

# Ballard Labs Compilation Report

Patient - Provider Communication among Young Adults with Chronic Illnesses in Utah Lab

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# 1. Introduction and Acknowledgements

## Mission Statement:

The Healthcare Lab exists to help bridge the gap in communication between providers and young adult patients, specifically with chronic conditions.

## Vision:

We envision a world where patients are empowered to advocate for themselves; providers engage in patient centered care, and there is consistent and unified collaboration between providers on behalf of the patient. As a result, patient-provider communication is effective in addressing symptoms and solutions for young adults struggling with chronic illnesses.

## Acknowledgement:

We gratefully acknowledge our co-creator, whose vision laid the foundation for this project. We thank the Ballard Center for Social Impact for their resources and belief in our work. We also appreciate the guidance and feedback from the Policy Project and ACCME. Finally, we are especially grateful to Will for his mentorship and support throughout this process.

## Executive Summary

This report documents the work of the Ballard Labs Healthcare team — Hallie Moldenhauer and Priscilla Silva — in researching and addressing patient-provider communication gaps among young adults with chronic illnesses in Utah. The project originated from a personal connection: a co-creator (Hallie's sister) whose chronic illness journey revealed systemic failures in how the healthcare system communicates with and empowers young patients.

Through extensive research tools — including an Individual Situation Assessment Map (ISAM), Iceberg analysis, Stakeholder and Power Matrix mapping, Feedback Loops, and an Ecosystem Map — the team identified a core problem: young adults with chronic conditions lack the tools, knowledge, and support structures to effectively advocate for themselves within a fragmented and often inaccessible healthcare system.

Research led to the design and iteration of three interventions: a **Policy** proposing that 10% of Continuing Medical Education (CME) credits required for ACCME accreditation be dedicated to evidence-based communication training; a **Program** connecting newly diagnosed young adults to experienced peer mentors as care navigators; and a **Product** — the CareCompass mobile app — designed to bridge the appointment gap through question builders, real-time notetaking, and symptom tracking.

After implementation and evaluation, the policy was submitted for formal ACCME review, the peer program was archived as a resource for future use, and CareCompass emerged as the most promising intervention, attracting interest from Intermountain Healthcare and the broader public. The team is exploring forming an LLC or partnering with an organization to continue its development.

This report will progress in the order that the project took place, following the Social Impact Cycle as outlined by the Ballard Center (Appendix A).

## 2. Loving the One

### Our “One”

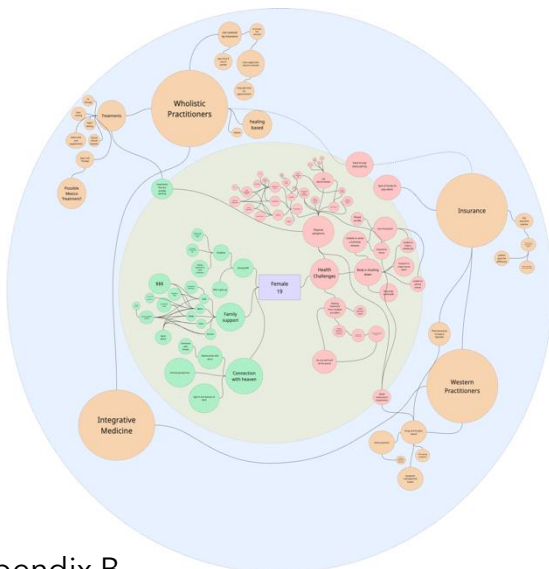
“As this new cohort of labs began, we went through some major shifts in the direction the program was headed. We went from doing research on a predetermined lab, to then having to come up with our own social issues surrounding someone with whom we had a relationship of trust. I walked away from that meeting struggling to come up with any ideas, let alone one that could lead to a successful lab. That evening, I got off the phone with my sister who had been struggling with a chronic illness for about a year at that point and was struggling with not only physical symptoms but also with some hard things that came with being in the healthcare system in general. I knew that there must be some part of what she was experiencing could be solved and that others just like her were having similar struggles. That was when I decided on the project and determined my sister as our original co-creator.”

- Hallie Moldenhauer

## Mapping

### ISAM/Triangulated Issue

Priscilla soon joined the team and that is when our lab first started. We dove right into “loving the one” and created the first map called an ISAM (Individual Situation Assessment Map). After hours of taking notes and calling our co-creator, we organized all our thoughts on this map. The green circle are things directly affecting the co-creator and the blue are a little more removed but still play a role. The red are weaknesses or struggles, and the green are strengths. The lines are meant to show relationships and connections that give us a better view of the complex network at play.



Appendix B

There are more detailed pictures that can be found in the appendix, but from this map our biggest takeaway was the important role of an advocator. For our co-creator, my mother was incredibly involved, given that she spent a very large portion of her time doing her own research as well as being a voice for our Co-Creator. Our family also had access to alternative methods not covered by insurance that were discovered by my mother, in addition to a very high faith and reliance on Jesus Christ and His ability to heal.

Many of the challenges of our co-creator, such as multiple misdiagnoses as well as no one seeing the whole picture, were caused by what we determined to be gaps in communication. Those challenges ultimately led to the co-creator's inability to progress in life at a time when that exact thing was of incredible importance. They were unable to engage in things like school, work, and social activities. These experiences and conversations with our co-creator ultimately led us to focus on our triangulated lab issue of Patient-Provider Communication Among Young Adults Struggling with Chronic Illness in Utah.



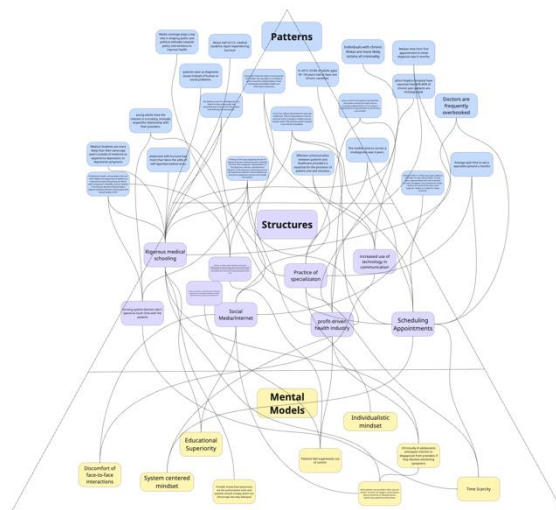
Appendix C

## Iceberg

The next step in our efforts to understand and love the problem a little deeper took shape on our Iceberg map. Like its name suggests, the Iceberg map is meant to be a framework for research that looks at patterns and models that lie beneath the surface of what we might see represented in the issue. It became a step of validation as we dove into secondary research to find that this issue was not only something experienced on a large scale, but also something that many people were studying and trying to understand better.

As we engaged in extensive secondary research, we were able to determine that this issue has an effect on a large portion of our demographic. This helped us take the experiences we were looking at on the scale of one individual and put it into the context of a social issue experienced every day by so many others. While it

validated many of the predictions we had, it also broadened our understanding on aspects we had never considered being a part of this issue. For example, as we researched it became clear that social media carries a lot of weight as a stakeholder. We discovered that while social media is meant for the masses, it often rephrases things that are complex in a way that many people can understand, and this holds true for the medical world. People who are experiencing complex medical journeys are turning to social media not only to create community, but also as a way to talk about, discuss, and understand health.



The map is structured as a top-down trail that connects what we see to what might lie beneath. When you look at a specific pattern, you can follow the trail that leads to structures that hold the patterns in place and then the mental models behind the structures.

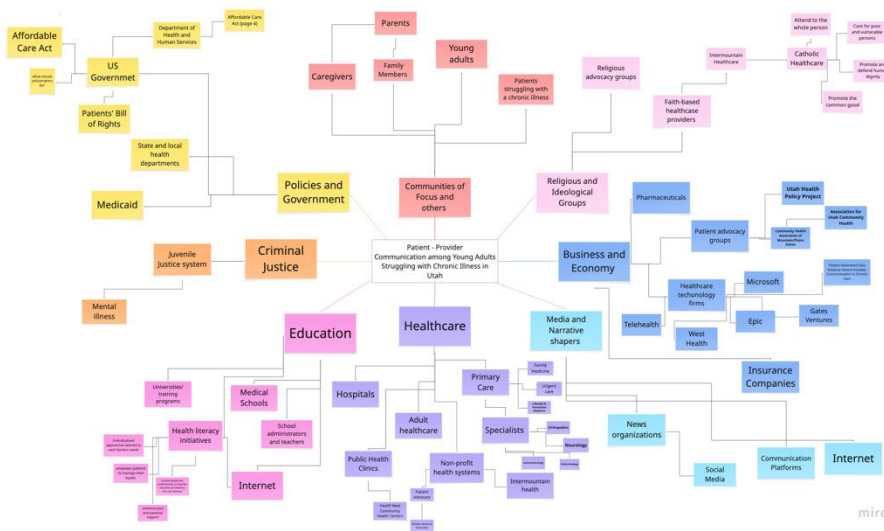
## [Appendix D](#)

### **Stakeholders and Players of Power**

The Stakeholder and Players of Power maps were our next step in understanding the issue in the context of people and organizations that already exist and play a role in the issue, wither to help or hinder the relief from suffering.

The Stakeholders Map gave us an opportunity to research how different stakeholders were involved in the issue of Patient-Provider Communication among Young Adults with Chronic Illnesses in Utah. Originally, we thought the main stakeholders who played a part in the issue were the ones associated with healthcare, education, and business. However, creating this map helped us learn that there are other aspects of society that are involved and have an effect on the issue. Therefore, it expanded our research and vision of the problem. Religious and ideological groups,

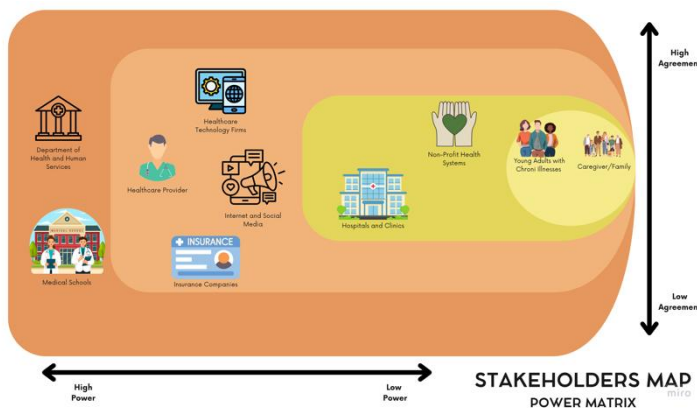
for example, are more engaged in our issue than what we initially considered. There are faith-based healthcare providers seeking to address the issue by making the healthcare system more patient-centered.



Appendix E

Following the research on various stakeholders and how they play a part on Patient-Provider Communication, we placed them on a map based on their level of agreement (how much they agree that it is a problem and how engaged they are in trying to solve it), and power (how much capacity they have to solve the problem). By doing so, we realized that even though all stakeholders agree that patient-provider communication is an issue, the ones with the most capacity to make a change are the ones who aren't actively engaged in trying to solve it.

Appendix F



To read the stakeholder maps, you will find the issue in the center and then different sectors that branch out from that. Each sector then has branches coming out of the sector box that show that sectors have specific influence on the issue. The Power Matrix version shows the sectors in a

visual way to see how much they agree that this is an issue and then also how much power they have in making a difference.

