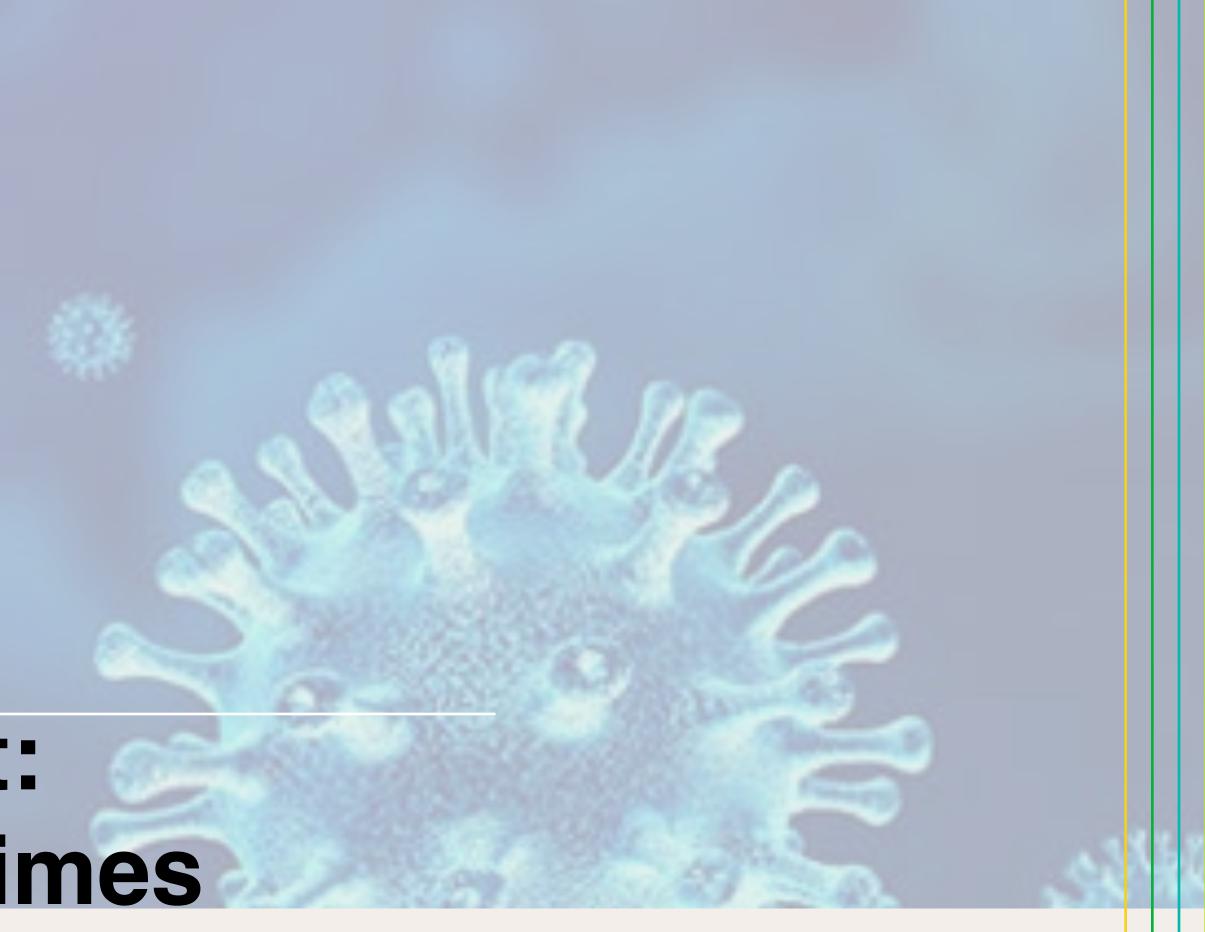
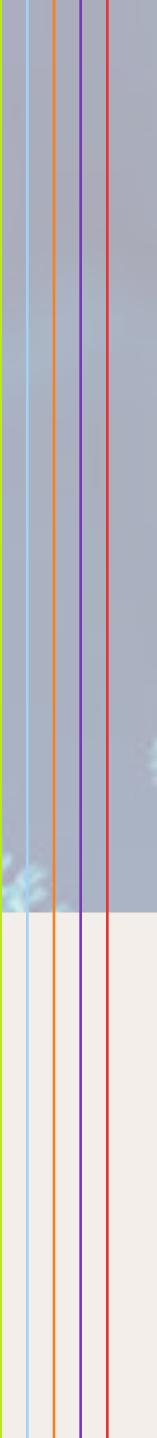
#### The Cards We're Dealt: Innovation in Uncertain Times

Congress on Healthcare Leadership American College of Healthcare Executives March 25, 2021



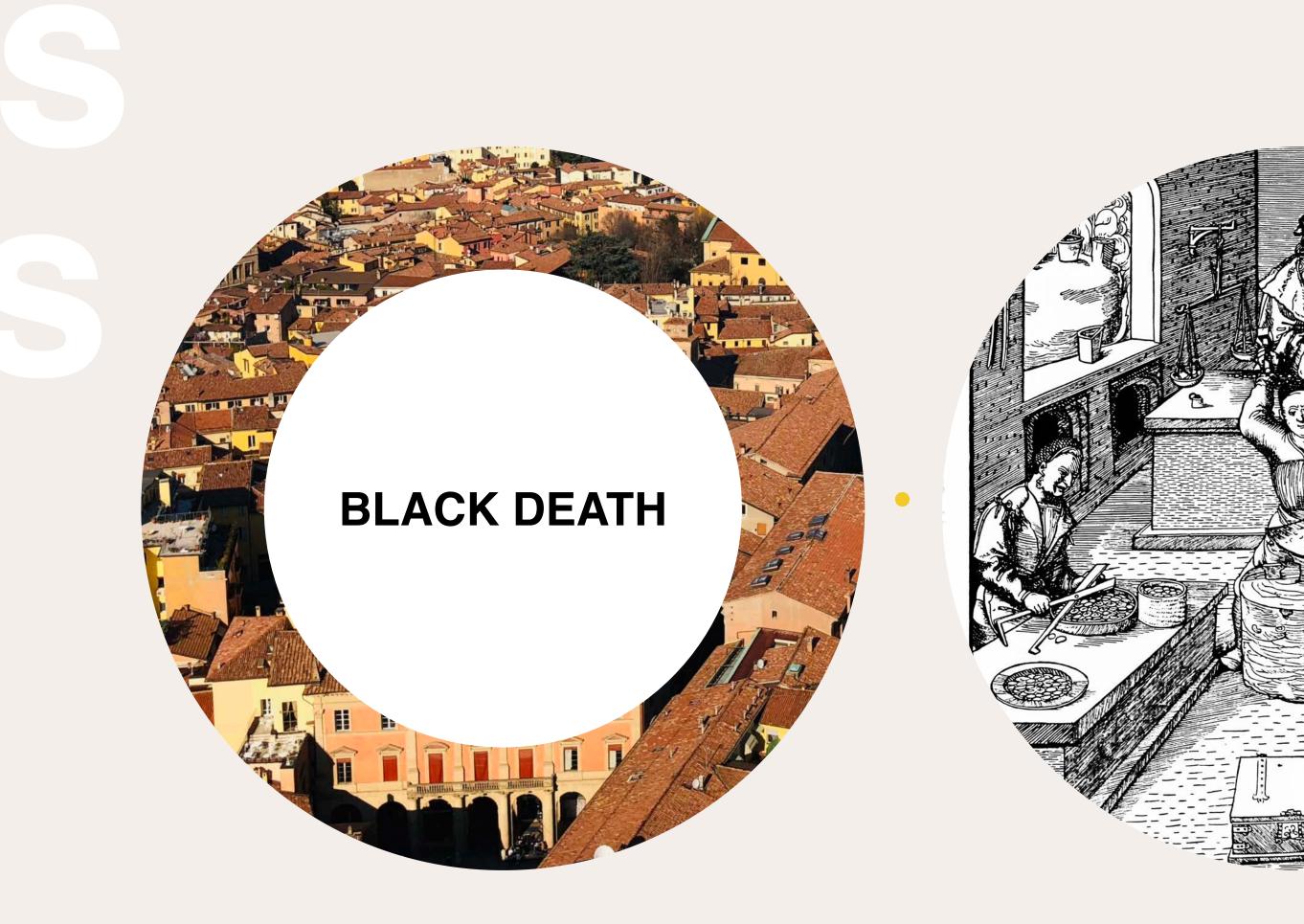
#### Indu Subaiya, MD MBA Co-founder & President Catalyst @ Health 2.0





# **History**

## What we have learned





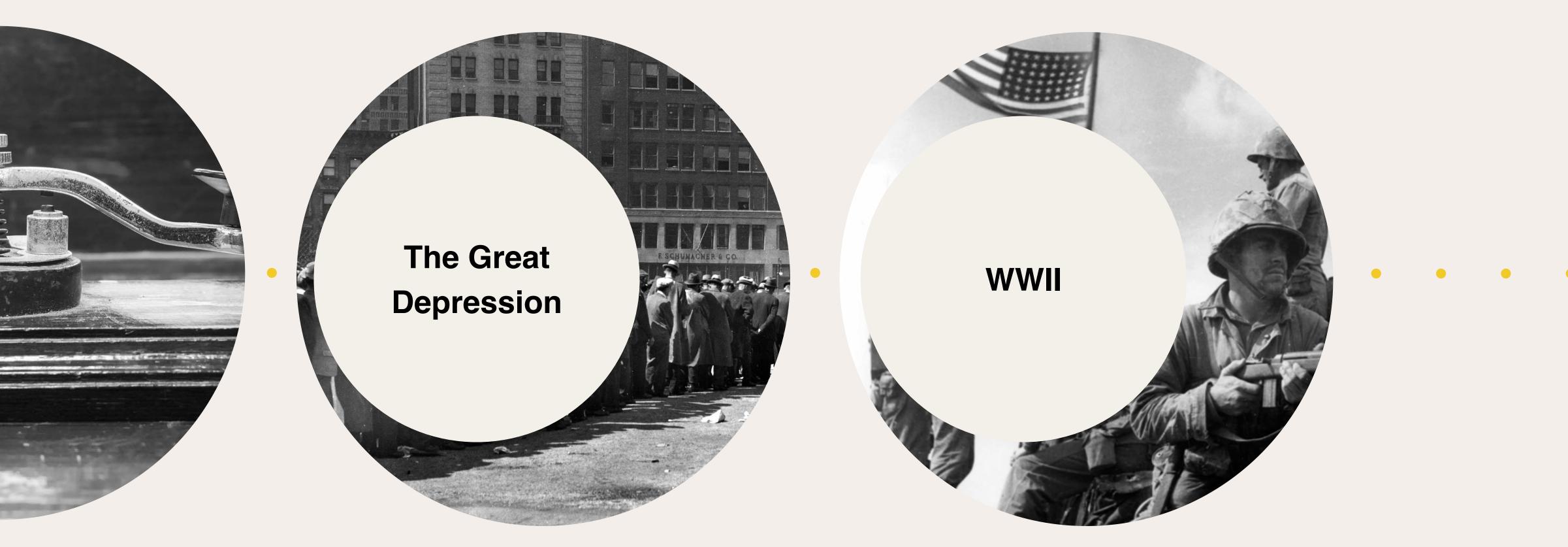
#### Working Poor

Shortage of labor meant bargaining rights

# Beak Mask Protection and Distance









#### **Delays in Care**

#### **Racial Disparities in Health**

#### A Crisis of Mental Health Issues in Patients & Our Workforce

Having to Act in the Face of Limited Evidence

Limited Infrastructure for Diagnosing & Stemming the Tide of the Pandemic

#### Limited Public Health Infrastructure

#### Social Media Perpetuating Misinformation

#### Limited Clinical Tools for a Complex & Evolving Disease



#### "Winter weather has disrupted hundreds of thousands of U.S. vaccinations" - NYT

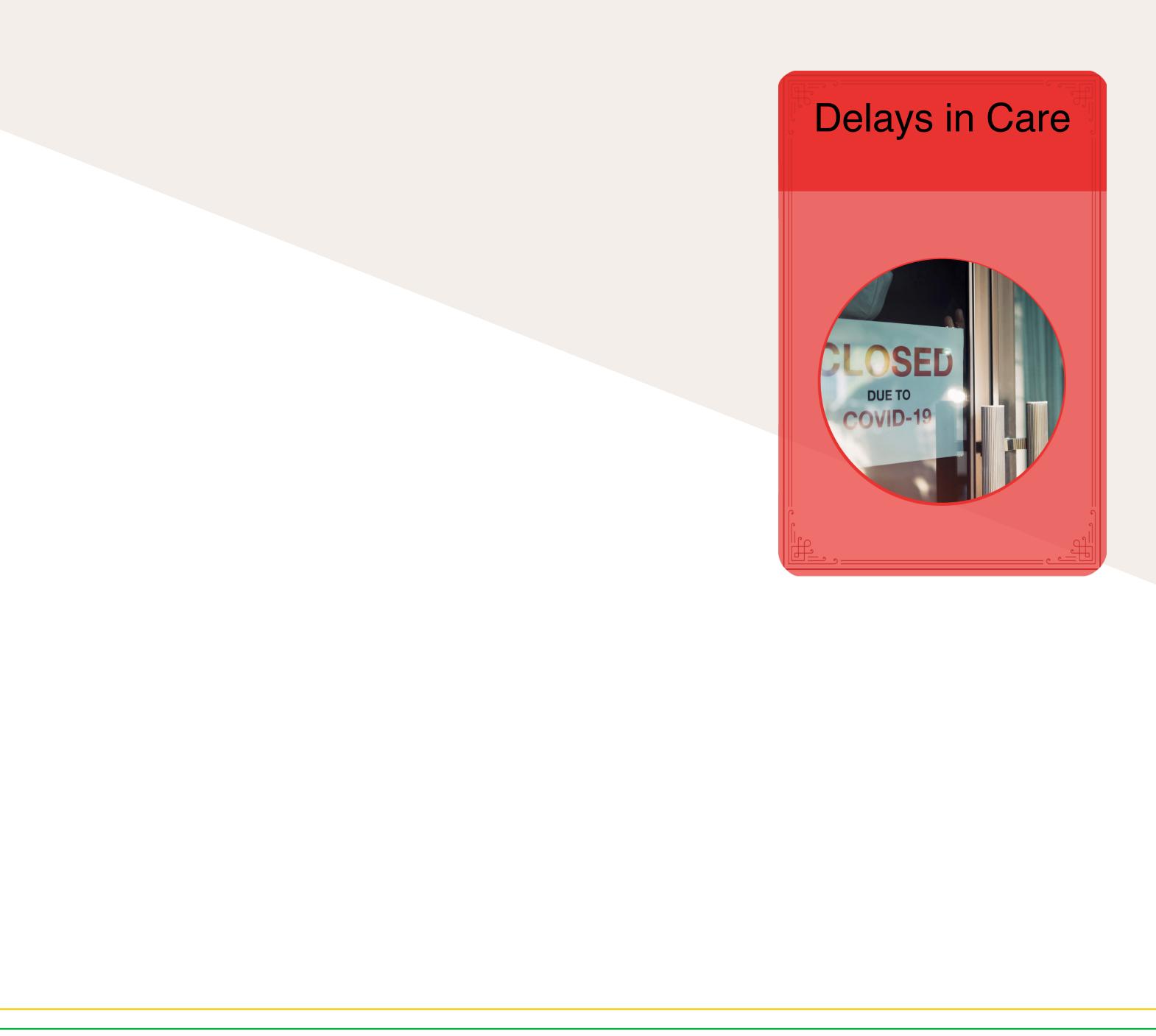
AHGLE

ARKING

ING

FOR

















### **Social Media** Stemming the Tide of the Pandemic

Limited Infrastructure

Limited public

In the structure

Standsco Chito

FRA BUT HONN



#### Racial **Disparities in** Health

Limited Infrastructure

Limixed public

In the structure

Francisco Chito.

FRA RITHONS

Health

for Diagnosing & Stemming the Tide

the pandemic



Social Media

platforms

Nisinformating











"We cannot change the cards we are dealt, just how we play the hand."

