



Healthcare
Working Group

5th Annual Systems
Engineering in Healthcare
Conference

May 1-2, 2019
Minneapolis, MN

Digital Disruption



Kathy Frisbee
Department of Veterans Affairs
Office of Connected Care

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How Systems Engineering Can Reduce Cost & Improve Quality

1-2 May, 2019 Twin Cities, Minnesota



#hwgsec

Goals for Today

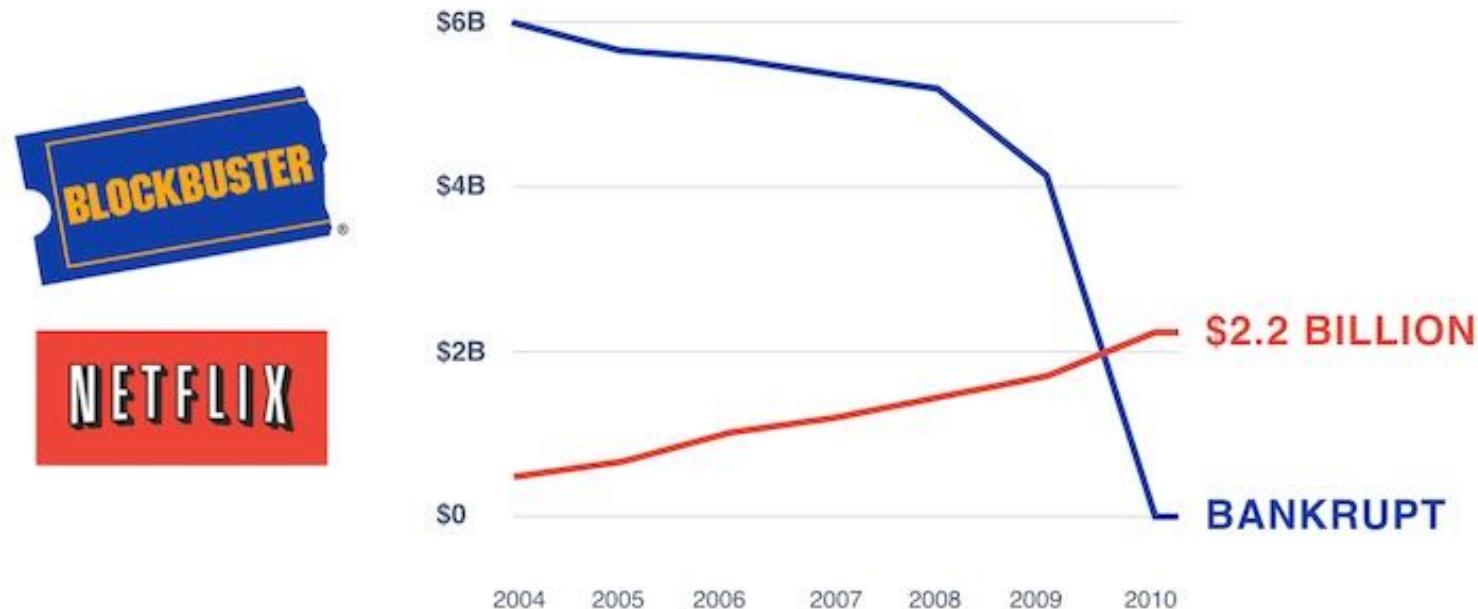
- Illuminate how disruption occurs
- Highlight emerging digital health trends
- Describe Digital Health in VA Today
- Forecast what the Future looks like

How you can miss Disruption

- You can be making rational decisions in the context of old models, and miss the sea change around you
- Profitability may be maintained even as the foundation of that profitability is eaten away
- The disruptive innovation may be of poorer quality and lesser cost. All that matters in consumers find it appealing

The Disruption Machine, The New Yorker, June 23, 2014

Netflix's Disruption of BlockBuster



Trends

- Consumerization of Healthcare
- Entry of Amazon, Walmart and others
- Increasing Costs especially chronic disease
- Value-based payments
- Recognition that health depends on more than just access to a healthcare provider
- Improving Digital Health Tools

77% of Patients Want Access to Virtual Care, Telehealth

Patients respond to healthcare consumerism by demanding virtual care and telehealth access, surveys show.



June 2017 Advisory Board

Amazon, Berkshire Hathaway And JPMorgan Chase Launch New Health Care Company

January 30, 2018 · 8:48 AM ET

BILL CHAPPELL



COLIN DWYER



Berkshire Hathaway Chairman and CEO Warren Buffett (left) in 2017; Jeff Bezos, CEO of Amazon, in 2013; and JP Morgan Chase Chairman and CEO Jamie Dimon in 2013. Berkshire Hathaway, Amazon and JPMorgan Chase are teaming up to create a health care company announced Tuesday that is "free from profit-making incentives and constraints."

AP



Amazon
Alexa In
Healthcare



macadamia

CVS cites estimates suggesting that \$500 billion of annual spending on chronic diseases is wasted

70% of the U.S. population lives within three miles of a CVS

CVS plans to provide 80% of the services now provided by primary care physicians in its Health Hubs using Licensed Independent Practitioners

CVS will push digital technologies using TeleDoc for Video Visits and Mobile apps to help patients manage their health care

CVS Wants to Fix Health Care. It's Time to Buy the Stock.

By [Jack Hough](#)

Barron's - April 12, 2019 8:24 p.m. ET



NHE Growth Will Exceed GDP Growth Going Forward

Percent Growth

7%

6%

5%

4%

3%

2%

1%

0%

2010

2013

2016

2019

2022

2025

NHE Growth

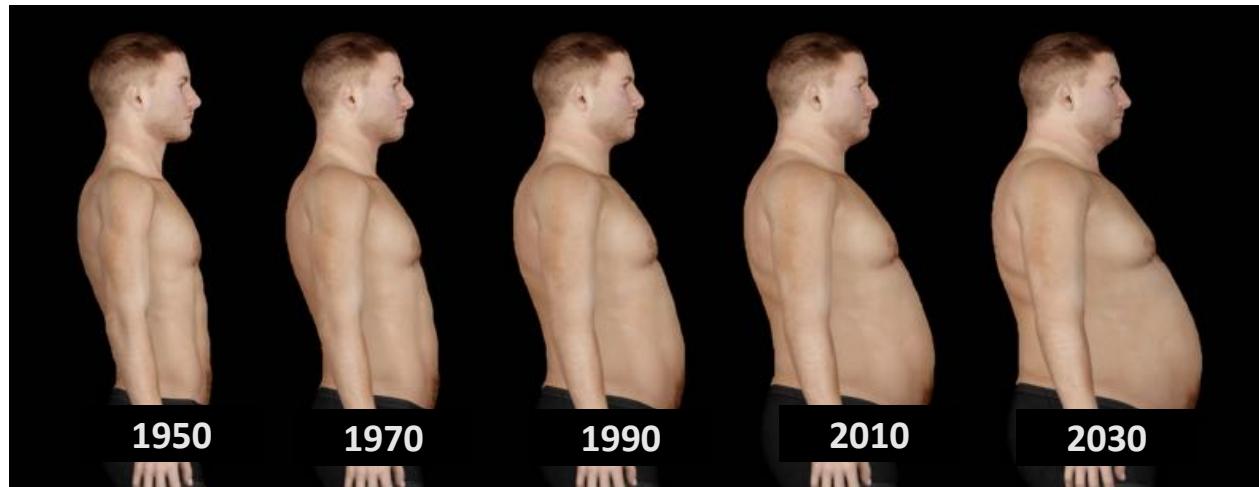
GDP Growth

Sources: Center for Medicare and Medicaid Services

CRFB.org



Diabetes is the fastest growing chronic condition



- 2 BILLION people around the world are overweight or obese
- 50% of the world's population will be overweight or obese by 2030
- 39 million or 15% of US adults will have diabetes by 2020.
- 1 in 3 US adults will have diabetes by 2050

Depression Is Now the Leading Cause of Illness and Disability Worldwide

By Lisa Ryan

March 30, 2017
10:05 a.m.

