

Telfer Health Transformation Exchange
Ottawa

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Innovate Health, Not Health Care: The Mayo Clinic Experience

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We are missing the point



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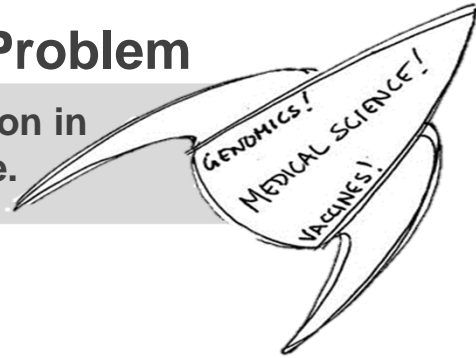
Instead of trying to improve the current system of health care, we need to consider how we create health for people.



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The Health Care Problem

Is not a lack of innovation in
the Science of Medicine.

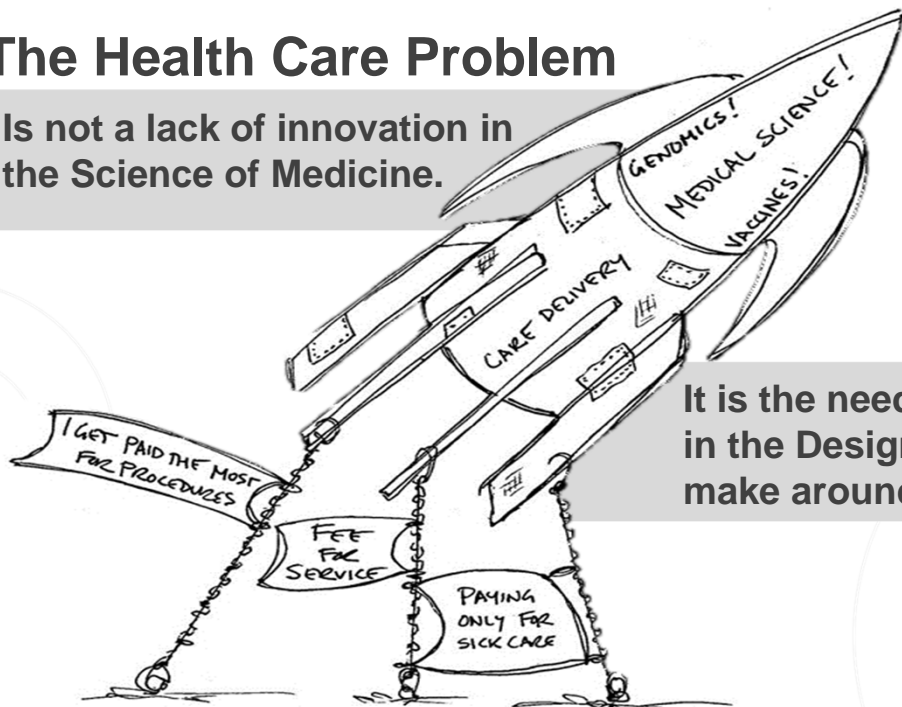


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The Health Care Problem

Is not a lack of innovation in
the Science of Medicine.



It is the need for innovation
in the Design Decisions we
make around Care Delivery.

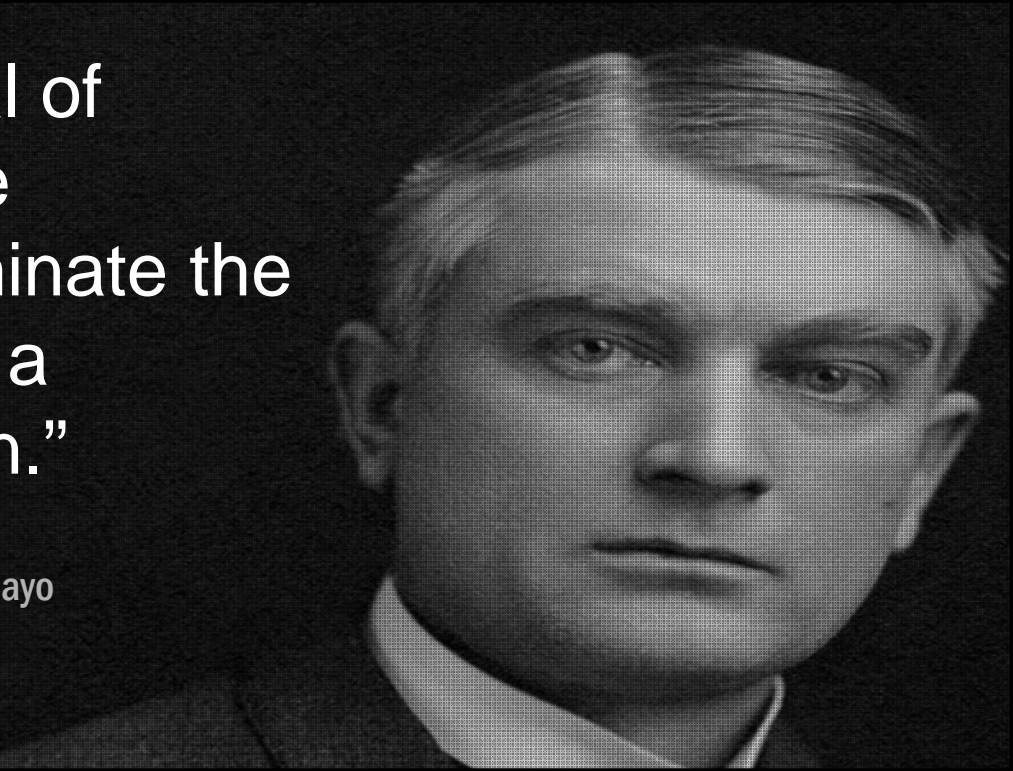


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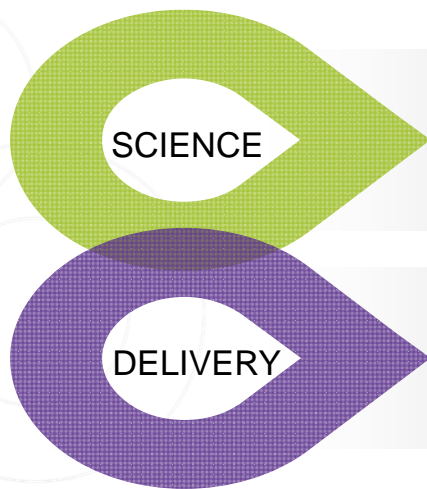
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“the ideal of
medicine
is to eliminate the
need for a
physician.”

–Dr. William W. Mayo



Health Care



20TH
CENTURY
Enormous
& disruptive

21ST
CENTURY
Continue &
accelerate

Minimal &
sustaining

The new
opportunity
area



CFI Mission

Transforming
the delivery and experience
of
health and health care



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CFI Definition of Innovation

Discovering and implementing
new ways to deliver
better health.



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“The mission of design thinking is to translate observations into insights and insights into services and products that will improve lives.
...design thinking is human-centered innovation...”

