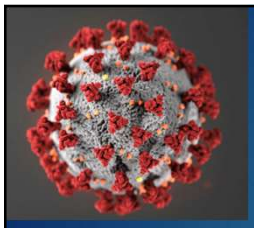

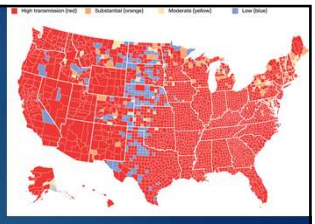

Covid-19 and the Transformation of Healthcare:
Managing the Challenges, Capitalizing on the Opportunities

Robert M. Wachter, MD
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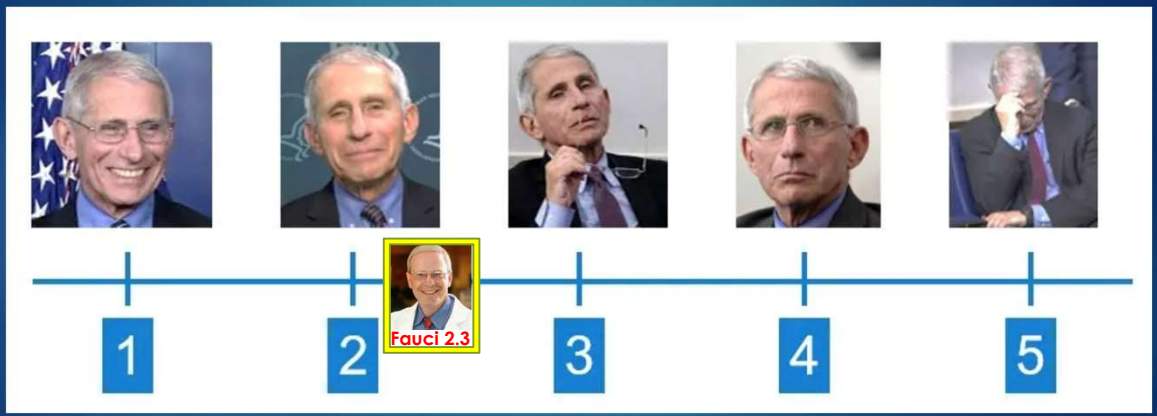
1

Before we start, let's check in to be sure everybody is feeling OK…



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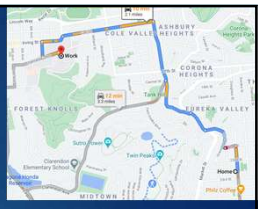
Talk Roadmap



- A few thoughts on how we've managed the pandemic and the problems it has exposed in our politics and society
- A few tech innovations that were accelerated by Covid
  - Telemedicine, dashboards
  - Plus a few that might have hit the tipping point, but didn't
  - Entering the post-EHR era: why and what that means
- A couple of areas in which everyone is saying the right things, but I worry about follow-through

3

The Dominant Challenge in Preparing for a Pandemic

"Everything we do before a pandemic will seem alarmist. Everything we do after will seem inadequate."

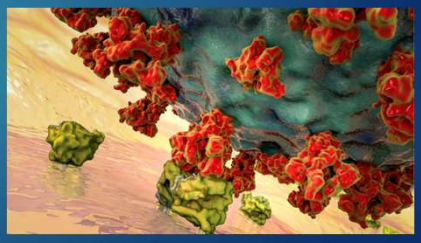
— Michael Leavitt, former HHS secretary

4

The American Response

"Aspects of America's identify may need rethinking after COVID-19. Many of the country's values have seemed to work against it during the pandemic. Its individualism, exceptionalism, and tendency to equate doing whatever you want with an act of resistance meant that when it came time to save lives and stay indoors, some people flocked to bars and clubs. Having internalized years of anti-terrorism messaging following 9/11, Americans resolved to not live in fear. But SARS-CoV-2 has no interest in their terror, only their cells."

