RIETI
Research Institute of Economy, Trade & Industry, IAA

RIETI BBL Seminar Handout

“What’s Next In Healthcare IT?”

October 10, 2018

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https://www.rieti.go.jp/jp/index.html

What's Next In Healthcare IT?

John D. Halamka MD, MS

The Problems to be Solved

- Ever increasing healthcare costs in an aging society
- Poor tools for patients and families to navigate the healthcare system
- Caregiver burden with technology
- Lack of data sharing
- Significant variations in healthcare quality

Update from Around the World

- Asia-Pacific: China, New Zealand
- Europe: England/Scotland, Nordics
- India, Middle East and Africa: the India Stack, Israel, South Africa

The US Replaces Meaningful Use with the Promoting Interoperability Program

- Fewer measures – from 16 down to six
- Fewer objectives – from six down to four
- The four objectives would be comprised of ePrescribing, Health Information Exchange, Provider to Patient Exchange, and Public Health & Clinical Data Exchange
- Scoring would occur at the individual measure level and be based on a hospital's performance
- A hospitals aggregate performance on the measures would constitute its score
- There would be a possible 100 points total available, and at least 50 points need to be successful in 2019 to avert a penalty

Final Performance-Based Scoring Methodology
for EHR Reporting Periods in CY 2019

Objectives	Measures	Maximum Points
e-Prescribing	e-Prescribing	10 points
	Bonus: Query of Prescription Drug Monitoring Program (PDMP)	5 points *bonus*
	Bonus: Verify Opioid Treatment Agreement	5 points *bonus*
Health Information Exchange	Support Electronic Referral Loops by Sending Health Information	20 points
	Support Electronic Referral Loops by Receiving and Incorporating Health Information	20 points
Provider to Patient Exchange	Provide Patients Electronic Access to Their Health Information	40 points
Public Health and Clinical Data Exchange	Choose any two of the following: Syndromic Surveillance Reporting Immunization Registry Reporting Electronic Case Reporting Public Health Registry Reporting Clinical Data Registry Reporting Electronic Reportable Laboratory Result Reporting	10 points

Note: Security Risk Analysis is retained, but not included as part of the scoring methodology.

Emerging Trends

- Cloud Services
- Mobile/Internet of Things
- Machine Learning/Artificial Intelligence
- Telemedicine/Telecare
- Blockchain

Examples

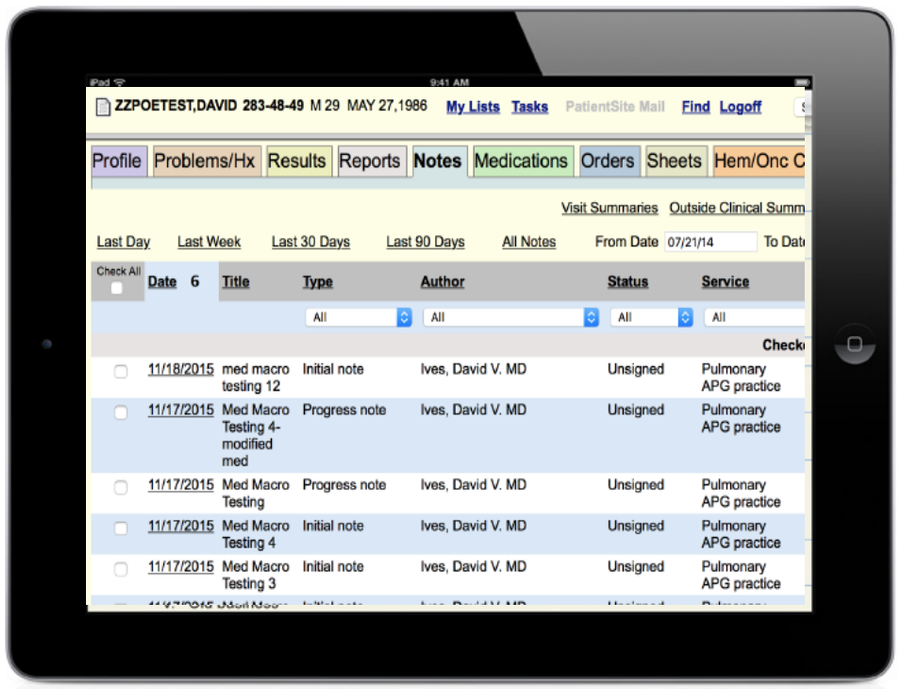
- EHR – my wife's thyroid issues and the need for "social" precision medicine

