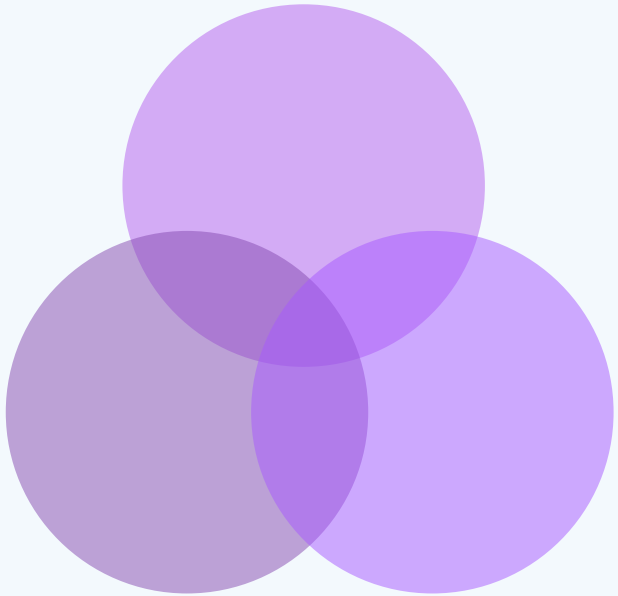
NYU Digital DesignLab + Mobile Health

mHealth: Capturing remote patient data and making it useful for clinicians

NYU Langone Health

mHealth is the convergence of technology, medicine, and human activity



mHealth can enhance the connection between patients and clinicians

How did this happen?

