

Syphilis Project Update

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Since our last STD meeting, I've run some MCMC calibrations (attached) and started to implement the interventions we described last time.

Those interventions are as follows:

- All Population or MSM Focused
- Annual or Twice Annual
- (Amongst MSM Interventions) HIV-negative, positive, or all focused

We will refine the interventions and their analysis further.

Input requested: I think we will want to simulate quite a few more interventions to better understand the underlying dynamics. (Agree/Disagree?) In light of this, how can we improve the readability of the plots?

Proposition: If we have a lot of interventions, maybe sorting them into “low, medium, and high” based on total number of additional tests compared to the basecase done during the intervention period and presenting other results filtered by this categorization makes sense. (Agree/disagree?)

We can have some really large plots with lots of details for internal usage, but it's useful to think about how the material will be best presented later on in a manuscript.

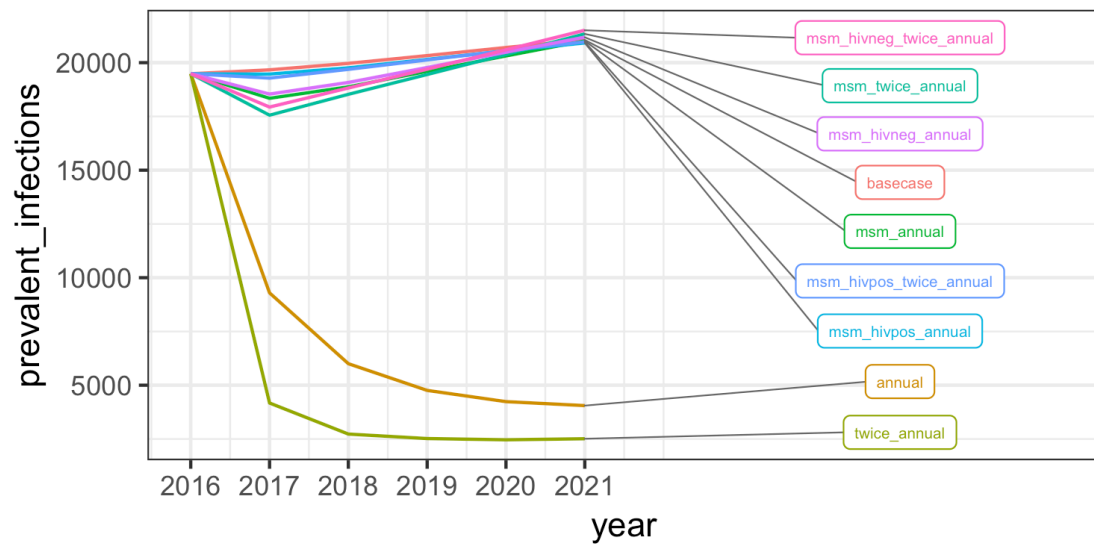
Next steps:

- Preparing for our DSTDP Meeting
 - Improved intervention analysis
 - Breakdown of the modeled epidemics in each location
 - What next steps do we want to convey?
- Sensitivity Analysis on Duration of Immunity
- Waiting on Kathy for Contact Tracing Denominator Data, Reinfection Data
- Simultaneous Calibration for Natural History Parameters
- Interventions Targeted to Reinfection History

