



Digital Health During the COVID-19 Pandemic and Beyond

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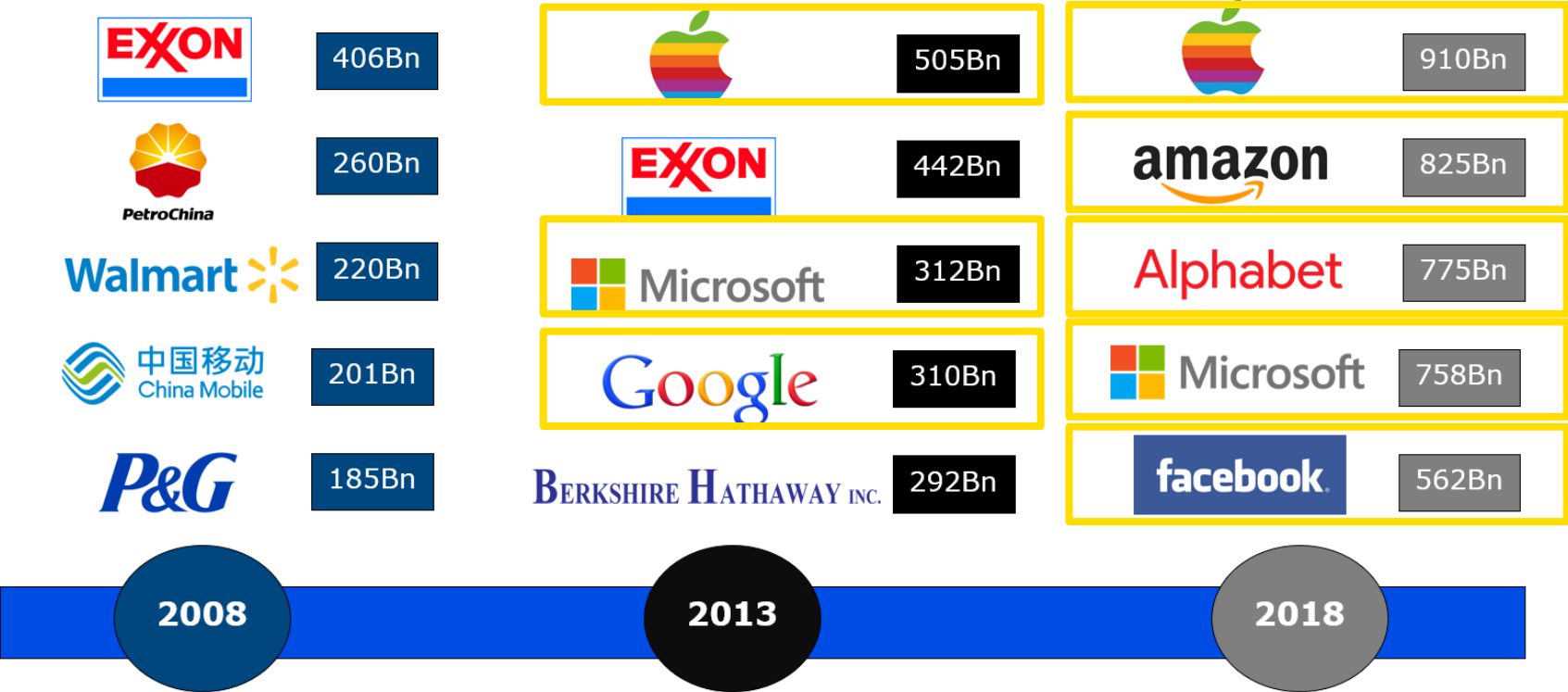
MEDICINE *of* THE HIGHEST ORDER



Technology is Disrupting Every Industry

Top 5 publicly traded companies (by market cap)

Tech Company



Big Tech in Healthcare



- Apple Health Mobile App
- Apple Watch
- Apple Health Records
- ResearchKit & CareKit



- Medical supplies & equipment
- Employee health with J.P. Morgan and Berkshire Hathaway
- Voice technologies (Alexa)



- Over 190 healthcare patents filed
- Google Glass
- Google Home
- HIPAA cloud platform
- \$375 million investment in Oscar Health

Hasselberg, 2019



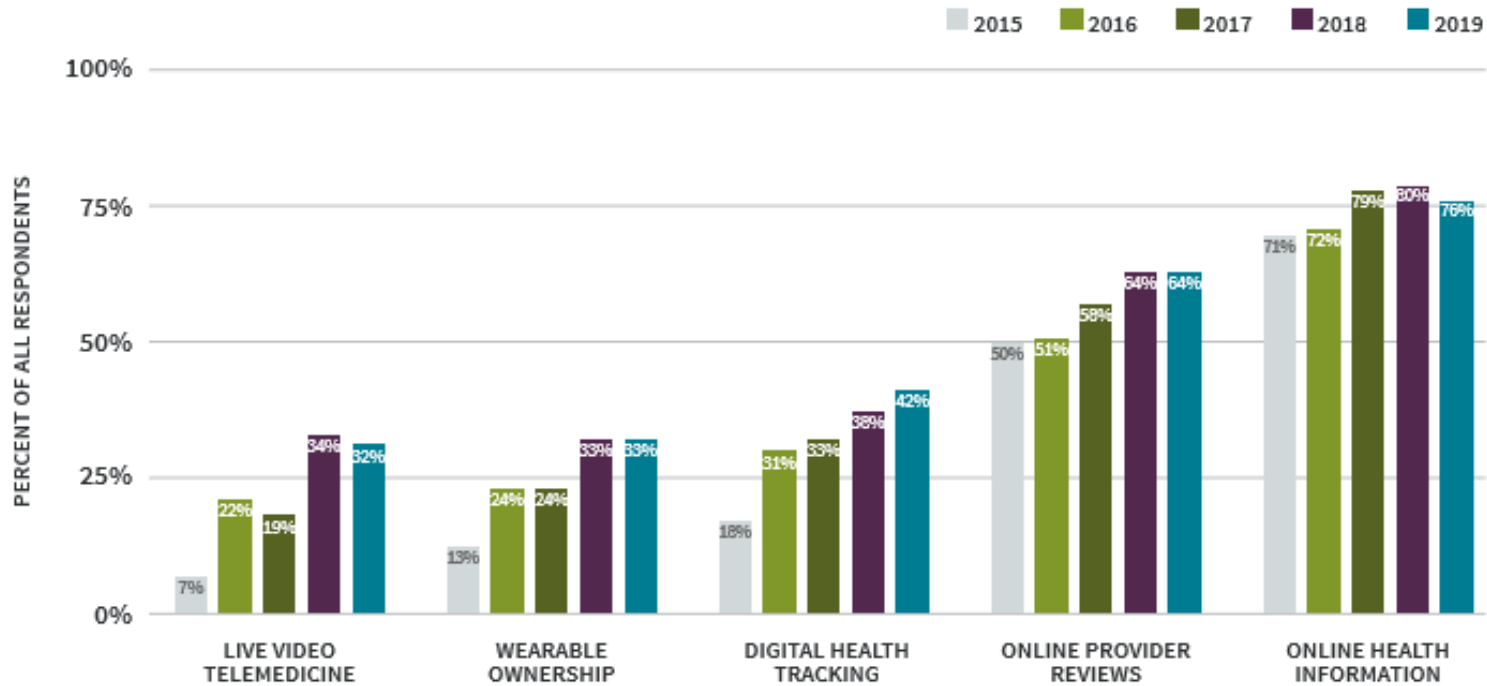
- Healthcare NExT
- Azure for health data
- Microsoft Genomics
- AI Network Project
- Empower MD with UPMC
- Project InnerEye



- Data share with top hospitals
- AI for suicide predictions and drug addiction
- Healthcare marketing

Health Technology Adoption

Adoption of Digital Health Tools 2015-2019



Source: Rook Health (2019). Digital Health Consumer Adoption Report 2019.