Ed Yong, *The Atlantic,* March 25, 2020



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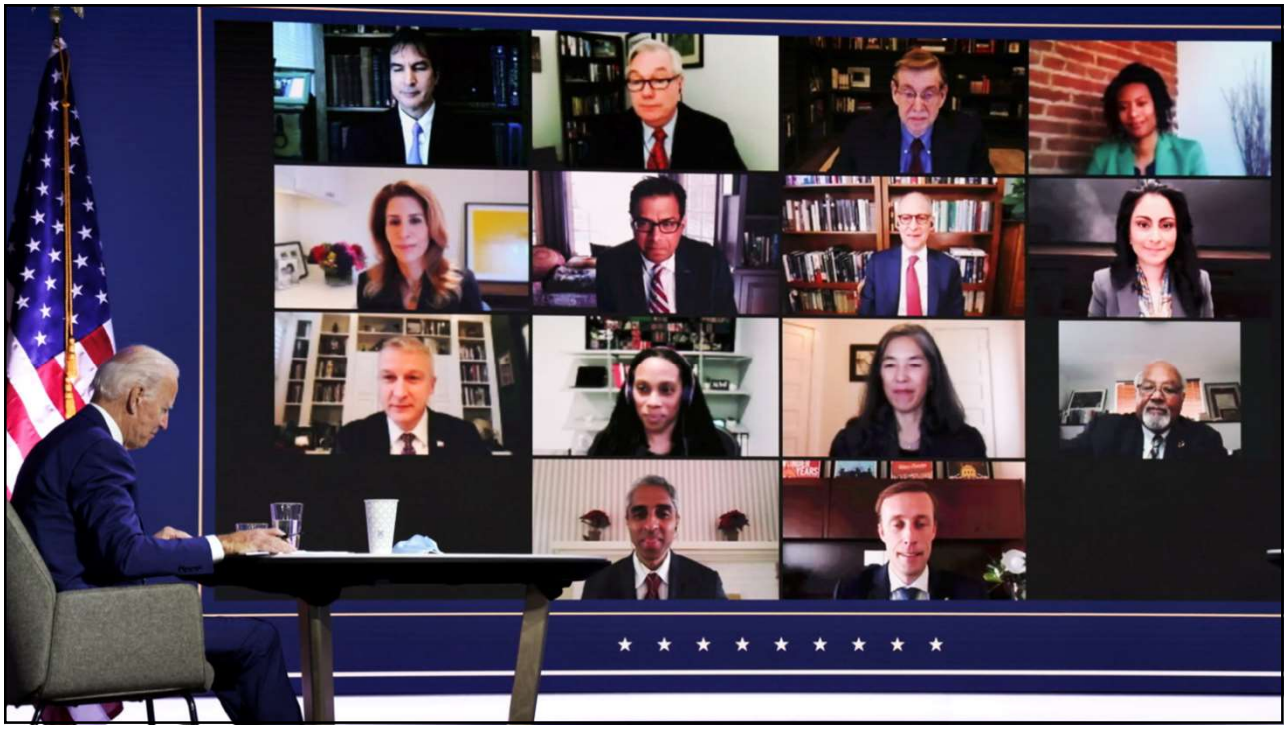

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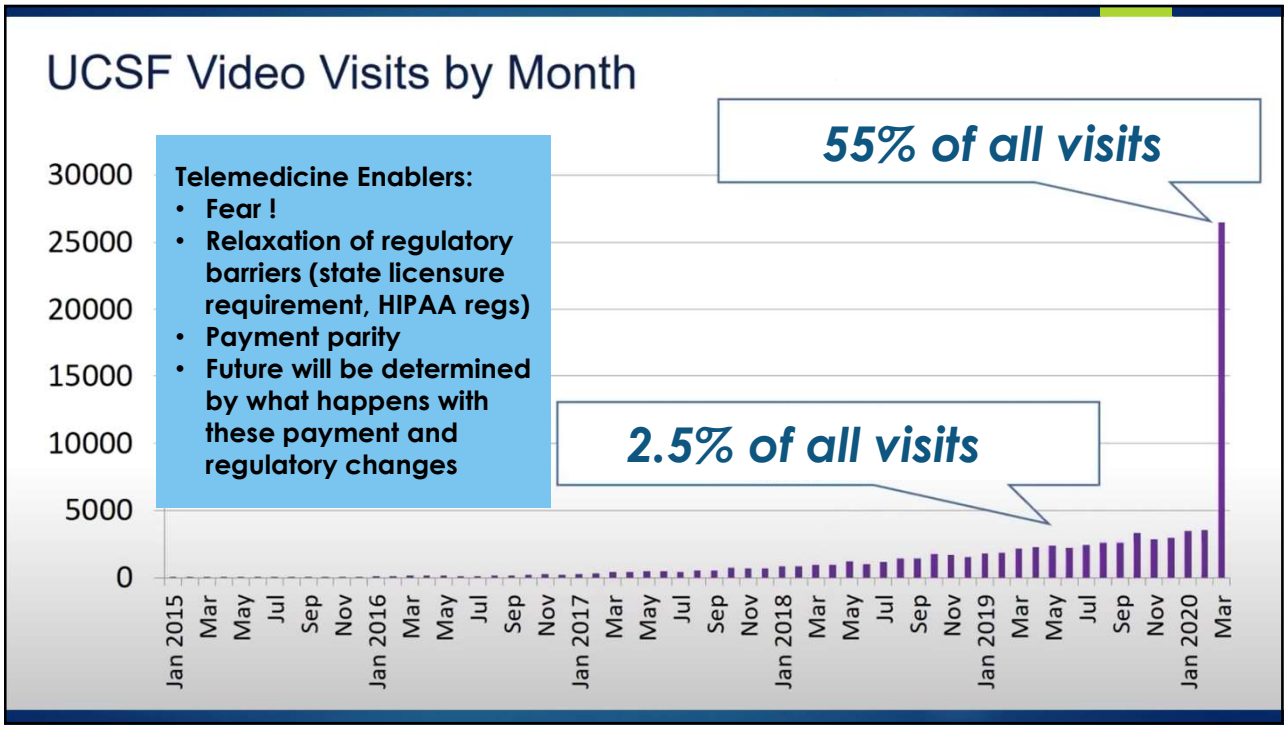
© Andy Freeberg

7

Technology-related Innovations:
Which Ones Will Endure?
UCSF Health COVID-19
Enterprise Dashboard

