

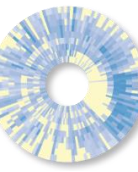
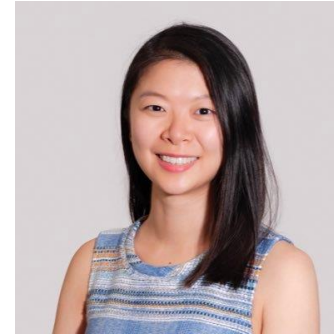
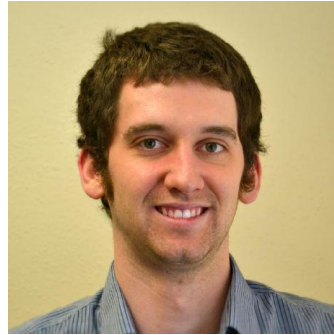
Cholera Updates from Johns Hopkins Groups

Andrew Azman

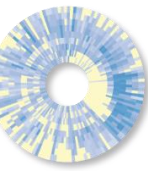
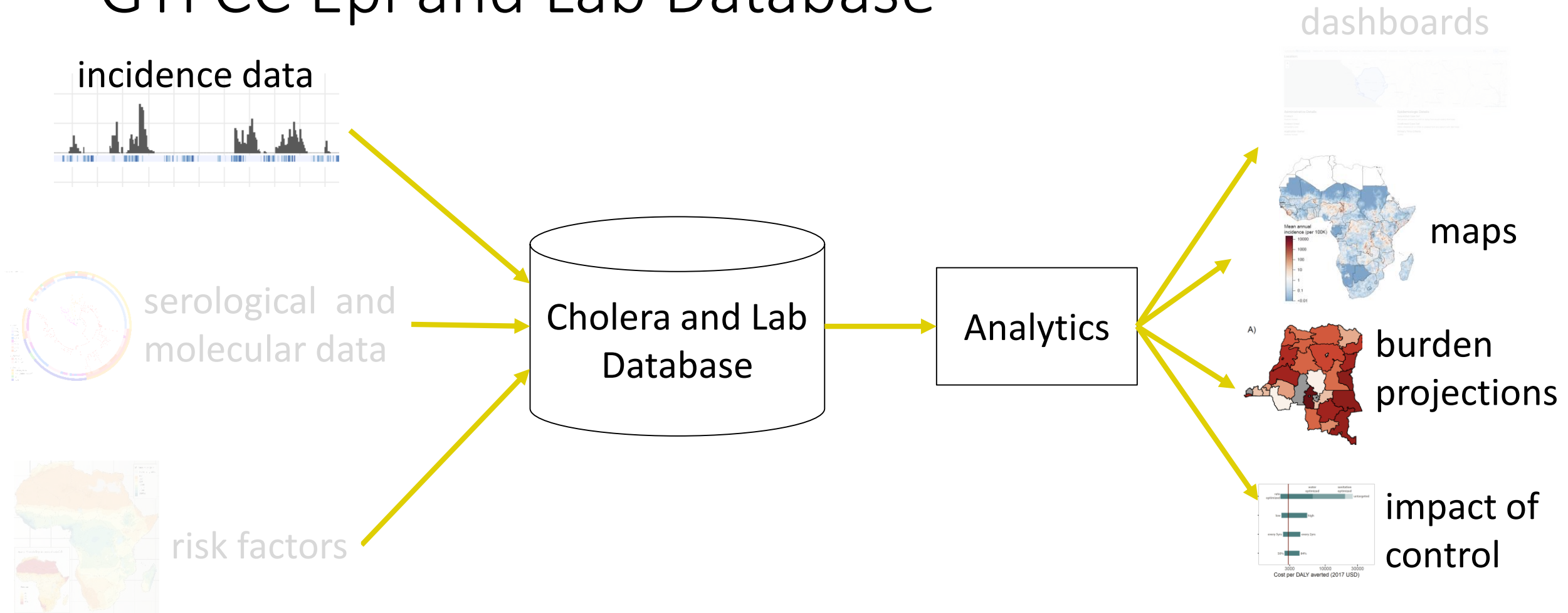
GTFCC OCV Working Group Meeting, Geneva