 Share

 Tweet

 Share

 Share

 Email

 Comment

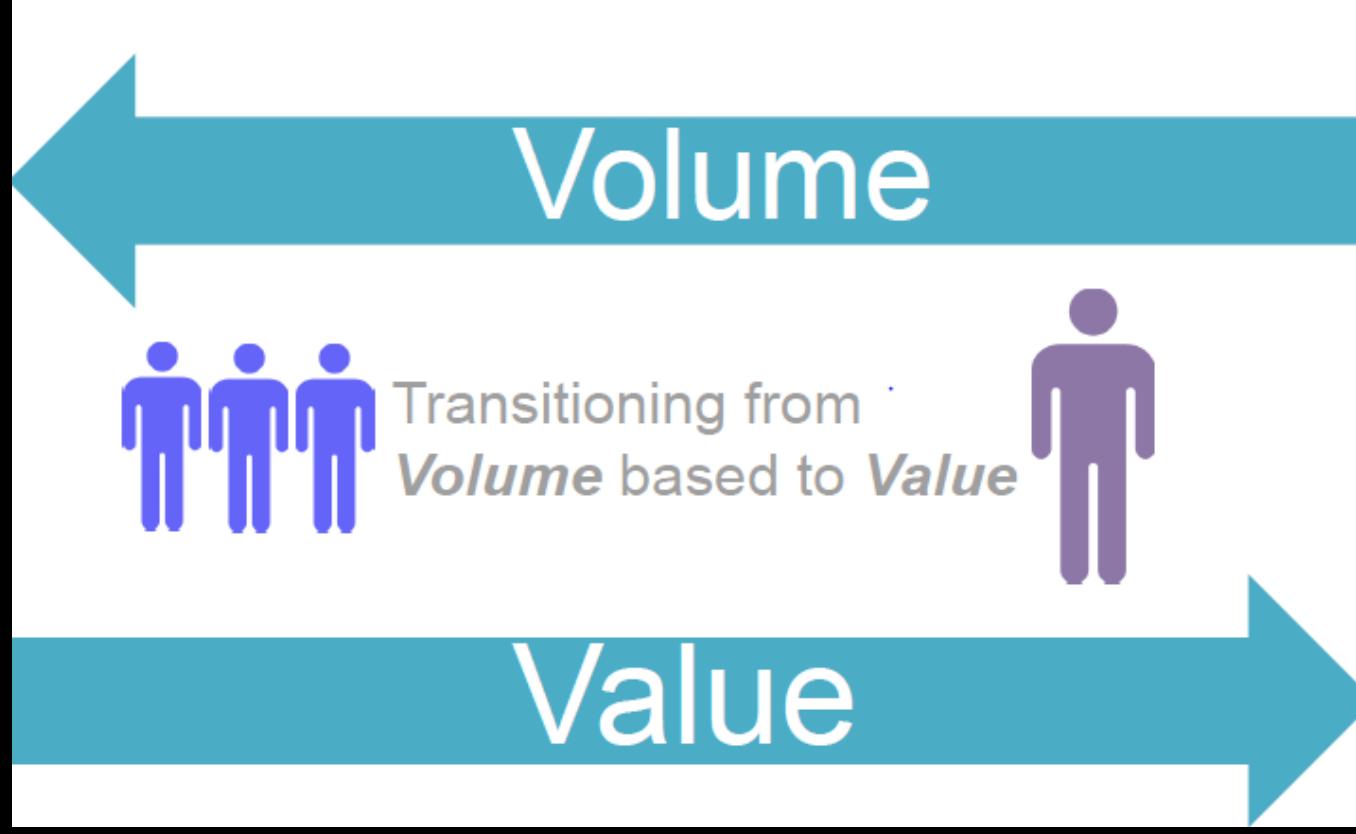
 Print



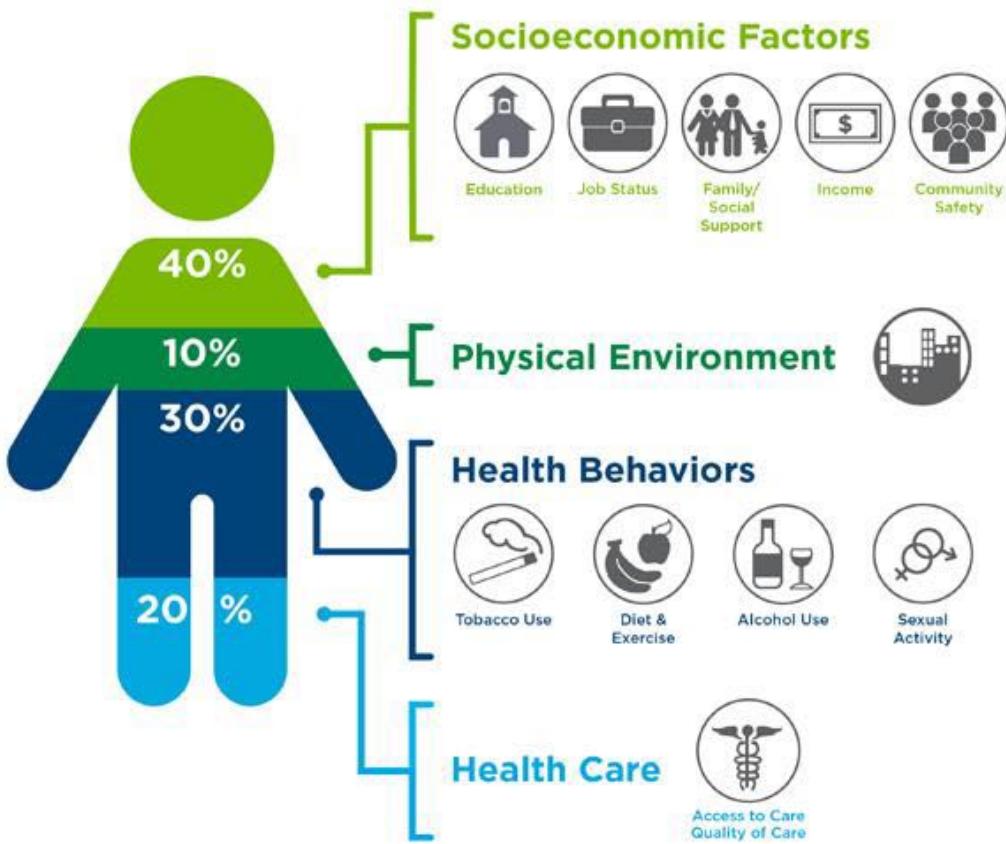


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HHS Moves To Value-Based Payments



What Goes Into Your Health?



Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems (October 2014)

The Bridgespan Group

“EXERCISE AND NUTRITION ARE THE PRIMARY INTERVENTIONS FOR OVER 35 CHRONIC CONDITIONS.” CDC.GOV



exercise



nutrition



smoking



emotional health



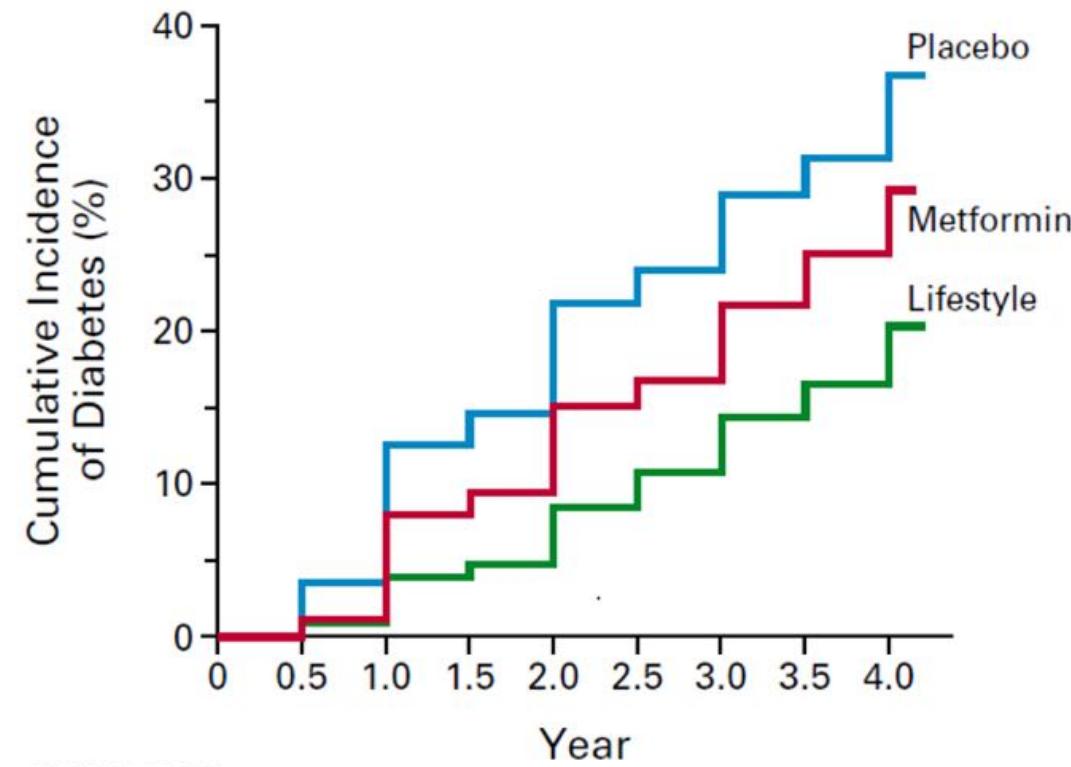
social support



sleep

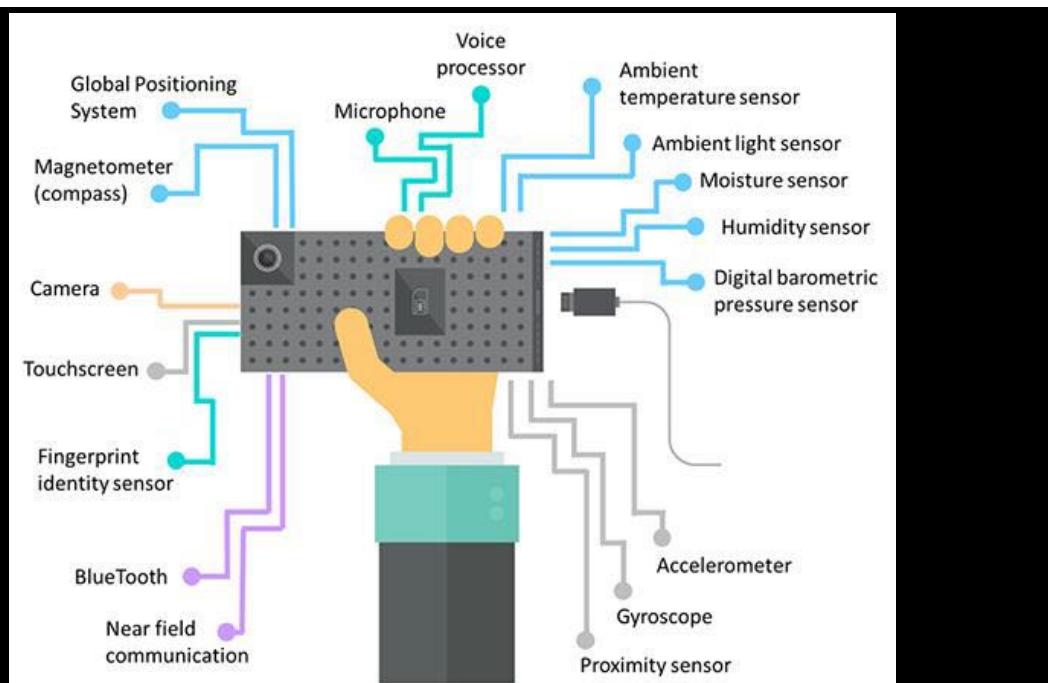
Lifestyle is Medicine

Preventing Diabetes



Source: DPP Research Group, NEJM, 2002

Emergence of Digital Health



Most commercial EHRs designed to fee for service care
Digital Health Platforms are for engaged patient care

- Mhealth Apps
- Telemedicine
- Linked Wearables
- AI/Machine Learning
- Secure Messaging
- Augmentic/ Virtual Reality
- Voice commands/ Alexa
- Chat Bots
- Biomarkers

