

# Digital Disruption

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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

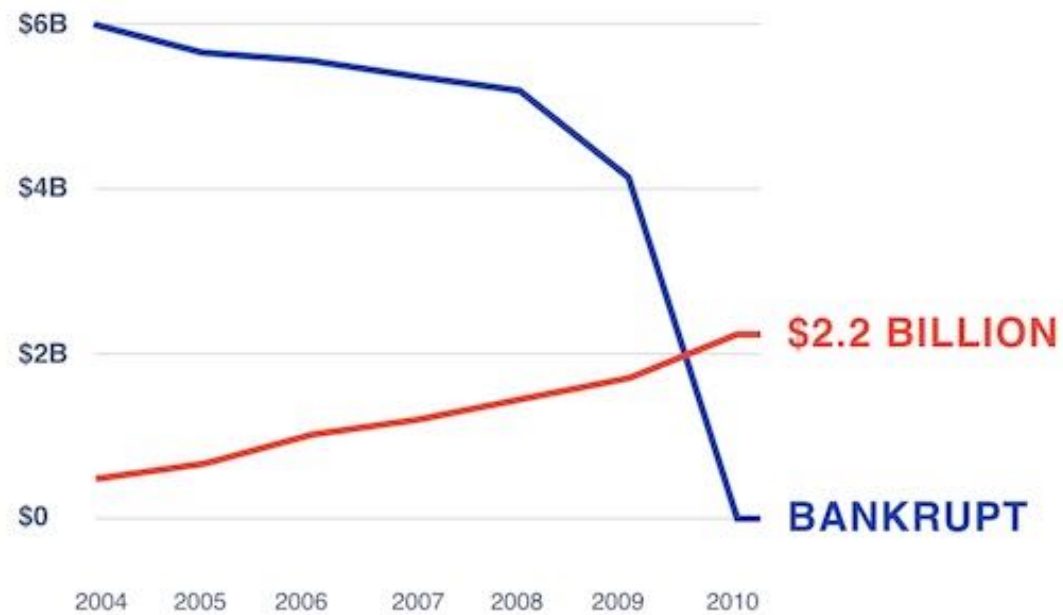
- Illuminate how disruption occurs
- Highlight emerging digital health trends
- Describe Digital Health in VA Today
- Forecast what the Future looks like

## 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





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.

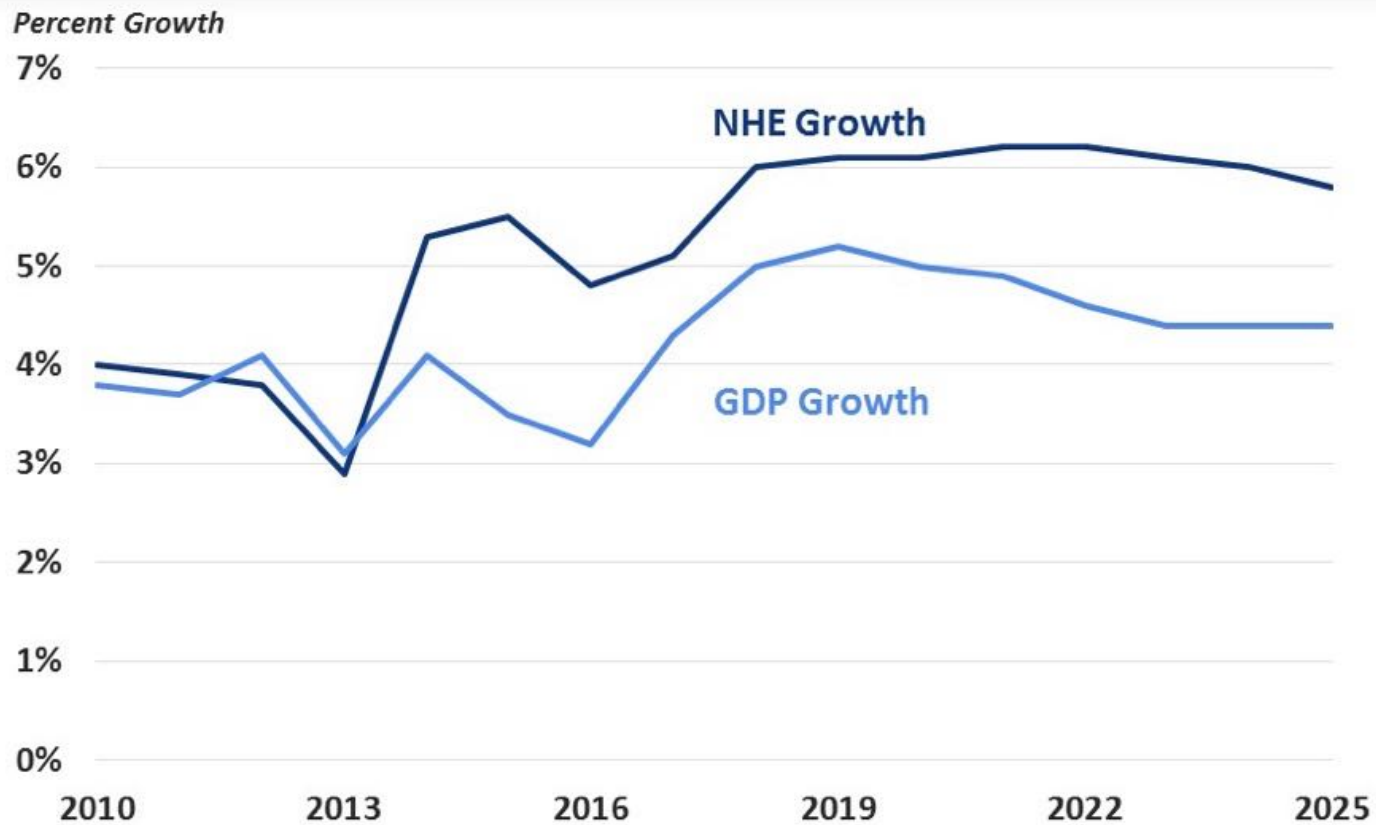
By [Jack Hough](#)