- Patient/Family engagement – my recent hypertension diagnosis and "internet of things" precision medicine

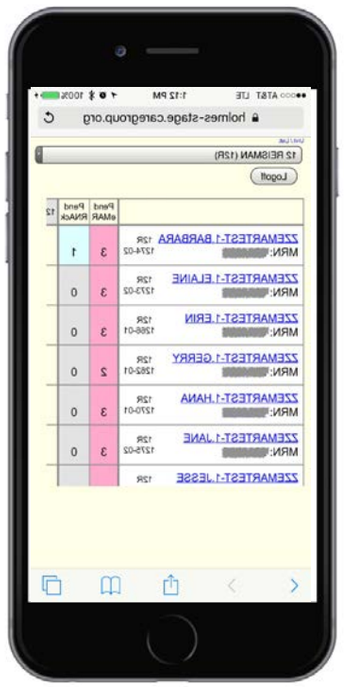
- Big Data Analytics – my wife's cancer experience and "clinical trial of one" precision medicine

Patient and Provider Mobile Apps

Clinician Apps



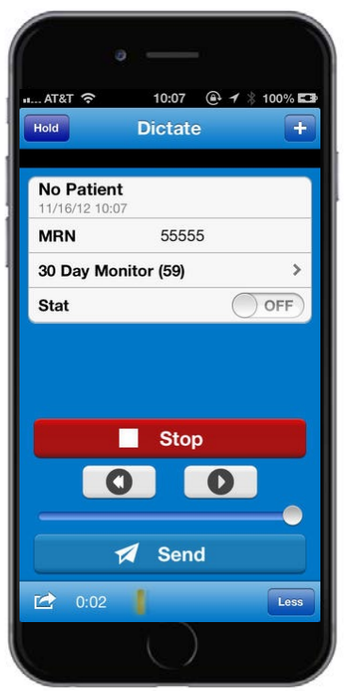
Inpatient Med Lists



PatientSite

Patient Questionnaires