4 December 2019

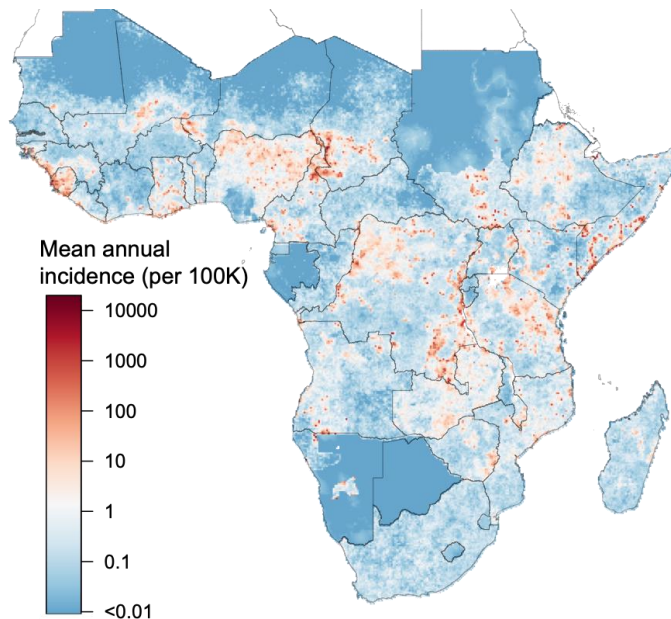
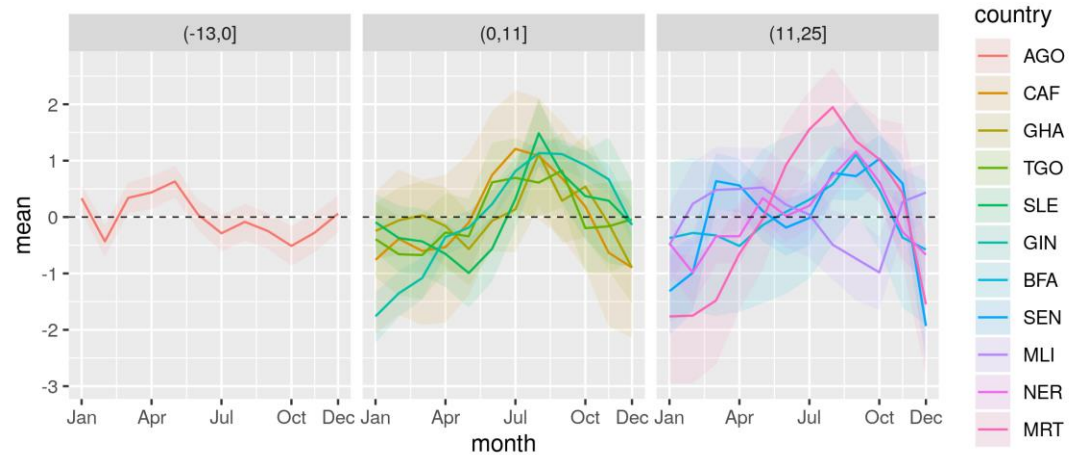
One University, Many “Cholera People”