Content Overview

Enablers

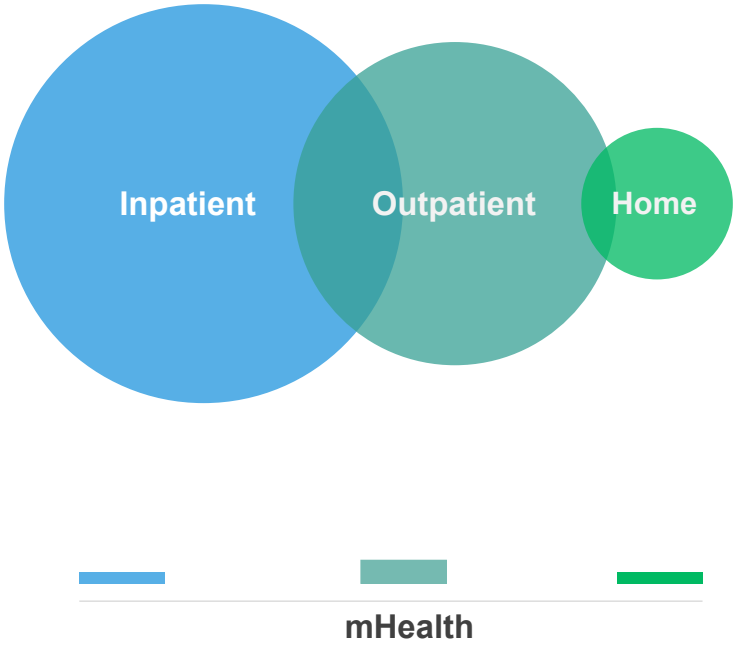
Convergence

Connected Care

Enablers

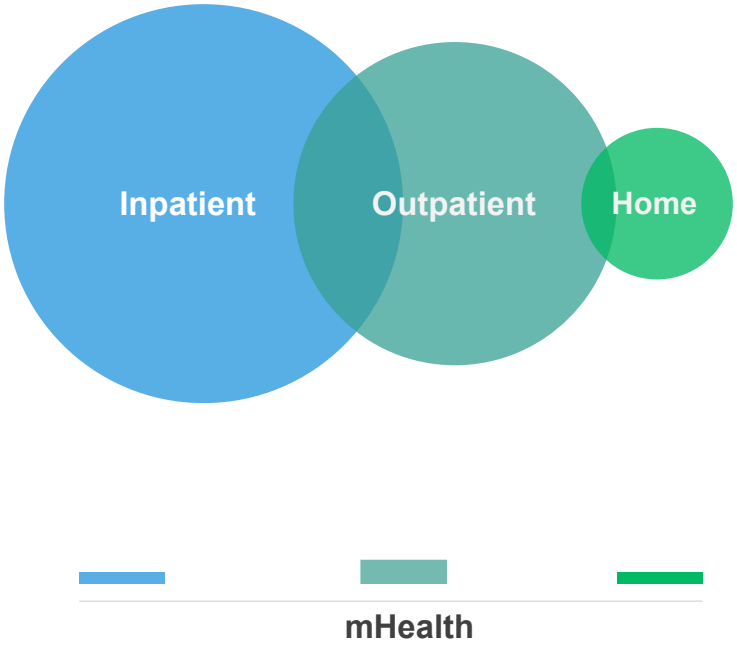
Enablers

Then

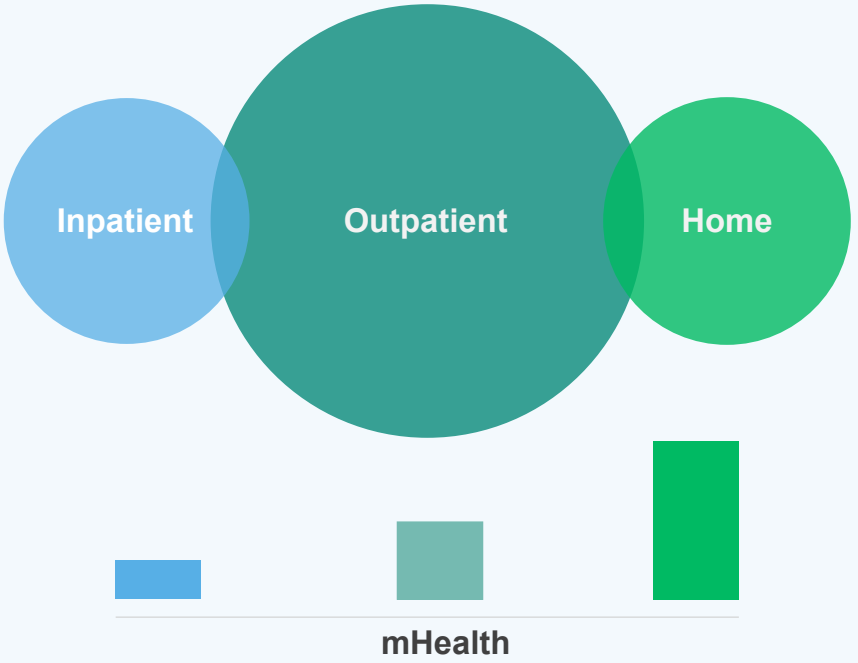


Enablers

Then



Now



Enablers

Advances in baseline technology

Access

Broadband infrastructure allows video communication

Smartphone penetration into global population allows app prescriptions

Wireless

Wifi, Bluetooth

Sensors

Geolocations

Smaller + Cheaper

Nanotechnology

Smaller devices

Cheaper and widely available component hardware

AI / ML / NLP

Artificial Intelligence predicts or suggests probable outcomes

Machine Learning Systems; White/Black Box

Voice/Natural Language Processing documentation & commands

AR / VR

Sims/medical education

Emerging clinical use cases

Enablers

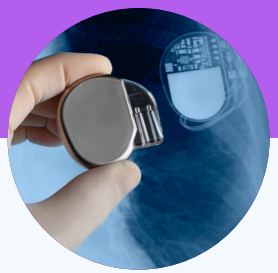
Advances in medical technology