Limited Public

Social Media

Platforms

Perpetuating

Misinformation

Health

Infrastructure

Francisco Chro.

STANDAVIRUS PANDEMIC ATANANA ATHON ATHON ATHON

Randy Pausch, The Last Lecture



is pacino Honix. an Altro

V

0

6

S

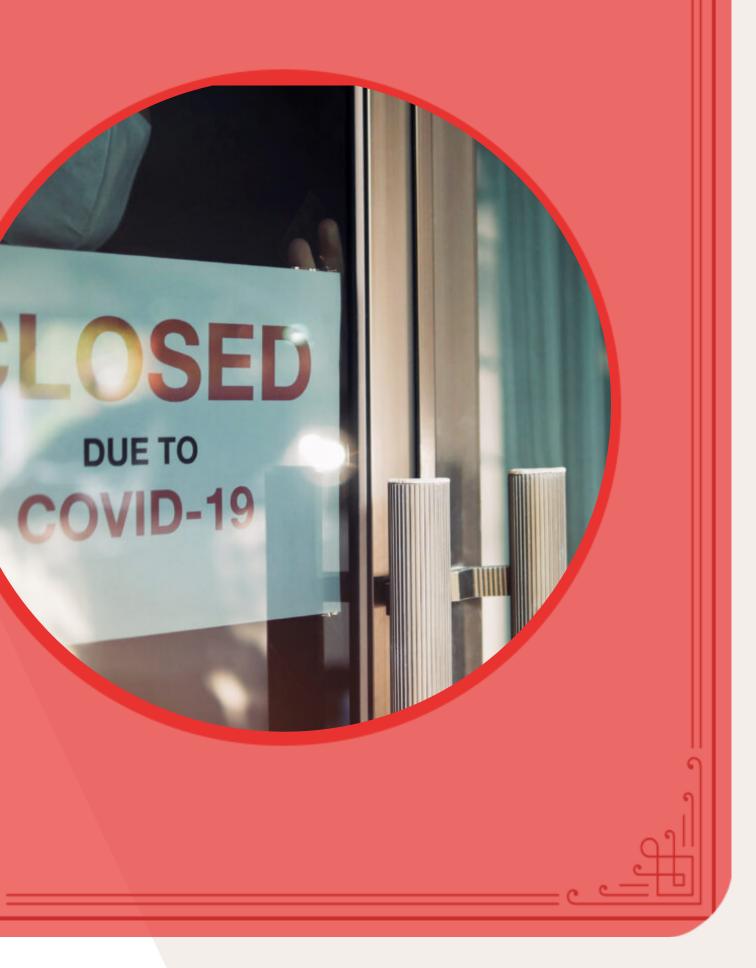
Jorkforce

111

es

 $\bigcirc$ 

#### Delivering Timely Care





Dr. Bart Demaerschalk, medical director for synchronous services at Mayo's Center for Connected Care

"

The **COVID-19** pandemic has essentially accelerated U.S. digital health by about 10 years.

Between March and April 2020, the Mayo Clinic saw a 78% drop in in-person visits and a 10,880% increase in video appointments

"



## Ways the pandemic has changed telemedicine



Medicare will pay physicians the same rate for telehealth services as they do for in-person visits



01

Physicians are allowed to waive or reduce costsharing for telehealth visits



Physicians who are licensed in one state are allowed to see a patient in a different state

## $\frac{1}{10} \frac{1}{5}$ American households are missing critical medical care during the pandemic

According to a poll conducted by NPR, the Robert Wood Johnson Foundation, and the Harvard T. Chan School of Public Health in September 2020



Jane Sarasohn-Kahn of HealthPopuli.com

Three in four people avoiding healthcare in the pandemic have had chronic conditions

"

Of those forgoing medical care during the pandemic: 76% have a chronic health

condition,

68% have a physical health condition

"



#### "A Year of Missed Preventative Medical Care is Endangering Minority Communities"

Dr. Wayne Frederick President, Howard University NYT



#### Opinion

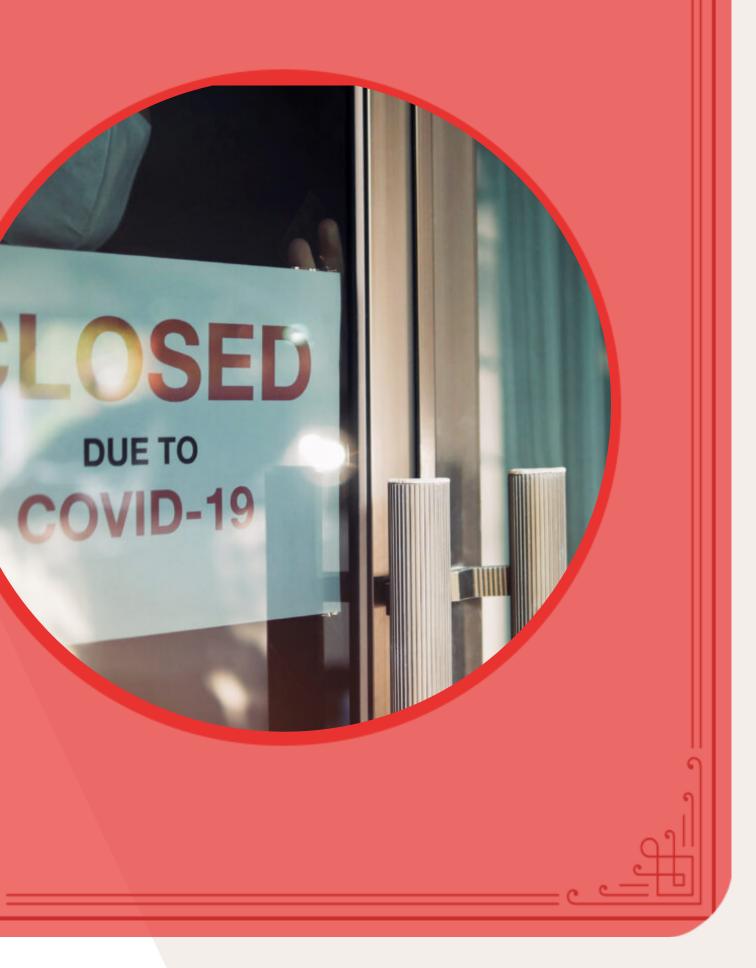
## What Happens When People Stop Going to the Doctor? We're About to Find Out

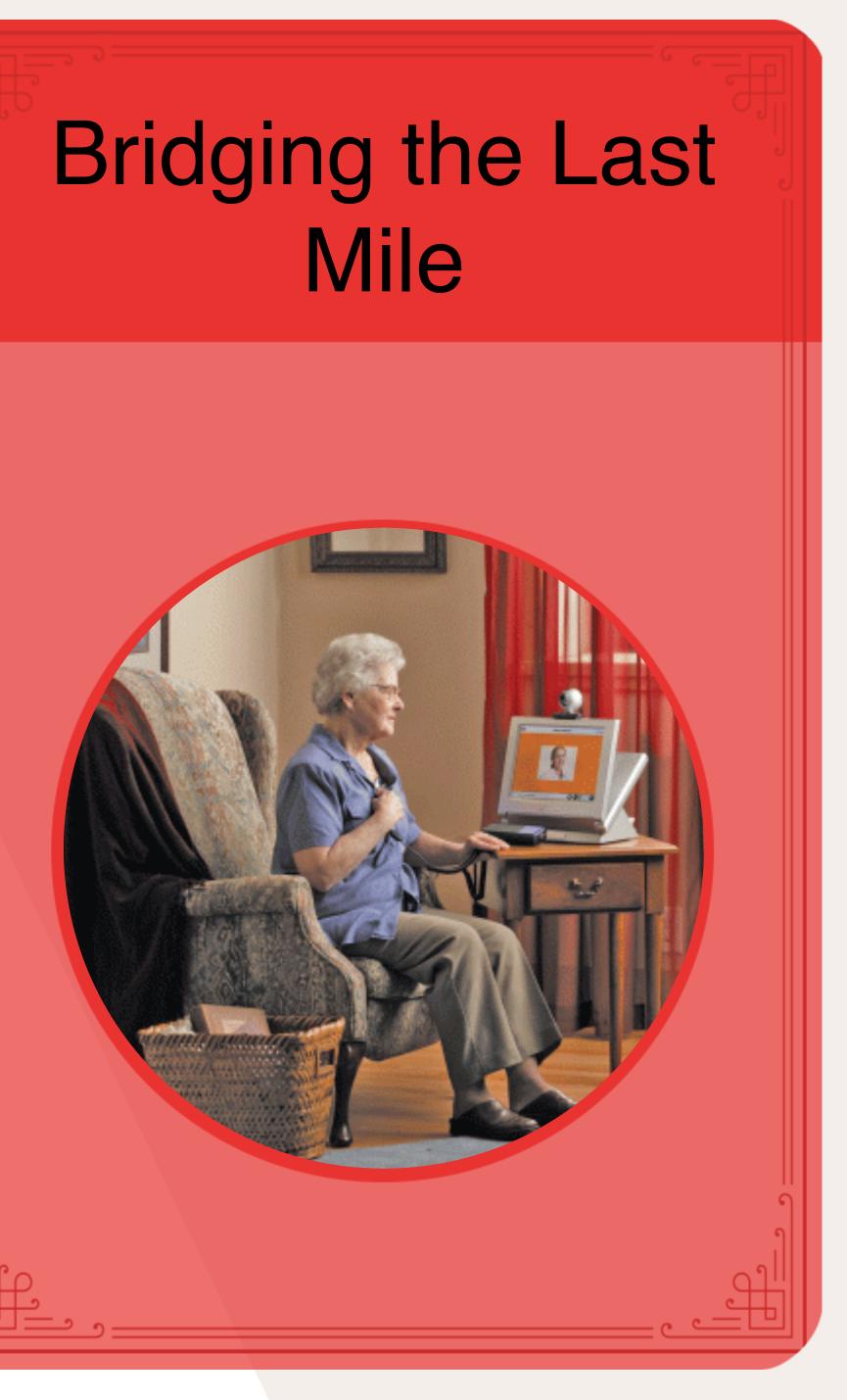
A year of missed preventive medical care is endangering minority communities.

#### By Wayne A.I. Frederick

Dr. Frederick is the president of Howard University and a professor of surgery at Howard University School of Medicine.

#### Delivering Timely Care





#### **TELEHEALTH ENABLES HEALTH/CARE ACROSS THE CONTINUUM**



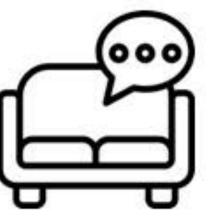




Primary care

Emergency triage

Specialty physician







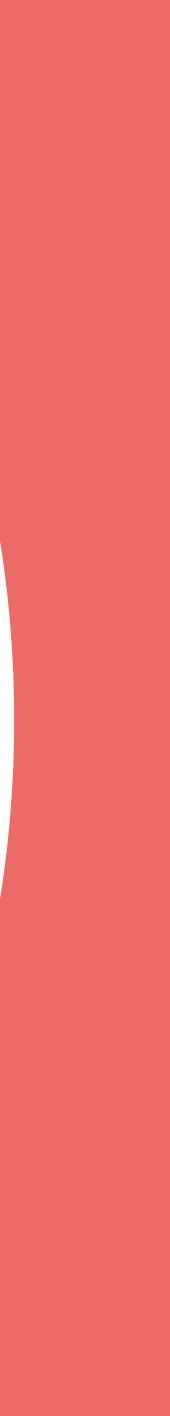


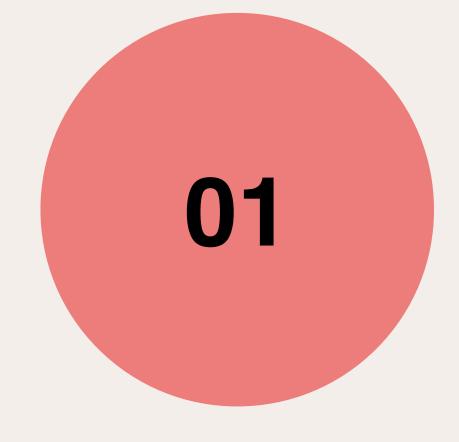
Tele-mental/ behavioral health

Team-based Chronic health care management

```
Hospital
at-home
```







#### Identifying/ Notifying





Gyant

#### **GYANT COVID-19 SERA**

#### Screener & Emergency Response Assistant.

Provide patients with educational content and a virtual triage to assess risk, then route triaged patients to the appropriate telehealth, nurse line or physical facilities for testing and treatment.

> (+)engagements for screening and education.

Solutions Abou News

#### **GYANT CLIPBOA**

#### **Tomorrow's Waiting Roo**

Leveraging industry-standard medical pro proprietary natural language processing, t captures patient HPI, conducts an ROS, and patient chart to reduce physician bu

#### Decrease in

provider handling time





#### ee SMS updates on the impact of COVID-19 in your county &

#### CovidSMS (614) 50-COV-19

O

Today 9:01 AM

Here's your COVID-19 update for April 01 3019 cases confirmed in Los Angeles County. 8210 cases confirmed in California. More info: https://bit.ly/covid-:dc SOCIALLY DISTANCE WILL GET THROUGH THIS ETHER.

#### Phone Number \*

10-Digit US Numbers Only

#### Zip Code \*

5-Digit US Zip Codes Only

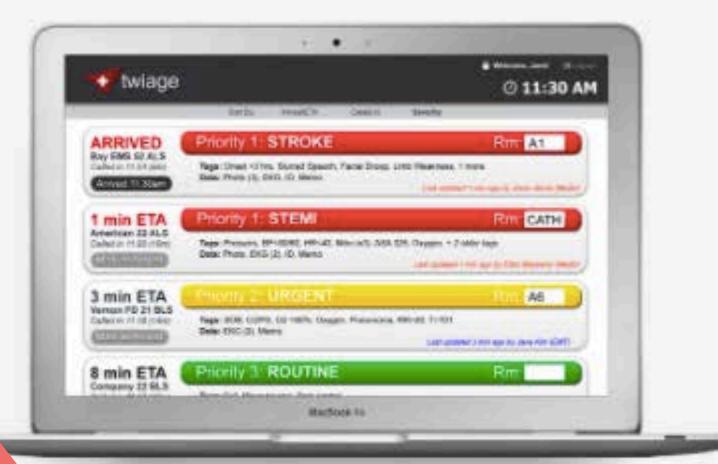
#### FOR EMS

#### Stop waiting. Twiage improves turnaround times at the hospital by 65%.

- Skip the radio call and send instant alerts directly to the hospital
- Securely share photos, picture IDs, EKGs, and videos in real time
- Best of all, it's FREE.

Learn More

Twiage



pital time



#### FOR HOSPITALS

#### Finally, Air-Traffic Control for incoming patients.

- Gain instant situational awareness to improve your throughput and optimize your resources.
- Easily track and prioritize incoming EMS, inter facility, primary care, and nursing home referrals with live GPS.
- Accelerate door-to-room times with pre-arrival patient registration
- Improve clinical outcomes with rich prehospital data, EKGs, a





## Extending the Exam



## Integrated Remote Triage

When incorporated into your health system, the Isabel Symptom Checker provides clinicians with the relevant information needed to efficiently triage a patient virtually.

Learn more

#### **Isabel Healthcare**

#### Where to get care?

Gender: Male , Age: Young Adult 17-29 yrs Country: United States (North America) Symptoms: Sore Throat, Pain In Head, Feeling F

This is just a suggestion of where you should go n <u>must not</u> be relied on over and above your own in judgement.