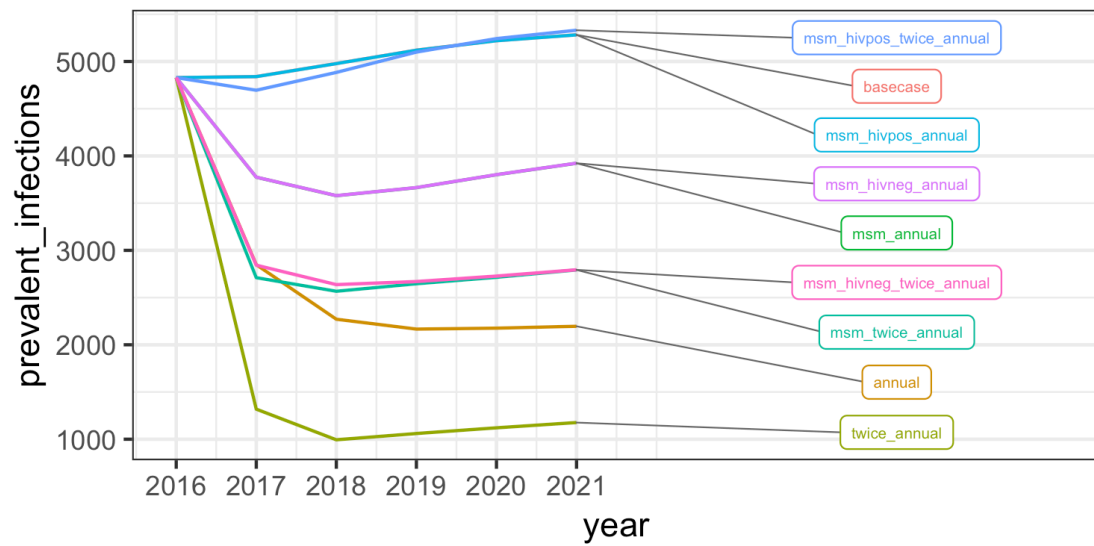
Questions spurred by the following plots already on my radar:

- What explains the differing levels of effectiveness of interventions in each location?
- Why does the annual number of tests appear to decrease for 2021?
- How many frequency levels do we need for our interventions? (annual, semi-annual, 1.5x annual, 4x annual, etc...)