8

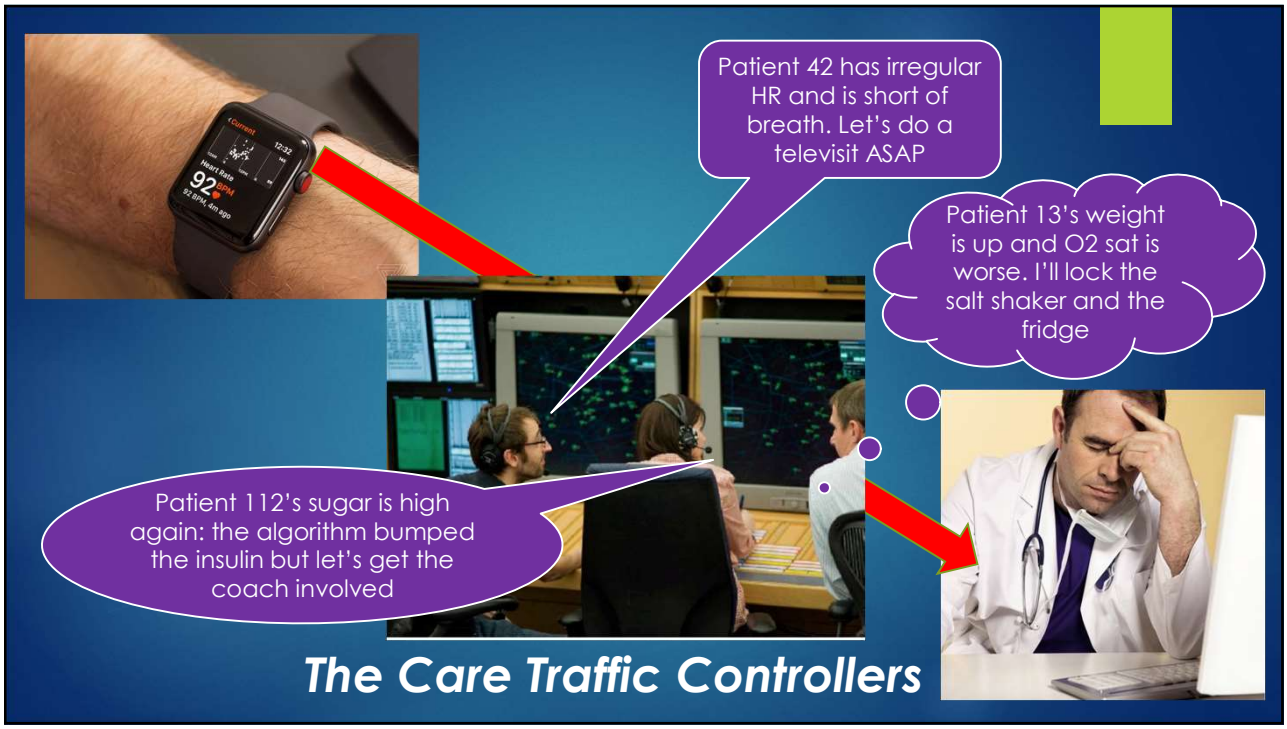


9

The Fundamental Question About Telemedicine/Virtual Visits

- Is it simply a visit replacement?
  - Fine if so: convenient for patients, maybe for providers
  - Opens up new non-geographically-determined care options
    - Potentially good for patients, but new competitive threats for health systems
- Or does it pave the way for true virtual care – the real game-changer
  - Patients no longer coming into office to get BP, weight, glucose checks, etc. means new dependence on digital data streams
  - Measures less episodic; more semi-continuous
  - The trillion-dollar question: how will we manage these new data flows?

