



Benjamin Hillson

SUSTAINING ORGANIZATIONAL CULTURE CHANGE

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SUSTAINING ORGANIZATIONAL
CULTURE CHANGE

by
Benjamin A. Hillson

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Degree Master of Industrial Design
in the School of Design*

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Abstract

Medical centers are exploring for new methods of problem solving as they confront a vastly changing landscape. How can these new methods become part of an already established culture? My goal was to provide support between workshops that introduce innovation and the application of the learning. I created a role to support a team of healthcare employees as they applied innovation to their work. The results from this work not only reveal a strategy to strengthen the application of learning beyond the workshop, but it also provides a method for designers to improve the way they develop concepts with their clients.

*For my wife Emma,
for always being awesome*

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Thank you Mom & Dad for all of the love and support that got me here.

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DESIGN-THINKING IN HEALTHCARE

THE HISTORY BEHIND
A COLLABORATION AT
PENNMEDICINE



Academic health centers are employing innovative thinking as a way to improve their quality of care. This methodology, which is derived from design-thinking, deviates from the cultural norms that exist in healthcare. The evolving climate of healthcare has recently encouraged the establishment of centers for innovation. These centers act as a venue for employees to explore solutions to complex problems using this new methodology. Many health centers see design-thinking as a way to empower frontline staff to share innovative ideas with executive leaders. This push to employ design thinking is also in response to the Affordable Care Act that uses Press Ganey scores, which measures a patient's satisfaction with their care, to determine the percentage of insurance reimbursement that is received by the health center.

The University of Pennsylvania Health System (PennMedicine) is an academic health center in Philadelphia, Pennsylvania that has collaborated with the Master of Industrial Design program at the University of the Arts to explore avenues for employing design-thinking. I have personally been part of multiple initiatives that have employed design thinking within PennMedicine. These initiatives have applied design to improve PennMedicine care services while building a culture of innovation. These efforts have been to both explore specific issues in the delivery of care as well as to foster a culture of innovation. A cultural assessment, during the first collaboration, discovered that workshops were an ideal method of teaching innovative thinking while providing a venue that breaks down hierarchical barriers to empower front line staff. A number of initiatives that have applied this approach have developed strong concepts to address complex problems during the delivery of care through the facilitation of workshops. However, while participants are walking away from workshops with a strong



A nurse manager shares details about the culture at PennMedicine. Designers interviewed professionals from different departments to gain a broad understanding of the organization.

understanding of design thinking, they are not successfully applying the learning in their work.

The success of these initiatives helped lay the groundwork for the establishment of the Center of Innovation. There are two purposes for applying innovation within PennMedicine. The first purpose is to improve the quality of care while the second purpose is to develop a culture that can independently apply the learning. While the center for innovation has been able to successfully deploy design thinking to improve the quality of care, there has been difficulty developing a culture of innovation.

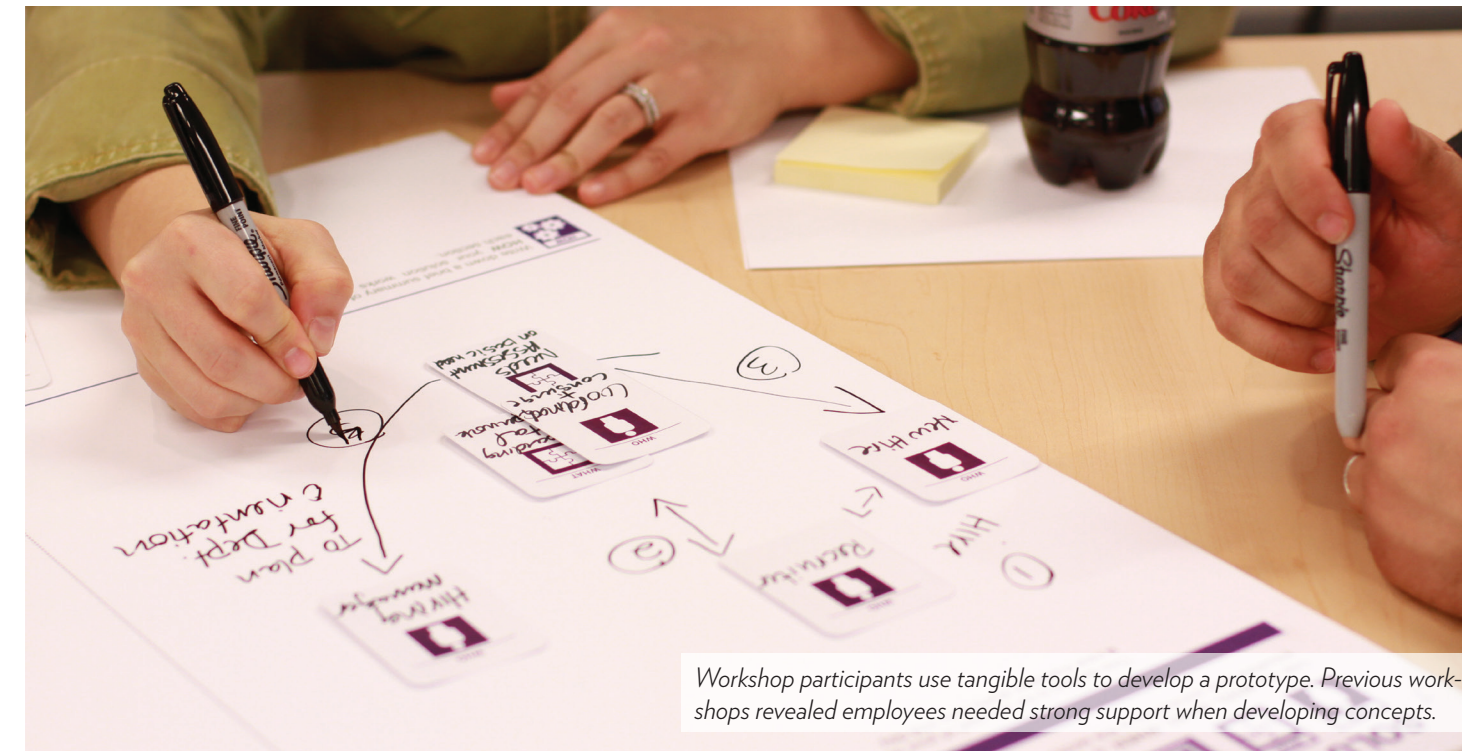
Building a culture of innovation requires shifts within the organizational culture. In order to successfully change the culture at PennMedicine to embrace innovation, we need to understand the difficulties of change, what type of support may be needed beyond the workshops, and the complexities of organizational cultures.



