# Use of a Safe Ultraviolet Sanitizing Station in the Cedarville University School of Pharmacy

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## BACKGROUND

The ongoing COVID-19 pandemic has ushered in several important societal behavioral changes (e.g., mask wearing, hand washing, and social distancing) to lessen the spread of the virus.[1] Some of these non-pharmaceutical interventions (NPIs) have been implemented in many parts of the world for well over a year. Many institutions began voluntarily installing gel and liquid hand sanitizing stations that eliminate bacteria and viruses from hands. These same hands, however, would almost immediately engage with personal devices (e.g., smart phones, glasses, etc.) that may already be harboring these pathogens. Another need, particularly early in the pandemic, were methods to sanitize masks for reuse in front-line institutions such as hospitals. While many high-throughput, innovative mask sanitizing methods were developed, they were not readily available to the general population.[2] For non-medical providers, the Centers for Disease Control recommended that individuals sanitize their masks by washing them as part of their routine laundry. This recommendation would require individuals to own several masks or do laundry at non-optimal times to ensure a supply of sanitized masks.

## OBJECTIVE

The purpose of this project was to evaluate the use of an ultraviolet (UV) sanitizing station by graduate students within the Cedarville University School of Pharmacy.

## METHODS

A UV CLEAN Portable Phone Sanitizer (Model SAN-PH100-BK-EF) was purchased from HoMedics®. The HoMedics® sanitizer was selected based on its ease of use and its claim to optimally sanitize a device in 30 seconds. The HoMedics® sanitizer is rechargeable and was recharged every 2-3 days to ensure it was operational.

The sanitizer was strategically placed on a small table in the School of Pharmacy, Cedarville University. Alongside the sanitizing station, a sheet was provided to indicate the item that was sanitized and the date of use (Figure 1). An instruction sheet was also placed near the UV sanitizing station (Figure 2). Students were informed of the availability of the sanitizing station along with its location and the purpose of this study via email.

***Figure 1.*** UV station to evaluate the use of a publicly available device for sanitizing personal items.

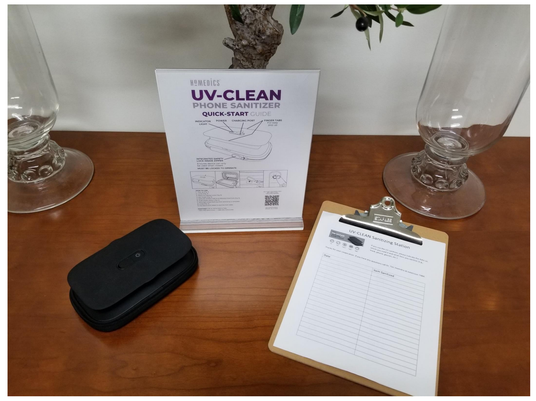


***Figure 2.*** Instruction sheet provided with UV sanitizing device.

Use of UV Clean for Sanitizing Masks and Phones

The following provide a description of how to use UV Clean station. Please following directions carefully.

If you have any problems with the device contact Dr. Tim Veenstra at tveenstra@cedarville.edu or call 937-766-7484 or visit him in office HSC 122.

How to Use

1. Pop up device
2. Unzip to open device
3. Place face mask or phone inside
4. Zip device closed making sure zipper tab is in proper position
5. Push power button to turn device on. Blue light should start flashing indicating device is working
6. When sanitizing is complete the blue light will stop flashing
7. Unzip device and fold mask in opposite direction to sanitize other sides of mask or flip phone over to sanitize other side of phone.
8. Repeat steps 3-6
9. Remove mask and zip up device for next user.

Students could use the sanitizing station to treat any item of their choosing if it fit within the compartment. The notification was sent to approximately 170 P1-P4 students; however, less than 120 students were on campus during the time of the study.

The UV sanitizing station was made available for a total of 24 user days, during facility hours (i.e., Mon-Fri 7 am - 8 pm). The total number of sanitizing station uses, and the specific items that were sanitized, were recorded, and analyzed.

## Results

***Use of UV CLEAN Sanitizer***

The UV CLEAN Portable Phone Sanitizer along with user instructions was made available for public used for 24 days. Over this time, the sanitizing station was used by students a total of 38 times. The most sanitized items were phones (79%), followed by glasses (11%), keys (6%), masks (3%), and watches (3%) as shown in Figure 3.

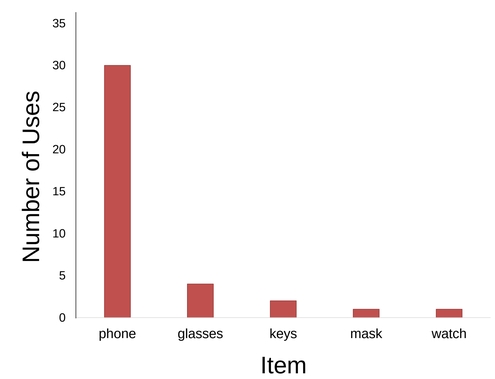


***Figure 3.*** Bar graph showing number of times specific items were treated using the UV sanitizing station.

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## Conclusions and Discussion

The current COVID-19 pandemic has made the general population more aware of the presence of pathogens within our environment. Several steps are being used to protect individuals from contracting or transmitting pathogens (e.g., vaccination, social distancing, mask wearing, sanitizing, etc.). While students have access to vaccines and can readily control social distancing and mask wearing, they generally cannot control the sanitizing of their environment outside of their own personal hygiene. While gel and liquid-based hand sanitizers are available for public use in a vast majority of workplaces, restaurants, schools, etc., devices for sanitizing devices such as phones, masks, watches, etc. are generally only available for use in health care settings and only for health care workers.

There are several commercially available UV sanitizing for personal in-home use; however, they are not routinely owned by households within the U.S. The cost would be a significant factor for preventing university students from purchasing such a device. Much like the presence of hand sanitizing stations, placing UV sanitizing stations in high-traffic public areas would encourage their use enabling more individuals to keep their routinely used devices free of infectious pathogens.

Like many of those previously, the COVID-19 pandemic will end and likely become endemic during the first half of 2022, as the number of people who gain immunity from vaccination and natural infection increases. It could be argued that this switch will make the use of publicly accessible sanitizing stations obsolete. It is more likely, however, that their use will continue since the COVID-19 pandemic has created new normative societal behaviors related to pathogen avoidance.[3] Not only has this pandemic given individuals a greater awareness of infectious diseases and how to limit their spread, but also altered how people view other health-related lifestyle changes such as diet and mental wellness. This study suggests that publicly available UV sanitizing stations could be a popular tool in the future battle against the spread of infectious pathogens.

## ACKNOWLEDGEMENTS

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## References

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