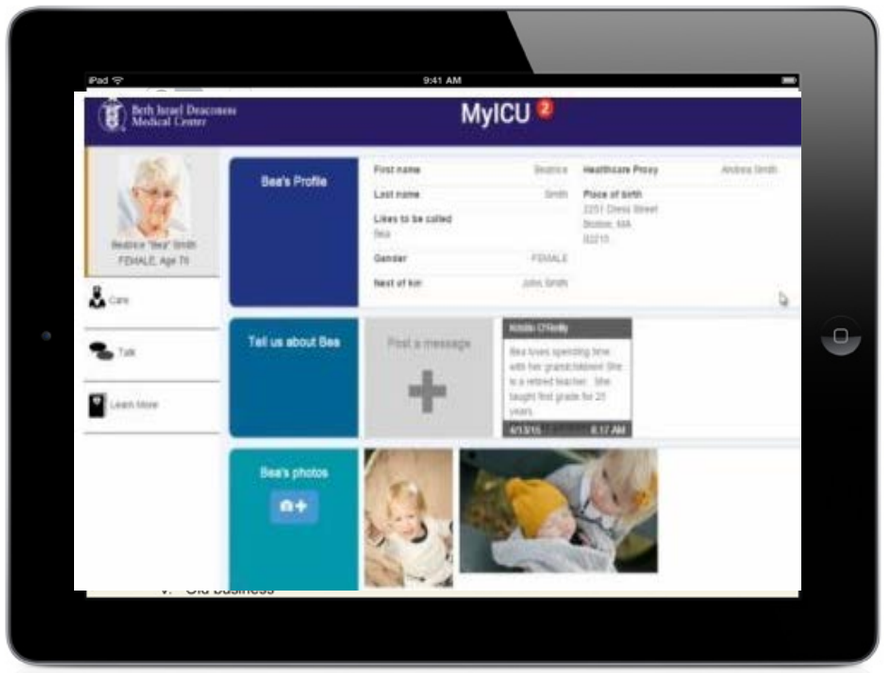
Dragon Medical Recorder



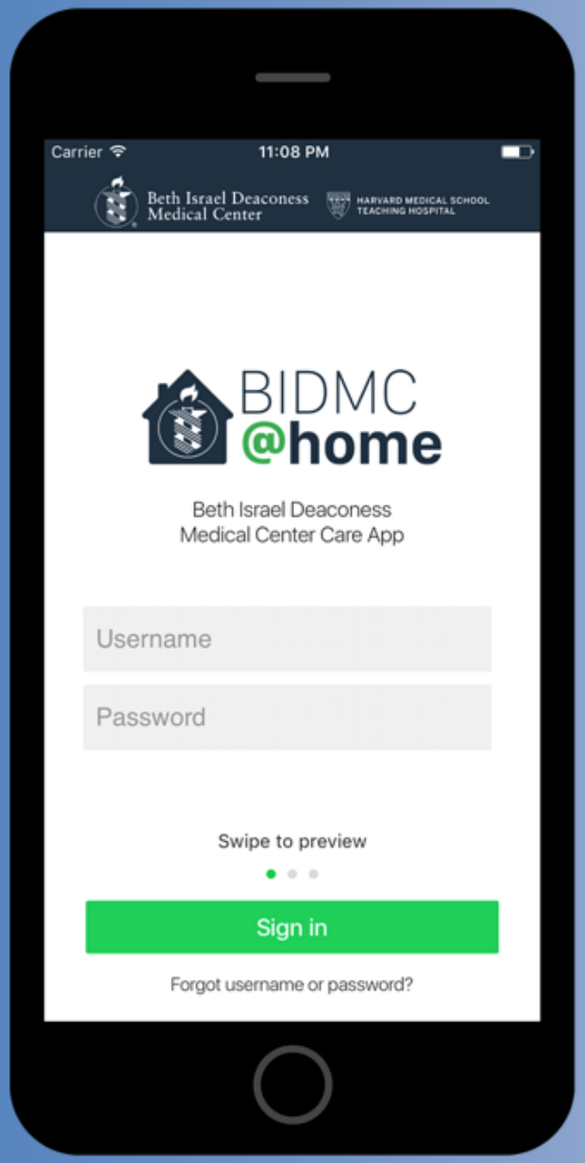
LiteImage Mobile

eyeRad

MyICU



BIDMC@Home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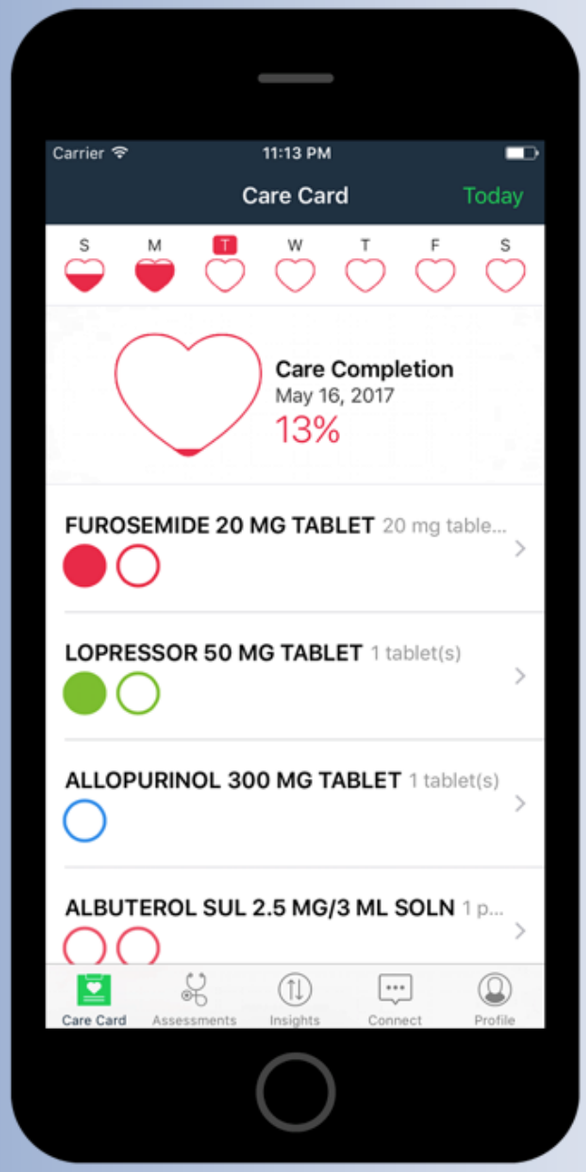
Beth Israel Deaconess Medical Center
HARVARD MEDICAL SCHOOL TEACHING HOSPITAL
BIDMC @home
Beth Israel Deaconess Medical Center Care App
Username
Password