10

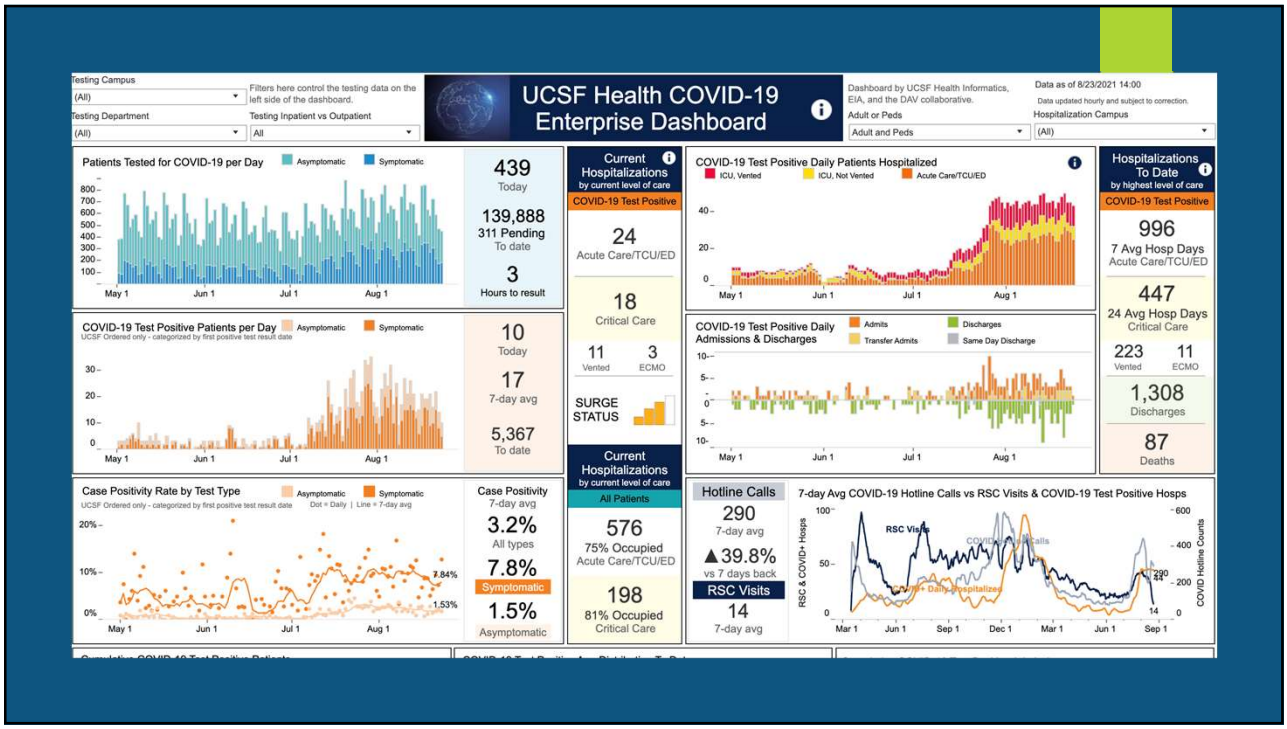


11

Dashboards

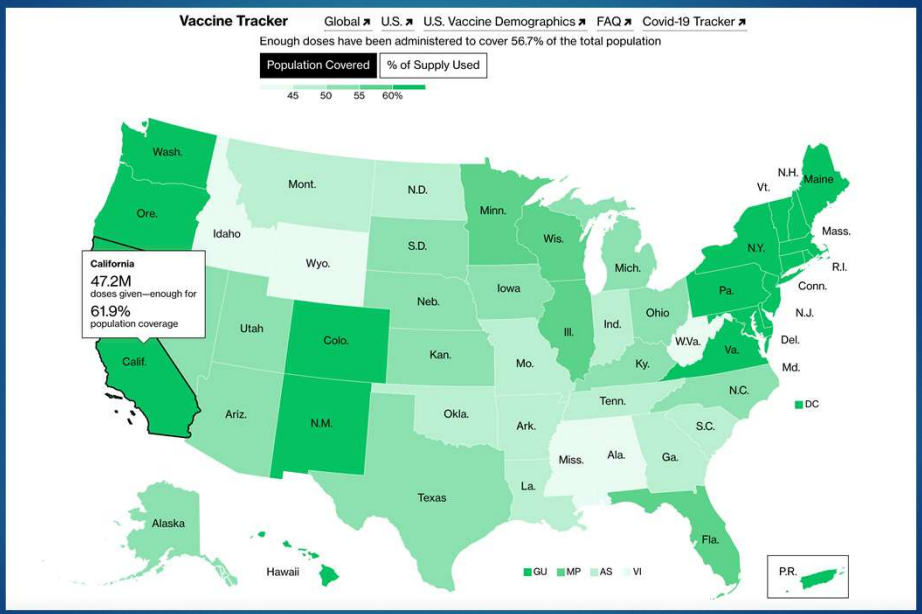
Finally taking all that data and delivering usable, real time information in visually attractive and actionable form to managers and clinicians