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



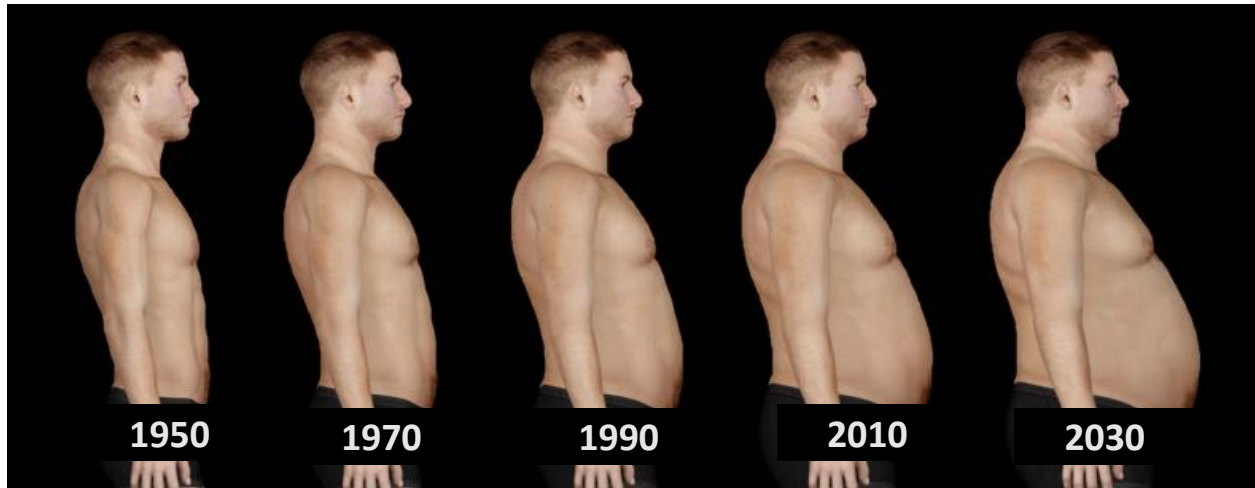


## NHE Growth Will Exceed GDP Growth Going Forward



Sources: Center for Medicare and Medicaid Services

# 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.

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Twitter Tweet

in Share

g+ Share

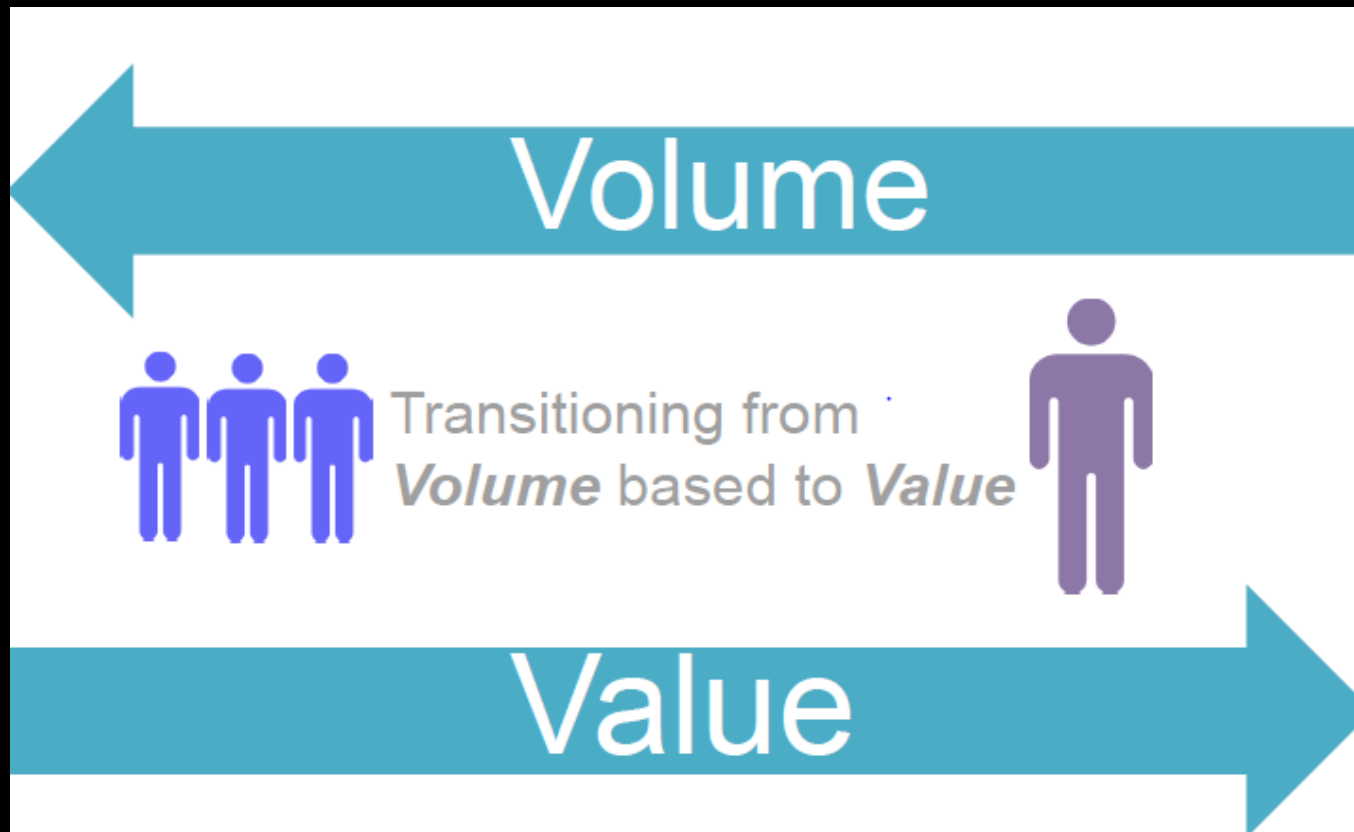
Email

Comment

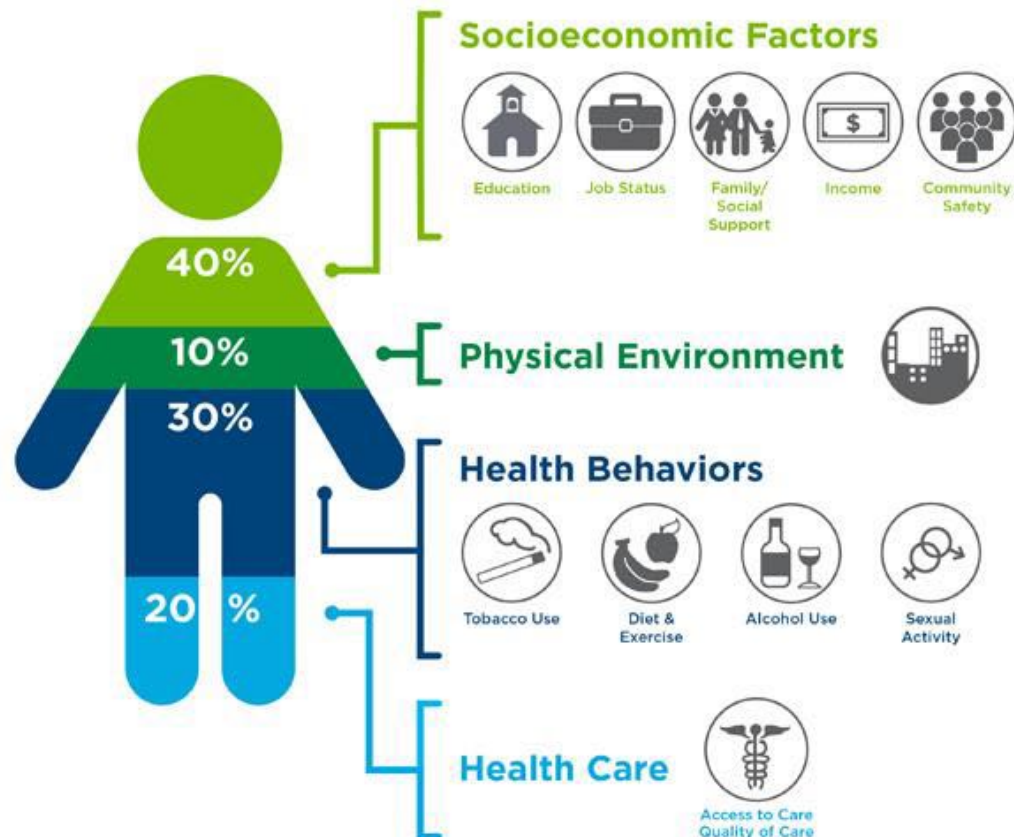
Print



# 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)

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

exercise



nutrition



smoking