Swipe to preview
Sign in
Forgot username or password?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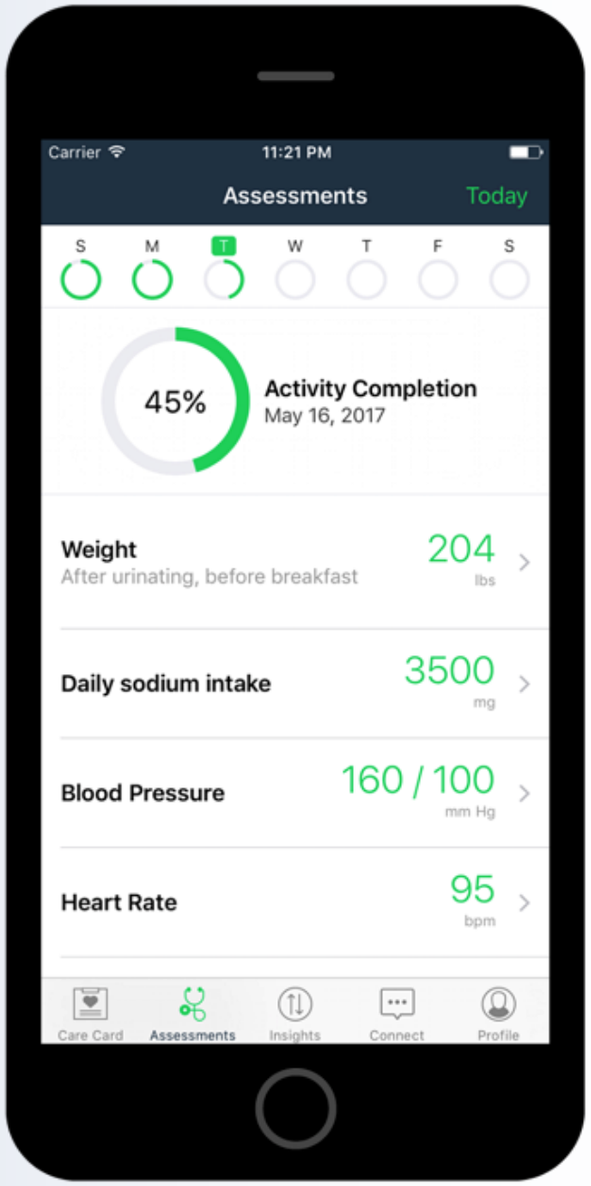
Care Card
Today
S M T W T F S
Care Completion
May 16, 2017
13%
FUROSEMIDE 20 MG TABLET 20 mg table...
LOPRESSOR 50 MG TABLET 1 tablet(s)
ALLOPURINOL 300 MG TABLET 1 tablet(s)
ALBUTEROL SUL 2.5 MG/3 ML SOLN 1 p...
Care Card
Assessments
Insights
Connect
Profile