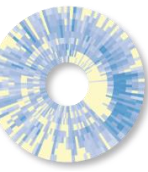
GTFCC Epi and Lab Database



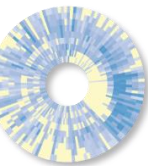
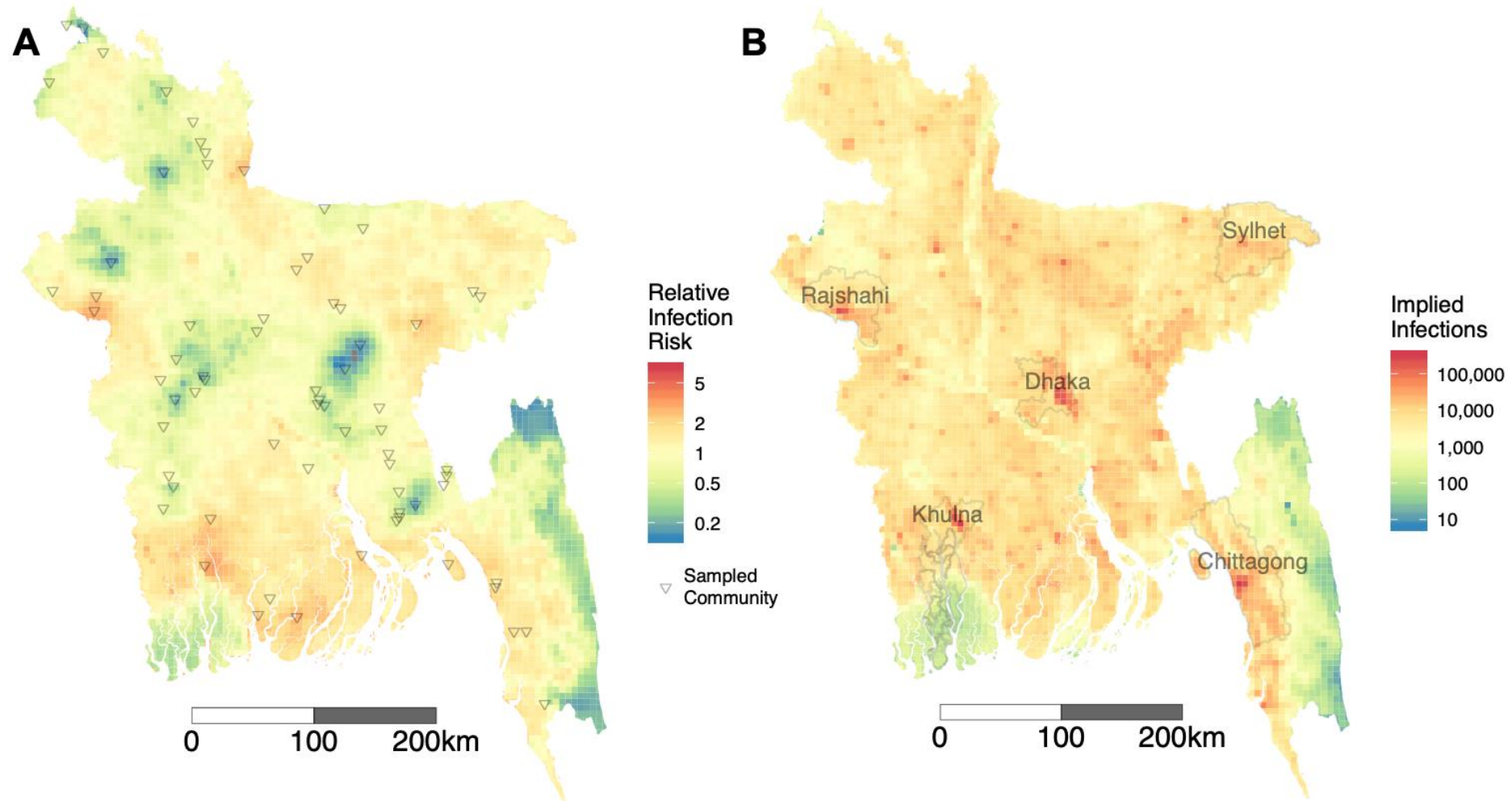
Global cholera epidemiology and burden



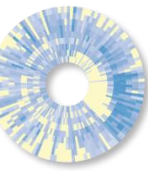
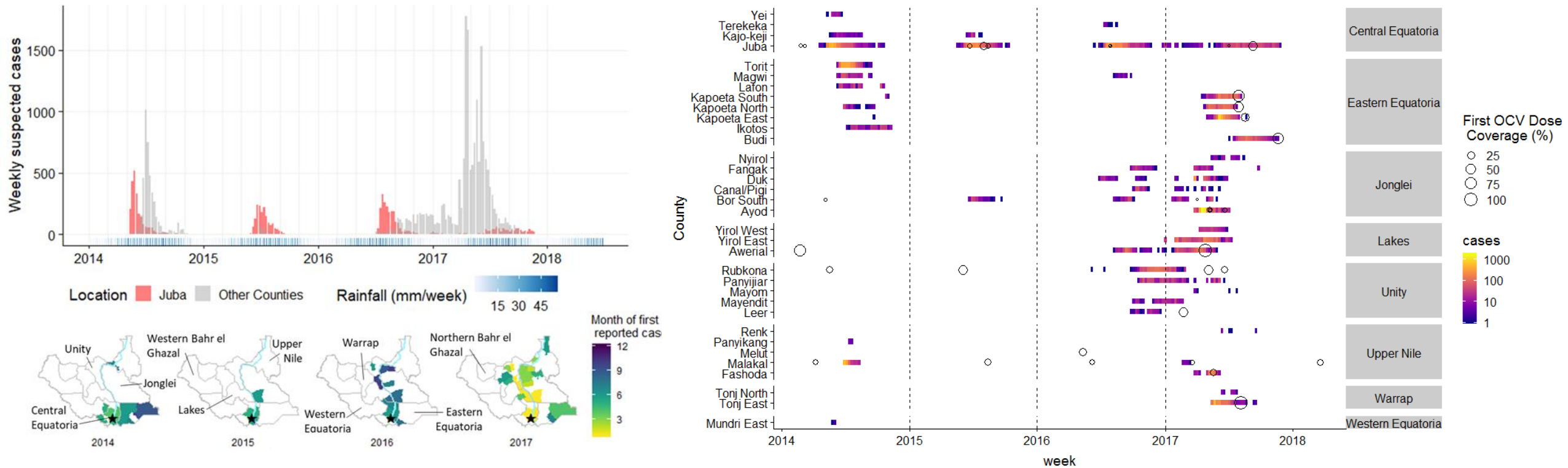
- Updates to cholera incidence maps to include global data through 2019
- Time-space maps in Africa
- Estimating the seasonality of cholera in Sub-Saharan Africa