Your results

#### Family Physician / Urgent Care Clinic Unit

Walk in clinic / Telemedicine
 Family Physician / Urgent /
 Minor Injuries Unit
 Emergency Services



#### Artificial Intelligence Technologies

#### Proprietary Mathematical Backend

 $\equiv$ 

Heart Rate

80

BPM

Stress Level

 $\bigcirc$ 

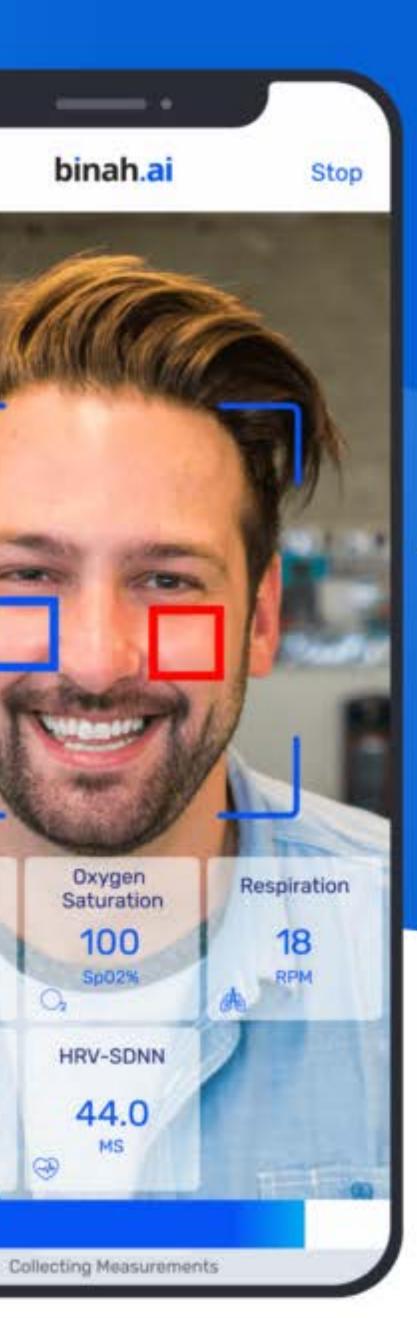
Low

 $\odot$ 

3

88%

#### **Binah.ai**



#### Signal Processing

## Iting better stand better

TIME

4/7 medical exams with a doctor, from the comfort of home

Buy Now

Watch Video

Surp.

0

FDA



#### Skip the waiting room



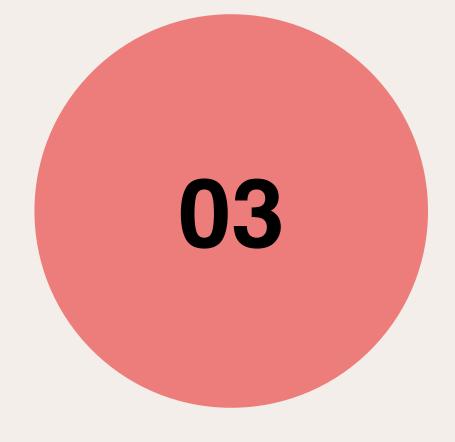
HSA

FSA

CE







#### Remote Monitoring

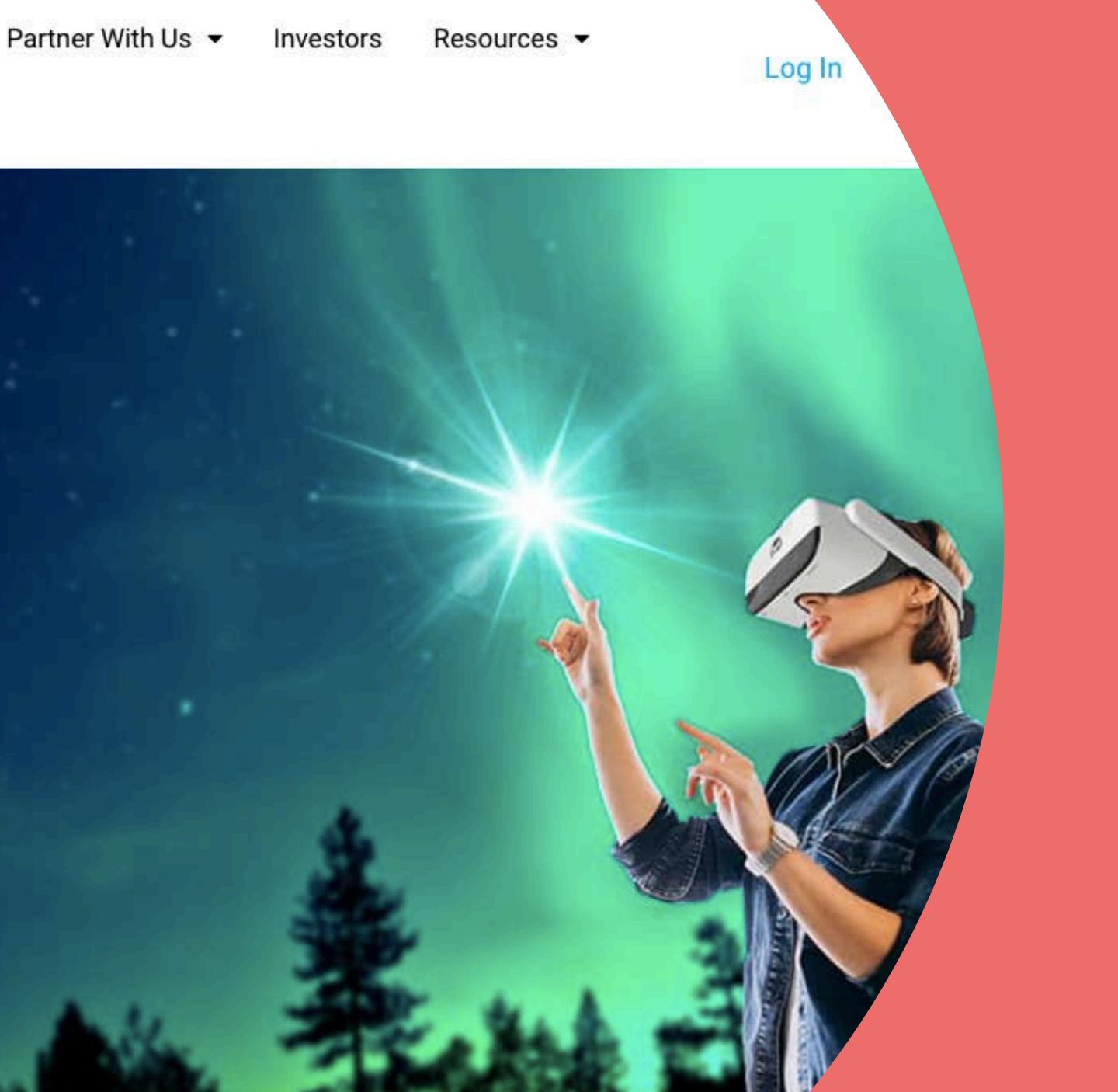




What We Treat -

Contact Us

#### Post-COVID-19 Rehabilitation At-home treatment to ease the aftereffects of the coronavirus. As Featured in TIME B B C cnet Forbes **D&LL**Technologies XRF ealth



## Stasis Al Development

Stasis is developing algorithms to inform caretakers up to twenty minutes before a critical event.

### STASIS

## JUSIS LOS UNITTRANSFERS

A WEIGHTED SIMILARITY MEASURE APPROACH TO CT INTENSIVE CARE

Aditya Patel Izzathir Singh Landon Brand Roheat Rao

Stasis Labs, Bangalore, India

Know about patient deterioration, before it happens.





## Quarantine at Home **Galel** QKit by 19 Labs

enables health nplement minimally antine policies by ive monitoring of cted individuals at

llows care providers ent's health using devices such as tethoscopes, infrared rated through **IPAA** 



HOME

# 19 Labs GALE QKIT Quarantine at Home health & video monitoring solution

PLATFORM

SOLUTIONS







## Having to Act in the Face of Limited Evidence

## abcNEWS VACCINE HESITANCY EXAMINED

# "How Do Hospitals Decide Who Gets Treatment?" - NYT

Guidelines vary by state, involving factors such as age, health problems, pregnancy and cognitive abilities









"No one in the United States has had to implement guidelines like this, at this scale, or for the duration that we may have to."

"

Dr. Arun Patel, Director of Quality, Patient Safety, and Risk Management - Los Angeles County Health Services

"

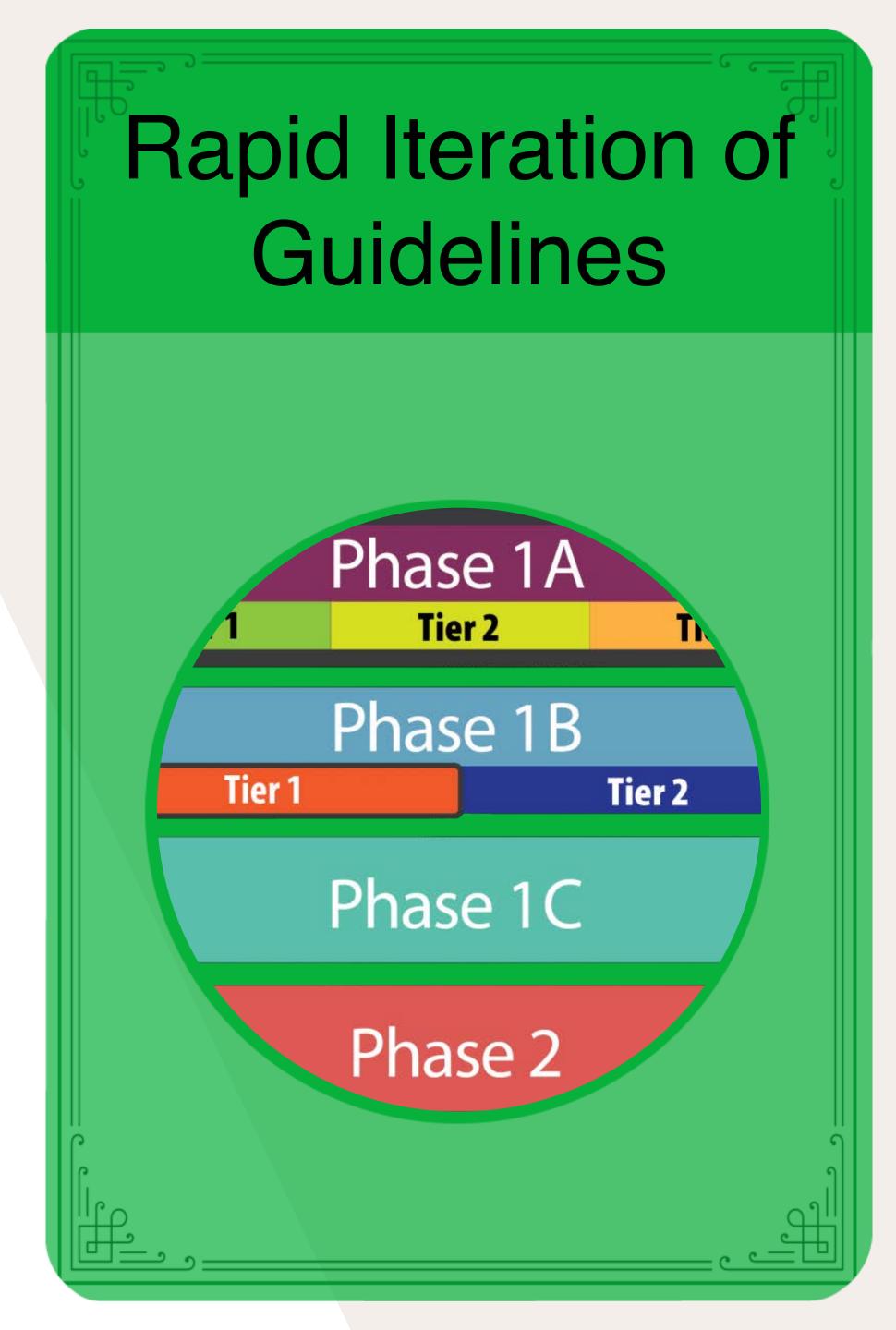






## Having to Act in the Face of Limited Evidence

## abcNEWS VACCINE HESITANCY EXAMINED



## When a public health emergency creates demand for critical care resources that outstrips available supply...



Los Angeles Department of Health Services Guida **Care Resources During a Public Heal Summary Overview** 

The COVID-19 pandemic has shown that a surge of COVID-19 patien. system's ability to treat all patients in need of care. When available re exceed the demand for those resources, decisions must be made about and who will not. As a result, the Los Angeles County Department of Hea developed guidance for its facilities regarding the triage of critically ill pat. resources when a public health emergency creates demand for critical care ventilators, critical care services, staffing, space, etc.) that outstrips availab more detailed discussion of the guidelines and their background and underl please refer to the full DHS "Guidance for Allocation of Scarce Critical Care R Public Health Emergency".

The guidance provides for designation of Triage Officers at each hospital who authority and responsibility for assessing availability/scarcity of resources an collaboratively with administrators and clinicians to allocate them according described below, with the overall goal of doing the most good for the most r

The Guidelines are intended to be used at a time of "crisis" care, meaning v overwhelmed with patients that it is simply unable to deliver typical stands opposed to "conventional" care, which is normal standard of care provide circumstances, and "contingency" care, often associated with surge conc goal is normal standard of care, but may require changes in standard or achieve that). (Appendix A provides information about how resources a crisis, and how to prepare for that process.)

These Guidelines are grounded in the following Ethical and Guidir

Maximization of public health – doing the most good fr

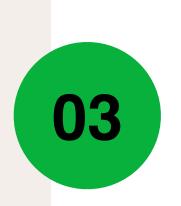
### Los Angeles County Department of **Health Services Guidelines**

## 01

### Staffing is the most likely resource shortage



**Decisions will be made** based on greatest benefit to greatest number of people,



Local decision-making; rapid iteration

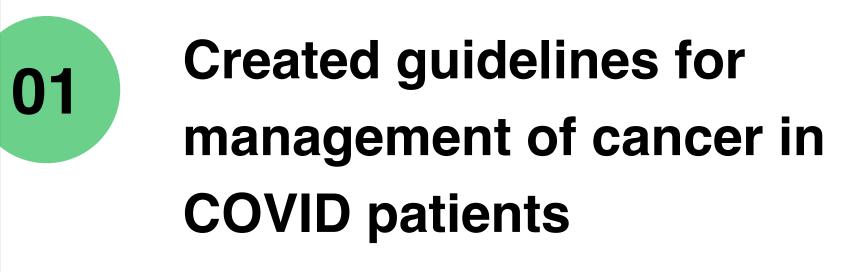
"Triage Officers' would decide who gets care and who doesn't if COVID-19 crushes L.A. hospitals" - LA Times





## Dr. Leon Bernal-Mizrachi

Associate Professor in the Department of Hematology and Oncology at Emory University School of Medicine





Built upon his experience managing HIV patients



Curative intent vs. Non curative intent

## Limited Clinical Tools for a Complex & Evolving Disease



### Dr. Bob Wachter, UCSF

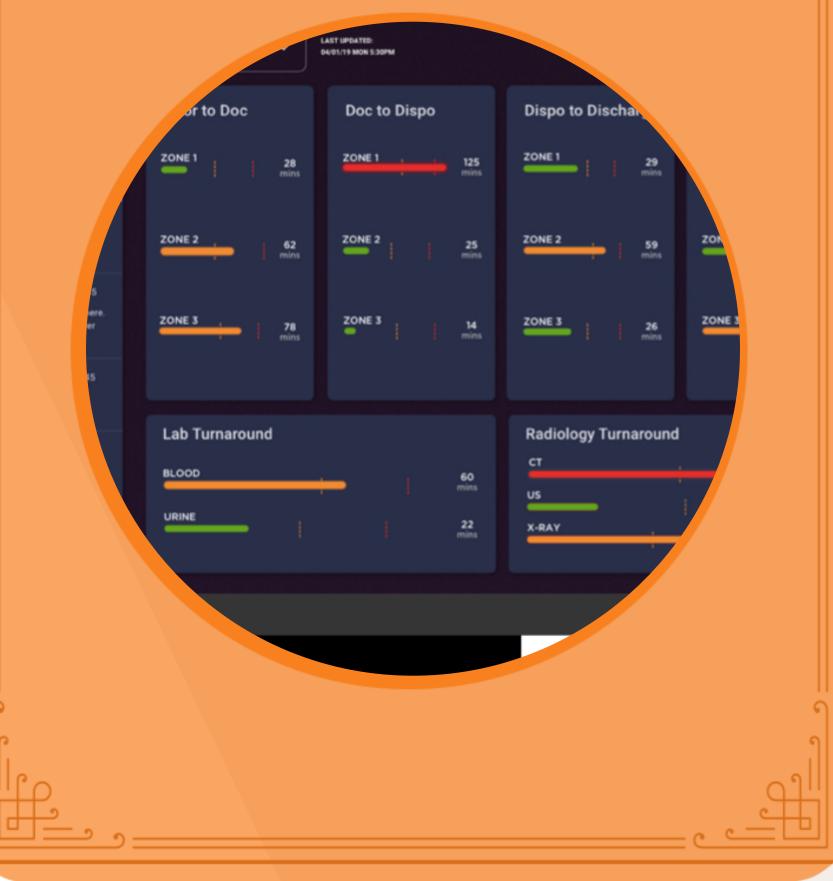
"

Real-time dashboards have become, almost, an expectation.

