Innovate Health, Not Health Care: The Mayo Clinic Experience

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We are missing the point

Instead of trying to improve the current system of health care, we need to consider how we create health for people.
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.
“the ideal of medicine is to eliminate the need for a physician.”

–Dr. William W. Mayo
CFI Mission

Transforming the delivery and experience of health and health care

CFI Definition of Innovation

Discovering and implementing new ways to deliver better health.
“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

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

Steve Jobs

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.
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.
ALWAYS BE THERE FOR ME…

To help me be well
When I need care
When I need to make a decision
To help me think and work differently

To help me be well
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

When I need care
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

When I need to make a decision
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

To help me think and work differently
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

CENTER FOR INNOVATION

Thinking Differently

Engineers
Attorneys
Bioethicists
Coordinators
Administrative Assistants
Physicians
Administrators
Analysts
Anthropologists
Nurses
Innovators
Computer Programmers
Project Managers
Innovators

Thinking Differently
Mayo Clinic Center for Innovation
270 projects
600+ experiments
10,000+ contact hours with patients

we challenge assumptions and expose orthodoxies

Emily

What I do for work: Financial Planning for Large Real Estate
Where I live: Denver, Colorado
My family: Richard, Jerry and I plus Cheryl, Jerry and Sam
What I like to do in my free time: Reading and art welding with Jerry

End Goals
- Get my mom through her appointments, tests
- Finish the presentations for work
- Make sure home is clean and meals are cooked
- Get home before my mom's baseball game on Saturday
- Do research on breast cancer

Needs
- To coordinate my mom's care
- To make sure she is on track with MCR
- To keep track of all appointments

Influencers
Low High
- Personal Acuity
- Service Expectations
- Length of stay
- Number of visits to MCR

The Daughters

Motivated
Organized
Tired

Character: Grieving Provider. Takes care of 3 daughters and struggles to keep up with work and home commitments. She is often overwhelmed and exhausted.
...that challenge the status quo

we focus on shifts

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
Shift Left

Higher quality-of-life
Lower cost
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

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.

Yes, I would purchase wearable technology 44%
I already have wearable technology 9%
No, I would not purchase wearable technology 47%
Always Be There For Me
Help Me Understand My Health and Make the Best Decisions about my Health and Health Care

People, not Patients
Health, not Health Care
People’s Experience of Health: **Key Insights**

**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.

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

**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.
People’s Experience of Health: **Key Insights**

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.

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

- Campus EMRs
- Pioneering electronic tools
- Refined and innovative tools
- Converged EMR
- Knowledge to Delivery
- Central lab
- Mayo Scheduling System
- Plummer record

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
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
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 your mind in what you’re ordering, that’s for sure.” – Patient
The OB NEST experience

The range of issues women have between visits

- Where do I go to find a maternity swim suit?
- What brand of vitamin should I take?
- I'm going on vacation next week...
- I'm not feeling the baby move consistently yet...
- How much swelling is too much swelling?
- The baby hasn't been kicking...
- I'm bleeding...

- on my own
- wait until next appointment
- call in

CURiosity             CONCERN
Shifting a clinic’s culture from “sick care” to wellness care

- **RE-CENTRALIZE MOM**
  - OB

- **STRENGTHEN**
  - Autonomy
  - Confidence
  - Self-Awareness
  - Empowerment

- **ACTIVATE**
  - Partners
  - Families
  - Relatives & Friends
  - Communities

- **SIGNAL**
  - Wellness & Normalcy
  - Joy & Celebration

**INCORPORATING CONNECTEDNESS REDEFINING CONTINUITY OF CARE**
**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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**Asthma Connected Care**

**mHealth**

**70%**
- the app helped me control my asthma

**40%**
- reduction in care teams time per patient

"I didn’t know I even had a nurse and after the app I got to know her better.”
Teenage Participant

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

**Need:** Operational home

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**Incorporated**
- Assessment questionnaire
- Personal care plan
- Educational materials (push/pull capability)
- Text based communication with their care team
- Provider dashboard showing each patient
## Patient Centered Care Plan – Patient Side

### Patient: Paul Nordlund looking at Justin Playl

### Priority Concerns

<table>
<thead>
<tr>
<th>Priority Concern</th>
<th>Details</th>
</tr>
</thead>
</table>
| Have a plan for getting better sleep | - 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 | - 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 |

## Provider Experience Can be Better
Augmedix-Technology enabled physician work

- Technology application for Google Glass
- Providers work with a remote scribe
### Tools for Surgical Excellence

<table>
<thead>
<tr>
<th>Provider Workflow / Effort</th>
<th>Current EMR Provider Workflow (caring for 9 patients)</th>
<th>New PoC Tool (mobile) Provider Workflow (caring for 9 patients)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information Systems</td>
<td>11+</td>
<td>1</td>
</tr>
<tr>
<td>Use of Paper Intermediates</td>
<td>5+</td>
<td>0</td>
</tr>
<tr>
<td>Manual Pathway/Complication Calculations</td>
<td>&gt;36</td>
<td>0</td>
</tr>
<tr>
<td>Screen Transitions (inter-application)</td>
<td>237 (43)</td>
<td>25 (0)</td>
</tr>
<tr>
<td>Mouse Clicks</td>
<td>619</td>
<td>25</td>
</tr>
<tr>
<td>Estimated Cognitive Load Index</td>
<td>1,623</td>
<td>75 (&lt;5% of current)</td>
</tr>
<tr>
<td>Time (minutes)</td>
<td>30:14 (95% on navigation)</td>
<td>&lt; 4:30 (95% on clinical)</td>
</tr>
</tbody>
</table>
a few fundamental insights may help us prepare to innovate health
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.

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.
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.

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

William J. Mayo, 1931

Thank You

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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.