Mapping cholera with cross-sectional serology



Case studies to inform future interventions



Modeling the potential impact of OCV

RESEARCH ARTICLE

The projected impact of geographic targeting of oral cholera vaccination in sub-Saharan Africa: A modeling study

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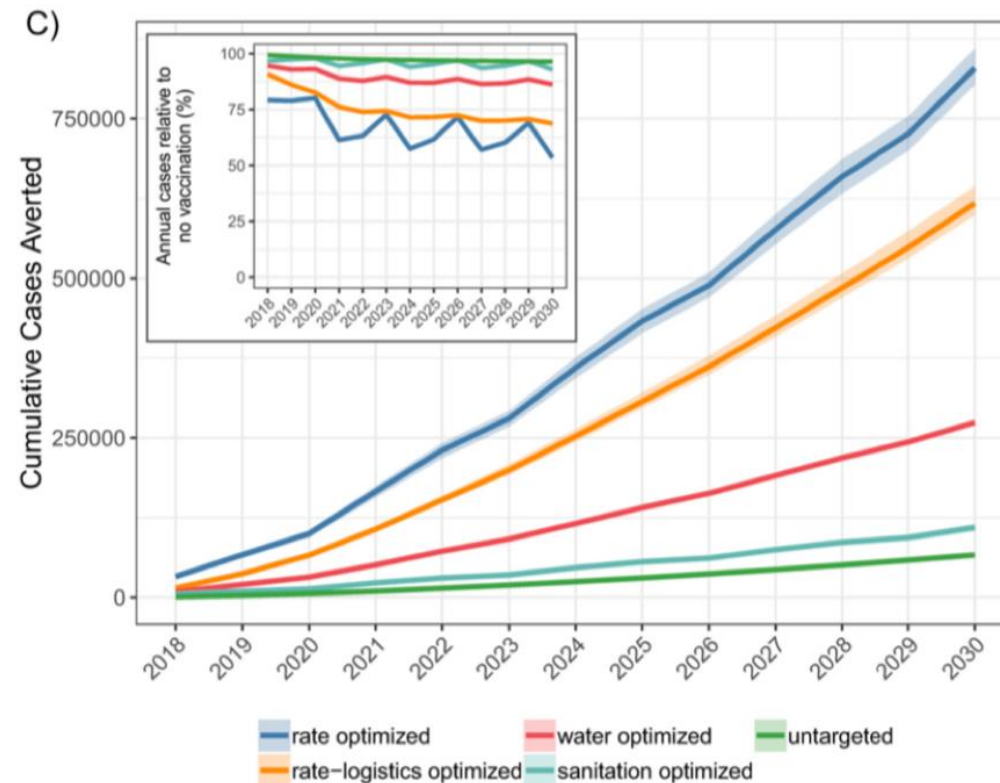
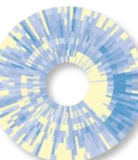


Fig 2. Health outcomes after vaccination under primary model assumptions. Cumulative number of fully vaccinated persons in sub-Saharan Africa as a result of campaigns from 2018 through 2030 according to the (A) rate-optimized and (B) rate-logistics-optimized vaccination deployment strategies. Countries in grey had no districts targeted by a given vaccination deployment strategy. Base maps were sourced from GADM (<https://gadm.org>). (C) Cumulative cases averted from mass oral cholera vaccination campaigns across 5 deployment strategies in sub-Saharan Africa from 2018 through 2030 (mean and 95% CI). The inset figure shows the mean annual percentage of cholera cases averted in our models according to each deployment strategy.