A practice manager considers methods to gather patient feedback. Tools are developed collaboratively with the center for innovation.



Stakeholders review data produced from generative research. The designers externalized research to share findings with stakeholders.



Workshop participants use tangible tools to develop a prototype. Previous workshops revealed employees needed strong support when developing concepts.

STAKEHOLDERS

INSIGHTS FROM THE EXPERTS



“Innovation is not so much different from what healthcare has been doing. It’s about framing it in a way that people can understand.”

*-Shivan Mehta
Director of Operations for the
Center for Innovation*

While working with PennMedicine and the Center for Innovation, the importance of building a culture of innovation was discovered as well as the difficulties that are faced when introducing change. These insights speak to how the Center for Innovation promotes their mission and the motivation for this thesis.

“We want to enable a culture to independently employ new thinking.”

Judy Schueler

Vice President of Organizational Development



Judy has been involved in several initiatives to develop a culture of innovation even before the creation of the Center for Innovation. She has recognized the hierarchical nature of academic health centers that can discourage front-line staff from sharing ideas. Judy’s interest in innovation is really about creating a culture that empowers front-line staff to share ideas.

David Asch

Executive Director of the Center for Innovation



David helps determine how the Center for Innovation promotes their work to fellow executive employees of PennMedicine. One thing David emphasizes is that the Center for Innovation is not the center *of* innovation. He wants to make sure that the work is approached in a manner that allows other employees to feel comfortable and welcome to engage in their projects.

Roy Rosin

Chief Innovation Officer



Roy promotes innovation throughout PennMedicine with roadshow presentations and Innovation Boot-camps. Roy has seen success in giving people an understanding of what innovation is but is not certain that attendees are applying their learning. He has expressed interest in discovering how to redesign boot-camps to address the issue of applying the learning.

Shivan Mehta

Director of Operations for the Center of Innovation



Shivan manages the projects for the Center for Innovation and is also a practicing physician. His perspective helps reveal which approaches are attainable and appropriate. He also understands the intricate organizational structure of PennMedicine which helps expedite the progress of projects. Shivan recognizes that innovation is not new to medicine and is interested in discovering how their message can be framed in a way that is easy for medical staff to understand.

Aaron Johnson

Director of Innovation Communication



While Aaron’s position does not immediately fall under the Center for Innovation umbrella, he does work on a number of innovative projects with the team. Like Judy, Aaron has been part of many innovative initiatives prior to the establishment of the Center for Innovation. His understanding of the obstacles of building a culture of innovation speaks to the importance of not only communicating what innovation is, but communicating it in a way that motivates people to action.

Chris Klock

Performance Improvement Consultant



Chris facilitates the Performance Improvement in Action workshop. His department is part of PennAcademy, which offers professional training for employees. While his workshops are rooted in traditional, six-sigma based methodologies, a component introduces innovative thinking. Chris recognizes that the results from the workshops can be stronger and would like to ensure that participants are correctly applying their learning.

Organizational Structure

What does an Academic Health Center look like?