COVID-19 Pandemic Induced Shift

UNEMPLOYED



Insurance From Another Family Member



Coverage Through Medicaid



Uninsured and Paying by Cash or Eligible for High Deductable Plans

“The Amazon Effect”

Convenience



Experience



amazon

Value



Retail Health Care



Summarized Pricing List for Dallas, GA Store #340

Primary Care Basic Services	Price
Office Visit	\$40.00
Annual Checkup - Adult	\$30.00
Annual Checkup - Youth	\$20.00

Primary Care Add-ons	Price
Lipid Test	\$10.00
A1C Test	\$10.00
Pregnancy Test	\$10.00
Flu Test	\$20.00
Strep Test	\$20.00
Mono Test	\$20.00
Stitches & Other	\$115.64*

Counseling Services	Price
Individual Counseling, Existing Patient (45 minutes)	\$45.00
New Patient Therapy Intake	\$60.00

Save more with Talkspace

Start therapy at a fraction of the cost, with the same benefits of in-office therapy, plus more.

	talkspace	IN-OFFICE
50% In Savings		
Work with a licensed therapist	✓	✓
Attend in-office visits	✗	✓
Daily messaging with guaranteed therapist response 5 days/week	✓	✗
Phone sessions ?	✓	✗
Live video sessions ?	✓	✗
Same day start ?	✓	✗
Cost ?	\$65-\$99/ week	\$150+ per session



Top 5 reasons to sign up for One Medical today

Discover a more modern health care experience with One Medical, a tech-enabled primary care practice that puts you first.

1. Your membership is free. As a UC employee enrolled in Health Net Blue & Gold or UC Care, you qualify for a free membership to One Medical (valued at \$149/year per person).

2. Same-day and next-day appointments that start on time help you get the care you need when you need it.

3. Top rated doctors and health care professionals make time to listen.

4. Mobile app allows you to book appointments, renew prescriptions, message your provider, and get immediate treatment for cold/flu, allergies, UTI, and more.

5. Free 24/7 virtual care makes it easy to get treated at 3am or anytime while traveling.

Sign up for free now!

Go to: onemedical.com/uc
Use code: UCXOMG

UC employees and their spouses can use this code to sign up for or renew a free membership to One Medical.



Download the app: onemedical.com/mobile

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Digital Health Innovation



**Clinicians &
Caregivers**



**Health
Systems**



**Insurance
Companies**



Employers



Patients



Credit: Aaron Martin
MANAGING GENERAL PARTNER, PROVIDENCE VENTURES
EXECUTIVE VP, CHIEF DIGITAL OFFICER

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Health Lab



**Clinicians &
Caregivers**



**Health
Systems**



**Insurance
Companies**



Employers



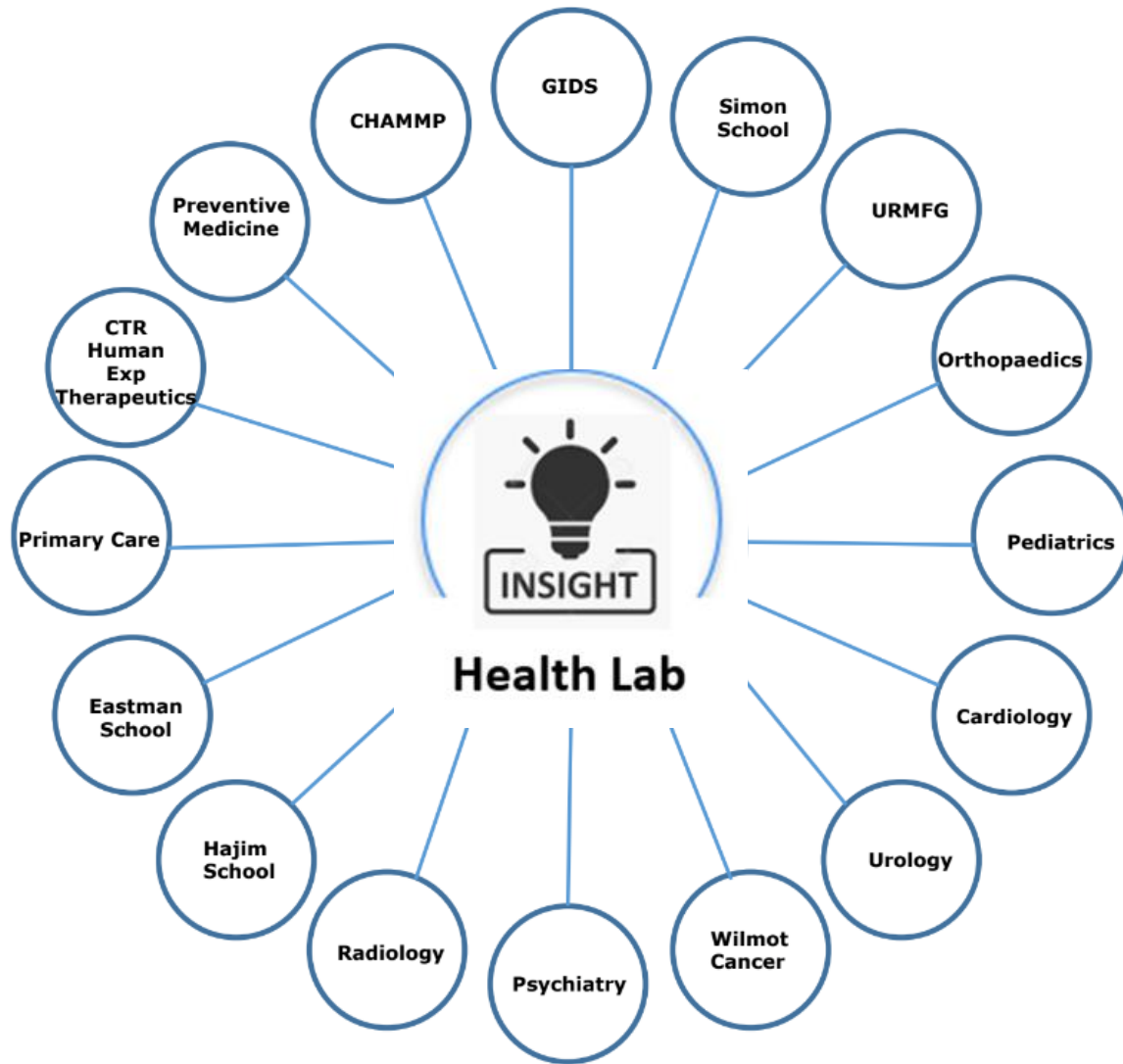
Patients

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**Clinicians &
Caregivers**



Patients

Is the Current System Sustainable?



