

# An HEP MPH Student Perspective: My Volunteer Experience

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Rachel Gold

Since January of 2021 I have been volunteering with Kylie Sage, an epidemiologist with the Utah Department of Health (UDOH). I initially started working with Kylie because I needed to complete my APE and wanted my projects to be epidemiology related. However, I decided to continue to volunteer with UDOH because I wanted to continue to grow in my epidemiology skillset. The projects I worked on for my APE were COVID-19 related. One study looked at comparing hospitalized COVID-19 cases to hospitalized influenza cases and seeing what differences they presented. The other project was to determine how a unique and robust COVID-19 testing site being implemented in a traditionally underserved area of Utah altered the spread of COVID-19 in the nearby locations.

The first project was a lot of fun to do and was a lot of quantitative work. The shortened version is that we did a case-control of our hospitalized COVID to the hospitalized influenza cases, so we had the same number of cases as well as similar demographics (sex-age matched). Then we compared hospital length of stay, mechanical ventilation rates, and mortality rates. When including

outliers for both cohorts (COVID and influenza), length of stay was significantly different with COVID-19 having a higher length of stay in the hospital. Mechanical ventilation rates were not significantly different between the groups, but mortality rates were significantly different with the COVID-19 cohort having significantly higher rates. Then we did a secondary analysis comparing the outcome diseases between the cohorts (diseases caused by getting COVID of the flu, i.e. heart disease, kidney disease, etc.). I won't go into nitty-gritty detail, but there were about 8 different outcome diseases we focused on and all but 2 were significantly different between the cohorts, but they changed on which had the higher significance rates.

The second project was interesting because we were doing a linear regression analysis to see how the areas near the robust COVID-19 testing had a change in incidence rate of COVID-19 compared to Salt Lake County (the small areas were located in Salt Lake County). We also compared how their demographics were different compared to Salt Lake County. Overall, we found that in both small areas where the testing site was located there was a significant decrease in incidence of COVID-19 cases compared to Salt Lake County. This study showed a promising decrease in incidence which warrants UDOH to do a time-series analysis to fully determine to what extent this type of testing site has decreased the rate of COVID-19 and to determine if it is a site that should be implemented in other places as well.

Recently, Kylie has taken a job offer to work at the Salt Lake County Health Department starting her own epidemiology surveillance team. Not only was she my mentor throughout all this, but she became my friend. I'm excited for her and her new job, but sad for me because I will miss her. But I am continuing to work with Randon Gruninger and Hannah Rettler. Randon is the symptomatic surveillance epi at UDOH and Hannah is the epi who is the expert of rabies. We are beginning to work on a project where we will build a query that will hopefully be able to detect animal bites in the ESSENCE database so we can adequately track what hospitals may need post-exposure prophylaxis in case of rabies and how many doses they should each have on hand at all times. The rabies vaccine is extremely expensive, it has a relatively short shelf-life, and most insurances won't cover it, so it is important to know how many to have on hand so that the vaccines aren't wasted and so that they always have enough for any patient who might have been exposed to rabies. Because of how deadly rabies is once someone develops symptoms it makes this an important tool for UDOH, and other states, to have. Most states don't have a query like this, so creating it and doing a study on it would

allow for us to likely publish in MMWR to be a resource for all other states' symptomatic surveillance epidemiologists.

I am excited to continue volunteering with UDOH and to continue to learn more about epidemiology through this. I am grateful for Kylie, Randon, and Hannah for taking me on and trying to teach me how to be a better epidemiologist. I am grateful for the opportunity to learn and help in this way.