

# **COVID-19 Model Projections under different levels of non- pharmaceutical interventions**

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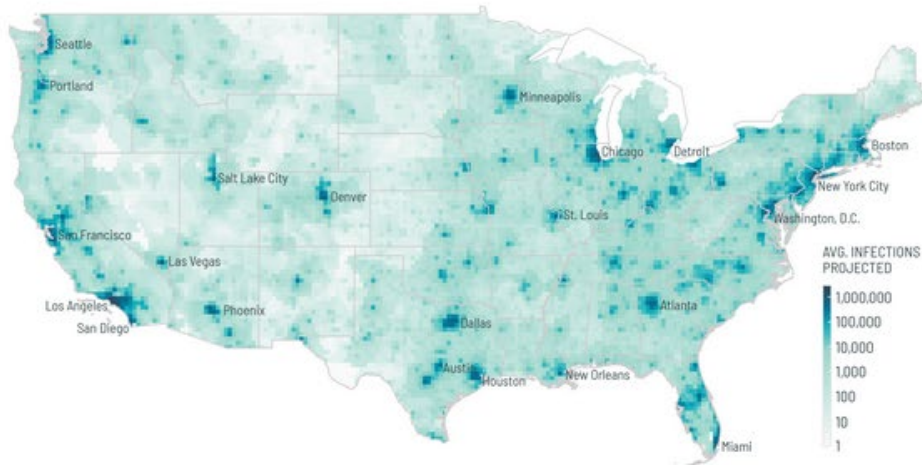
April 23, 2020

# For the entire US

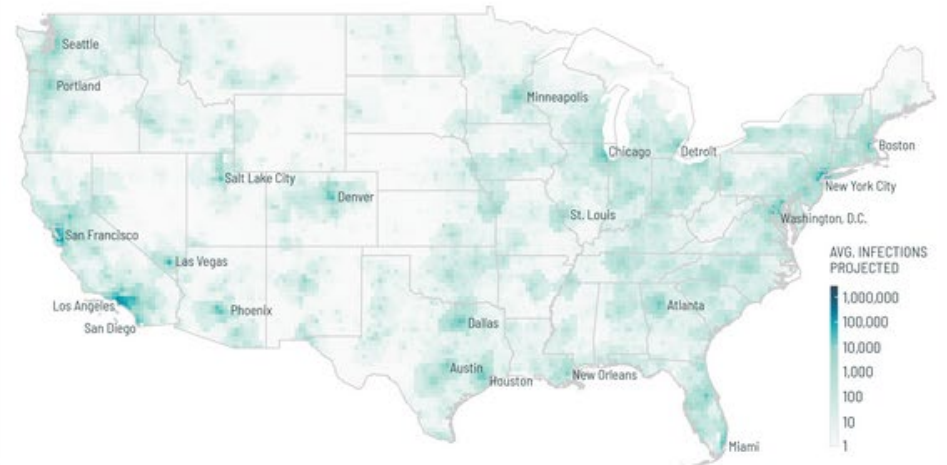
PROJECTIONS FOR:

May 1, 2020

## UNMITIGATED PROJECTIONS



## SOCIAL DISTANCING PROJECTIONS



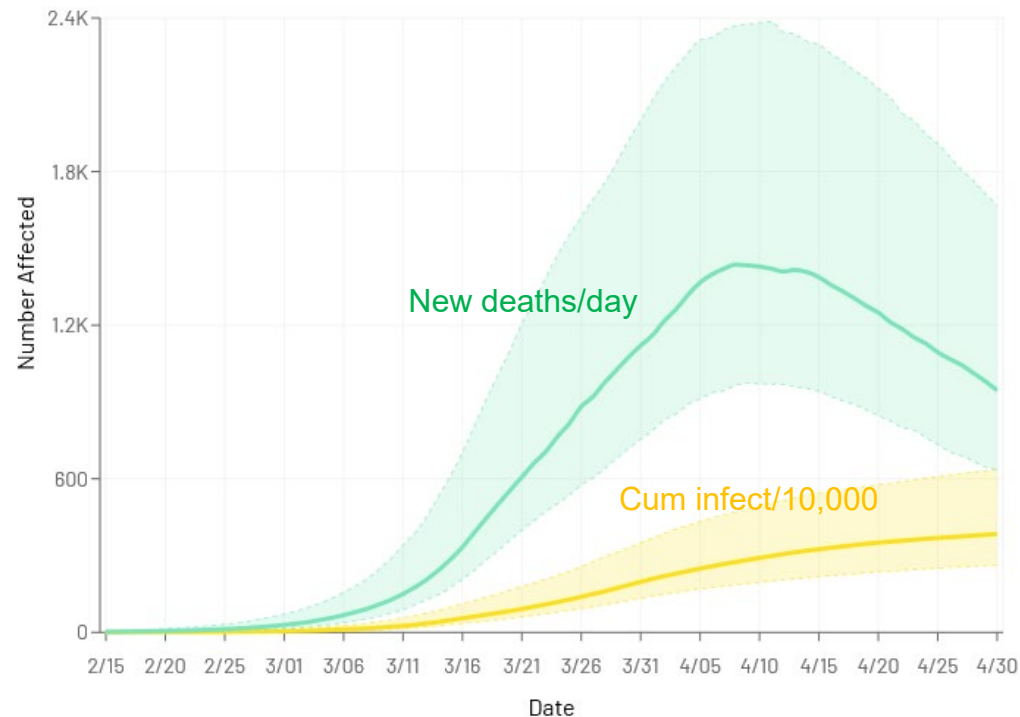
Even with the current level of social distancing and closures, the epidemic will affect virtually the entire US by May 1