WHO Plans to Create Digital Health Department



2017: Year of Wearables / Implantables/ digestibles



Digital Channels

Synchronous



Video Visits



Virtual Reality

Asynchronous

Chat Bots / Chat



Texting



Secure Email

E-Visits

The Future Patient Engagement Platform

Connected Device Vendor
Cloud with Analytics



Connected Devices



Google Health Cloud
Aggregation Service



Patient Aggregates and Distributes their own Health Data



Apple Health (VA Pilot)

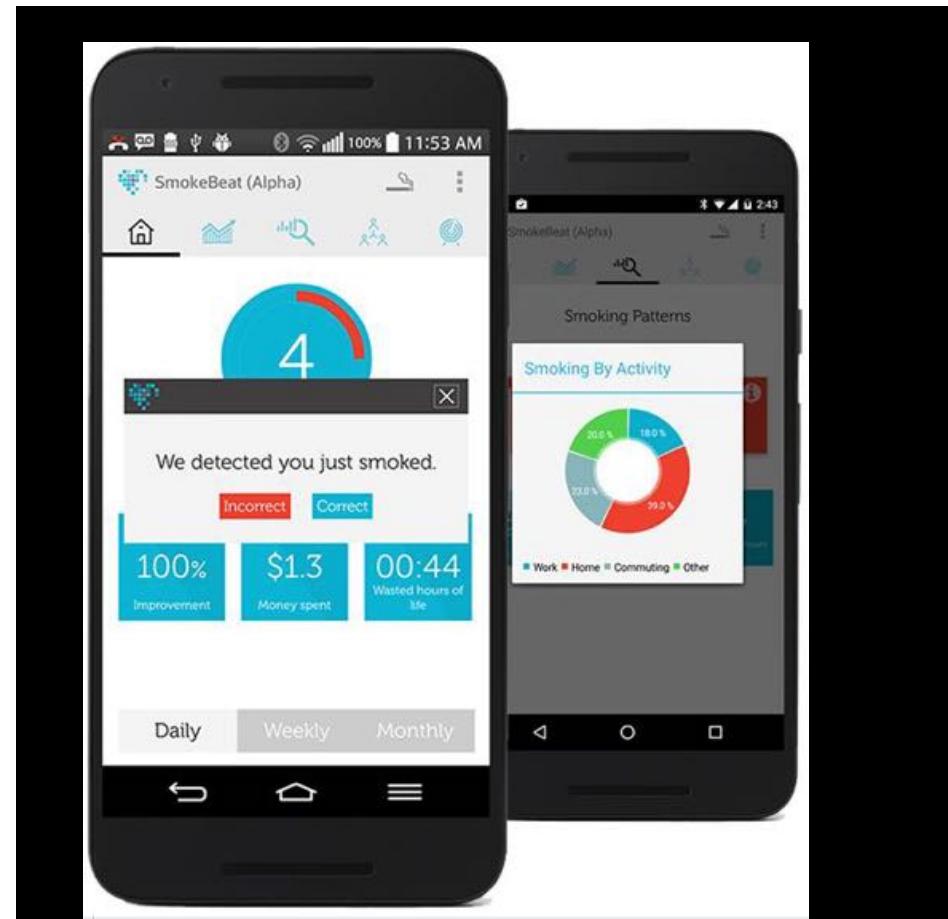


VA Personalized Patient Engagement Platform



Somatix Wearables

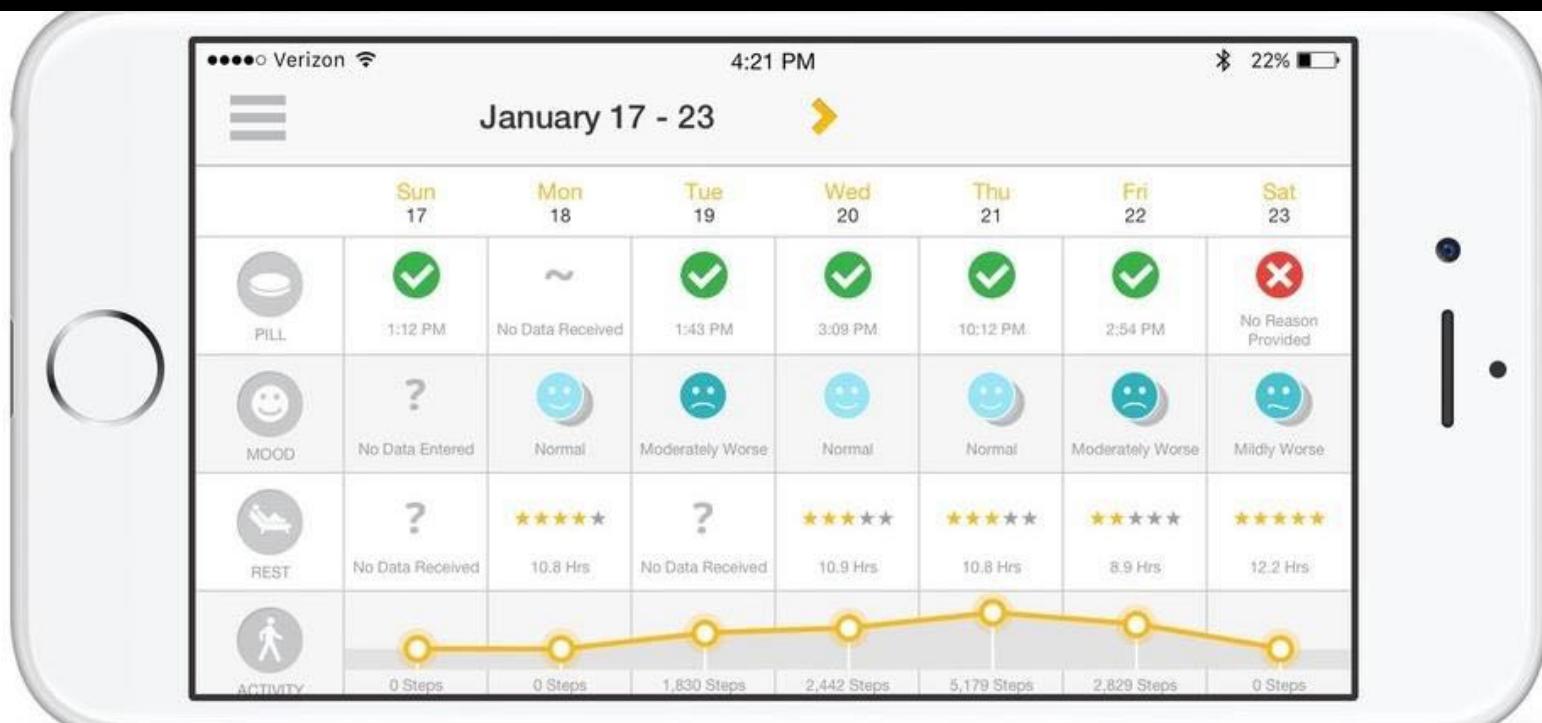
Somatix is a behavioral medication software platform, utilizing real-time interventions based on data gathered from standard wearables. Its first product, SmokeBeat is addressing the global smoking cessation market; its customers include corporate employers, health insurance companies and clinics



FDA News Release

FDA approves pill with sensor that digitally tracks if patients have ingested their medication

New tool for patients taking Abilify



Behavioral Health Digital Therapeutics Evolving Quickly

Challenges to Accessing Mental Health Therapy

- Cost
- Convenience & Accessibility
- Finding a Therapist
- Scheduling
- Stigma Visiting Therapist's office
- Anxiety of face-to-face visit

2002-2013 National statistics on mental health

The Talkspace User Experience

Online Therapy with a Licensed Therapist

1. Clinical Intake and Assessment

Client answers questions to identify therapy needs

The screenshots illustrate the clinical intake and assessment process on the Talkspace mobile app:

- Step 1: Welcome to Talkspace Quick Match**

Welcome to Talkspace Quick Match™. In the next 90 seconds you'll learn everything you need to know about Talkspace and choose your therapist. **Let's start!**

If you are in a life threatening situation - **don't use this site**. Call +1 (800) 273-8255 or use [these resources](#) to get immediate help.
- Step 2: Select why you thought about getting help from a therapist**

To begin, please select why you thought about getting help from a therapist

 - I've been feeling anxious
 - I've been feeling depressed
 - I'm having trouble in my relationships or family
 - Something major changed in my life
 - There's something else going on
- Step 3: Rate current physical health**

How would you rate your current physical health?

 - Excellent
 - Good
 - Fair
 - Poor
- Step 4: Select state of residence**

Please select your state of residence

Select state

 - Alabama
 - Alaska
 - Arizona
 - Arkansas
 - California
- Step 5: Calculating profile...**

Please hang on while we find the best matched therapists for you.

Calculating profile...

Searching for matches...
Analyzing matches...
Returning best matches

If you are in a life threatening situation - **don't use this site**. Call +1 (800) 273-8255 or use [these resources](#) to get immediate help.

My therapist is simply amazing! I was...

2. Client Selects Their Therapist

Proprietary Algorithm Feeds Customer Choice

Choose Therapist

Based on what you've shared, these are the best therapists for your needs.



Jasmine Rosser
Psychologist, LCSW, MFT
Available now!

View Profile



David Issod
MFT, LPCC, LADC,
Psychologist, LMFT
Available now!

View Profile



Andrea Bice
LPC, Psychologist, LADC
Available in 21 hours

View Profile

Not happy with these options? Get matched again

Info **Availability**

On time off between Jul 12, 2017 - Jun 30, 2017

Monday	12AM-2AM	8AM-11AM	2PM-5PM	8PM-12PM
Tuesday	Unavailable			
Wednesday	12AM-2AM	8AM-11AM		
Thursday	Unavailable			
Friday	12AM-2AM	8AM-11AM	2PM-5PM	
Saturday	12AM-2AM	8AM-11AM		
Sunday	12AM-2AM			

Start Therapy

Information

Locations
Marriage and Family Therapist
MFT 9233199

Fields
Alzheimer's, Addiction, Autism
Treatment Approach
Eclectic, Experiential, Cognitive behavioral (CBT)

Years in Practice 6
Users Helped 122

Psychology Today Profile

David joined Talkspace 3 years ago.