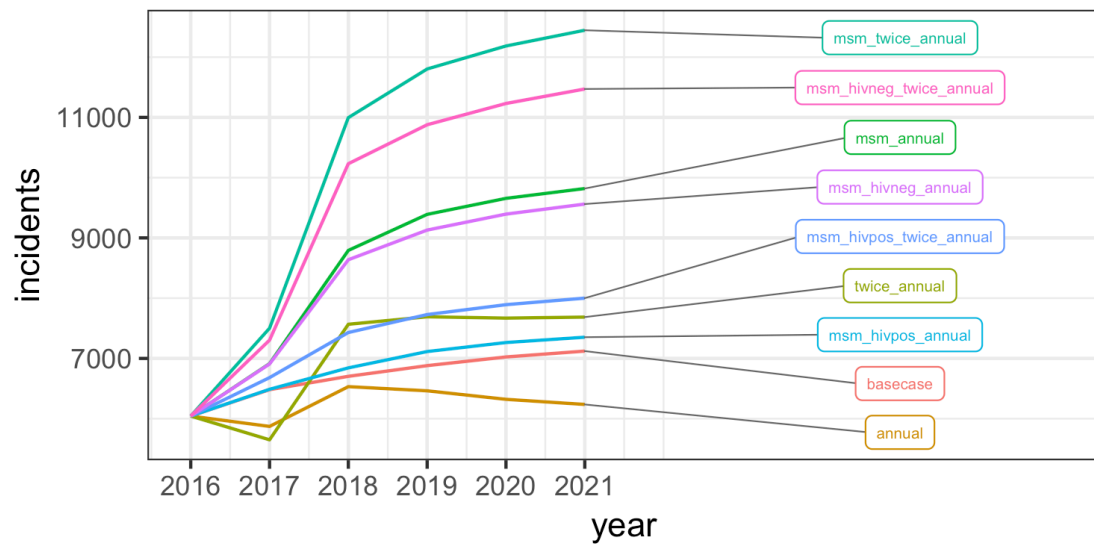
Yearly Prevalent Infections Louisiana



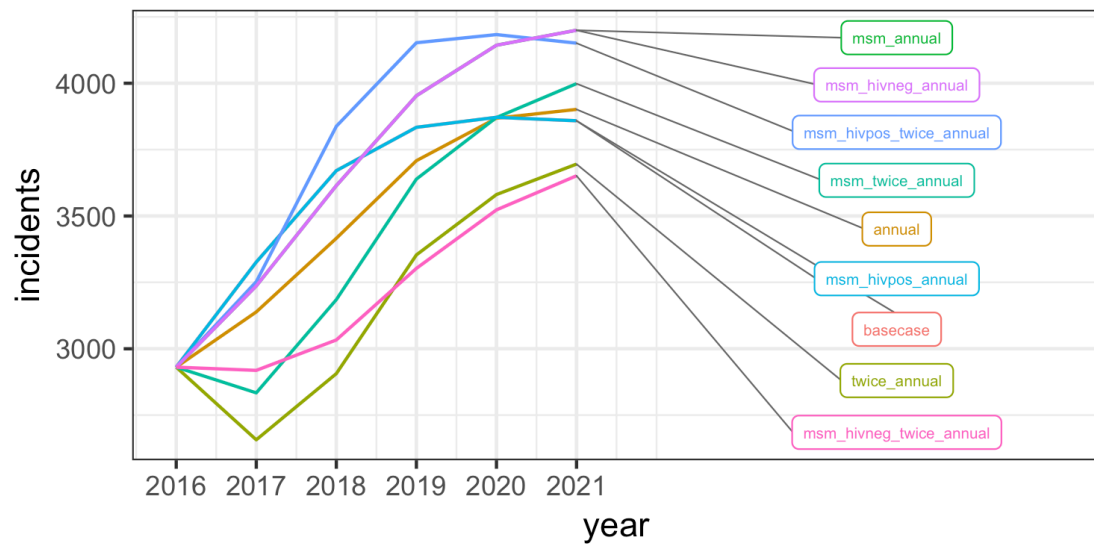
Yearly Prevalent Infections Massachusetts



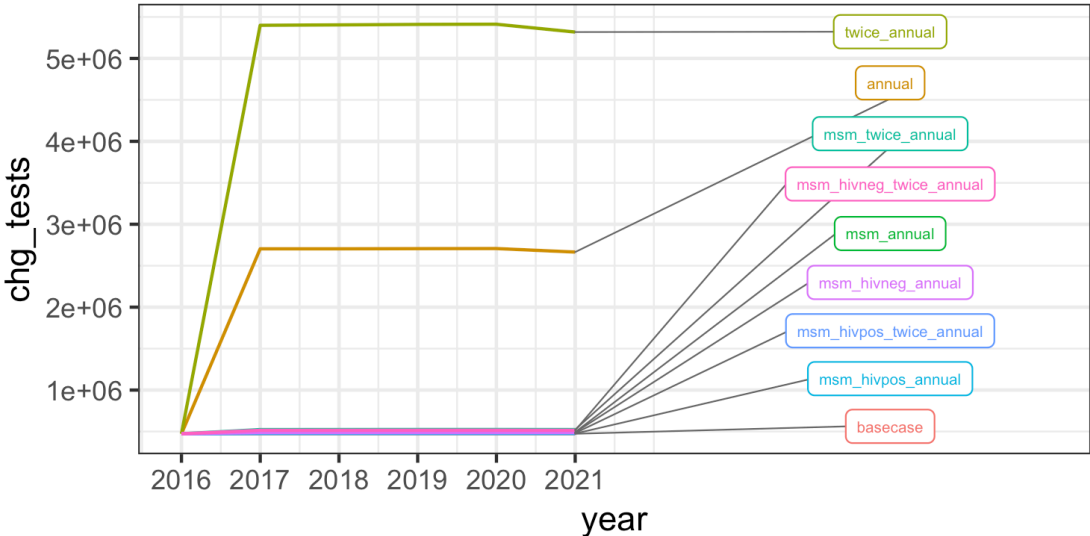
Yearly Incidents Louisiana



Yearly Incidents Massachusetts



Yearly Number of Tests Additional to the Basecase



Yearly Number of Tests Additional to the Basecase Massachusetts