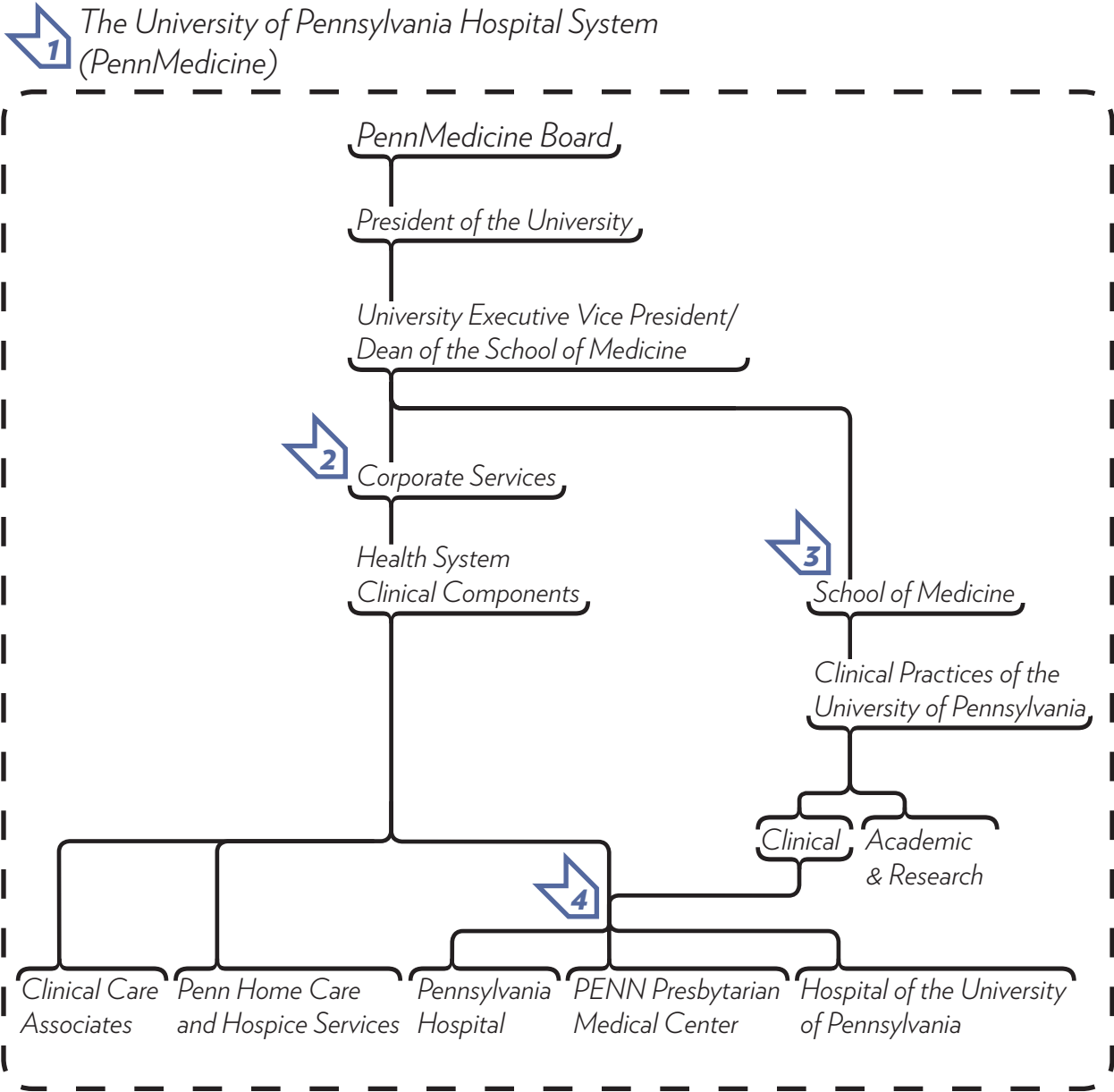
- DISCOVERIES
- 1

PennMedicine has over 20,000 employees across three main campuses and 29 satellite clinics.
- 2

Corporate services provides support to PennMedicine’s clinical components. This includes administrative servies and technical training through PennAcademy. This is also where the Center for Innovation is positioned within the organization.
- 3

The School of Medicine operates independently from the clinical components of PennMedicine. It does not recieve support from the corporate services and has its own ad-ministrative services.
- 4

PennMedicine has three main campuses that are dispersed throughout the city of Philadelphia. These act as teaching hospitals for the school of medicine.



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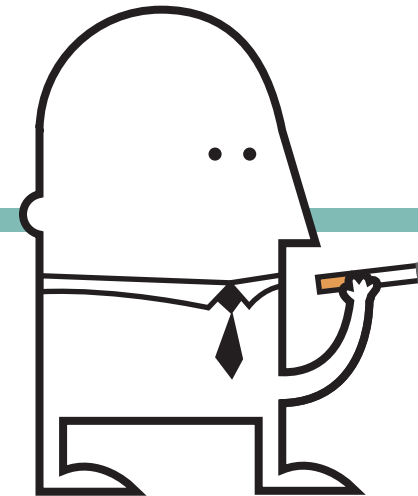
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HABIT & BEHAVIOR CHANGE

WHY PEOPLE BEHAVE
THE WAY THEY DO



“I need to change”