## Feedback Loops

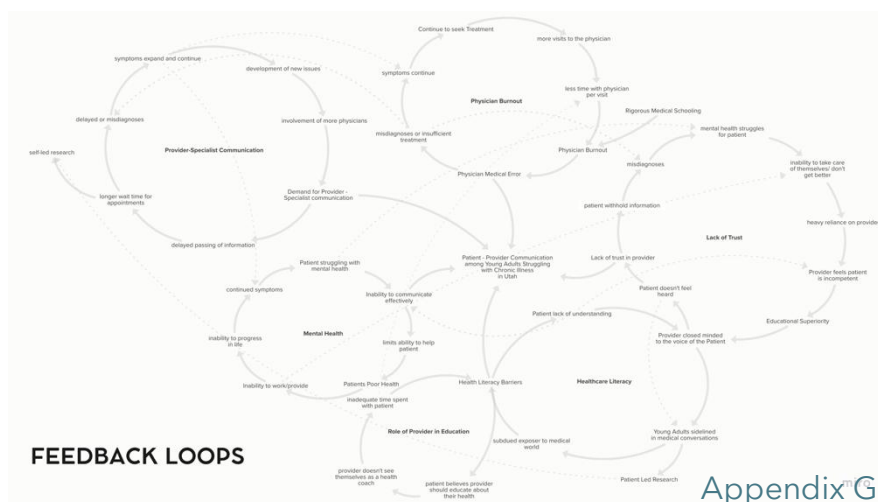
In an effort to get a deeper look at the systems and perpetuating cycles of this issue, we dove into research for the creation of our feedback loop map. The feedback loop map was an integral part of placing our issue in context of what contributed to its perpetuation. It was incredibly helpful to see that this issue is not structured in a way in which contributing factors lead to the issue which leads to negative consequences. Instead, there are systems where contributing factors and negative consequences are mutually reinforcing, and each holds the other in place, keeping the issue in a space of causing suffering.

A specific cycle that added to our understanding of the issue was the Role of Provider in Education Cycle. This imbalance was not something we had previously investigated nor was reflected in our initial secondary research. However in conversations with our co-creators and further research, we discovered that it was an

integral part to our issue. Patients often are thrown into a world that is new and scary, and thus they look for someone to guide them and bridge the gap of understanding. However, providers don't view themselves as a coach and have to spend a lot of their time

spread thin, so as a result they don't spend adequate time with the patient. Therefore, there is a continued misunderstanding of what the role of a provider really is.

To read the map, the issue can be found at the center, and there are six major feedback loops that are visually shown to contribute to the issue. The arrows indicate what the indicated text leads to.



## Ecosystem Map

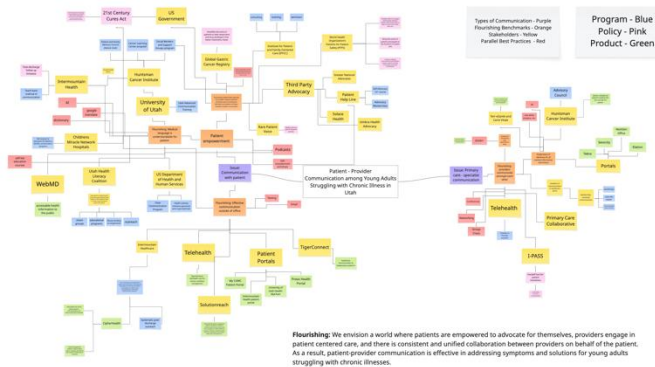
For our final map, we dove into capturing the current state of the issue. The purpose of an ecosystem map is to understand the ecosystem the issue exists in. This included looking at organizations that were active in the issue as well as all other organizations, people, or conditions that affect, whether directly or not, our ability to find and implement solutions.



Before we started creating our Ecosystem Map, we talked to as many Co-Creators as we could. We went into our conversations with them with the goal of understanding how they believed their suffering could be decreased and their flourishing, increased. By doing so, we were able to determine different aspects of their life

that according to them would increase their flourishing if changed. We called these aspect benchmarks for thriving/flourishing.

These benchmarks were: patients feel listened to and respected, patient understands medical language, communication between patients and providers is effective outside of office, and providers collaborate with each other. These benchmarks helped us formulate our statement of flourishing. After we determined the four aspects that should be focused on our interventions, we researched organizations engaged in seeking to solve them along with best practices that were effective. This secondary research allowed us to find strengths and gaps in existing interventions. Some of the gaps included the focus on product-based interventions, usually surrounding technology, when addressing effective communication outside of office, and the lack of programs focused on improving collaboration between providers.



Appendix H

To read the map, the issue lies at the center and then we broke it up into different aspect of the issue we wanted to focus on including communication between providers and patients and then communication among providers. This was then broken up further to different flourishing “benchmarks” that would help us focus where we feel the needs are the greatest. We then worked out into different

organizations and then included their specific programs or products that related to the issue. We then went back and added best practices which can be found in the red color. We also included a best practices map that looked at interventions in all 4 states of thriving.

## The Core Problem

At the conclusion of our formal research, we concluded that we wanted to focus on patient empowerment because we felt that is where we could move the needle the most. It was apparent that young adults were needlessly suffering because they did not have the tools or knowledge to advocate for themselves. We felt that our research validated the need to help young adults feel better able to take an active role in their care and have resources to support the collaborative care model. We transitioned to the design and creation of our interventions, which consisted of a policy, program, and product (often referred to as our 3 P's).

## 3. Research Conclusion and P's

### Policy

#### Access to a Care Navigator

- **What it is:** A policy mandating that every individual diagnosed with a chronic illness has the right to a Care Navigator. This role serves as a centralized "information hub" for tests, appointments, treatments, and resources. The Navigator acts as a dedicated advocate, helping the patient sort through complex data and empowering them to regain control of their healthcare journey.
- **The Research Logic:**
  - **The ISAM (Individual Situation Assessment Map):** Our initial research into our co-creator's experience revealed that a major strength was the presence of a "mother-advocator" who filled the gaps left by the system. However, we recognized that not every patient has a family member with the time or ability to do this. This policy institutionalizes that "advocator" role to ensure equity for all patients.
  - **The Feedback Loop Map:** We identified a "Role of Provider Education Cycle" where patients look for a guide, but providers, because they are so busy and lack, cannot act as "coaches." By establishing a Care Navigator, we break this cycle, offloading the "bridge-building" tasks

from overworked providers while ensuring the patient's need for guidance is met.

## Program

### Better Connection to Best Practices

- **What it is:** A structured resource and support initiative that connects patients and providers to existing best practices and patient support services, focusing on effective utilization rather than just awareness.
- **Research Logic:**
  - **The Ecosystem Map:** Our mapping of the current landscape revealed that while many resources exist, many existing tools are siloed, leaving providers unaware of referral options and patients without a clear path to support. Consequently, these resources fail to reach the individuals who need them most.
  - **The Feedback Loop:** We discovered a reinforcing cycle where "Provider Burnout" leads to "Time Scarcity," which often prevents providers from seeking out or sharing best practices. This program acts as an intervention in that loop, ensuring that patients are aware of the resources available to them.

## Product

### The Patient Empowerment Guidebook

- **What it is:** A physical guidebook with an online companion featuring simplified medical terminology, appointment preparation worksheets, note-taking templates, and action trackers.
- **Research Logic:**
  - **The ISAM (Individual Situation Assessment Map):** Our original map of our co-creator (the sister) highlighted that "Gaps in Communication" led to an inability to progress in life (school, work, social). The guidebook directly targets the "red" weaknesses identified: the feeling of being overwhelmed and out of control.
  - **The Statement of Flourishing:** Through conversations with multiple co-creators, we identified "understanding medical language" and "feeling

listened to" as the primary benchmarks for thriving. The product is a tangible tool to help young adults hit those benchmarks.

- **Social Media Insights:** Our secondary research showed that young adults turn to social media for "translated" medical info. This product professionalizes that need, providing a reliable, structured way for patients to "translate" their own clinical experience into actionable steps. This image represents some of our market research concerning our product creation.



## 4. Implementation Appendix I

### Final P's Defined

As we transitioned from the theoretical design of our interventions to the practicalities of implementation, we engaged in iteration to ensure that our solutions were impactful and feasible. While our initial ideas were rooted in research and the lived experiences of our co-creators, further secondary research and feedback from our co-creators revealed a need for some changes. We realized that our Policy (a Care Navigator mandate) would not be feasible, so we decided to make it a Program that connects patients with experienced peers that can help in their mentoring process. Our Policy shifted to requiring that 10% of Continuing Medical Education (CME) credits for ACCME to be evidence-based communication training. For the Product, we moved from a physical Guidebook to a digital one, targeting specifically the appointment gap identified previously during our research. Plans to develop an app were established, prioritizing appointment preparation and follow-up tools, symptom and medication tracking.

## Policy

### CME Communication Mandate

- **What it is:** A proposal to dedicate 10% of Continuing Medical Education (CME) credits required for ACCME accreditation to evidence-based communication training.
- **The Research Logic:**
  - **The Power Matrix:** Our research showed that while most stakeholders agree communication is an issue, those with the most power (accreditation bodies and large healthcare systems) were the least "engaged" in active solutions. This policy targets the "Power" axis to move communication from a "soft skill" to a mandatory professional standard.
  - **The Iceberg Map:** We identified a "Mental Model" where providers see themselves as clinical experts rather than "coaches" or "guides." By mandating CME training, we address the underlying structure that currently de-prioritizes the interpersonal aspect of care.
  - **Statistical Validation:** With 80% of medical errors stemming from miscommunication and nearly 33% of malpractice suits linked to the same, this policy addresses the \$6.7 billion drain on the healthcare system by treating communication as a matter of patient safety rather than just patient satisfaction.

## Program

### Care Navigator Program

- **What it is:** A peer-to-peer support initiative that connects young adults newly diagnosed with chronic illnesses to "experienced peers" who have navigated the healthcare system successfully. These mentors act as care navigators, offering guidance on how to organize medical information, prepare specialists, and manage the emotional toll of a chronic diagnosis. Care Navigators will be provided with a structured guidebook outlining specific topics to address in the first six official sessions.
- **The Research Logic:**

- **The ISAM & Feasibility:** Our original ISAM identified the "Advocator" (often a family member) as a primary strength. However, legal and financial research showed that mandating a professional Care Navigator was not feasible within the current Utah healthcare infrastructure. By shifting to a Peer Program, we utilize the "community" stakeholder identified in our Iceberg Map.
- **The Stakeholder Map:** Our research into religious and ideological groups showed that peer-support models are highly effective in Utah. This program leverages that existing cultural strength, turning "lived experience" into a formal resource to address the "Role of Provider" gap identified in our feedback loops.

## Product

### CareCompass Mobile Application

- **What it is:** A digital evolution of our initial guidebook, CareCompass is a mobile app designed to bridge the "appointment gap." It features specific modules for appointment preparation (question builders), real-time notetaking, and it allows patients to record clinical encounters and generate automated, searchable transcripts to ensure the accurate retention of complex medical instruction. It also contains a simplified medication glossary, and integrated trackers for symptoms and medication.
 
- **The Research Logic:**
  - **Ecosystem Map & "The Appointment Gap":** Our ecosystem research revealed that while many health apps exist, few focus specifically on the communication between the patient and provider during the short appointment time window. CareCompass helps patients prepare for appointments to ensure that their communication with providers is more effective.
  - **Secondary Research on Young Adults:** Data showed that our demographic (young adults) has a near-universal reliance on smartphones for health information. Moving from a physical guidebook to a digital product increases feasibility and ensures the tool is available at the "point of care."
  - **Statement of Flourishing:** The inclusion of symptom and medication tracking directly addresses the benchmark of "effective communication

outside of the office," providing providers with the data-driven "whole picture" that was missing in our initial co-creator assessments.