## Lifestyle is Medicine

emotional  
health



social support

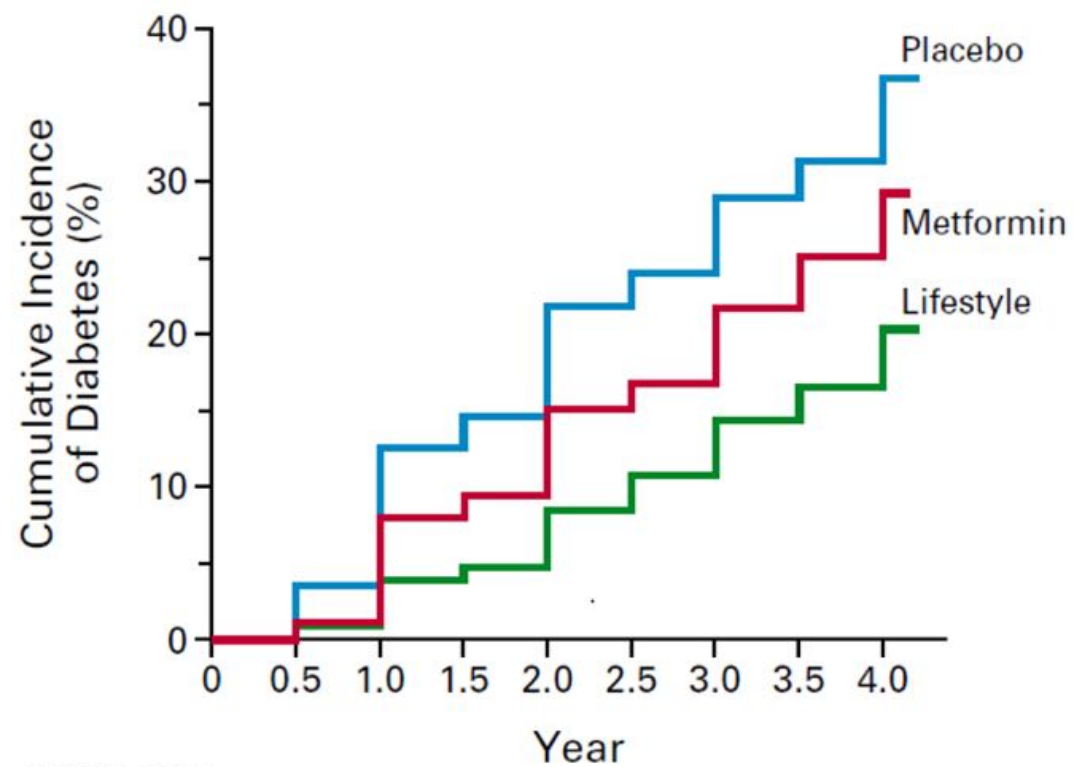


sleep





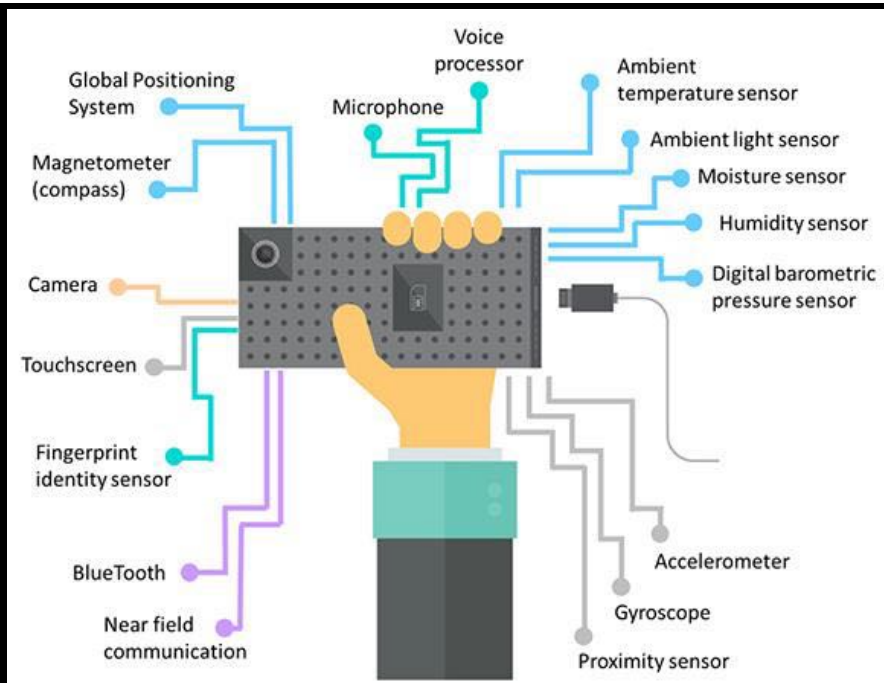
# Preventing Diabetes



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

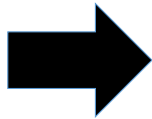


Secure Email

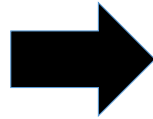
E-Visits

# The Future Patient Engagement Platform

Connected Device Vendor  
Cloud with Analytics



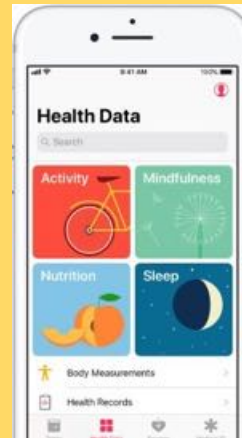
Google Health Cloud  
Aggregation Service



Connected Devices



Patient Aggregates and Distributes their own Health Data



Apple Health (VA Pilot)