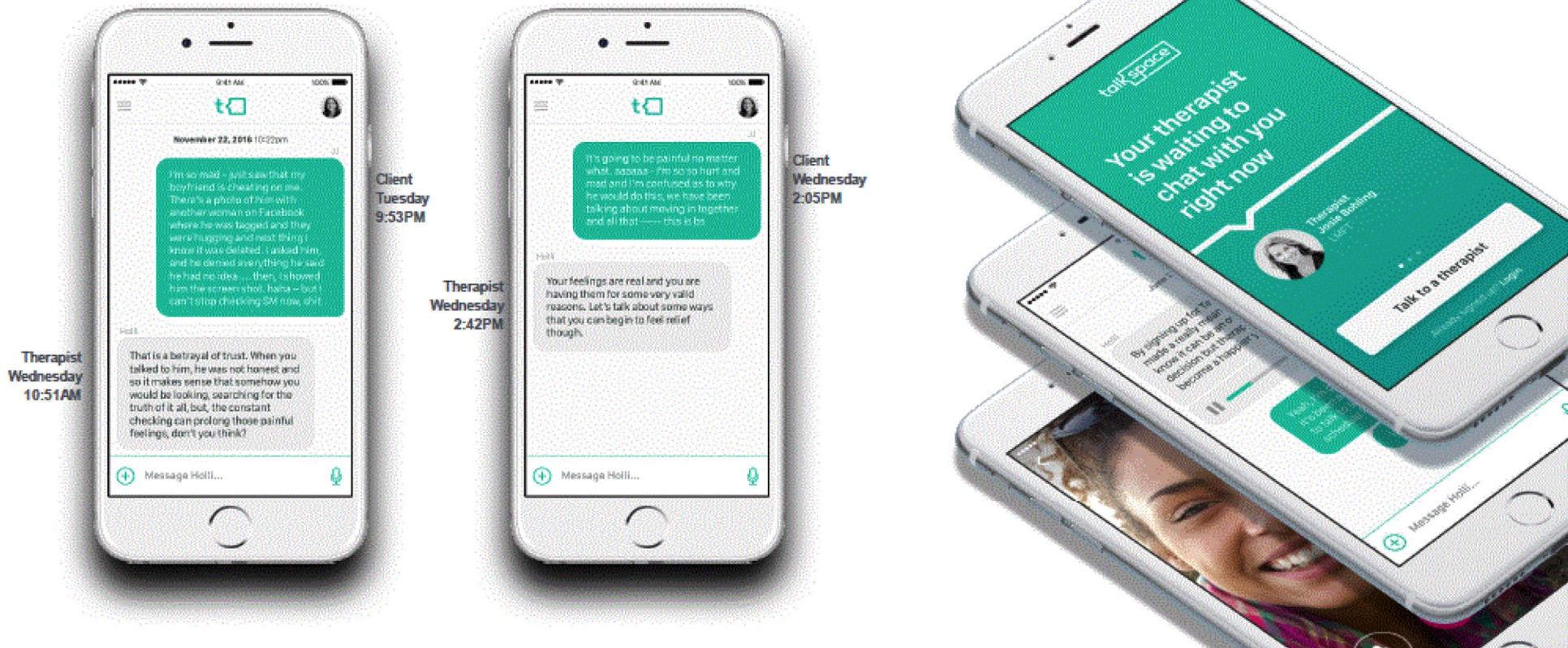
Other Matches

Jasmine Rosser
Psychologist, LCSW, MFT

Andrea Bice
LPC, Psychologist, LADC

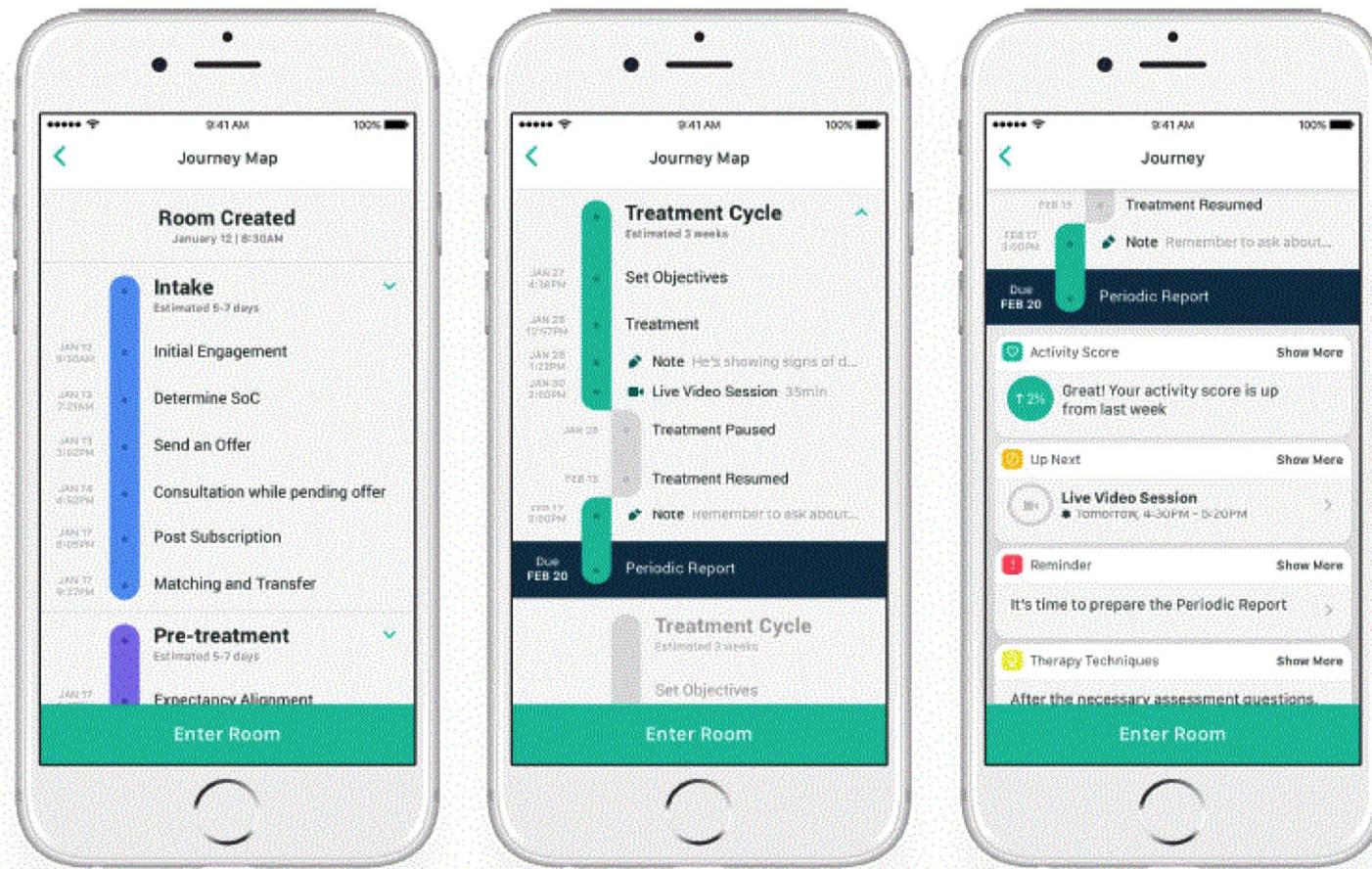
3. Therapy

Daily engagement, 5 days a week, anytime, anywhere



Structured Treatment Plan Tool

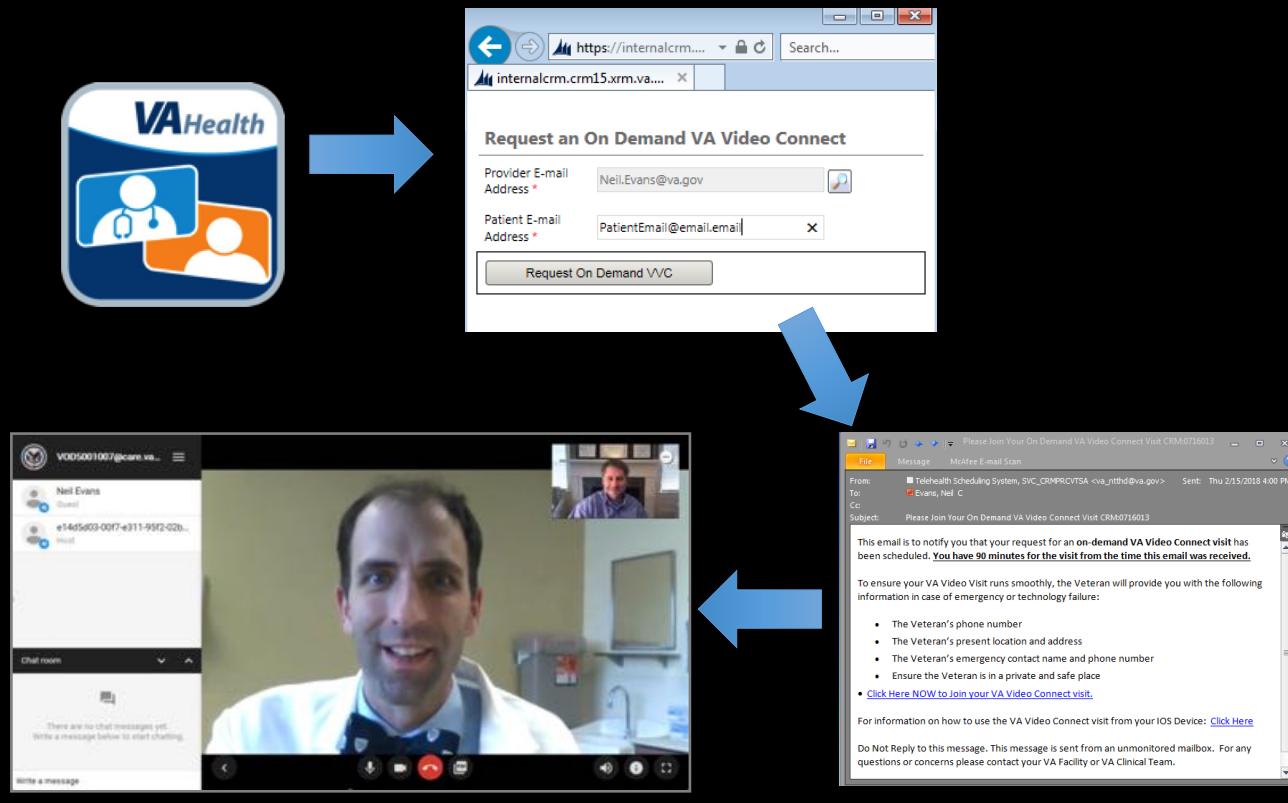
Client & Therapist Establish Treatment Plan, Goals & Objectives