## Implementation in Practice

### ACCME Policy Implementation

- For implementation of our policy, we were able to get in contact with a representative from the Policy Project. She met with us and walked through the policy, giving us valuable feedback. She then connected us with the head of the Utah chapter of the ACCME, who we met with and discussed our policy.

### Care Navigator - Program Implementation

- For implementation of our program, we had a hard time with recruiting. We ended up timing it right during finals and over Christmas break and so the availability of young adults to participate in mentored meetings both on the mentor and on the mentee side, proved difficult. In the end, we were able to have a few people experiencing the issue look over it. If we were to do this again, we would start earlier for recruiting and implement the first round before finals.

### CareCompass - Product Implementation

- Implementation for our products consisted of a small group of people testing and using the app. The app was created and distributed using Lovable and Despia and so we gave temporary access to a few individuals. They were able to engage with the app and use its specifically designed features to test its effectiveness in reducing suffering for young adults with chronic conditions.

## 5. Evaluation and Reimplementation

### ACCME Policy

- **What we learned:** We learned from our discussion with the head of the Utah ACCME chapter that the ACCME rarely puts restrictions on how providers must spend their credits.

- **What we did:** We were able to take her instructions and pivot towards suggesting that the ACCME put in place promotions for engaging in evidence-based communications training. This would allow patients to spend credits however they would like but would also bring awareness and desire to engage in trainings that would improve patient experience and decrease barriers to effective communication.

## Care Navigator - Program

- **What we learned:** We learned from this first round of implementation that we needed to start earlier on recruiting and getting people on board with testing our program. From the feedback of those that looked over it and also the feedback from the judges of the Bid Idea Competition by the Rollins Center, we were given some suggestions on other things to include in the mentoring curriculum.
- **What we did:** We made edits to the curriculum of the program and updated it to reflect what we would have loved to implement, and then decided to not move forward with our program. We felt that we had received more engagement with our product and success with our policy that we wanted to focus more on those for the second round of implementation.

## CareCompass - Product

- **What we learned:** Feedback from our initial implementation highlighted a need for increased user engagement through personalization. Users requested "catered notifications" to help them maintain consistency in symptom logging. This taught us that reducing the "cognitive load" on patients is just as important as the medical tools themselves.
- **What we did:** We decided to add a few new features after our first round, including a patient timeline and medication effectiveness tracking, and decided to keep moving forward with our app. We came up with a larger recruiting plan so that we could scale it better and invested more into getting it on the app store as a real app instead of just beta testing.

## 6. Final Evaluation and Conclusion

### ACCME Policy

- After making the necessary edits, we have been able to submit our policy for review. The estimated time it takes for the review process is 6 months.

Once we hear back, we will either be able to make necessary edits or the policy will be implemented which will act as our conclusion and hand off.

### **Care Navigator - Program**

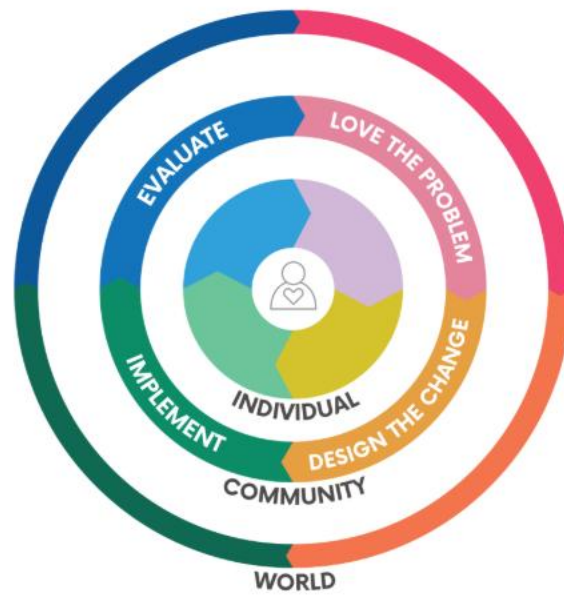
- Because we have decided not to move forward with our program, we have gone through it and made edits and then filed it in teams. We hope that people will be able to use it as a resource if someone in the future decided to follow a similar issue in labs, but it will remain available and archived.

### **CareCompass - Product**

- For our final evaluation, we ran into some roadblocks because our beta period expired and we had some decisions to make before we got it back on the app store, and so we were not able to implement for as long as we wanted, but we got some inadvertent validation as we had multiple people reach out about losing access and wanting to know when it would be up and running. Overall, we got some positive feedback as we gathered thoughts from those that were able to use it. We also had people outside of the target population get intrigued by what we were doing including an executive at Intermountain healthcare, BYU Daily Universe, and people who were struggling with chronic conditions but were not young adults. For our conclusion we are working with the possibility of creating an LLC with the app and continuing to work on it or possibly selling/passing it off to an organization that could use the software to incorporate some of its features in useful places.

## **7. Appendix**

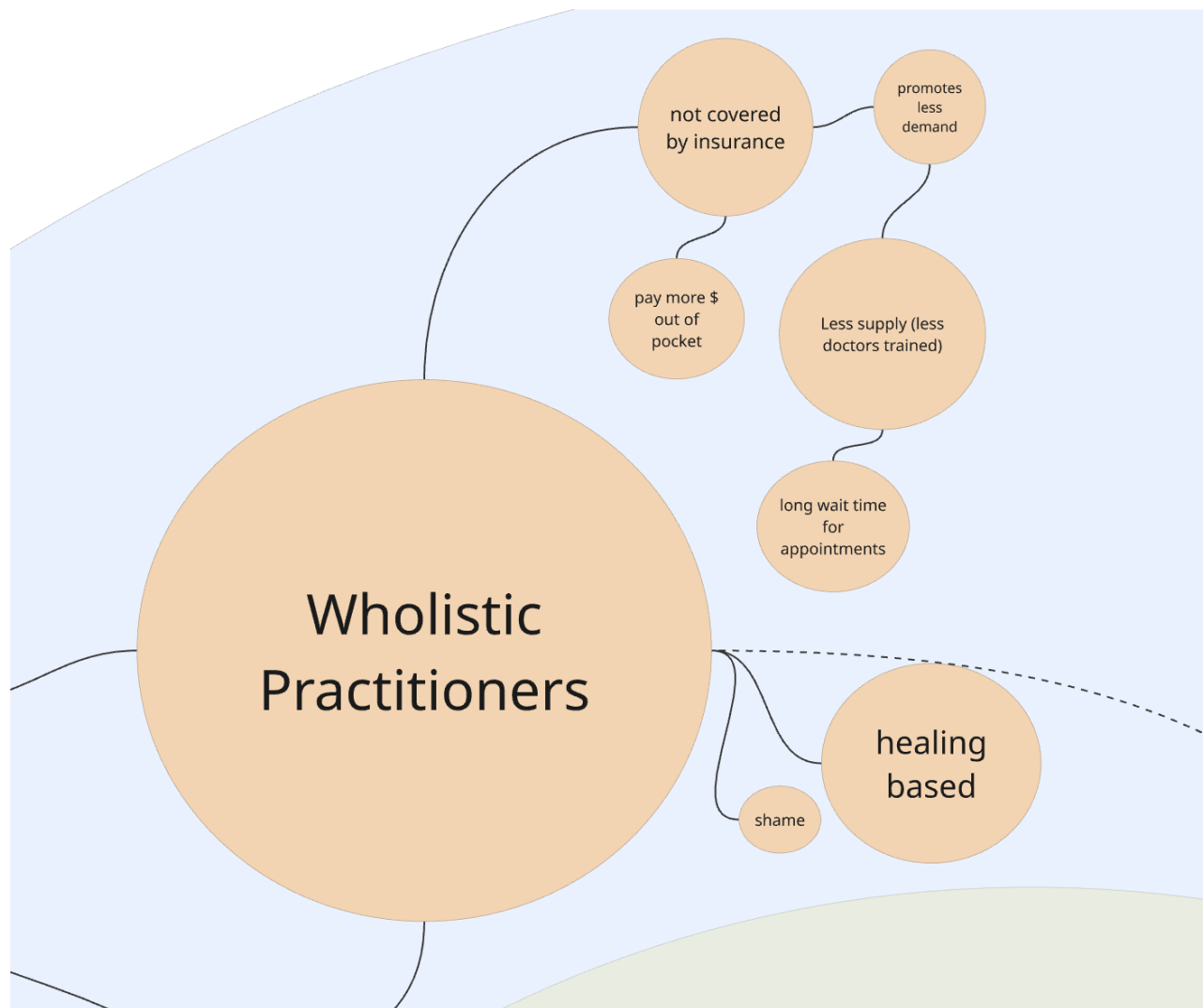
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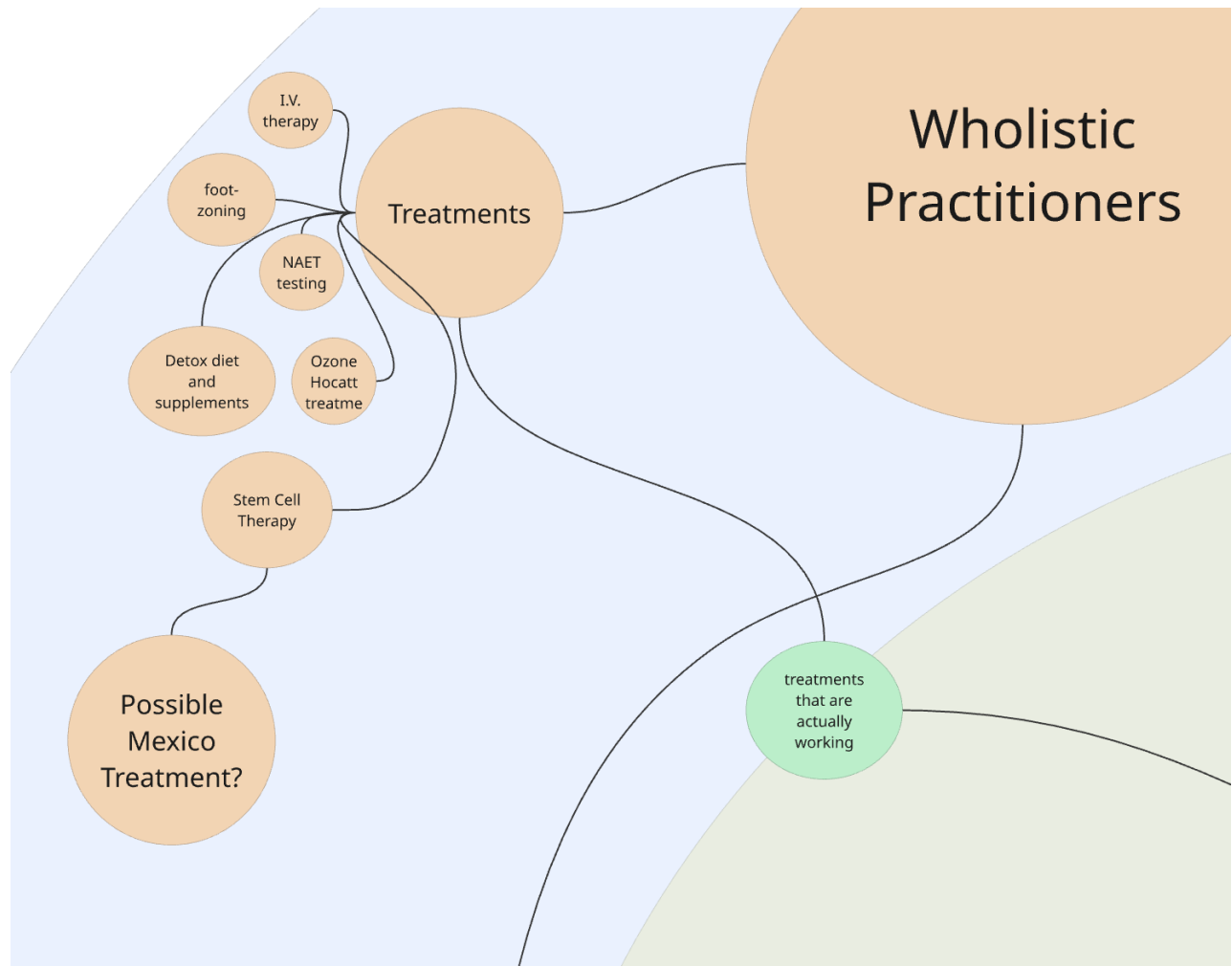


