic techniques, which are simply actions taken to prevent the accumulation of bacteria and other microbes to prevent diseases and their spread. Handwashing is an important aspect of hand hygiene because hands pick up the microbes from surfaces and are easily transported from person to person through direct contact or indirect contact. According to the CDC and WHO, many diseases are spread by not washing hands effectively, therefore hand hygiene is important everywhere in society, especially in healthcare where the spread of disease can mean life or death.

In this study, we analyzed data collected from the student population of microbiology classes from the University of Charleston in West Virginia over the span of nine years (2014 to present). We measured the number of colony forming units (CFU) from students' hands prior to manipulation (control), using just water, using soap and water, and using hand sanitizer. We hypothesized that handwashing and use of antimicrobial aids such as hand sanitizer will reduce the number of bacteria on hands compared to controls. An analysis was also performed comparing pre-pandemic and post-pandemic data to determine if handwashing behaviors have changed behavior which would alter the normal microfauna on the hands. This analysis revealed that there was a significant difference between handwashing techniques ($p < 0.001$). There was a difference in formation of colony forming units between pre and post pandemic times ($p < 0.001$).