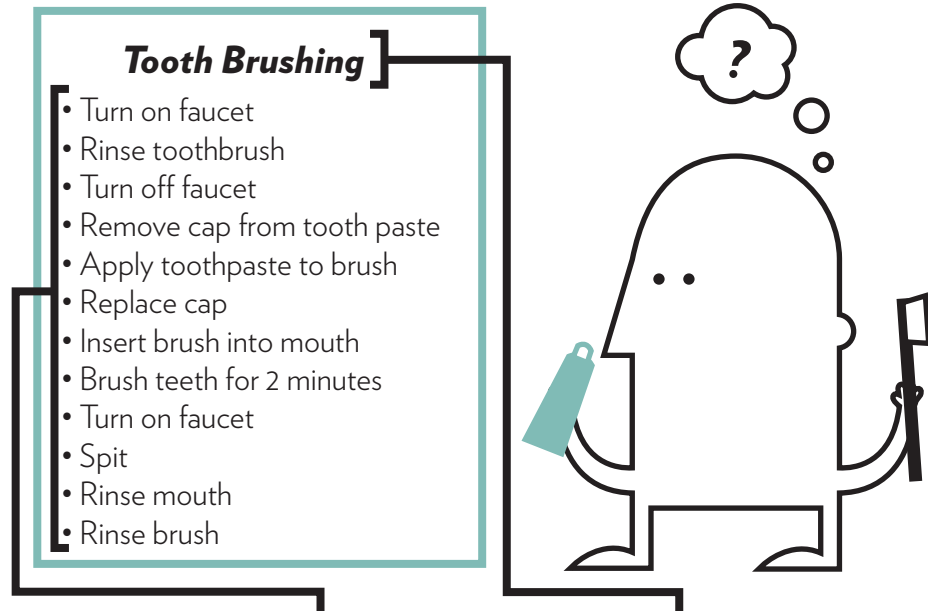
Before concepts are created to change organizational culture and individual behavior, the complexities of behavior change must be understood. Daily human behavior is made up of a series of habits. The great neurologist William James said, “All our life, so far as it has definite form, is but a mass of habits.” *(Duhigg Prologue)*

*“All our life, so far as it has definite
form, is but a mass of habits.”*

-William James
Psychologist

Habit is an interesting topic for a designer and can be an indicator to inform the way a designer approaches a new concept. Human behavior is full of habits with varying degrees of complexity. Brushing your teeth is a simple task that is made up of a series of steps but most people don't spend a lot of time thinking about all of the individual steps involved in the process. This is because this task has become habit. But some habits can be undesirable and difficult to break. (Duhigg 20)

Some people may think of a habit as a bad routine that needs to be broken but habits are an important part of our ability to function. Making our lunch, taking a shower, brushing our teeth, driving to work; these all include a series of steps that need to be fulfilled in order to perform a task successfully. In order for us to carry out these tasks more easily, and reduce our cognitive load, our brain naturally "chunks" these processes. (Duhigg 17) Instead of thinking about driving to work by thinking about all of the individual steps (picking up our keys, unlocking the car, getting in,



"Chunking" allows complex tasks to become *simple*

closing the door, putting the key in the ignition, etc.) we simply just think of it as "driving to work." If people didn't naturally chunk their routines, we would be mentally exhausted by the time we showed up to work. (Duhigg 17)

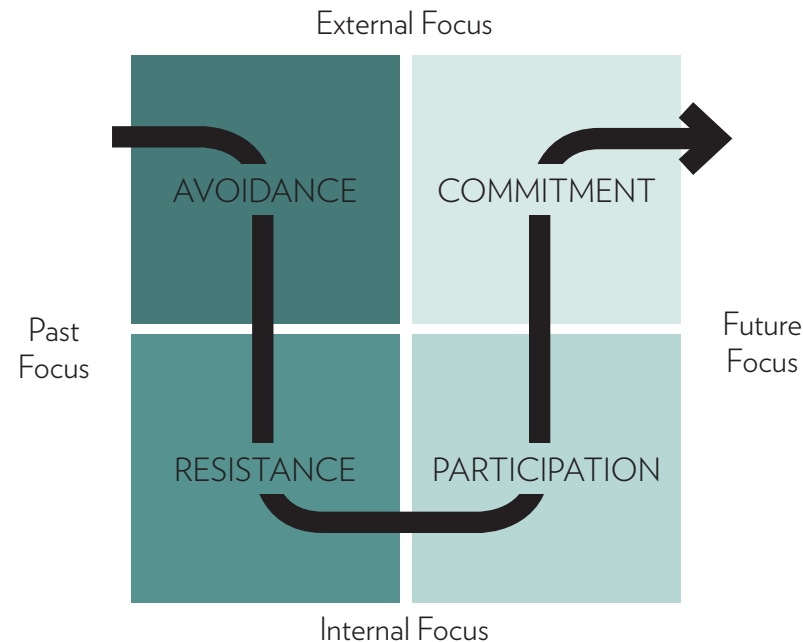
This chunking not only allows people to perform habits more easily but it also physically moves where this information is stored in the brain. While performing or learning new routines, human thought process is occurring in an area of the brain called the prefrontal cortex. Neurologists believe this area was developed late in human evolution and when processing information here, the brain is under a large cognitive load. Habits are maintained in a part of the brain

called the basal ganglia. This part of the brain is much older (in terms of the evolution of the brain) and contains our instinctual behaviors. While performing functions using this part of the brain, our brain is under a small cognitive load. (Duhigg 18)

As new behaviors become habits the brain physically changes where it is storing and referencing information, shifting the thought process from the prefrontal cortex to the basal ganglia. This reduces the cognitive load needed to perform a task or routine that has now become familiar. (Duhigg 18) This is what makes it so easy for us to brush our teeth everyday without thinking about it.