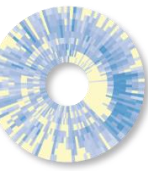
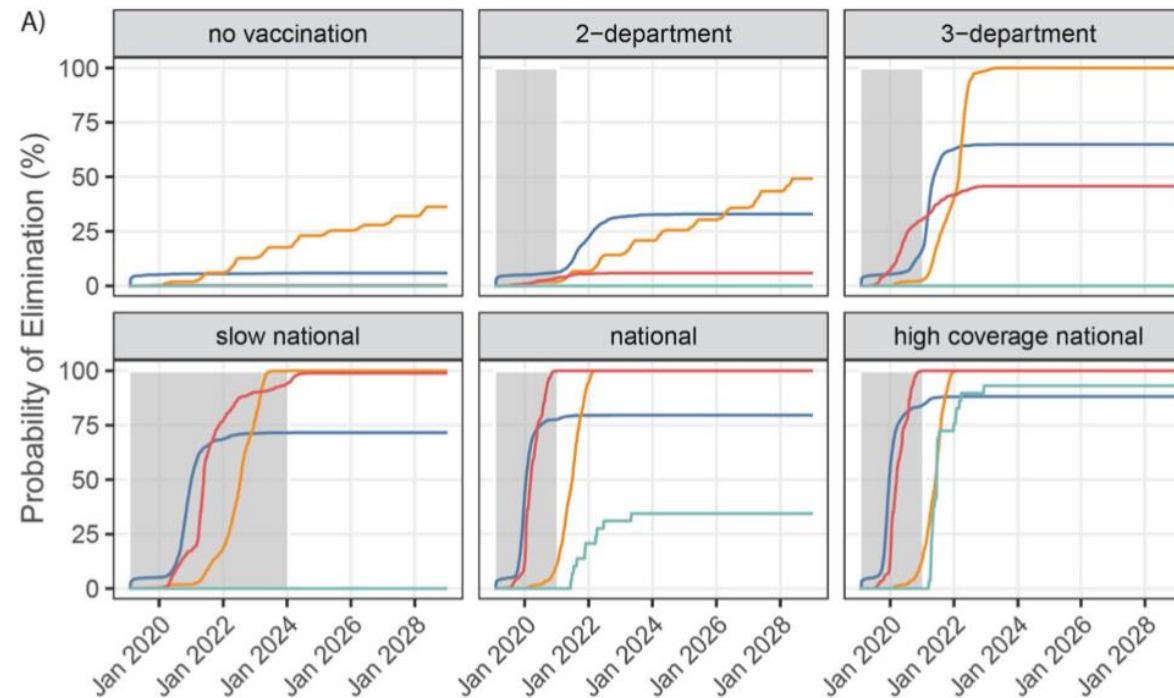
<https://doi.org/10.1371/journal.pmed.1003003.g002>



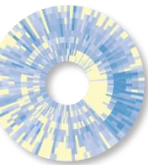
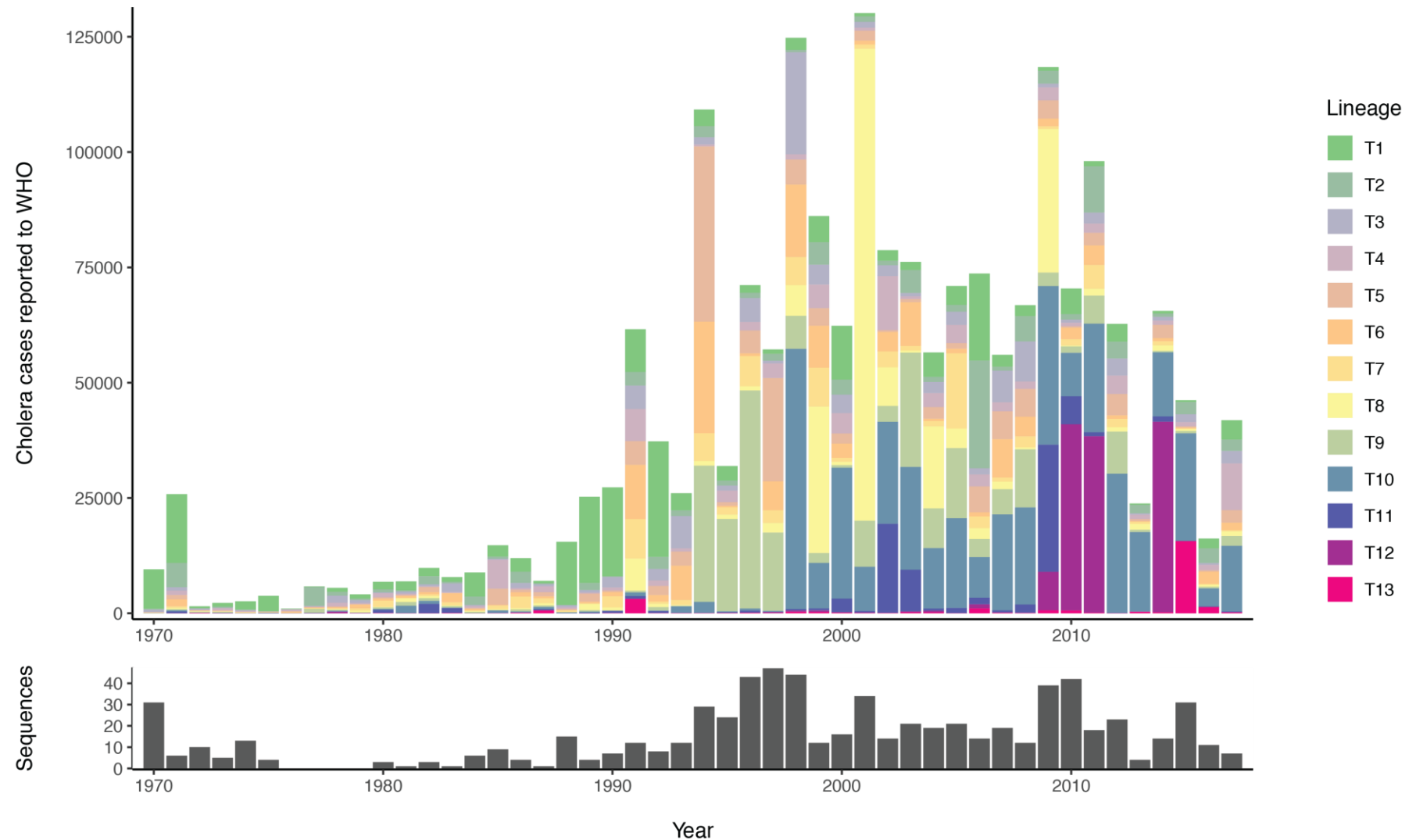
Can OCV be used to eliminate cholera?