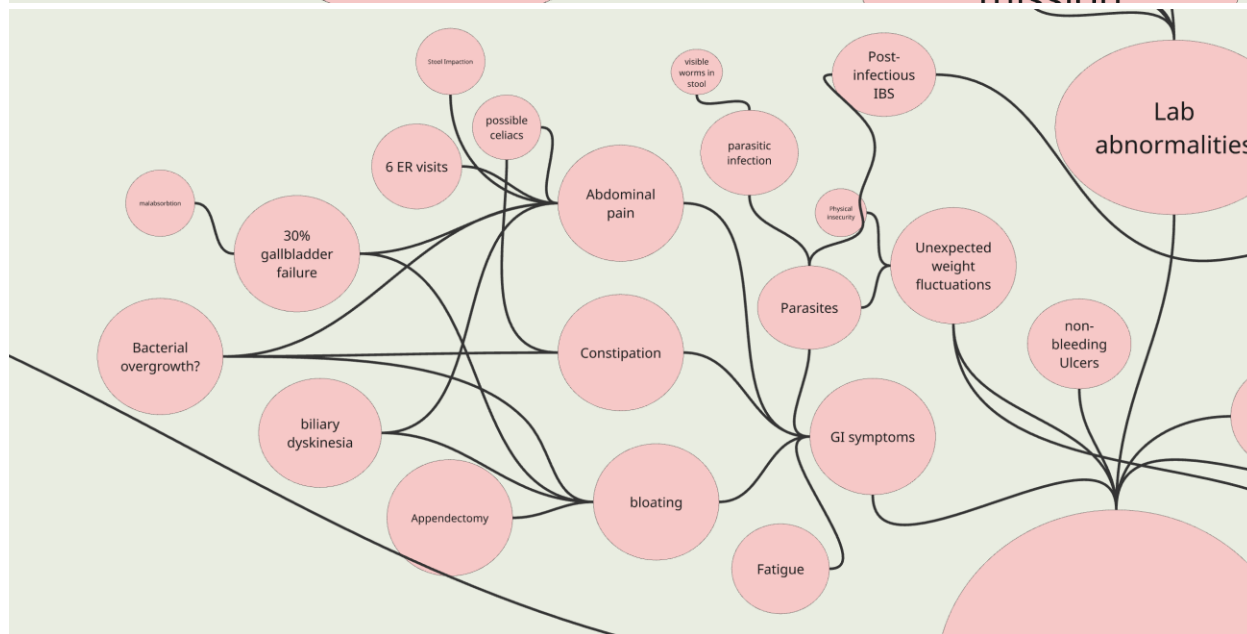
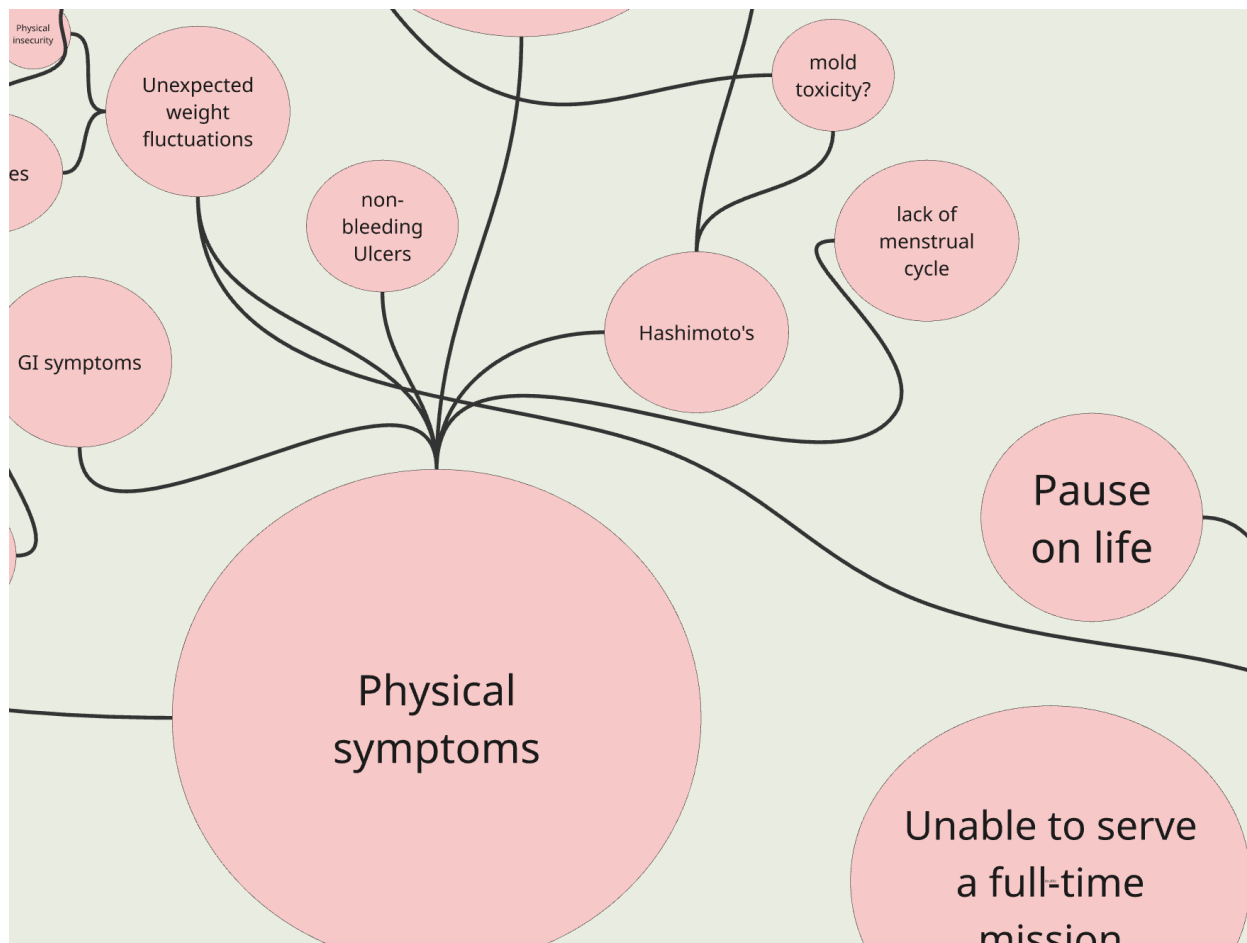
The Social Impact Cycle