There are three components to every habit: the cue, the routine, and the reward. (Duhigg 19) The cue is what triggers the habit. An example of a cue could be a sign to your favorite coffee house. This cue then triggers the routine of going to buy coffee. Once the transaction is complete, the reward is a fresh, hot cup of coffee. This example is extremely simplified as each one of these components can have varying levels of complexity. The reward of the coffee is really a complex package containing everything from the cof-

THE CYCLE OF CHANGE



fee in the cup to the environment of the coffee house. (Duhigg 22) While it may be easy to identify the routine, it can be difficult to pinpoint the cues and rewards.

Good designs help reduce cognitive load which, in-turn makes it easy to adopt new habits. Every design either builds off of an existing habit (a new tooth brush that maintains the traditional design) or attempts to create a new habit (an electric tooth brush). Understanding how habits are created and maintained is

important for designers to consider as a reinforcement tool for successful designs.

Pamela Tudor, a professional consultant and facilitator, describes how people cope with change with the Change Cycle. This Change Cycle has four components; avoidance, resistance, participation, commitment. Each of these four components have either an internal or external focus with either a past or present orientation. The change cycle is something that is inevitable during any type of change, but good design can help determine how quickly the change cycle is managed.

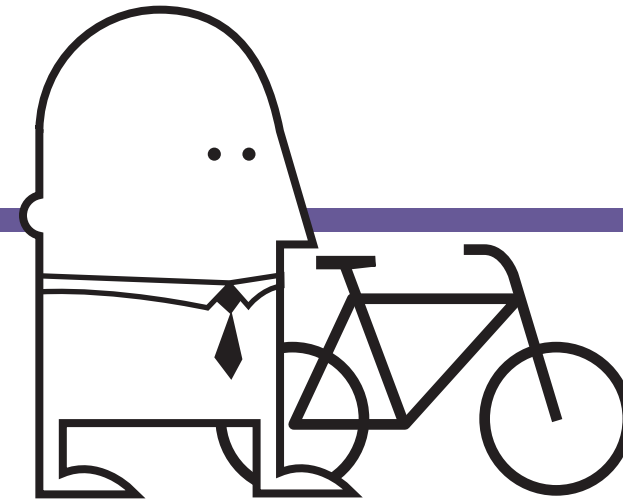
The most important thing to know about habits is that they are permanent. Once the brain has been trained to crave something, that craving is maintained forever. You can, however, change the routine while still maintaining the cue and reward. This allows habits to be changed as opposed to broken. The "golden rule" in regard to behavior change is that habits can not be extinguished, they can only be changed. (Duhigg 63)

FAMILIARITY

BUILDING ON WHAT IS
KNOWN

*“To market a new habit
—be it groceries or aerobics—
you must understand how to
make the novel seem familiar.”*

*-Charles Duhigg
The Power of Habit*



“I’ve done this before”

While exploring different resources addressing the issue of change, the theme of familiarity kept cropping up. This theme was evident in different fields that introduce a new product, helping someone overcome personal change like smoke cessation, and also organizational consulting. While product design considers familiarity as something that can help a design become adopted more readily, consultants and counselors understand working within the context people are already familiar with is a more successful approach when addressing change. As academic health centers employ innovative thinking, leveraging what people are already familiar with can help organizations more readily adopt new methodologies.

Raymond Loewy's MAYA (Most Advanced Yet Acceptable) principle states that no matter how sound the reasoning for a new idea or concept, if it is a great leap beyond what people already know, it will not be embraced and is more likely to fail. This perspective comes from a designer who is responsible for several successful designs including the same logos we still see today for Shell, Exxon, the US Postal Service as well as consumer goods like the coca-cola can and the Avanti automobile.

There are several phenomena that occur when there is a lack of familiarity. As a person encounters a new product for the first time, the strength of the design determines how well the individual understands the intended use. Poor designs can lead individuals to misinterpret a design and falsely blaming themselves for the failed interpretation. This situation can lead to a user developing a sense of "learned helplessness." This occurs as a user is repeatedly unsuccessful at interpreting a design but is aware of others being able to successfully understand that same concept. The

"The adult public's taste is not necessarily ready to accept the logical solutions to their requirements if the solution implies too vast a departure from what they have been conditioned into accepting as the norm."