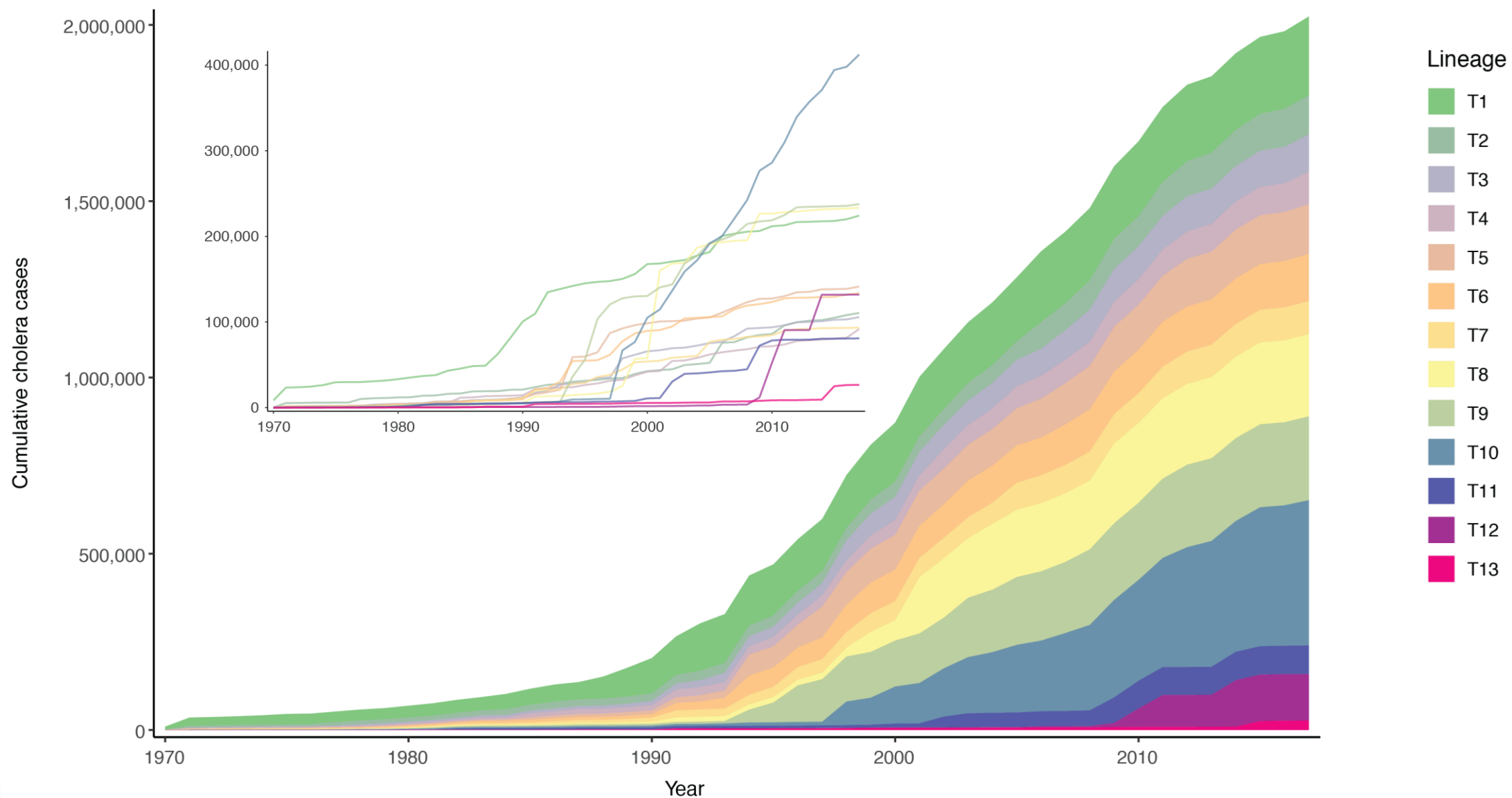
Achieving coordinated national immunity and cholera elimination in Haiti through vaccination