Tim Brown, Change by Design



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“Innovation that works is a disciplined process. The real frontier is to not think of it as just a creative exercise, but to think about it as being disciplined in using the right methods.”

Larry Keeley
CEO, Dublin



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“Design is a funny word. Some people think design means how it looks. But it’s really how it works.”

Steve Jobs



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Design is not about the finite and the absolute but more about a process by which people can move from the known to the unknown with confidence.



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THINK **BIG** start small **MOVE FAST**™

OUR APPROACH

We start with big ideas around people's needs, frame them as opportunities, define and refine the concept and move fast to validate tangible models that can be scaled.

At CFI, we use human-centered design principles to understand how people experience health and health care. We build meaningful products and services to meet people's needs.



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Always Be There For Me... To help me be well



**HEALTHY AGING AND
INDEPENDENT LIVING**
Exergaming for seniors

STUDENT TRANSITIONS APP
Enhancing the health and well-
being of ASU students



**POST-DISCHARGE
PATIENT GUIDE**
Improving patient
discharge materials



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When I need care



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Always Be There For Me... When I need care



eCONSULTS
(Synchronous and asynchronous)
Finding new, efficient
pathways of
communication



**HEALTH PERSONAS & THE
PATIENT JOURNEY**
Understanding how patients
see themselves



PROJECT MARS
Reducing outpatient
costs and improving
peoples' experiences



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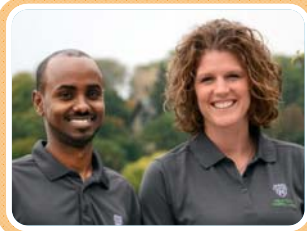
When I need to make a decision



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Always Be There For Me... When I need to make a decision



DIABETES

Managing
Type 2 diabetes
in everyday life

LIVING PAST CANCER

Moving past treatment and
preventing recurrence



USING MY INFORMATION

The value of self-tracking in
a prevention visit



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To help me think
and work differently



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Always Be There For Me...
To help me think and work differently



THE GARAGE

incubator for products and services with commercialization potential (w/ Mayo Clinic Ventures)



EUREKA

online tool for group ideation and implementation



TRANSFORM CONFERENCE

annual international conference

TOOLKIT

case studies, project stories and learning tools



CoDE: CONNECT, DESIGN, ENABLE

seed funding across the enterprise (10 awards/year; 12 months for idea generation to implementation)

INNOVATION CATALYST

certification in design thinking & innovation



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Mayo Clinic Center for Innovation

270 projects

600+ experiments

10,000+ contact hours with patients



we challenge assumptions and expose orthodoxies

Emily



End Goals

- Get my mom through her appointments / tests
- Finish the presentation for work
- Manage my stress so I don't go home burned-out
- Keep peace between my parents and siblings
- Document the doctor visits and plan mom's care
- Get home before my son's baseball game on Saturday
- Go running and do yoga tomorrow
- Bring home information about breast cancer

My age: 43

What I do for work: Financial Planning for large scale business

Where I live: Denver Colorado

My family: Husband, Terry and 3 kids (Sarah, Joshua and Steven)

What I like to do in my free time: Reading and bird watching with Terry

Needs

- To coordinate / manage my mom's care
- Work remotely while visiting MCR
- Relax during long wait times
- Make private / sensitive phone calls
- Navigate MCR with my mom in a wheelchair
- Stay in contact with my husband and kids
- Keep my siblings in the loop
- Keep up my daily yoga practice
- Talk to someone about what I am going through
- Find walking and running trails
- Eat healthy foods
- Do research on breast cancer for my mom and for myself

Influencers

Personal Acuity
Service Expectations
Prep to come to MCR
Length of stay
Desire for more than medical experience
Number of visits to MCR

Low



High

The Daughters

Narrative

I arrived in Rochester yesterday with my mom, Sarah, she is having a mammogram today. This will be her first follow-up after her surgery for cancer 3 months ago. My dad, George, was too afraid to come, besides he has trouble getting around. My three kids and husband are at home, hanging for themselves this week. (I hope they are doing okay, I think I will try to sleep with them later.) My mom is so nervous. I told her it would be fine, that she should stay positive. (Maybe we can take a walk around town later to get her mind off of the results she will get in a morning.) Mom is being so passive and disconnected from the family. (This makes my stay here even more alienating, are there support groups here for people like me? I know it's because she is worried, we are all worried. Tomorrow afternoon we will know either way. If the cancer is back (Not sure how I will handle that on my own with mom, I wish my sister could have come as well.) I will have to calm more down, make all the phone calls and keep my cool, for her. (I hope I never have to go through this, or just my kids through this.) Tonight we are going out to dinner, not sure what we will do after that, maybe go see a movie or read. (Not much to do downtown, maybe I will try to find a walking trail.) Yesterday we checked into the hotel and wandered around the clinic to make sure we know where to go. (The appointments are spread all over, I will need a wheelchair for even tomorrow.) I'm a financial planner and I have a presentation I need to finish up and get to my team at work. (I guess I'll just work on my laptop while I wait, or leave in my room.) Everytime something happens at once, (I really need to relax.) My daughter loaded up my iPad with island music, she is such a thoughtful girl. I'm disappointed I will miss her volleyball game tonight, maybe I will call her now and wish her good luck. (How where was the parent cafeteria? When they had better, healthier food, although their food is like comfort food for me, and mom doesn't seem to mind.)

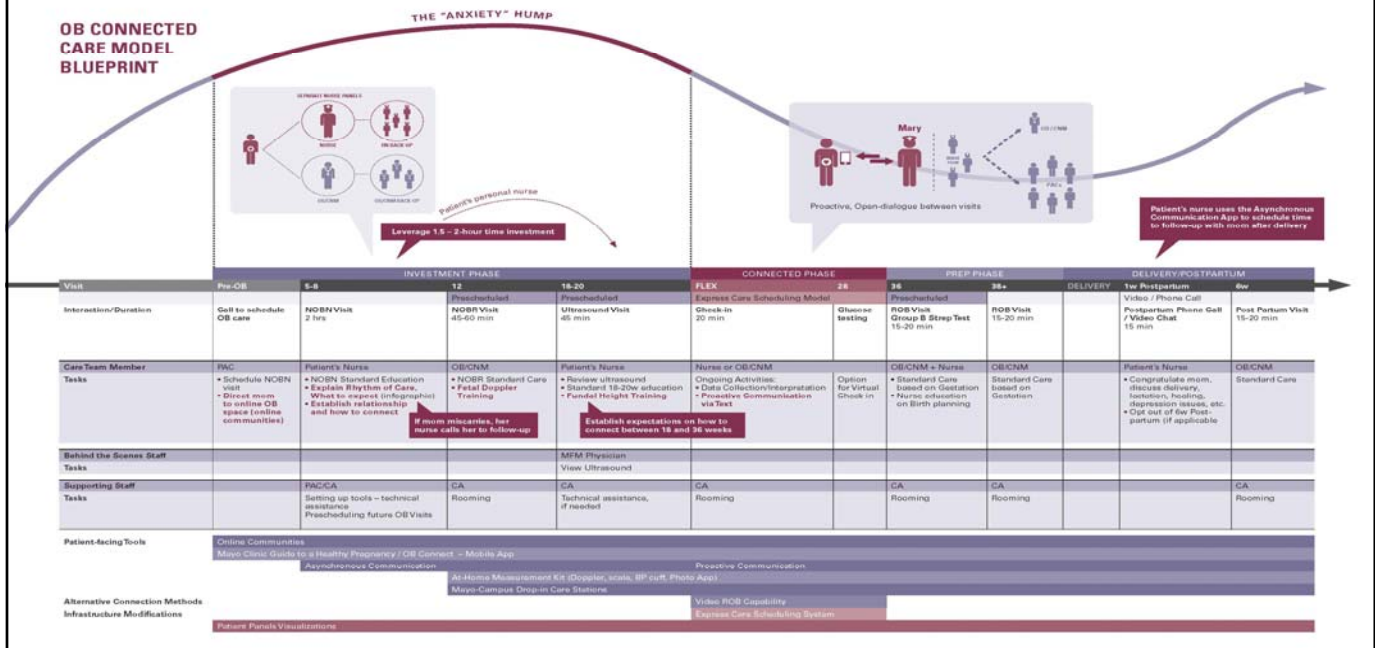
Character Diamond: Provides Tone, Emotion and suggests top level Attributes.



