The Future of Healthcare*

A project aimed at provoking questions and conversations about the societal effects of technological trends through the lens of healthcare.

*This project was done as a part of a team, with two other students from the Institute of Design, Chicago.
How will people self-manage their healthcare, regarding wellness and prevention in ten years?
We selected and analysed trends that we thought were relevant to the future of healthcare. The list was further compressed by selecting the top few emerging trends based on the rating scale.
Some trends were categorised as ‘givens’. This implied that they would be constants in the future worlds that we were building, these were trends that would influence the uncertainties and therefore, shape the way they projected themselves.

**givens**

- **severe weather conditions**
  Extreme weather events are a major consequence of climate change, and are becoming more frequent, powerful and erratic.

- **gamification**
  Gameplay and mechanics are being integrated into long term treatment and recovery plans as ways to ensure patient motivation and adherence.

- **biointerface**
  Pressure-sensitive fabrics, optical sensors and bio-acoustic sensing arrays are transforming your hands, arms and legs into control pads.
uncertainties

The ‘uncertainties’ were trends that would either show up in positive or negative light in the future scenarios. What this means is that the trend will exist in the future scenario but will have either have or not have social acceptance.

genomic editing

As the data pool from genomic testing grows, researchers, physicians, and even consumers will better understand genetic predispositions to health and disease. Gene editing tools, new data streams from wearables, pharmacogenomics, and consumer-driven genomics all point toward the goal of improving population health.

open lives

We are willingly offering up more information and giving up control to new technology. However, consumers are wary of technology and companies using their personal data, fearing leaks that can compromise their information.
We plotted the uncertainties on a 2x2, which was the platform for the world building process. The two scenarios we further developed are the ones highlighted in the image above.
scenario one
The scenario definition for a world where genomic editing is widely accepted but people are not willing to share their data.

1. **Privacy becomes extremely important.** People are hesitant to provide data because of fear of how data brokers may use it for commercial purposes.
2. People are responsible for **maintaining their own health related data.**
3. They consider their **health as important as money.**
4. People will become more interested in **DNA editing for all purposes.**
5. The shortage of doctors has triggered innovations in **machine diagnosis.**
6. Biointerfaces provide **faster services** and interactions.
7. Weather conditions have **reduced the shelf life of perishable goods,** like food products.

**Open lives ( - )**
Robert

Male in his mid-30s
Upper middle class
Caucasian

Works as a lawyer in the city. Often works 10 to 11 hours a day, doesn't get enough rest.
He is generally tired and doesn't have time to take care of himself.
He likes to remain healthy.

He has recently been falling sick more and more. He's been having indigestion, diarrhea, stomach cramps and nausea for a week now.
Robert is checked by machines instead of human doctors.

**Symptoms**
- Headache
- Nausea

**Stomach Pain**
Experience stomach pain every time you have dairy—that includes milk, ice cream, whipped cream, butter, and sauces containing milk.

**How Often?**
- 1-2 times a week
- 1-2 times a month
- Rarely

**What Was Your Last Meal?**

**Have You Tried Probiotics?**
- Yes
- No

**Where Do You Feel the Pain?**
- Upper part of my...
- Lower part of my...
- Right side of...

**Diagnose:** Primary Lactose Intolerance

**Description:** Lactose intolerance refers to individuals who are unable to digest lactose (sugar found in dairy products). Due to a lactase enzyme deficiency, the body is unable to break down lactase into glucose, leading to symptoms like abdominal pain, bloating, and diarrhea.

**Treatment:**
1. Avoid servings of milk and other dairy products for 6 months.
2. Maintain good nutrition.

**Diet:** Eat fruit and vegetables with extra calcium. Consider: GMO fruits.

**Print Report**
His health is as important to him as his money.

Convenient, checking accounts simplify your money and your health records

ALL ABOUT YOU

United Bank: Well-balanced to meet your wants and needs.
His bank now provides a service to keep records of his health.
scenario two
The scenario definition for a world where genomic editing is not widely accepted but people are willing to share their data.

1. Everyone is open about their lives and the acceptance rates in most people are high. The people that struggle with how they look face backlash.
2. Genomic editing is a well kept secret
3. Pharmaceuticals companies are fragmented. There are secret clinics that are making gene editing easier to access and pharmaceuticals want to acquire them to protect their business.
4. Only wealthy people have access to gene editing.
5. Genomic editing is easier in some states like California and Colorado.
6. Weather conditions have changed, temperatures have increased.
7. People care a lot for their wellness and make an effort to maintain a healthy life.
Susan Myres

Female in her mid-30s.
Middle income group.

Very active on social media, regularly updates her profile.

She suffers from vitiligo, which makes her prone to skin cancer. Because of this she needs to take a lot of precaution when she goes out into the sun. Visits her doctor on time once six months to get tested for skin cancer. For a while now she has been keen to find a permanent solution for her problem.
scenario

Susan is updating her health profile on a social media platform.
The government uses the collective healthcare data to inform decision regarding health legislations as well as city planning.
**Scenario**

Susan has to decide which options she prefers.

<table>
<thead>
<tr>
<th>Pros.</th>
<th>Cons.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Faster procedures;</td>
<td>There is a chance that you may not have the procedures done once the company is limiting the patient numbers and the severity of the disease.</td>
</tr>
<tr>
<td>Less paperwork;</td>
<td></td>
</tr>
<tr>
<td>Guaranteed on the procedures</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Underground clinics</th>
<th>Pharma Central (companies' program)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Legal program supported by government;</td>
<td>1.</td>
</tr>
<tr>
<td>2. Covered by insurance</td>
<td></td>
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</tbody>
</table>

**Genomic Editing (-) x Open Lives (+)**
stakeholder implications
What does this mean for clinics?

ROBERT

Machine learning algorithms to become a tool for diagnosis

Collaborate with Alphabet to strengthen the diagnostic abilities

SUSAN

Survive the healthcare system as an underground clinic

Retaining clinicians to keep them in your system.
stakeholder implications

What does this mean for pharmaceutical companies?

**ROBERT**

Expand scientific research towards gene-edited food.

Strategies to rebrand GMO

Create partnership with larger tech giants

**SUSAN**

Partnerships with government

Interest in the science of prevention