Health Systems



Insurance Companies

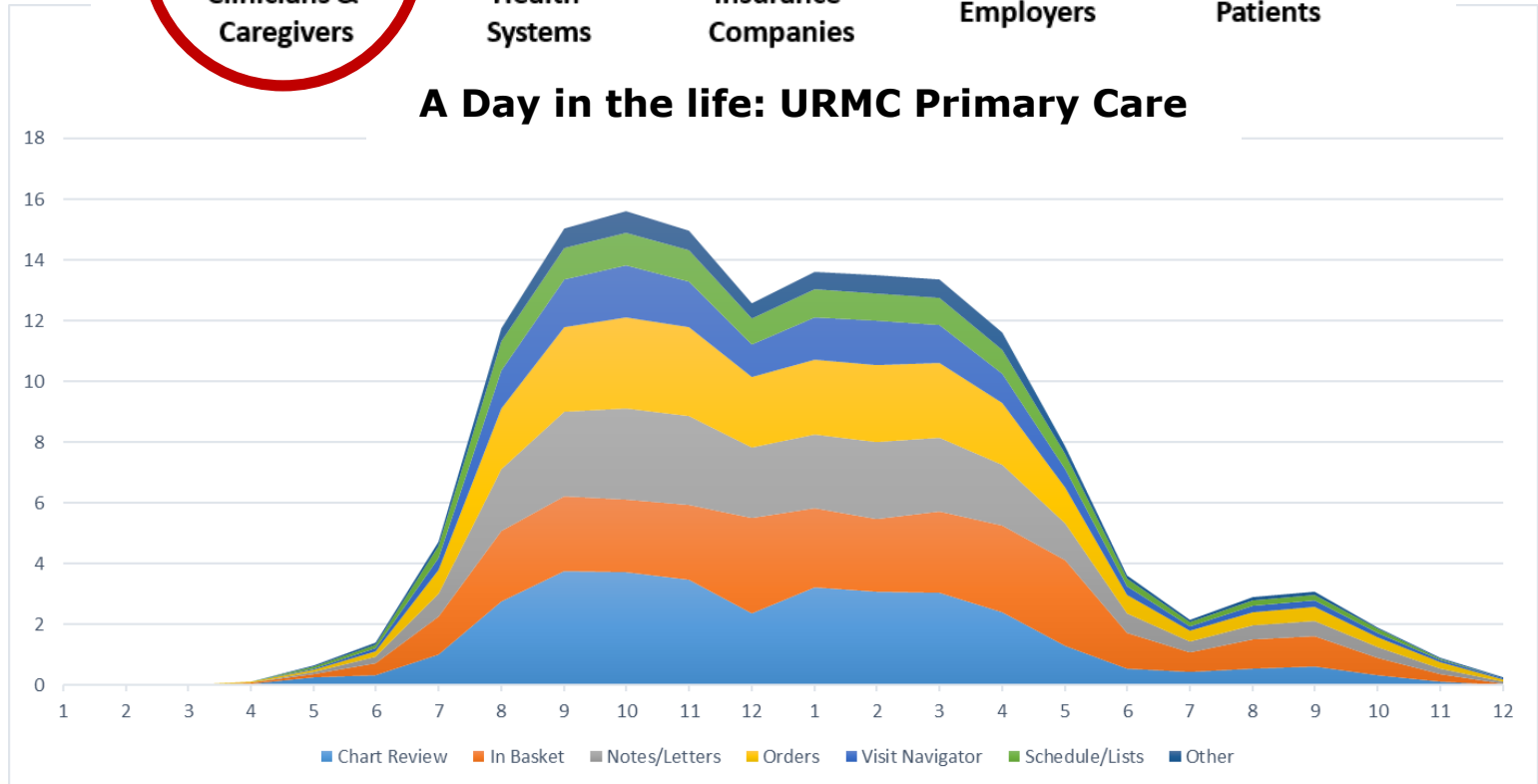


Employers



Patients

A Day in the life: UPMC Primary Care



Artificial Intelligence in Healthcare

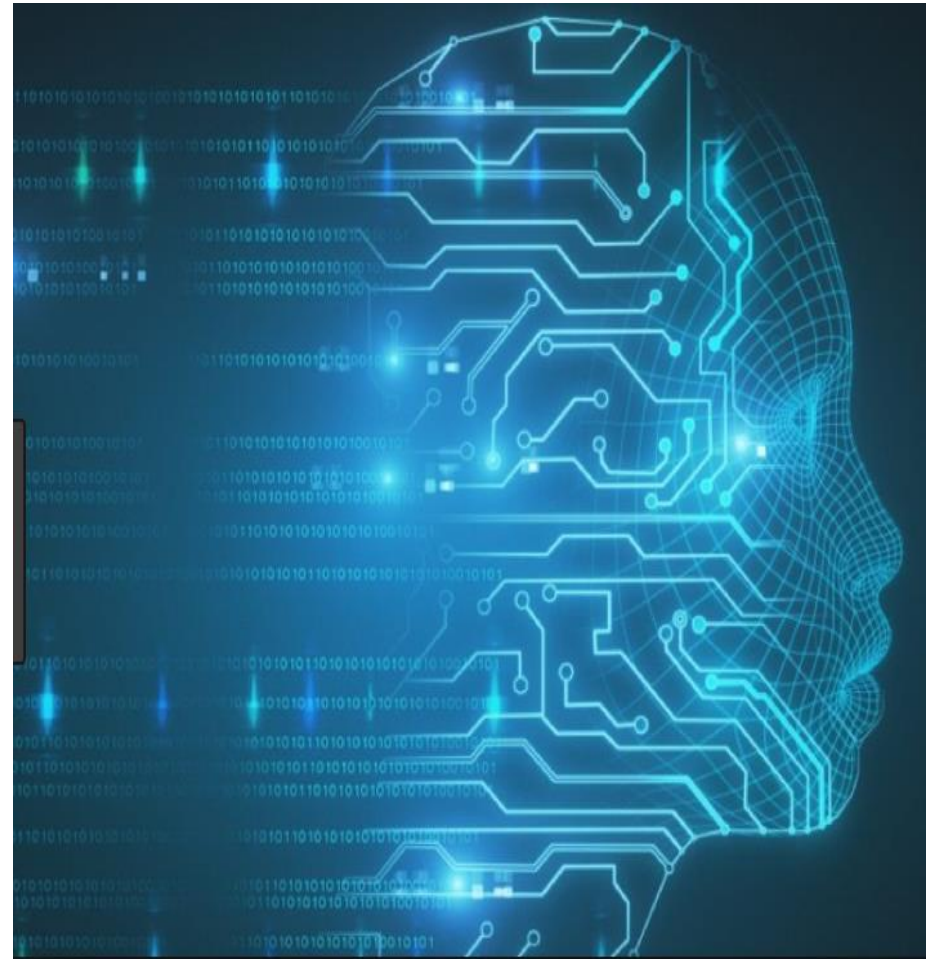
Need a lot of data

- Data needs to be systematic
- Electronic Health Record is “dirty”

