



Harm reduction strategies and positive behaviors of medical providers in mitigating the effects of COVID-19 among HIV-infected children and HIV-exposed infants.

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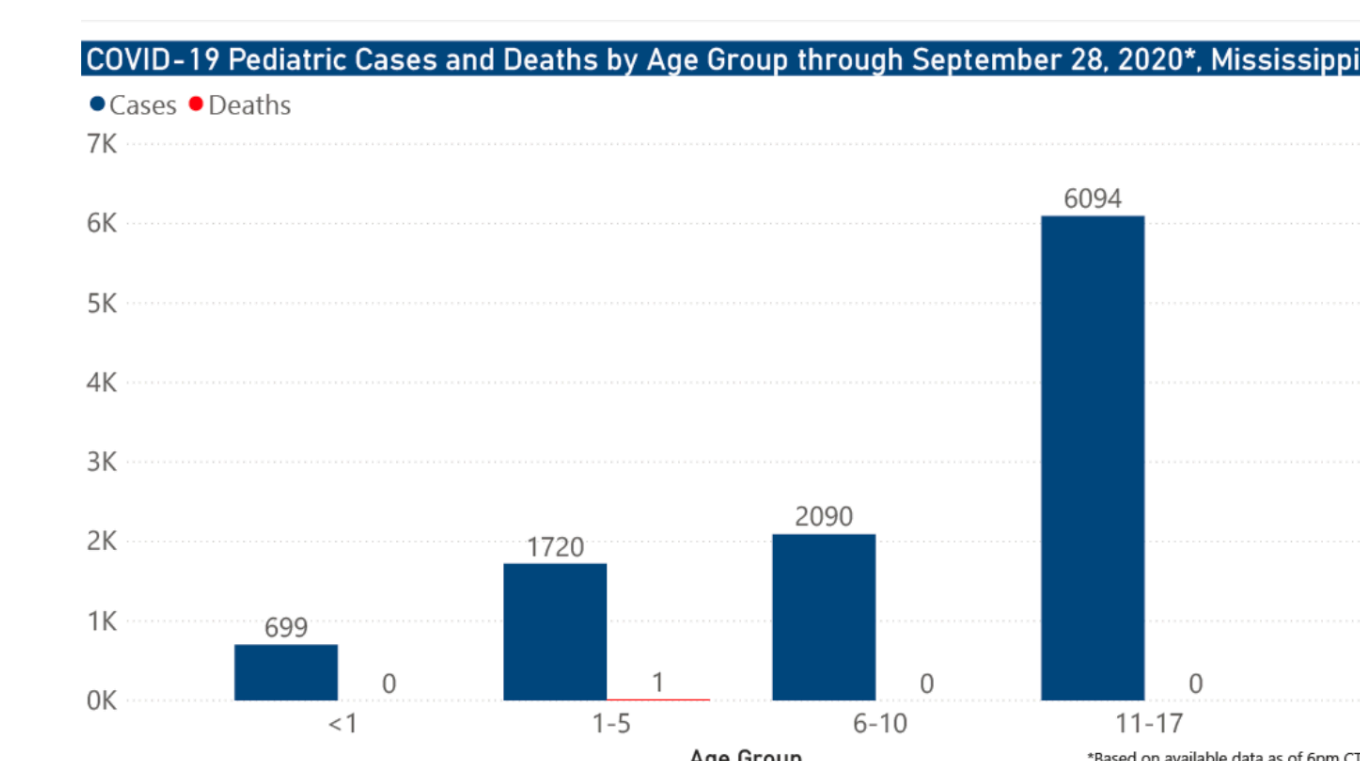
INTRODUCTION

Hand hygiene is one of the most widely accepted and practiced forms of infection control. According to CDC guidelines, hand washing with soap and water for at least 20 seconds or the use of alcohol-based hand sanitizer if soap and water is unavailable is critical to stopping the spread of pathogens and infection (CDC 2020). Particularly when addressing the novel Coronavirus Disease 2019 (COVID-19), hand hygiene becomes particularly relevant, as it is one of the few proven ways to combat this virus.