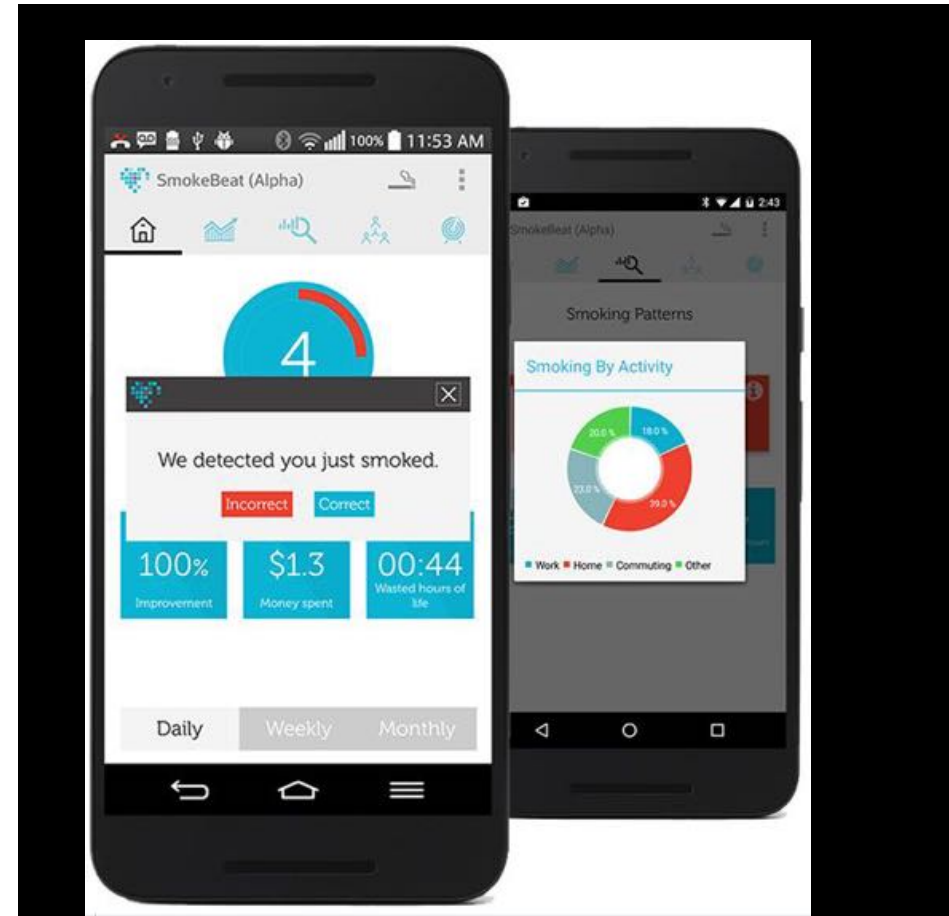


VA Personalized Patient Engagement Platform



# Somatix Wearables

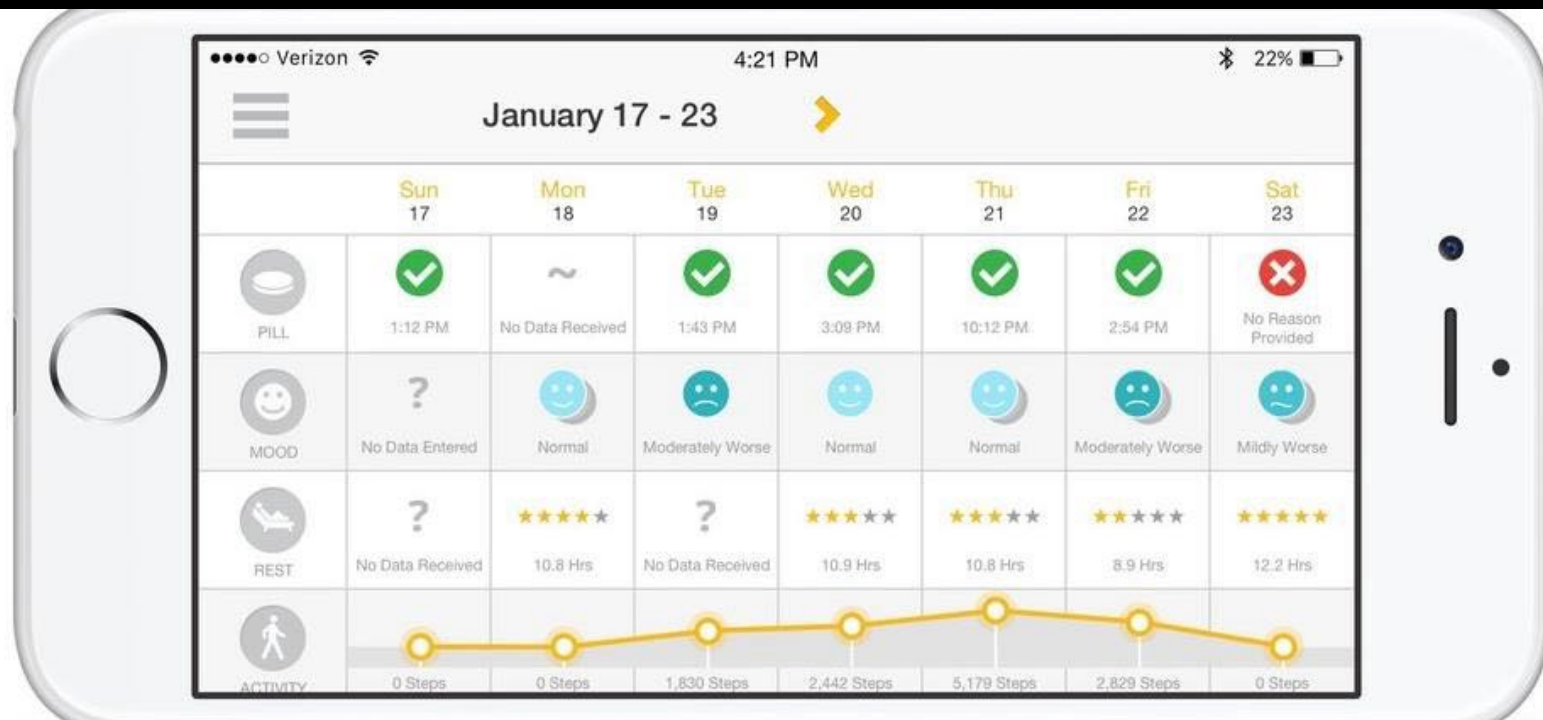
**Somatix** is a behavioral medication software platform, utilizing real-time interventions based on data gathered from standard wearables. Its first product, SmokeBeat is addressing the global smoking cessation market; its customers include corporate employers, health insurance companies and clinics



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

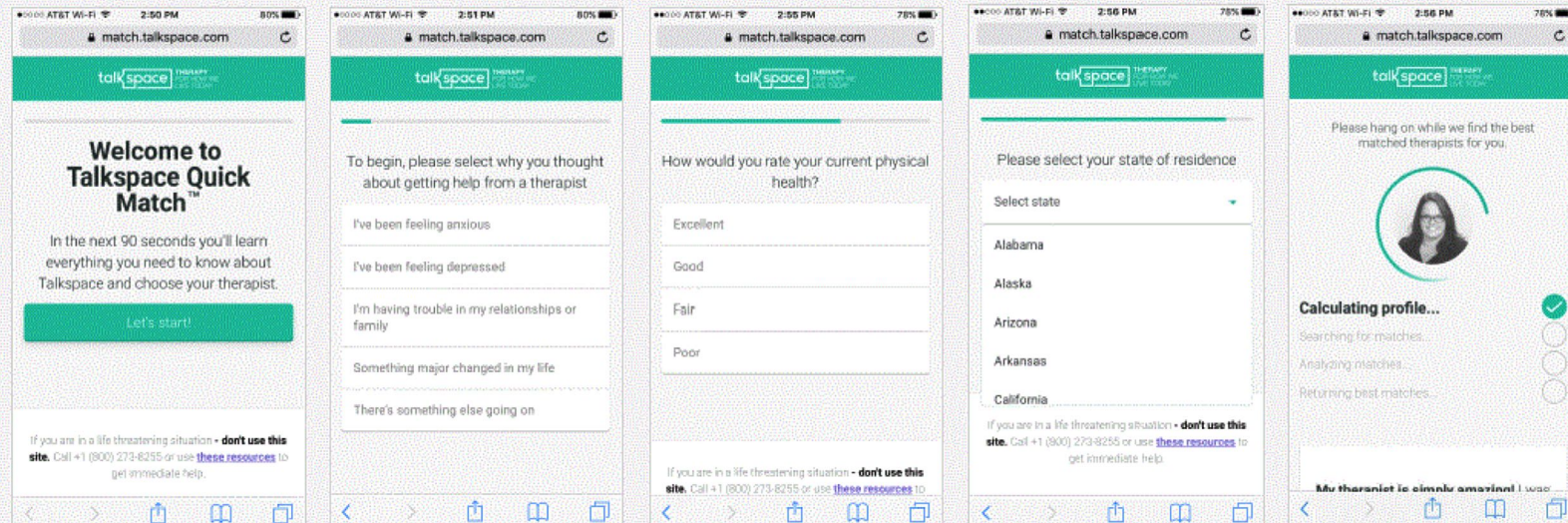
2002-2013 National statistics on mental health

# The Talkspace User Experience

## Online Therapy with a Licensed Therapist

### 1. Clinical Intake and Assessment

Client answers questions to identify therapy needs






## 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](#)



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

A brilliant strategist and devastating critic, David Issod was a dominating figure in developing the Palo Alto Group's communications model and strategic family therapy which became popular in the 2000s. He studied under three of the most influential pioneers in the evolution of family therapy - Gregory Bateson, Milton Erickson, and Salvador Minuchin, and combined ideas from each of these innovative thinkers to form his own unique brand of family therapy.

Start Therapy


#### Info

##### Availability

On time off between Jun 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			

GMT -04:00 Eastern time - US & Canada



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

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Start Therapy

#### Information

Licensed: Marriage and Family Therapist MFT 0055100 ID


Focus: Alzheimer's, Addiction, Autism

Treatment approach: Eclectic, Solutionist, Cognitive behavioral (CBT)


Psychology Today Profile

David joined Talkspace 2 years ago

Other Matches:



Jasmine Rosser  
Psychologist, LCSW, MFT



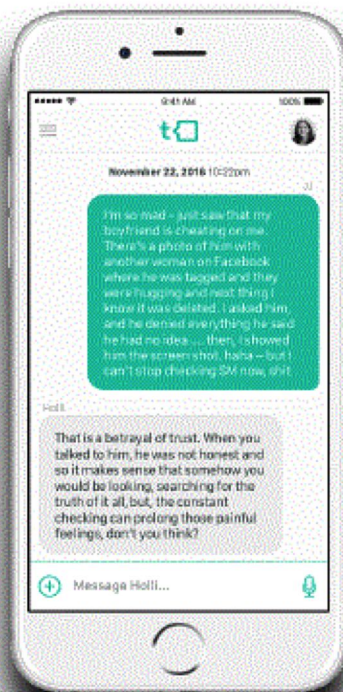
Andrea Bice  
LPC, Psychologist, LADC



# 3. Therapy

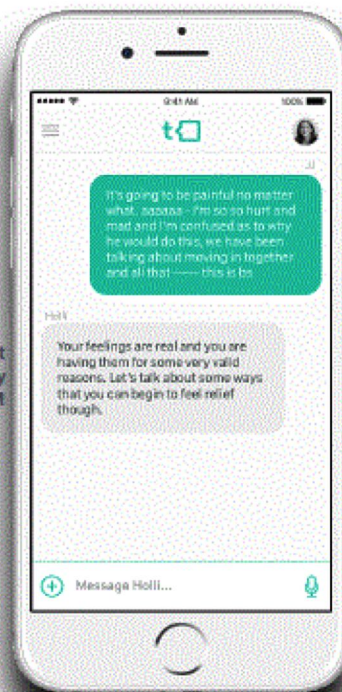
Daily engagement, 5 days a week, anytime, anywhere

