Project Summary
The World Health Organization published updated guidelines for managing persons with advanced HIV disease (CD4 cell count <200 cells/mm³) in 2017. Two separate studies have shown this package of care reduced mortality among patients with advanced HIV by 28% and 27%. The recommended package of care initiative is known to have significant positive impacts on health outcomes among patients, but has also sparked conversations regarding the sustainability of HIV related screening and drug supply, especially in resource limited countries like Uganda where there is an expected 1.4 million persons currently living with HIV. The package of care policy implementation increases the demand of screening/drug availability in Uganda by expanding the recommended treatment regimen of persons receiving ART, potentially leading to a shortage of supplies and little research has been done on the effect these newly implemented policies have had on overall screening/drug supply in Uganda. The primary objective of this study was to identify the availability and accessibility to HIV Drug and Screening supplies, as recommended by the WHO individual package of care for advanced HIV disease, among care facilities in Uganda.

Results
The main goal of this study was to determine whether a supply gap in the WHO Package of Care Medicine and Screens exists in Uganda. Overall, this research demonstrates essential ARV and Anti TB medicines were the only medicines or screens from the recommended package of care to be in-stock at > 90% of sampled clinics. Clinics had 4 times higher odds to be out of stock of a screen or medicine if the last received date exceeded 90 days. Uganda receives supply data from clinics and distributes all medicine through its central medical store on a quarterly basis. Increasing supply reporting to a monthly basis would provide opportunity for a quicker response to both stock-outs and accounting for increased use seasonally. This information was presented locally after completion of data collection to the Infectious Disease Institute. This data also sparked conversations with the Ugandan Ministry of Health and how stakeholders could engage in further research on accessibility of the package of care and increase availability of these medicines nationally. Additionally, this information was presented to the Mycotic branch of the Center for Disease Control as well as Doctors without Borders. Last, this research was leveraged for my Independent Learning Experience, where I presented findings and potential solutions locally to University of Minnesota School of Public Health professors.

Future project plans
This work has led to many conversations regarding the sustainability of such policies in Sub-Saharan Africa. Directly, groups in the area are working on understanding the current gaps in care as a result of this study. Additionally, potential solutions will be put in place to
increase access to these medicines, which may result in future publications of research. This research has also opened the door for future students to engage in what I consider atypical epidemiological research, where students are thinking more systematically on what impacts health outcomes, not just the health outcomes themselves.