Kratzel et al. (2020) found SARS-CoV-2 to be inactivated by WHO-recommended formulations I and II, consisting of 80% ethanol and 75% 2-propanol, respectively. Given that alcohol rubs are generally more available than soap and water, alcohol-based sanitizer was included in addition to soap and water as harm reduction strategies for this study.

With over 7 million cases and over 200 thousand deaths in the United States alone, COVID-19 has proved catastrophic (CDC 2020). Children represent about 11% of these reported cases, according to the American Academy of Pediatrics (2020). Mississippi, in particular, is continuing to have increasing number of cases in children. (See graphs below.) These cases will continue to rise, especially with the most recent “Safe Recovery” order, which has lifted the statewide mask mandate.

Adding to the complexity of treating COVID-19 in a pediatric patient is treating one who is also infected with Human Immunodeficiency Virus (HIV). Limited data is available on the disease course of COVID-19 among children with HIV and among HIV-exposed infants. Thus, it is sensible to maximize the preventive effort against SARS-CoV-2 infections in this generally vulnerable group of patients using harm reduction strategies and positive behaviors provided by medical providers.



COVID-19 Pediatric Cases and Deaths by Conditions in Deaths by Age Group through September 28, 2020. Mississippi

AIM

To test the hypothesis that preventive interventions (periodic reminders through Telehealth and sending a video clip regarding the 4 principles of hand awareness) will help achieve a high frequency of hand hygiene performance and prevention of COVID-19.

