



## Encouraging Social Distancing: Evidence from several Randomized Controlled Trials

**Esther Duflo**

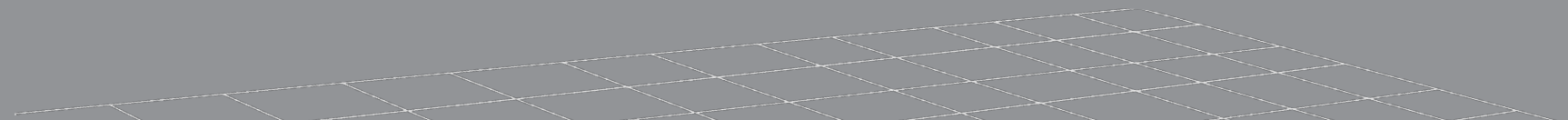
MIT and J-PAL

Markus Brunnermeier

Princeton

**Coming momentarily**

**At 12:30 p.m.**



# Webinar with Esther Duflo “Social Distancing”

## Poll Questions

- As of September 2020, who was more likely to always be wearing a mask outdoors:  
a) Blacks, b) White Democrats, c) White Republicans, d) All the same?
- Whose knowledge on COVID-19 is most affected by short video messages by a racially diverse group of physicians from MGH (Massachusetts General Hospital)  
a) Blacks, b) White Democrats, c) White Republicans, d) All the same?
- Whose willingness to pay for a mask is most affected by short video messages by a racially diverse group of physicians from MGH  
a) Blacks, b) White Democrats, c) White Republicans, d) All the same?

# Webinar upcoming momentarily at 12:30 pm

## ■ Tomorrow's Special Webinar



- Sign up and
  - Participate live and ask questions
  - Get executive summary

## ■ Paul Krugman & Lawrence Summers

“Will the Biden Stimulus lead to Inflation”

# Webinar upcoming momentarily at 12:30 pm

## ■ Next Week's Webinar



### ■ **Lasse Pedersen** “GameStop and Predatory Trading”

- **Sign up and**
  - **Participate live and ask questions**
  - **Get executive summary**

# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



- Andy Lo  
“Funding Models for  
Biomedical Innovations”

## ■ Catch up and

### ■ watch on YouTube

- Princeton Bendheim  
Center for Finance

**Biomedicine Is At An Inflection Point**

MIT LIFE

The “omics” Revolution:

- Gen**omics**
- Epigen**omics**
- Transcript**omics**
- Prote**omics**
- Metabol**omics**
- Microbi**omics**

What About Econ**omics**??

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# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars

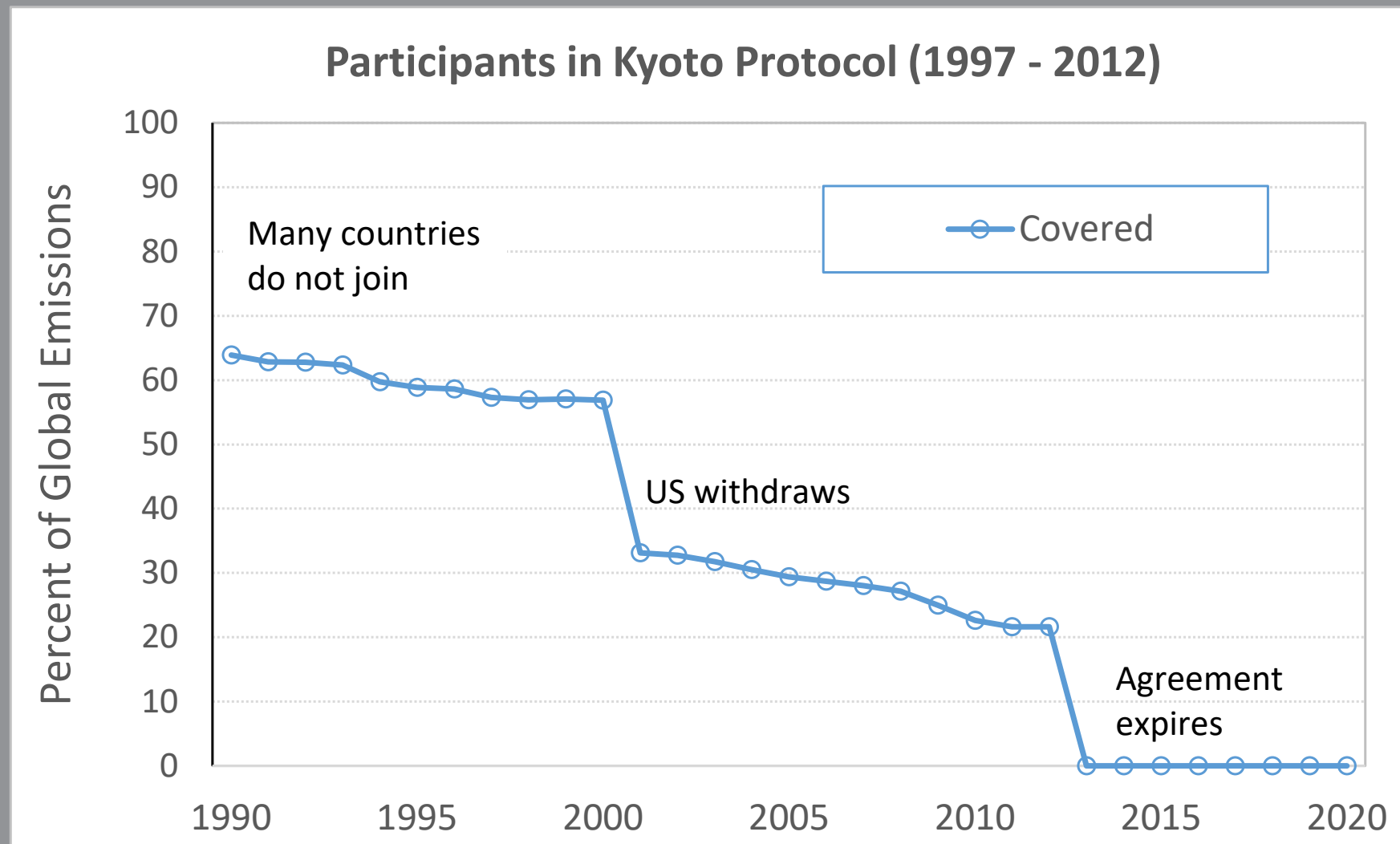


- Bill Nordhaus  
“Climate Compacts to Combat Free Riding in International Climate”

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### ■ watch on YouTube

- Princeton Bendheim Center for Finance

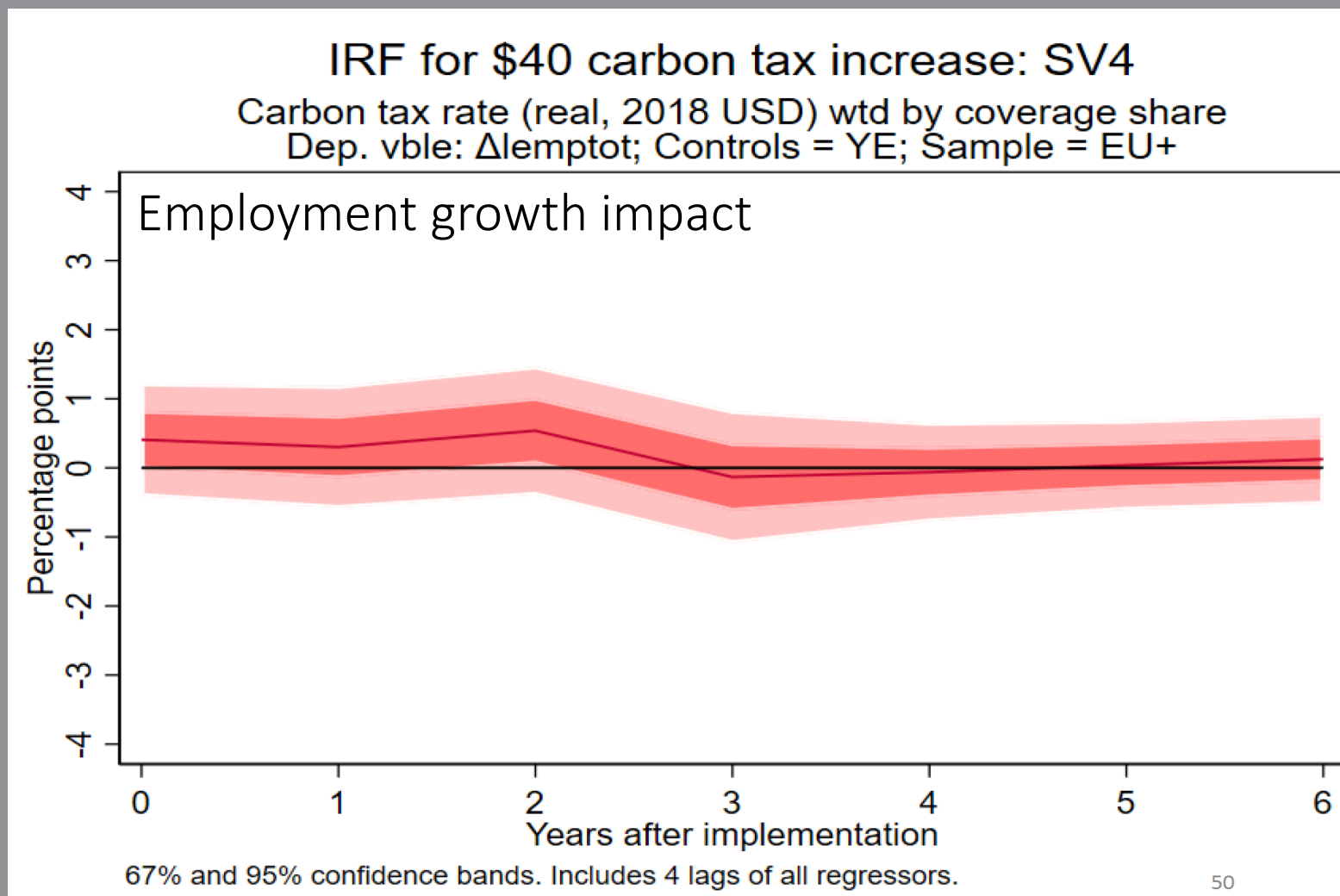


# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



- James Stock  
“Macroeconomics,  
Carbon Pricing, and  
Climate Policy”