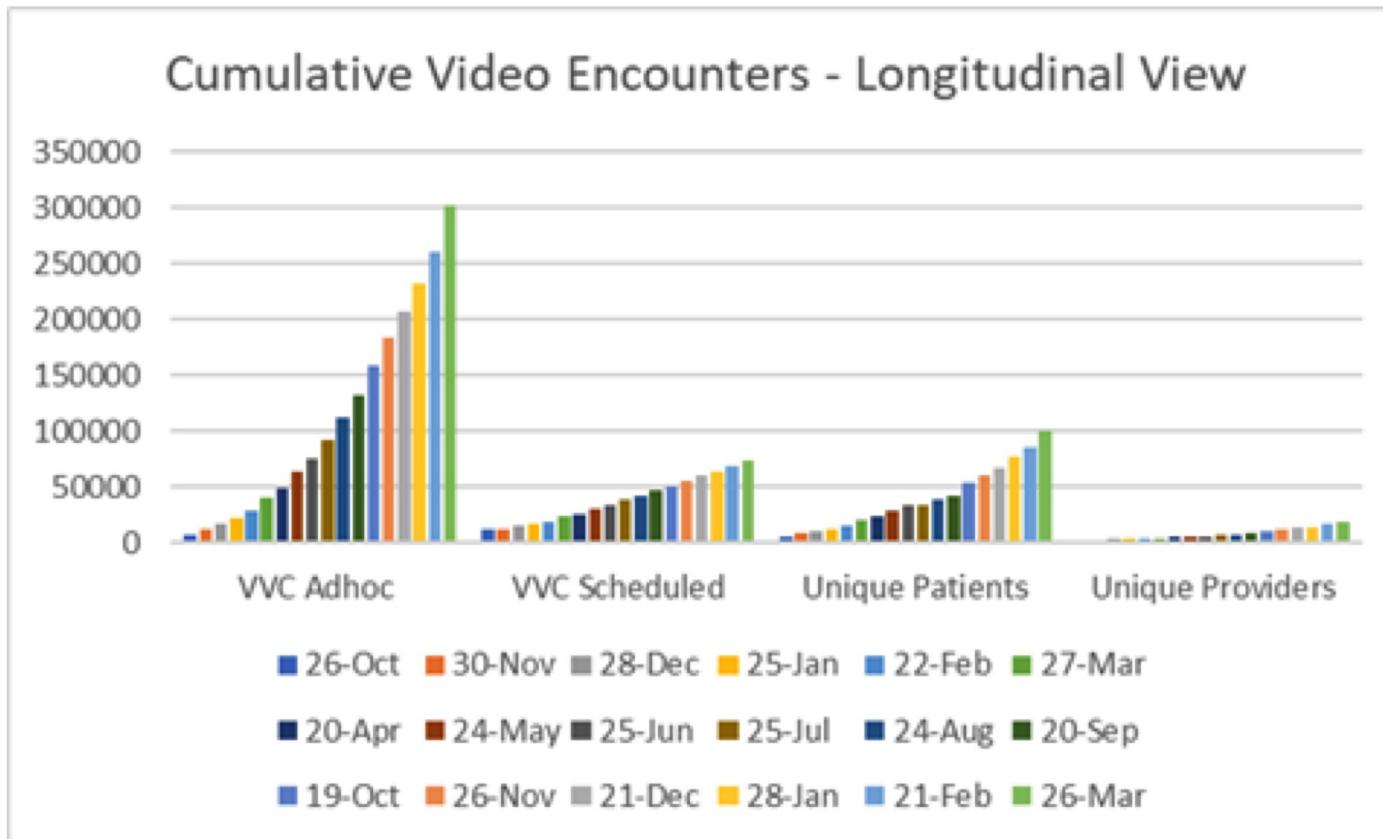
VA Virtual Health Technologies

- VA Video Connect
- VA Online Scheduling
- My HealtheVet
- Mobile Medical Applications
- Annie Text Messaging
- Online Chat (Pilot)

VA Video Connect



VA Video Connect Utilization



~ 100,000 Veterans and ~18,000 Providers have used Video Connect as of March 2019

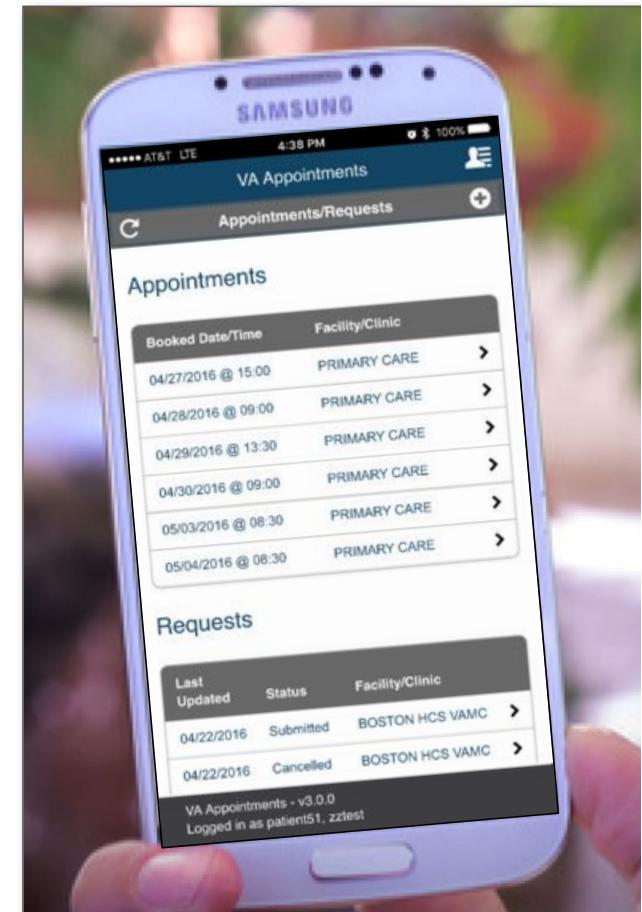
VA Online Scheduling

Functions of the Application:

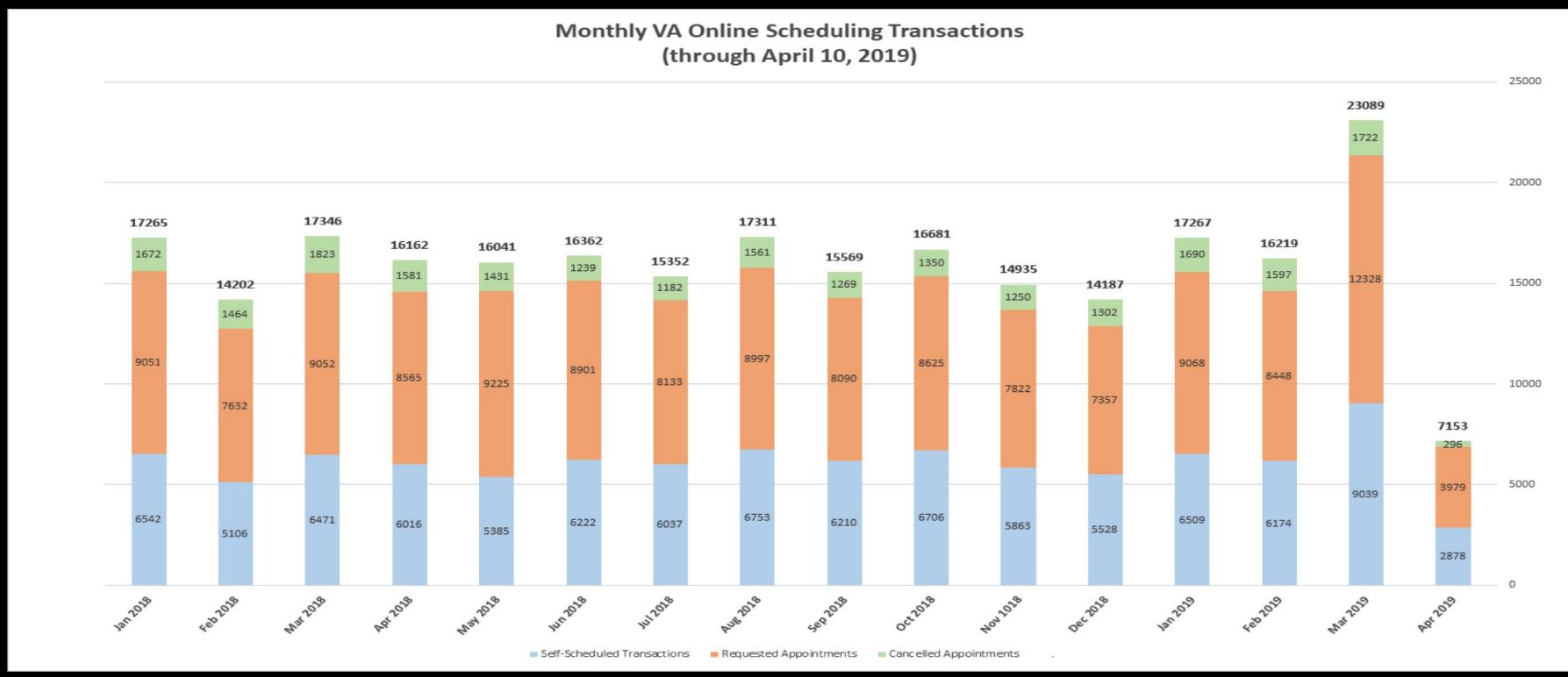
- Available to Veterans as a **mobile app** or through an **internet website**.
- Allows Veterans to self-schedule appointments
- Allows Veterans to electronically request VA to schedule an appointment for them
- Allows Veterans to view and cancel appointments in real time

Clinic Specialties:

- Primary Care
- Mental Health
- Audiology
- Optometry
- Nutrition & Food Services
- MOVE
- CPAP
- Clinical Rx
- Physical Therapy