<https://covid19.gleamproject.org/#team>

# Cumulative infections and incidence of deaths with current mitigation

USA

INFECTION AND DEATH PROJECTIONS FOR USA

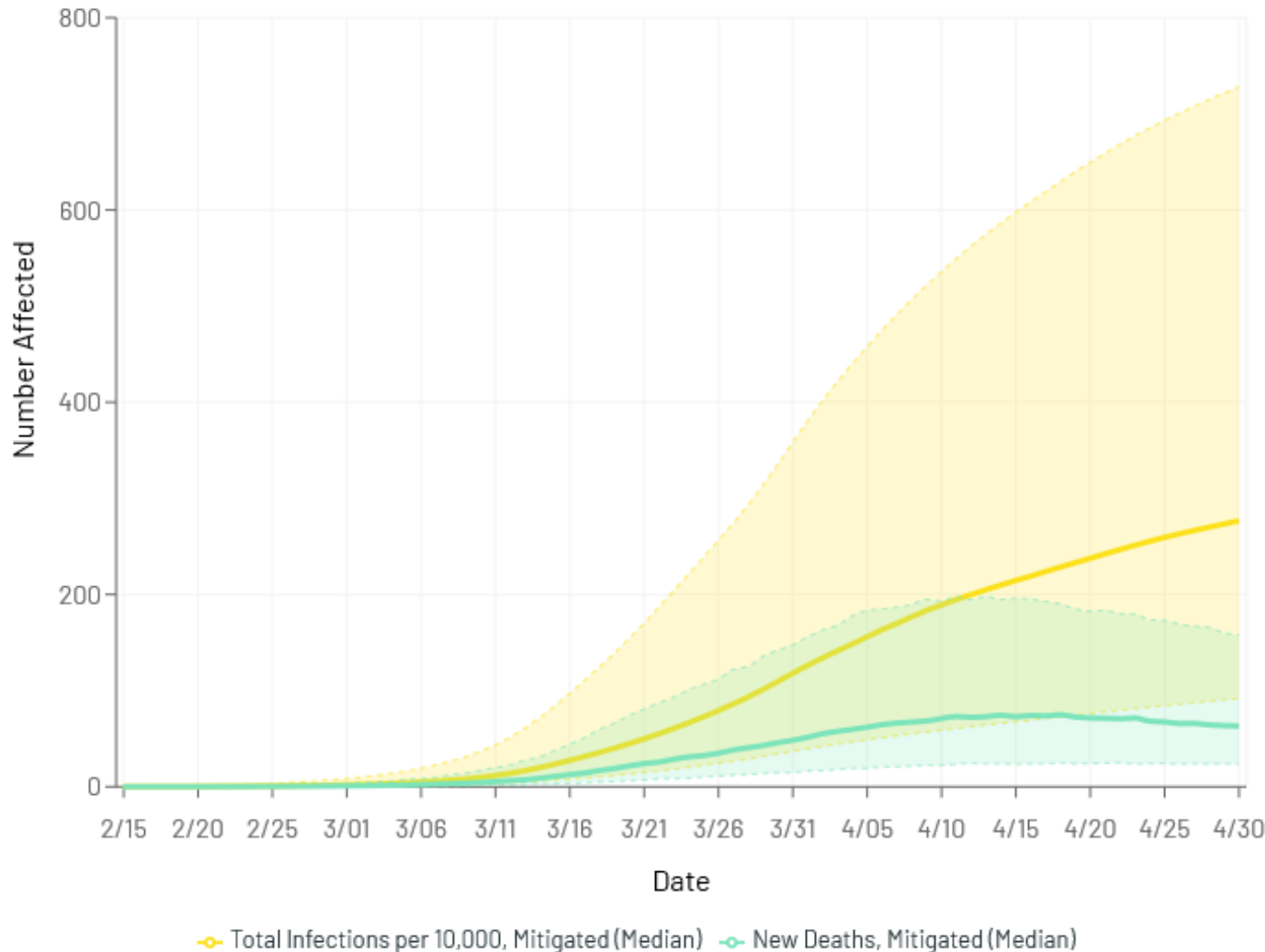


- Model points to the days around April 8, 2020 as the peak time for deaths in the US
- Based on the last projections, a total of about 52,000 COVID-19 deaths are currently projected through April 30, 2020.
- We project that about 4% of the population will have been infected by April 20, 2020

USA	UNMITIGATED SCENARIO	STAY-AT-HOME POLICY
Total Deaths	544,900 [373,911 - 1,117,467]	51,559 [34,688 - 86,696]
Cumulative Infection Attack Rate	55.1% [43.5% - 77.7%]	3.8% [2.6% - 6.3%]