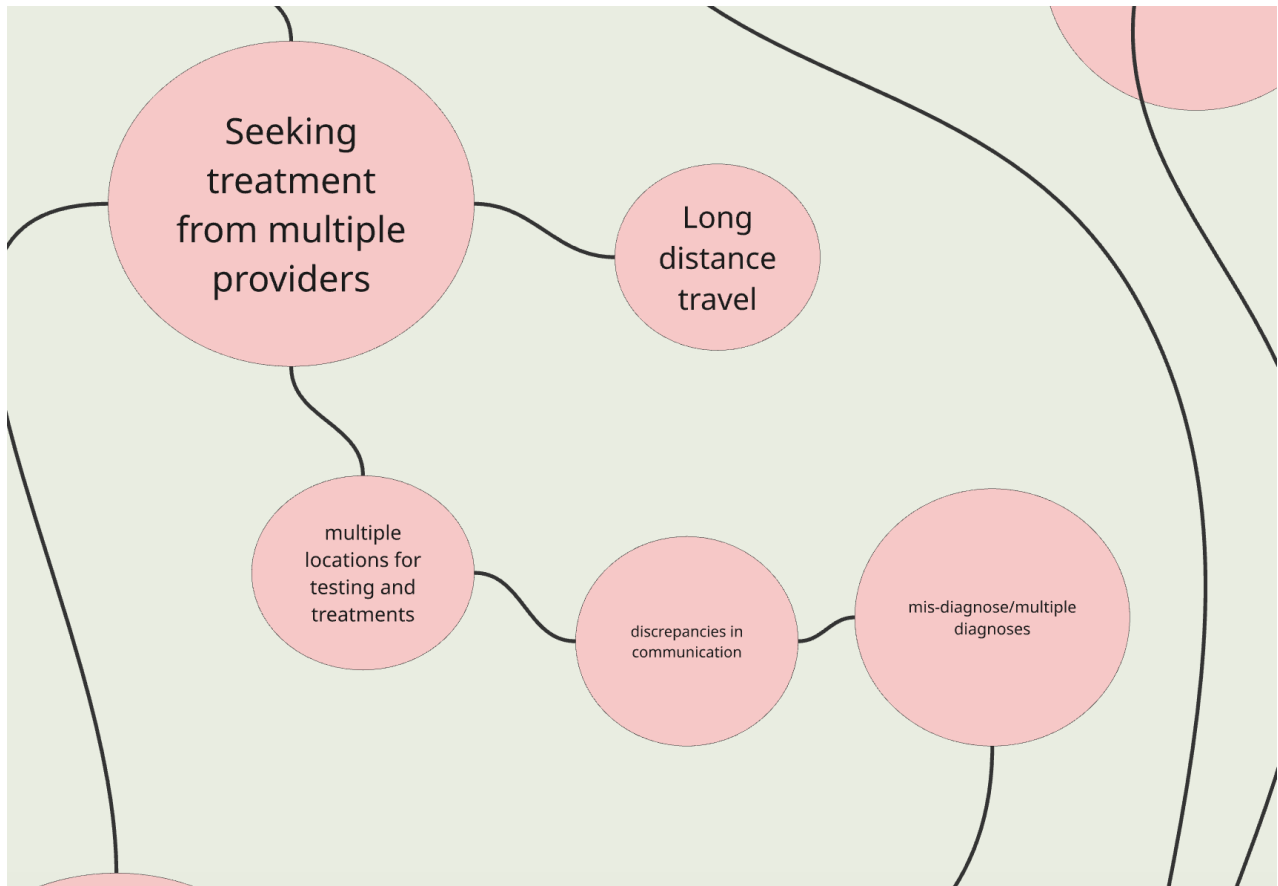
## Appendix B

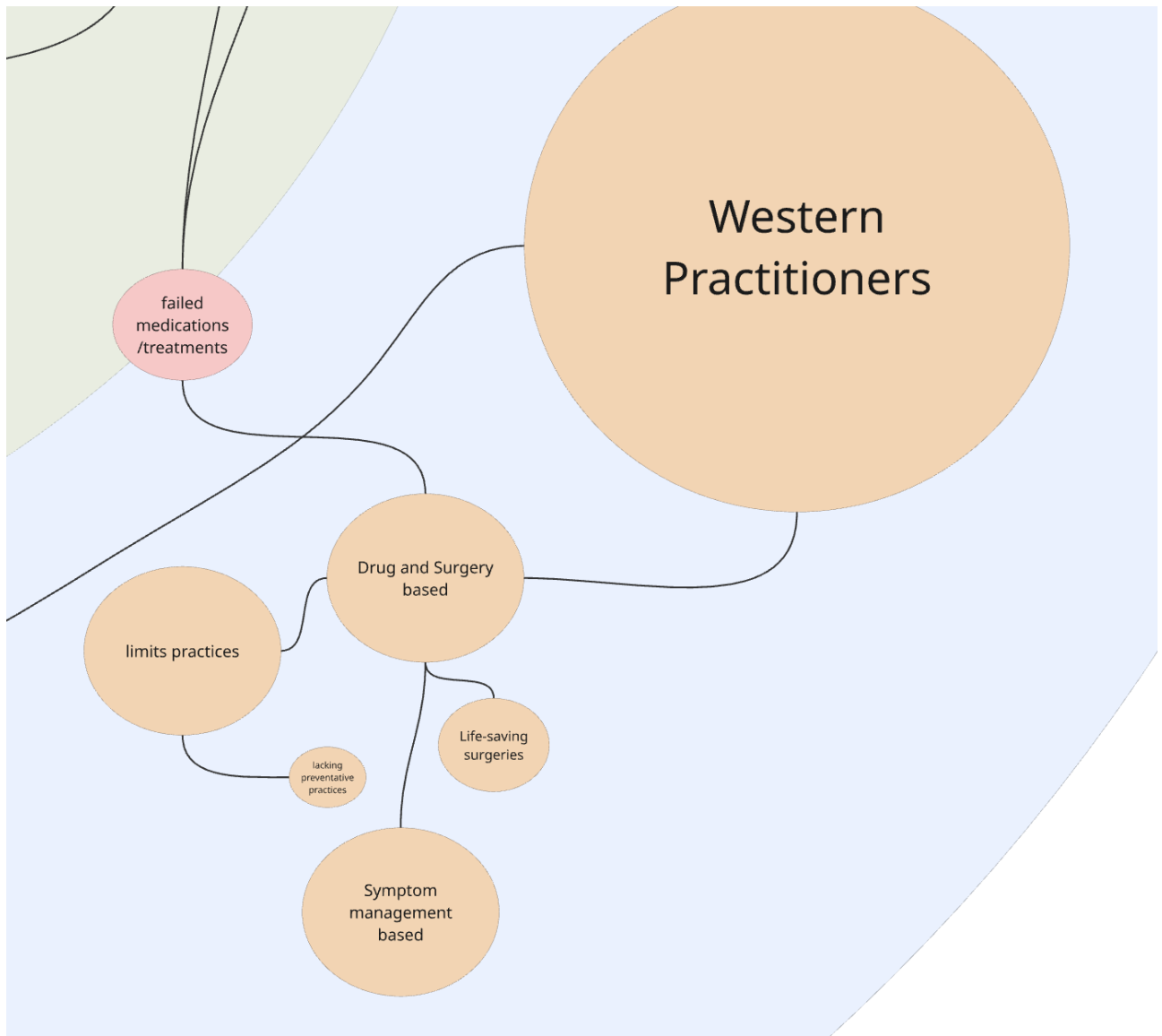


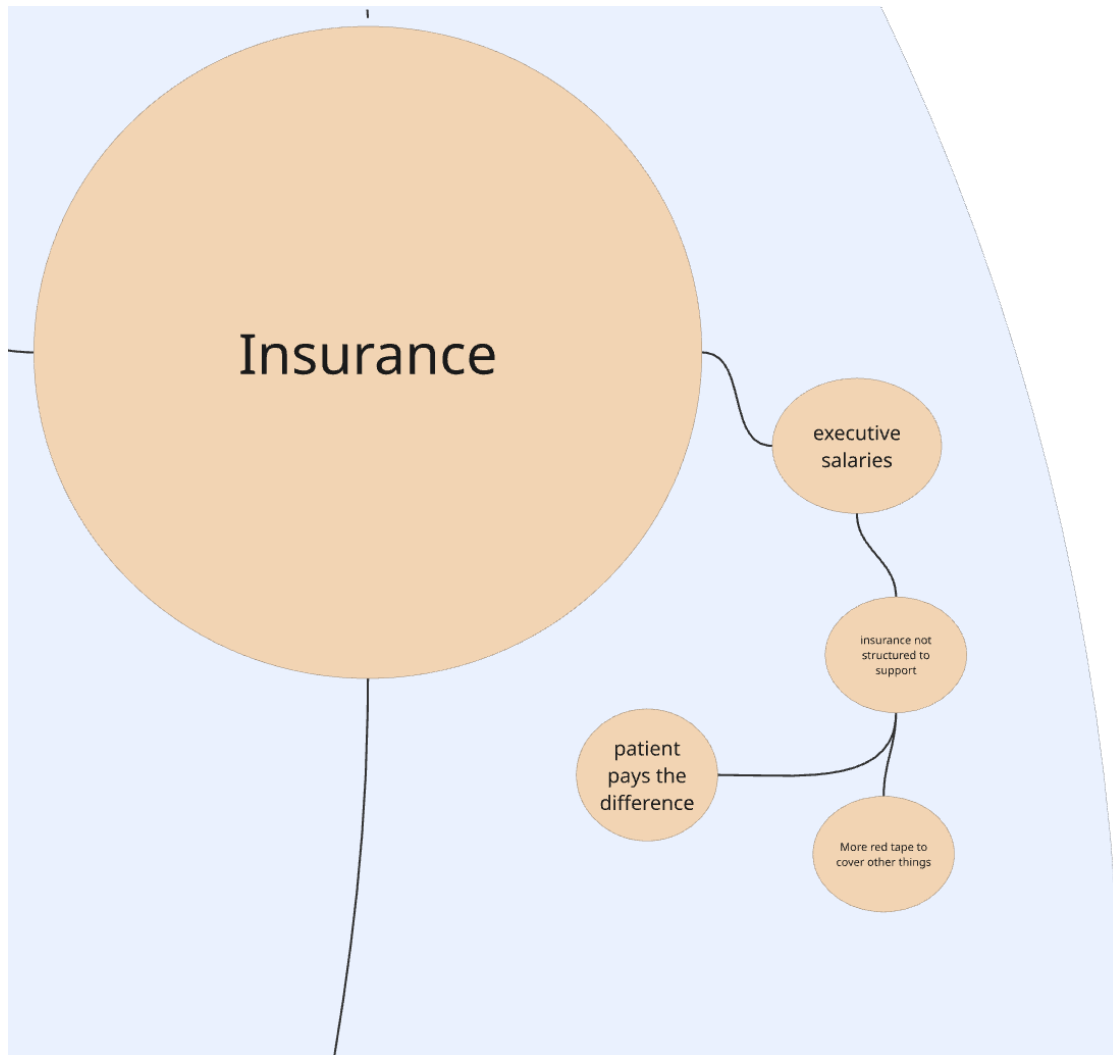












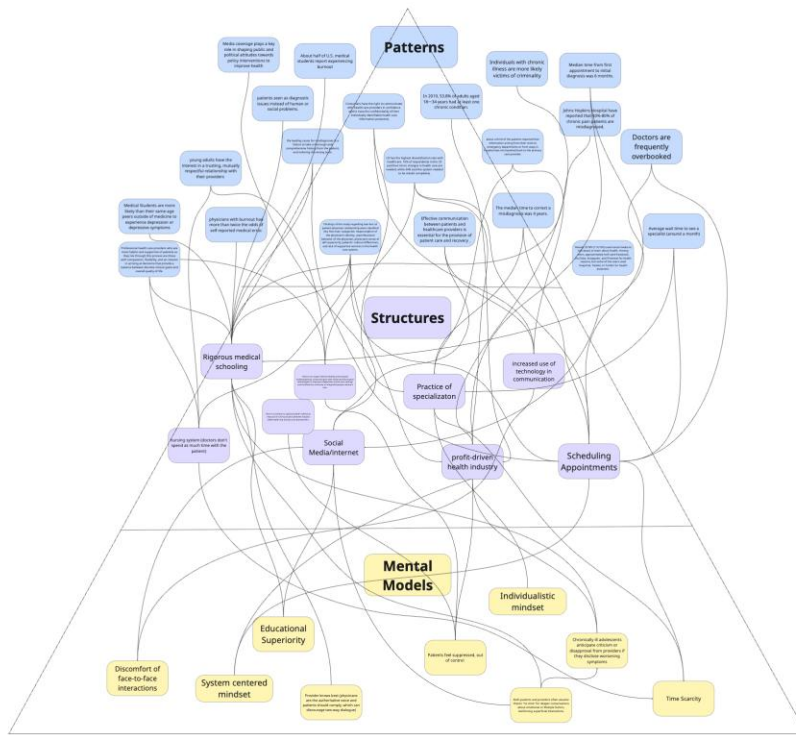
The ISAM

## Appendix C

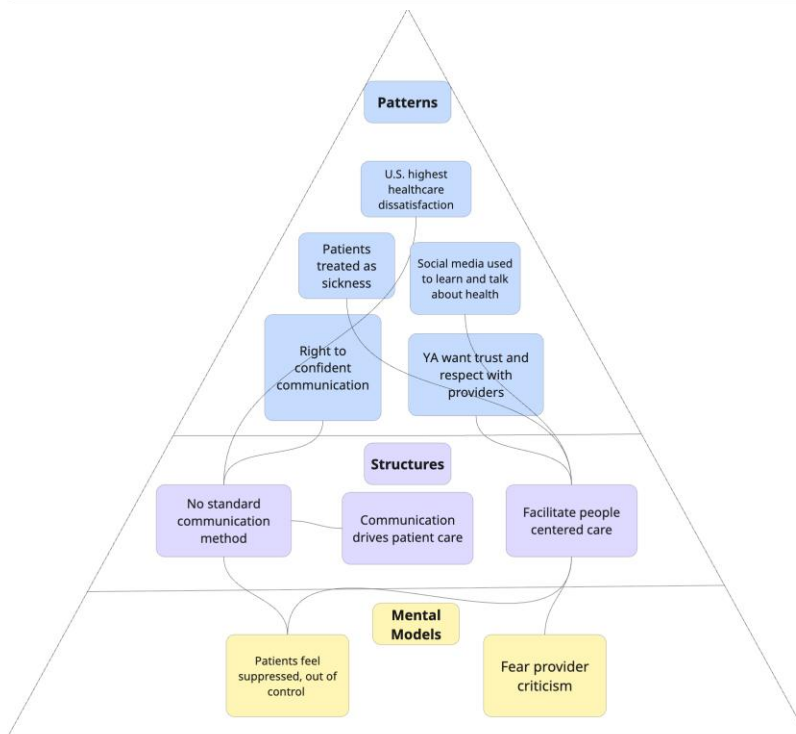


Official Triangulated Issue.