Elizabeth C. Lee^{*1}, Dennis L. Chao^{*2}, Joseph Lemaitre^{*3}, Laura Matrajt^{*4}, Damiano Pasetto³, Javier Perez-Saez³, Flavio Finger^{5,6}, Andrea Rinaldo³, Jonathan D. Sugimoto⁴, M. Elizabeth Halloran^{4,7}, Ira M. Longini Jr.^{8,9}, Ralph Ternier¹⁰, Kenia Vissieres¹⁰, Andrew S. Azman^{†1}, Justin Lessler^{†1}, and Louise C. Ivers^{†11,12}

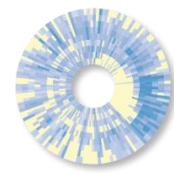


Combining genomic and epidemiologic data

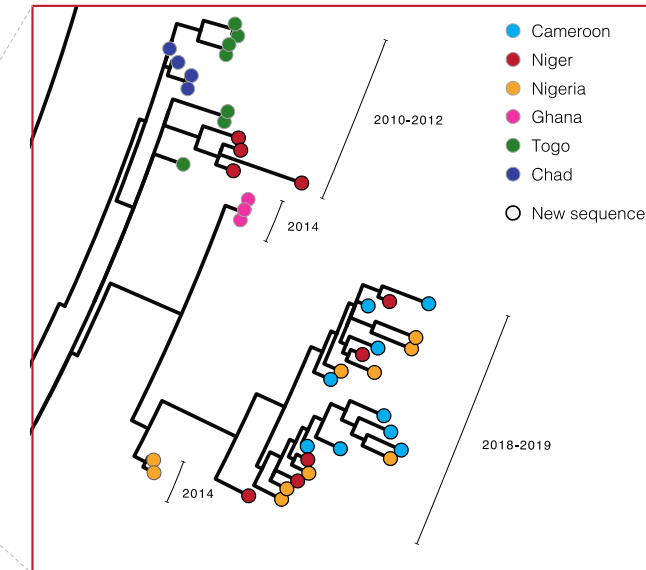
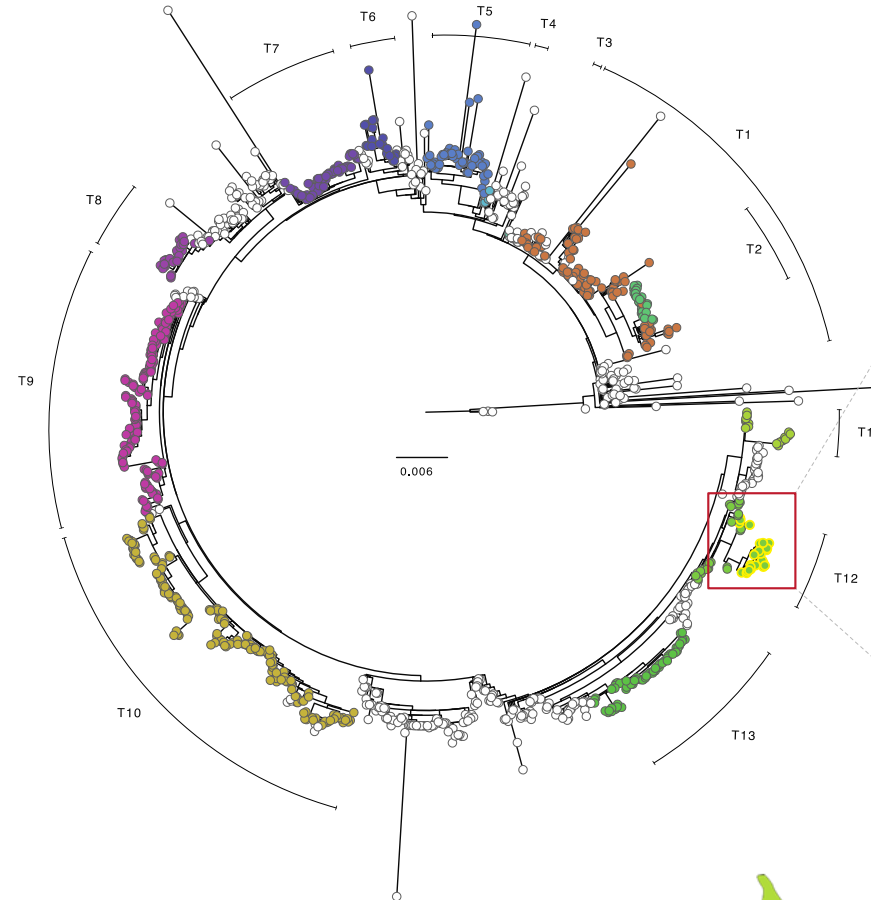