Carrier
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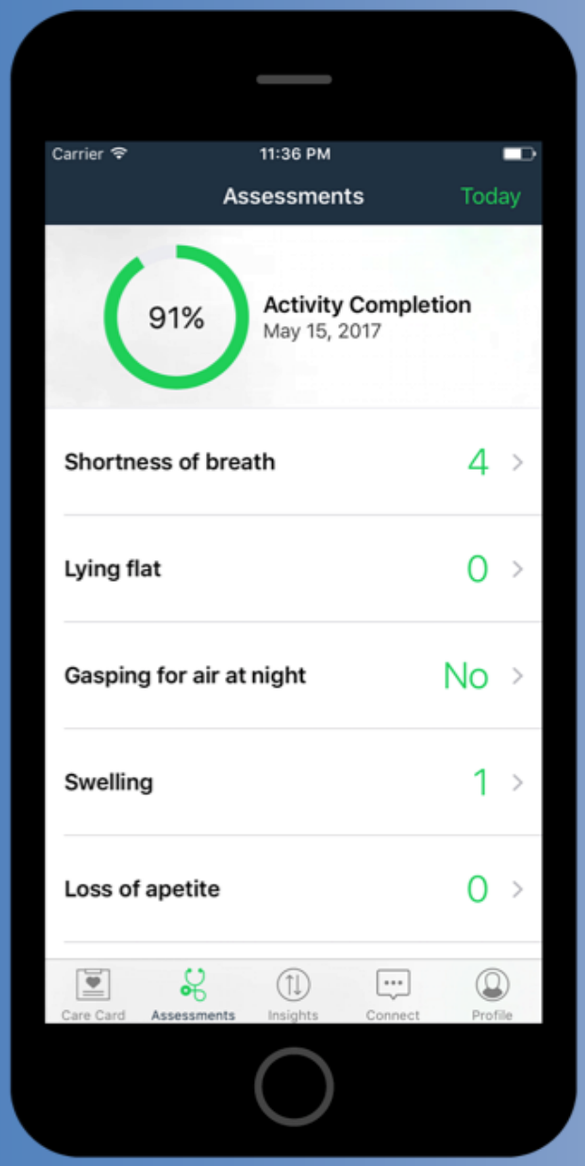
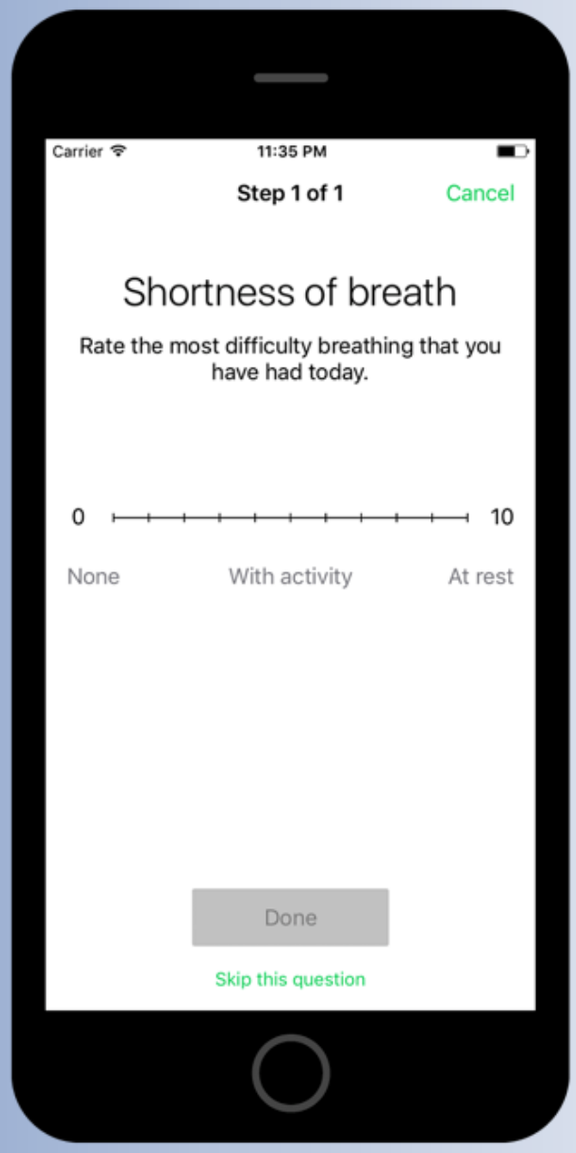
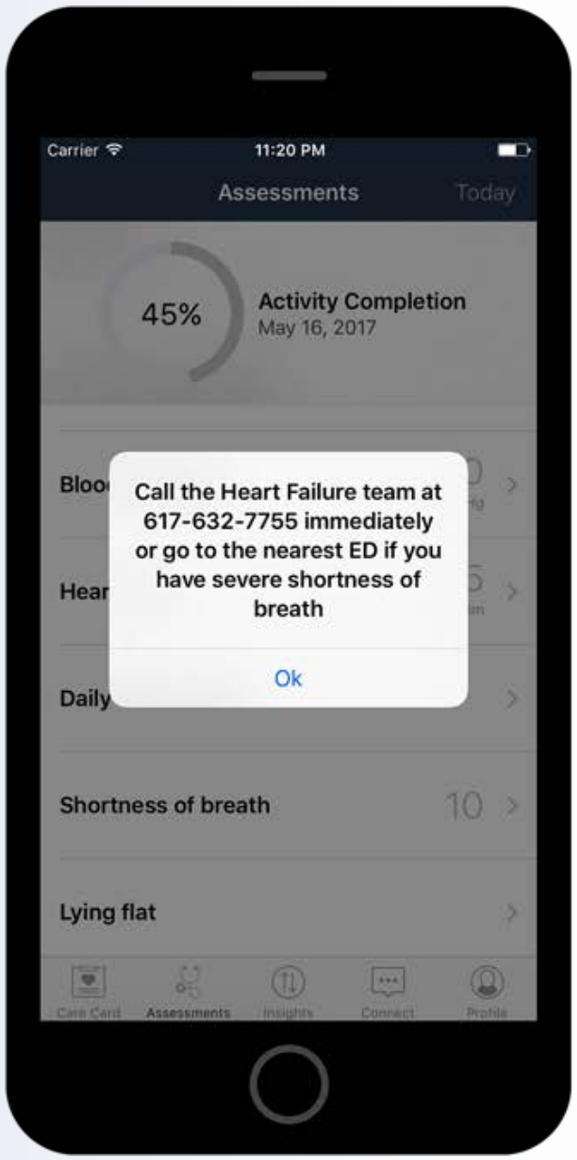
Assessments
Today
S M T W T F S
45%
Activity Completion
May 16, 2017
Weight
After urinating, before breakfast
204
lbs
Daily sodium intake
3500
mg
Blood Pressure
160 / 100
mm Hg
Heart Rate
95
bpm
Care Card
Assessments
Insights
Connect
Profile