12



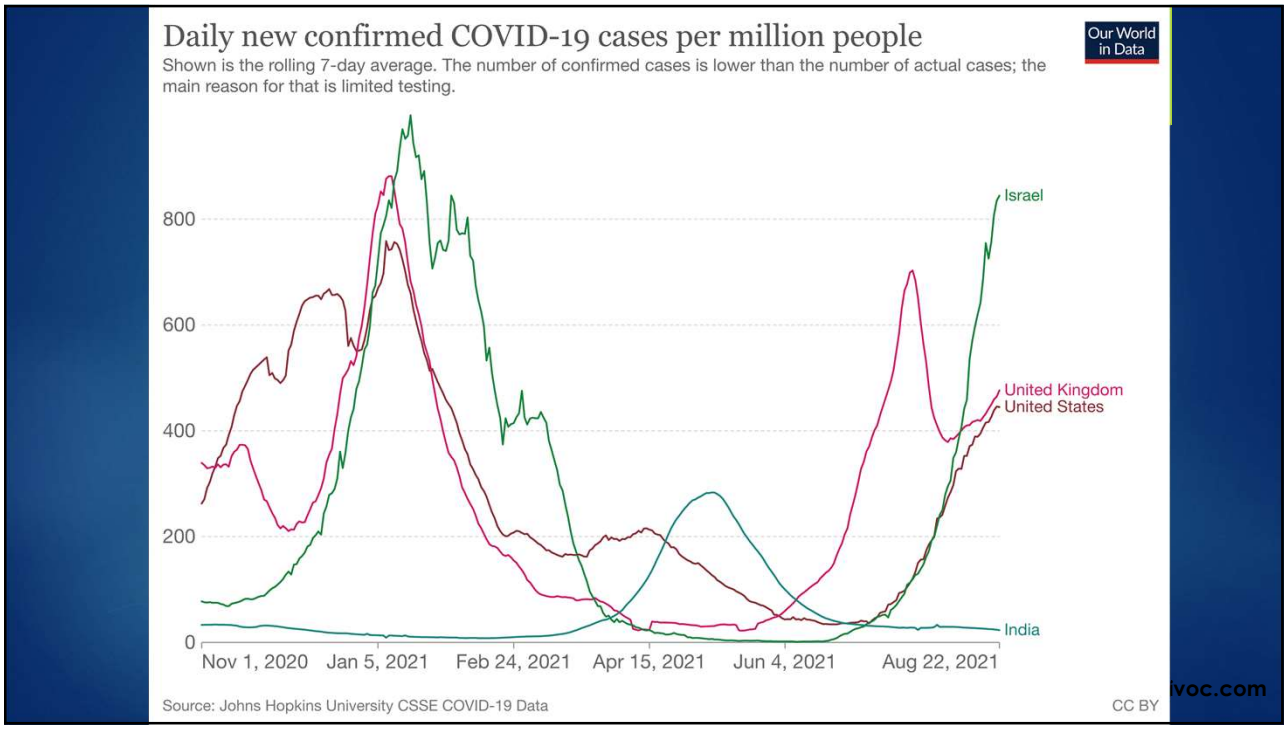
13

Bloomberg's Vaccine Tracker

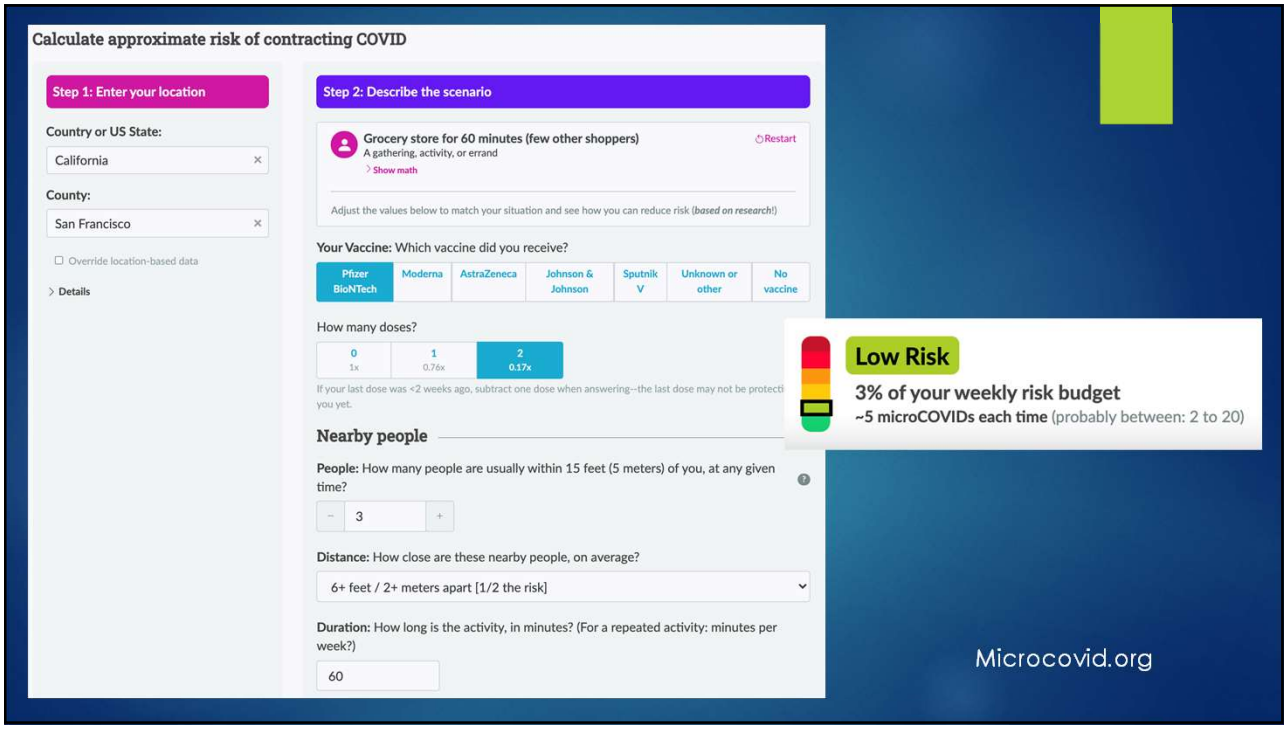


https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/

14


Daily new confirmed COVID-19 cases per million people
Shown is the rolling 7-day average. The number of confirmed cases is lower than the number of actual cases; the main reason for that is limited testing.
Our World in Data
800
600
400
200
0
Nov 1, 2020
Jan 5, 2021
Feb 24, 2021
Apr 15, 2021
Jun 4, 2021
Aug 22, 2021
Israel
United Kingdom
United States
India
Source: Johns Hopkins University CSSE COVID-19 Data
CC BY

15


Calculate approximate risk of contracting COVID
Step 1: Enter your location
Country or US State:
California
County:
San Francisco
Override location-based data
Details
Step 2: Describe the scenario
Grocery store for 60 minutes (few other shoppers)
A gathering, activity, or errand
Restart
Show math
Adjust the values below to match your situation and see how you can reduce risk (based on research!)
Your Vaccine: Which vaccine did you receive?
Pfizer BioNTech
Moderna
AstraZeneca
Johnson & Johnson
Sputnik V
Unknown or other
No vaccine
How many doses?
0 1x
1 0.76x
2 0.17x
If your last dose was <2 weeks ago, subtract one dose when answering--the last dose may not be protecti
you yet.
Nearby people
People: How many people are usually within 15 feet (5 meters) of you, at any given time?
3
Distance: How close are these nearby people, on average?
6+ feet / 2+ meters apart [1/2 the risk]
Duration: How long is the activity, in minutes? (For a repeated activity: minutes per week?)
60
Low Risk
3% of your weekly risk budget
~5 microCOVIDs each time (probably between: 2 to 20)
Microcovid.org

16

How About AI, Data-sharing Apps, and Interoperability?

