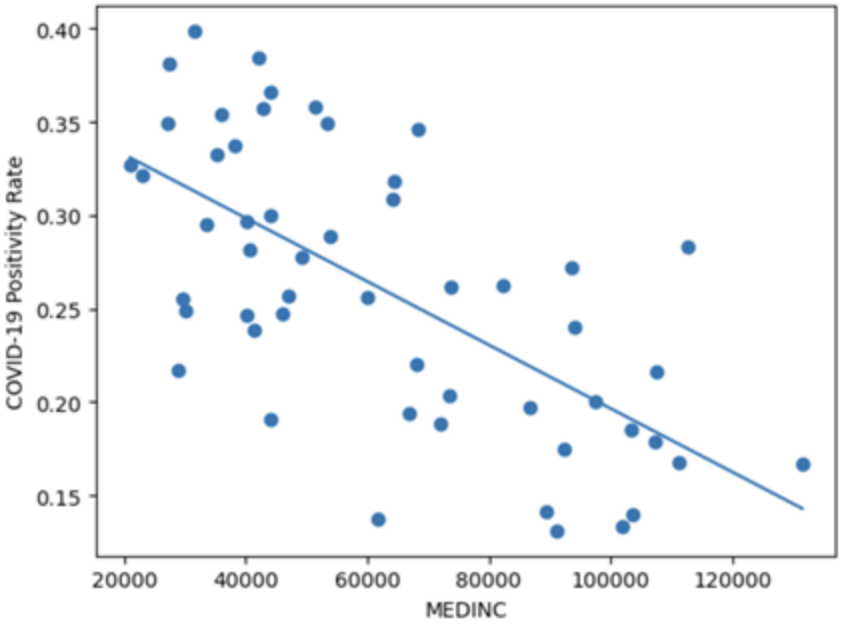
Looking Below the Surface

Proposing Explanations

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Correlation p-value: 8.643899684124575e-08
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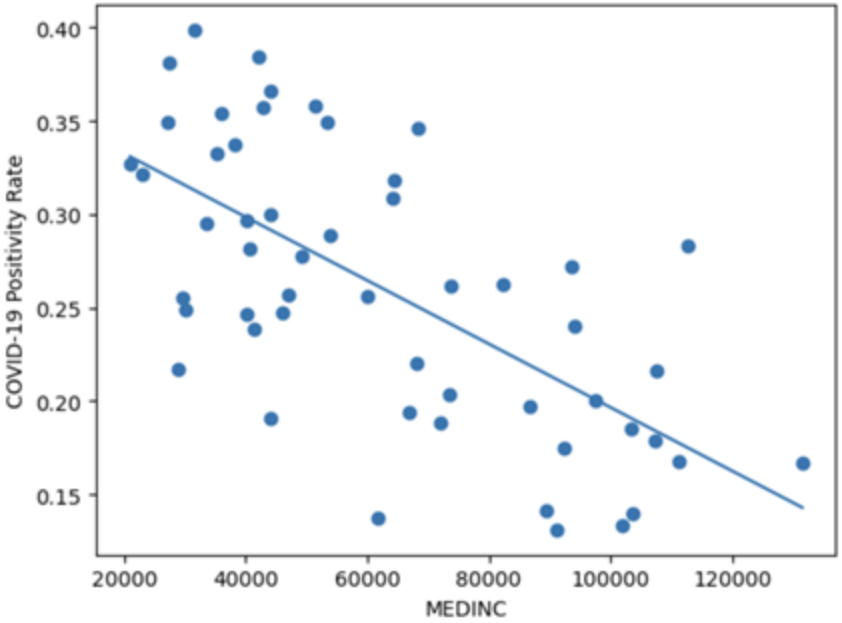

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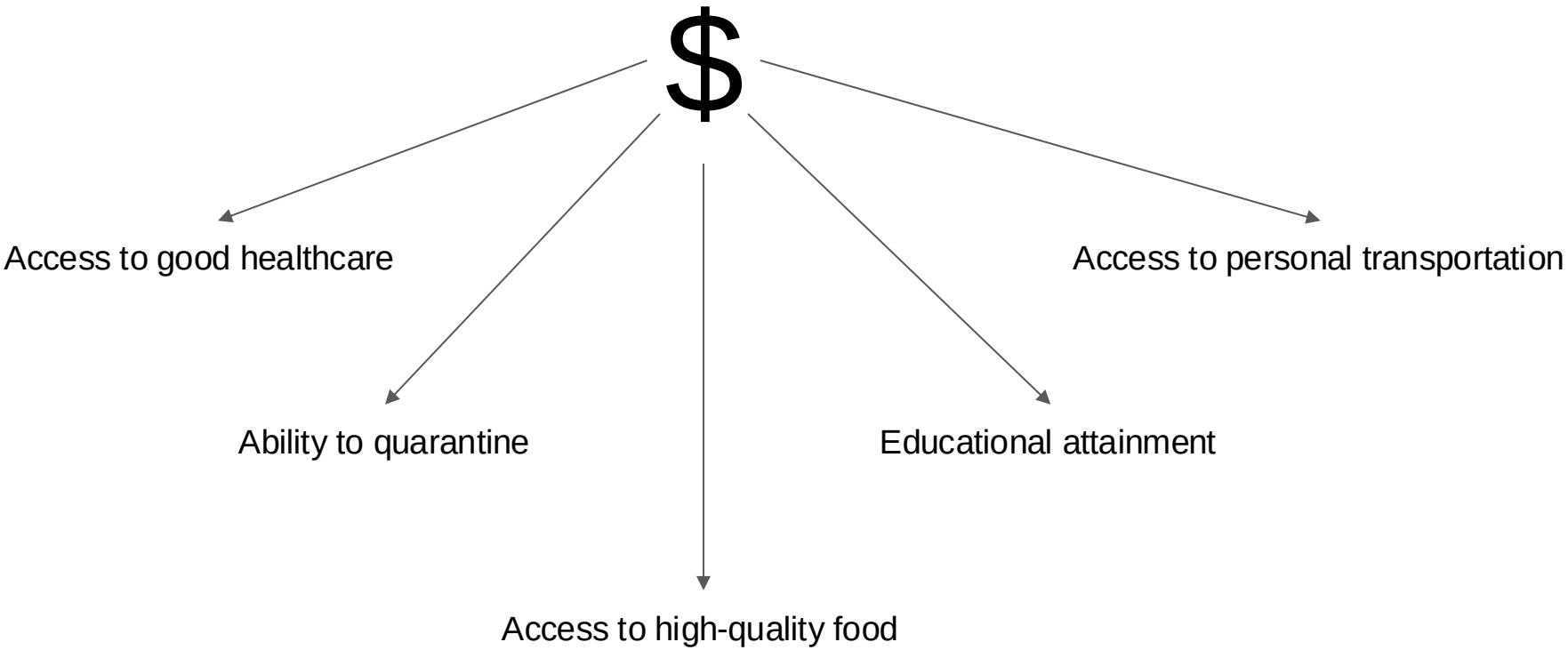
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Access to good healthcare
Access to personal transportation
Ability to quarantine
Educational attainment
Access to high-quality food