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# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



- Jerome Powell  
“A **Conversation** about  
‘Average Inflation Targeting’,  
COVID Crisis, GFC, Debt,  
Swap Lines, ...  
and Resilience

- **Catch up and**
  - **watch on YouTube**
    - Princeton Bendheim  
Center for Finance

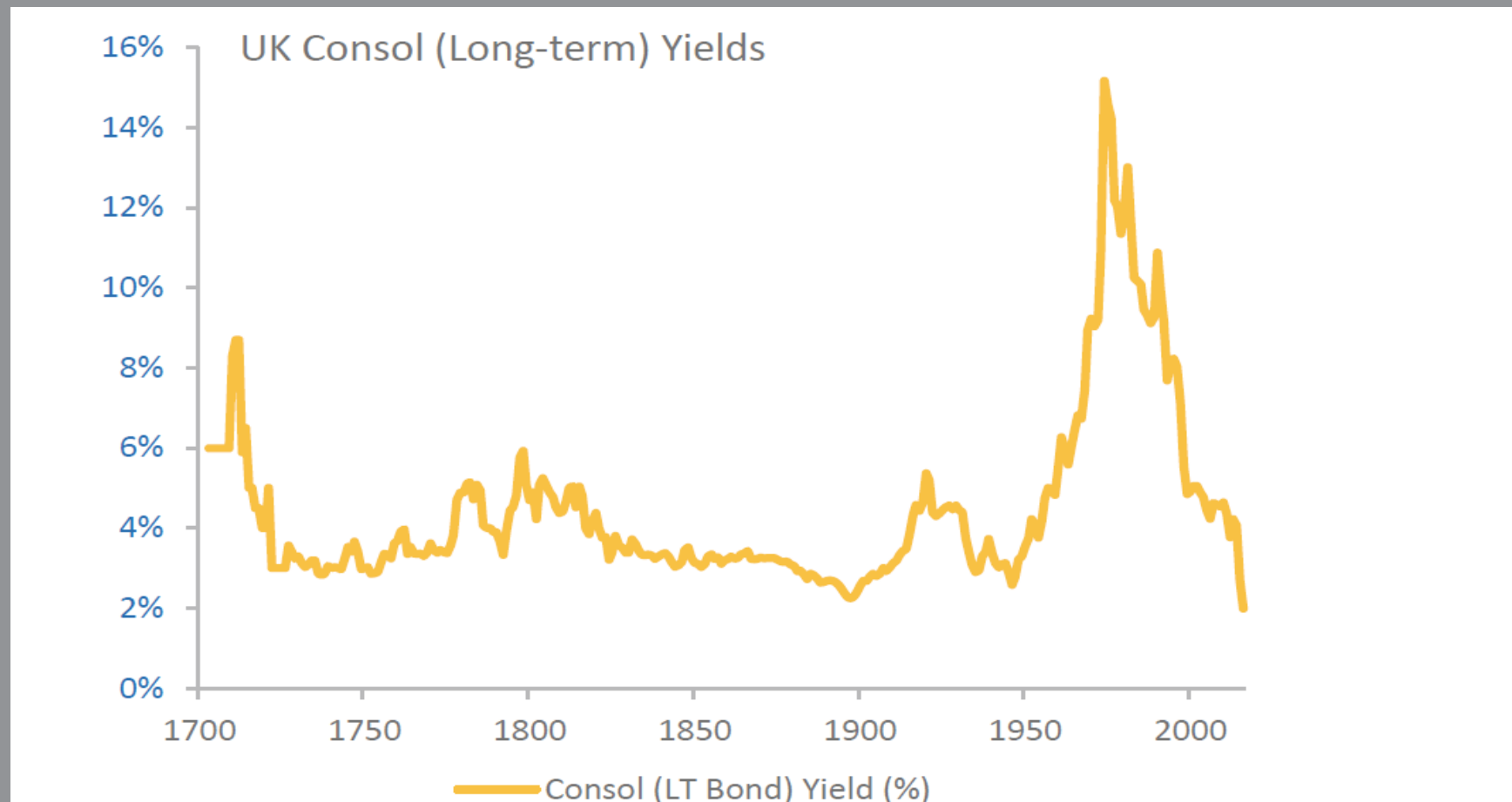


# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



- Charles Goodhart  
“Inflation and Interest Rates;  
not so much lower for longer  
as higher and sooner?”



## ■ Catch up and

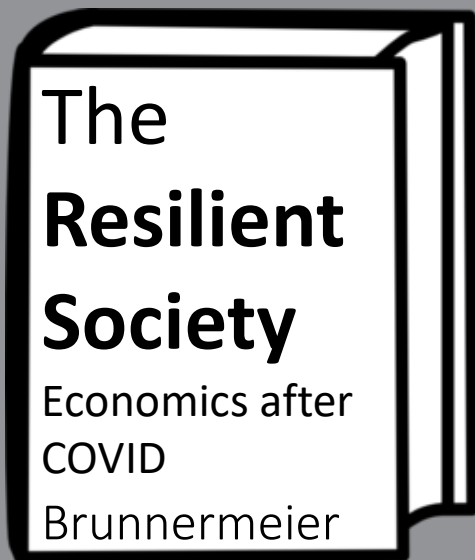
### ■ watch on YouTube

- Princeton Bendheim  
Center for Finance

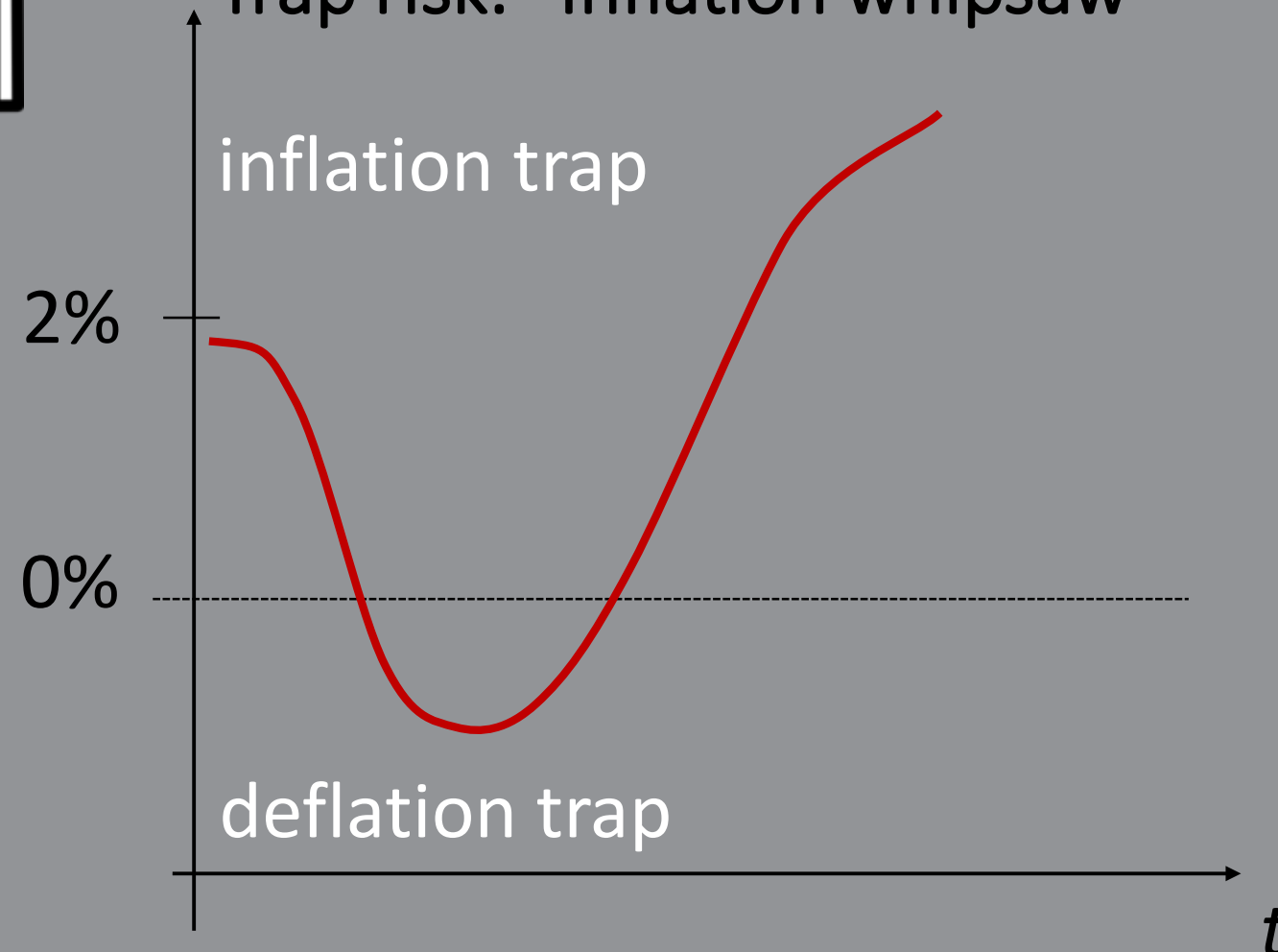
# Webinar upcoming momentarily at 12:30 pm

## Recent Webinars

- Markus Brunnermeier  
“Towards a Resilient Society”



- Trap risk: “Inflation whipsaw”



- Catch up and  
watch on YouTube
  - Princeton Bendheim  
Center for Finance

# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



- Nick Bloom  
“Working from Home: Will it Persist?”