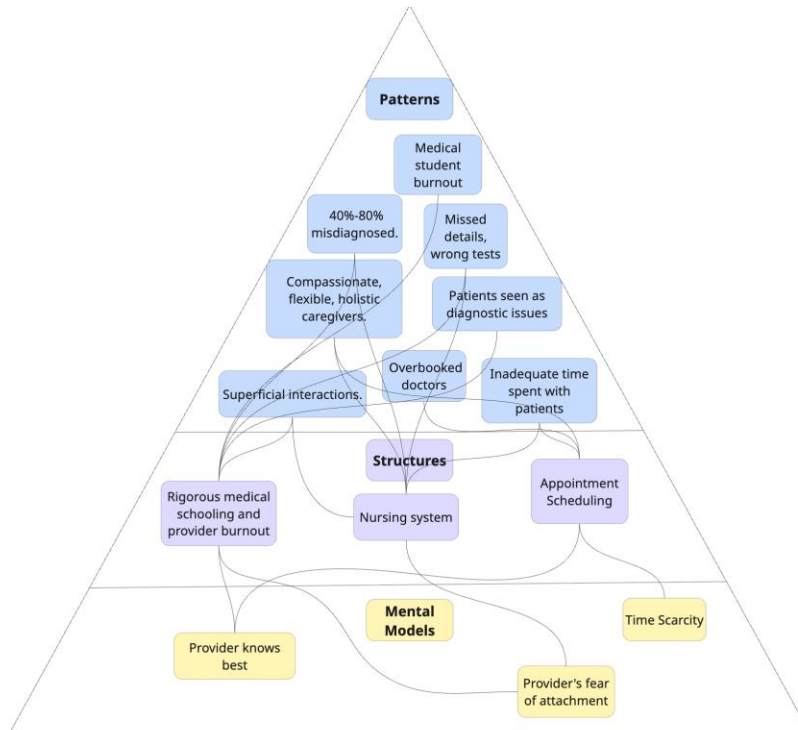
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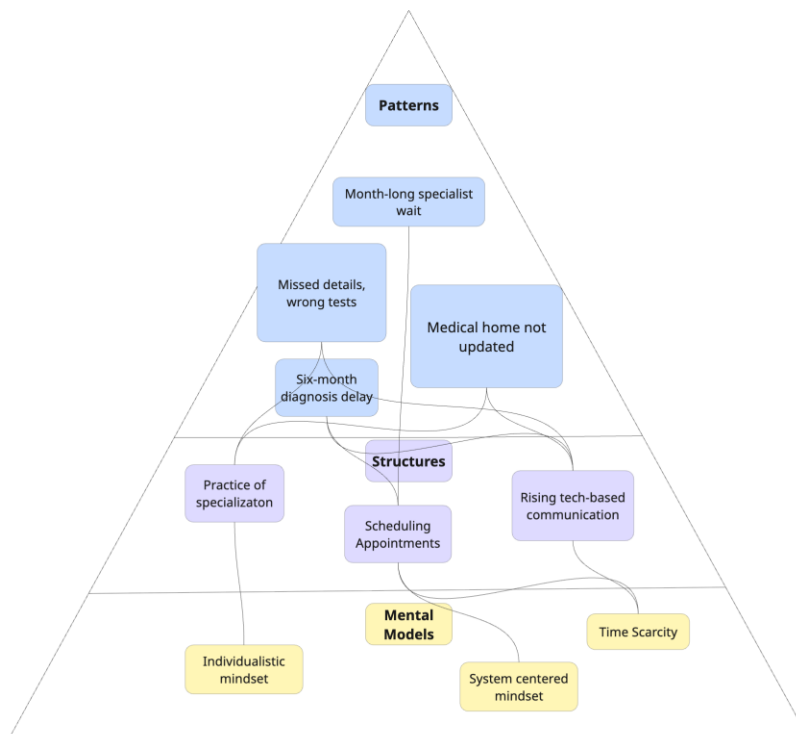
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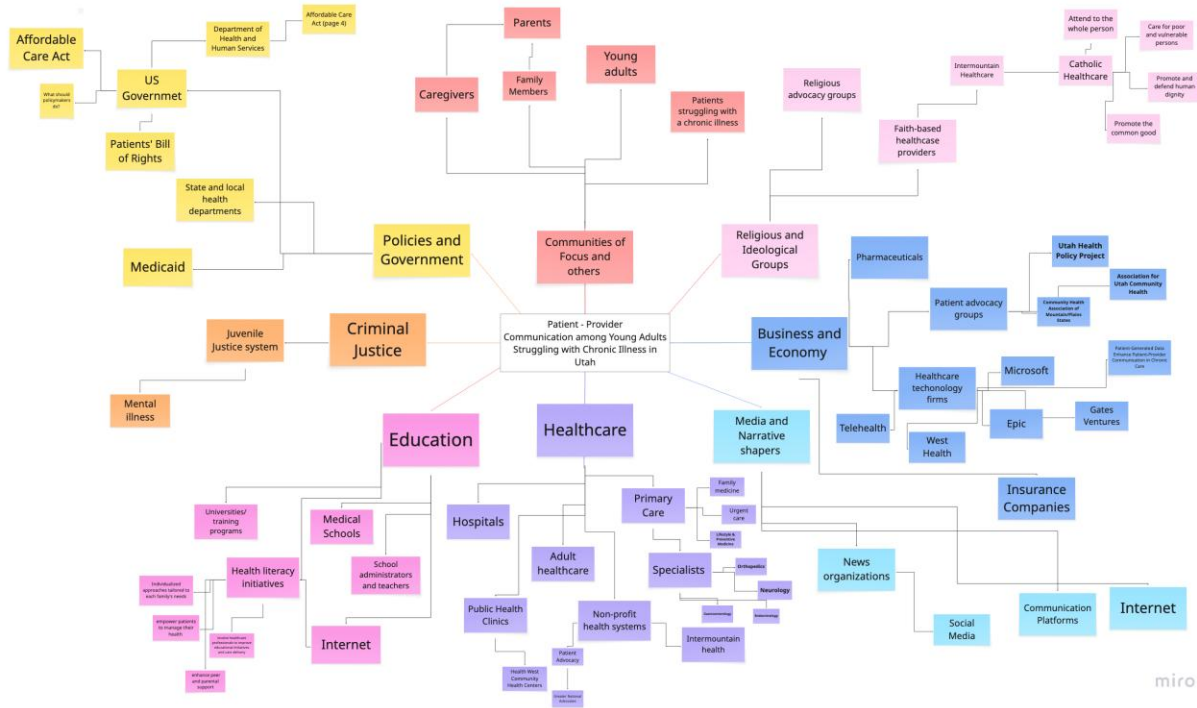
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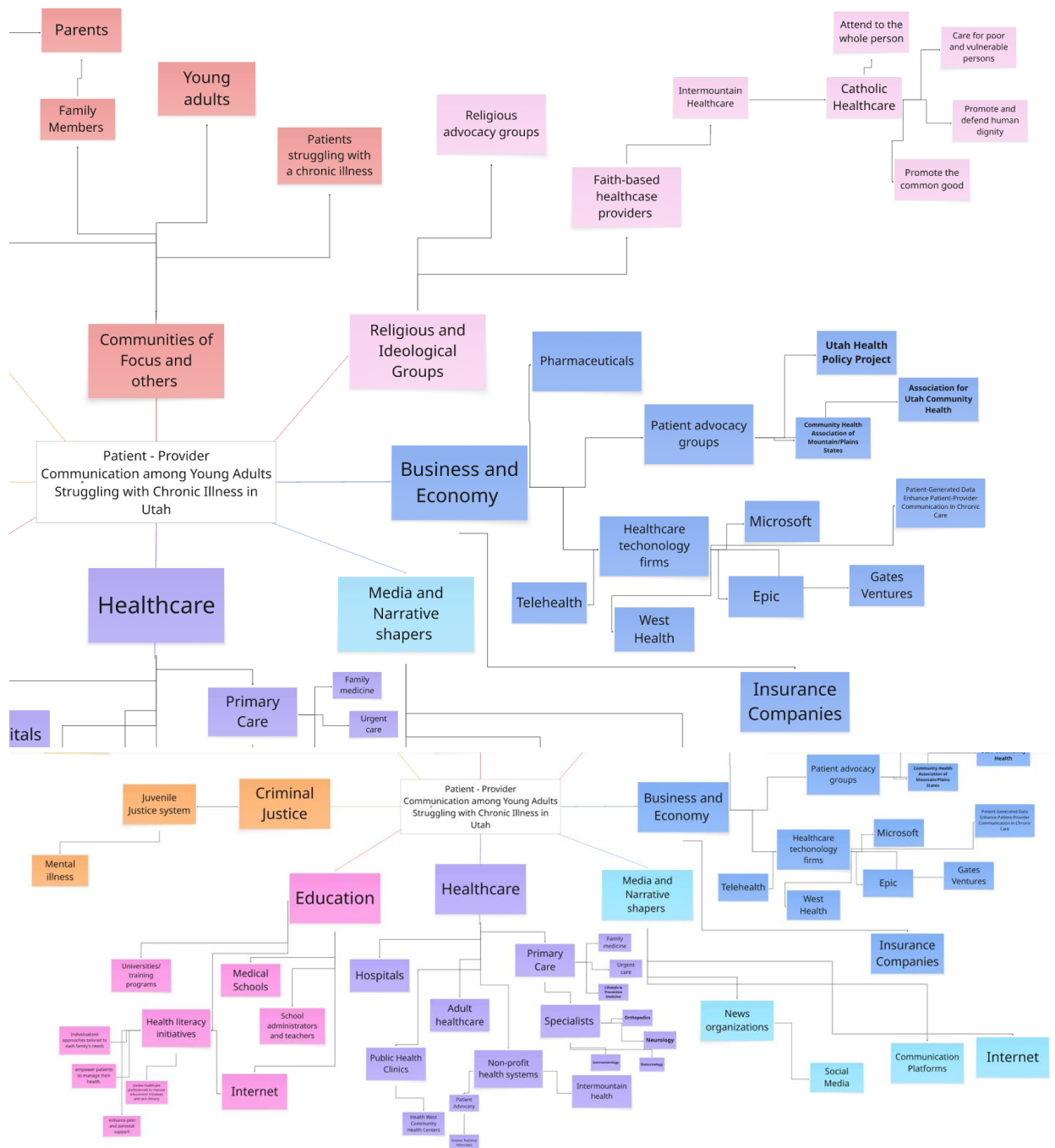


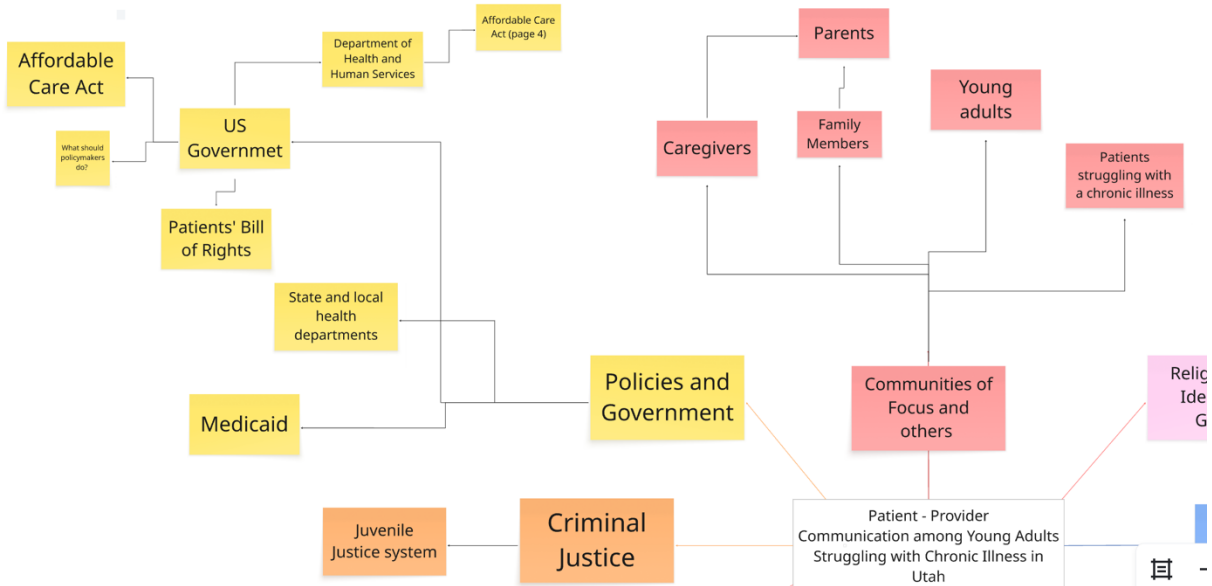
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The Iceberg Diagram