Median Income is a “Proxy” Variable

- Sometimes good: can be used in the place of a variable that you cannot measure

- Sometimes bad: hides the true causal factors, can be used to generalize and promote stereotypes

Which are the variables that stand in as proxies for a mechanism to get Covid – and which are more directly related to a mechanism?

Population

`POP` : Total population

`P0_44` : Number of people ages 0 to 44

`P45_64` : Number of people ages 45 to 64:

`P65_` : Number of people ages 65 and older

Socio-economic status

`MEDINC` : Median household income

`PERNOINS` : Percent without health insurance

Racial/Ethnic neighbourhood types

`PERBLK` : Percent of population that is Black

`PERHISP` : Percent of population that is Hispanic

`PERW` : Percent of population that is White

`PERASN` : Percent of population that is Asian

Occupations

`PEROFFTC` : Percent office and telecommute workers

`PERHSRV` : Percent healthcare service workers

`PERPSRV` : Percent public service workers

`PERFOOD` : Percent food service workers

`PERCLEAN` : Percent cleaning service workers

How people get to work

`PERAUTO` : Percent personal automobile commuters

`PERTRAN` : Percent public transportation commuters

`PERPEDB` : Percent pedestrian and bike commuters

`PERTELE` : Percent telecommuters (work from home)

Built environments

`FDTRTPER` : Percent food desert tracts

`WS_5` : Hospital accessibility score (lower score = hospitals are farther away)

`POPDENS` : Population density (per square meter)

`PERCROWD` : Percent housing units w/ > 1 person per room

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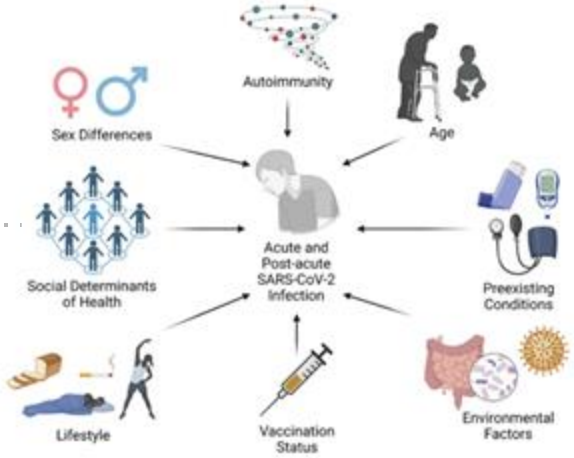
Covid-19 Explanatory Mechanisms at Different Scales

Social determinants of health

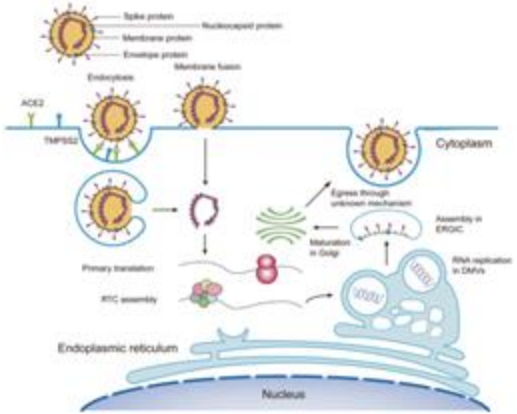
https://hitconsultant.net/2019/03/18/social-determinants-of-health-sdoh-collection/

Risk factors at the individual level



https://virologyj.biomedcentral.com/articles/10.1186/s12985-023-02061-8

Mechanisms at the microbiological scale



https://www.nature.com/articles/s41392-023-01510-8

In your groups…

1. Develop proposed explanation for the question:

“Why has Covid affected some communities more than others?”

1. Choose one explanatory variable that will help you test your proposed explanation.