Use of VA Online Scheduling



My HealtheVet

Data for First Half of FY 2019

- 1.94 million active users (40% mobile)
- 8.4 million Secure Messages sent/received
- 2.67 million Blue Button downloads
- 10.2 million Prescription refills
- 232 K new registrations
- 81 – CXA User Satisfaction score
- 30% of users are 65 – 69

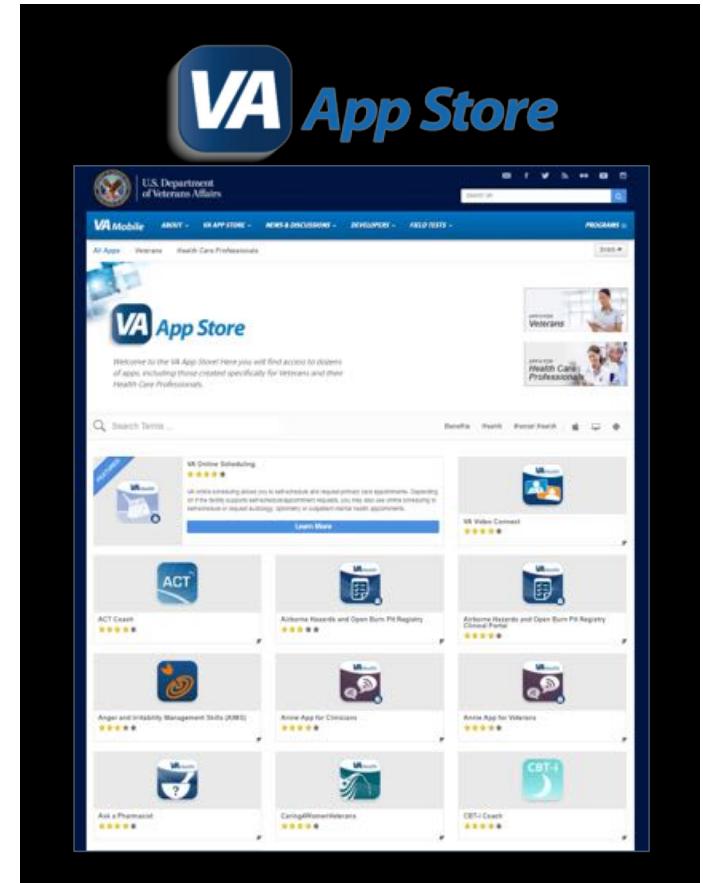
Accessing VA Apps



VA Veteran Launchpad
Medical
★★★★★ 4

OPEN

The image shows the VA Veteran Launchpad Medical app page on a mobile device. The top section features the VA Health logo and a rocket ship icon. Below this, the app name 'VA Veteran Launchpad' and category 'Medical' are displayed, along with a 4-star rating. A large blue 'OPEN' button is prominent. The main content area shows a screenshot of the app's interface, which includes a 'Ask a Pharmacist' section with a video player and a 'Description' section with a 'PE Coach' feature. To the right, a grid of mental health coaching apps is shown, including ACT Coach, Anger and Irritability Management Skills (CBT-I), Concussion Coach, CPT Coach, Mindfulness Coach, Mood Coach, Moving Forward, PE Coach, PTSD Coach, PTSD Family Coach, and Stress Coach.



VA App Store

Welcome to the VA App Store! Here you will find access to dozens of apps, including those created specifically for Veterans and their Health Care Professionals.

Search Terms...

VA Online Scheduling

VA Video Connect

ACT Coach

Alzheimers and Open Burns PH Registry

Alzheimers PH

Anger and Irritability Management Skills (CBT-I)

Anne App for Clinicians

Anne App for Veterans

Ask a Pharmacist

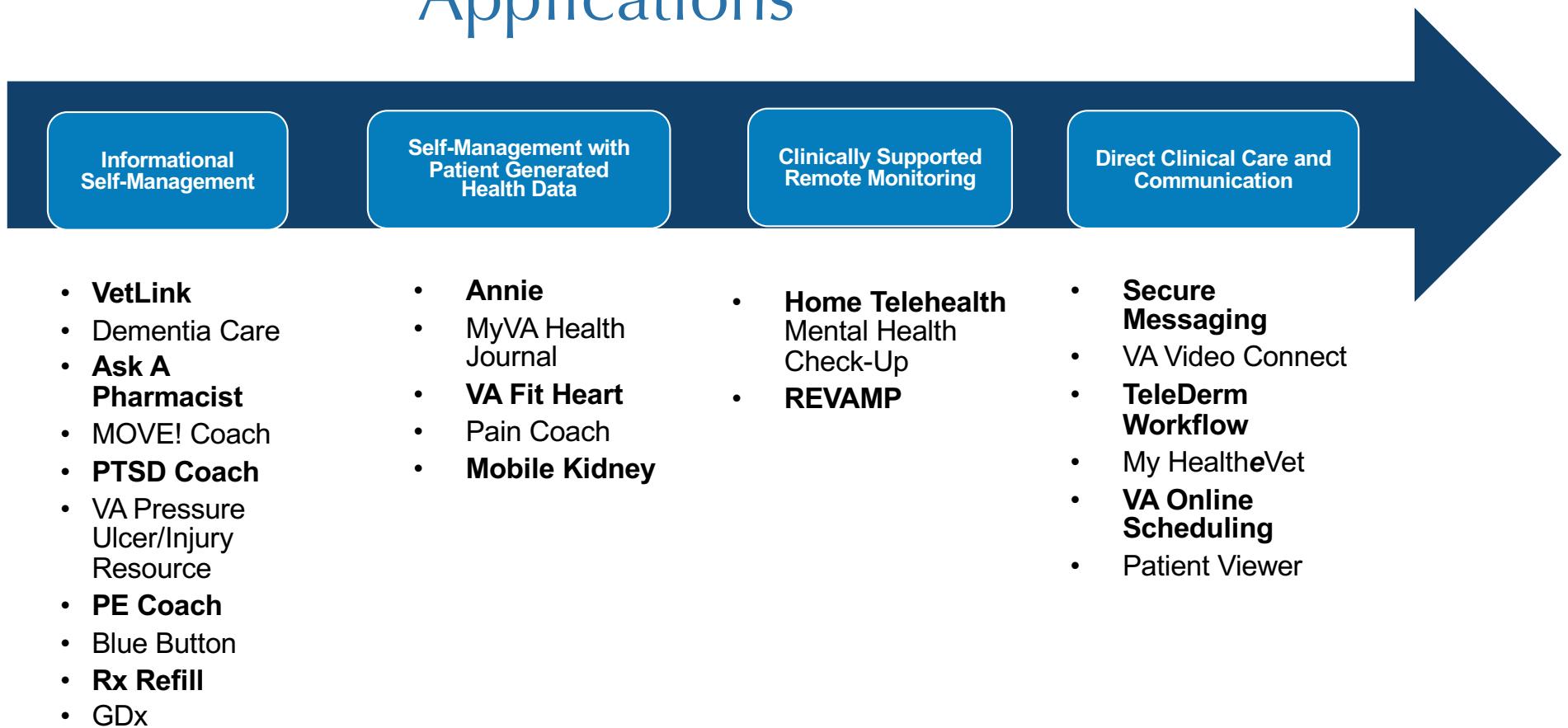
CaringForVets

CBT-I Coach

The image shows the VA App Store website on a mobile device. The top navigation bar includes 'VA Mobile', 'About', 'VA APP STORE', 'NEWS & DISCUSSIONS', 'DEVELOPMENT', and 'FIELD TESTS'. The main content area is titled 'VA App Store' and features a search bar. Below the search bar, a section for 'VA Online Scheduling' is shown. The main area displays a grid of app icons, each with a title and a star rating. The apps include VA Video Connect, ACT Coach, Alzheimers and Open Burns PH Registry, Alzheimers PH, Anger and Irritability Management Skills (CBT-I), Anne App for Clinicians, Anne App for Veterans, Ask a Pharmacist, CaringForVets, and CBT-I Coach.

Mobile.VA.Gov

Spectrum of Mobile Health Applications



Annie

A mobile messaging system that promotes self-care for Veterans.

Annie sends regular, automated text message reminders to Veterans to help them track health information requested by their VA care teams.

Annie can also send Veterans reminders and messages from their local VA facility



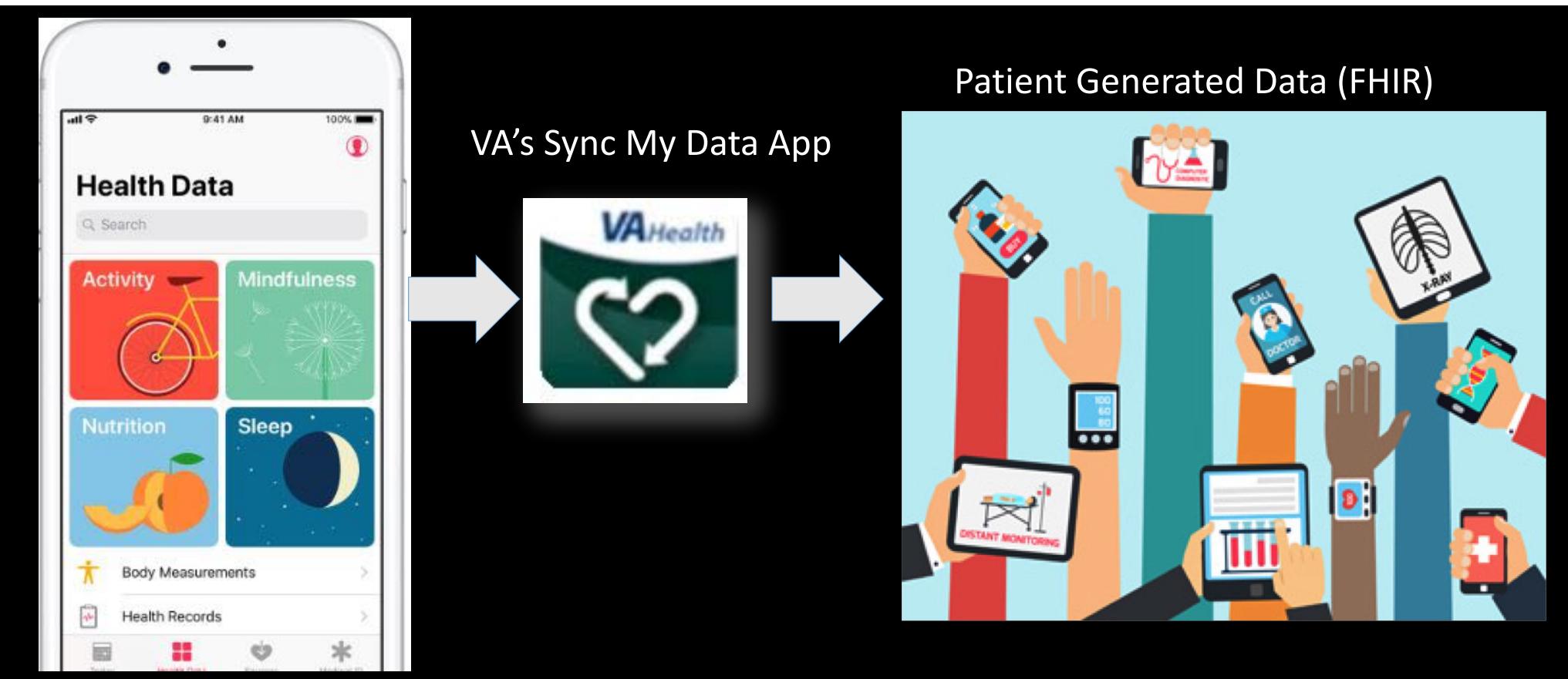
Named after Lt. Annie G. Fox
First woman to receive Purple Heart for combat