Connected EHR

Patient portals

API Standards

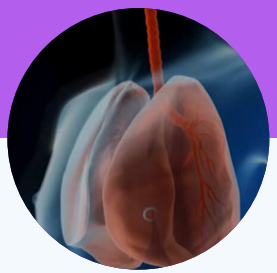
HealthKit



Medical Devices

Pacemakers

Insulin pumps



Complex care

Monitoring

Post-op

Rehab

Miniaturization

Remote Monitoring

Home diagnostics

Enablers

Societal shifts

Family structure

Less social support

Family structure atomized

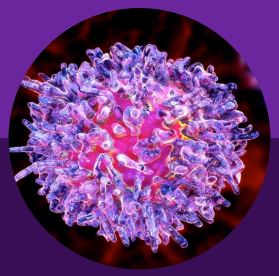
Decline of extended family as caregiver

Age shifts

Aging baby boom

Rise of digital natives

Rising comfort with asynchronous medical care



Rise of chronic disease

Obesity/diabetes

Cancer survival

Better treatments

Work-life Imbalance

Longer working hours

Longer commutes

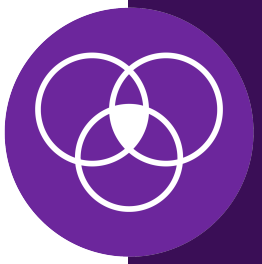
Rise of telework

Consumer Standards

Commodification/ corporatization of healthcare

Patient as consumer

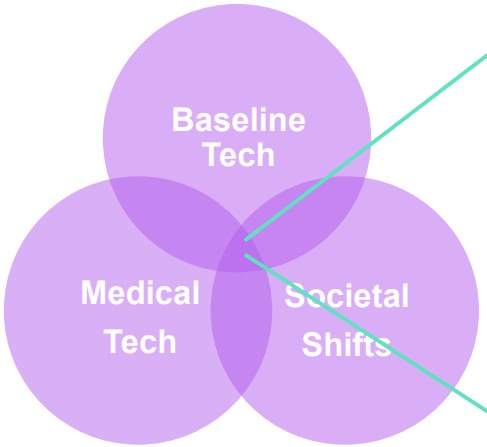
Rising expectations of digital experience