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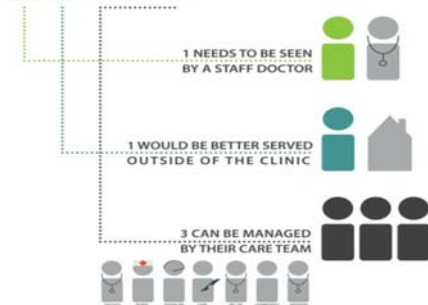
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...that challenge the status quo



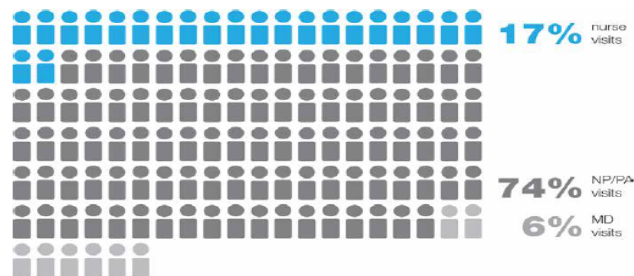
we focus on shifts

OF EVERY 5 PATIENTS SEEN IN THE CLINIC TODAY



WHO NEEDS TO SEE THE PATIENT

Running Optimized Care Team pilots at Kasson Clinic increases the Care Team's flexibility to operate at the top of each member's licensure. Finding significant opportunities to optimize roles and reduce total cost of care through improved integration of Nurse Practitioners and Care Team RNs.



76% of staff reported that team workflow improved

80% were confident in the care delivered by the team

96% of patients reported all of their needs were met with same or higher satisfaction

Asking "who really needs to see an MD?" against a sample of appointments in the current model