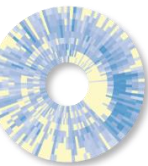
Very Preliminary



Bringing sequencing closer to the source

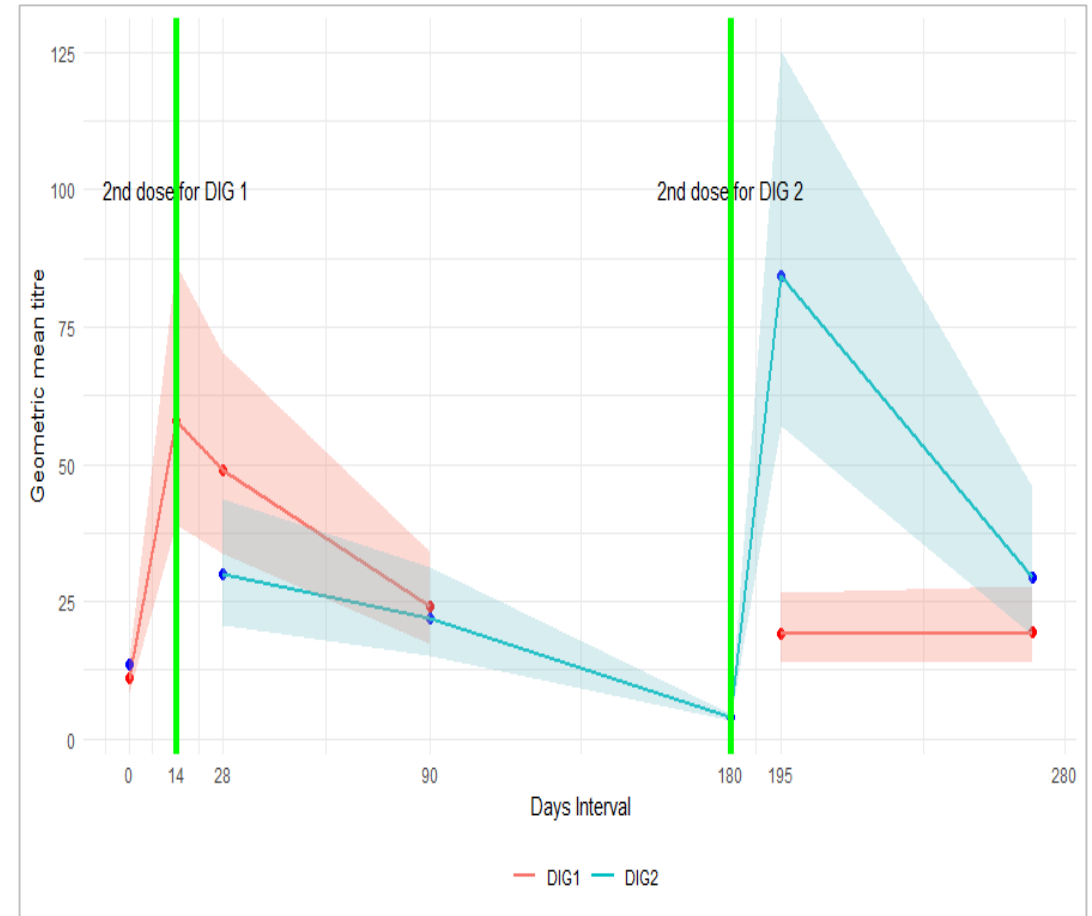


Tree by Shirlee Wohl

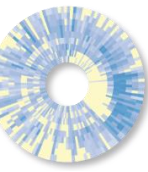


Dose-Interval studies

- Zambia
 - 2 week or 6-month interval
 - Endpoint:
 - Preliminary Results Available
- Cameroon
 - 2 week, 6-month and 11.5-month intervals
 - Endpoint:
 - Final blood draw in February-2020



Mwamba et al, *in prep*



Diagnostic evaluations

- Lamp PCR field evaluation(s)
- O1-only Crystal VC evaluation in Kenya
- CholKit evaluation in Malawi

