

Background

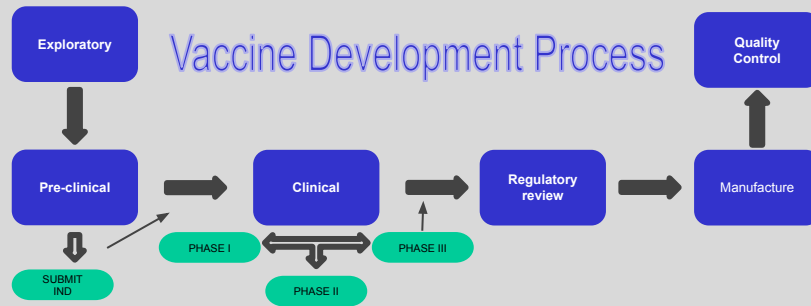
- For my capstone project I am working to contribute to the development of a vaccine for Plasmodium vivax (PV) malaria.
- The overall goal is to identify antibodies which block PV invasion into red blood cells.
- PV is the most geographically widespread form of malaria, putting over 2.5 billion people at risk of infection.
- From this vantage point I created a COVID-19 vaccine outreach program.

Population

- PV:**
- 80-90% of all PV occurs in the tropical regions of the Middle East, Asia, and Western Pacific
 - Other 10-20% occur in Central and South America.
 - Children, pregnant women, rural communities and migrant workers are most vulnerable
- COVID-19:**
- SARS-CoV-2 virus has caused a global pandemic.
 - In the United States individuals at higher risk for serious complications due to COVID-19 include: minorities, pregnant women, elderly individuals, people with chronic medical conditions

Learning Objectives

- Effectively develop health communication for COVID-19 vaccine
- Understand the public health impacts of both a PV and COVID-19 vaccine
- Effectively advocate for minorities in Cuyahoga County to get COVID-19 vaccine



Public Health Impact of Vaccines

Health:

- Eradication of disease
- Reduced morbidity & mortality
- Herd immunity
- Reduced Antibiotic Resistance

Social:

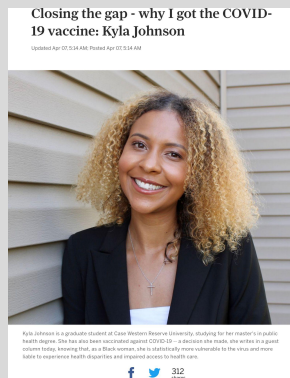
- Health equity
- Social integration
- Social mobility

Economic:

- Health cost savings
- Reduced government spending
- Productivity gains

Deliverables

- Op Ed published in the Cleveland Plain Dealer
- Educational flyer advocating for the Covid-19 vaccine



Lessons Learned

- How to effectively communicate concerns and needs of a vulnerable population
- How to develop health education materials
- The impact of my own voice as a professional and minority

Resources

Centers for Disease Control and Prevention. "Do I Need to Take Extra Precautions Against COVID-19." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, Mar. 2021. www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/index.html.

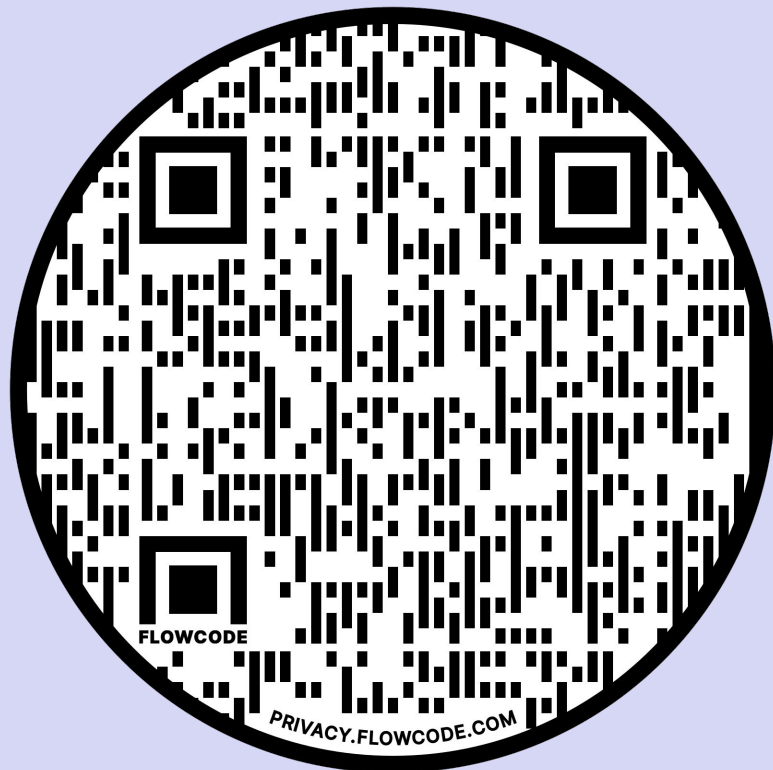
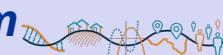
Centers for Disease Control and Prevention. "Health Equity Considerations and Racial and Ethnic Minority Groups." *Centers for Disease Control and Prevention*, Centers for Disease Control and Prevention, Feb. 2021. www.cdc.gov/coronavirus/2019-ncov/community/health-equity/race-ethnicity.html.