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Apple Health Kit Integration



Prescribing Asynchronous Data Updates

Mental Health Check Up

VAHealth

Morgan, Norman

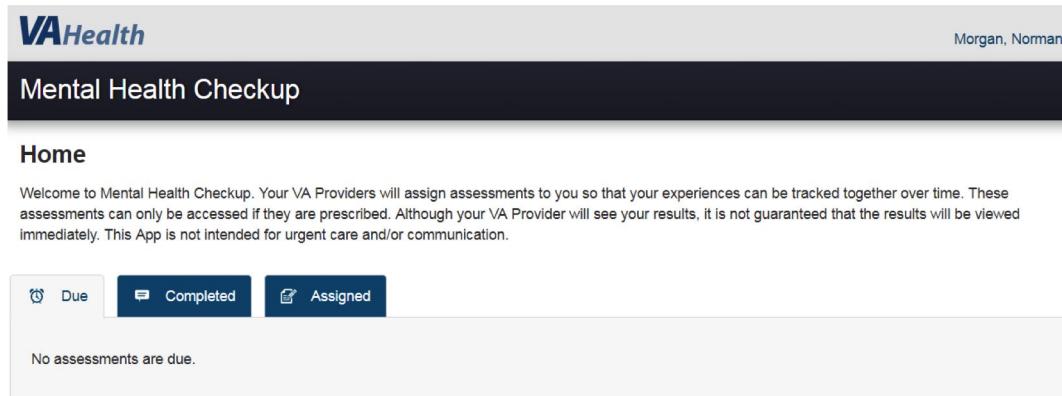
Mental Health Checkup

Home

Welcome to Mental Health Checkup. Your VA Providers will assign assessments to you so that your experiences can be tracked together over time. These assessments can only be accessed if they are prescribed. Although your VA Provider will see your results, it is not guaranteed that the results will be viewed immediately. This App is not intended for urgent care and/or communication.

Due Completed Assigned

No assessments are due.



Mental Health Assessments

My VA Images

Menu **My Telederm**

Follow-Up Request Details

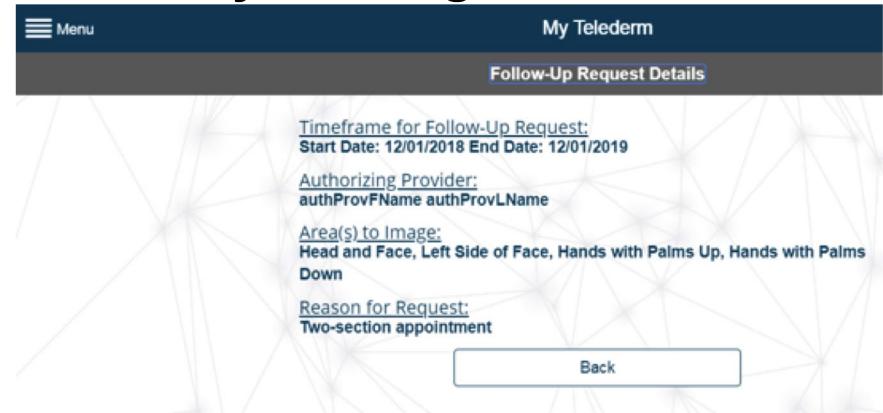
Timeframe for Follow-Up Request:
Start Date: 12/01/2018 End Date: 12/01/2019

Authorizing Provider:
authProvFName authProvLName

Area(s) to Image:
Head and Face, Left Side of Face, Hands with Palms Up, Hands with Palms Down

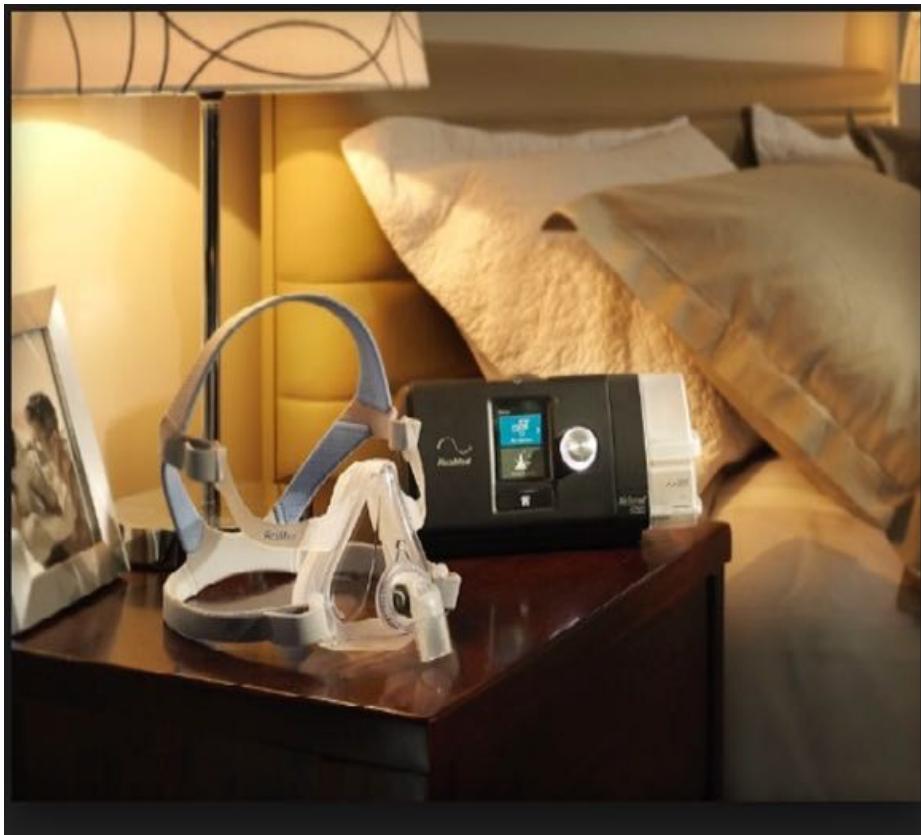
Reason for Request:
Two-section appointment

Back



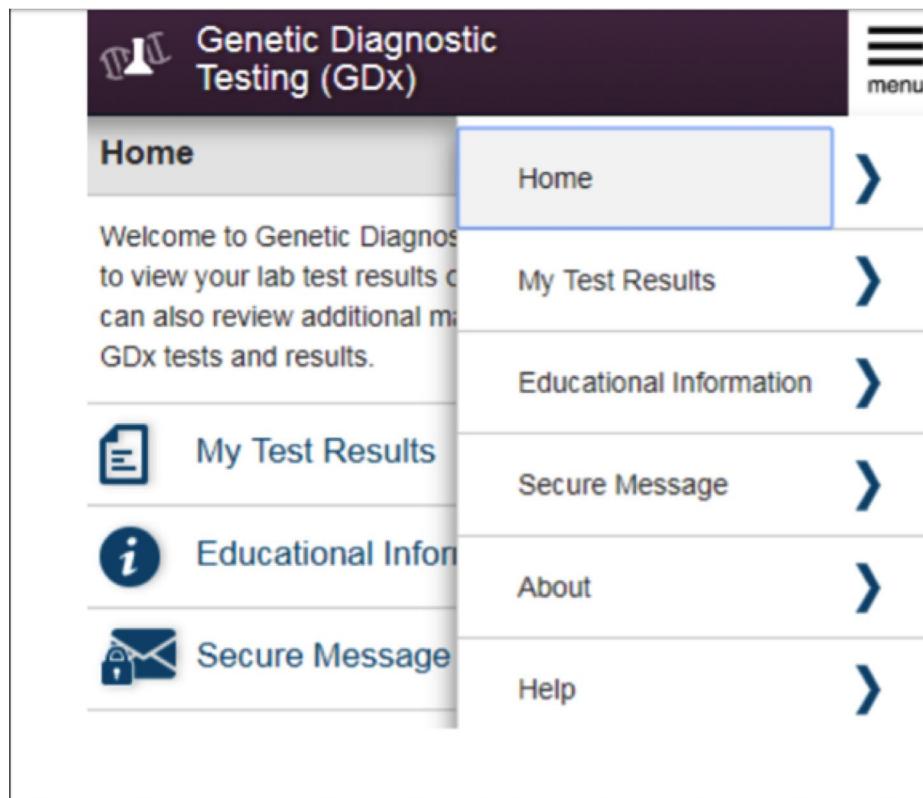
Short Video Images or Pictures

Remote Veteran Apnea Management Portal (REVAMP)



Remote Veteran Apnea Management Portal (REVAMP) – designed to improve access to care for Veterans with obstructive sleep apnea by allowing them to be evaluated without traveling to a VA sleep center by connecting a patients continuous positive airway pressure (CPAP) modem to a web portal.

