



Aniruddha Deshpande

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Third Year ARCS Scholar
Donnell Award



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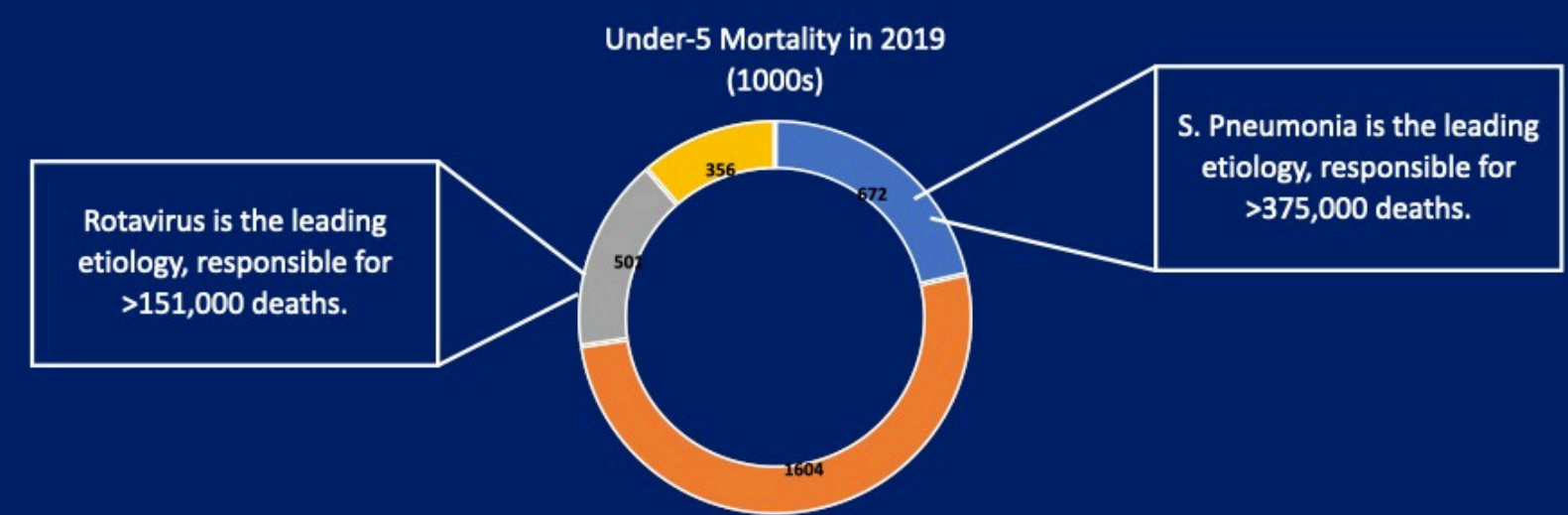
The potential impact of climate change on infectious disease epidemiology

A (Very Brief) Primer on Climate Change

- Anthropogenic climate change is the result of greenhouse gas emissions
- Directly affects global mean surface temperature and the water cycle (precipitation)
- Shifts in climate are also expected to result in changes in seasonality and extreme weather events

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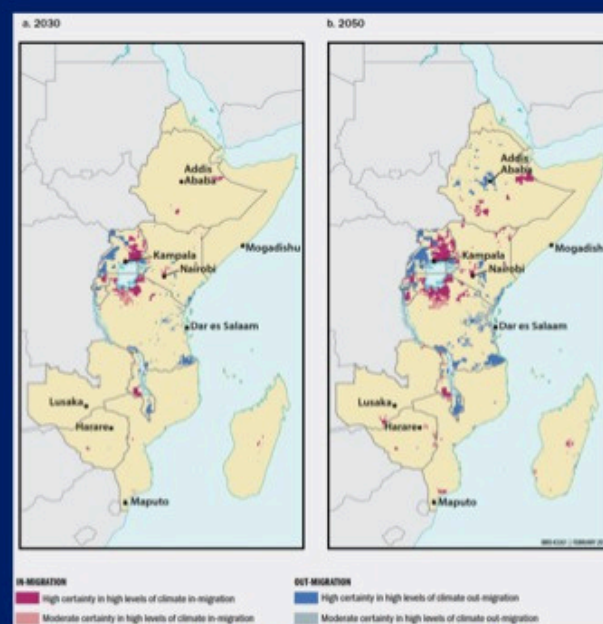
Burden of Infectious Diseases



Source: Global Burden of Disease Study 2019. The Lancet.

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Rural to Urban Migration is Expected in Climate Vulnerable Regions



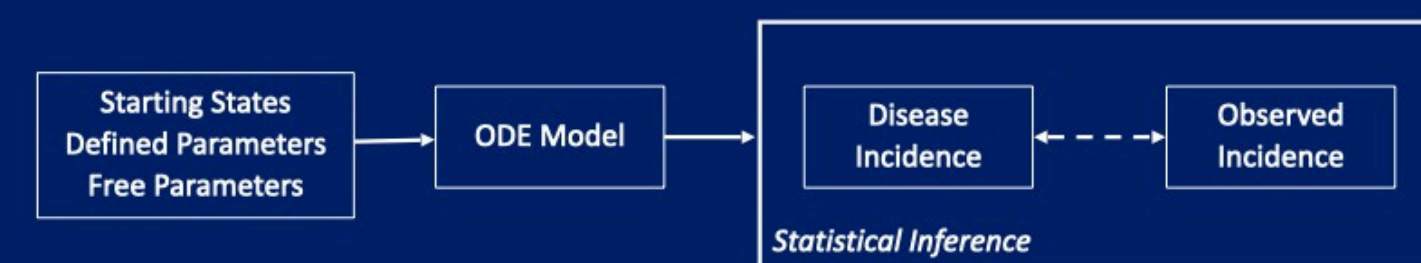
- Over 6 million internal migrants in East Africa by 2050
- Countries surrounding Lake Victoria will be most severely affected

Source: The World Bank Group, 2018.

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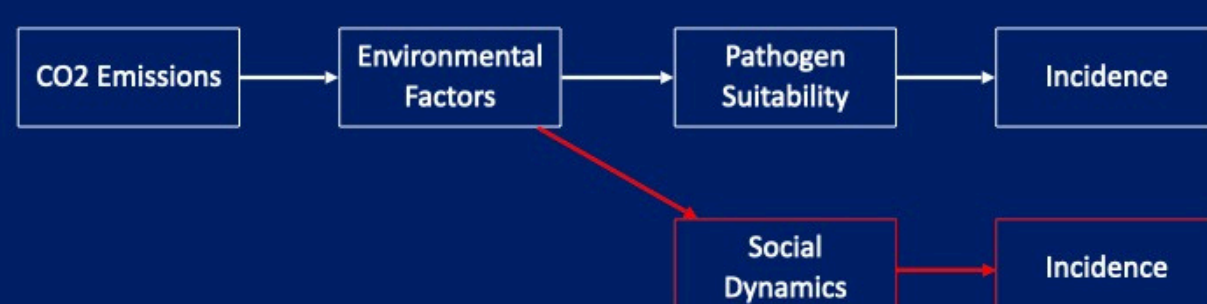
Approach

- Dynamics: Demographic Change, Vaccination, Pathogen Transmission, Social Mixing
- Integrated assessment via mathematical modeling:



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Takeaway: Expansion of Infectious Diseases Considered



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Scholar Awards Celebration
November 15, 2023



Igniting
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