### (B) The donut effect: bad for city centers good for suburbs

- Looks like employees WFH 2 or 3 days a week still want to live *near* city centers
- Generating a **Donut-Effect** – City Centers struggling but suburbs booming



## ■ Catch up and

### ■ watch on YouTube

- Princeton Bendheim Center for Finance

# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars



■ Jason Furman

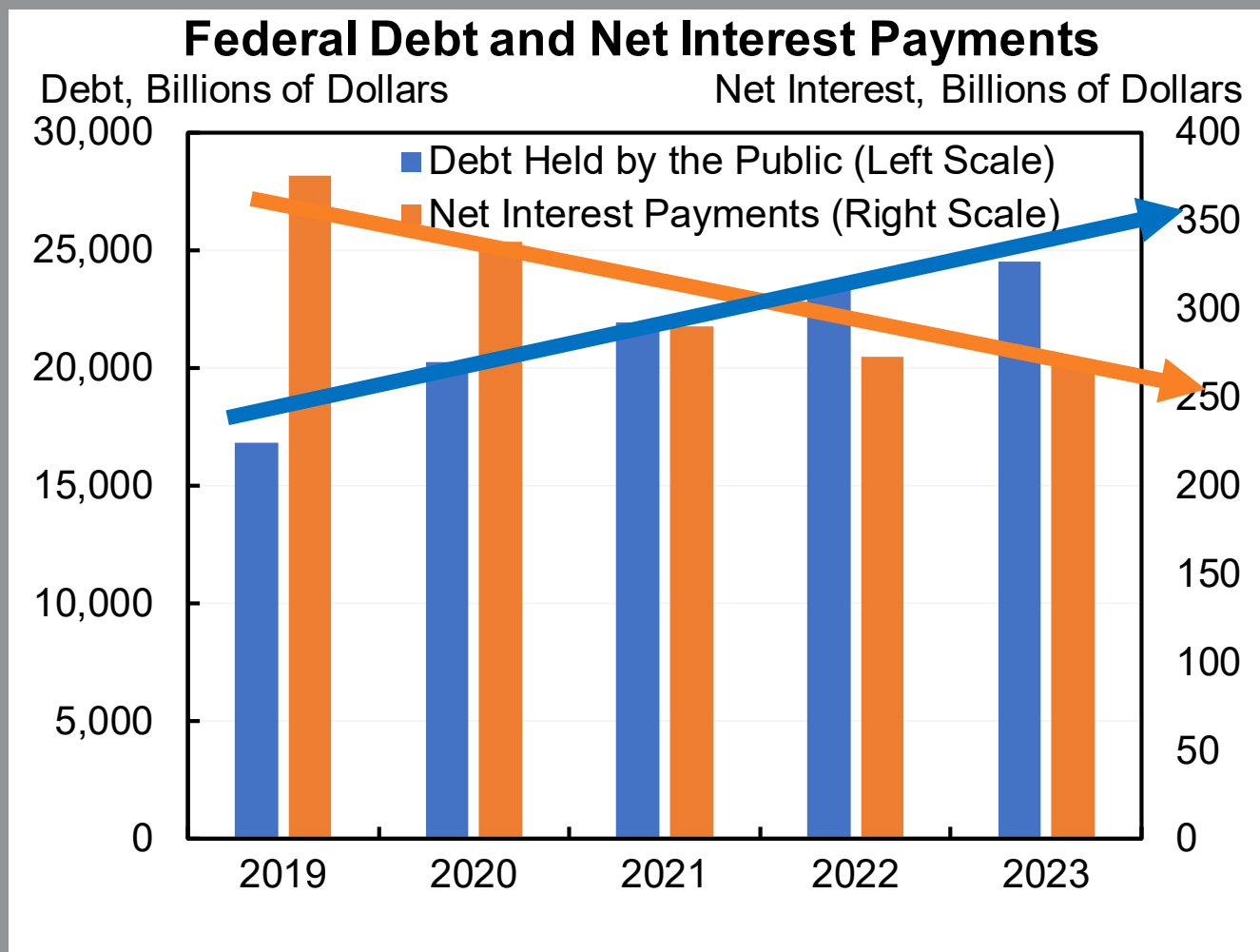
“When, if ever, should we worry about **debt**?”

■ Catch up and

■ watch on YouTube

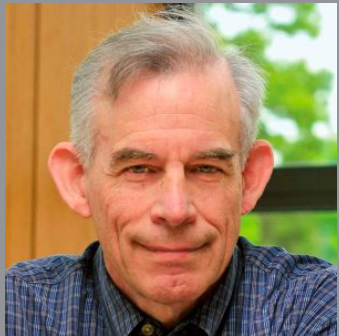
■ Princeton Bendheim  
Center for Finance

*Debt up,  
but interest  
payments down*



# Webinar upcoming momentarily at 12:30 pm

## ■ Recent Webinars

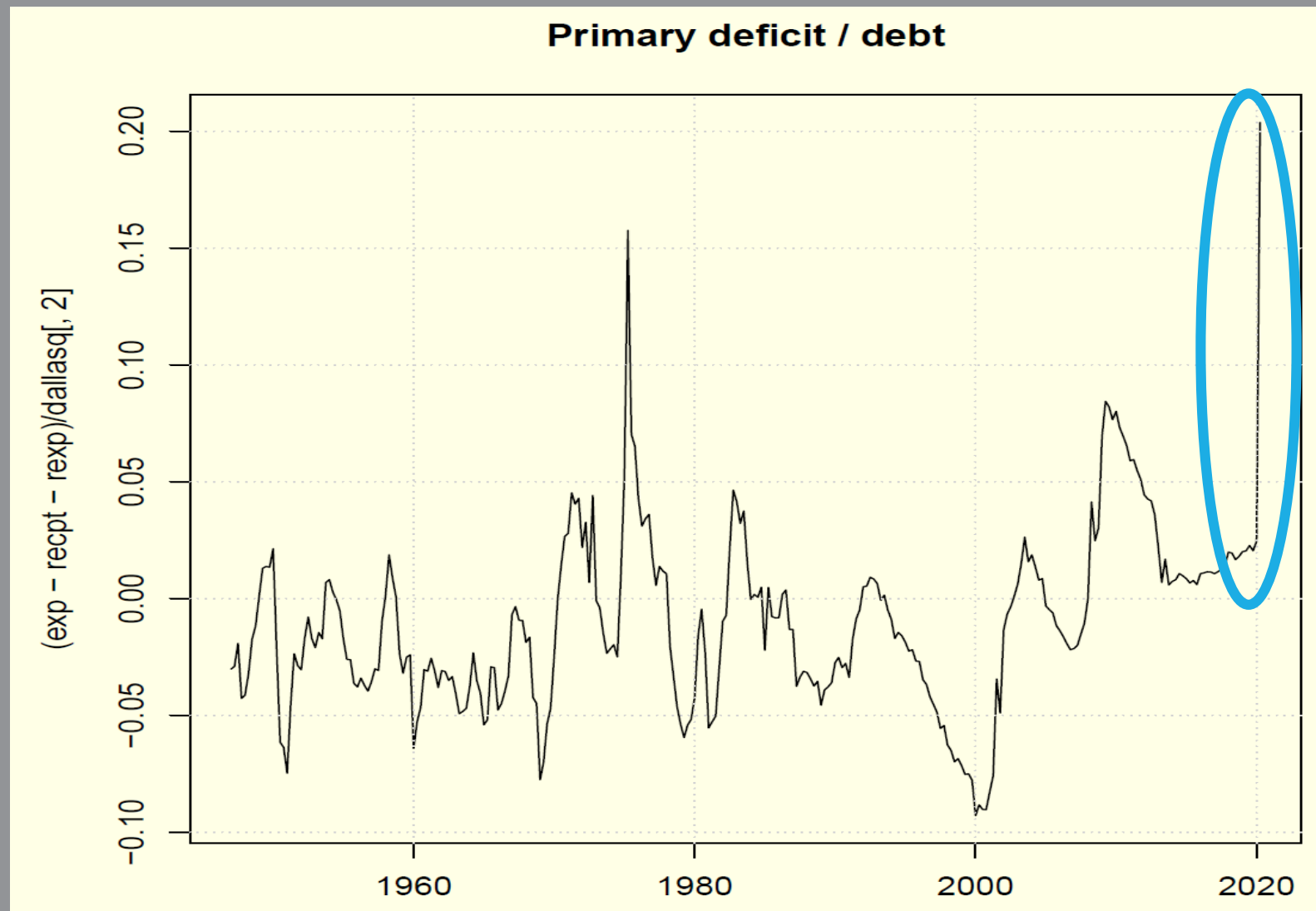


- Chris Sims  
“How to worry about Gov. Debt”

## ■ Catch up and

### ■ watch on YouTube

- Princeton Bendheim Center for Finance





# Webinar speakers 2020 ... and beyond



Thank you for your questions and for being part of it!