Shift in corporate strategy

- **Data is the asset**
- Can get started with a modest amount of data
- Get users and then get more data

Strategic data acquisition



How Google Does It

Look – no driver

Video camera

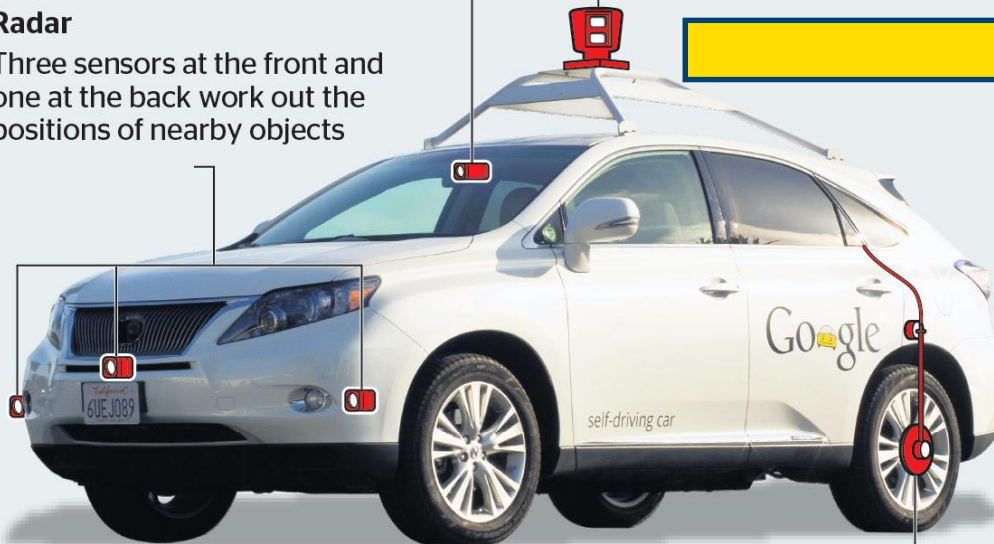
Detects traffic lights, oncoming vehicles and other obstacles

Radar

Three sensors at the front and one at the back work out the positions of nearby objects

Lidar

A rotating sensor on the roof scans 200ft in all directions to create a 3D map of its surroundings



Position estimator

A sensor on the left rear wheel measures the car's movements so that its position can be mapped with accuracy



UR VOICE

Bio

Physical Health

Physical Function

Pain Intensity

Pain Interference

Fatigue

Sleep Disturbance

PROMIS Profile
Domains

Pain Behavior

Pain Quality

Sleep-related
Impairment

Sexual Function

Gastro-Intestinal
Symptoms

Dyspnea

PROMIS Additional
Domains

Psycho

Mental Health

Depression

Anxiety

Anger

Cognitive Function

Alcohol Use,
Consequences, &
Expectancies

Psychosocial Illness
Impact

Self-efficacy

Social

Social Health

Ability to
Participate in Social
Roles & Activities

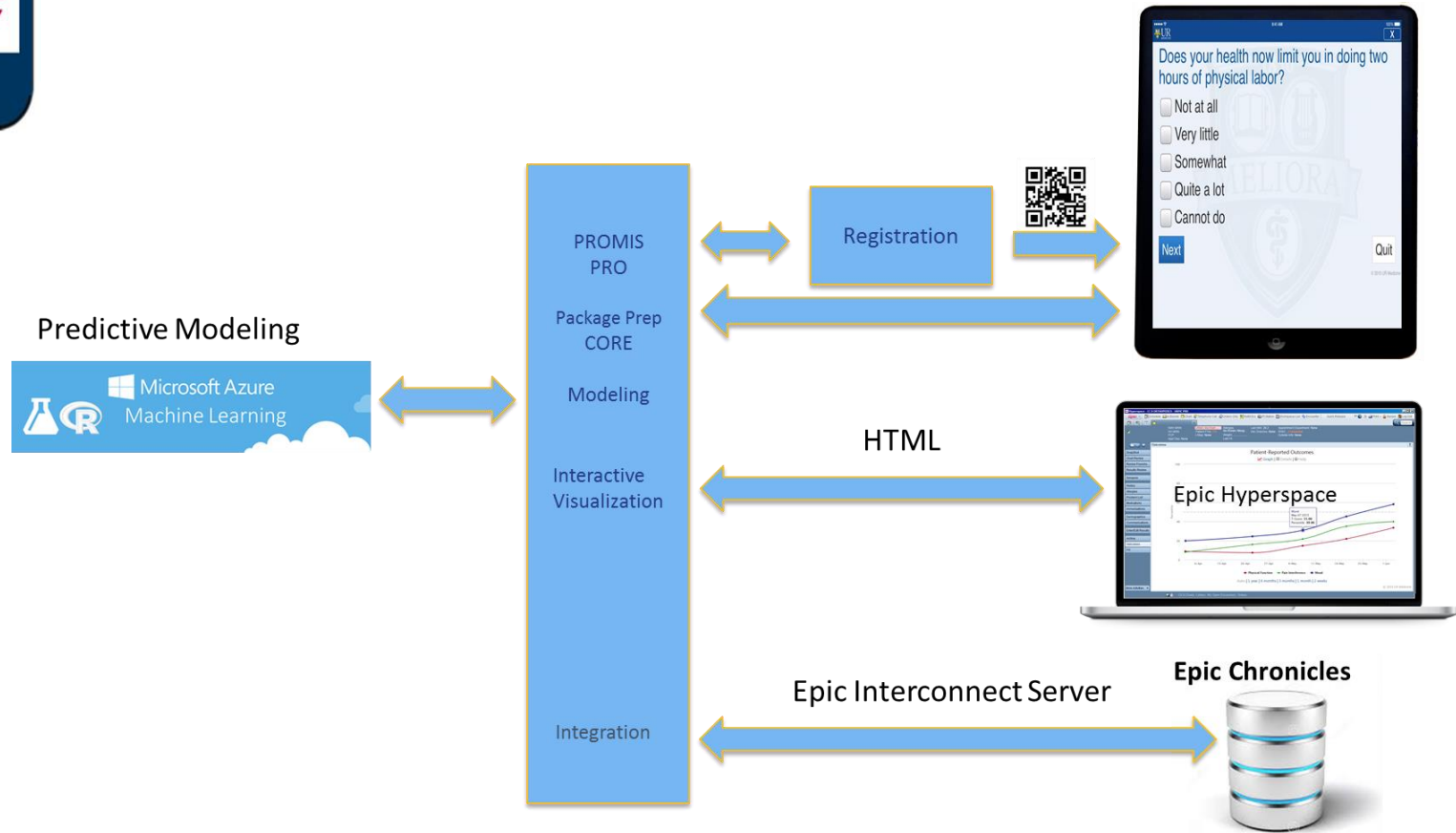
Satisfaction with
Social Roles &
Activities

Social Support

Social Isolation

Companionship

Decision Supports Based on Data Science



Putting the EHR to Work for You

The screenshot shows the Epic EHR interface for a patient named Mrs. Carol. A yellow callout box in the center reads: "We have cracked Epic wide open for 3rd party development". A blue overlay in the top left corner is titled "Health Lab Bundles" and "MACHINE LEARNING". The interface includes a left sidebar with navigation options, a top header with patient information, and a main content area with various clinical data points and a right-hand "Epic Analytics" panel.