Convergence

Convergence

Convergence of Enablers Improves Patient-Clinician Relationships



In-Person Experience

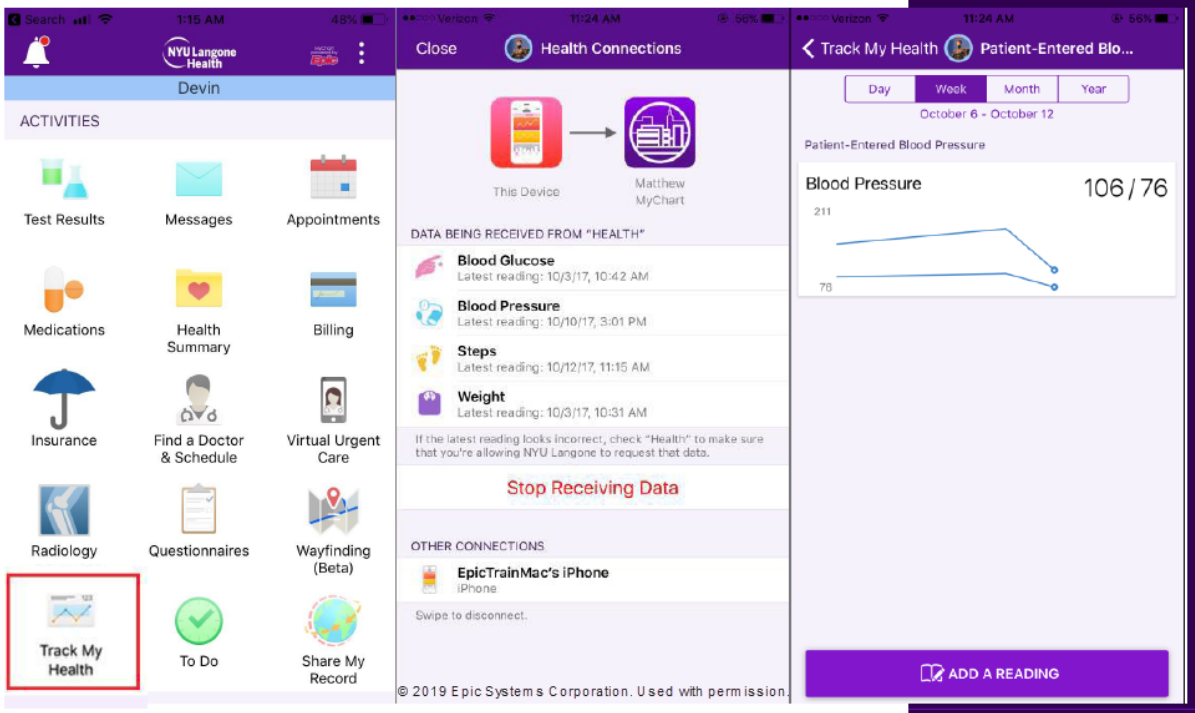
Remote Experience

Connected Care

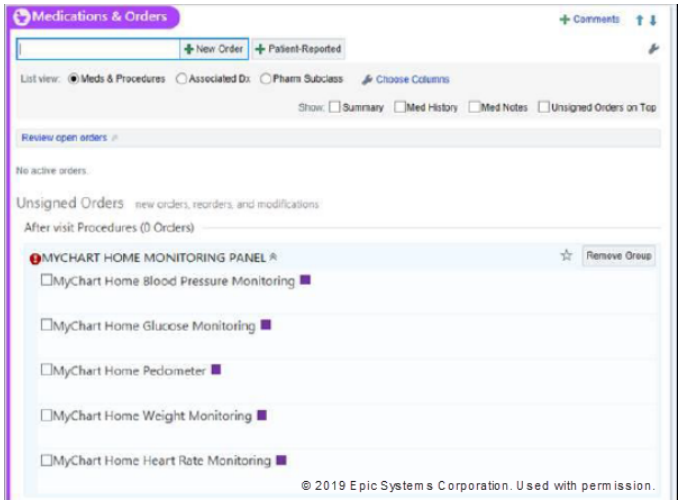
Connected Care
EHR integration today

Connected Care: EHR integration today

Patient View



Connected Care:
EHR integration today



Clinician View

Blood pressure (systolic and diastolic)