Therapist  
Wednesday  
10:51AM



Client  
Tuesday  
9:53PM

Therapist  
Wednesday  
2:42PM



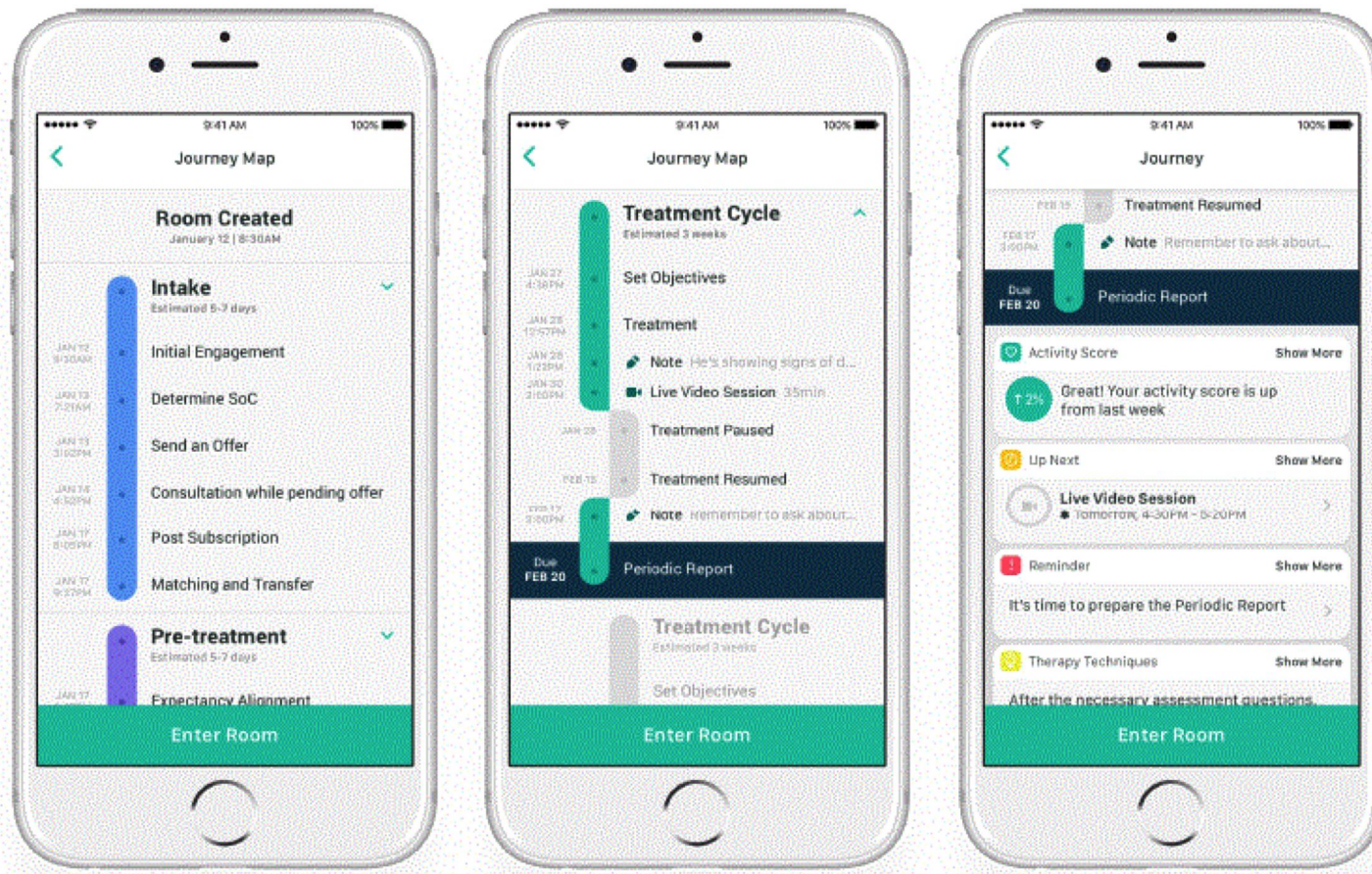
Client  
Wednesday  
2:05PM





# Structured Treatment Plan Tool

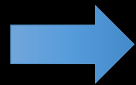
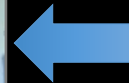
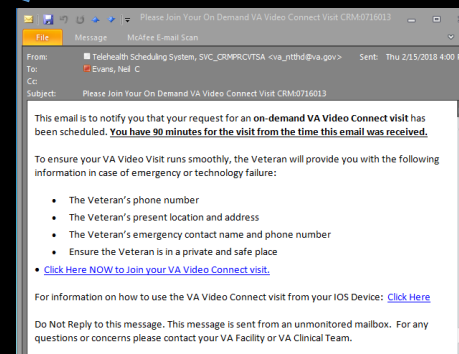
Client & Therapist Establish Treatment Plan, Goals & Objectives



## VA Virtual Health Technologies

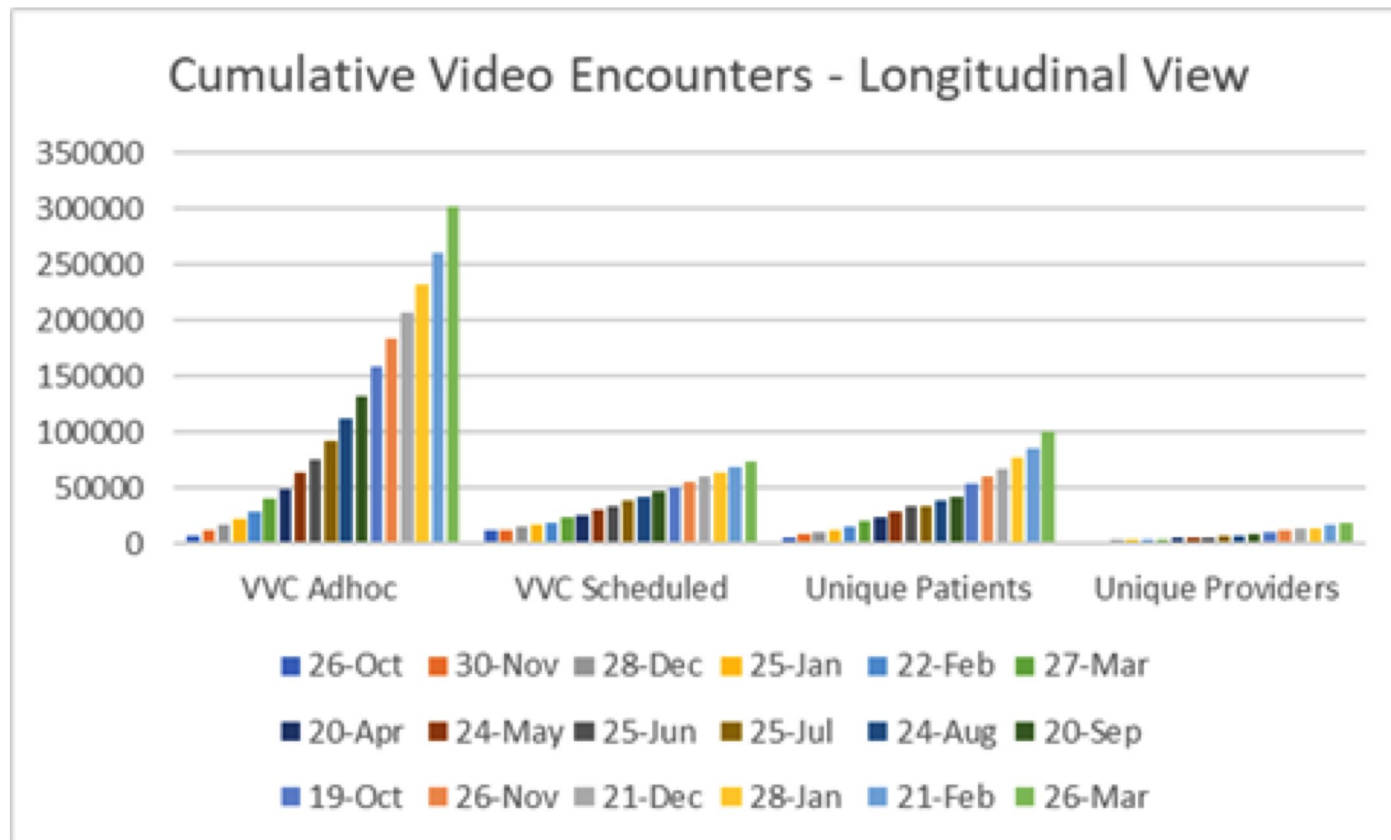
- VA Video Connect
- VA Online Scheduling
- My HealtheVet
- Mobile Medical Applications
- Annie Text Messaging
- Online Chat (Pilot)

# VA Video Connect

A screenshot of a web browser showing a form titled "Request an On Demand VA Video Connect". The form has two input fields: "Provider E-mail Address" with the value "Neil.Evans@va.gov" and "Patient E-mail Address" with the value "PatientEmail@email.email". Below the fields is a button labeled "Request On Demand VVC". The browser's address bar shows "https://internalcrm...." and the page title is "internalcrm.crm15.xrm.va....".



# VA Video Connect Utilization



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

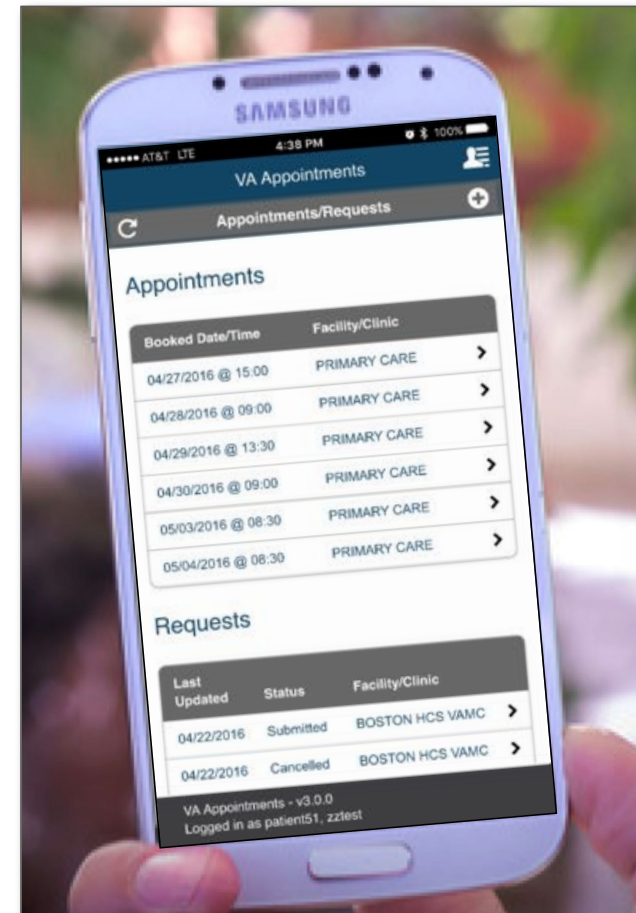
# VA Online Scheduling

## Functions of the Application:

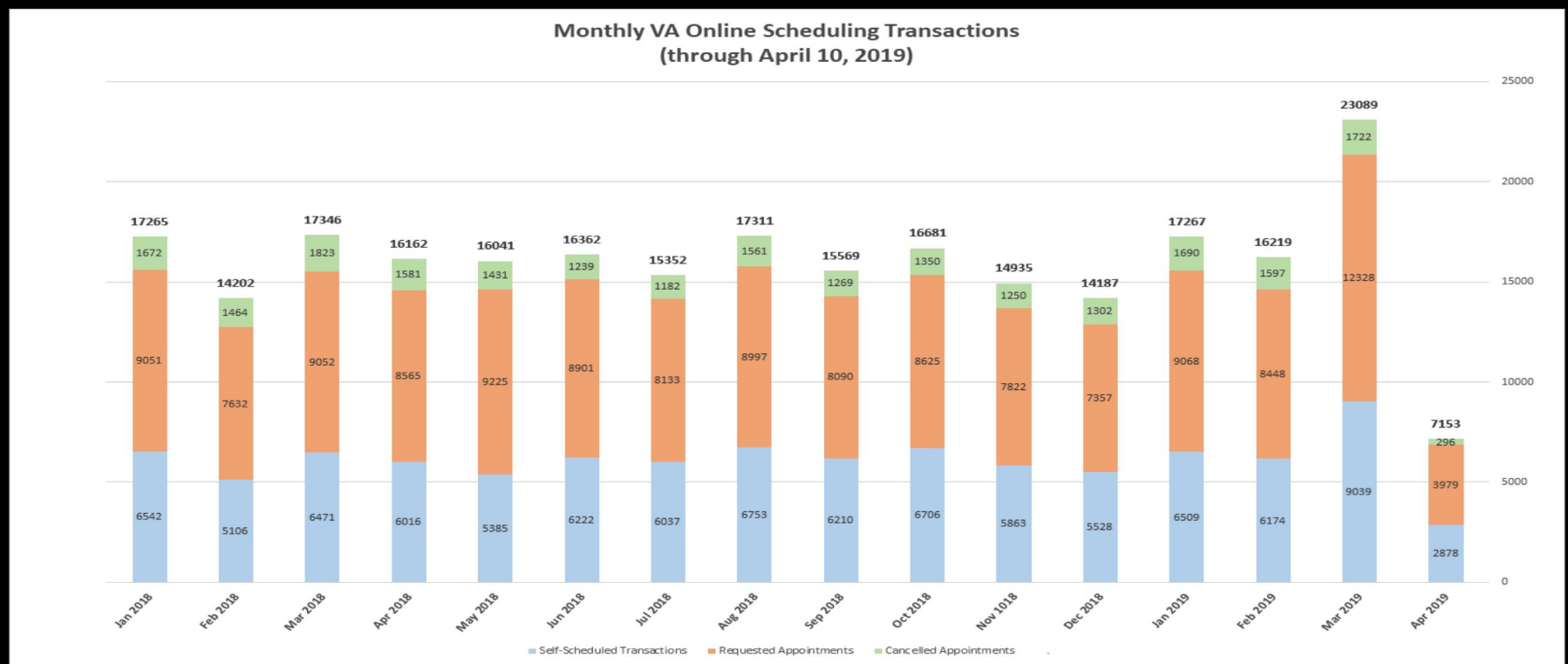
- Available to Veterans as a **mobile app** or through an **internet website**.
- Allows Veterans to self-schedule appointments
- Allows Veterans to electronically request VA to schedule an appointment for them
- Allows Veterans to view and cancel appointments in real time

## Clinic Specialties:

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



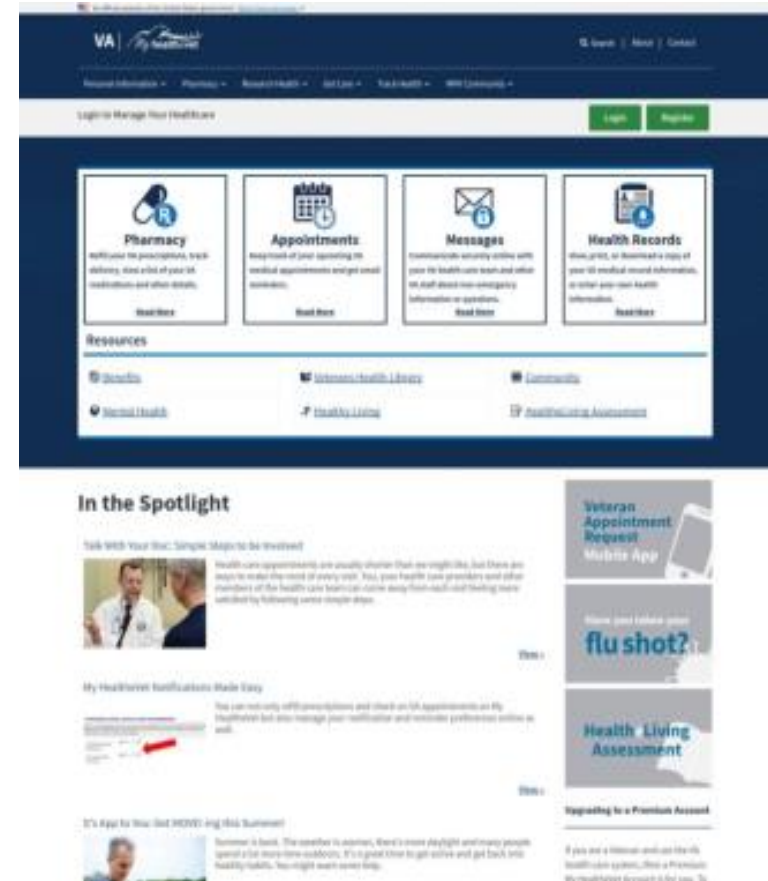
# Use of VA Online Scheduling



# 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



Mobile.VA.Gov

# Spectrum of Mobile Health Applications

## Informational Self-Management

- **VetLink**
- Dementia Care
- **Ask A Pharmacist**
- MOVE! Coach
- **PTSD Coach**
- VA Pressure Ulcer/Injury Resource
- **PE Coach**
- Blue Button
- **Rx Refill**
- GDx

## Self-Management with Patient Generated Health Data

- **Annie**
- MyVA Health Journal
- **VA Fit Heart**
- Pain Coach
- **Mobile Kidney**

## Clinically Supported Remote Monitoring

- **Home Telehealth**  
Mental Health Check-Up
- **REVAMP**

## Direct Clinical Care and Communication

- **Secure Messaging**
- VA Video Connect
- **TeleDerm Workflow**
- My HealtheVet
- **VA Online Scheduling**
- Patient Viewer

# 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*





# Apple Health Kit Integration

VA's Sync My Data App

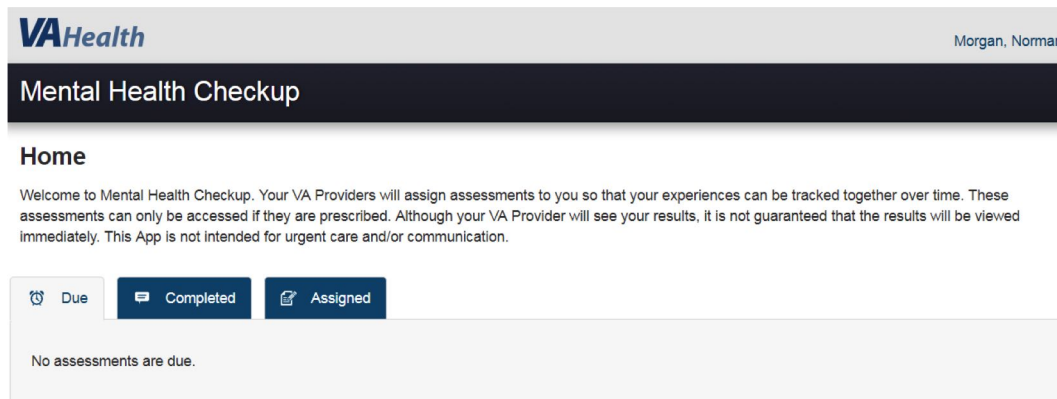


Patient Generated Data (FHIR)



# Prescribing Asynchronous Data Updates

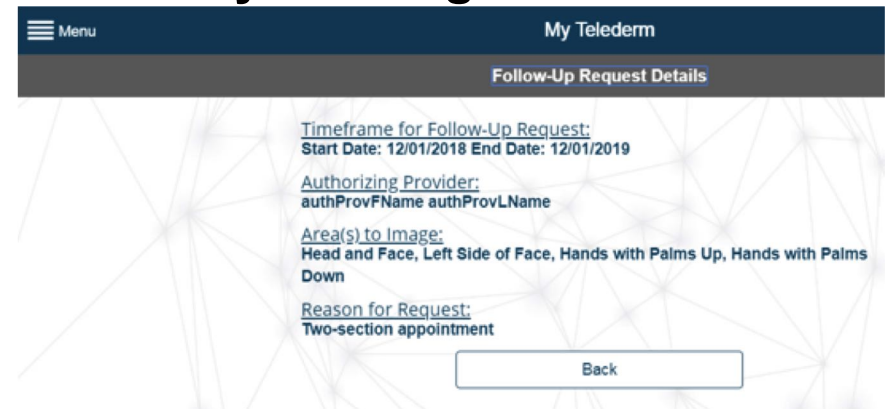
## Mental Health Check Up



The screenshot shows the VA Health Mental Health Checkup interface. At the top, there is a header with the VA Health logo on the left and the user's name, Morgan, Norman, on the right. Below the header is a dark blue bar with the text "Mental Health Checkup". Underneath this bar is a section titled "Home" with a welcome message: "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." Below the welcome message is a row of three buttons: "Due", "Completed", and "Assigned". The "Due" button is highlighted. Below the buttons is a message: "No assessments are due."

Mental Health Assessments

## My VA Images



The screenshot shows the My VA Images interface. At the top, there is a header with a "Menu" button on the left and "My Telederm" on the right. Below the header is a dark blue bar with the text "Follow-Up Request Details". Underneath this bar is a section titled "Timeframe for Follow-Up Request:" with the text "Start Date: 12/01/2018 End Date: 12/01/2019". Below this is a section titled "Authorizing Provider:" with the text "authProvFName authProvLName". Below this is a section titled "Area(s) to Image:" with the text "Head and Face, Left Side of Face, Hands with Palms Up, Hands with Palms Down". Below this is a section titled "Reason for Request:" with the text "Two-section appointment". At the bottom right is a "Back" button.