Health Lab Bundles
MACHINE LEARNING

We have cracked Epic wide open for 3rd party development

Epic Analytics
Chance of SNF Admission

Situation	Percentage
Current Situation	80
If the patient lost 38 pounds	77
If the patient had assistance at home	54

Inputs:

Function	Pain	Mood
38	33	33

Other Vital Data:

Weight	Height	BMI	BSA	OB/Gyn status reviewed	Tobacco	Smoking Status	Smokeless Status
136.1 kg (300 lb)	1.727 m (5' 8")	45.61 kg/m ²	2.56 m ²	Never reviewed		Never Assessed	Unknown

Direct-to-Consumer



Clinicians & Caregivers



Health Systems



Insurance Companies



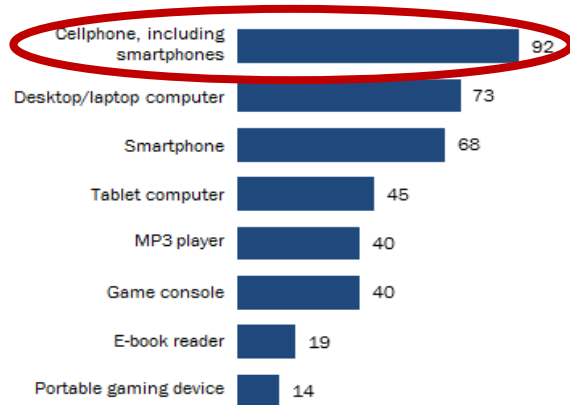
Employers



Patients

Cellphones, Computers Are the Most Commonly Owned Devices

% of U.S. adults who own each of the following devices

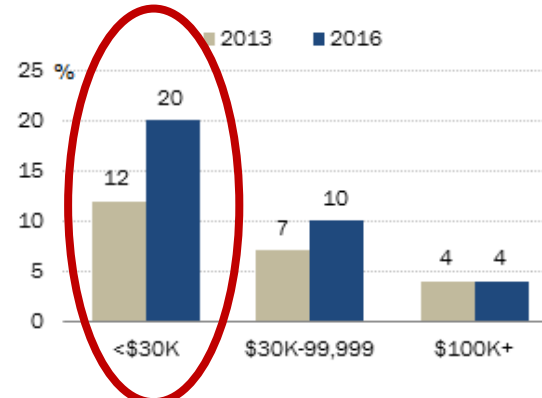


Source: Pew Research Center survey conducted March 17-April 12, 2015. Smartphone data based on Pew Research survey conducted June 10-July 12, 2015.

PEW RESEARCH CENTER

Growing share of low-income Americans are smartphone-only internet users

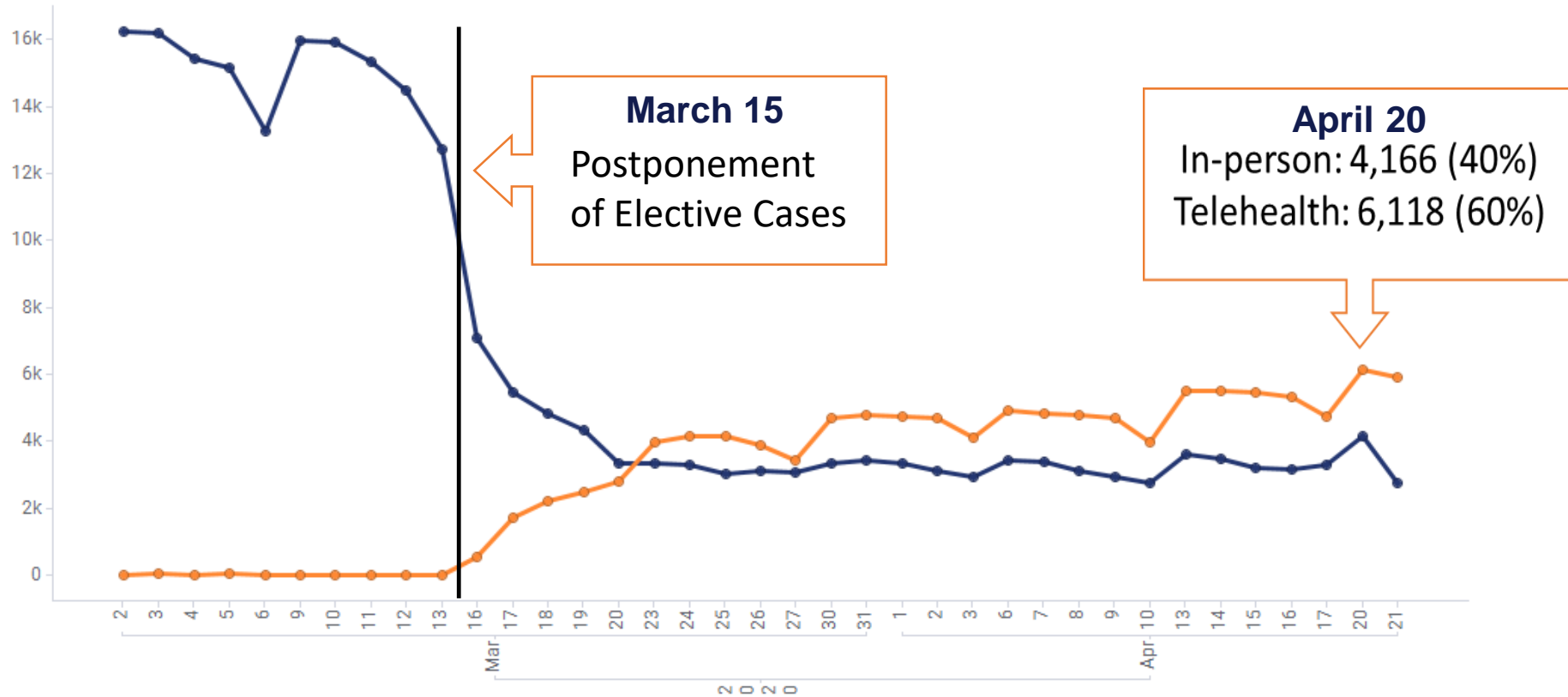
% of U.S. adults who have a smartphone but no broadband at home, by annual household income



Source: Survey conducted Sept. 29-Nov. 6, 2016. Trend data from previous Pew Research Center surveys.