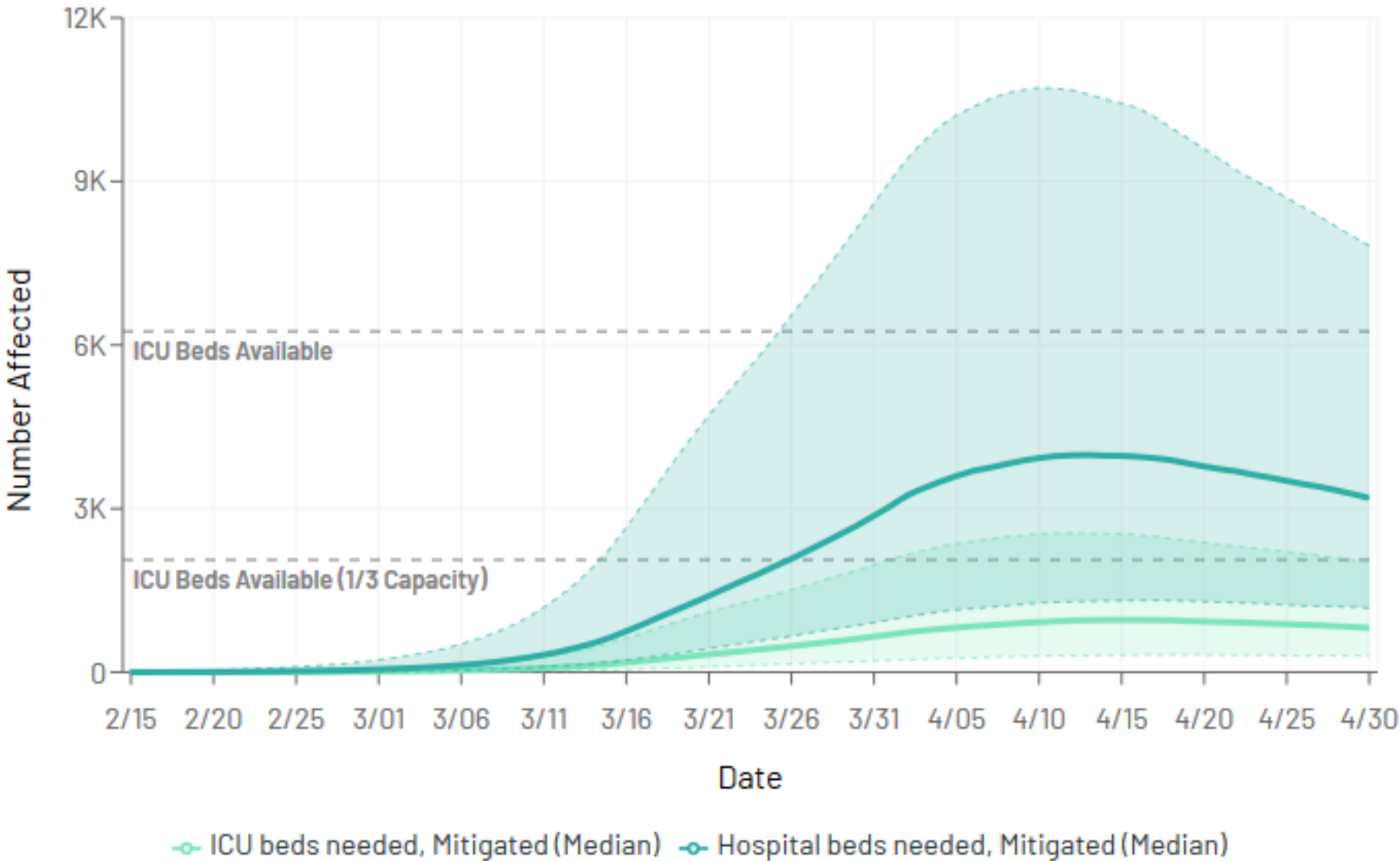
# For the State of Florida

## INFECTION AND DEATH PROJECTIONS FOR FLORIDA

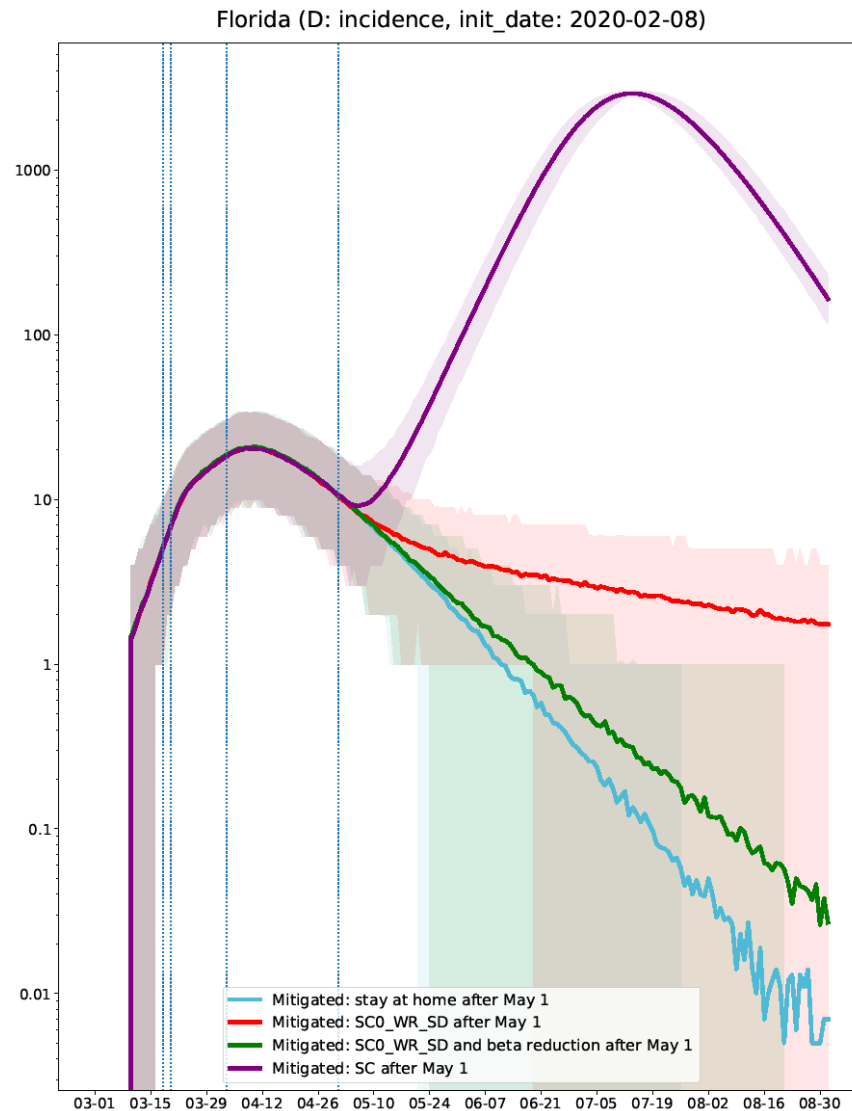


- Around April 14, 2020 as the peak time for deaths
- We project that about 2.8% of the population will have been infected by April 20, 2020
- Thus, lifting mitigation will result in large epidemic