17

90+ Healthcare AI Startups To Watch

Imaging & Diagnostics

Drug Discovery

While one might have anticipated the pandemic would be a moment for AI to shine, I can't identify a true game-changing AI application

Clinical Trials

Nutrition

Compliance

Mental Health

Remote Monitoring

Created by You. Powered by CBINSIGHTS

18

Alice and Bob meet each other for the first time and have a 10-minute conversation.

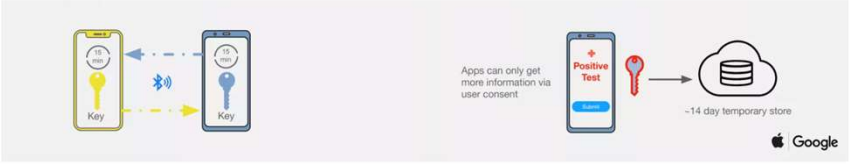
Bob is positively diagnosed for COVID-19 and enters the test result in an app from a public health authority.

Perhaps months too late, the Apple-Google Covid-19 contact tracing tool comes to America

Virginia is the first US state to come out with an app that uses Bluetooth-based tech, nearly three months after its release.

By Sara Morrison | Aug 6, 2020, 4:46pm EDT

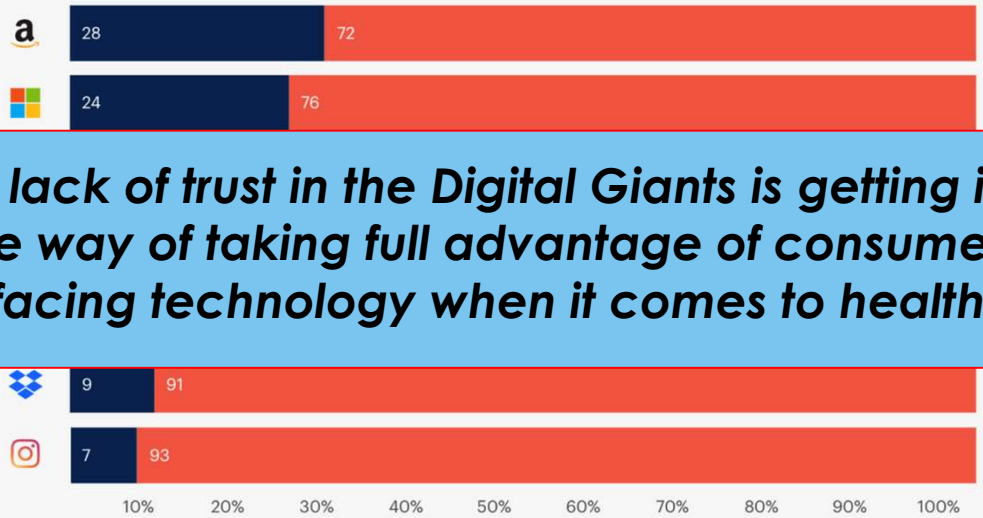
Vox



Apple and Google

19

Trust in Tech Giants



A lack of trust in the Digital Giants is getting in the way of taking full advantage of consumer-facing technology when it comes to health

YouGov survey of 3580 adults, Mar-May, 2019

20

THE VICE PRESIDENT
WASHINGTON

March 29, 2020

Dear Hospital Administrator:

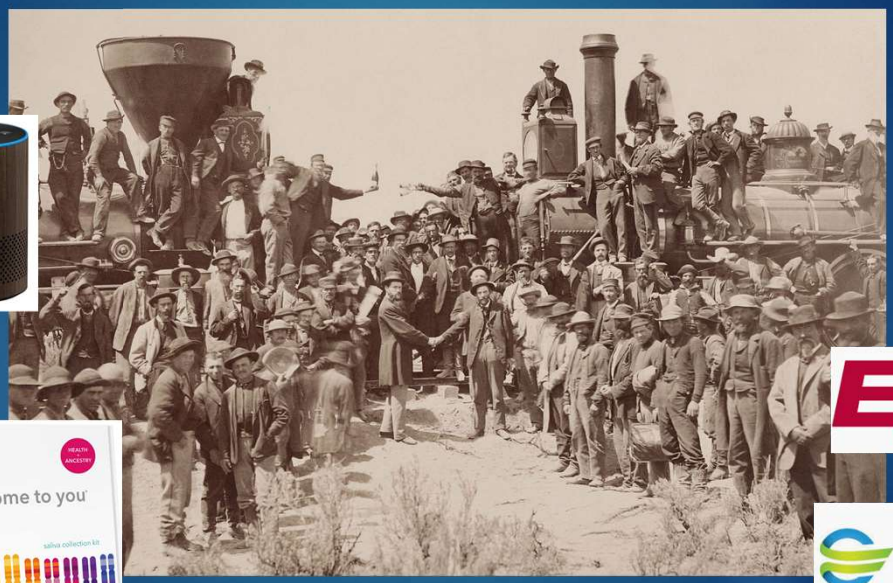
The pandemic might have been an opportunity to promote interoperability, but we still find ourselves faxing spreadsheets

i. *Commercial laboratories*: LabCorp, BioReference Laboratories, Quest Diagnostics, ~~Mayo Clinic Laboratories, and ARUP Laboratories~~.

b. ***Reporting Instructions:*** We request that all data for COVID-19 testing completed at "in-house" laboratories or a laboratory not listed above be ***reported*** using the attached spreadsheet.

