

A Comparison of Bacterial Contamination of Nine Public Surfaces

Holtom, Lindsey (School: Hillcrest High School)

My research examines the level of bacterial contamination of nine commonly touched, public surfaces. Nine surfaces sure to be touched several times a day by a diverse pool of people were chosen. Included were a gas pump handle, a medical office door handle, a high school door handle, a grocery store shopping cart handle, a public restroom toilet handle, and an ATM touchpad. a dollar bill, a smartphone screen, and a laptop keyboard. The surface of the gas pump handle was expected to cultivate the most bacteria because it would be the most commonly touched, yet least commonly disinfected surface. A cotton swab was used to collect a bacterial sample from each surface and inoculate an agar plate with a clean swab as a control. The treated agar plates were cultured for two weeks. The dirtiness of each sample was determined by the percentage of the petri dish that the bacteria grew to cover. The dollar bill bacteria cultivated to cover over 75% of the Petri dish, a much larger percentage than any other sample. The surface of the smartphone touchscreen was the least dirty because the bacteria it grew covered only 20% of its Petri dish. The results of the research disproved the hypothesis because the surface of the gas pump handle did not cultivate the most bacteria. These results showed every single touchable surface contained germs. This research demonstrates the need for all public surfaces to be regularly disinfected in order to prevent the spread of illness.

Awards Won: