Fiscal, monetary, and health policy responses and implications for the economic outlook Part 2 of a COVID-19 webinar series

WITH ALAN BLINDER, BILL DUDLEY, JESSICA METCALF, AND WILLIAM FRIST, M.D. June 9, 1:00 p.m. ET Pre-registration required

<u>clfw</u>





SARS-CoV-2: state of the pandemic

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Early growth

Two key quantities: R_{0} , here = 2 \checkmark Serial interval:



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https://coronavirus.jhu.edu/map.html

With a serial interval of ~ 1 week and an R_0 of 2, cases double approximately every week (R_0 estimate: ~ 2 - 3)

Early growth

Two key quantities: R_{0} , here = 2 \checkmark Serial interval:





April-June

<u>Cumulative cases</u> saturating



Where are we now?

Daily cases: falling or flat

https://coronavirus.jhu.edu/map.html



This is the beginning



https://coronavirus.jhu.edu/map.html

This is the beginning



https://labmetcalf.shinyapps.io/serol1/

Estimates of the **proportion susceptible** range around ~2%, with only larger urban settings as high as ~20%.

Jul	Aug	Sept	Oct	Nov	Dec
		•	••		
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Will climate reduce transmission?

lower temperatures may increase transmission



Coronaviruses are 'winter' pathogens: reduced humidity /

Year

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Coronaviruses are '**winter**' pathogens: reduced humidity / lower temperatures may increase transmission



But magnitudes unlikely to overwhelm the effects of the large **pool of susceptible individuals.**

Year

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What about other winter viruses?



The incidence of directly transmitted infections like influenza and RSV has fallen sharply relative to previous years.

national emergency

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The incidence of directly transmitted infections like **influenza** and **RSV** has **fallen** sharply relative to previous years.

This could mean **larger future outbreaks** as susceptible build up.

Interventions have flattened the curve.



Bought time to build knowledge:

- role of pre-symptomatic transmission
- role of super-spreading events
- ventilation & transmission
-
- therapeutics & vaccine development

https://www.nature.com/articles/s41591-020-0869-5

https://hopkinsidd.github.io/nCoV-Sandbox/DispersionExploration.html

Interventions have flattened the curve.



Policies implemented:

- Case based self-isolation mandated
- Social distancing encouraged
- Public events banned
- School closure ordered
- Lockdown ordered

https://science.sciencemag.org/content/early/2020/05/20/science.abb6144

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How do we evaluate these policies?

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How do we evaluate these policies?

Pilot loosening one intervention for two weeks in a subset of locations.

This is the beginning: most of the world is **still susceptible to a highly transmissible and lethal pathogen**; yet the state of lockdown in place in many settings is **not sustainable**.



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The precautionary principle governed the early phases: now **data is needed** to understand **which interventions work**.

Evidence will come from many sources: from RCTs, to models probing drivers of transmission, to statistical & other analyses of impacts beyond infection.

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Resources

Illustrating model calibration and serology: https://labmetcalf.shinyapps.io/serol1/

An Immune Observatory to meet a time of pandemics https://elifesciences.org/articles/58989

Seasonality and SARS-CoV-2 https://science.sciencemag.org/content/early/2020/05/15/science.abc2535

Evaluating interventions: https://science.sciencemag.org/content/early/2020/05/20/science.abb6144

SARS-CoV-2 in children: https://cjelandm.github.io/Metcalf-Children-9thJune.pdf

Thank you!

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https://eebcovid19.princeton.edu/