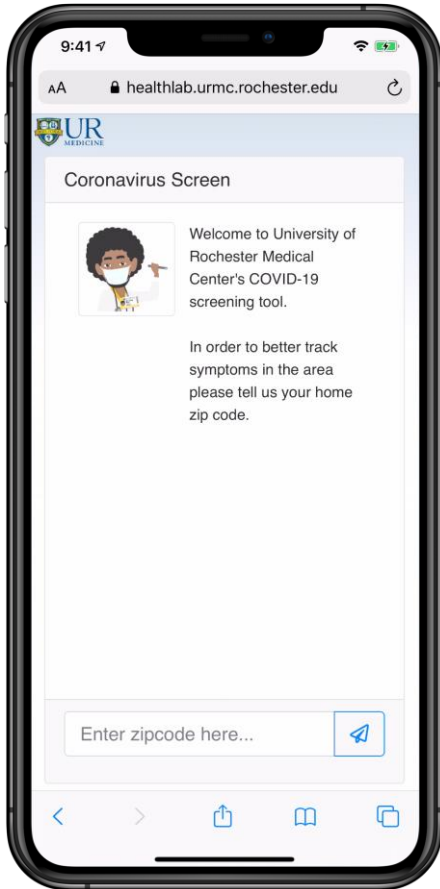
PEW RESEARCH CENTER

Rapid Shift to Telemedicine



In-Person and Telehealth Visit Volume, March 1 – April 21, 2020

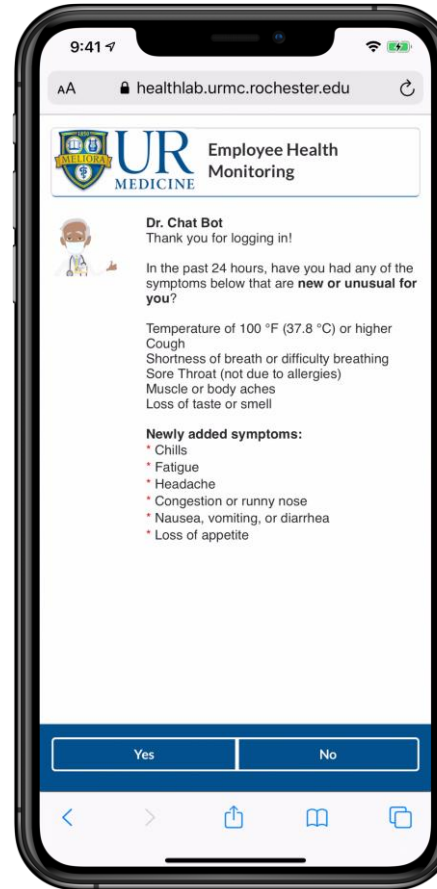
Birth of Dr. Chat Bot



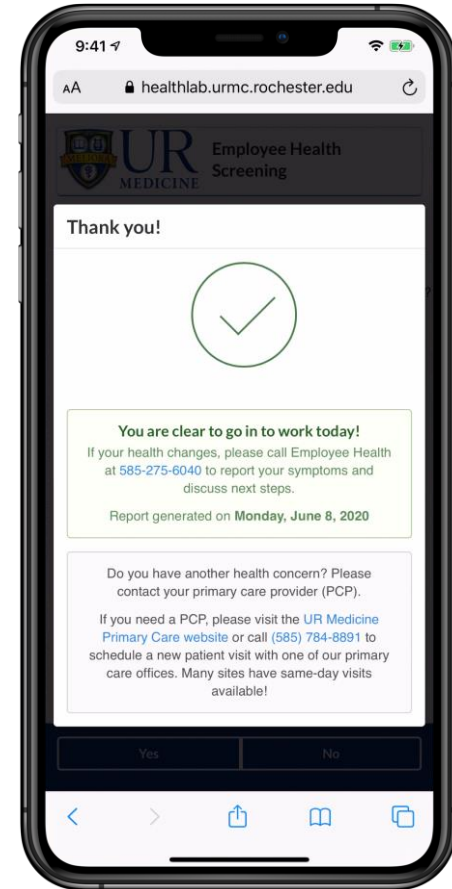
Patient Facing Covid-19 Hotline Screener



URMC Dr. Chat Bot 1.0

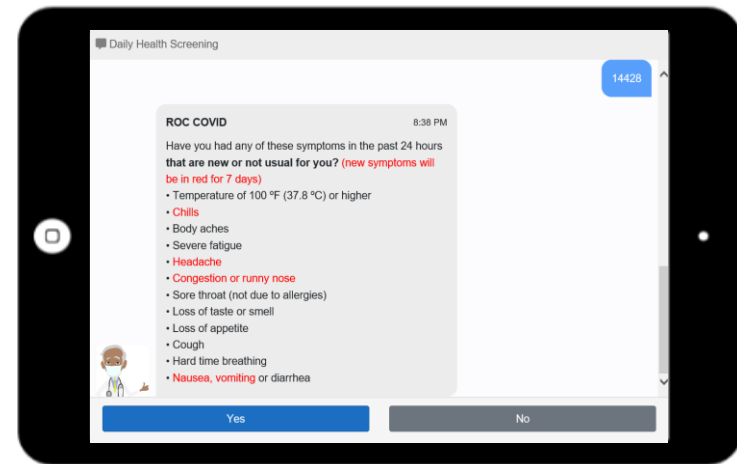
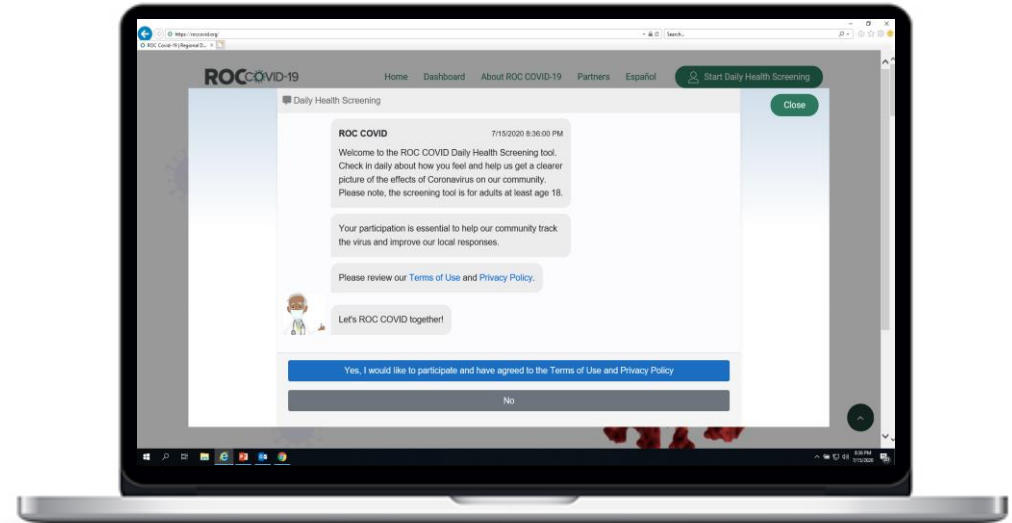
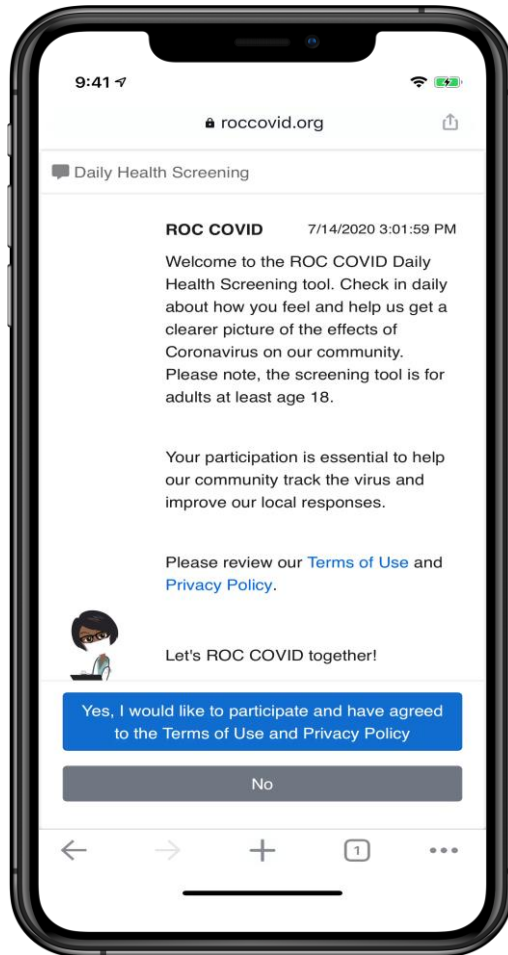