Luyten, Jeroen, and Philippe Beutels. "The Social Value Of Vaccination Programs: Beyond Cost-Effectiveness." *Health Affairs*, vol. 35, no. 2, 2016, pp. 212-218. doi:10.1377/hlthaff.2015.1088.

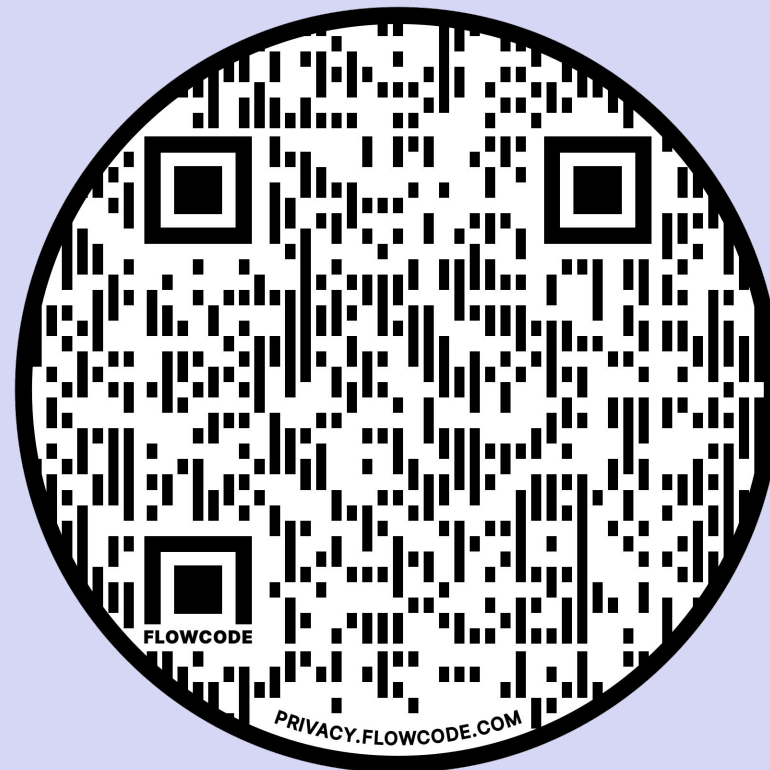
Mehlotra, R.K., Blankenship, D., Howes, R.E. *et al.* Long-term in vitro culture of *Plasmodium vivax* isolates from Madagascar maintained in *Saimiri boliviensis* blood. *Malar J* 16, 442 (2017). <https://doi.org/10.1186/s12876-017-2060-7>.

Mendis K, Sina BJ, Marchesini P, Carter R. The neglected burden of *Plasmodium vivax* malaria. *Am J Trop Med Hyg*. 2001 Jan-Feb;64(1-2 Suppl):97-106. doi: 10.4269/ajtmh.2001.64.97. PMID: 11425182.

Rodrigues, Charlene M., and Stanley A. Plotkin. "Impact of Vaccines: Health, Economic and Social Perspectives." *Frontiers in Microbiology*, vol. 11, 2020, doi:10.3389/fmicb.2020.01526.



[Link to presentation](#)



[Link to Op-Ed](#)