Public Policy For Addressing the COVID-19 Pandemic

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Public Policy for COVID-19
Overview:

• Today I will:
  – Propose two broad principles on how to think about public policy for addressing the COVID-19 pandemic
  – Apply these principles to evaluate “shelter in place” policies
What should the goal or objective of COVID-19 public policy be?
Principle 1: Maximize Welfare
Principle 2: Think Long Term
Health System Capacity

Strict Measures
It is unclear what shutdowns do to improve health

- Reduce the number of cases
- Flatten the curve

- Reduce non-COVID healthcare use
- Impact health in other ways (stress, mental health, etc)
Were the COVID-19 Shutdowns Worth It?  
Measuring their Impact on Health

- Patients’ interactions with the healthcare system
- Country and state stay-at-home orders and excess mortality
- School shutdowns and COVID-19 cases
There were significant declines in healthcare use in the first two months of the pandemic

*Relative to March and April, 2019

- Colonoscopies: 70% decrease
- Mammograms: 67% decrease
- HbA1c: 51% decrease
- Vaccines: 22% decrease
- Angioplasty: 17% decrease

Emergency department use also declined dramatically during the first surge in L.A. County

*Relative to March and April, 2019 and 2018

Decline of in-person care was accompanied by a significant uptick in telehealth use

• telemedicine use offset only about 40% of declines

County-level shelter in place orders explain part of the decline

Shelter-in-place policies lead to:

- Colonoscopies: 23% decrease
- MRIs: 18% decrease
- Mammograms: 16% decrease
- Angiogram: 11% decrease

Were the COVID-19 Shutdowns Worth It? Measuring their Impact on Health

- Patients’ interactions with the healthcare system
- Country and state stay-at-home orders and excess mortality
- School shutdowns and COVID-19 cases
We analyzed the impact of country-level stay at home orders on excess deaths

Shelter in place orders ranked:
0 – No measures
1 – Recommended not leaving house
2 – Required not leaving house with exceptions for daily exercise, grocery shopping, and essential trips
3 – Required not leaving house with minimal exceptions (e.g. allowed to leave only once a week, or only one person can leave at a time, etc.)

Excess deaths:
Deaths in 2020 in excess of the average deaths in 2015-2019 (all causes)
International Comparison: Duration of Shelter in Place orders positively associated with increased excess deaths

Excess deaths during the first six months of pandemic

Weeks that shelter in place orders were implemented during the first six months of pandemic
International Comparison: Speed of Shelter in Place orders positively associated with increased excess deaths

Excess deaths during the first six months of pandemic

Weeks to implement first shelter in place since first COVID-19 death
We also analyzed excess deaths across U.S. states and found a similar pattern.

**Speed of Shelter in Place order**

**Duration of Shelter in Place order**
Similar results even when we look at trends in excess mortality within states/countries after shelter in place orders.
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- Patients’ interactions with the healthcare system
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We identified whether schools were open based on cell-phone data.
When schools re-open, risks for households without children should not change much.
School re-openings lead to small increases in cases

Risk is low overall: A doubling of county-level school mobility leads to a 0.3 per 10,000 household increase in COVID-19 diagnoses for households with children.

Risk is higher in lower income counties:
- **Lowest income:** 1.2 increase in cases per 10,000 households
- **Low income:** 0.6 per 10,000 households
- **Medium income:** 0.4 per 10,000 households
- **High income:** 0.1 per 10,000

Risk is higher in counties with higher prevalence: A one per 10,000 increase in new cases leads to a 0.16 per 10,000 increase in COVID-19 cases for households with children.