Heart Rate

Glucose

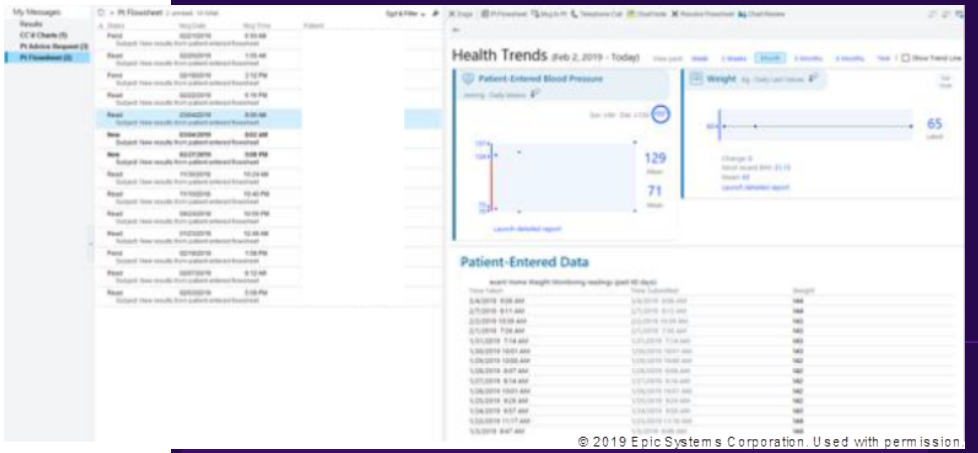
Weight

Steps

Spirometry

CGM

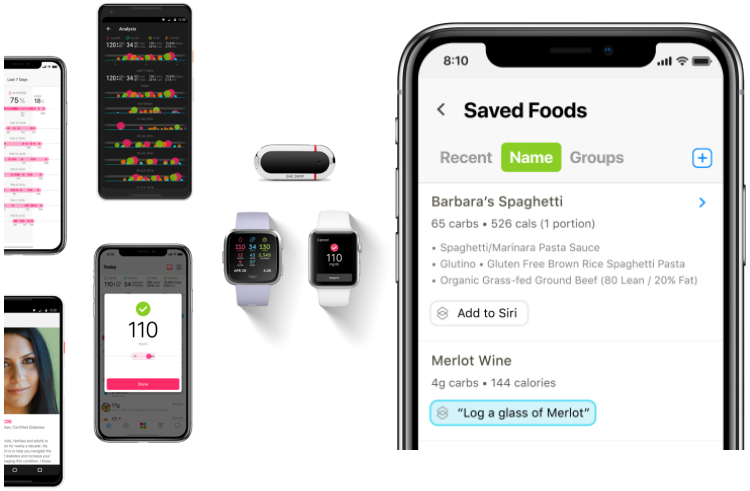
Insulin pump



Connected Care

Mobile Health & Remote Monitoring

Connected Care: mHealth + Remote Monitoring

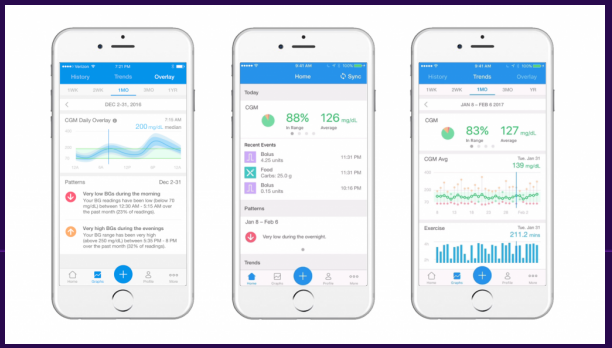


Diabetes

Track and share glucose

Online coaches

AI predictions



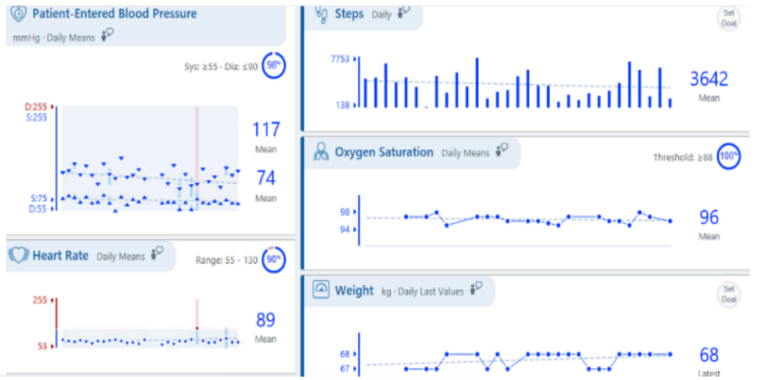
Connected Care: mHealth + Remote

Lung Transplant

1 year high risk of rejection

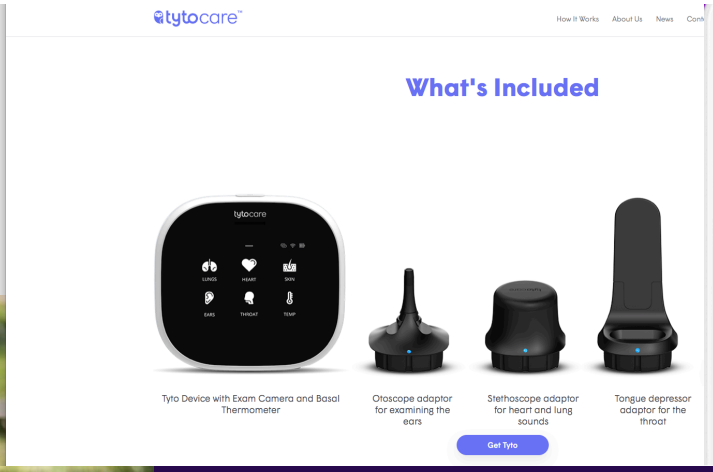
Historically required frequent in-person follow-up

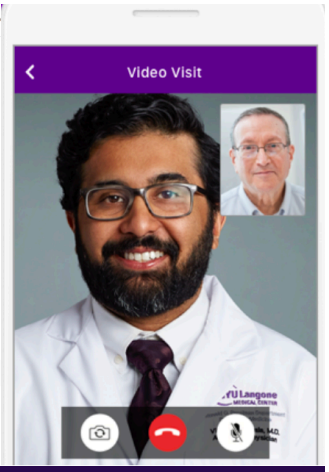
Harness 7+ home devices to manage remotely with telemedicine