"

## Limited Clinical Tools for a Complex & Evolving Disease

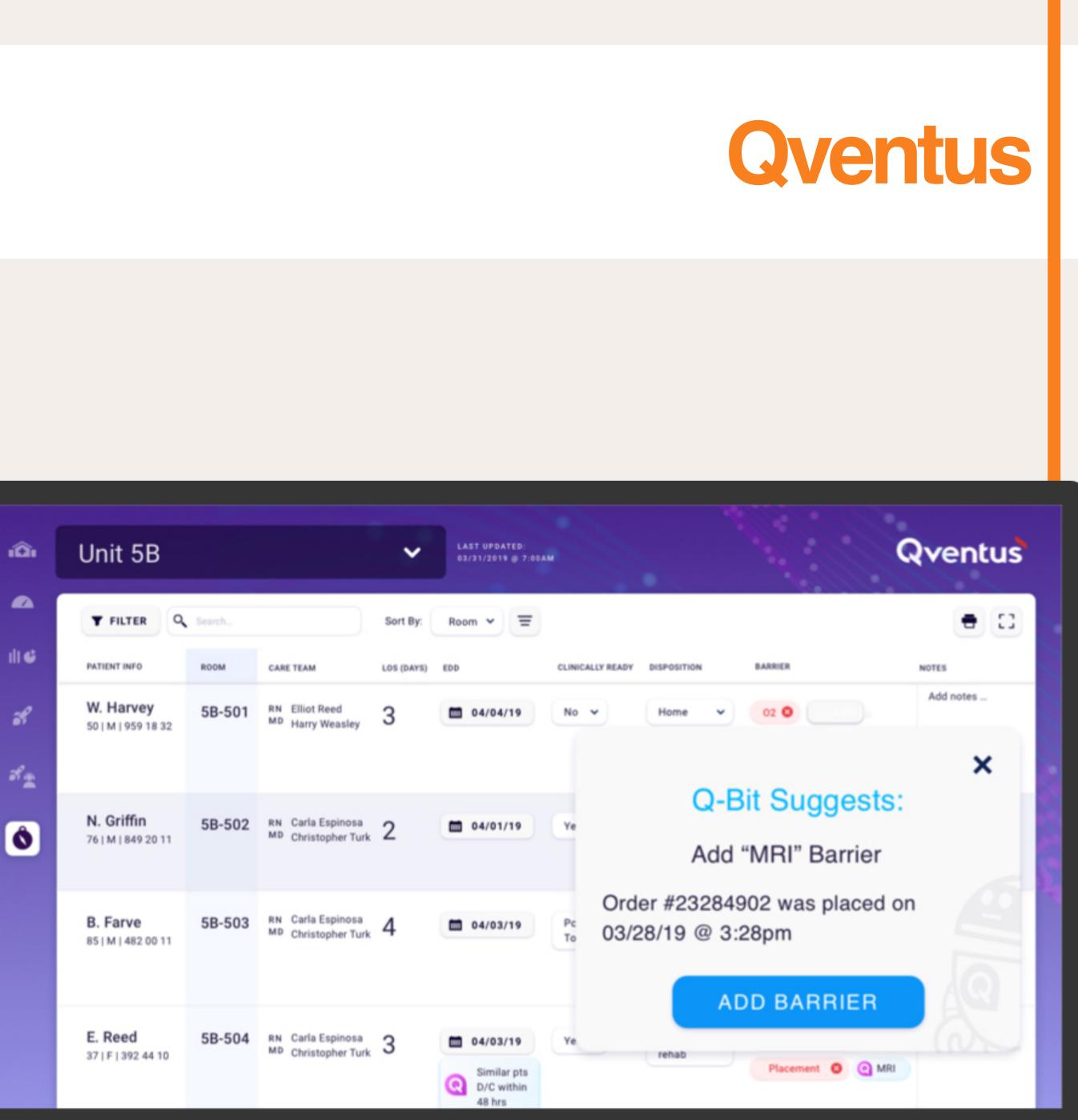
## Improved Dashboards & Interfaces to Optimize Care





- Managing COVID-19 demand through optimizing operations & patient flow
- Alleviating critical resource constraints
- Supporting frontline teams







**Deliver for Patients** Bring new therapies and medical devices to market to improve patient quality of life - while reinvesting new revenues to fuel clinical care programs, expansion, and hiring

Access All of Your Data Gain relevant insights from your own data to map patient journeys, detect adverse event signals, recruit patients to join clinical trials, and manage drug inventories more easily between sites

Expect Data Gatekeeping 

# Population Level Analytics for COVID-19

### Click here to explore

### n Level Analytics for COVID-19 Powered by Roche

Ŧ

ap Filters







ABOUT

SIMU



"Experts say the US needs teams ready to hunt down new Covid-19 cases. But so far, here a content of the set o

dex

ac

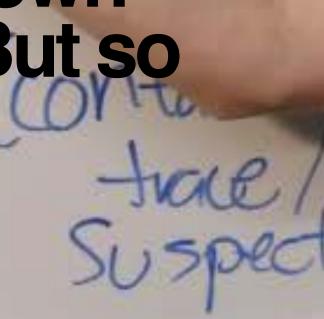
+ Cara

VOTIEL

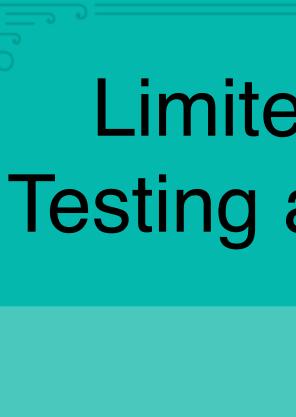
SONF

Neighbort 14 Qays Quarantine Not a Case +Asymptomatic 14 days. not a case

100











## Limited tools for **Testing and Tracking**

**Innovations in Testing** & Vaccine Tracking for Different Populations

HealthDesk Vaccine Virtual Queues are the best way to manage vaccine distribution.

Phone

57890



### Join Vaccine Virtual Queue Wait List

## Functional Fluidics Defining Red Blood Cell Health

## How it started



# GOVED-19 Comprehensive Workplace Testing Solution

## How it's going

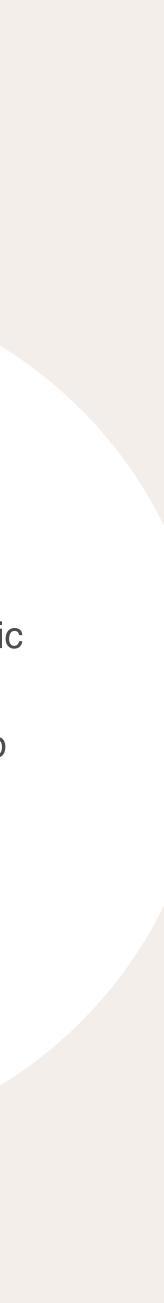


"

Do not limit yourself to the tools that are right in front of you.

Dr. Patrick Hines, pediatric critical care doctor and founder of biotech startup Functional Fluidics

"



# "Albany County Launches Coronavirus Vaccine Pre Registration Tool Union Times



## COVID-19 Vaccine Administration Tracking

Nearly 50 companies responded

## Rapid Response Open Calls









## COVID-19 Vaccine Scheduling



## Healthvana helping end **COVID-19**

- Over 8 million test results delivered
- Digital vaccination record and 2nd dose reminders
- Digital contact tracing
- Emphasizes communication, not acting as passports for the immune

### Healthvana

COVID-19

### Jane

Appointment ID: visit\_289

### Negative

al 🕆 🗖

Test Kit Received 04/28/2020

To download a PDF record of your result(s) and maintain secure access to them, please create a Healthvana account:

### **CREATE ACCOUNT**

Your COVID-19 test was NEGATIVE, which means that the test found no evidence that you were infected with the COVID-19 virus.

A negative test means that you were probably not infected at the time of testing. 'owever, it is not possible that you were ted early into your infection and that you ' test positive later. You could also be d at any time and develop the illness.

7:05



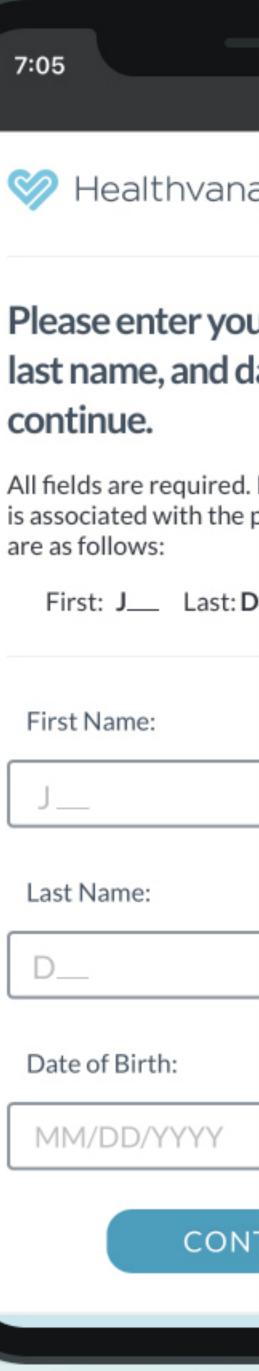
## continue.

are as follows:

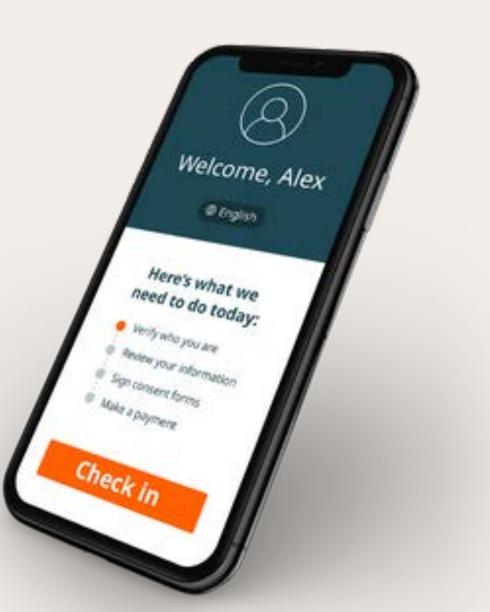
First Name:

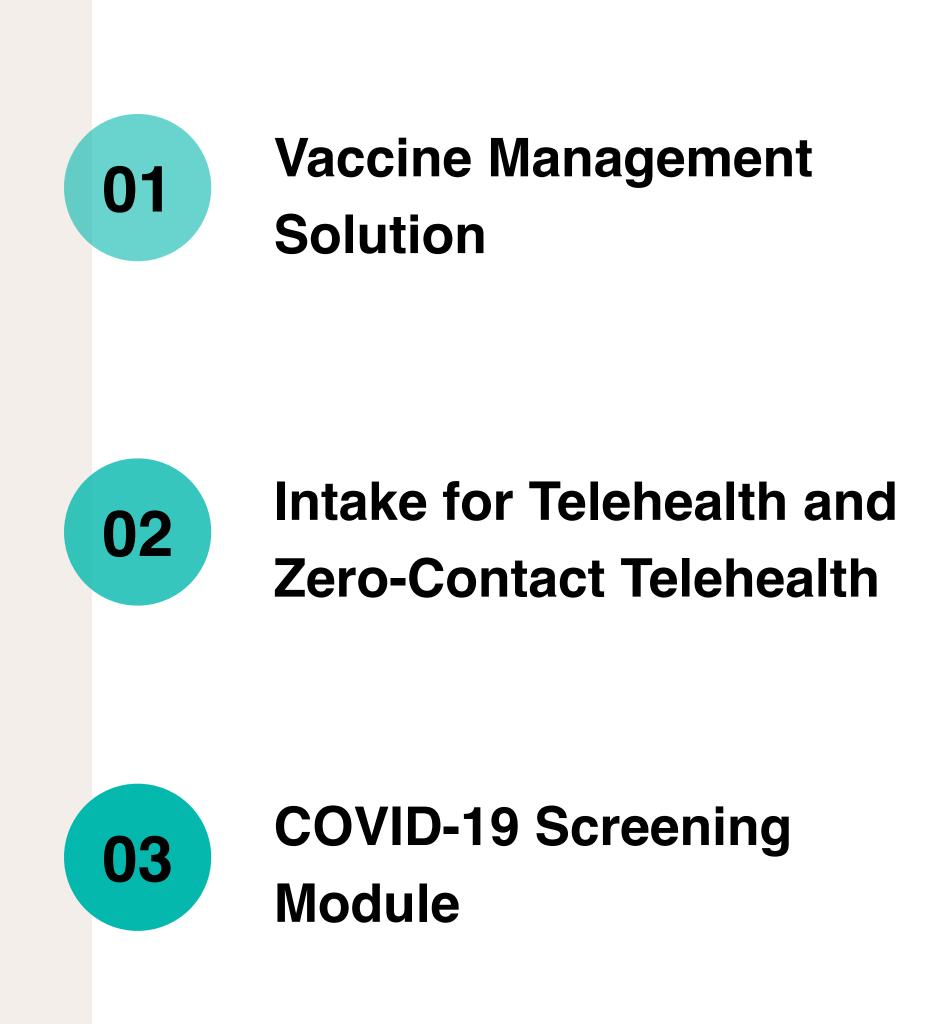
Last Name:

D\_\_\_

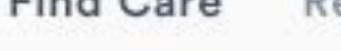


## Phreesia's COVID-19 Response









Resources

Need a COVID test? Instantly book a visit near you.

# **Convenient healthcare for everyone.**

# Book same-day doctor's appointments, COVID tests, and video visits.

Search

Symptom, CO...

Location

**Current Location** 

## **SolvHealth**



Find test



### Need a COVID test?



# BUILD ON WHAT'S ALREADY IN PLACE







## Limited **Public Health** Infrastructure

UNDERFUNDED AND UNDER THREAT

## Hollowed-Out Public Health System Faces More Cuts Amid Virus

U.S. public health system has been starved for decades and lacks the resources necessary confront the worst health crisis in a century.