Genetic Diagnostic Testing (GDx)

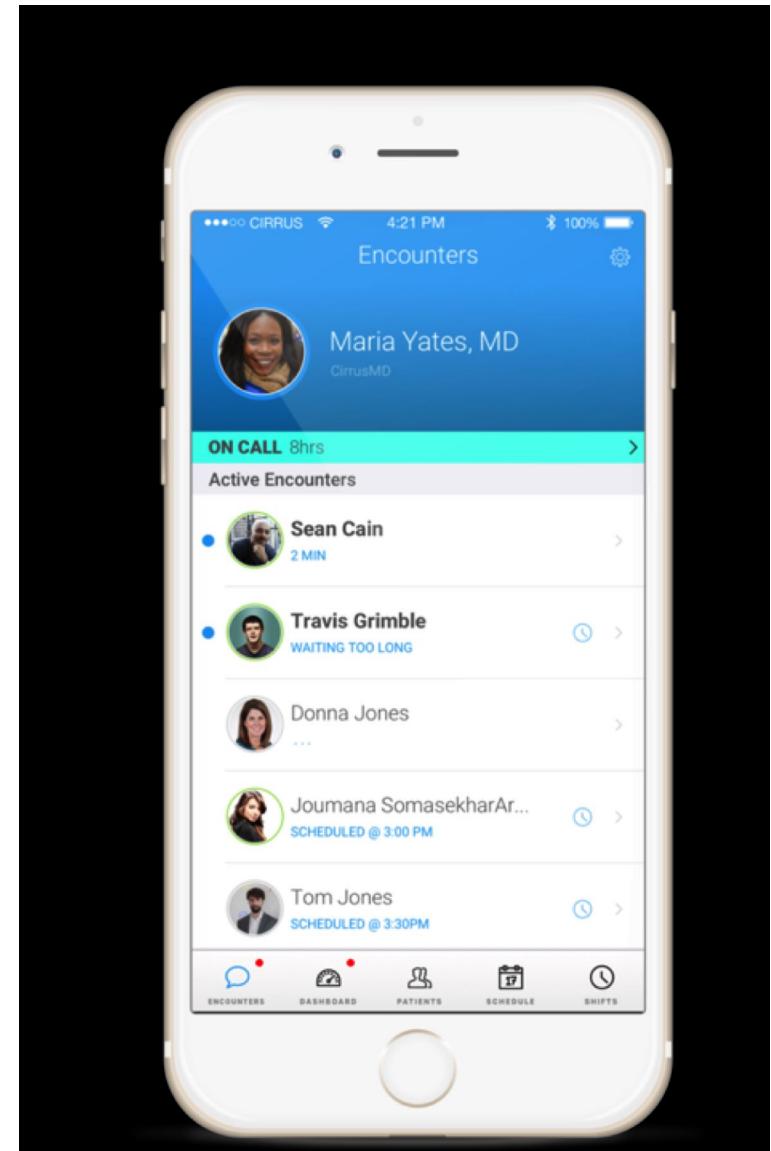


Access the app's main features by tapping the feature on the Home screen or in the menu:

- My Test Results
- Educational Information
- Secure Messaging

Future Pilot of chat-first workflow

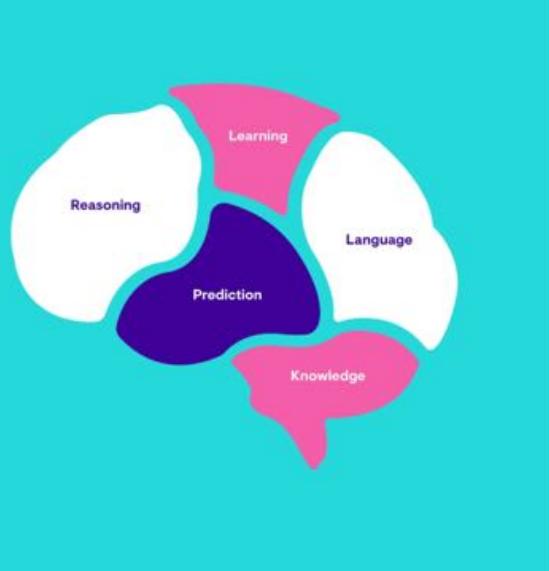
OCC plans to do a pilot of real-time secure chat-first work flow



FUTURE



Very Intelligent Chat Bots



Babylon was designed around a doctor's brain.

Babylon's deep neural network, created from many millions of data samples collected and input by our scientists and doctors, works behind the scenes to provide you with the information you need.

[Ask Babylon](#)

Babylon can interpret symptoms and medical questions through a chatbot interface and match them to the most appropriate service.

It can recognise the vast majority of healthcare issues seen in primary care and provide information on any next steps to take.

[Ask Babylon](#)

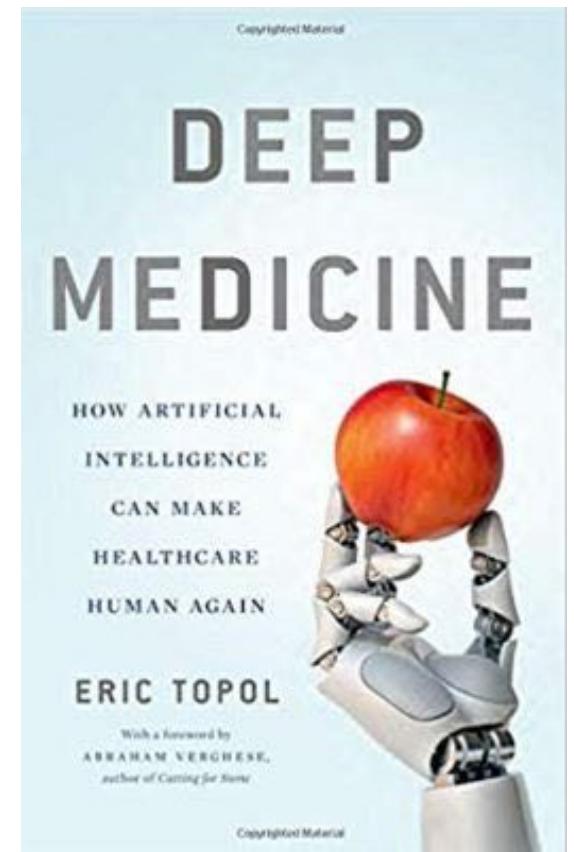
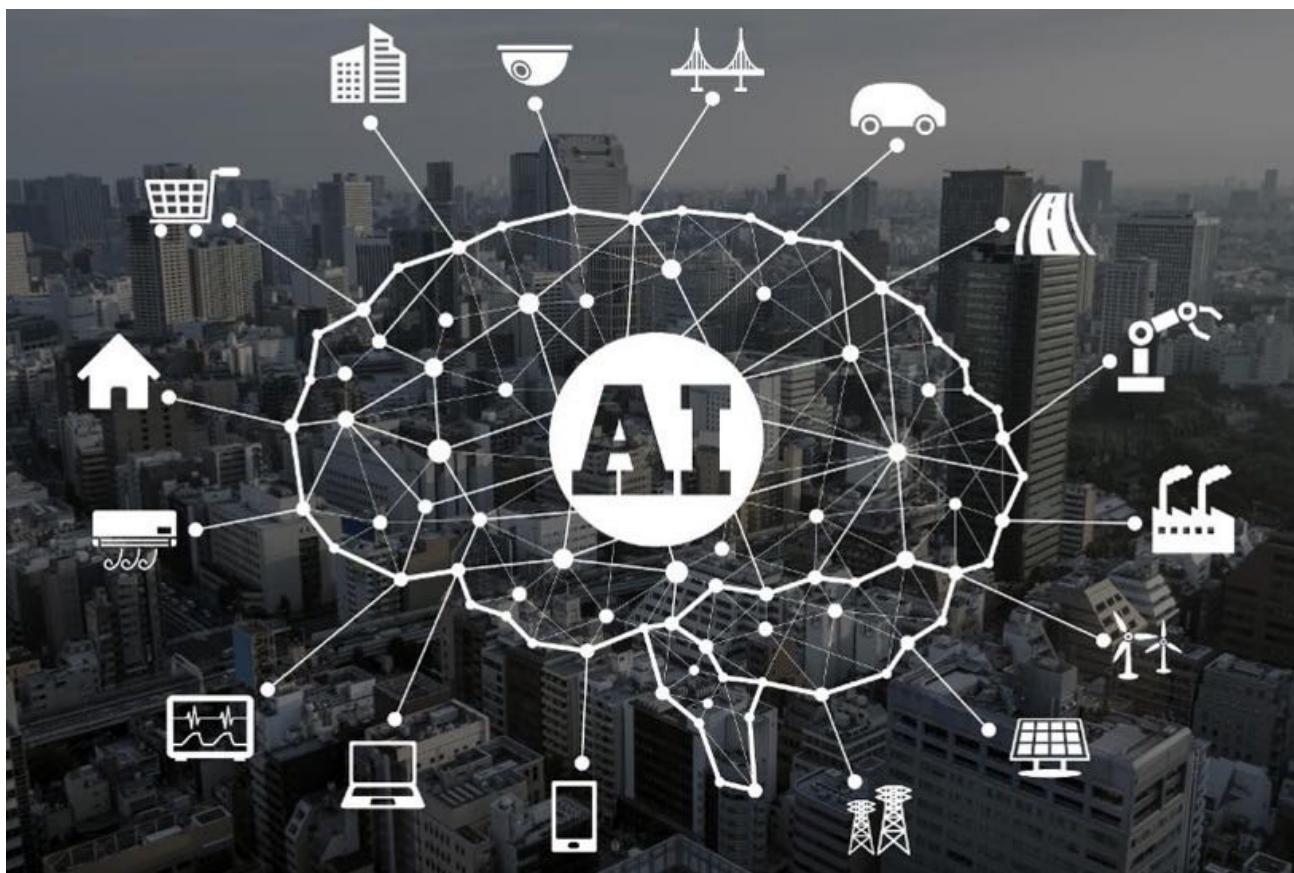
Hi Alex, how can I help?

I've got a really bad headache and I don't know what to do...

No problem, let me ask you a few questions

• • •

Artificial Intelligence



Future Technology Should Fix This

“While in the examination room with patients, physicians spent 52.9% of the time on direct clinical face time and 37.0% on EHR and desk work.”

Sinsky Ann Intern Med. 2016;165(11):753-760





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Q&A



Contact Information

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**Thank you for attending!
Share your experiences at #HWGSEC**

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