NYU Langone Health

Connected Care: mHealth + Remote Monitoring





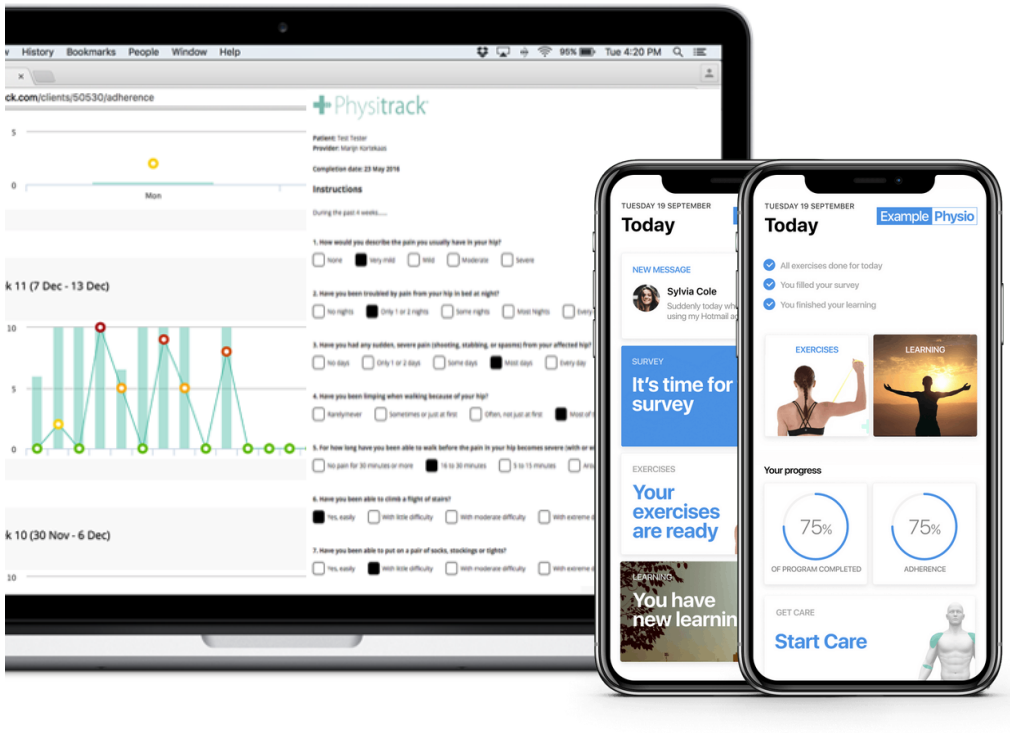
Urgent Care

https://www.tytocare.com/

Connected Care

Rehabilitation

Connected Care: Rehab

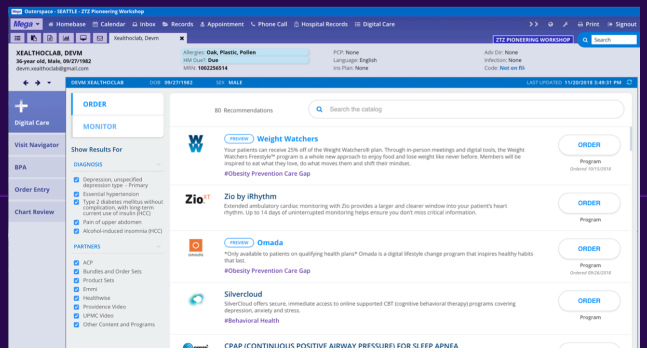


http://physitrack.com

Physitrack with Xealth Integration

Digitally prescribe (via EHR) custom home exercises for our occupational and physical therapy patients.

Patients to view videos and content from within NYU Langone Health MyChart.