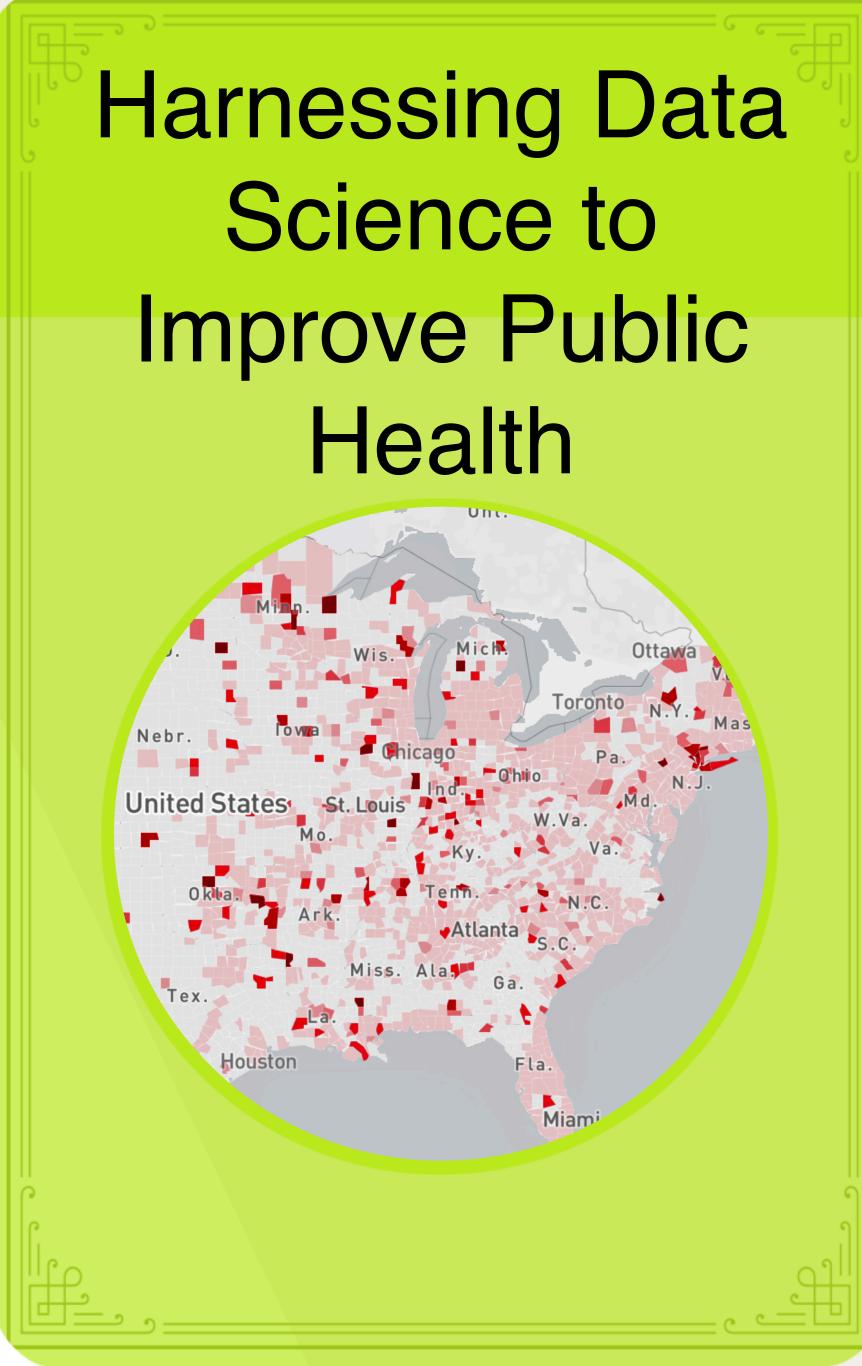


## Limited **Public Health** Infrastructure









**OVID ALLIANCE** 

### **How Safe Is Your Community?**

Visualize your neighborhood's COVID-19 vulnerabilities, disparities, and risks.

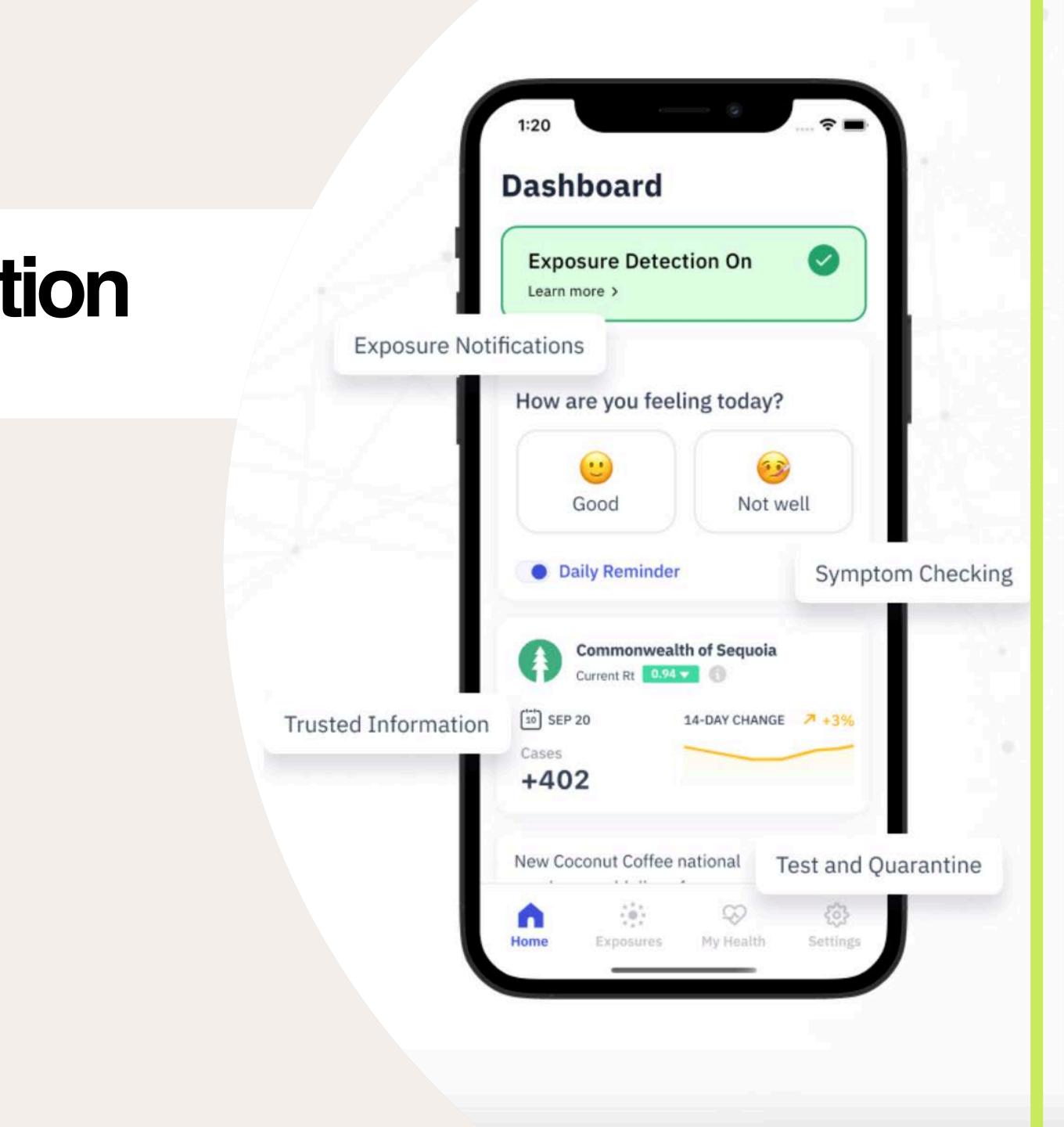


00000

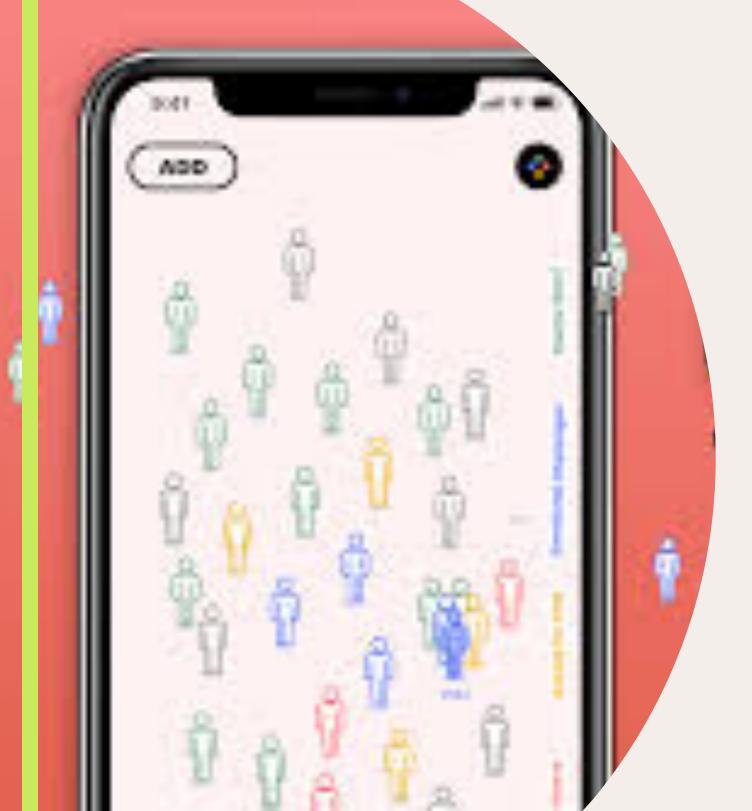


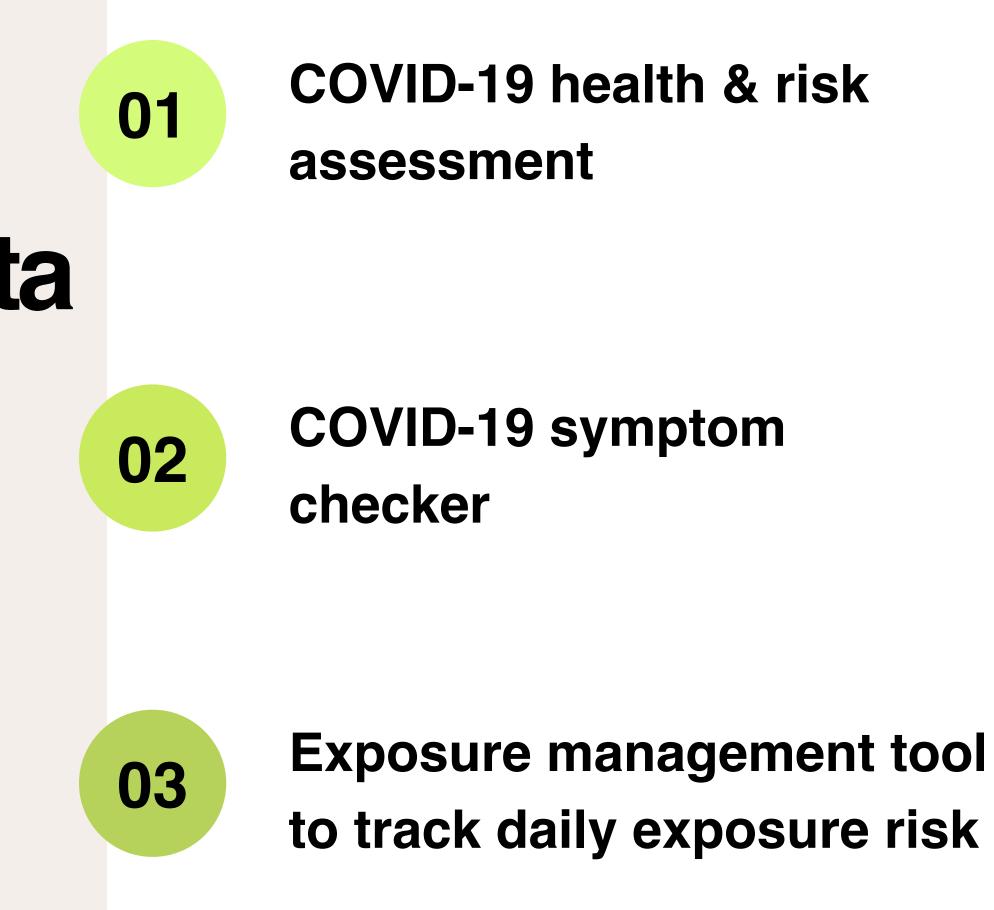
# PathCheck Foundation

- Fight COVID-19 With A Digital Pandemic Response
- Spun out of MIT
- Working on participatory epidemiology



