Using Design Methodology to Drive Innovation

A talk on healthcare service delivery

January, 2019

Erik Vanderlip MD MPH
Medical Director | Primary Care + Behavioral Health
ZOOM+Care
Using Design Methodology to Drive Innovation in Healthcare Service Delivery

Erik Vanderlip, M.D.
Medical Director for Primary Care, Behavioral Health, Telemedicine and Urgent Care for ZOOM+Care

Apply principles of the design process, including empathy, problem definition, ideation, prototyping, testing and iteration towards creatively innovating healthcare service delivery.

Reframe healthcare reform as a challenge of delivering services for chronic illness.

Abstract aspects of the chronic illness model to applicable behavioral health services.
First, thanks.
Disclosures: With respect to the following presentation, I have no relevant financial relationships or affiliations with commercial interests to disclose other than my 100% employment by ZOOM+Care, a [yes, you’re reading this right] for-profit healthcare system headquartered in Portland, OR. I have no pharmaceutical industry ties or Swiss bank accounts. I will not be discussing the use of any off-label treatments, therapies, medical devices or scooters. I won’t be discussing drugs to make people feel better. I’ll be discussing people making people feel better. I don’t own any people. My wife owns me.
Disclosures: Though you may be accustomed to talks with statistics, P-values, sample sizes and words like “randomized” and “meta”, I believe I might be letting you down. In fact, I feel a need to be apologetic simply because I believe that I will only be using the word “randomized” twice, and the concepts I’ll be discussing are what may initially seem to be far astray from the world of mental health. However, I hope beyond anything that I can make this a useful and thought provoking adventure and that, by the end of this hour, I will have challenged your notions of what healthcare is and could be by looking at it through a different set of lenses. That may be a tall order to accomplish within an hour, but sometimes you just have to say WTF.
my bosses...
Who am I?
Roots: Me and Gerry Clancy, Oklahoma
Left brain

I am the left brain.
I am a scientist. A mathematician.
Always in control. A master of words and language. Realistic, I calculate equations and play with numbers.
I am order. I am logic.
I know exactly who I am.

Right brain

I am the right brain.
I am creativity. A free spirit. I am passion.
Younng, Sensuialiy. I am the sound of roaring laughter.
I am taste. The feeling of sand beneath bare feet.
I am movement. Vivid colors.
I am the urge to paint on an empty canvas.
I am everything I wanted to be.
Erik Vanderlip
American, 1979 – Present

Integration of Primary Care and Behavioral Health, 2011
Finger on iPad
Exhibit 1
DEPRESSION IS BOTH A CAUSE AND EFFECT OF DIABETES.

Dr. Wayne Katon

Wayne Katon, MD
Professor of Psychiatry
Director of Health Services and Epidemiology
University of Washington, Seattle
Who am I?
my bosses...
I have three primary objectives today:

1. There was once a time when these roamed the earth.

2. Poor design.

3. Collaborative Care for Patients with Depression and Chronic Illnesses
There was once a time when these roamed the earth.
We are living dying of chronic conditions.