# Encouraging Social Distancing: Evidence from Several Randomized Trials

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Marcella Alsan, Abhijit Banerjee, Emily Breza, Fatima Cody Stanford, Arun G. Chandrasekhar, Esther Duflo, Sarah Eichmeyer, Paul Goldsmith-Pinkham, Tristan Loisel, Mohit Karnani, Lucy Ogbu-Nwobodo, Benjamin A. Olken Carlos Torres, Anirudh Sankar, Pierre-Luc Vautrey, Erica Warner

February 11, 2021

# Introduction

- Before a vaccine was available, behavior change (social distancing, mask wearing, hand-washing) were the only tools available to protect oneself against COVID-19
- Even with the vaccine, communication remains critical
- As soon as March 2020, people were bombarded with information and dis-information, through radio, TV, social media, and it went on.
- “Credible” people (Fauci, stars, doctors) try to convey the most relevant information and advice
- This raises several questions:
  - Does this kind of light touch campaigning make any difference (or is it drowned, in the noise or in the politics)?
  - Does the information need to be tailored to particular groups to be effective?
- This group of projects seek to determine precisely that, and also to make a difference along the way...

# Study 1: The “Banerjee effect”

Context West Bengal, India May 2020

- Late March-April, strict nationwide lockdown, early May saw loosening of some restrictions
  - Our intervention: May 4-5
- Population bombarded with messages about COVID-19
  - e.g. 20 messages on social distancing in the last 2 days
  - Marketing jingles on hand-washing from soap manufacturers
  - $\implies$  marginal impact of *another* message may be limited
- Reasonably high knowledge levels
- However, public health behavioral compliance far from universal
  - 67% washed hands with soap when coming home from trip outside
  - 37% had traveled outside village in prior 2 days
  - on avg, 11 interactions within 2 arms lengths in prior 2 days

Field experiment: Would an extra unexpected nudge from a reliable source improve compliance?

# Large-scale randomized controlled trial in West Bengal

## Research design

- 2.5-minute-long video clips recorded by Abhijit Banerjee on an iPhone
  - 2019 Nobel laureate in economics, chair of the COVID-19 scientific council, well-known in WB
- Control: Link to gov't website
- All messages reviewed basic symptoms, encouraged symptom reporting to local health worker (ASHA)
- $2 \times 2 \times 2 + 1$  treatment arms
  - Behavior: Social distancing vs. Hygiene
  - Motivation: Externality vs. internality
  - Ostracism: Anti-ostracism vs. No Mention
- Messages randomized at Pincode level (1,214 out of 1,264 Pincodes in WB)
- Sent via SMS to 25m Jio subscribers (+ 3m control)
- Randomization allows measurement of:
  - Effect of any message (compare any message to control)
    - Spillovers (non Jio subscribers)
  - Comparative effects of specific message content

## Data: phone surveys

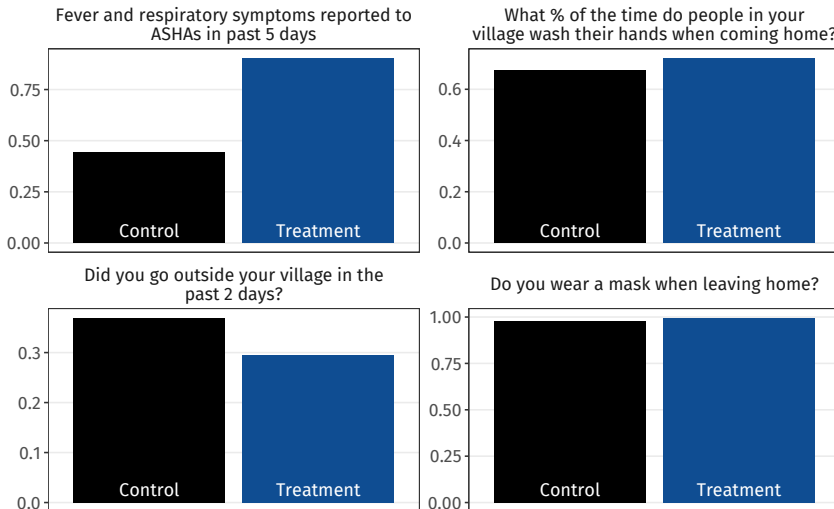
### Health Worker survey:

- Front-line health worker survey data (677 ASHAs)
  - Pre-pandemic: ASHAs responsible for maternal and child health
  - Redeployed by government for COVID work: symptom tracking, quarantine for migrants, triage of symptomatic individuals
- Surveys conducted w/in 5 days of treatment
  - Key outcomes: does anybody report to them?

### Council Member survey:

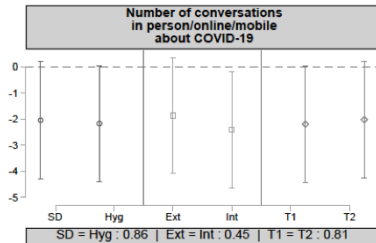
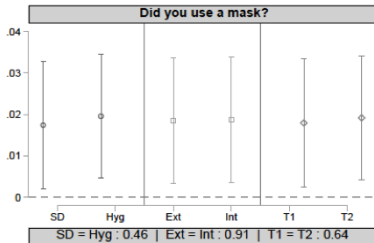
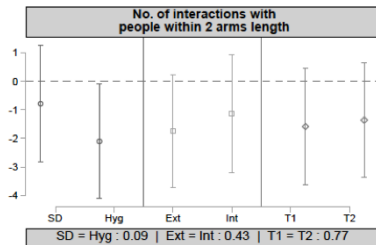
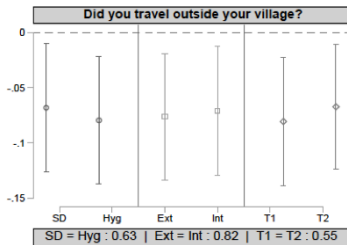
- Random sample from public phone directory of previous and current village council members (*gram panchayat*).
  - Largest-scale public directory we could find.
- Questions on travel, social distancing, hygiene & knowledge of COVID-19, mask wearing (not just by them).
- 1883 respondents: mix of Jio (treated) and non-Jio (untreated) subscribers

# Treatment doubled symptom reporting and improved behaviors





# Message content didn't matter



## Take-aways

- Intervention led to substantial improvements in health-preserving behaviors, regardless of content.
- Additional results:
  - No detectable impacts on knowledge
  - Large spillovers onto behaviors of non-Jio subscribers (didn't directly receive the videos)
- Interpretation: Intervention led to behavioral “nudge” rather than spread of new information
- Indicative of significant benefits from continuing messaging campaigns by *credible sources* even once society is informed
- Note we don't know if the same message would also have worked by a less credible source...

## Study 2 and 3: Two Studies with US doctors

### Study 1

*Comparison of knowledge and information seeking behavior following general COVID-19 public health messages and messages tailored for Black and Latinx communities: A randomized controlled trial. Annals of internal medicine*

### Study 2

*Comparison of knowledge and behavior following general physician-delivered COVID-19 public health messages and messages acknowledging racial inequity: A randomized controlled trial.*

# Motivation

- 2020 saw a "syndemic": pandemic+systemic racism epidemic.
  - 1.4 times greater case COVID-19 rates in Black US population
  - 3.7 times greater hospitalizations.
  - 2.8 times greater death rates (age adjusted: 4 times)
- Many physicians have tried to reach out to people directly to encourage social distancing, not travelling, etc.
- Doctors are among the experts most trusted in public opinion
- Questions:
  - Is such physician communication effective?
  - Does it effectively reach Black Americans who bear the biggest burden?
  - Can anything be done to make such communication more effective for Black Americans?

## Context and methods for both studies

- Both studies were conducted in the US, on line, using the Lucid (online surveying) platform.
- Relatively large samples of low income Americans were recruited
  - Study 1: 11,000 Blacks and LatinX from May 13 to May 24 2020
  - Study 2: 20,000 Blacks and Whites in September 2020
- Diverse doctors from MGH and Lynn community health center read 3 information statement about COVID-19 and preventive behavior [▶ Link](#)
- We varied different aspects of the message and the messengers.
- And then surveyed online to measure outcomes.

## Study 1: Main Hypotheses Tested

- Do the videos have any impact (on knowledge, beliefs, behavior)?
- Does race concordance between doctor and respondent have an impact?
- Does acknowledging prior injustices, immigration fears, or economic insecurity have an impact?
- Is the video from a CDC representative (Dr. Birx) as effective as a video from a MGH doctor?
- Do beliefs & behavior on mask wearing change if informing respondents of others beliefs?



# **Study Design and Flow**

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# Study Flow and Timeline

## 1. Recruitment and Baseline Survey:

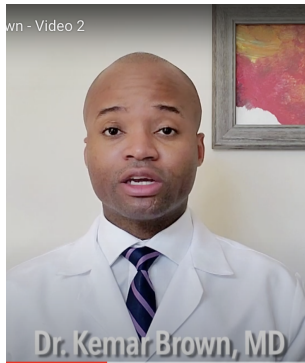
- Recruit target sample via Lucid (began on May 13 ended May 24, 2020)
- Collect demographic information and healthcare experience.