# binformed I covidata

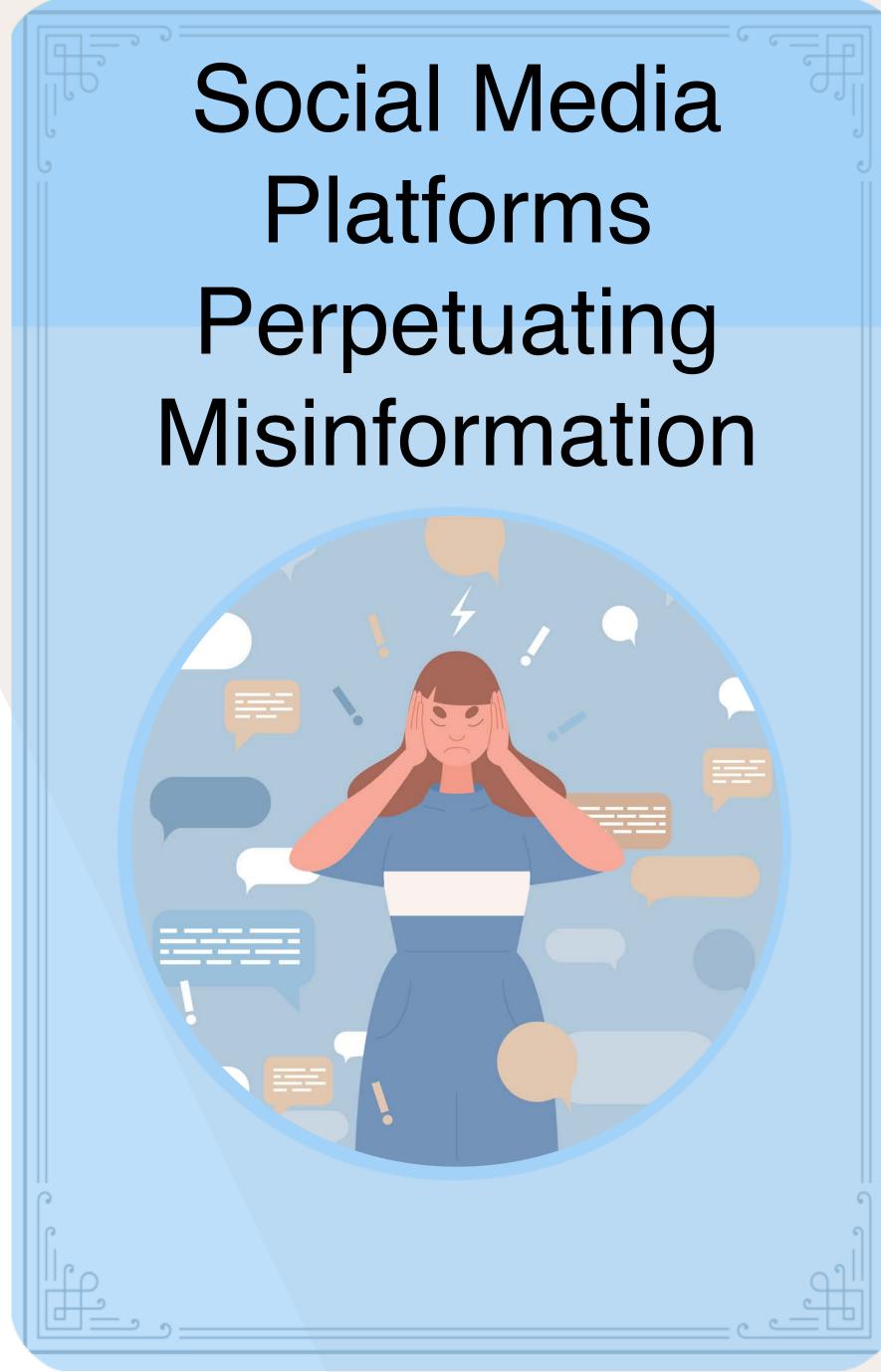


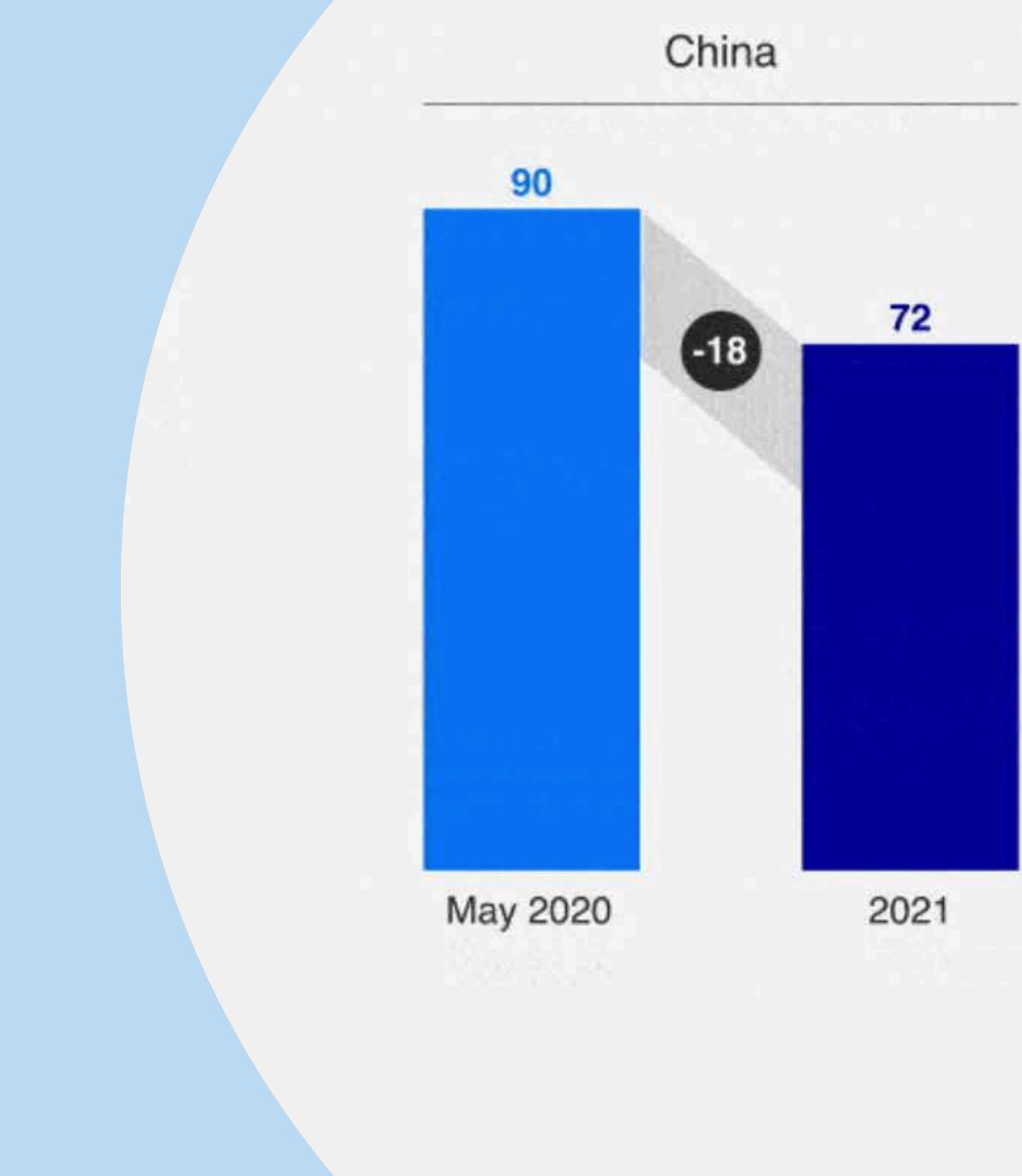


### "Scientists Are Trying to Spot New Viruses Before They Cause Pandemics" - NYT

- "Scientists want to build a weather system for viruses. It would require a big financial investment, plus buy-in from doctors, hospitals and blood banks"
- By analyzing blood samples at scale







-5

## Trust declines in the World's two largest economies

Edelman Trust Barometer 2021





May 2020



# "Battling the 'pandemic of misinformation" - The Harvard Gazette

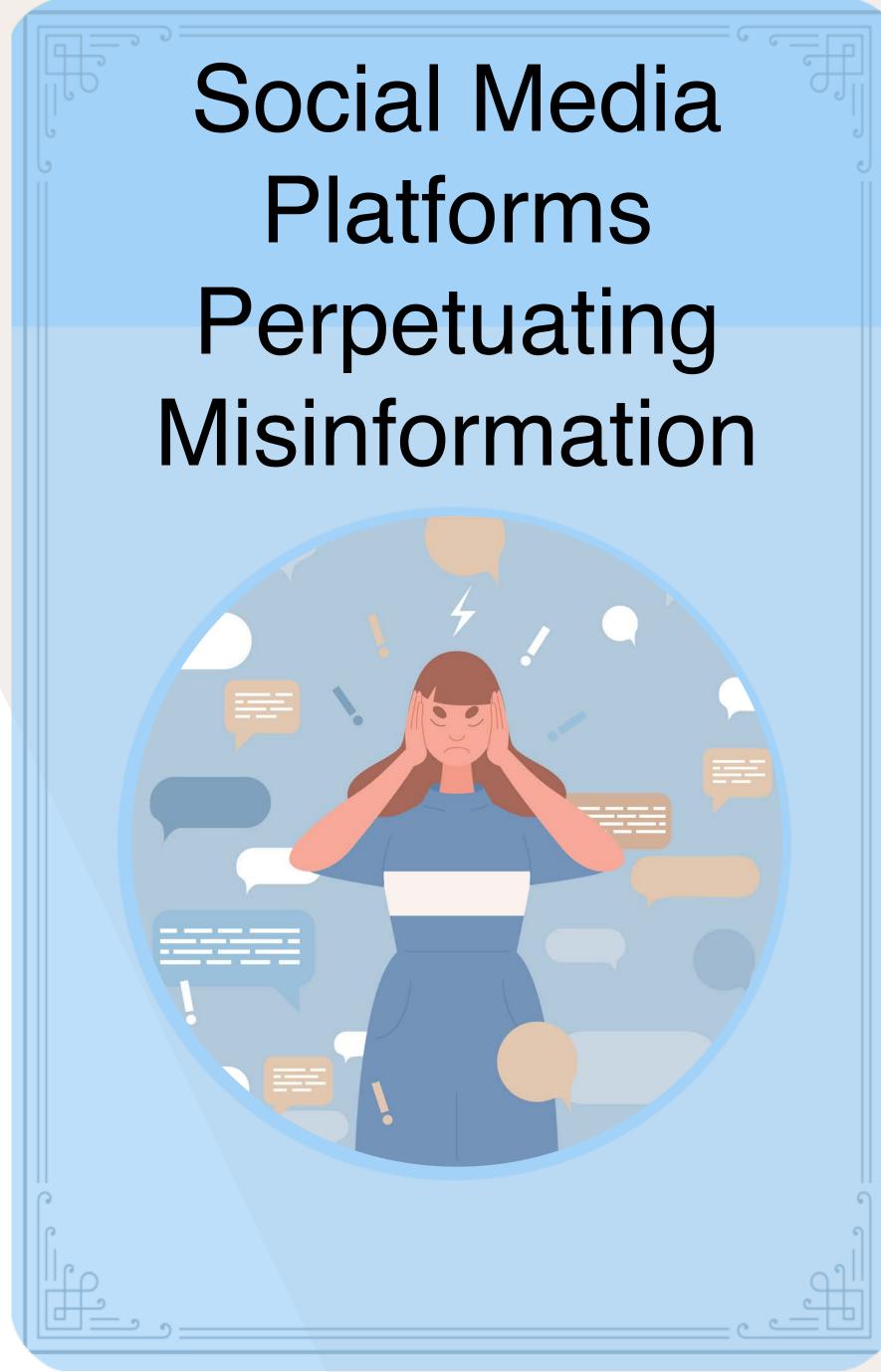




"Social-Media Algorithms Rule How We See The World. Good Luck Trying To Stop Them" - WSJ



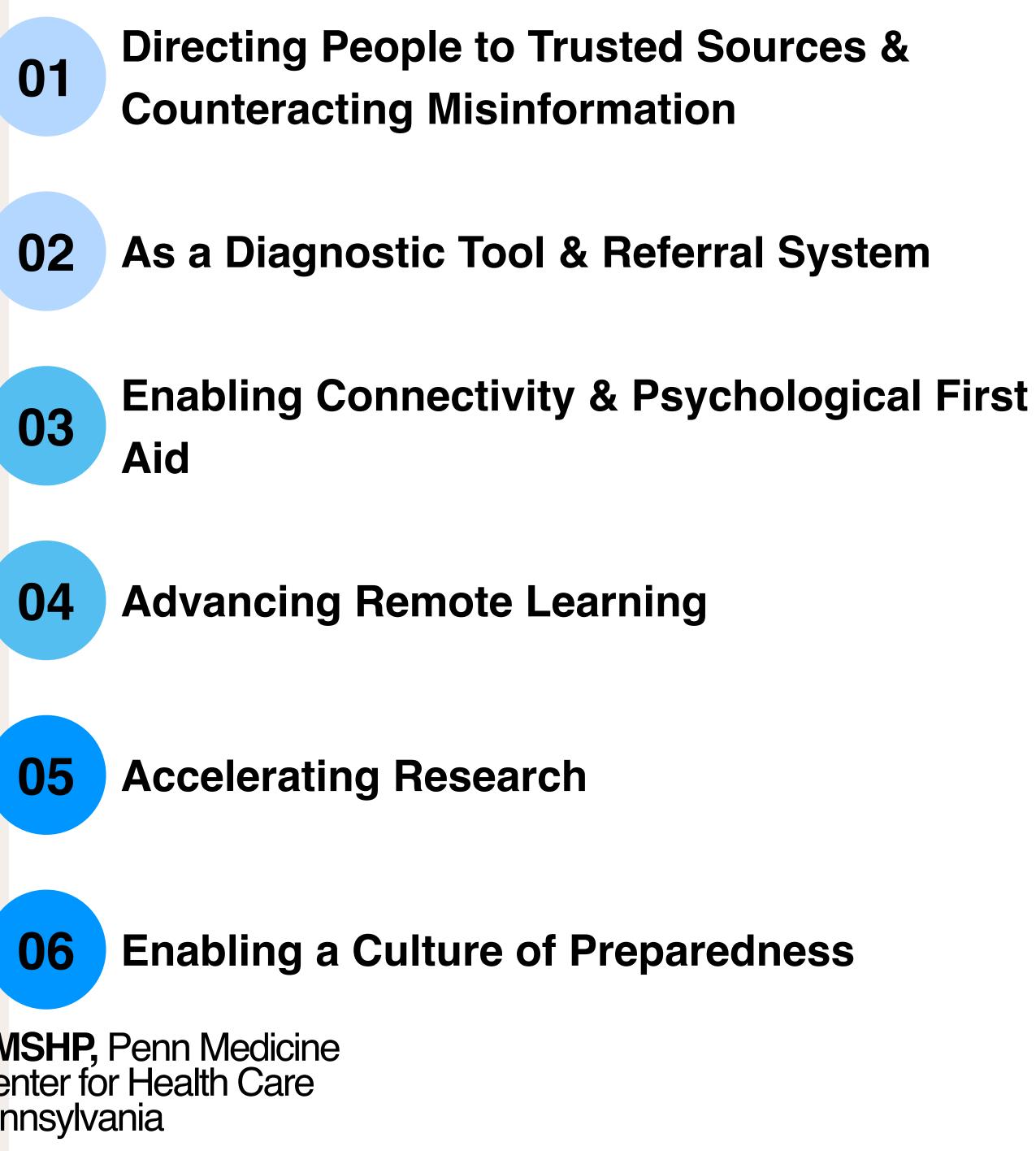




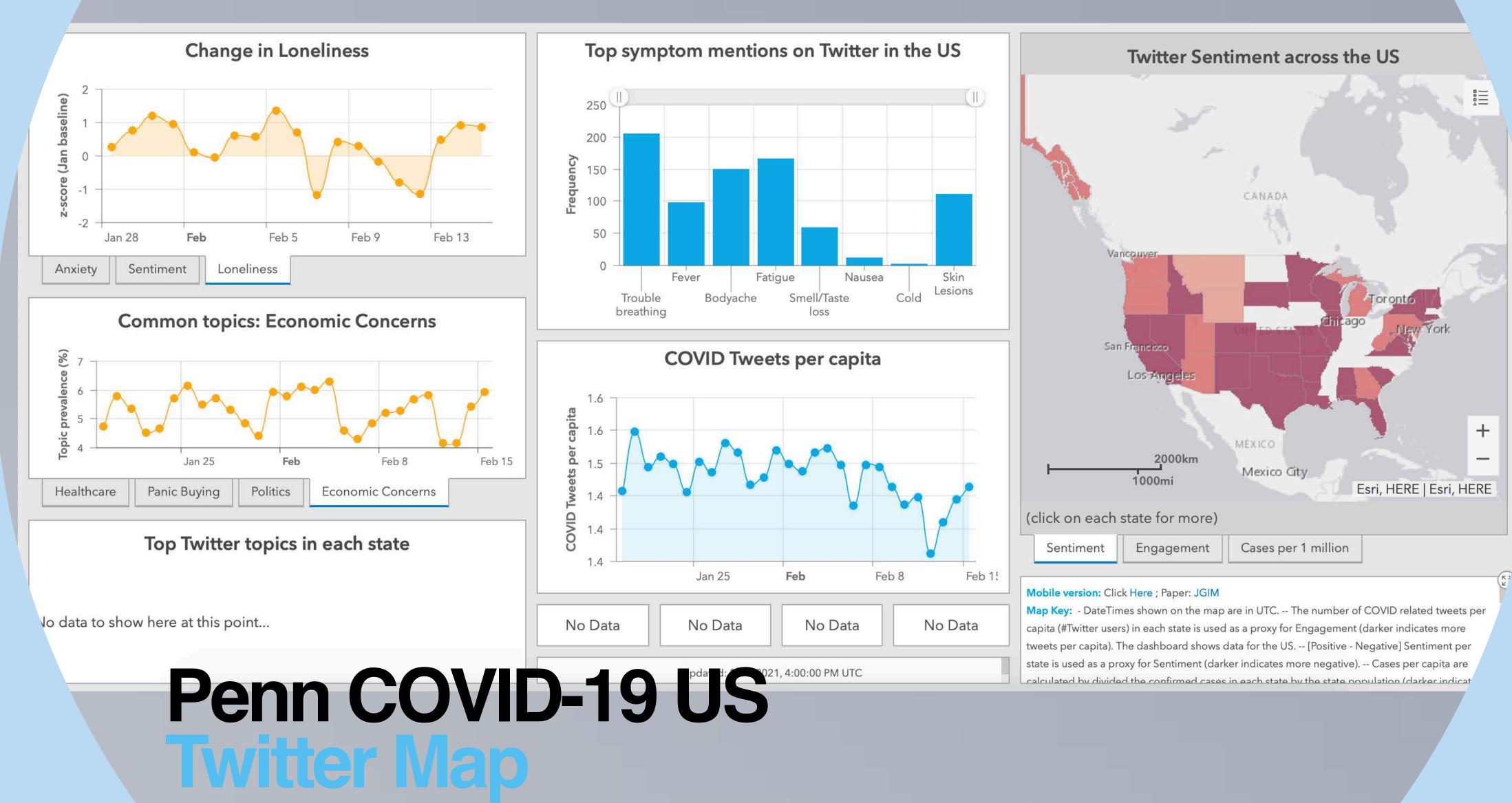


# **Social Media and Emergency Preparedness in Response to Novel Coronavirus** - JAMA, 03/2020

Dr. Raina Merchant, MD, MSHP, Penn Medicine Center for Digital Health, Center for Health Care Innovation, University of Pennsylvania