1954

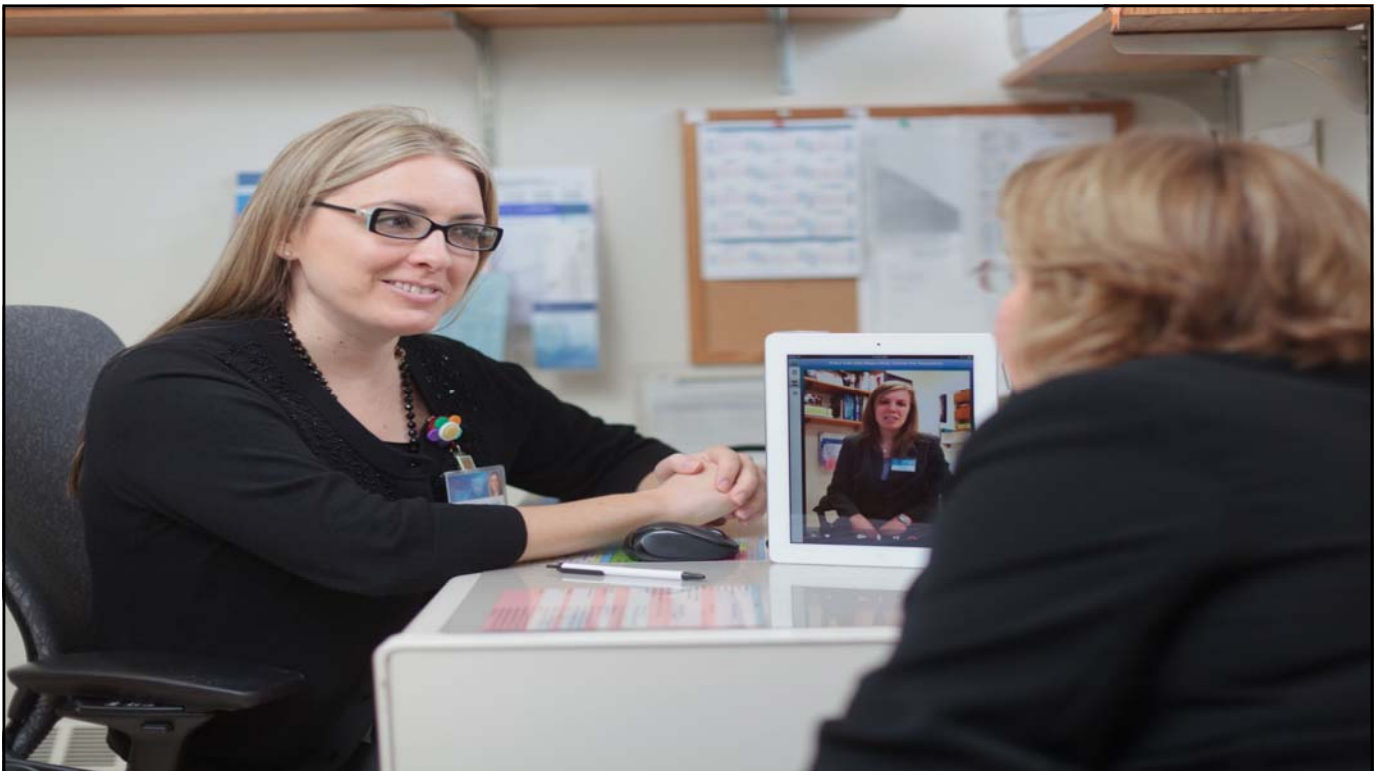


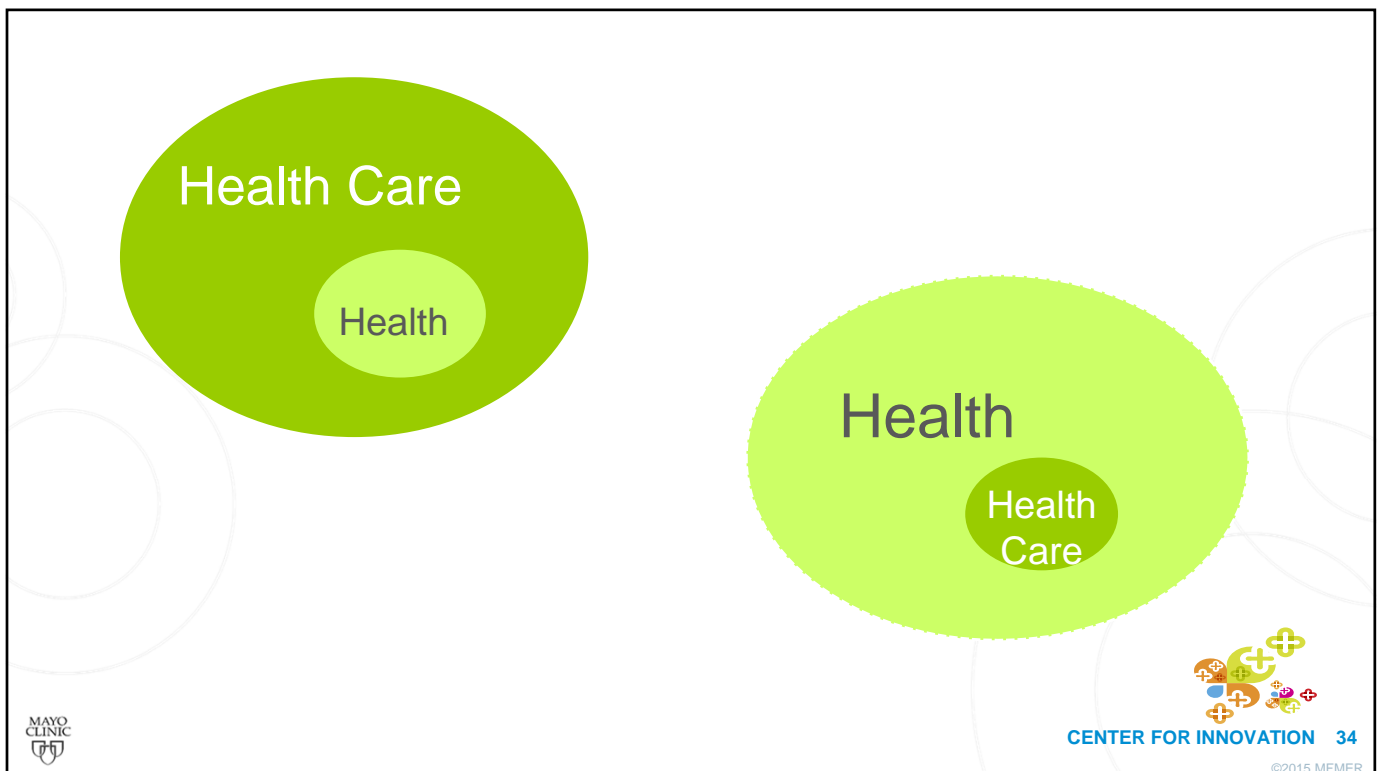
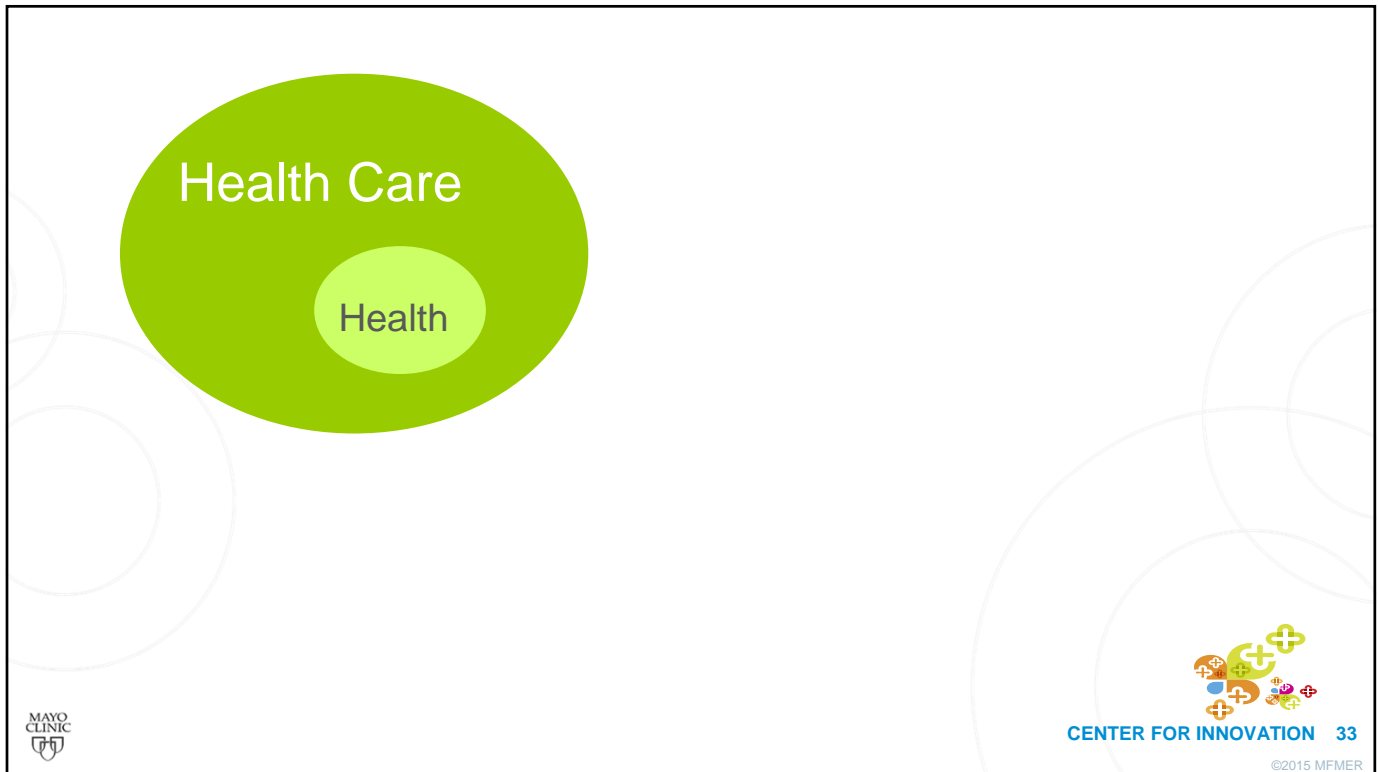
2004