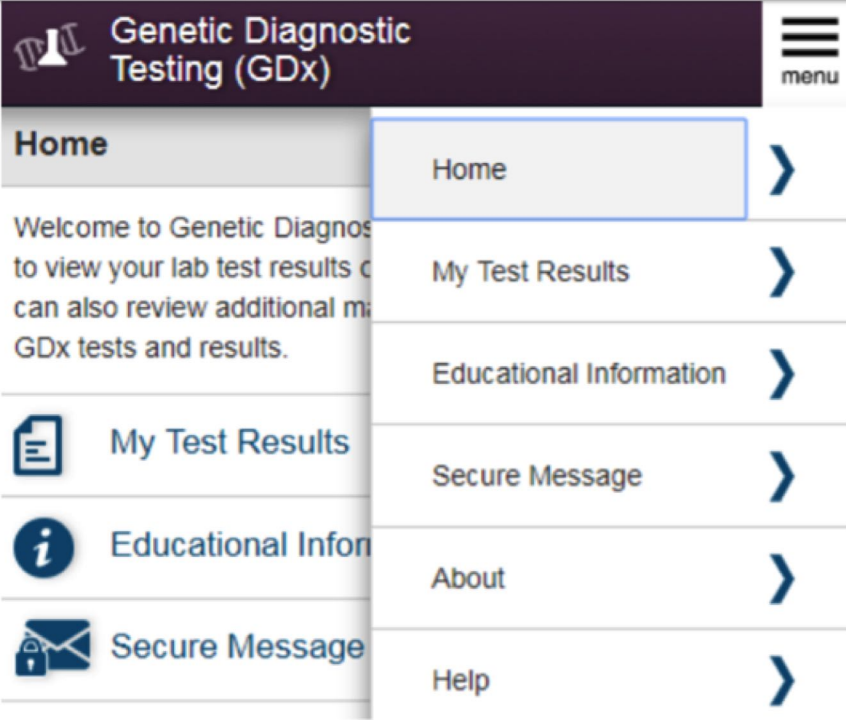
Short Video Images or Pictures

# 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)



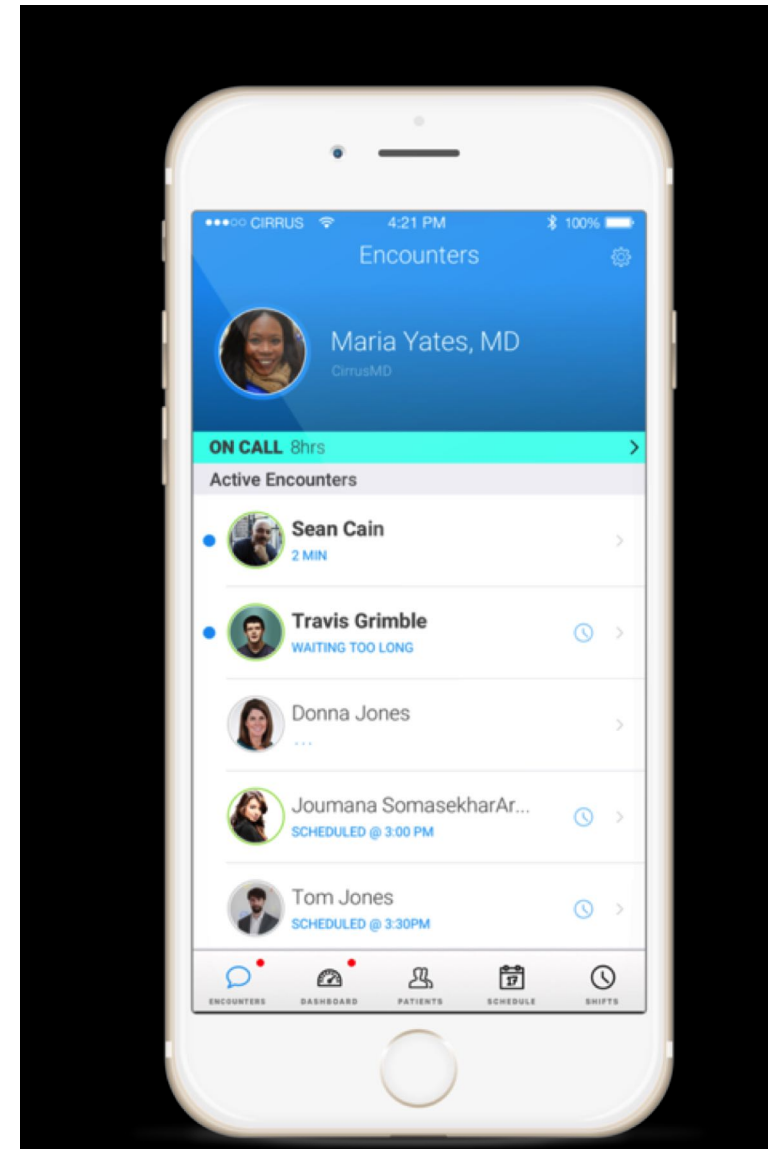
The screenshot displays the Genetic Diagnostic Testing (GDx) app interface. The top header is dark purple with the app logo and name. Below the header, the 'Home' screen is visible, featuring a welcome message and a list of features: 'My Test Results', 'Educational Information', and 'Secure Message'. A menu overlay is shown on the right side of the screen, listing the same features: 'Home', 'My Test Results', 'Educational Information', 'Secure Message', 'About', and 'Help'. The 'Home' option in the menu is highlighted with a blue border. To the right of the menu, text explains how to access the app's main features.

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

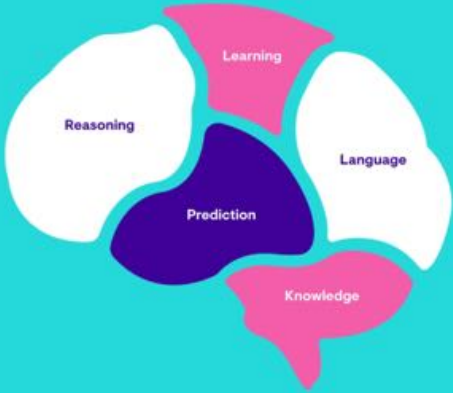


# FUTURE





# 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](#)

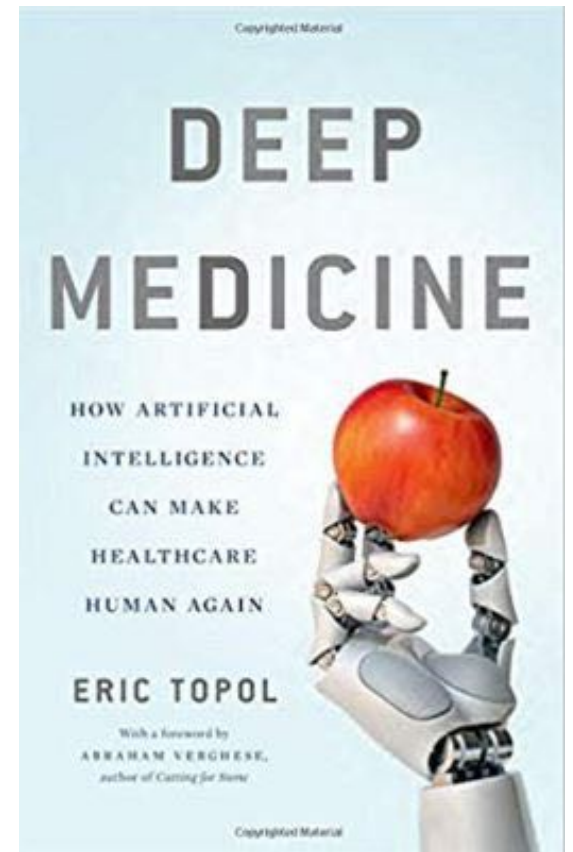
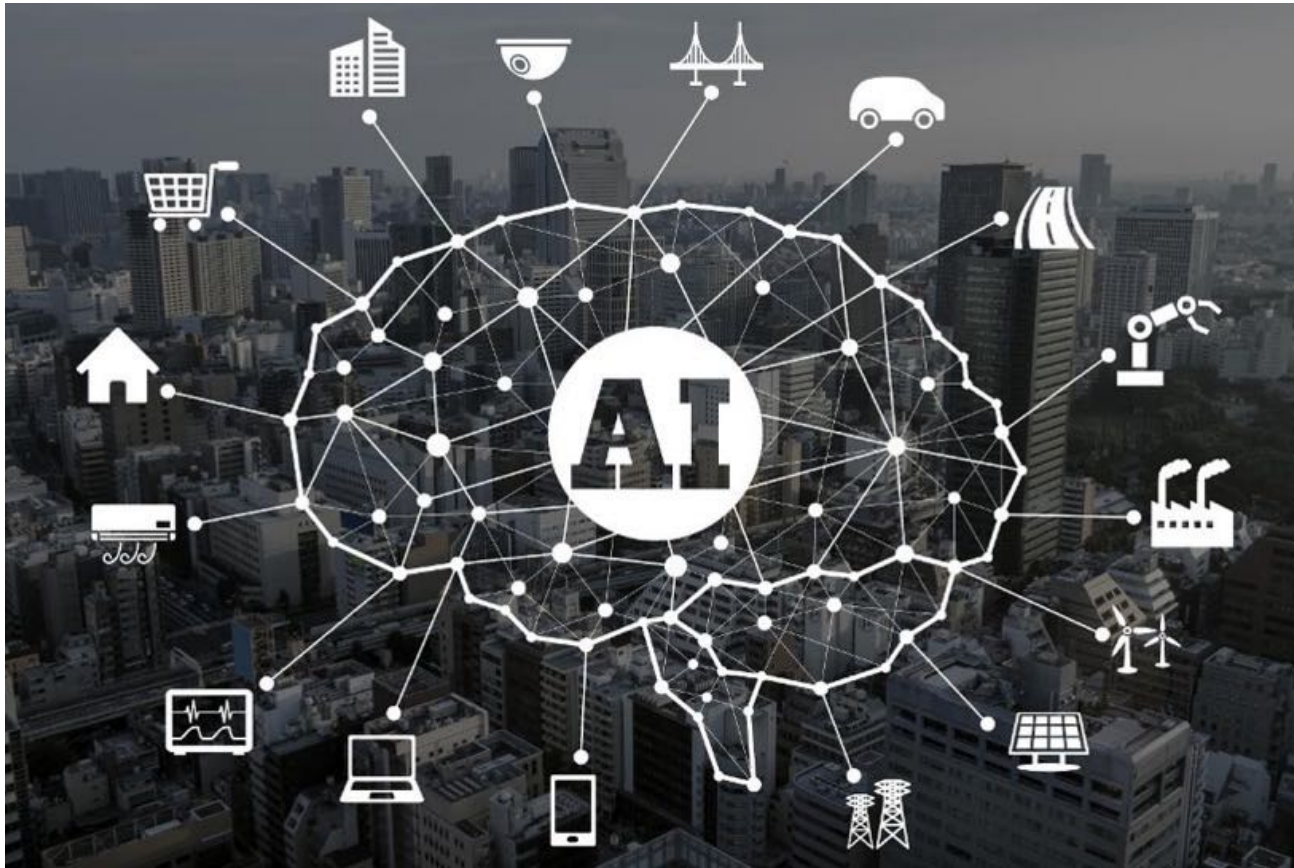
Hi Alex, how can I help?

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





Q&A

## Contact Information

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# Thank you for attending!

## Share your experiences at #HWGSEC