1990. US.

Global Burden of Disease
Global Burden of Disease
### Global Burden of Disease

<table>
<thead>
<tr>
<th>1990 rank</th>
<th>United States (Both sexes, All ages, DALYs per 100,000)</th>
<th>2017 rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Cardiovascular diseases</td>
<td>1 Cardiovascular diseases</td>
<td>2 Cardiovascular diseases</td>
</tr>
<tr>
<td>2 Neoplasms</td>
<td>2 Neoplasms</td>
<td>2 Neoplasms</td>
</tr>
<tr>
<td>3 Musculoskeletal disorders</td>
<td>3 Musculoskeletal disorders</td>
<td>3 Musculoskeletal disorders</td>
</tr>
<tr>
<td>4 Mental disorders</td>
<td>4 Mental disorders</td>
<td>4 Mental disorders</td>
</tr>
<tr>
<td>5 Neurological disorders</td>
<td>5 Neurological disorders</td>
<td>5 Neurological disorders</td>
</tr>
<tr>
<td>6 Unintentional inj</td>
<td>6 Unintentional inj</td>
<td>6 Unintentional inj</td>
</tr>
<tr>
<td>7 Other non-communicable</td>
<td>7 Chronic respiratory</td>
<td>7 Chronic respiratory</td>
</tr>
<tr>
<td>8 Chronic respiratory</td>
<td>8 Diabetes &amp; CKD</td>
<td>8 Diabetes &amp; CKD</td>
</tr>
<tr>
<td>9 Transport injuries</td>
<td>9 Other non-communicable</td>
<td>9 Other non-communicable</td>
</tr>
<tr>
<td>10 Self-harm &amp; violence</td>
<td>10 Unintentional inj</td>
<td>10 Unintentional inj</td>
</tr>
<tr>
<td>11 Diabetes &amp; CKD</td>
<td>11 Digestive diseases</td>
<td>11 Digestive diseases</td>
</tr>
<tr>
<td>12 Digestive diseases</td>
<td>12 Self-harm &amp; violence</td>
<td>12 Self-harm &amp; violence</td>
</tr>
<tr>
<td>13 Substance use</td>
<td>13 Skin diseases</td>
<td>13 Skin diseases</td>
</tr>
<tr>
<td>14 Maternal &amp; neonatal</td>
<td>14 Transport injuries</td>
<td>14 Transport injuries</td>
</tr>
<tr>
<td>15 Skin diseases</td>
<td>15 Sense organ diseases</td>
<td>15 Sense organ diseases</td>
</tr>
<tr>
<td>16 Respiratory infections &amp; TB</td>
<td>16 Maternal &amp; neonatal</td>
<td>16 Maternal &amp; neonatal</td>
</tr>
<tr>
<td>17 HIV/AIDS &amp; STIs</td>
<td>17 Respiratory infections &amp; TB</td>
<td>17 Respiratory infections &amp; TB</td>
</tr>
<tr>
<td>18 Sense organ diseases</td>
<td>18 HIV/AIDS &amp; STIs</td>
<td>18 HIV/AIDS &amp; STIs</td>
</tr>
<tr>
<td>19 Other infectious</td>
<td>19 Enteric infections</td>
<td>19 Enteric infections</td>
</tr>
<tr>
<td>20 Enteric infections</td>
<td>20 Nutritional deficiencies</td>
<td>20 Nutritional deficiencies</td>
</tr>
<tr>
<td>21 Nutritional deficiencies</td>
<td>21 Other infectious</td>
<td>21 Other infectious</td>
</tr>
<tr>
<td>22 NTDs &amp; malaria</td>
<td>22 NTDs &amp; malaria</td>
<td>22 NTDs &amp; malaria</td>
</tr>
</tbody>
</table>
We are in a nasty game of whac-a-mole.
A google search. The trend remains basically upwards.
Mental illnesses AND unhealthy behaviors account for greatest burden of disease.

Behavioral health conditions account for the largest proportion of years of productive life lost (YP LL).

Martin et al., Lancet. 2007; 370:859-877
Leading Determinants of Overall Health are Behavioral

Behavioral, 40%

30%

15%

10%

5%

Behavioral
Genetic
Socioeconomic
Environment
Health Care

This fundamental shift in epidemiology is the source of nearly all our friction in healthcare.
We are not taught to manage chronic illnesses.
Our technology is not *developed* to manage chronic illnesses.
We are not paid to manage chronic illnesses.
Patients must go through US to manage chronic illnesses.
Simply put, our current system is not designed to manage chronic illnesses.
This is our system. And it’s actually not bad for what it’s designed to do.
"St. Elsewhere is running a special this month!!"
The Lexicon of Healthcare Reform

Medical Home
Accountable Care
Self-Management Support
Health Information
Engagement
Behavioral Health Homes
Integrated Care
SBIRT
Population Health
Cardiovascular Disease
Patient-Centered
Adherence
Health Behavior Change
Shared Decision Making
Motivational Interviewing
Outcomes and cost with chronic illnesses are predicated on individual behavior change.
Design thinking is a method to make products that are engaging and change behavior.
What quality/skill-set should we be most focused on cultivating in among the next generation of doctors?

Empathy/design thinking: 70%
Entrepreneurship: 10%
Software engineering: 7%
Health policy expertise: 13%
The Stanford d.school was formed in 2004. Click on the photo above.

The d.school helps people develop their creative abilities. It’s a place, a community, and a mindset.
Apple macbook pro ca. before they killed the CD-ROM.
Apple macbook air ca. *after they killed the CD-ROM.*

Also, I don’t own any stock in Apple or have any relationship to them. And this was a free stock photo on pexels.com. It’s a cool site. So was that last one. Credit to J Katz for this example.
Poor design.
Design thinking is a method to make products that are engaging and change behavior.
Phases of design thinking: empathy
Phases of design thinking:

- empathy
- problem definition