## 2. Randomization:

- Treatment scripts tailored to each racial/ethnic group
- Randomization at the individual level :
  - Concordant or discordant doctor
  - Birx-acknowledgement of inequality/difference in health care access
  - Social norm on masks or not
- A control group received COVID-19 information at the very end of the survey.

## 3. Endline: included knowledge and click on links to get more information

# Concordant or Discordant

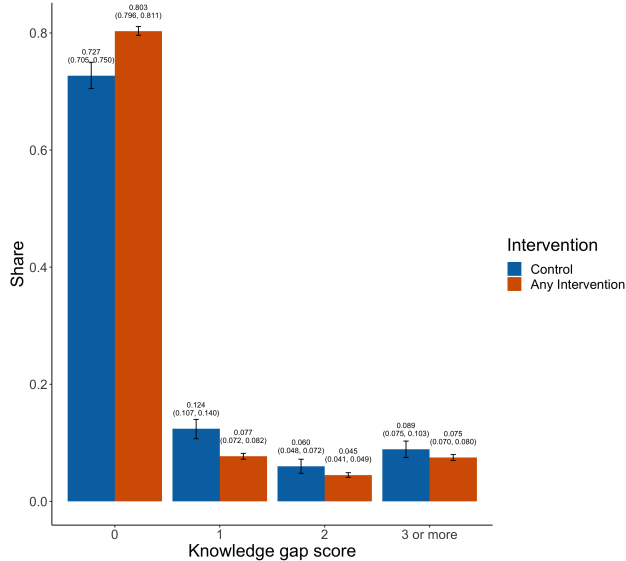


# Social norms Survey

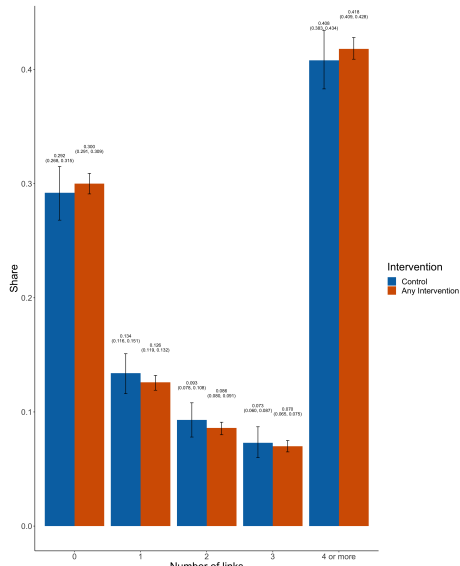


- Do you believe this person is... sick? up to no good? protecting their communities
- 8 out of 10 people think that black person wearing a mask is protecting their communities

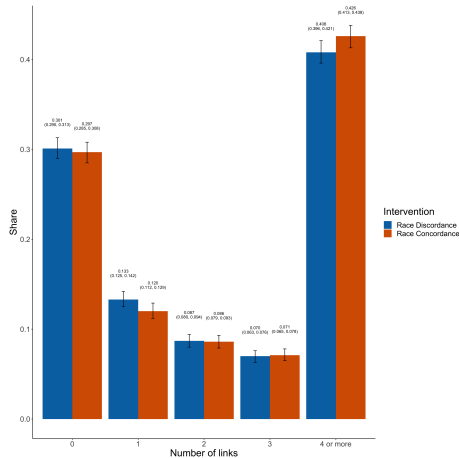
# On average, intervention Affected knowledge



# But not demand for links



# Except for Black, when the doctor reading the scripts was Black



## The other forms of tailoring did not matter

- Dr Birx was not popular but did not affect impacts on knowledge or demand for link.
- Social norm message affected the perception of social norm but not other knowledge or behavior (even for people whose view on the social norms was changed)
- Acknowledgement of inequality did not make any difference.



## Doctors video appear to be effective at changing knowledge but...

- No hard measure of behavior in our survey (even self reported)
- No Whites
- COVID fatigue...
- Racial justice protests, polarization getting closer to the election.
- Before scaling up, a second study...

## Study 2

- Do the videos have any impact (on knowledge, behavior)?
- Does race concordance between doctor and respondent have an impact?
- Does systemic-racism acknowledgment that had become popular with companies following the racial protest have an impact?
- What are the effects of acknowledging racial disparities in COVID incidence?

## The AMA anti-racism statement

After the George Floyd protests, every large organization rushed to issue anti-racism statements, including the American Medical association

Treatment statement ▶ treatment

Control statement was another AMA statement on drug pricing. ▶ control

Actors for both statement varied in gender and race (randomly assigned)

# **Study Design and Flow**

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## Study Design: Videos

Each subject receives one AMA statement (anti-racism or placebo) and then watches three videos pertaining to health.

**AMA Statement:** Racial Injustice Acknowledgment or Drug Pricing (Placebo)

### **Treatment Videos:**

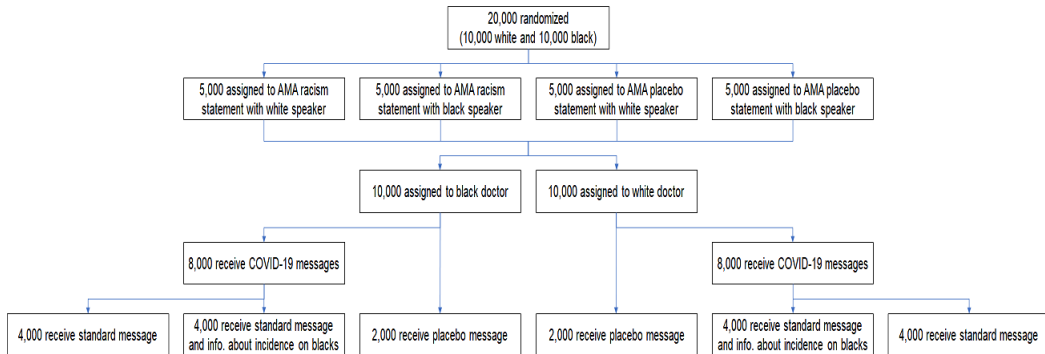
1. Video T1:
  - Introduction and symptoms
2. Video T2:
  - Social distancing and hygiene
    - Variation: racial disparities in burden
3. Video T3:
  - Information about masks

### **Placebo Videos:**

1. Video C1:
  - Information about fitness routines
2. Video C2:
  - Information about sleep hygiene
    - .
3. Video C3:
  - Information about sugar intake

# Study Design

Summarized randomization tree with target cell-sizes:



Full tree with exact cell-sizes: ► CONSORT Chart

# Study Flow and Timeline

## 1. Recruitment and Baseline Survey:

- Recruit target sample via Lucid (began on August 7 ended September 6, 2020)

## 2. Randomization:

- Randomization at the individual level according to Figure 24.

## 3. Video delivery

## 4. Endline: questions, click on links, preference over donations, willingness to pay for masks.

## 5. Follow-up: some participants that agreed to be recontacted were surveyed ~ 3 days later and asked about their safety-behaviors (and re-surveyed on knowledge and beliefs).

- 12591 people were included in the follow up sample to track (defined by Lucid).
- We managed to track 6217.
- Attrition at this stage is 51.8% in the treatment group and 51.0% in the control group.

# Outcomes

1. **Knowledge gap** measures if individual knows:
2. **Information seeking behavior** measures the number of additional COVID-19 informational links requested by the participant.
3. **Willingness to pay for masks** the price they would be willing to pay for a pair of high-quality masks. It was in participants' best interest to report their true willingness to pay for them.
4. **Safety gap** measures if participants engaged in four behaviors of interest in the followup:
  - If they wore a mask indoors
  - If they wore a mask outdoors
  - If they washed their hands
  - If they followed social distancing guidelines
5. **Donation allocations** measure how they would like to allocate two donation of \$1000 (covid vs alzheimer and Black COVID relief vs all COVID relief)