-Raymond Loewy
Industrial Designer

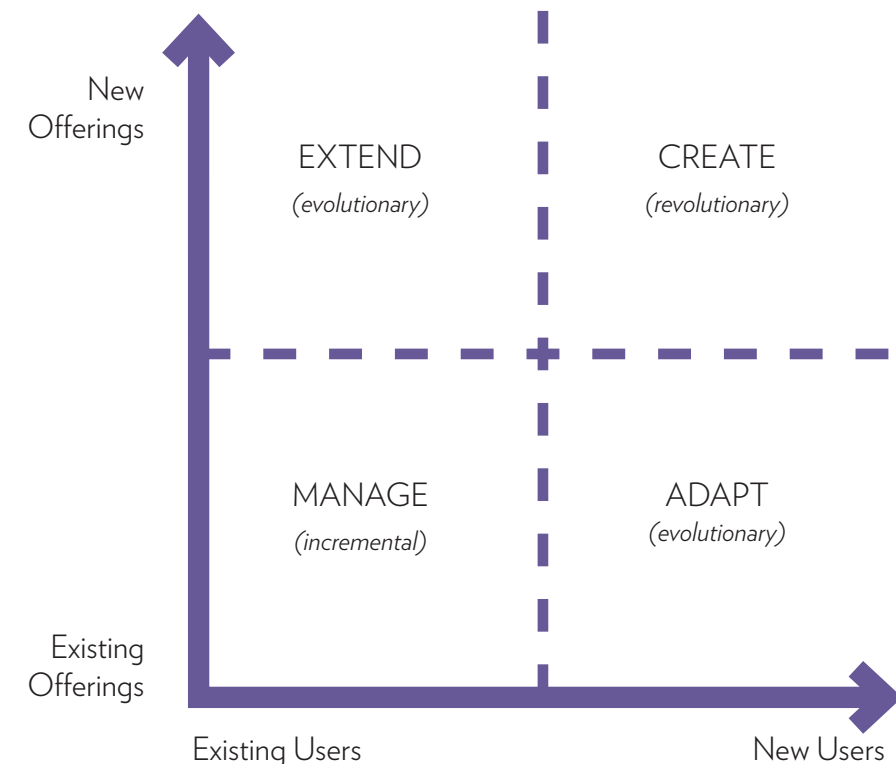
result is an individual being convinced that a concept will never see success as long as they are part of the equation. (Norman 42)

The issues of misuse and learned helplessness can be avoided by minimizing the gulfs of intension and execution. The gulf of evaluation is the difference between a concept's intended use and how a user interprets the intended use. The gulf of execution is the difference between how a process is meant to be executed and how a user executes a process. The burden of creating a concept that minimizes the gulfs of execution and gulfs of evaluation falls on the shoulders of the designer.

(Norman 51) As concepts are created that resemble something a user has seen before, these gulfs inherently become minimized. This allows users to refer to previous experiences to interpret intended use and application of designs. Leveraging familiarity with the introduction of a new concept can make change seem more incremental and less revolutionary.

The "Ways to Grow" matrix reinforces this type of incremental change. This matrix shows there are new and old users and goods. (Brown 161) Successful designs typically fall in the evolutionary quadrants while radical ideas fall in the revolutionary quadrant. A good example of

Ways to Grow matrix



a revolutionary concept that failed is the Segway. The Segway offered personal transportation to people who were not already using personal transportation. It was a new offering to new users. (Brown 164)

The Power of Habit acknowledges that "to market a new habit, you must understand how to make the novel seem familiar." (Duhigg 212) If you dress something up in something familiar, it is easier for the public to accept it. Charles Duhigg likens

this to a radio DJ's sandwich technique used to make a new song a hit. This technique takes a song that is unpopular and plays it between two songs that are already hits. This "sandwich playlist" is used over and over again until the song catches hold. The method is so effective that is credited for Outcast's "Hey Ya" receiving a Grammy. The song originally had 26.6% of listeners changing the channel. Within three months, that number dropped to 5.7% by disguising the song with

songs that were familiar. The song eventually sold 5.5 million albums. (Duhigg 207)

Success in both individual and organizational change can be greatly improved by leveraging what is already familiar. Concepts should keep this in mind when introducing new processes in existing cultures. This approach can help ease the process of change.