21

Health IT Needs Its Golden Spike



Epic

Cerner

22

Maybe the Stupidest Thing I Ever Said to a Mentee

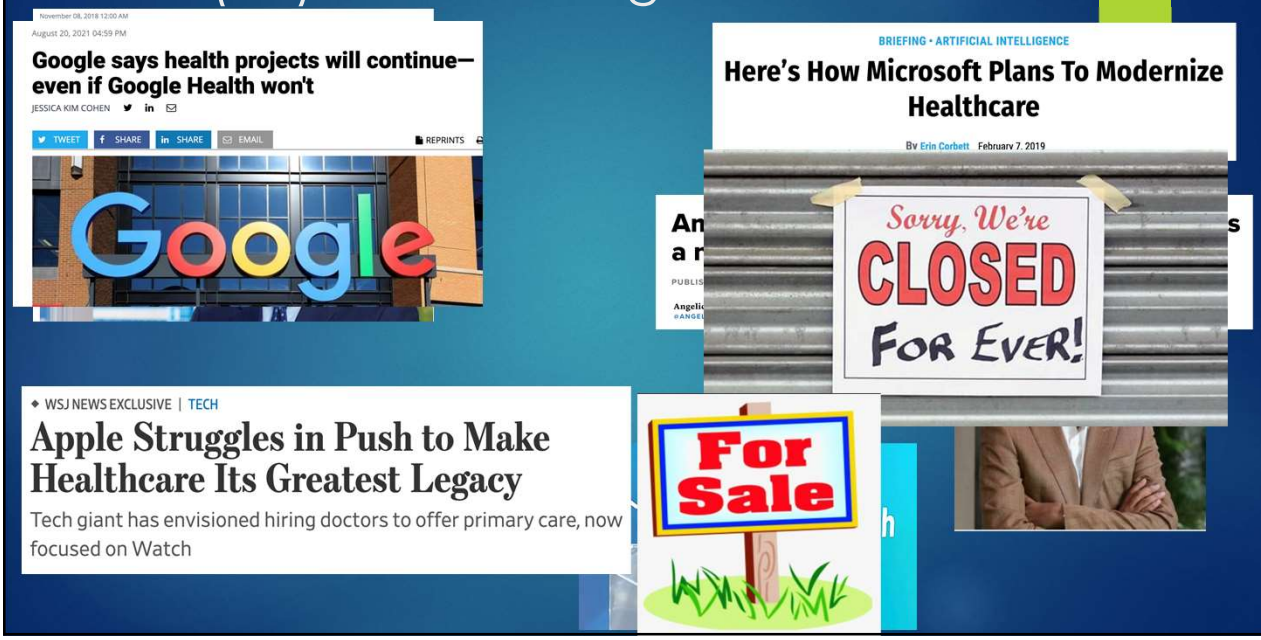
"What will you do after we've implemented our EHR?"

23

Digital Health Investments Are Growing

24

(Re) Enter the Digital Giants….



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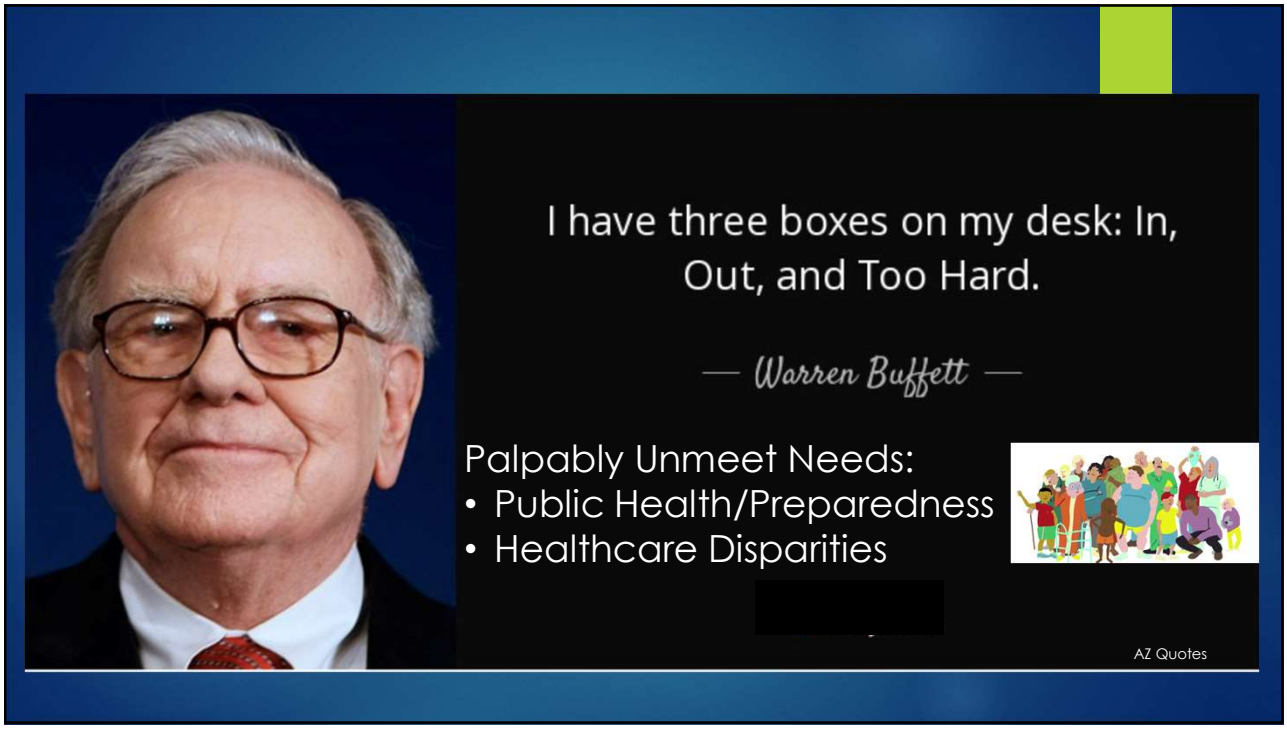
Why Health IT May Finally Be Entering a New (Post-EHR) Phase