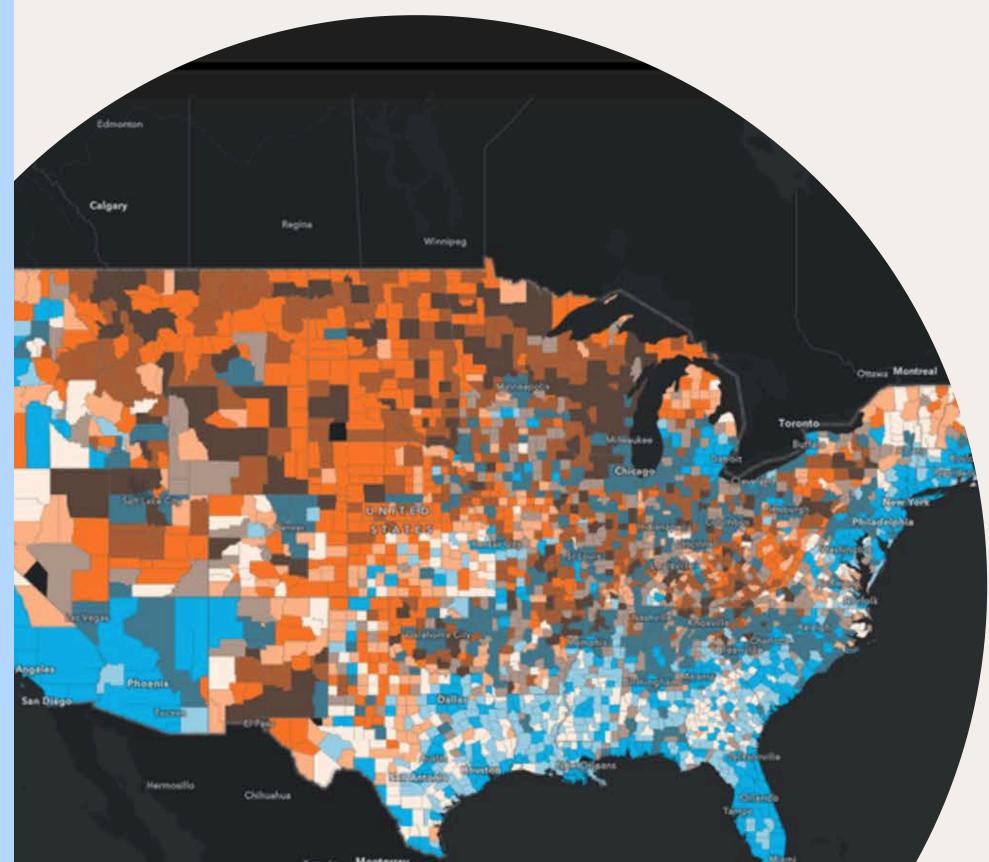








# The COVID-19 Symptom Survey

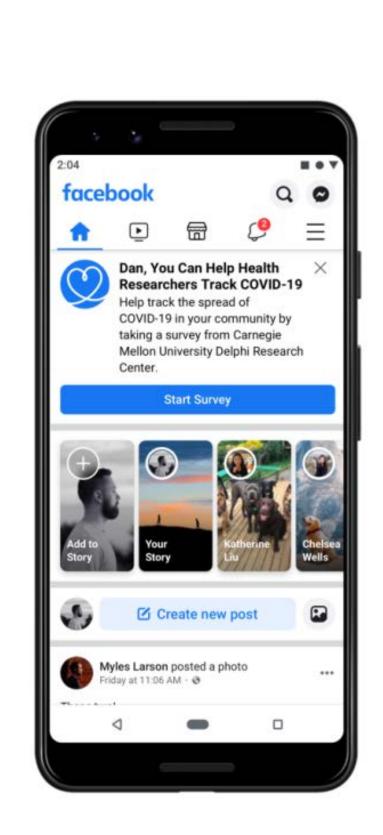


**Facebook** Carnegie Mellon University (MARYLAND) A collaboration between Facebook Data for Good, the Delphi Group at Carnegie Mellon **University, and the Joint Program in Survey** Methodology at the University of Maryland

### More than 30 million 02 survey responses

01













# The COVID-19 Symptom Data Challenge

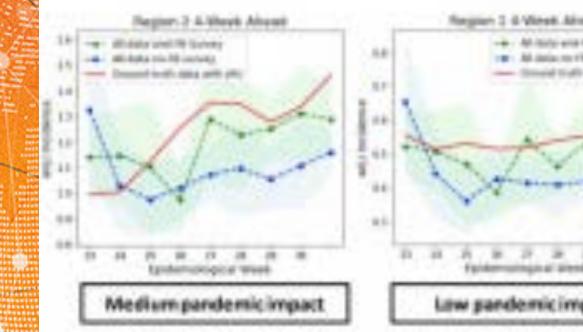
- With Catalyst @ Health 2.0, the collaborators from the Symptom Survey, Duke-Margolis **Center for Health Policy, & Resolve to Save** Lives, an initiative of Vital Strategies
- Winner: DeepOutbreak
- Created a framework for forecasting and comparing the domestic activity and trends in transmission of COVID-19 versus symptomatically-similar illnesses

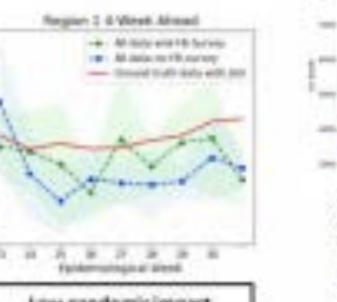
Duke MARGOLIS CENTER for Health Policy

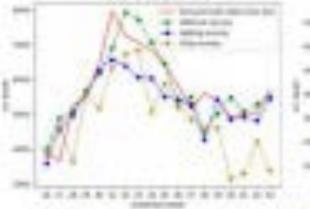






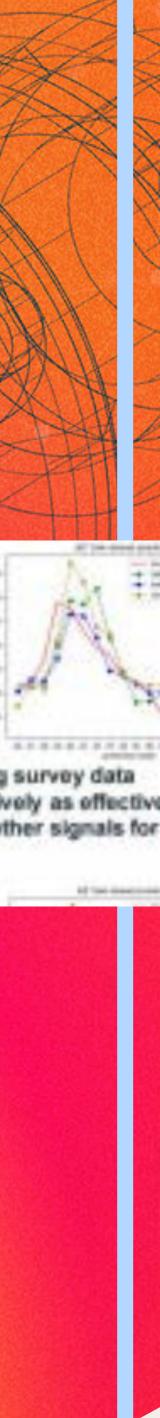




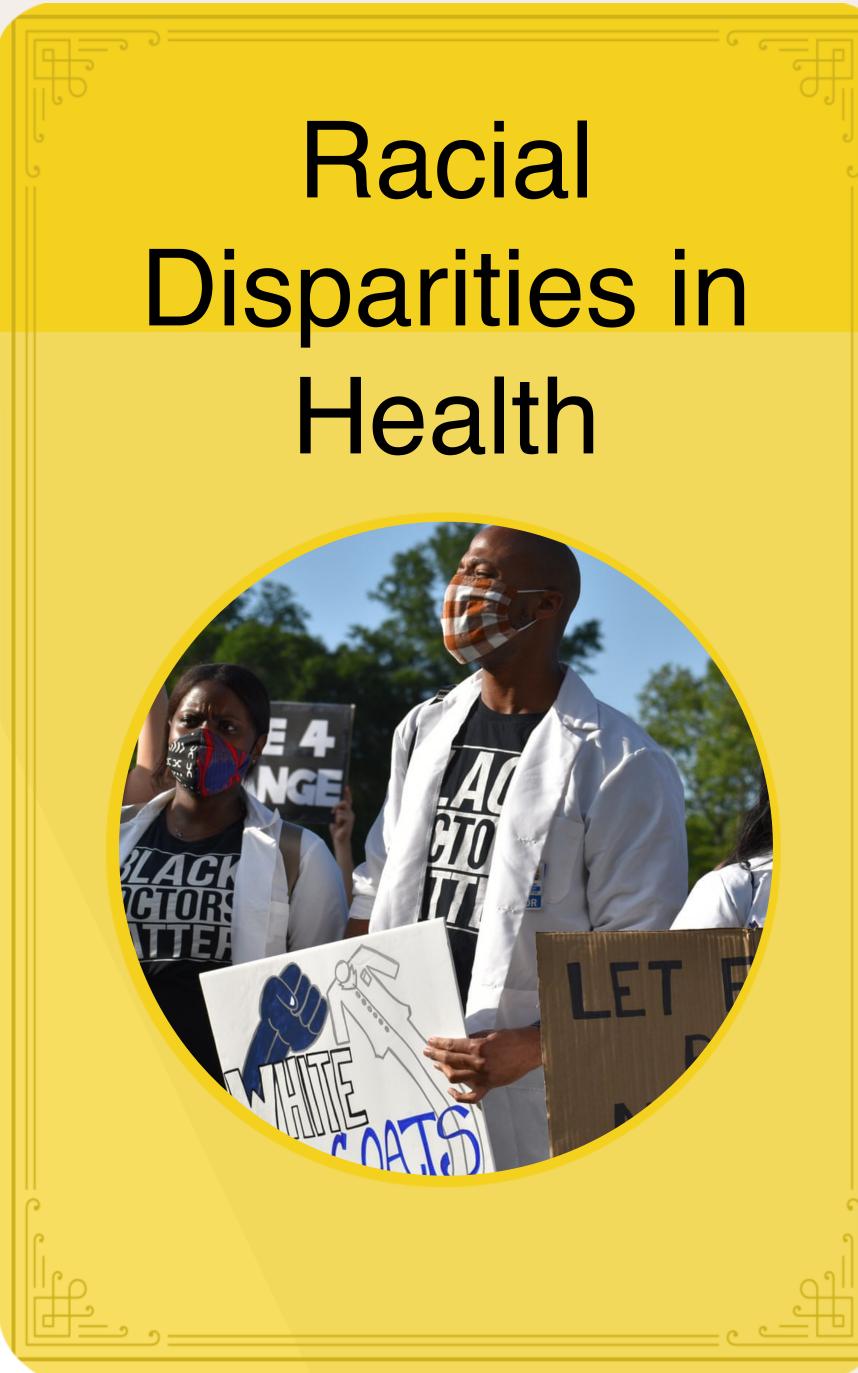


Short-term forecasts: Using survey data independently is comparatively as effective using in conjunction with other signals for 19 mortality forecasting.





# THNKING OUTSIDE TRADITIONAL BORDERS





### "

### The two pandemics are COVID and social injustice.

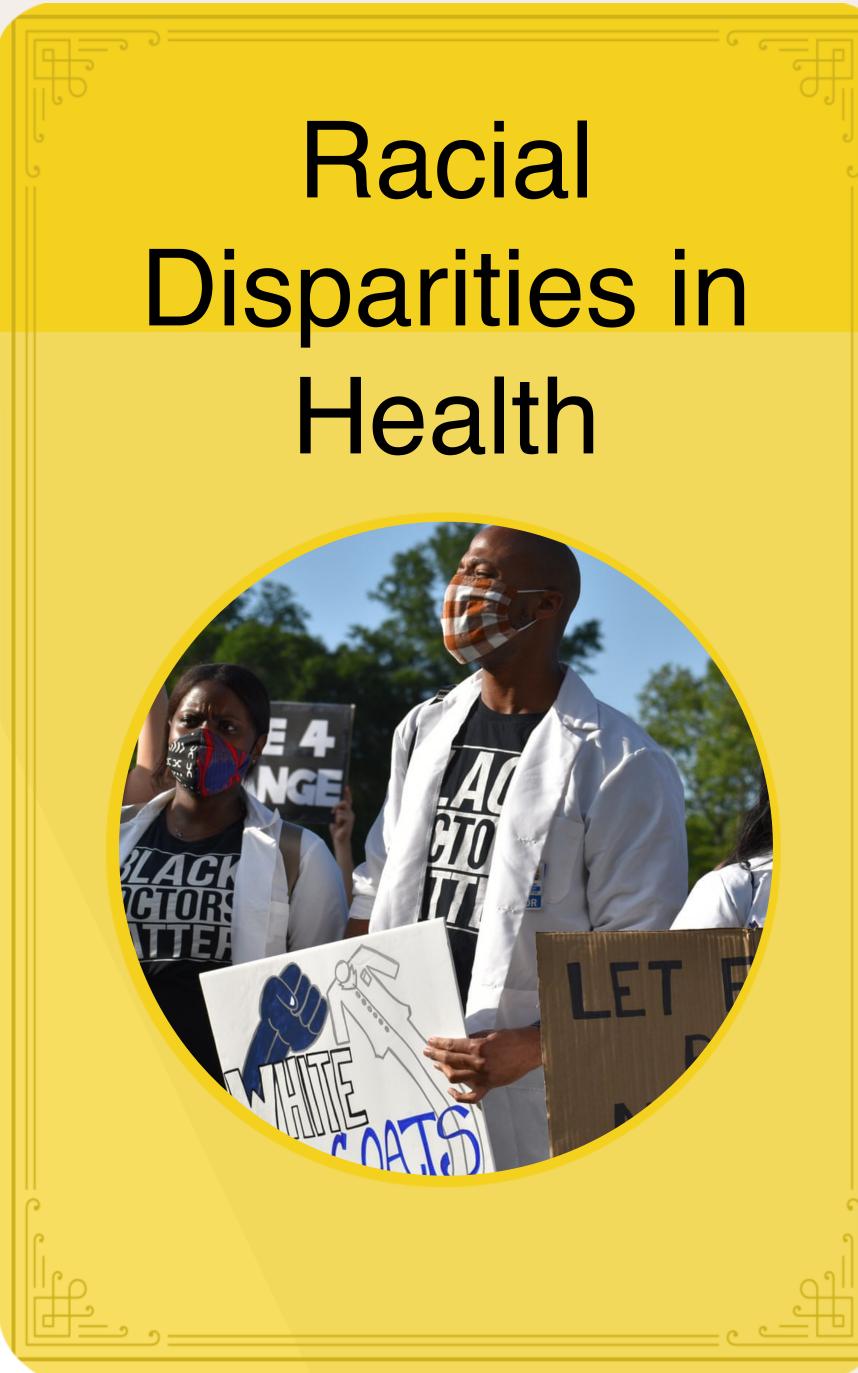
Cindy Bo, Operational Vice President, Chief Strategy & Business Development Officer, Delaware Valley Lead, Enterprise D.R.I.V.E. Strategy and Task Force

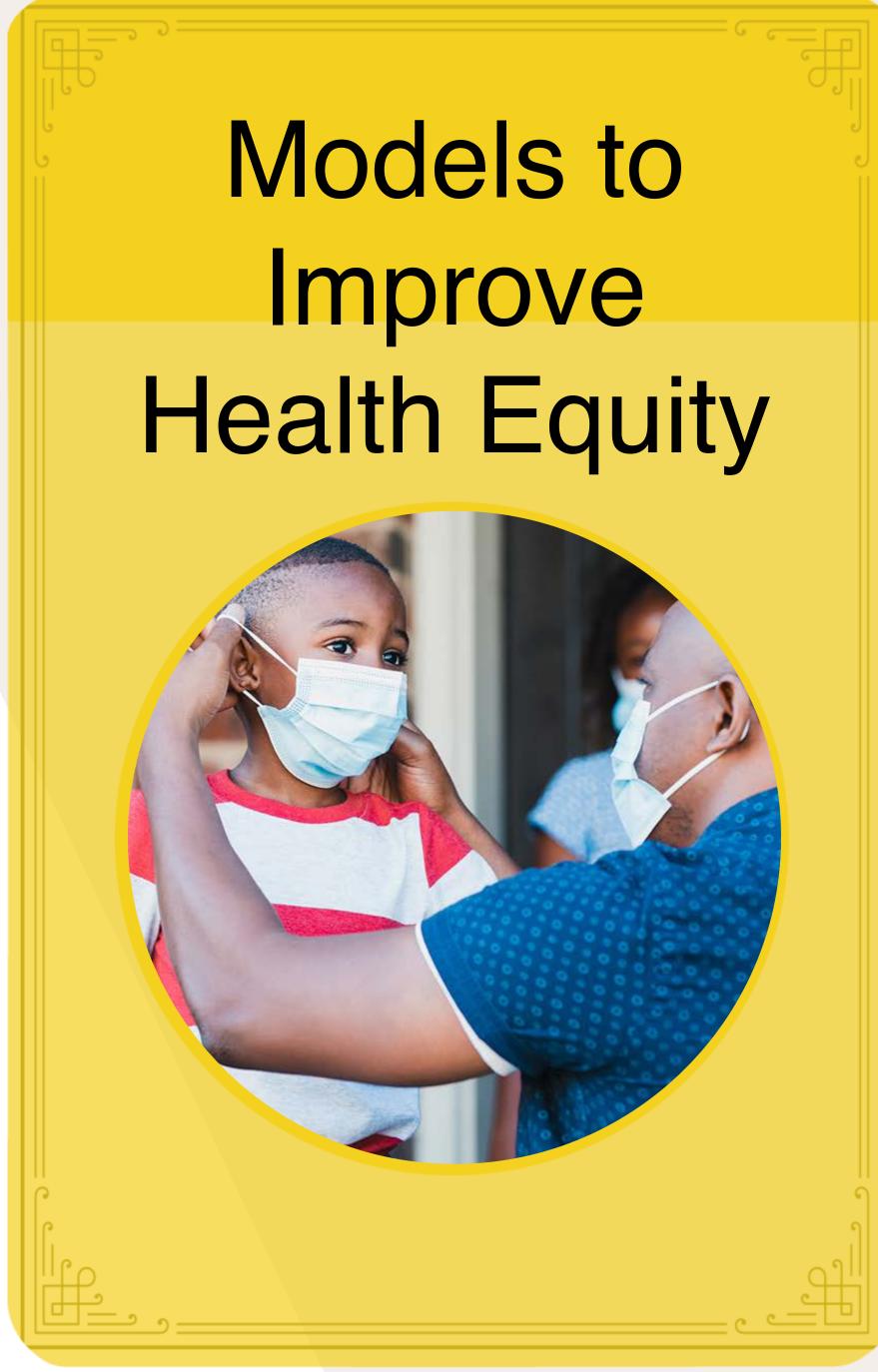
"