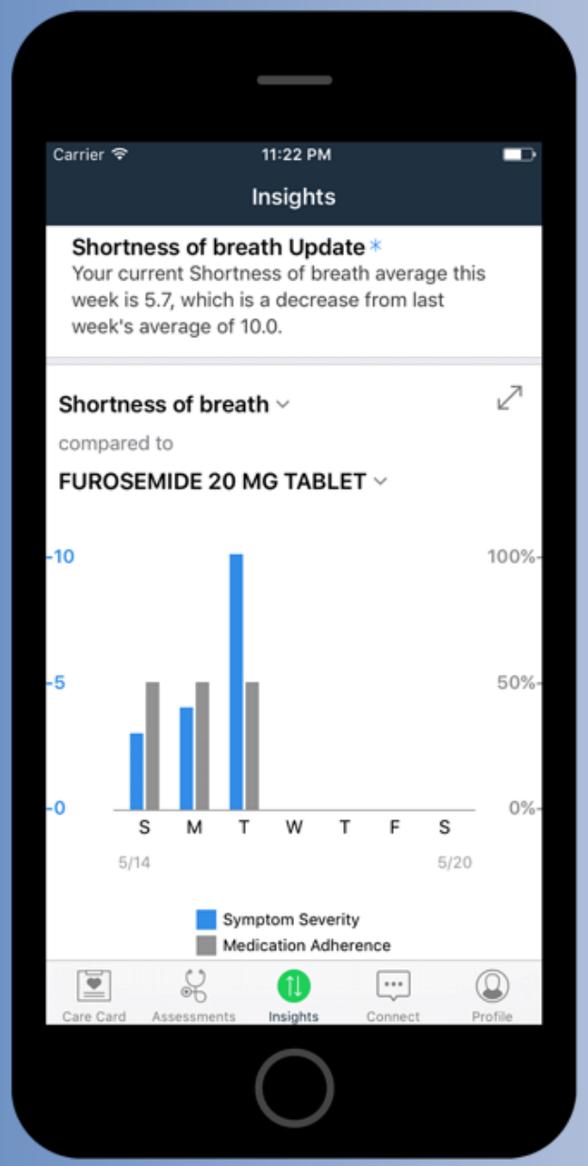
Monitoring to Management

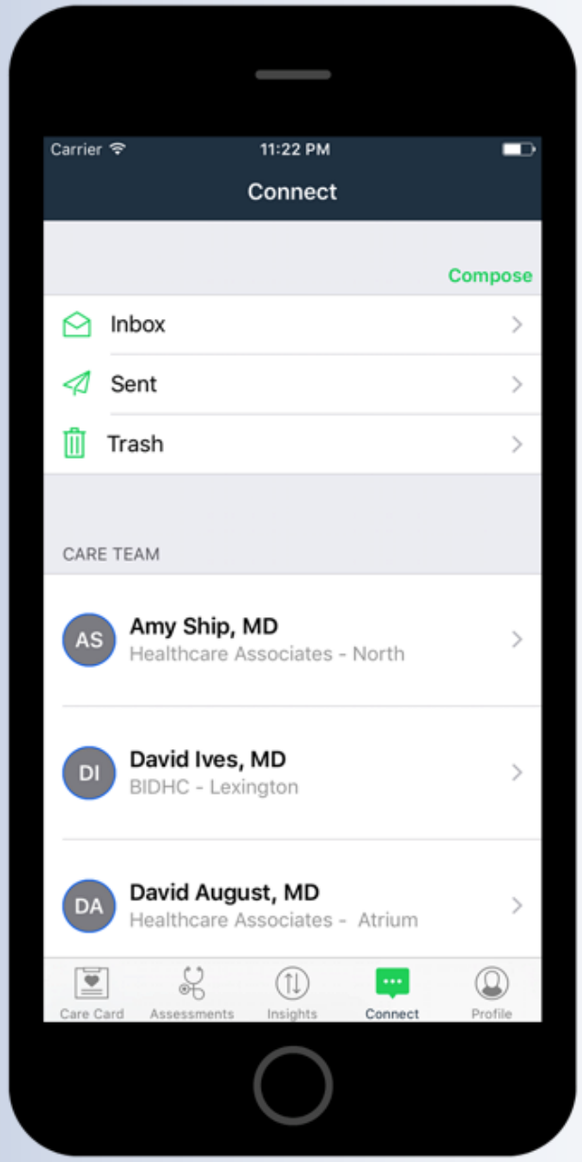




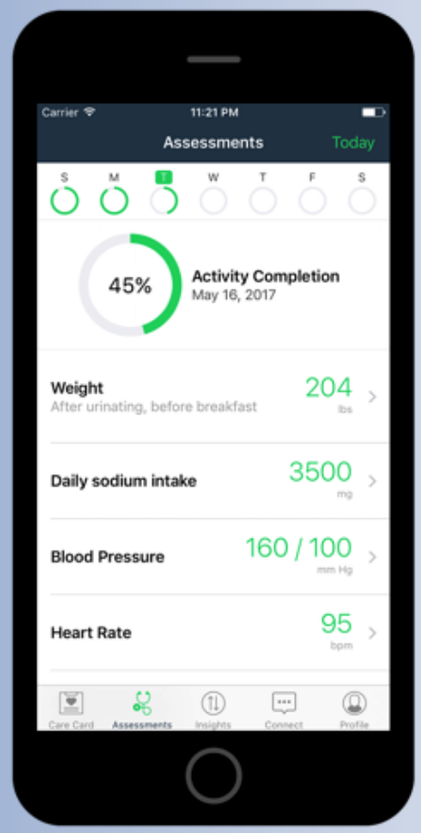


Insights and Messaging





Hub for Wearables and Internet of Things



Machine Learning Projects

Priority Projects	
1	Predict when a patient in the hospital will be discharged.
2	Predict no shows for ambulatory appointments.
3	Optimize operating rooms (OR) block allocation
Future Projects	
4	Predict at the time of discharge the probability that the patient will be re-admitted within 30 days and make prescriptive decisions in order to minimize the number
5	Minimize the overall length of stay at the hospital by studying the interaction between the Emergency Department (ED) and the main hospital at Beth Israel Deaconess Medical Center (BIDMC). Reduce number of patients that are re-admitted within 30 days.
6	Predict at the time of admission of a patient to the ED the probability that the patient will need an ICU bed and for how long
7	Apply methods developed by the PI in the area of personalized medicine for particular diseases; examples include but are not limited to diabetes, coronary heart disease, and breast cancer

Questions?

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- http://geekdoctor.blogspot.com