# ICU AND HOSPITAL BED PROJECTIONS FOR FLORIDA



# Effect of different mitigation effects

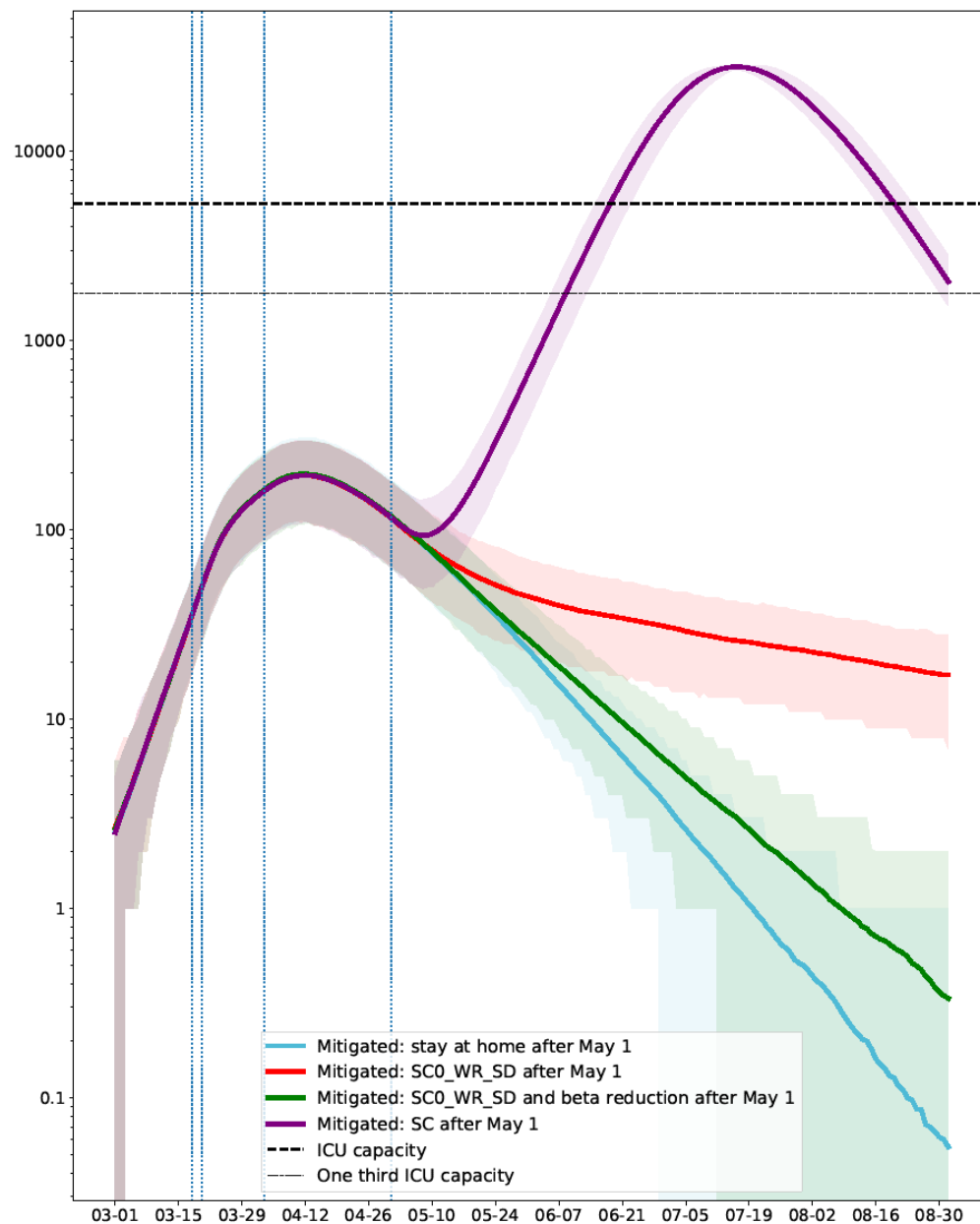


**Purple line:** Schools closed; everything else goes back to normal on May 1

**Red line:** Non-essential business open but schools and universities closed, smart working for about 50% of people; restaurant, bars and mass gatherings shut down.