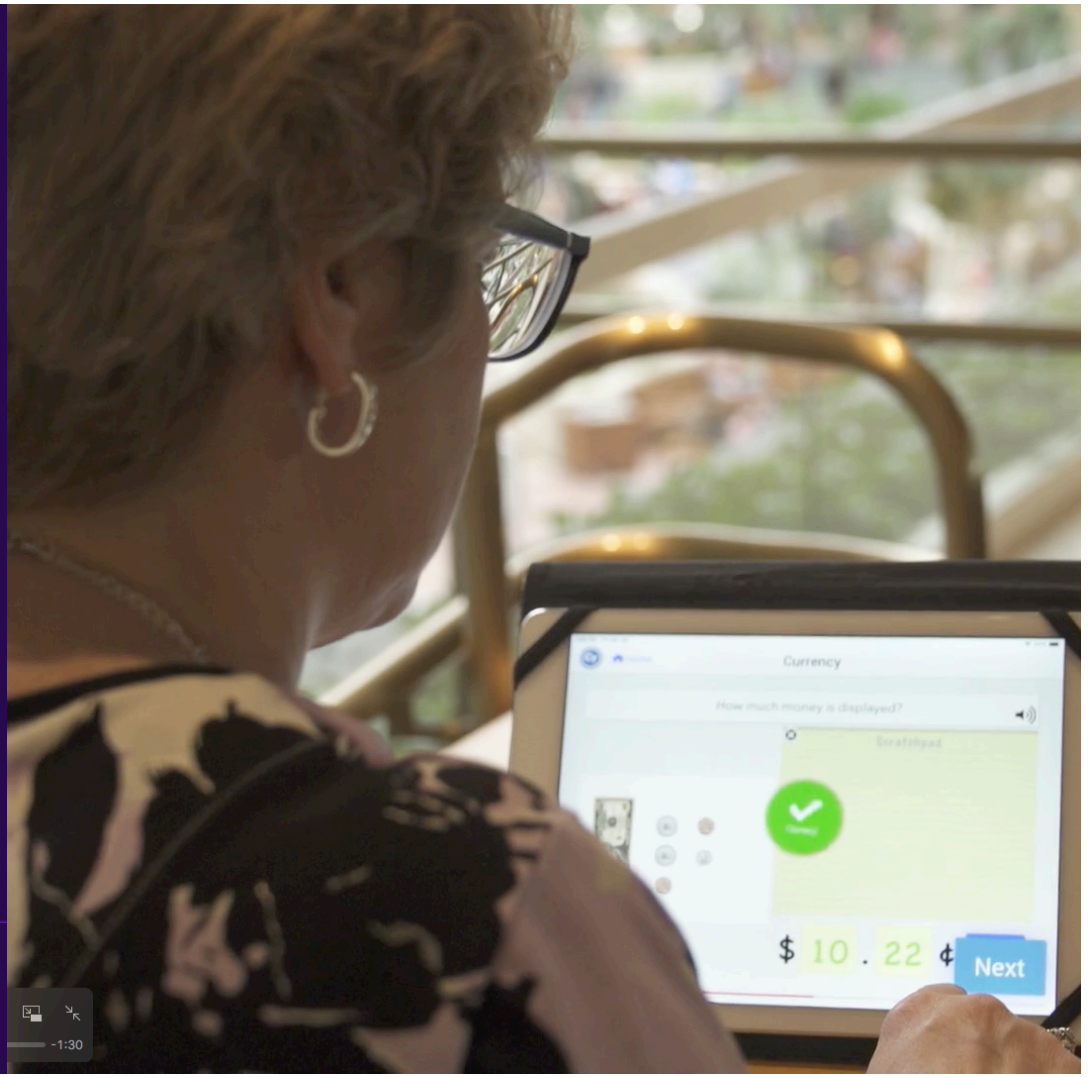
Connected Care: Rehab

Constant Therapy

Language therapy app for post-stroke patients

Rehab exercises prescribed by speech language pathologists, neurologists and occupational therapists

https://thelearningcorp.com/constant-therapy/



Connected Care

Aging Population

Connected Care: Aging Population

Canary Care

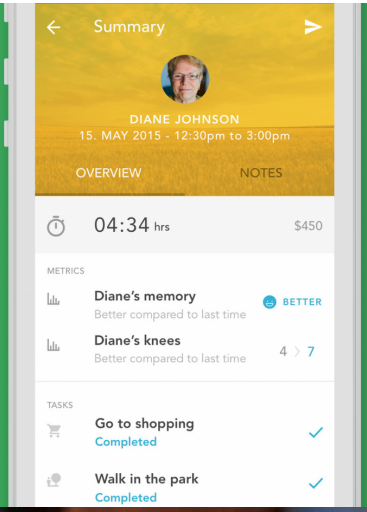
Senior care enbabled with home sensors

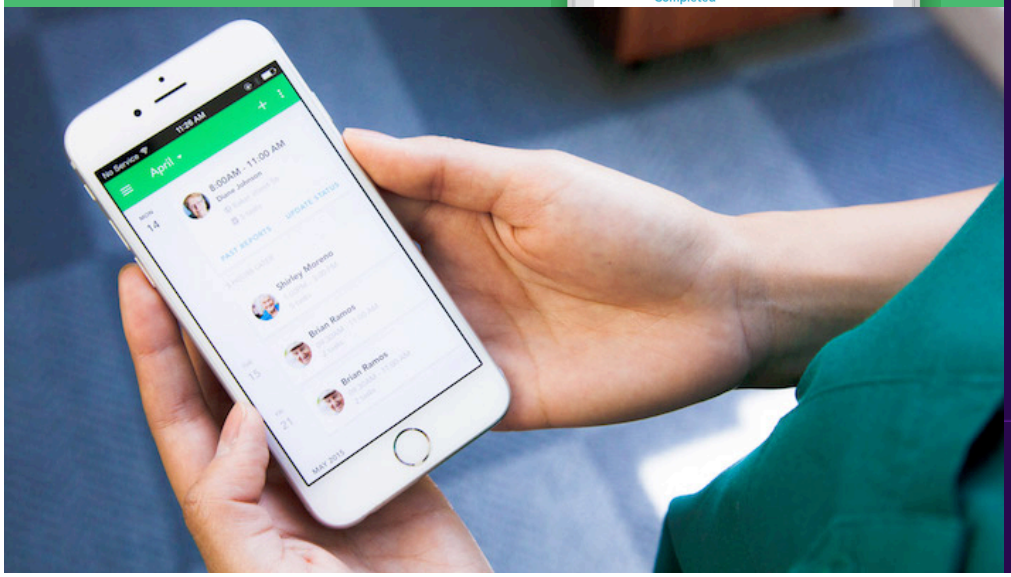
Door activity, temp, movement

Privacy aware (no mic or cameras, encryption)

https://www.canarycare.co.uk/

Connected Care: Aging Population





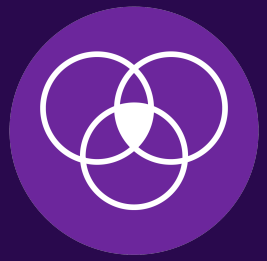
Kindly Care

Background-checked elderly caregiver, to receive full support throughout care needs, an app for managing tasks and schedules.