## Appendix E

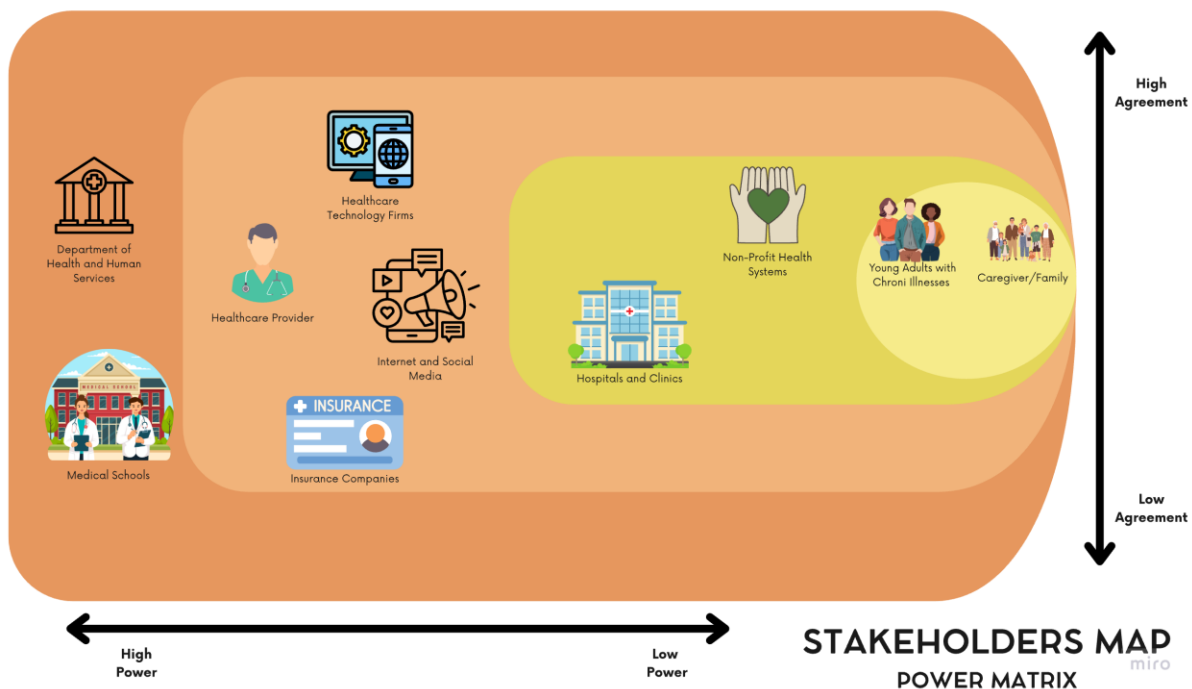






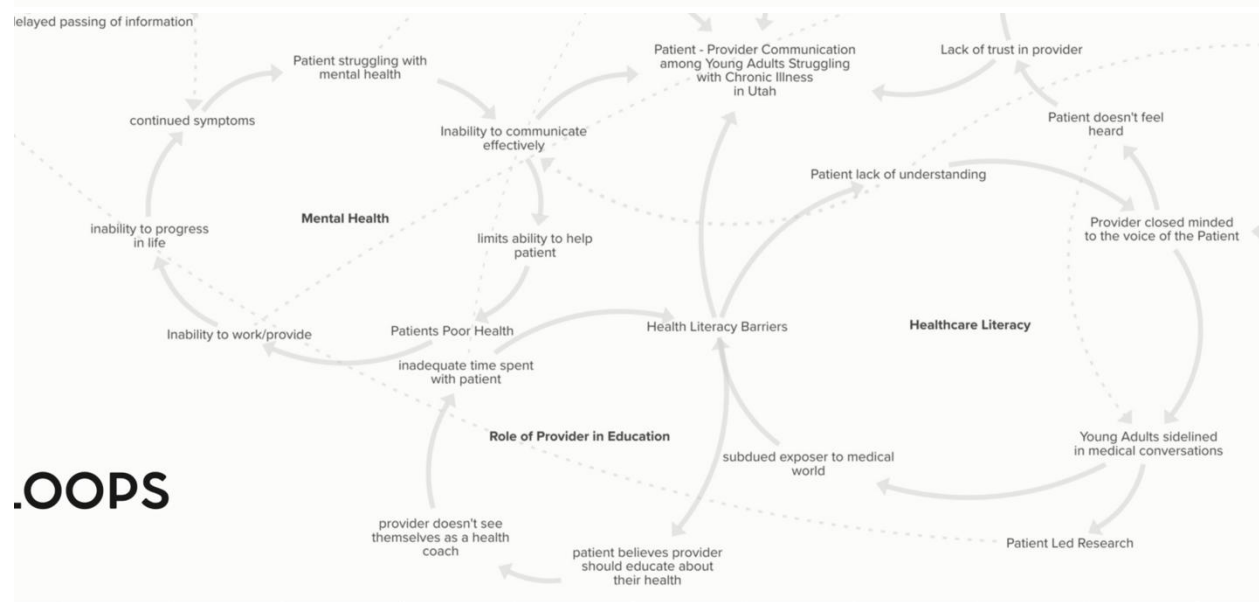
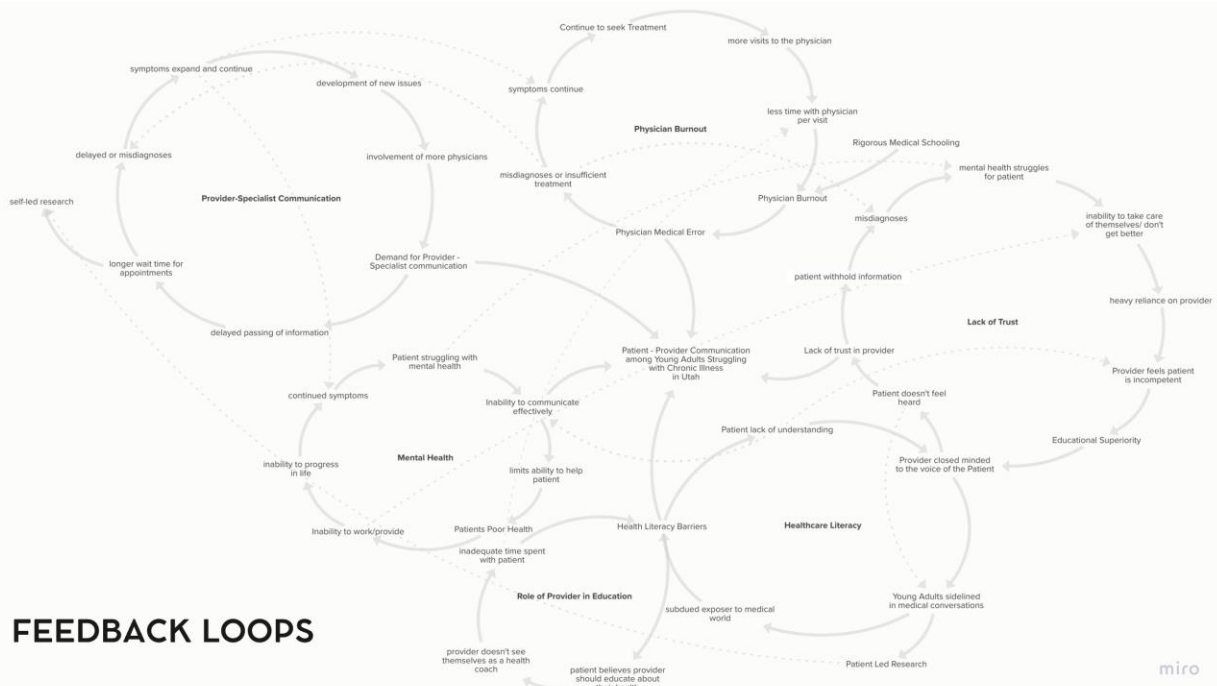
The Stakeholders Map