**Green line:** The same as red + enhanced testing with contact tracing

**Blue line:** Stay at home order prolonged after May 1<sup>st</sup>.



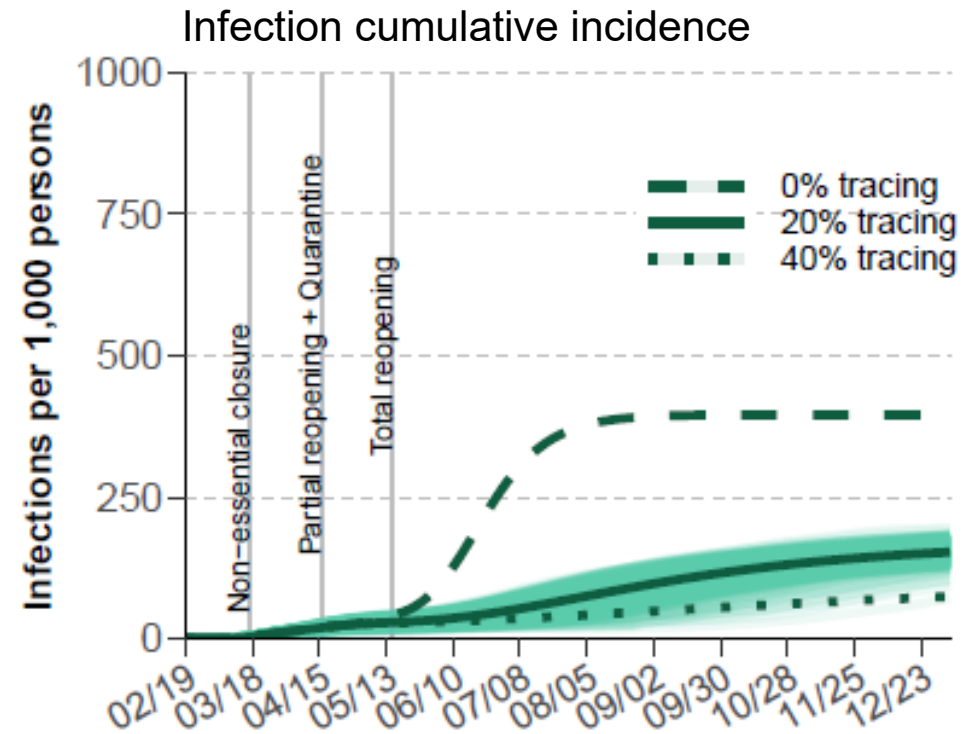
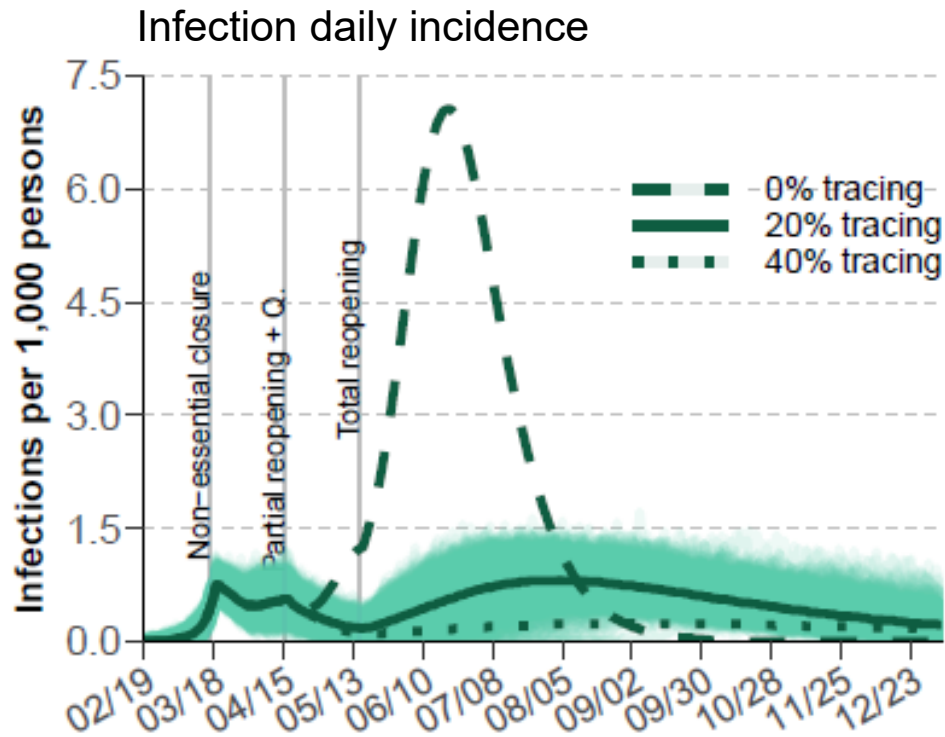
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# Boston: Modeling mitigation strategies, second wave



- Staged reopening without testing with contact tracing results in a large second wave
- If 20% or more or more of the contacts of the detected symptomatic individuals are traced and put into quarantine, the epidemic is controlled

Source: Aleta, et al. Modeling the impact of social distancing, contact tracing and household isolation on second-wave scenarios of the COVID-19 epidemic. Posted soon.



# Bottom line

- Return to normal will result in a big epidemic surge, i.e., second wave.
- Epidemic will continue to decline and reach a low endemic level as long as social distancing is in force. However, the infection will not disappear.
- Go slowly with easing social distancing and watch trajectory of epidemic.
- Large testing, contact tracing, treatment preparation is necessary to lift social distancing.
  - Some level of social distancing must stay in place

Thank you