- Winners in EHR derby: healthcare-specific companies, good at collecting data & moving it around
  - They were ready when healthcare went digital
  - Not expert in consumer-facing tools, user interface, learning from data, communication, visualization….
- Now entering the post-EHR era, facilitated by value pressure, population health needs, interoperability, cloud computing, AI, digital companies maturing… and the obvious limitations of what EHRs can offer

26

UCSF Health Digital Patient Experience
The Right Patient. The Right Provider. The Right Time. The Right Modality.
Integration
Together, we are creating a unified digital experience enabling UCSF Health patients and consumers easily and efficiently access and interact with care delivery in a personalized, and modern.
The Digital Patient Experience (DPE) is an ambitious, multi-year effort to make UCSF Health the premier digitally enabled care provider. It represents collaboration across multiple skills, disciplines, and areas across UCSF.
Newsletter
Check out the latest DPE Insider.
SUBSCRIBE

27


I have three boxes on my desk: In, Out, and Too Hard.
— Warren Buffett —
Palpably Unmeet Needs:
• Public Health/Preparedness
• Healthcare Disparities
AZ Quotes

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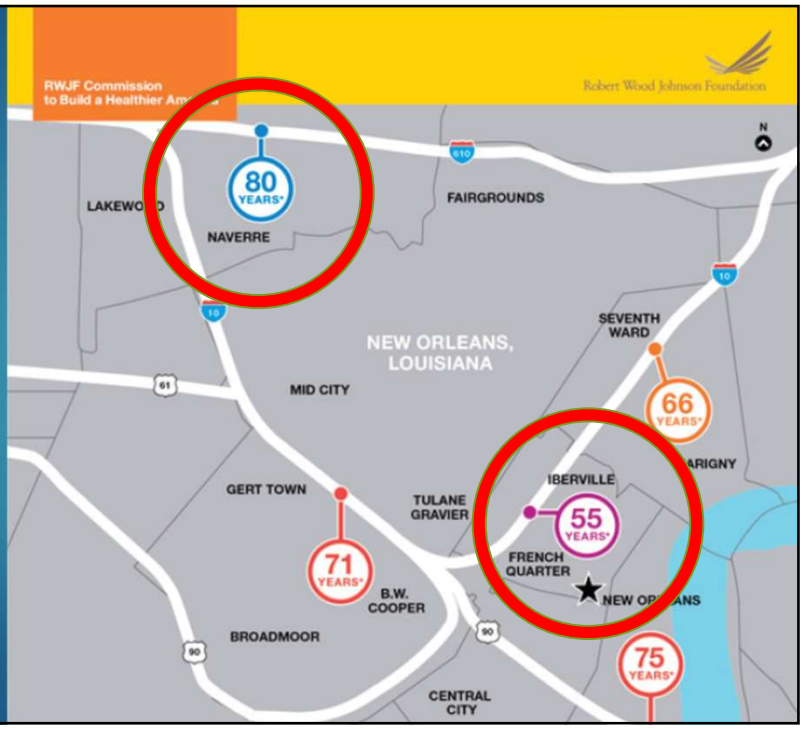
Health Disparities Were Well Appreciated Before Covid



29

Preparing for the Next Pandemic

"The most promising way to deal with a possible recurrence is, to sum it up in a single word, *preparedness*. And now is the time to prepare."

Surgeon General Rupert Blue
October 1918

30

"Obvious" Changes That May Go Into the "Too Hard" Box

- Everyone will profess to be committed to adequately resourcing public health. Beyond having an off-the-shelf plan for the next pandemic, this support will weaken once the Covid-19 pandemic is over
  - No powerful constituency
  - Hard to find resources for prevention when pitted against current needs
- Everyone will profess to be shocked by the disparities illustrated by Covid-19 (although they've been well appreciated for decades). Expect lots of lip service about addressing them, and then it too will recede
  - Most relate to social determinants of health, so they'll require investments in housing, jobs, justice system, and education, as well as significant income redistribution… all of which are politically challenging

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Several Easy Predictions, and a Hard One

- Health IT *will*, ultimately, transform and disrupt health and healthcare
- The new system will be less institution-focused, less geographically determined, more patient-centric, and deliver higher quality, less expensive, and more equitable care
- The winners will be any one of these four parties:
  - Existing healthcare organizations that thoughtfully embrace transformation
  - EHR vendors that innovate and open their architecture
  - Digital giants that are able to maintain a focus on health (lower probability)
  - New companies (start-ups) that skillfully address important use-cases
- ***The hard thing to predict: when?***

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A Time for Optimism?

33