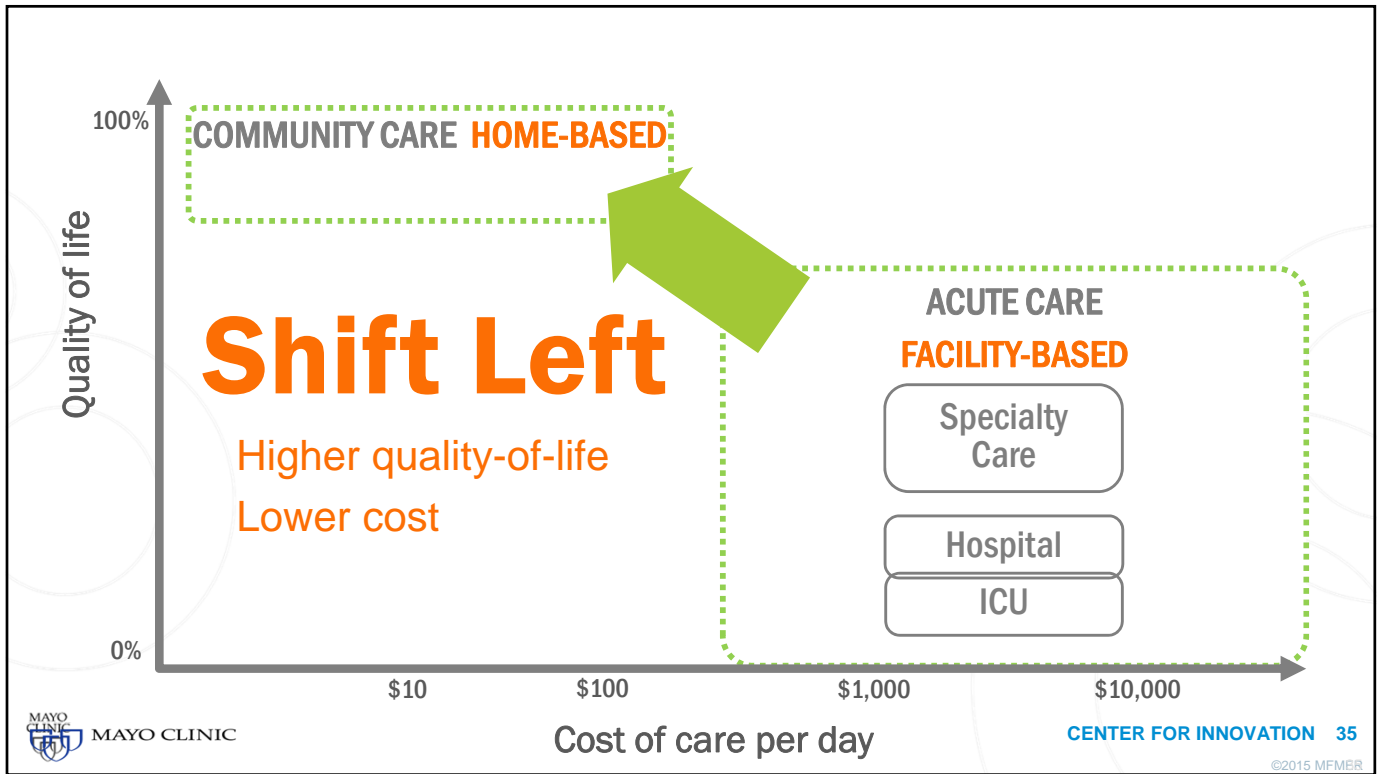


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The Quantified Self

We are increasingly treating our phones as self-tracking devices

40% of smartphone owners are interested in logging their physical activities

Almost 50% want to use wristbands, rings, patches, contacts or glasses to collect personal data

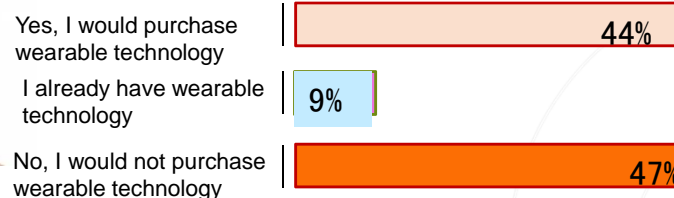


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Wearable Technology

When asked if they would purchase wearable technology, respondents are divided: 47% say no and 44% say yes. Only 9% have already purchased wearable technology, such as a smart watch, wristband or eyewear.



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**Always Be There For Me
Help Me Understand My
Health and Make the Best
Decisions about my Health
and Health Care**



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**People, not
Patients
Health, not
Health Care**



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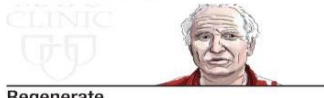
People's Experience of Health: Key Insights



Explore
Creating not consuming



Reinforce
Revealing inner strength



Regenerate
It's never too late



Vibrancy
Aging with confidence

Health decisions are not often “rational”

- Rather than being active, decisions tend to revert to the default or habitual.
- Fear of cost compounds a tendency that many people have to put off health concerns.
- People create their own narratives about cause and effect.
- Human nature to cope - compensate, adapt, normalize - works against people's potential for health.

CFI HEALTH PERSPECTIVES | DEC 2014 | p 41

People's Experience of Health: Key Insights



Explore
Creating not consuming



Reinforce
Revealing inner strength



Regenerate
It's never too late



Vibrancy
Aging with confidence

Health often manifests as an indirect investment

- People more readily invest in the health of others rather than in their own health.
- People more easily talk about the health of others rather than their own health.

CFI HEALTH PERSPECTIVES | DEC 2014 | p 42

People's Experience of Health: **Key Insights**



Explore
Creating not consuming



Reinforce
Revealing inner strength



Regenerate
It's never too late



Vibrancy
Aging with confidence

Health tends to be an abstract idea

- Being labeled affects behavior; there is pressure to conform to social norms or expected roles.
- Positioning “health” as something that can be sold has contributed to an emphasis on “looking healthy” rather than understanding the principles of health.
- When the profession of medicine spills over into a professionalization of health, it can affect the capacity and confidence for personal health and stretch medical resources.

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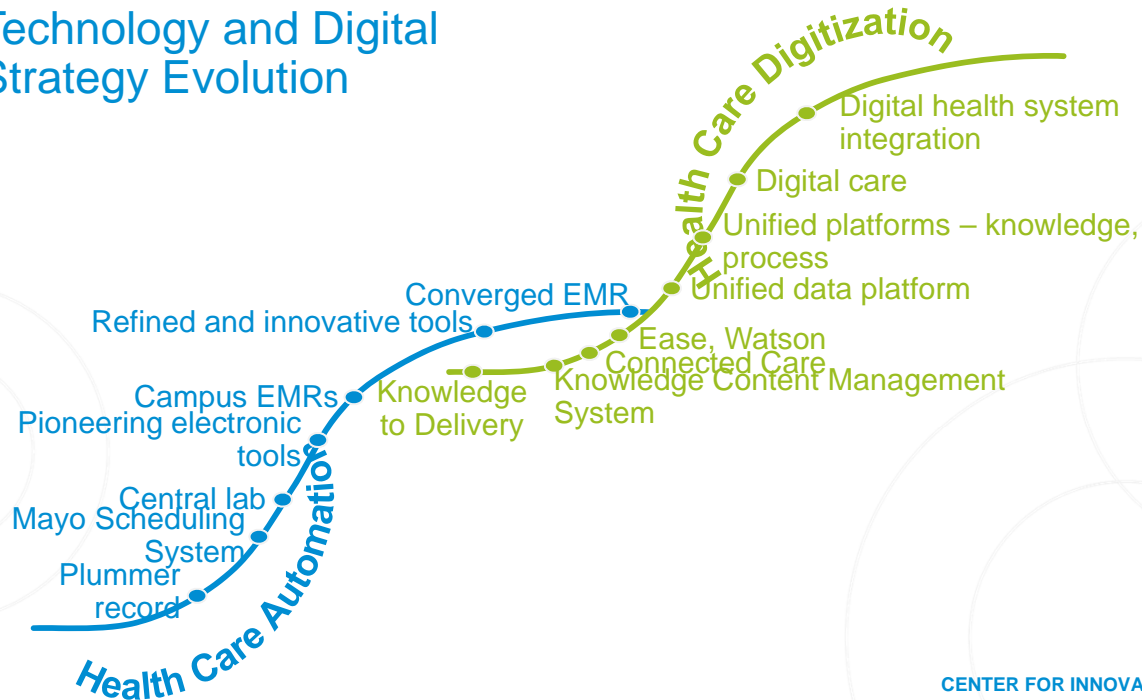
Mayo Clinic is developing a portfolio
of services to fulfill unmet needs
of patients, providers and health consumers