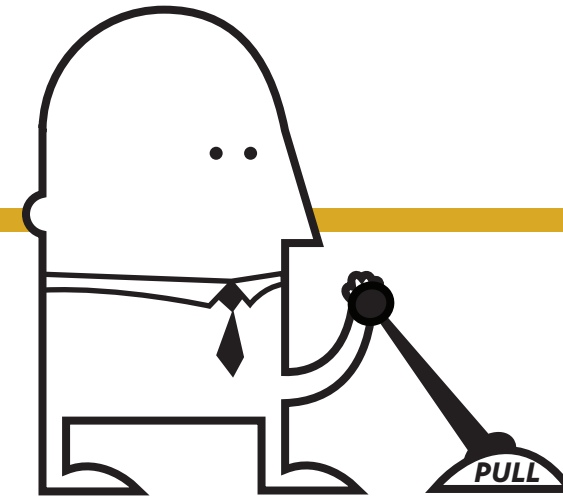
AGENCY

GIVING PEOPLE
CONTROL

*“It is natural human tendency to
resist persuasion.”*

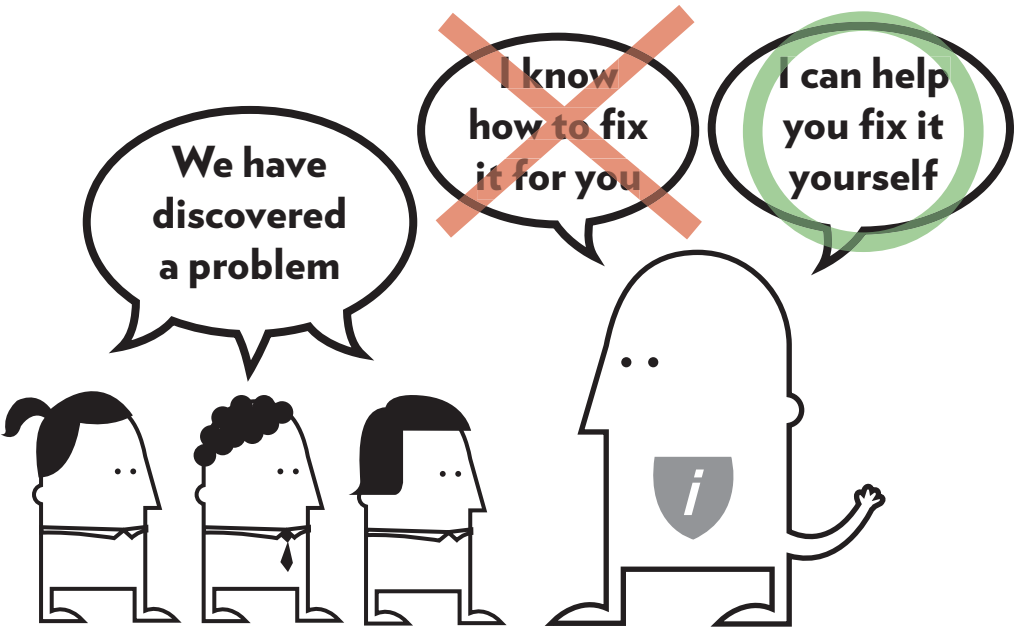
*-Butler, Miller,
& Rollnick*

*Motivational Interviewing
in Healthcare*



“I got this”

Throughout researching the issue of change, the importance of agency has come up repeatedly. People like to have a sense of control during processes. Part of this is because it is a natural human tendency to resist persuasion. *(Butler, Miller, and Rollnick 7)* Medical diagnosis approaches that include the patient as an active participant lead to a stronger understanding and commitment to a patient’s treatment. Similarly, academic health centers recognize the difficulty in transitioning ideas to action so they encourage avoiding a hands-off approach to introducing innovation. *(Daughtery, Moss, and Pratt 5)* This is reinforced by the increased enthusiasm seen when employees are given more control over their jobs in other industries. *(Duhigg 151)*



As academic health centers introduce innovation, it is important to engage individuals as active participants in their own stories. Tim Brown introduces this in *Change by Design* where he recognizes each individual’s experience with a new process will be unique as everyone naturally has different needs to be met. Allowing participants to take an active role means that each patient can create a unique story that can be referenced later. (Brown 136)

This approach is just as vital when addressing personal change. Wellness coaches are professionals who help people work through personal change. Their approach uses a technique known as motivational interviewing. This is similar to a psychologist’s approach to helping patients where emphasis is placed on guiding instead of directing. Motivational interviewing recognizes people’s human tendency to resist change. Wellness coaches do not dictate what a patient needs to do, rather the patient receives

guidance through inquiry. (Butler, Miller, and Rollnick 27) This reinforces the value of agency by allowing the patients to make their own discoveries. A successful example of this can be seen in the *Design Council’s Red Health Report: The Diabetes Agenda* case study.

In many cases, diabetes is onset or exacerbated by a failure to exercise, maintain a healthy diet, and manage prescribed medication. This type of regulation is personal and treatment plans vary with each individual. Instead of adhering to the traditional, directing approach, patients were empowered to describe their unique needs, act on this knowledge that would improve their quality of life. Within this

project, a team of designers examined a number of patients’ daily routines and struggles. They developed a set of cards that captured the types of difficulties patients who live with diabetes regularly face. These cards became a boundary object to enable patients to share their personal situations with their physicians. Ultimately, dimensions of the patients’ lives were shared with their physicians that would not have been discovered otherwise. This type of engagement, allowing patients to self-diagnose their unique struggles with diabetes, led to stronger understandings not only between patients and their doctors, but also between patients and their loved ones. (Burns and Winthall)

The Four Guiding Principles of MI

Resist the Righting Reflex

It is natural tendency to resist persuasion.

Understand Patient Motivations

A patient’s own reasons for change are more likely to trigger behavior change than the ones that are imposed on them.

Listen to the Patient

Understanding what the patient is saying and interpreting what they mean.

Empower Your Patient

A patient that is active in consultation is more likely to take action.

Just as there has been success leveraging agency while managing personal change, agency is equally important in organizational change. *Developing High-Impact Innovation Centers*, a white paper compiled from research performed at 10 academic health enters, reinforces this by promoting a hands-on approach. (Daughtery, Moss, and Pratt 5) While many health centers invite employees to attend workshops and boot camps to learn about innovative thinking,

there is a lack of scaffolding to support the transition to implementation. In order to execute an effective transition to implementation, including agency allows employees to have control and ownership over their new learning. *The Power of Habit* shares an anecdote of successful culture change seen at a manufacturing plant in Ohio. Employees were given the freedom to design their uniforms

