Life of Py

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Our Objective

We wanted to create a way that would further help us determine sickness rates. There are so many factors that determine sickness as well as the spread of sickness; to make an exact approximation would be difficult. We decided to narrow it down to five categories of safety measures instead. Creating an approximation within a control.

Five Categories

- ✖ Masks
- ✖ Vaccines
- ✖ Social Distancing
- ✖ Job Location (remote vs. in person)
- ✖ Family size
- ✖ Delivery (food/groceries)

Masks

More than 100 nations have adopted their own mask regulations. The majority of these rules were put in place as a result of a medical mask scarcity. Results in these countries are likely to reflect the reality of what masks the public is able to access during the pandemic.

Transmission was 7.5 times higher in countries that did not have a mask mandate or universal mask use.

A study between US states with mask mandates and those without, found that the daily growth rate was 2.0 percentage points lower in states with mask mandates.

https://www.pnas.org/doi/epdf/10.1073/pnas.2014564118

Vaccines

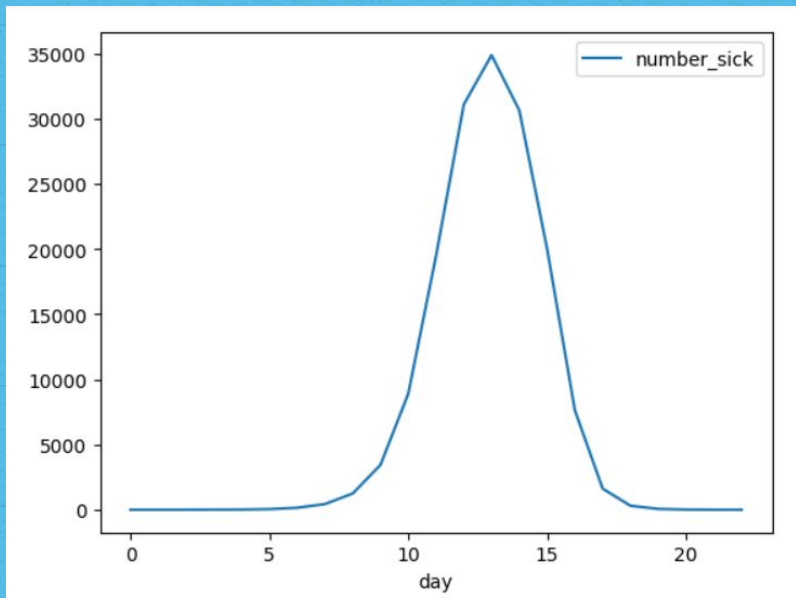We determined based on research that vaccines would lower the rate of infection by:

91% for Moderna and Pfizer (full vaccination)

81% for partial vaccination (one dose)

Both vaccines showed 90% effectiveness immediately following complete vaccination
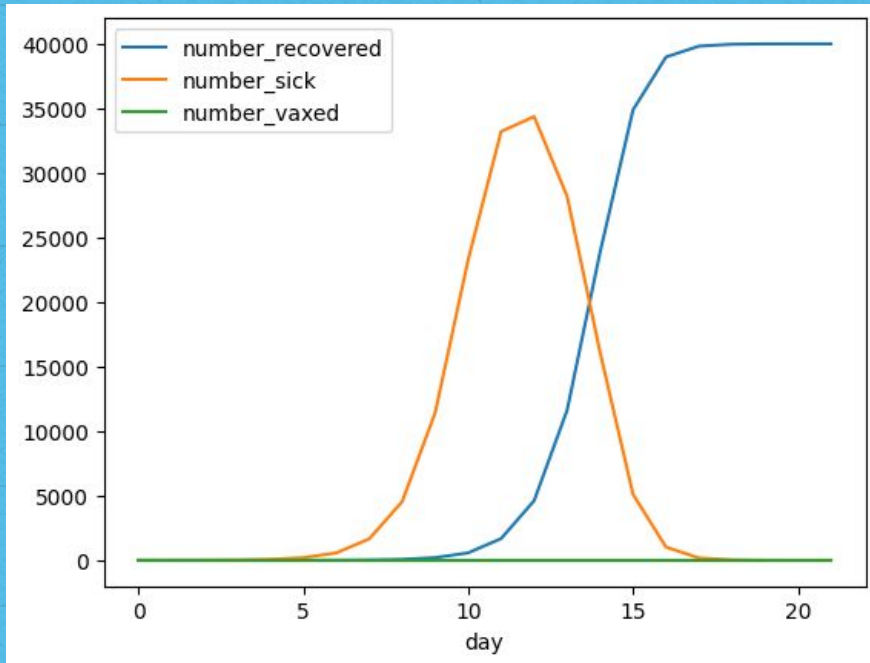
CODE WITHOUT UPDATE

	day	number_sick	number_recovered
0	0	1	0
1	1	1	0
2	2	2	0
3	3	6	0
4	4	13	0
5	5	45	1
6	6	151	2
7	7	432	6
8	8	1244	13
9	9	3440	46
10	10	8894	153
11	11	19462	438
12	12	31077	1257
13	13	34863	3486
14	14	30614	9047
15	15	20005	19900
16	16	7622	32334

CODE WITH UPDATE

	day	number_sick	number_recovered	number_vaxed
0	0	1	0	0
1	1	1	0	0
2	2	7	0	0
3	3	23	0	0
4	4	69	0	0
5	5	201	1	0
6	6	568	7	0
7	7	1655	23	0
8	8	4541	69	0
9	9	11405	202	0
10	10	23254	575	0
11	11	33186	1678	0
12	12	34345	4610	0
13	13	28190	11607	0
14	14	16112	23829	0
15	15	5106	34864	0
16	16	1018	38955	0

Job location (remote vs. in person)

Based on our research we found that those who working an in person job were 30% more likely to be infected compared to those who did not

Working remote was an additional factor towards lowered infection rates

Therefore, in order to have the lowest rate of infection possible working remote is the best option

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8872161/

Family size

A study showed that those with families with 4+ members and children were 10.5 times more likely to be infected compared to those with no children or less than four members in their family

This is due to household crowding. The more family members the more crowded and infection rates will increase.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7724676/

Delivery

Womply's data science team examined transaction trends at 400,000 local businesses nationwide, including 48,000 restaurants and 4,600 bars, and found that on March 13, revenue was down 19.6% from the previous year. That figure "should continue to drop rapidly with many restaurants closed or only open for takeout," the company said.

"Driven by consumer panic, grocery stores saw their highest daily revenues for 2020 last Friday, with consumer spending up 87.4% year over year," the analysts said. Relatedly, curbside pickup is also on the rise.
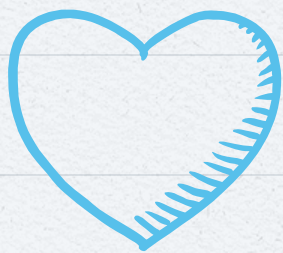
Social Distancing

Social distancing reduced the mobility for the COVID-19 spread. Travel restrictions and social distancing measures (i.e. self isolation, six feet rule, etc.) prevented more than 1.5 million COVID-19 cases in two weeks (about a 65% reduction).

THANK YOU!!