https://www.kindlycare.com

The Potential

Connected Data

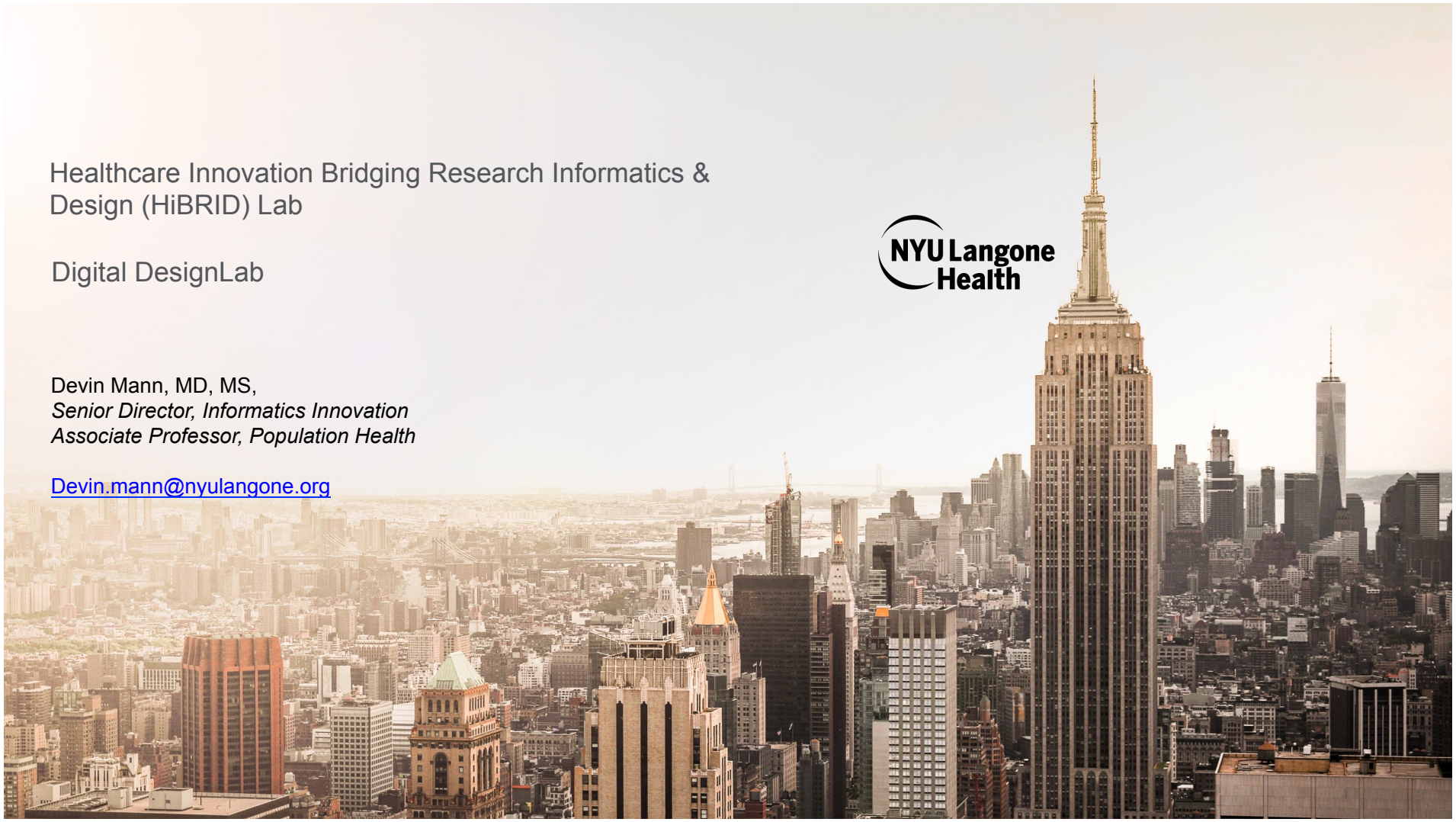


Personalized Treatment

Better Relationships

Healthcare Innovation Bridging Research Informatics & Design (HiBRID) Lab

Digital DesignLab



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