# **"COVID-19 vaccine inequity, racial disparities still a concern in Boulder County" - Daily Camera**







## Dr. Monica Lypson "Learning From The Past And Working In The Present to Create an Antiracist **Future for Academic Medicine**" - JAM

FIG OSMARKE

01

### **Individual Actions**

Use empathy, humility, and embrace growth while identifying and holding accountability for racist behaviors

02

### **Structural Actions**

Reexamine policies, curricula, and metrics to ensure they promote equality while using the platform to promote racial and health equity



### **Academic Medicine Actions**

**Develop systems-level policies, reporting,** & updated resource allocations to facilitate better health for underrepresented populations







## D.R.I.V.E. Diversity. Anti-Racism. Inclusion. Value. and Equity.

# DRIVE DRIVE CHANGE Building a Healthy Future for All



"

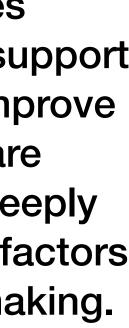
Dr. Lisa Fitzpatrick, CEO of Grapevine Health

As a Patient it is your right to ask as many questions as you need to to get the information you need to be well and healthy.

### GRAPEVINE HEALTH

Grapevine Health leverages storytelling, community-based support and digital communication to improve health literacy and health care engagement by learning and deeply understanding motivations and factors influencing medical decision-making.

"

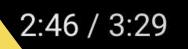


### Lisa On the Street: Doctor-Patient Communication

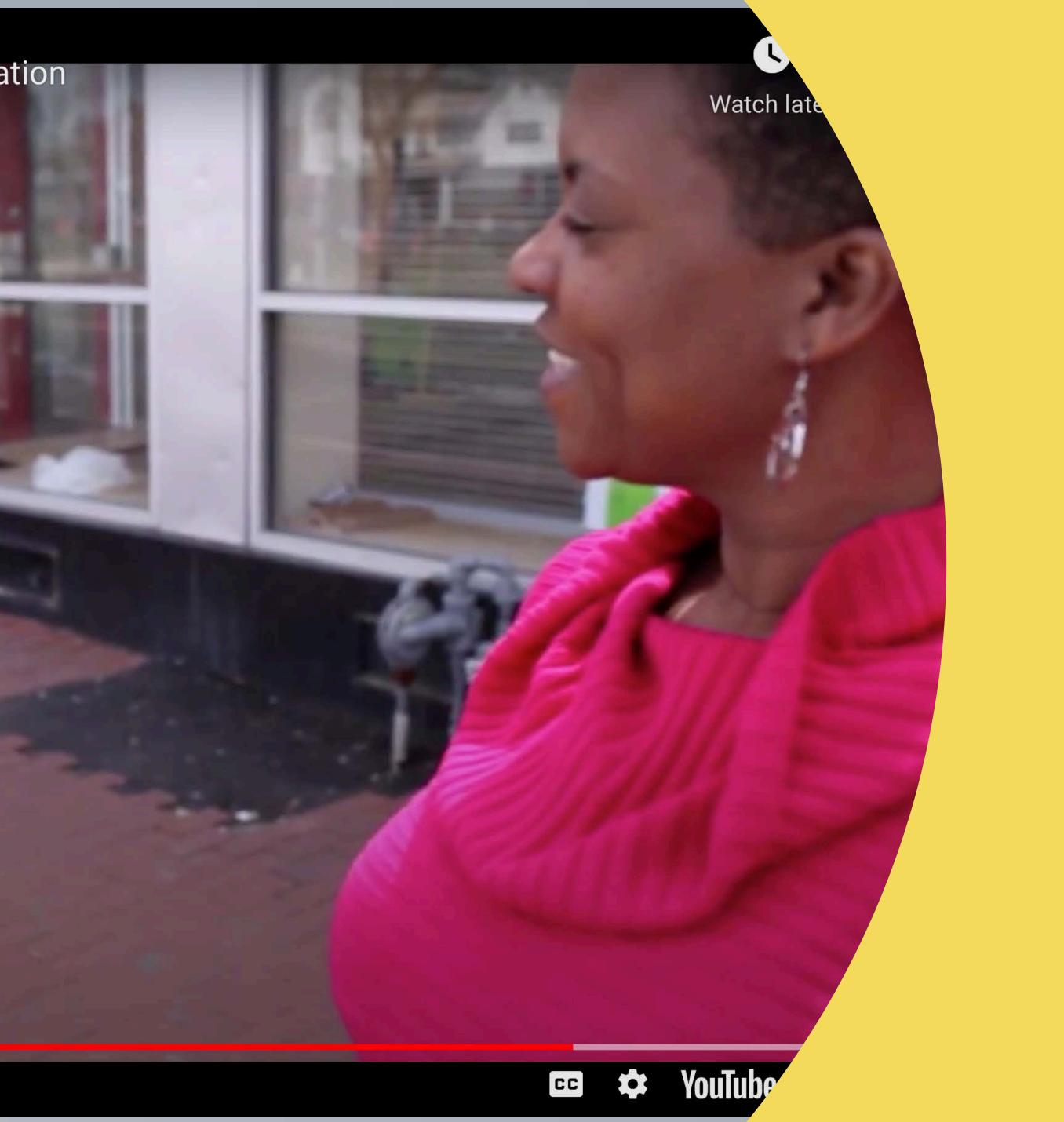
200

ALC: NO

a



**RE VIDEOS** 



A Crisis of Mental Health Issues in Patients & in Our Workforce



# "I feel so guilty for not being Stronger" Dr. Saleena Subaiya, Emergency Medicine in "They Get Brave" NYT documentary



"A cluster randomized controlled trial of a digital department of defense combat operational stress control intervention among frontline healthcare workers in New York City during the COVID-19 pandemic" Saleena Subaiya Frontline workers in NYC showed symptoms of depression, anxiety, insomnia, and PTSD at 3x the rate of the general population

Pre-pandemic burnout rates in medical practices was already as high as 40-50%

25% have symptoms of either PTSD, anxiety, depression, burnout, or insomnia

### A fascinating discovery made by the DoD was that troops exposed to more combat were actually *less likely* to develop PTSD than counterparts who saw less combat *if they had behavioral* health minded leaders -- that is leaders that worked alongside of them in the trenches, and supported a culture around mental health.



Dr. Saleena Subaiya, Emergency Medicine in "They Get Brave" NYT documentary





"



A Crisis of Mental Health Issues in Patients & in Our Workforce



### WellNurse 😎

### Gratitude

for what one has, spontaneous feeling making conscious effort to count one's blessings. A process of recognizing what one has with a positive outcome from a external source.

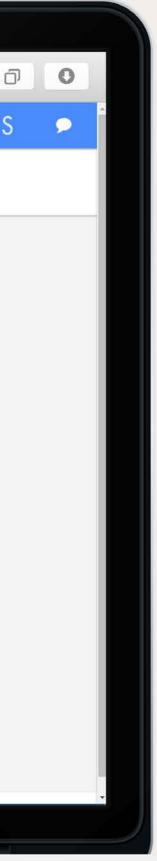


# CAREMINDr



# Tiatros, Inc.

••• < > [		tiatros.com	Ċ	• TIA
	al Growth & Psychological Resilie Session 1: Recognizing the Power in Your Story / 6) P			
Home  My Goals		5) Psychoeducation Lecture: Introducing Your Brain /1 Completed		
Profile				
Settings		FRONTAL 55	REITAL B	
<ul> <li>Password</li> <li>Tech support</li> </ul>			BOCCIPITAL DEST	
		Session 1 Psychoeducation Lecture Video	FINISH	
🕞 Log out	_			



### MEMBERSHIP **OUR METHOD** RESOURCES



# **Resilient.ai**



# ACKNOWLEDGE INTERSECTIONALITY

# 1. BUILD ON WHAT'S IN PLACE 2. THINKING OUTSIDE TRADITIONAL BORDER **3. ACKNOWLEDGE INTERSECTIONALITY**





# HOW DO WE MOVE FORWARD?

## "Haven, the Amazonbacked health company, will next month" - Kernel

### Watson Health

## **"IBM's retreat from** Watson Highlights Broader Healthcare" - WSJ

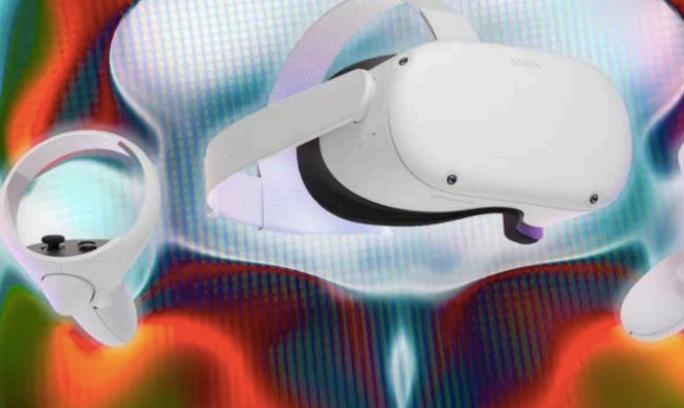


"GameStop: What is it and why is it trending?" - BBC Newsbeat

### The meteoric rise of Clubhouse – and why **Big Tech is taking notice**

Clubhouse is having a moment. Twitter and Facebook want in.





TECH

### **"Digital Art' Framed And Collected On Blockchain" - Forbes**

### How the Oculus Quest 2 finally made VR a mainstream hit

"Is It Too Late to Invest in **Bitcoin?**" - Finextra



10:53

~3











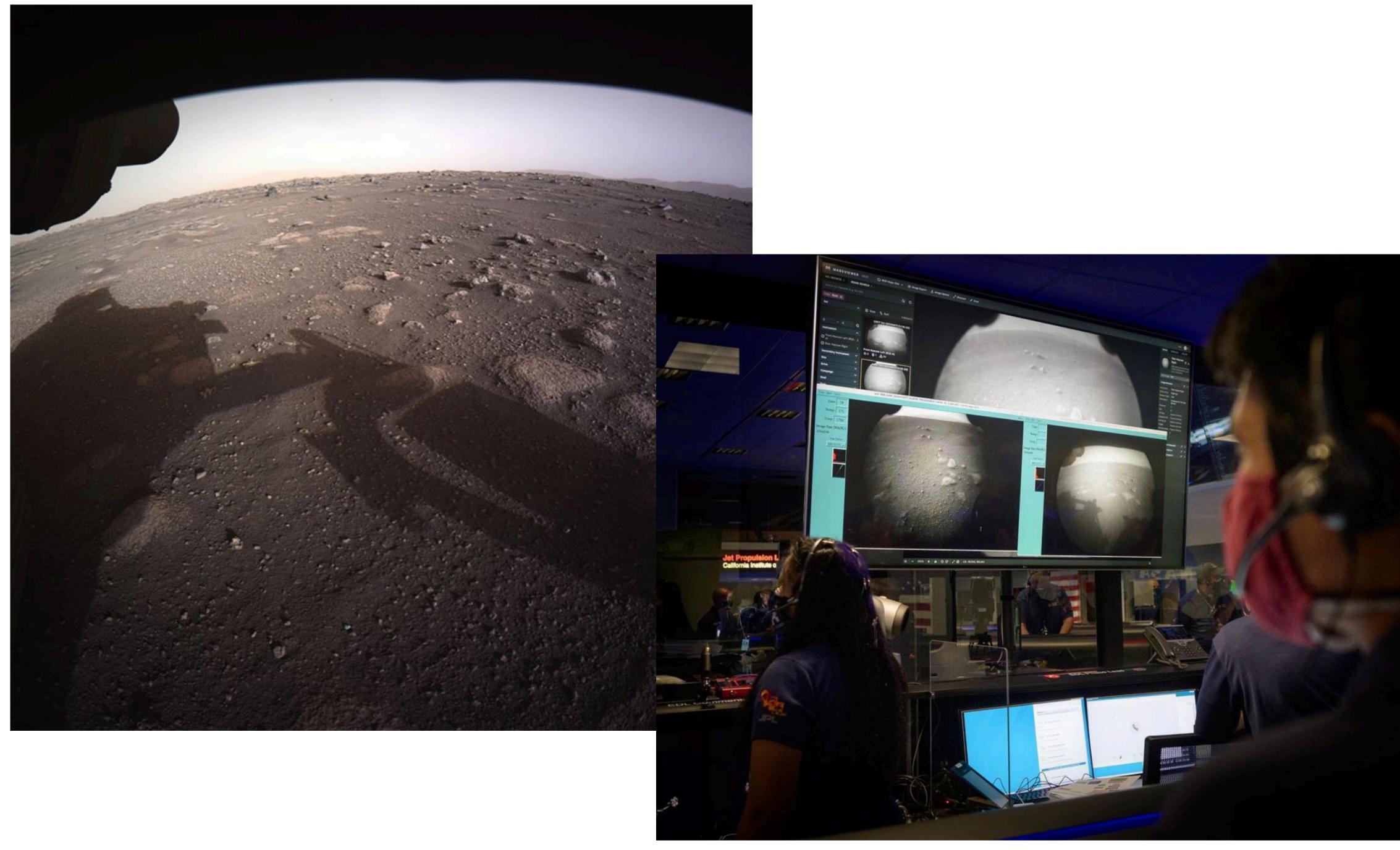






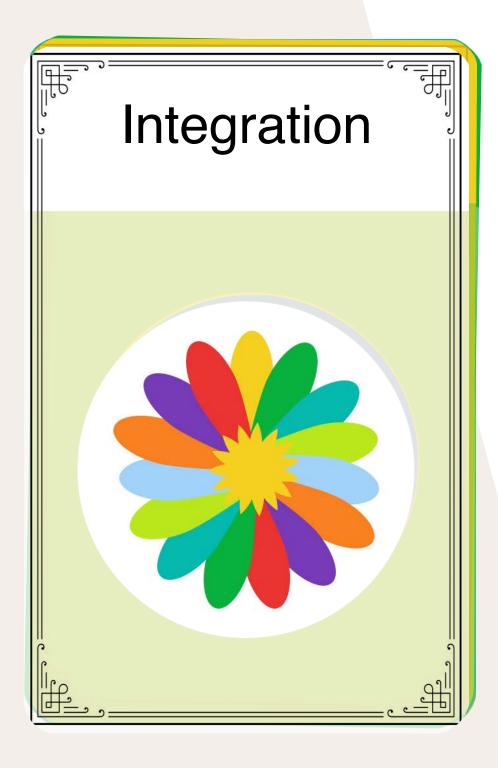












# Thank You

### Indu Subaiya, MD MBA Co-founder and President Catalyst @ Health 2.0