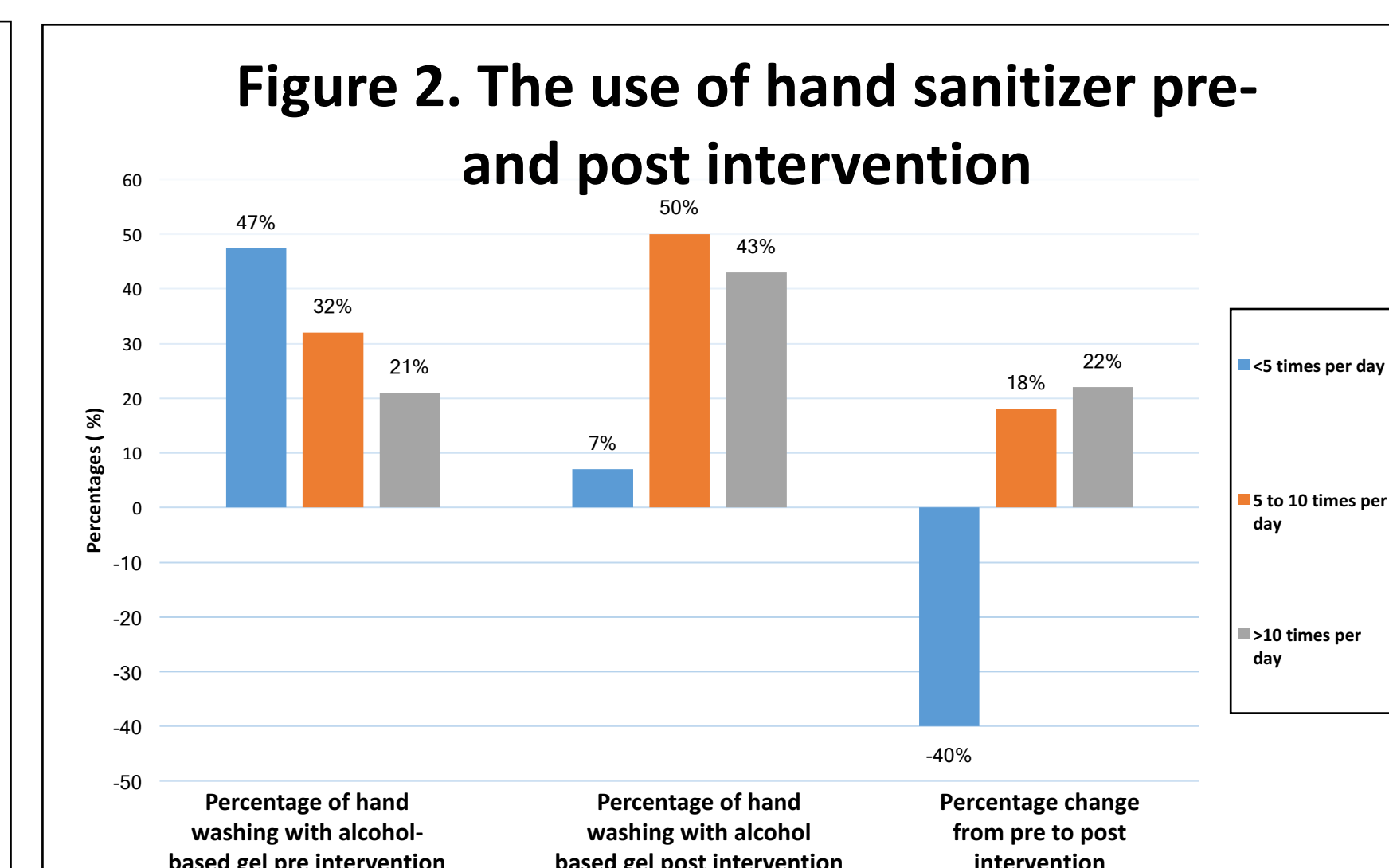
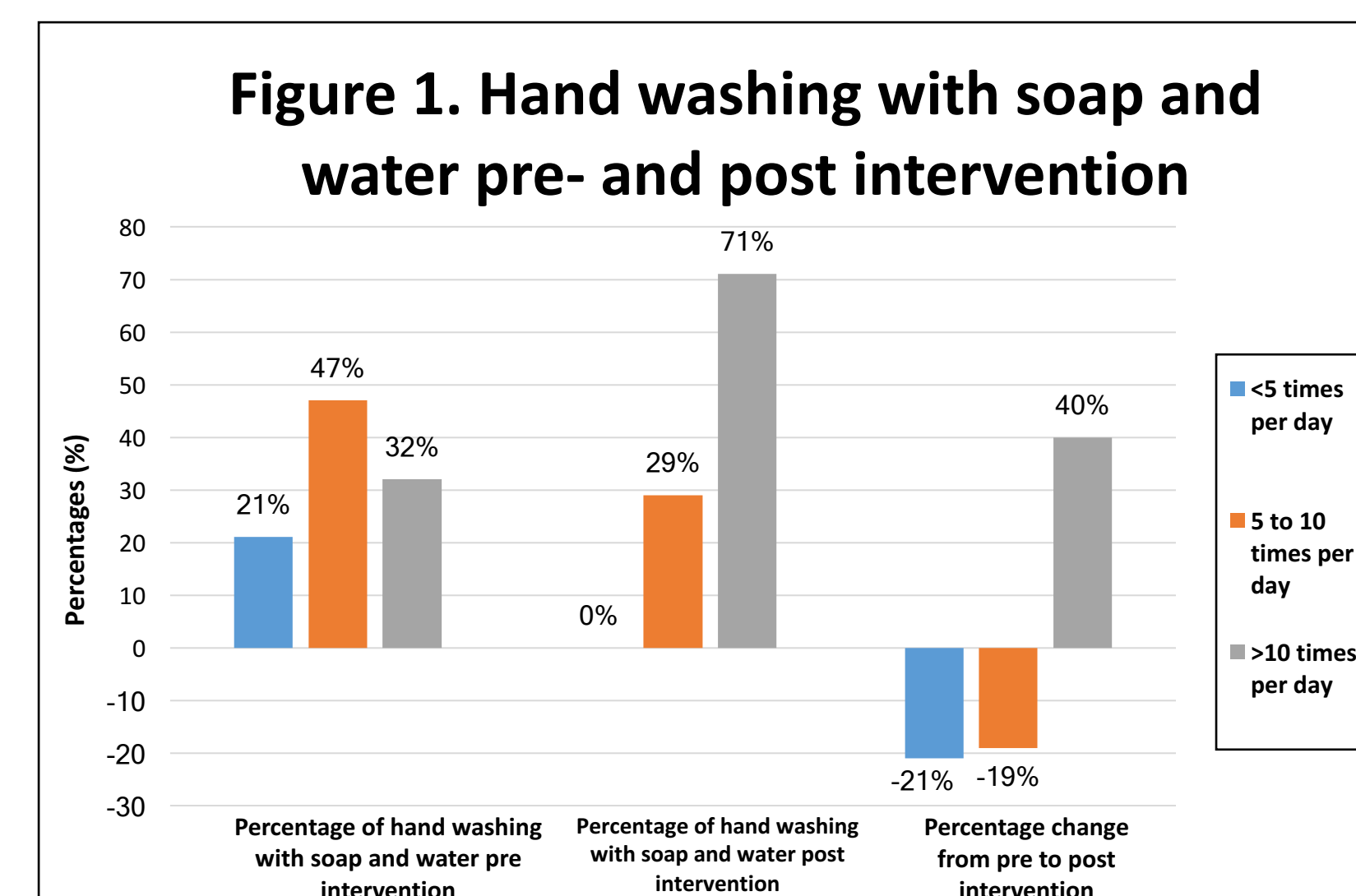
METHODS