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Technology and Digital Strategy Evolution



Connected Care

- Patient Portal
 - Mobile Patient App
 - HIE
 - Pre-visit information
 - Notes, labs, radiology and path reports
 - Secure messaging
- Internal eConsults
- External eConsults
- Telestroke
- eTumor boards
- eICU
- eDermatology
- eEmergency Dept



To create an **INTELLIGENT ADAPTABLE SYSTEM** to provide
an **UNPARALLELED EXPERIENCE** to meet the needs of people.

KNOW THE PERSON

TO ALLOW US TO
UNDERSTAND PEOPLE

PROVIDE

RIGHT SERVICE, RIGHT
PLACE, RIGHT TIME

TO MATCH NEED
TO SERVICES

OPTIMIZE

SERVICES & EXPERIENCE

TO DRIVE OPTIMAL
PERFORMANCE & EXPERIENCE

CREATE

AWARENESS & FLEXIBILITY

TO RESPOND & ADAPT TO
CHANGING VARIABLES

Upstream Health Benefits

Self tracking can help create a space within the clinical setting for a more participatory model.

"Our approach was -- do everything like you normally would, if we're doing something wrong we'll hear about it." – Patient

"We learn what is best for you. What we're doing with tracking is we monitor trends, what's going on and where the opportunities are for you to improve." - RN

MEDICAL MODEL FOR TREATMENT

Assessment
Diagnosis
Evaluative
Treatment
Prescription

Patients are accustomed to being passive recipients of care.

Care providers are accustomed to monitoring patients and directing the plan of care.



PARTICIPATORY MODEL FOR BEHAVIOR CHANGE

Self-analysis
Participatory
Collaborative
Self-directed
Conversation

Patients are invited and encouraged to engage on their own terms.

Patients develop their own plans using expert advice and knowledge.



Data is cheap,
context and relevance is priceless



Upstream Health Benefits of Pre-Visit Self-Tracking

Within a prevention & wellness use case, patient engagement and self-awareness are the primary value

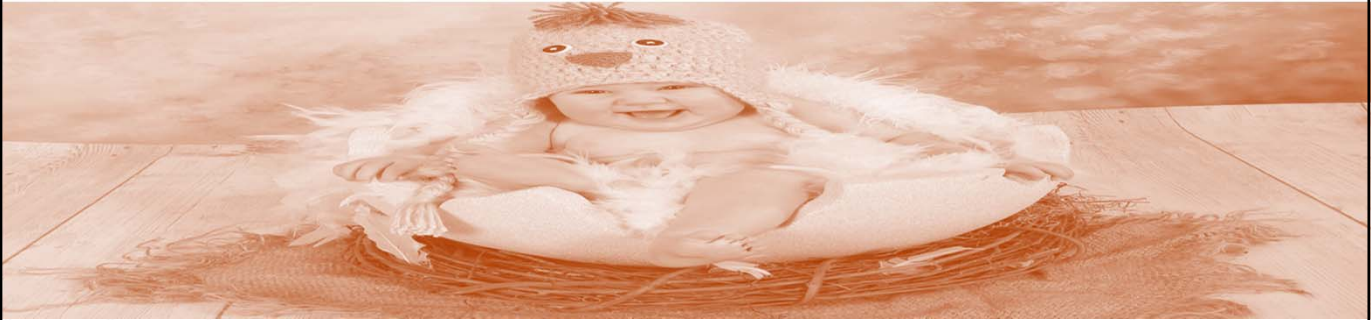
"When I knew you were looking I did walk more and kept better records of it... When I keep better records, I do a better job of walking." – Patient

"I certainly believe in the benefits of self-tracking and at the very least, find it helpful to understand about the patient's readiness to change." – Care team member

"It's mind-blowing how many calories you get eating out, mind-blowing! You change you mind in what you're ordering, that's for sure." – Patient