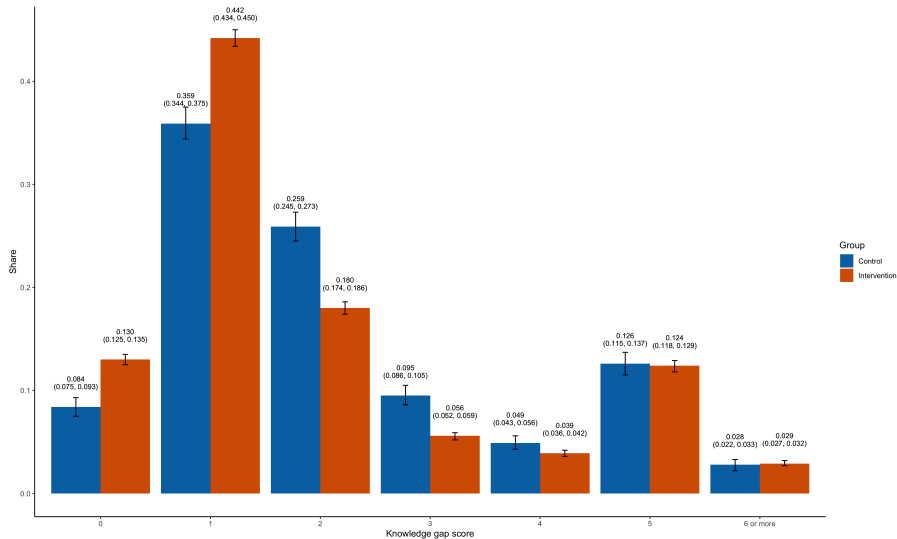
# Results

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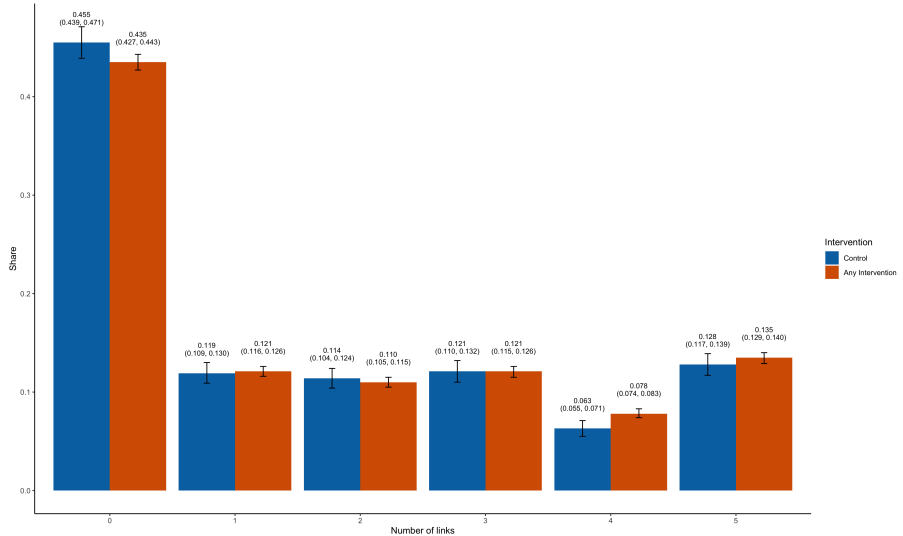
## Some interesting facts: Knowledge is not action

- Blacks have more knowledge gaps than whites (score of 0.31 vs 0.17)
- But they are much more careful (Before intervention, 44.6% always wear a mask outside , vs 20.4% for whites)
- Republicans similar knowledge gap to Democrats
- But they are much less careful (Before intervention, 30% of Democrat always wear a mask outside, vs 15% of Republicans )

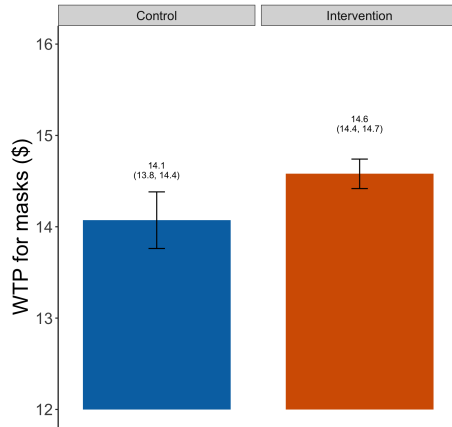
# Knowledge Gaps decreased



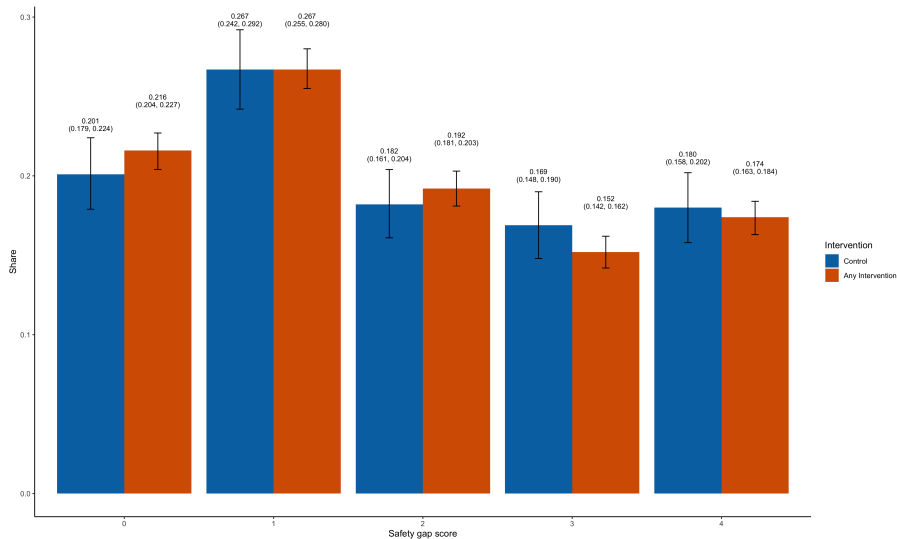
# Demand for Links increased



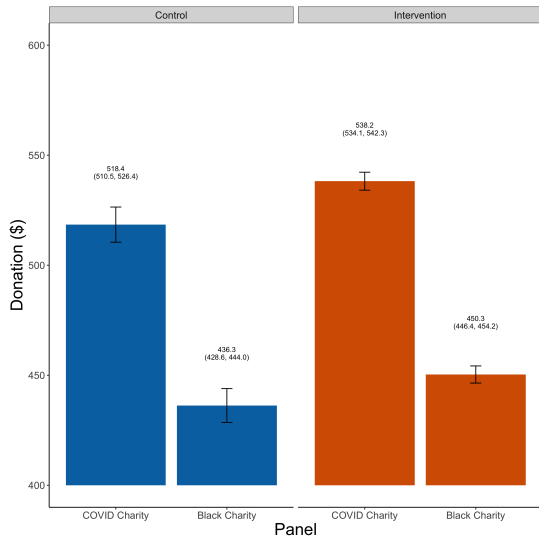
## Willingness to pay for mask increased



# Safety Behaviors Gaps decreased



# Donation to COVID and Black charity increased



## Effects of variations in the message framing

To analyze the effect of different variants of the treatment (AMA racism statement, race concordance, emphasis on unequal burden of COVID-19), we interact the each variant with the COVID treatment dummy.

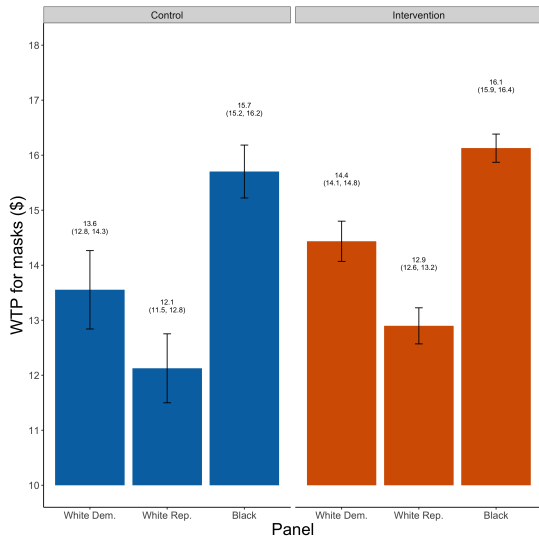
- Little impact on behavior
  - No impact on the AMA treatment on anything
  - No impact of Black doctor on knowledge or behavior (of either black or white)
  - No impact of the reminder of the disparate burden on knowledge or behavior
- But some positive impact on solidarity towards Black
  - Disparate burden increase donation to Black
  - Seeing a black doctors increase donations to black
  - Effects are stronger for White but when they are all on at the same time, very robust effect on Whites as well.



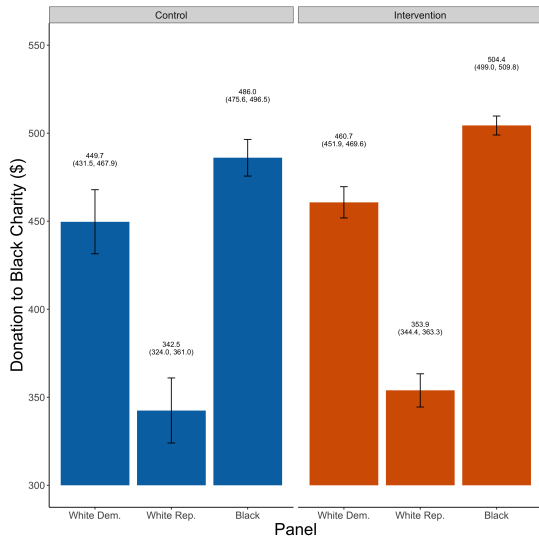
## Who is more affected?

- Effect on knowledge gaps larger for whites
- But effect on behavior all the same
- Effect on knowledge gap larger for republicans
- And effect on behavior also all the same, despite the lower levels to start with

# Republicans increase their WTP for mask as much as democrats



# Republicans increase their donation to Blacks as much as democrats



## Overall Summary

- Videos improved COVID-19 related knowledge.
- Videos improved behavior: increase in the demand for links and WTP for masks. Self-reported behavior a few days after the intervention also improves.
- Effects were present in all groups, even Republicans, and less educated people
- Racial specific framing did not matter for individual behavior but prompted sense of solidarity towards Blacks (among Blacks AND Whites).