URMC Dr. Chat Bot 2.0



Clear for Work Screen

Launch of ROCCOVID



Symptom Tracking

23,571 people have signed up to help stop COVID-19 in our region



848,283 daily screens have been submitted to date

Who is participating in ROC COVID?

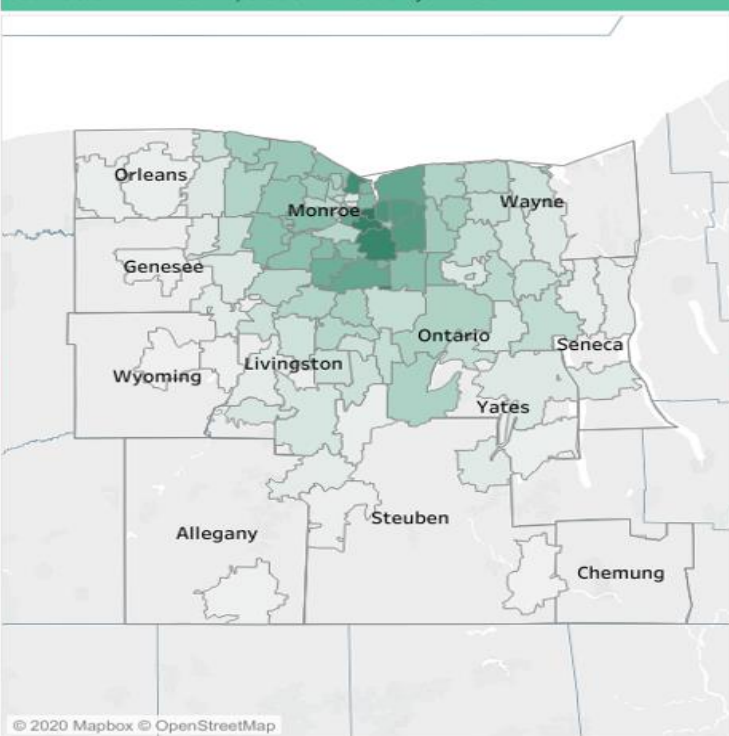
Percent of Participants by Age Group

18-24	2.9%
25-34	10.4%
35-44	16.9%
45-54	17.8%
55-64	23.2%
65-74	22.0%
75-84	6.0%
85 and above	Less than 1%
Prefer not to answer	Less than 1%

Percent of Participants by County

Allegany	Less than 1%
Chemung	Less than 1%
Genesee	Less than 1%
Livingston	2.6%
Monroe	82.9%
Ontario	6.9%
Orleans	Less than 1%
Seneca	Less than 1%
Steuben	Less than 1%
Wayne	4.0%
Wyoming	Less than 1%
Yates	Less than 1%

Estimated Percent of Population Enrolled by ZIP Code



Estimated .. 0.2% 6.7%

Note: ZIP codes and counties with less than 10 enrolled participants are hidden.

Data Updated July 14, 2020

What are participants saying?

The rate of reported symptoms last week has not increased compared to the week before. Overall, the rate of reported symptoms has been steady ..

Last week

Jul 6 - Jul 12

1%

out of 92,812 screens reported one symptom or more

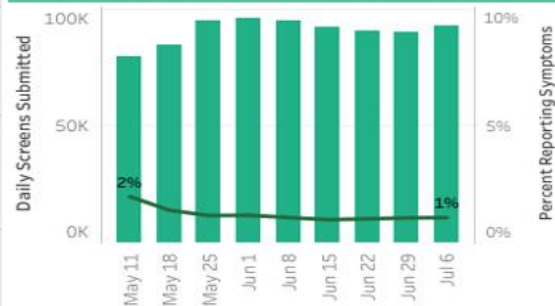
Two weeks ago

Jun 29 - Jul 5

1%

out of 90,368 screens reported one symptom or more

Daily Screens Submitted and Percent Positive By Week



% of Screens Reporting One or More Symptoms
 Count of Weekly Screens

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Health Mobile Apps

Over 10,000 available to download today

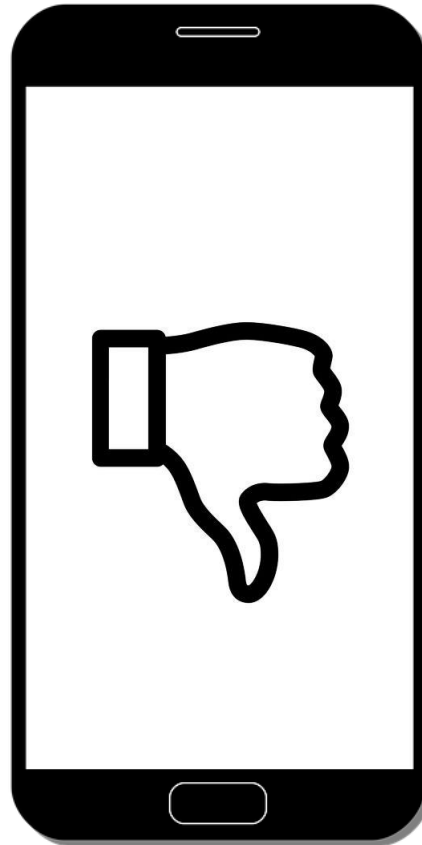
- Track symptoms
- Offer access to education
- Deliver adjunctive therapy treatments
- Provide mindfulness and meditation exercises