The OB NEST experience



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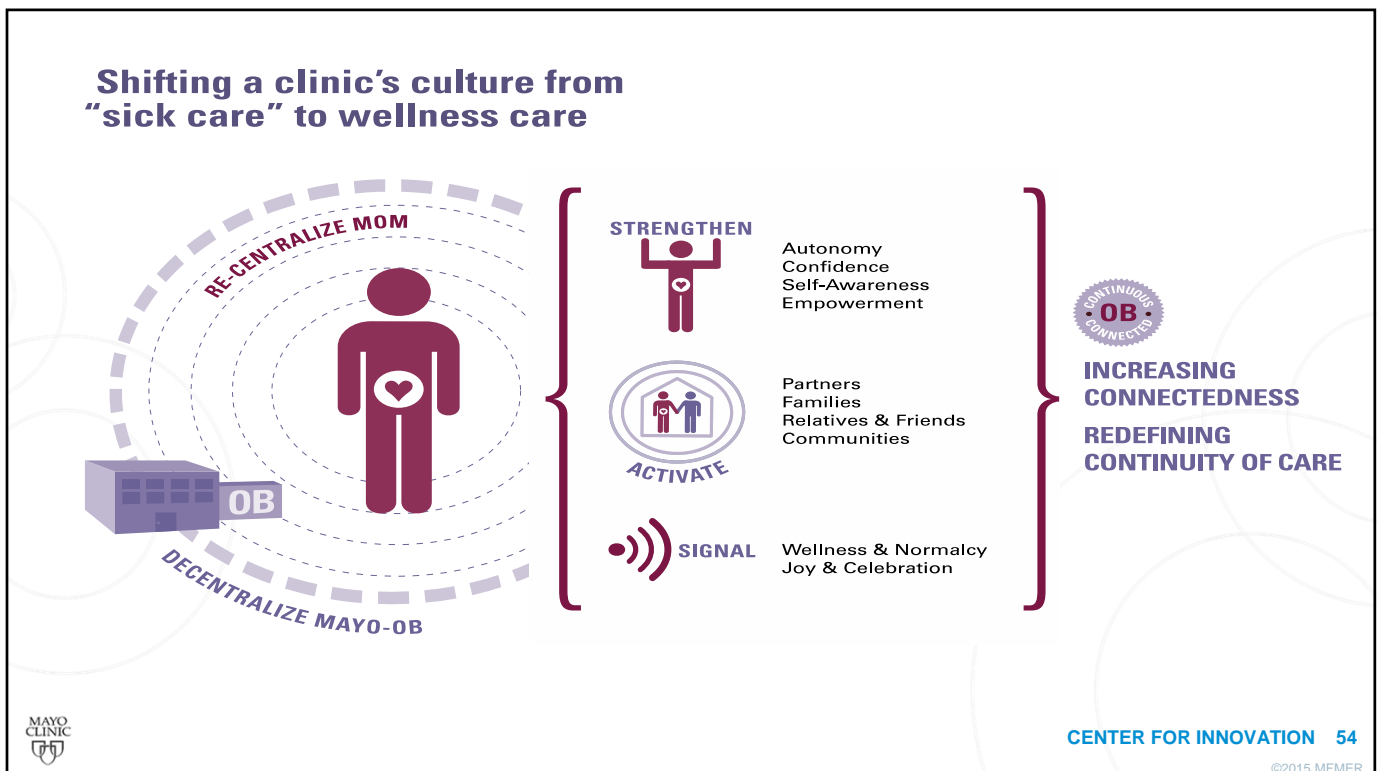
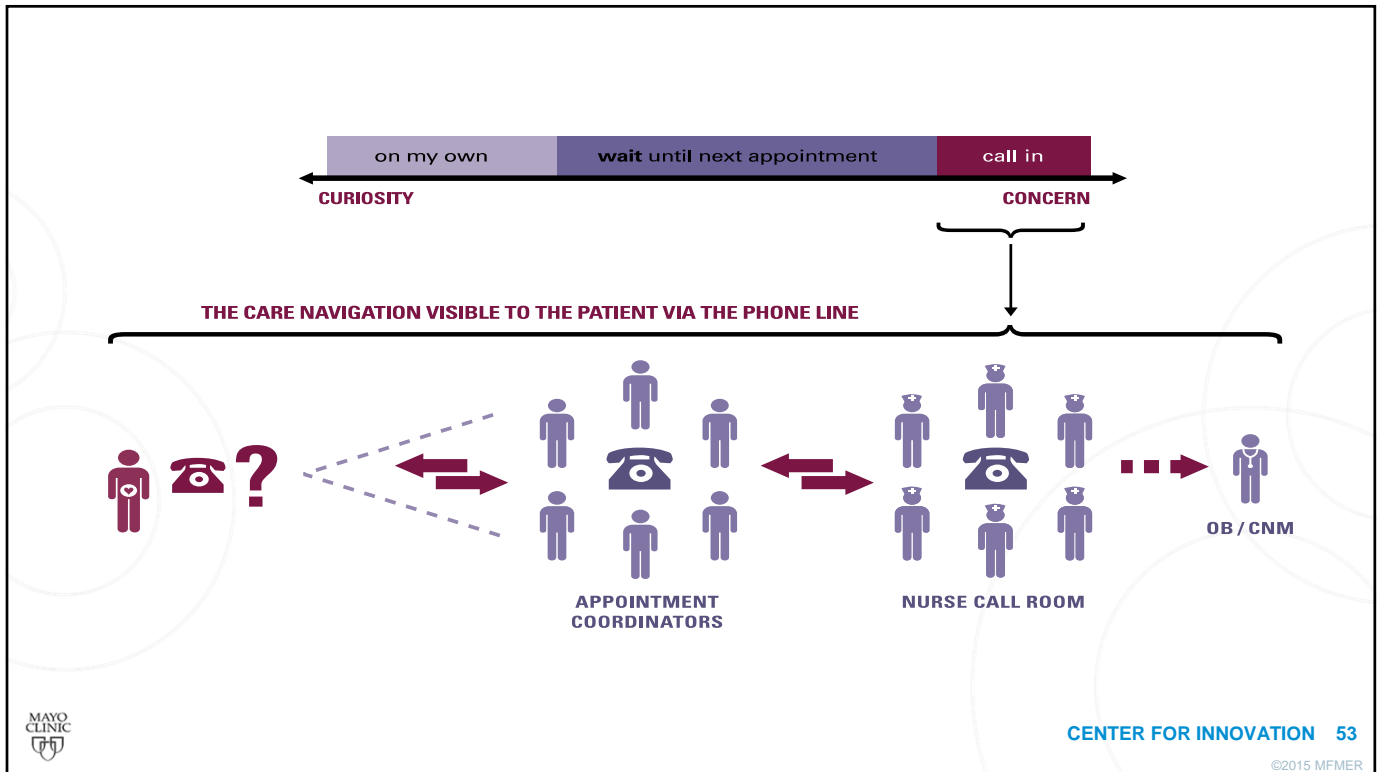
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The range of issues women have between visits



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OB Nest when compared to usual care

Quality

- Significantly improved patients' satisfaction with care
- Significantly reduced maternal stress
- Maintained perceived quality of care

Safety

Maintained maternal / neonatal safety outcomes

Utilization/Cost

- Significantly reduced prenatal clinic visits
- Increased connectivity time with the nurse



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"I didn't know I even had a nurse and after the app I got to know her better."

Teenage Participant



Asthma Connected Care mHealth

70%

the app helped me control my asthma

40%

reduction in care teams time per patient

Results Published in CIN: Computers, Informatics, Nursing & June 2013

Need: Operational home

Incorporated


- + Assessment questionnaire
- + Personal care plan
- + Educational materials (push/pull capability)
- + Text based communication with their care team
- + Provider dashboard showing each patient




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Patient Centered Care Plan – Patient Side


 Paul Nordlund looking at Justin Rayl

 Log Out
 Patient: **Justin Rayl**

PRIORITY CONCERNS

Have a plan for getting better sleep
change priority concern

Melatonin (can purchase at health food stores)
 Try taking one tablet of melatonin 1 hour before bedtime

- ☐ This is working for me
- ☐ This is not working for me
- ☐ I have a question about this

Routines
 Get in the habit of having a consistent bedtime routine

- ☐ This is working for me
- ☐ This is not working for me
- ☐ I have a question about this

Work on keeping my anxiety under control
change priority concern

Yoga
 Look online for opportunities in the community to attend yoga classes


- ☐ This is working for me
- ☐ This is not working for me
- ☐ I have a question about this


Be in the moment
 Be aware of your thoughts; tackle one thing at a time

- ☐ This is working for me
- ☐ This is not working for me
- ☐ I have a question about this

