Data, methods, algorithms Decision makers questions	**Data**	**Standard Epidemiology Compartmental Modeling**	**Multi-site modeling**	**Epidemiology models extension with resources inclusion**	**Regional Input-Output Economy modeling**	**Alternative approaches** • **Agent Based Modeling (ABM)** • **Other**
Patient-0 • How does infection from few propagates throughout the country? • How does disease spread is prevented if we close borders and airports?	Traveling patterns, traveling data.		The main use case of the Multi-site method			Direct application of ABM.
Quarantine • When the quarantine should start and how long should it be?	Demographic data Population density "Everyday" traveling patterns	Using piecewise functions.	Site-dependent quarantines.	Quarantine is expected to have an effect on resource consumption.	Quarantine(s) impact on regional economies.	
Spatial distribution • What is the effect of the spatial distribution of the population? • How traveling patterns or migration patterns should be changed or prevented?	Different dwelling habits. Traveling patterns.		The types of questions Multi-site method is designed for.		Which regions have which type of businesses?	Needed in order to make most use of ABM.
Hospital beds • What is the effect of the hospital beds? • How much more infected and dead we are going to have because hospital beds shortage? • Should we expand hospitals or build new ones?	Hospital beds per 1000 people per county (state or city.) Hospital beds building rate(s) per county (state or city.) Availability of medical personnel.	>	Site-dependent availability of hospital beds.	Main use case for the this model. Modeling includes hospitalization process and number of available beds.		
Medical supplies • How much medical supplies do we need? • Given the predictions and consumption from both hospitalized and non-hospitalized.	Breakdown of consumption. Hospitals inventory. Hospital capacities. Delivery capabilities.	>	Different sites have populations, needs, different delivery schedules.	Main use case for the this model. Modeling includes production rates and delivery periods.	In time medical care to maintain necessary business open.	

Economy impact
• What is the expected impact on Economy if:
  • Doing nothing
  • Start quarantine at X for Y days
  • Use gradual opening of industries
	Industries Input-Output Economy data.
	Demographic breakdown per industry.
	Which industries are essential (never stop.)
	Which industries allow gradual re-start.
			Regional impact and interaction with the epidemic.	This part is a natural hook-up between the two models.	Input-Output Analysis	

Contact tracing • How to do it? • What is the minimal amount of people to adopt mobile apps? • Alternatives?	Mobile phones data. *Waste water.*	Multiple initial conditions. Multiple calibrations.	Density of cell phone towers. Site-dependent adoption.		Better demographic estimates (if allowed.)	Best fit.