Current Mobile App Limitations

Poor Usability

Lack of User-centric Design



Lack of Trust

Disconnect From Clinician

Mobile App for Anxiety



CCBT VR



Login Connected to
Electronic Medical Record

Tr

Individualized
Immersive Experiences

Brain Wellness Mobile App

Lead - UR Medicine Health Lab

Co-lead - Department of Psychiatry

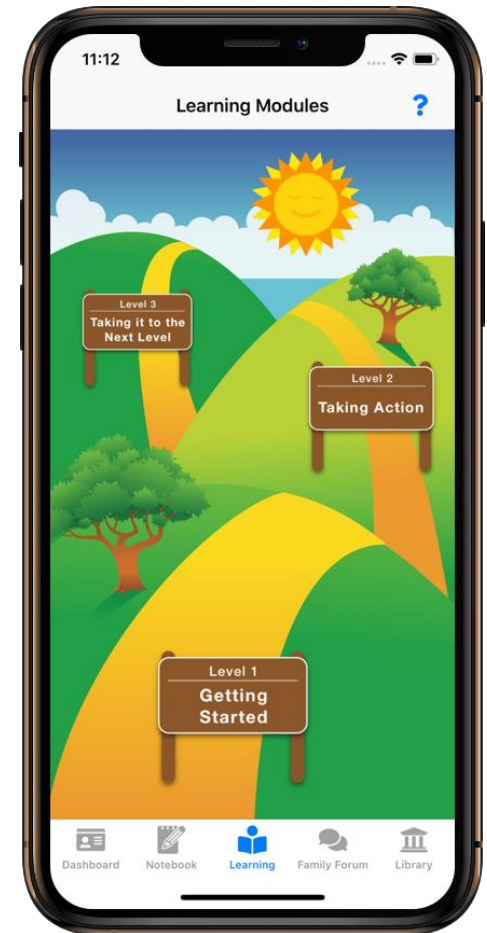
- Expertise in brain health / AD clinical care and AD prevention research

Eastman School of Music

- Expertise in music therapeutic functions

Other Collaborators

- Department of Neuroscience
- Center for Health + Technology
- Department of Preventive Medicine



Virtual Reality in Health Care

Lead - UR Medicine Health Lab

Department of Psychiatry Collaboration

- VR Mindfulness and guided imagery for workplace wellness

Department of Pediatrics Collaboration

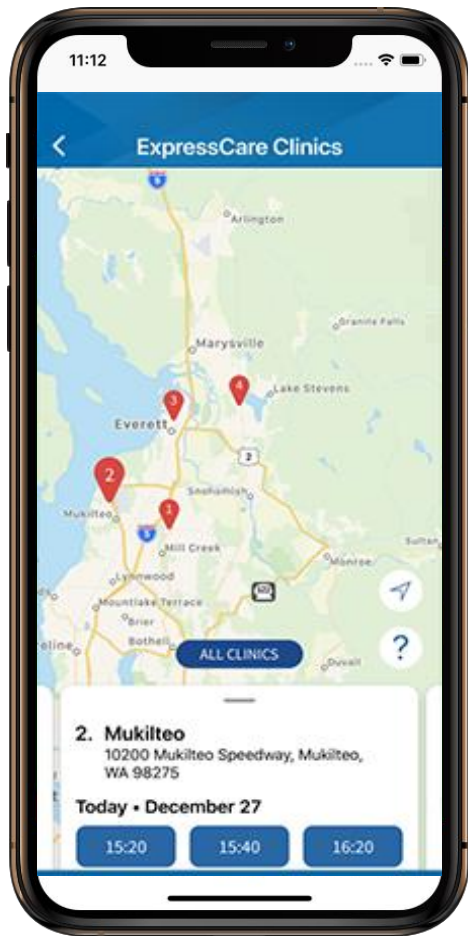
- VR for child/adolescent pain reduction

School of Dentistry

- VR for pre/post dental procedure for anxiety and stress reduction



Looking to the Leaders: Providence Health

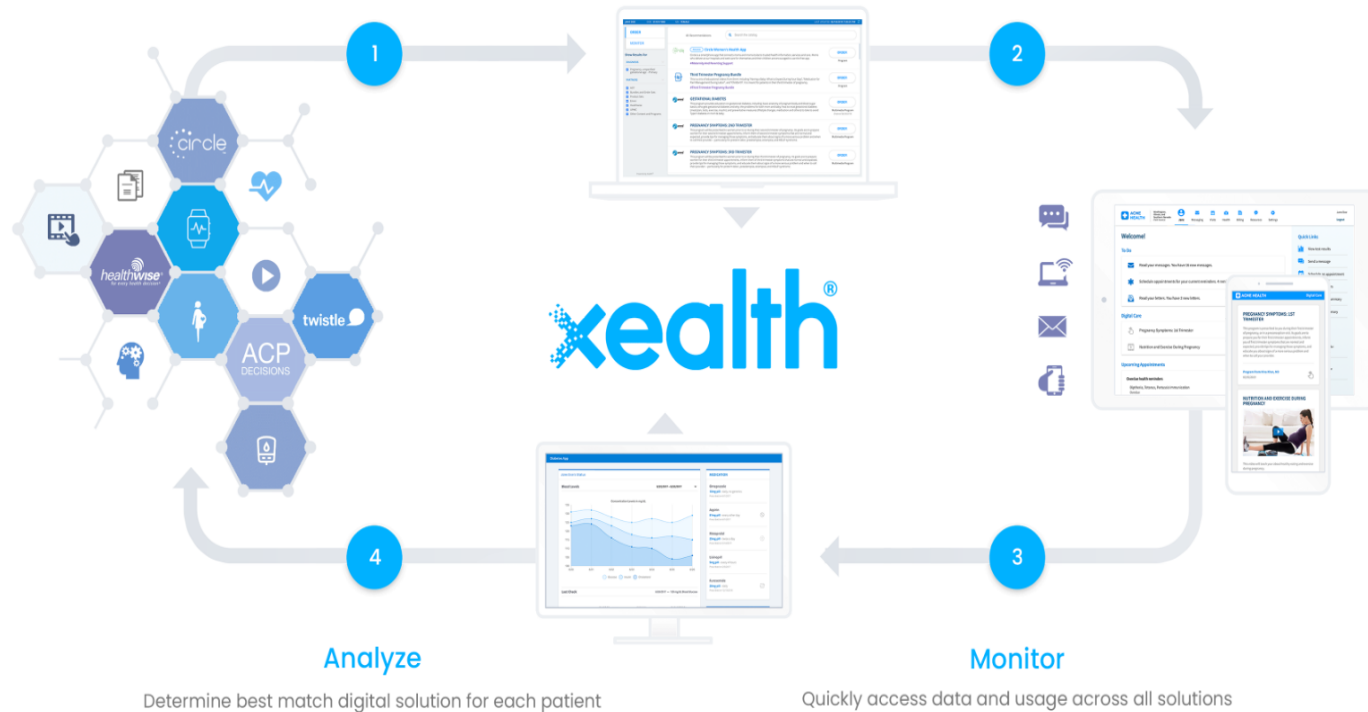


Integrate

Onboard and launch new solutions in days rather than months

Order

Easily order from existing charting workflow



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Ask Google



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