MY

PRIORITY CONCERNS
MEDICATIONS
CALENDAR
MESSAGES
CARE TEAM
PROFILE

 **SEND MESSAGE**
 Message your care team anytime



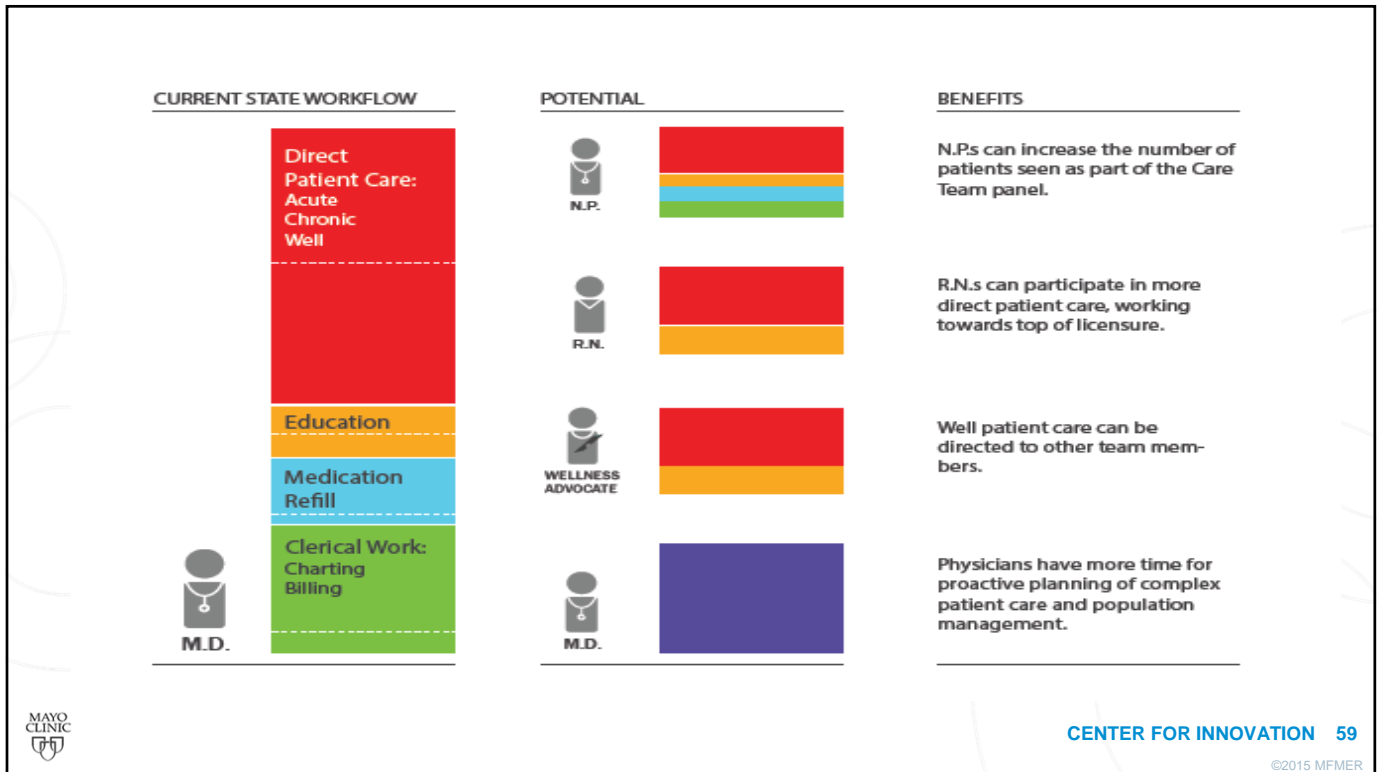
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Provider Experience Can be Better



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Augmedix-Technology enabled physician work

- Technology application for Google Glass
- Providers work with a remote scribe



Tools for Surgical Excellence



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Provider Workflow

Provider Workflow / Effort	Current EMR Provider Workflow (caring for 9 patients)	New PoC Tool (mobile) Provider Workflow (caring for 9 patients)
Information Systems	11+	1
Use of Paper Intermediates	5+	0
Manual Pathway/ Complication Calculations	>36	0
Screen Transitions (inter-application)	237 (43)	25 (0)
Mouse Clicks	619	25
Estimated Cognitive Load Index	1,623	75 (<5% of current)
Time (minutes)	30:14 (95% on navigation)	< 4:30 (95% on clinical)

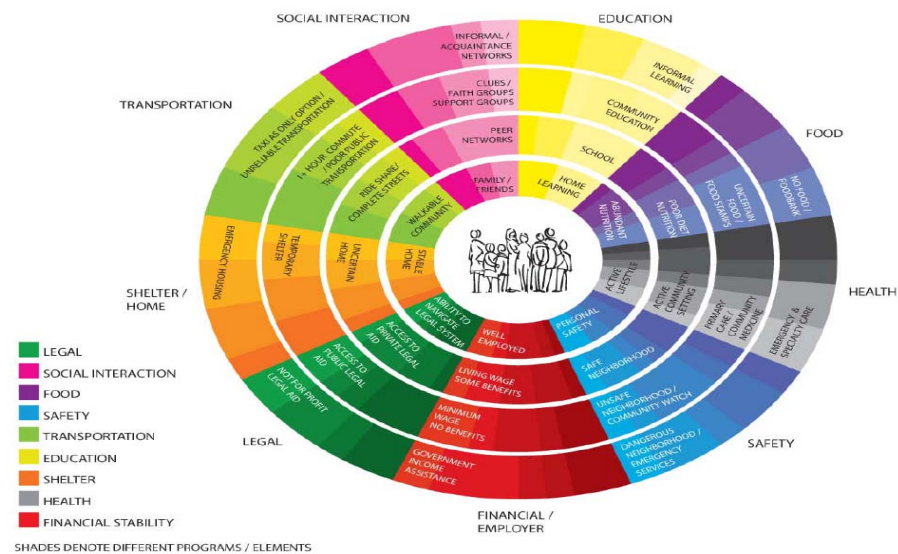


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a few fundamental insights may help us prepare to innovate health

What is health in a community?



Engagement in health:
the ability of individuals to pursue
healthy behaviors in their daily lives.

Activation of health care:
how people are able to optimally
interact with health care as a partner
in their engagement in health.



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Universal Patient Insight

The secret to patient motivation is the
deeply human need to direct our own lives,
to learn and create new things, and to do
better by ourselves and our world.

The three elements of true motivation are
autonomy, mastery, and purpose.



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Key insights from community based research

Right now, life is filled with complexity and a certain level of anxiety.

The integration and navigation of services and greater access in terms of physical access, cost and visibility is a win – not the creation of additional individual products and services.



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Key insights from community based research

The point is to empower, equip and communicate to individuals as to how to care of themselves throughout their lifetime in a manner appropriate to each life stage that simplifies life and makes long-term behavior change and adherence to a personalized regimen easier.



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*“I look through a half
opened door into the
future, full of interest,
intriguing beyond
my power to describe.”*

William J. Mayo, 1931



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Thank You

Douglas L. Wood, MD, Medical Director

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Annual Transform Conference

September 14th – 16th 2016

Transform, hosted by Mayo Clinic Center for Innovation (CFI), brings together thought leaders from around the globe to tackle the challenges of transforming the future of health and health care.



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