A quality improvement project was started in the 2nd week of April in our Children’s Hospital Subspecialty Clinic caring for children with HIV and HIV-exposed infants on antiretroviral therapy (ART). All patients were offered Telehealth at baseline and at 4 weeks after interventions, while ensuring that they remained adherent to their ART, with enough supply of ART for 4 weeks. Harm reduction strategies (hand washing, use of hand sanitizer & face mask, social distancing, and shelter-at-home) were discussed via telehealth and video clips. The goal was an increase of hand hygiene performance by 25% at 4 weeks after interventions. The number of hand washing and hand sanitizer use per day was categorized as < 5, 5-10, and >10 per day and was analyzed by Cochran-Armitage test for trend. Adherence to ART was categorized as < 50%, 50-90%, >90-100% per week. For statistical analysis, we calculated percentages with a 95% confidence interval. A p-value of <.05 was considered significant.



RESULTS

Intervention significantly improved the frequency of hand washing more than 10 times a day. There was a 40% increase with 95% confidence interval from 4.64% to 62.59% (P=0.0291). (Figure 1) Intervention improved significantly the frequency of use of hand sanitizer more than 5 times per day. There was a 40% increase with 95% confidence interval 8.55% to 61.75% (P=0.0147). (Figure 2)



DISCUSSION

Harm reduction strategies, including hand washing, face masks, eye protection, shelter-in-place orders, and practicing social distancing when encouraged via telehealth, telephone and video clips are critical in preventing the spread of COVID-19, particularly among our vulnerable patients such as children with HIV infection and HIV-exposed infants. As individuals are going back to work, communities are becoming more exposed to COVID-19, and masks and hand hygiene must continue to play a critical role in our daily lives, as they are essential to combatting the spread of the virus. With a looming second wave of COVID-19 cases as we enter the fall and winter seasons, these harm reduction strategies prove absolutely crucial. The University of Washington’s Institute for Health Metrics and Evaluations predicts that, with about 95% of Americans wearing masks, thousands of COVID-19 related deaths can be prevented (2020).

Moving forward, we will also do a quality improvement project, which provides preventative tools like antibacterial soap, hand sanitizer, face masks and educational material to children and their families in order to better limit the spread of COVID-19 among children with HIV infection and the families with HIV-exposed infants.

CONCLUSION

The degree of hand hygiene among the families of children with HIV and HIV-exposed infants was increased 4 weeks after the intervention consisting of harm reduction strategies and positive behaviors by medical providers. All patients remained healthy and adherent to ART 4 weeks after the project began. COVID-19 pandemic is an opportunity for impactful health education that can positively affect the patient’s life.

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