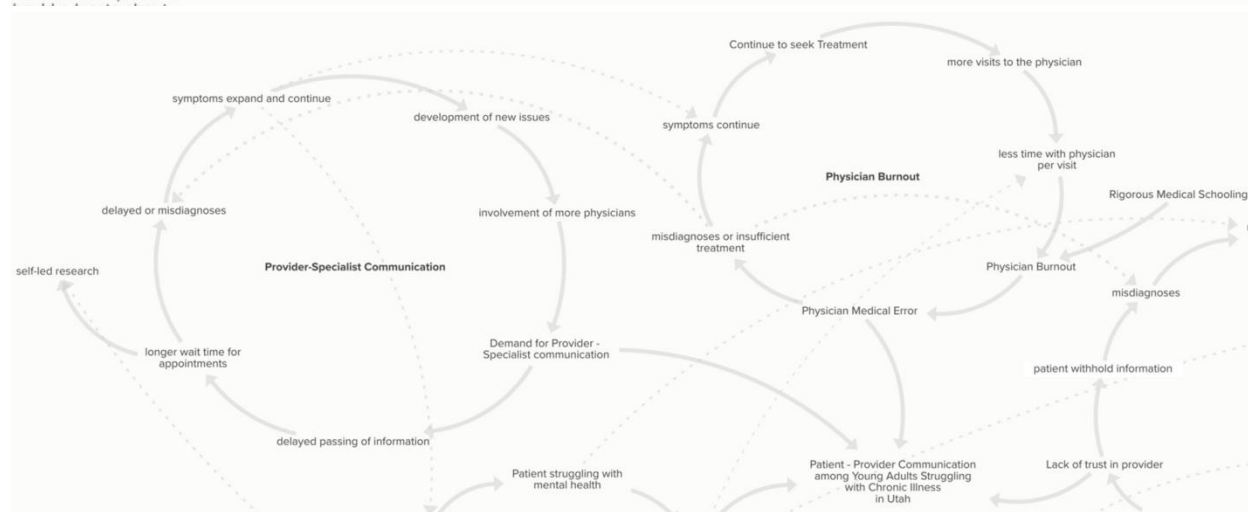
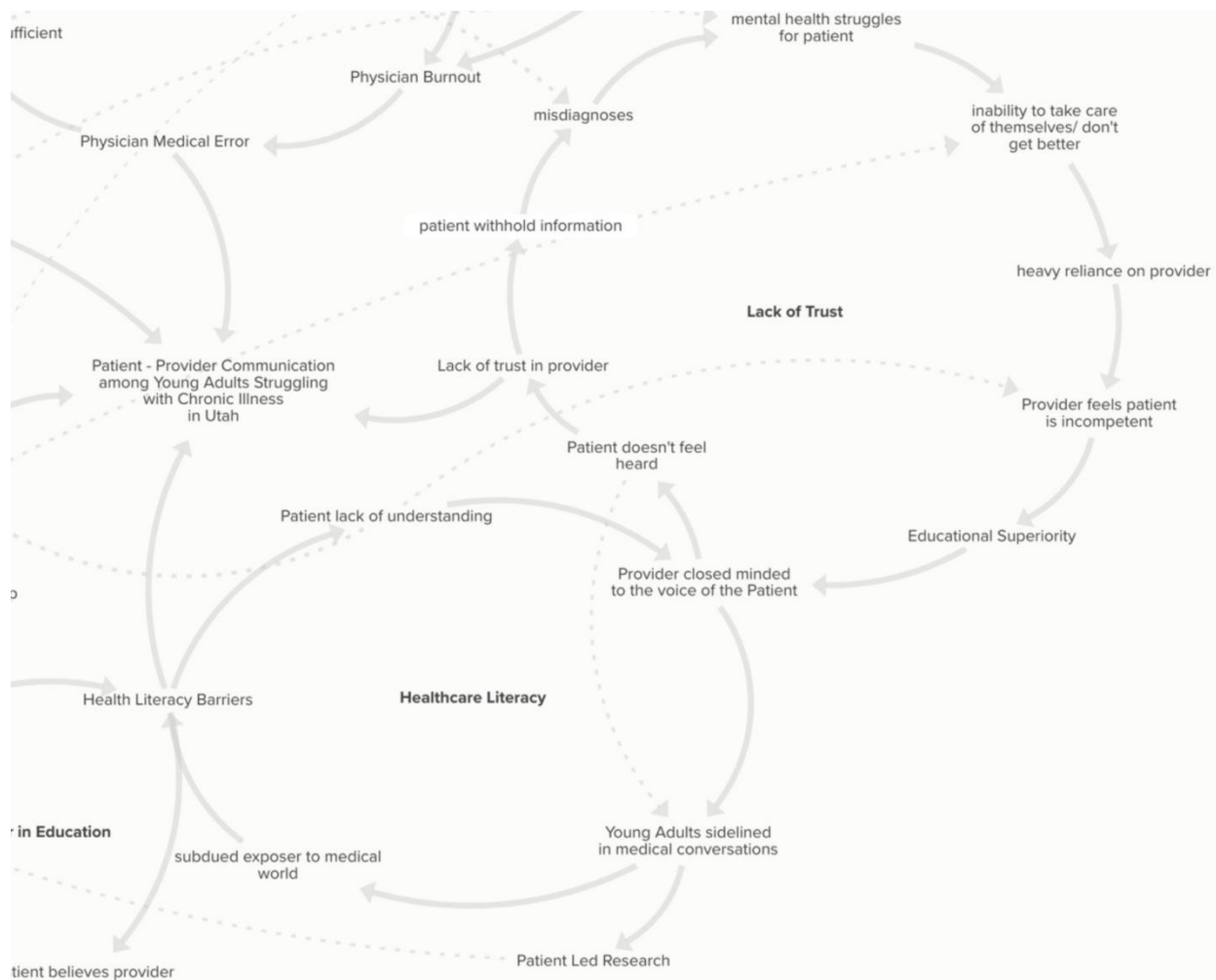
## Appendix F



Stakeholders Power Matrix Map

## Appendix G

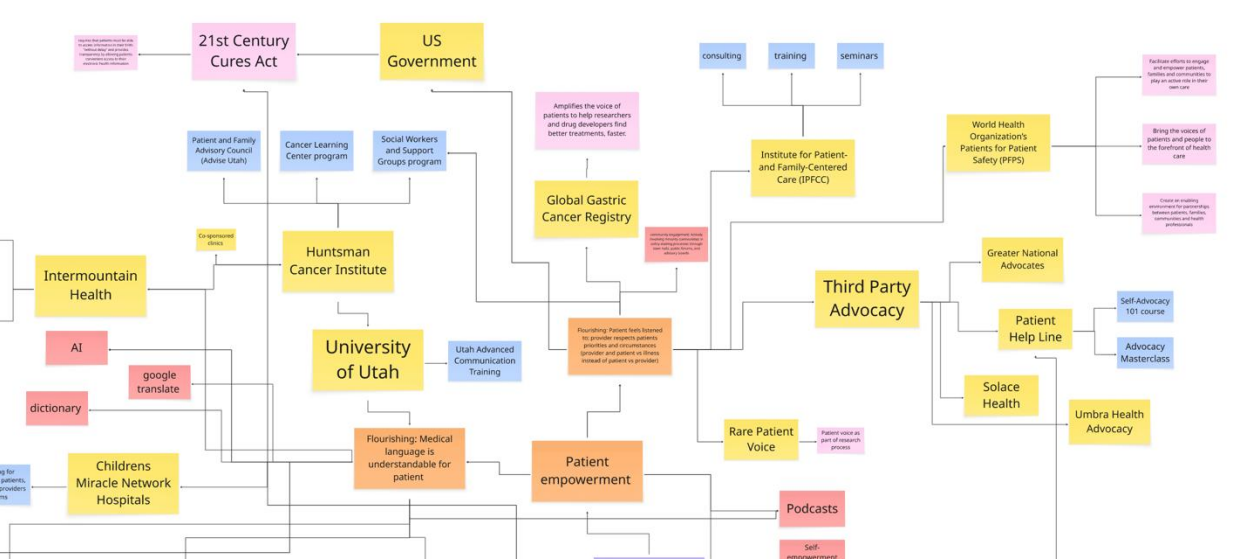
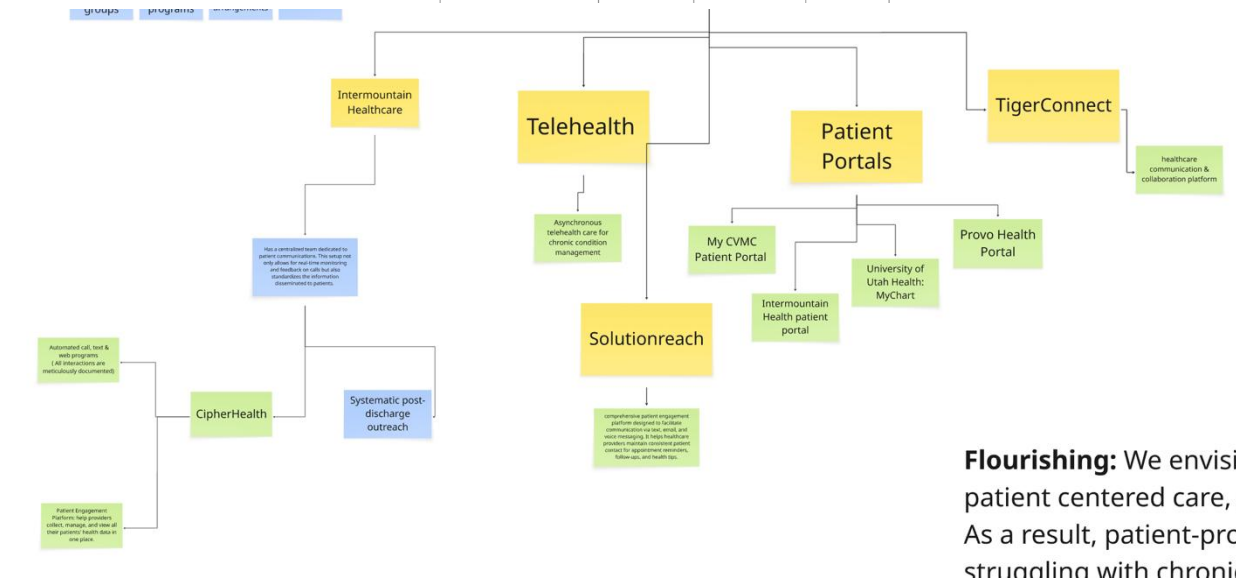
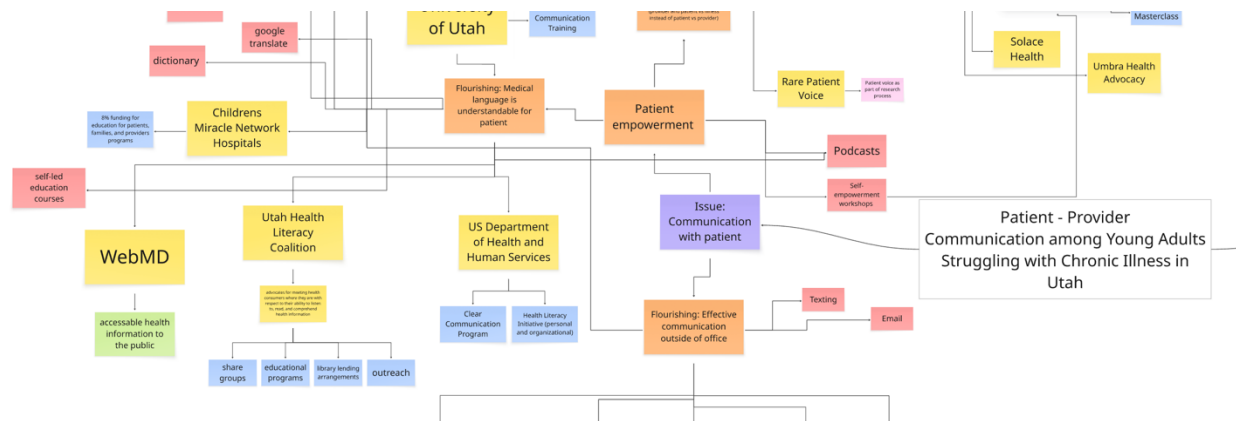




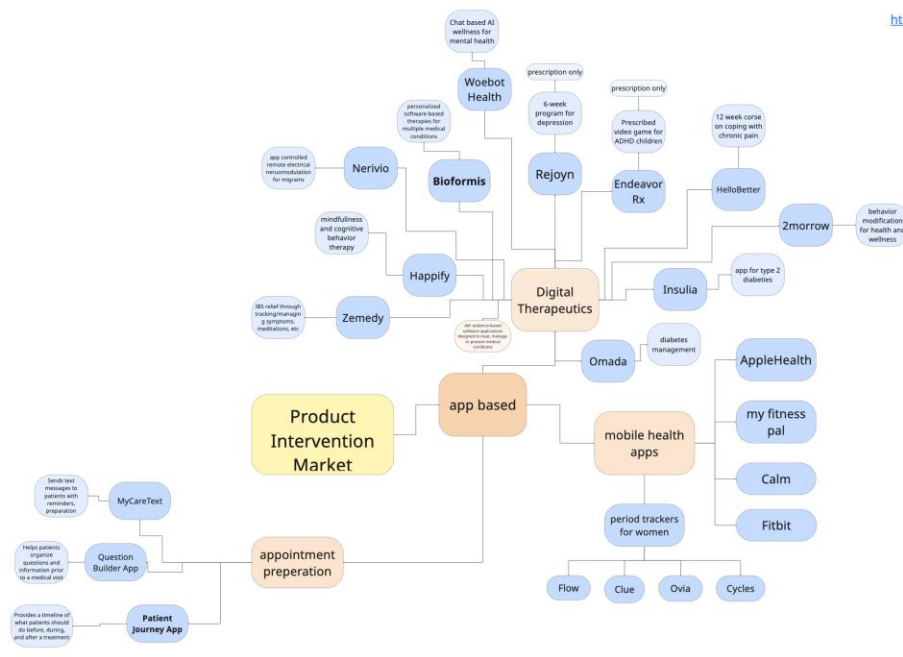
The Feedback Loop Map

# Appendix H









This image represents some of our market research concerning our product creation.

## Appendix J

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