# Messaging at Scale with Social Media

with Marcella Alsan, Abhijit Banerjee, Emily Breza, Arun Chandrasekhar, Paul Goldsmith-Pinkham, Benjamin Olken. FIXME ADDME

## Social Media and "Messaging at Scale"

Given these positive impacts, we partnered with Facebook to deliver messaging "at scale":

- Reach of social media unrivaled:
  - Facebook: 2.8bn monthly active users globally, 230mm US accounts
- November 2020: fear about holiday travel as engine for spreading COVID-19
- Many doctors try to take out to Facebook to convey to people they should stay home
- Intervention: video messages recorded by doctors and nurses
  - Key message: ▶ stay home for the holidays
  - Delivered as sponsored content (advertisements) to Facebook users (with Facebook donation)

# Interventions

- Thanksgiving intervention
  - Launched November 14
  - 11,954,108 users saw a study message at least once
  - 30,780,409 total video posts
- Christmas intervention
  - Launched December 17
  - 23,302,290 users saw a study message at least once
  - 80,773,006 total video posts
- Sample frame: 820 counties in 13 US states
- 2-Stage Experimental Design for both interventions:
  - Counties randomized to High vs. Low Intensity
  - Within county, ZIP codes randomized to treatment or control:
    - High Intensity Counties: 75% of ZIPs treated
    - Low Intensity Counties: 25% of Zips treated.

## Outcomes: Facebook Mobility Data

### County-level outcomes: Facebook Movement Range Data

- **"Change in movement" metric:** how much are people moving around?
  - aggregates of how many 600m x 600m spatial tiles each user is seen in each day.
  - relative to Facebook baseline: February 2020
- **"Stay put" metric:** how much of the time are people really staying in their homes? (measured daily)
  - Fraction of the day that is spent in a single 600m x 600m geographical area.
- We generate **"Leave home" = 1-"Stay put"**. Higher levels indicate more movement.
- Note: both measures consider individuals who began the day in each county.
  - Tagged to the place, not the person.



# Thanksgiving/Christmas: Leave Home

Time Period: Nov 23-29 for Thanksgiving; Dec 21-27 for Christmas

Thanksgiving		Share Leave Home		
	Mon-Weds	Thurs-Sun	Mon-Sun	
High Intensity County	0.100 (0.096) p = 0.298	0.166 (0.115) p = 0.149	0.135 (0.095) p = 0.155	
Control Mean	80.9	74.6	77.3	
Control Sd	2.66	4.16	4.76	
Main effect RI p-val	0.311	0.147	0.142	
Observations	2,072	2,759	4,831	
Christmas		Share Leave Home		
	Mon-Thu	Fri-Sun	Mon-Sun	
High Intensity County	0.085 (0.095) p = 0.372	0.180 (0.148) p = 0.226	0.106 (0.104) p = 0.310	
Control Mean	80.7	70.8	76.5	
Control Sd	2.85	4.62	6.13	
Main effect RI p-val	0.389	0.212	0.321	
Observations	2,651	1,988	4,639	

# Thanksgiving/Christmas: Distance Traveled

Time Period: Nov 23-29 for Thanksgiving; Dec 21-27 for Christmas

Thanksgiving		Distance Traveled Relative to Feb 2020		
	Mon-Weds	Thurs-Sun	Mon-Sun	
High Intensity County	-0.701 (0.411) p = 0.089	0.035 (0.312) p = 0.911	-0.190 (0.278) p = 0.494	
Control Mean	-5.32	-20.5	-14	
Control Sd	9.03	12.8	13.6	
Main effect RI p-val	0.091	0.909	0.528	
Observations	2,072	2,759	4,831	
Christmas		Distance Traveled Relative to Feb 2020		
	Mon-Thu	Fri-Sun	Mon-Sun	
High Intensity County	-0.755 (0.329) p = 0.022	0.238 (0.299) p = 0.426	-0.263 (0.262) p = 0.316	
Control Mean	-4.54	-27.6	-14.5	
Control Sd	9.77	16.2	17.3	
Main effect RI p-val	0.015	0.43	0.317	
Observations	2,651	1,988	4,639	

## Facebook Study: Takeaways

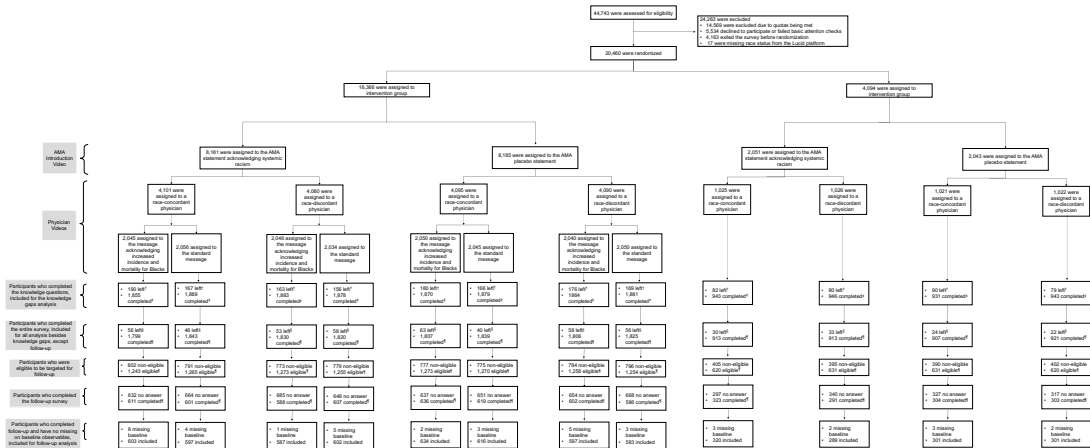
- We detect responses to public health messaging by medical professionals "at scale"
  - Facebook users respond to the sponsored content
- Distance traveled prior to both holidays decreases
  - Consistent with following specific instructions in video messages
- However, no impact on staying home
  - Cannot rule out sizable positive impacts
  - Scope for substitution effects
- Need to be cautious in interpreting net impacts
- In progress: COVID-related outcomes

## Conclusion

- Despite ambient noise, light, social-media based, information campaign still get people to change their behavior
- Even on topics that appear to be ultra-politicized (travel on thanksgiving, mask wearing) people are affected by simple messages, regardless of race or politics
- People are still responsive to actionable information...

Thank You

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# Scripts

## **Treatment Statement RI (Racial Justice):**

The American Medical Association recognizes that racism in its systemic, structural, institutional, and interpersonal forms is an urgent threat to public health, the advancement of health equity, and a barrier to excellence in the delivery of medical care. The American Medical Association opposes all forms of racism. The American Medical Association denounces police brutality and all forms of racially-motivated violence. The American Medical Association will actively work to dismantle racist and discriminatory policies and practices across all of health care.

## **Placebo Statement DP (Drug Pricing):**

The American Medical Association believes in transparency in prescription drug pricing, and we are pleased the House Ways & Means Committee moved the issue forward. Patients and their physicians want to be armed with more information, yet the current situation is opaque if not impenetrable. The committee is rightfully determined to expose factors that lead to high drug prices, and we look forward to continuing our efforts in that regard.

## Video T1

Hello, I'm Dr [YOUR LAST NAME HERE] from [YOUR INSTITUTIONAL AFFILIATION HERE], and I'd like to tell you a little about Coronavirus or COVID-19. COVID-19 is a new virus that can infect the respiratory tract and lungs. Although many people who get sick from COVID will get better, some people who get it become very ill and some even die.

Although there's no cure, there are ways medical professionals have found to protect you and your community from COVID. I hope that this message can give you information that will help you protect you or someone you love from COVID infection.

First, I would like to tell you about the symptoms of COVID-19. The most common symptoms of COVID-19 are cough, fever, and trouble breathing. Another odd symptom some people have is loss of taste or smell. A large number of people who have COVID-19 actually don't show any symptoms at all. Unfortunately, people can still spread the disease to others even with no symptoms. The next video will provide you with more information on how you can protect yourself and others.



## Video T2

Hello, I'm Dr [YOUR LAST NAME HERE] from [YOUR INSTITUTIONAL AFFILIATION HERE],

You may be looking for ways to resume some activities as safely as possible.

However, COVID-19 remains contagious and shows no signs of disappearing. In fact, during the week of July 6 there were 58,000 new COVID cases per day diagnosed in the United States.

[ONLY FOR ACKNOWLEDGMENT SUB-TREATMENT T2A] *Black Americans and other minority groups are three times as likely to get and, when you account for age, four times as likely to die from COVID as white Americans.*

Without a safe and effective vaccine or therapy, our only option is to continue taking precautionary measures to protect ourselves, our communities, and the most vulnerable among us.

## Video T2 (cont'd)

While there is no way to ensure zero risk of infection from COVID-19, observing these three practices will help to protect you and others.

First, continue to practice social distancing whenever possible: Try to stay outdoors, and to the maximum extent possible, please stay 6 feet apart. If you must be indoors, use visual reminders-like signs, chair arrangements, markings on the floor, or arrows-to help remind you to keep your distance from others, and maintain physical barriers whenever possible.

Second, continue to wash your hands often for at least 20 seconds with soap and water, especially before going out, and every time you return home.

Third, wear a mask when in public at all times, especially when indoors or when it is difficult to stay 6 feet away. The next video will tell you a bit more about masks.

## Video T3

Hello, I am doctor [YOUR LAST NAME HERE] from [YOUR INSTITUTIONAL AFFILIATION HERE], and I will tell you a bit more about masks. Wearing a mask is a key way to prevent the spread of COVID-19. You are not just protecting yourself but also your grandma and your community, just in case you have COVID-19 but don't know it.

Even if wearing a mask may sometimes put you in a difficult situation, it is important to protect you and the community from COVID 19 disease. As medical professionals, I am committed to delivering the best care I can to every patient. My goal is to make sure that you and everyone you love survives this COVID-19 pandemic. Thank you for listening to these messages.

## Video C1

Most adults need to sleep between 6 and 8 hours a night. Now, there are some people who get five hours a night and they are fine, so there is some variation across people. But for most adults, we need 6 to 8 hours in order to function well the next day. If you feel sleep deprived you might not be able to function as well as you would normally like.

It's important to have something called sleep hygiene which is a routine you follow at bedtime and can help you fall asleep. Things that can disrupt sleep hygiene include caffeine or alcohol too close to bedtime. Eating late at night can also cause indigestion. So keep a routine and trying to get 6-8 hours is important.

## Video C2

Sugar is found in many different food items. Natural sugars are those that can be found in fruits, vegetables and dairy products like milk. Sugars like these that are natural are not really problematic because they are coming alongside lots of other vitamins and minerals.

There are other sugars, though, that are processed and added to a food item. These are called additive sugars. A good rule of thumb is to eat foods with less than 5g of sugar per serving. Avoid buying products where one of the first five products is a sugar.

And it can be better to buy an unsweetened product like an unsweetened cereal or oatmeal and then add a teaspoon of sugar to it if you need the sweetness than to buy a heavily sweetened product, like a sugar cereal which can have several teaspoons of sugar per serving.

## Video C3

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New fitness guidelines can be summed up as follows: just move and anything counts. Sneaking in a few minutes of physical activity throughout the day adds up in the long run. The guidelines are trying to make it easier for individuals to be fit and drop the rule that activity must be in 10 minute blocks of time. In a nutshell, activity has benefits even if it's for a short amount of time. Taking the stairs instead of the elevator, parking your car far away from the entrance to a store or walking your dog around the block can all help you be fit. The guidelines still call for at least 150 minutes a week of moderately intense aerobic exercise and two weekly sessions of muscle training activity, like lifting weights or yoga.

# Summary Statistics

Variable	Study			Any intervention			Placebo		
	All	Black	White	All	Black	White	All	Black	White
<b>Nb observations</b>	17689	7879	9810	14145	6303	7842	3544	1576	1968
<b>Age, mean (SD)</b>	40.22 (17.81)	34.12 (15.48)	45.12 (18.04)	40.20 (17.83)	34.15 (15.48)	45.07 (18.09)	40.30 (17.73)	34.00 (15.47)	45.35 (17.81)
<b>Region, n (%)</b>									
Region 1	3024 (17.1)	1187 (15.1)	1837 (18.7)	2424 (17.1)	952 (15.1)	1472 (18.8)	600 (16.9)	235 (14.9)	365 (18.5)
Region 2	3884 (22.0)	1494 (19.0)	2390 (24.4)	3114 (22.0)	1207 (19.1)	1907 (24.3)	770 (21.7)	287 (18.2)	483 (24.5)
Region 3	8046 (45.5)	4291 (54.5)	3755 (38.3)	6397 (45.2)	3406 (54.0)	2991 (38.1)	1649 (46.5)	885 (56.2)	764 (38.8)
Region 4	2735 (15.5)	907 (11.5)	1828 (18.6)	2210 (15.6)	738 (11.7)	1472 (18.8)	525 (14.8)	169 (10.7)	356 (18.1)
<b>Demographic, n (%)</b>									
High school graduate	15016 (84.9)	6125 (77.7)	8891 (90.6)	12009 (84.9)	4899 (77.7)	7110 (90.7)	3007 (84.8)	1226 (77.8)	1781 (90.5)
HHI above 60k	4206 (23.8)	1657 (21.0)	2549 (26.0)	3356 (23.7)	1327 (21.1)	2029 (25.9)	850 (24.0)	330 (20.9)	520 (26.4)
Female	9880 (55.9)	4492 (57.0)	5388 (54.9)	7907 (55.9)	3595 (57.0)	4312 (55.0)	1973 (55.7)	897 (56.9)	1076 (54.7)
Male	7809 (44.1)	3387 (43.0)	4422 (45.1)	6238 (44.1)	2708 (43.0)	3530 (45.0)	1571 (44.3)	679 (43.1)	892 (45.3)
<b>Party, n (%)</b>									
Party dem.	6977 (39.4)	4228 (53.7)	2749 (28.0)	5594 (39.5)	3385 (53.7)	2209 (28.2)	1383 (39.0)	843 (53.5)	540 (27.4)
Party rep.	4376 (24.7)	699 (8.9)	3677 (37.5)	3494 (24.7)	553 (8.8)	2941 (37.5)	882 (24.9)	146 (9.3)	736 (37.4)
Independent	6336 (35.8)	2952 (37.5)	3384 (34.5)	5057 (35.8)	2365 (37.5)	2692 (34.3)	1279 (36.1)	587 (37.2)	692 (35.2)
<b>Preventive practices, n (%)</b>									
Mask in (always)	12106 (68.4)	5316 (67.5)	6790 (69.2)	9648 (68.2)	4230 (67.1)	5418 (69.1)	2458 (69.4)	1086 (68.9)	1372 (69.7)
Mask out (always)	5517 (31.2)	3513 (44.6)	2004 (20.4)	4408 (31.2)	2807 (44.5)	1601 (20.4)	1109 (31.3)	706 (44.8)	403 (20.5)
Wash hands (always)	10779 (60.9)	5084 (64.5)	5695 (58.1)	8688 (61.4)	4090 (64.9)	4598 (58.6)	2091 (59.0)	994 (63.1)	1097 (55.7)
Distance (always)	9461 (53.5)	4587 (58.2)	4874 (49.7)	7571 (53.5)	3681 (58.4)	3890 (49.6)	1890 (53.3)	906 (57.5)	984 (50.0)

## Extra tables



## Does race concordance have an effect on knowledge?

### Immediate Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	0.995 (0.947,1.045)	0.847	18762
African-American	1.005 (0.944,1.069)	0.886	9445
White	0.974 (0.894,1.061)	0.548	9317

### Follow-up Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	0.995 (0.916,1.082)	0.909	6030
African-American	0.973 (0.861,1.100)	0.661	2097
White	1.014 (0.905,1.137)	0.806	3933

## Does race concordance have an effect on behavior?

### Information Seeking Behavior

Panel	IRR (95% CI)	p-value	Obs
All	0.998 (0.908,1.096)	0.961	18223
African-American	1.035 (0.919,1.165)	0.575	9168
White	0.956 (0.822,1.112)	0.562	9055

### Safety Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	0.968 (0.881,1.063)	0.490	6035
African-American	1.008 (0.846,1.202)	0.928	2099
White	0.945 (0.841,1.063)	0.345	3936

## Does race concordance have an effect on WTP for masks?

Panel	Coefficient (95% CI)	p-value	Obs
All	0.244 (-0.457,0.945)	0.495	16759
African-American	0.036 (-1.079,1.150)	0.950	7725
White	0.425 (-0.459,1.309)	0.346	9034

**Does the AMA systemic-racism  
acknowledgment have an  
impact?**

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## Does the AMA acknowledgment have an effect on knowledge?

### Immediate Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	0.991 (0.943,1.041)	0.712	18762
African-American	1.007 (0.946,1.071)	0.836	9445
White	0.957 (0.879,1.043)	0.317	9317

### Follow-up Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	0.980 (0.901,1.065)	0.629	6030
African-American	0.985 (0.872,1.113)	0.807	2097
White	0.976 (0.871,1.094)	0.675	3933

## Does the AMA acknowledgment have an effect on behavior?

### Information Seeking Behavior

Panel	IRR (95% CI)	p-value	Obs
All	1.025 (0.933,1.126)	0.608	18223
African-American	1.019 (0.905,1.147)	0.758	9168
White	1.033 (0.888,1.201)	0.677	9055

### Safety Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	1.017 (0.926,1.117)	0.727	6035
African-American	1.033 (0.867,1.232)	0.717	2099
White	1.008 (0.897,1.133)	0.889	3936

## Does the AMA acknowledgment have an effect on WTP for masks?

Panel	Coefficient (95% CI)	p-value	Obs
All	-0.292 (-0.992,0.409)	0.415	16759
African-American	-0.091 (-1.206,1.023)	0.872	7725
White	-0.464 (-1.348,0.420)	0.304	9034

**Does acknowledging racial  
disparities in COVID incidence  
have an impact?**

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## Does acknowledging racial disparities in COVID incidence have an effect on knowledge?

### Immediate Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	1.005 (0.982,1.029)	0.659	18762
African-American	1.009 (0.980,1.038)	0.546	9445
White	0.997 (0.956,1.039)	0.874	9317

### Follow-up Knowledge Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	1.014 (0.976,1.053)	0.469	6030
African-American	1.051 (0.994,1.111)	0.078	2097
White	0.982 (0.932,1.035)	0.504	3933

## Does acknowledging racial disparities in COVID incidence have an effect on behavior?

### Information Seeking Behavior

Panel	IRR (95% CI)	p-value	Obs
All	1.023 (0.981,1.066)	0.297	18223
African-American	1.021 (0.968,1.076)	0.446	9168
White	1.026 (0.959,1.097)	0.463	9055

### Safety Gap Score

Panel	IRR (95% CI)	p-value	Obs
All	1.008 (0.965,1.051)	0.730	6035
African-American	1.121 (1.035,1.214)	0.005	2099
White	0.939 (0.890,0.991)	0.021	3936

## Does acknowledging racial disparities in COVID incidence have an effect on WTP for masks?

Panel	Coefficient (95% CI)	p-value	Obs
All	0.073 (-0.241,0.387)	0.649	16759
African-American	0.001 (-0.498,0.501)	0.996	7725
White	0.133 (-0.263,0.529)	0.511	9034