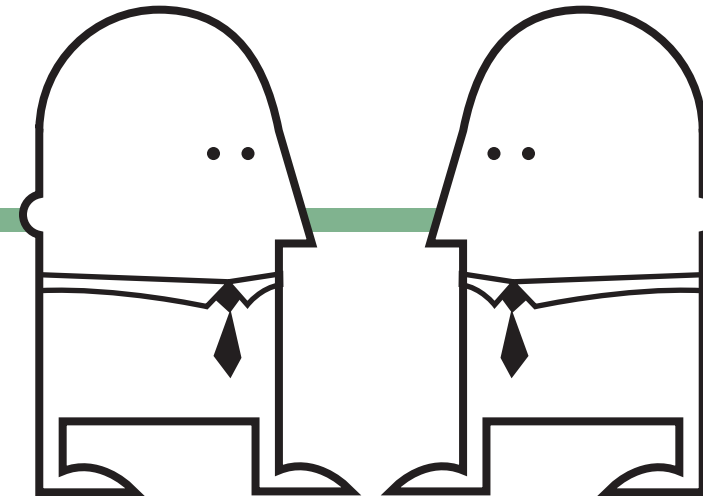
and were given more control over their shifts. Without changing pay scales or production processes, productivity at the plant increased 20%. Fewer errors occur during production and workers took fewer breaks. (Duhigg 151) Charles Duhigg attributes the success to giving the employees a sense of agency, improving the amount of “self-discipline” brought to work.

CO-CREATION

INCLUSION DURING
DEVELOPMENT

*“The evolution of design migrates
from designers creating for people to
designers creating with people.”*

*-Tim Brown
Change by Design*



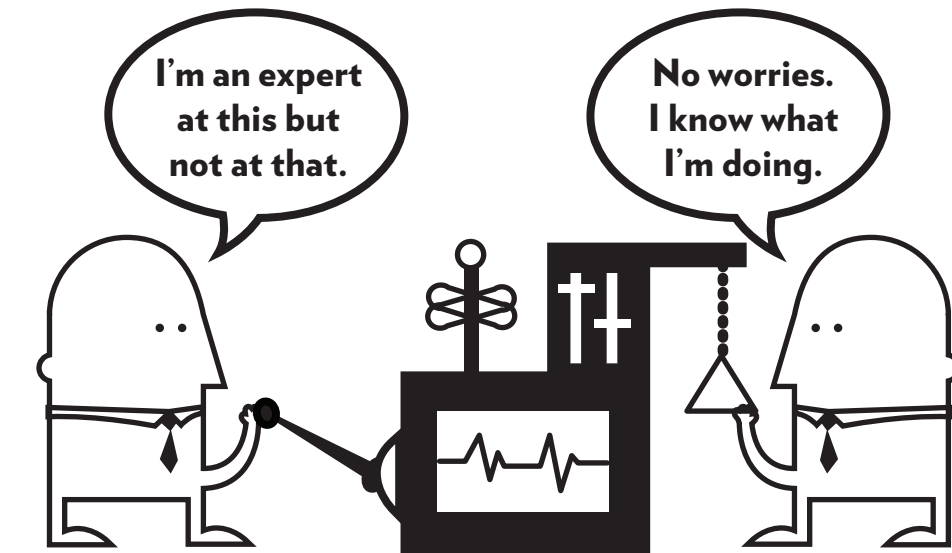
“Let’s do this together”

Designing a new methodology, process, or product needs to be approached with consideration for the user. It would be even better if the intended user participated in the design process. In the context of cultural change, including the members of the culture during the creation of an implementation plan is crucial. This approach invites the intended user to provide feedback and inform a design. This is a co-creative approach to design.

A co-creative approach is reinforced when tackling individual change. *Motivational Interviewing in Health Care* introduces “the spirit of M.I” as collaborative, evocative, and honoring patient autonomy. Here, the success of motivational interviewing is dependent on the cooperative and collaborative partnership between the patient and the clinician. The distinction between a traditional consultation and the collaborative approach is this collaboration which is necessary when dealing with behavior change. This collaborative approach abandons the traditional model where an expert clinician directs the passive patient to a treatment plan. Instead, the patient takes an active role and decision-making is a joint process. Motivational Interviewing insists on this collaborative approach and acknowledges it is ultimately up to the patient to enact whatever changes need to be made.

(Butler, Miller, and Rollnick 6)

In an organizational setting, Tim Brown emphasizes the importance of co-creation when explaining the proper approach for designers to engage with the people they are working with. He says that the



boundary between creator and consumer needs to be blurred. Tim Brown continues by explaining a designer’s approach should not be “us versus them” or even “us on behalf of them” but instead it should be “us with them.” (Brown 58)

Using a co-creative approach that includes the intended user allows for designers to develop a sense of empathy. This is the fundamental level connection that designers gain from their observations of people. Developing a sense of empathy brings the people we are designing with beyond being “subjects of observation” or “standard deviations.” The foundation of design thinking is translating observations into insights and insights into meaningful concepts. An empathetic, co-creative approach allows designers to create more meaningful, successful concepts. (Brown 49)

The Advisory Board, an international research, technology and consulting firm that specializes in healthcare, acknowledges that each academic health center is unique. As ten different academic health centers informed their white paper outlining how to structure high-impact innovation centers, the Advisory Board explicitly states, “It is clear that there is no one-size-fits-all model.” (Daugherty, Moss, and Pratt 5)

Each organization has its own unique priorities and resources. As a new innovation center defines its process and design, it should be informed by the unique needs of the organization it is being designed for. Including members of the academic health center during the establishment of centers for innovation will allow these centers to better reflect and support the culture in which they exist.

“It is possible to spend days, weeks, or months conducting research (...) but at the end of it all we will have little more than stacks of field notes, videotapes, and photographs unless we can connect with the people we are observing at a fundamental level. We call this **EMPATHY.**”

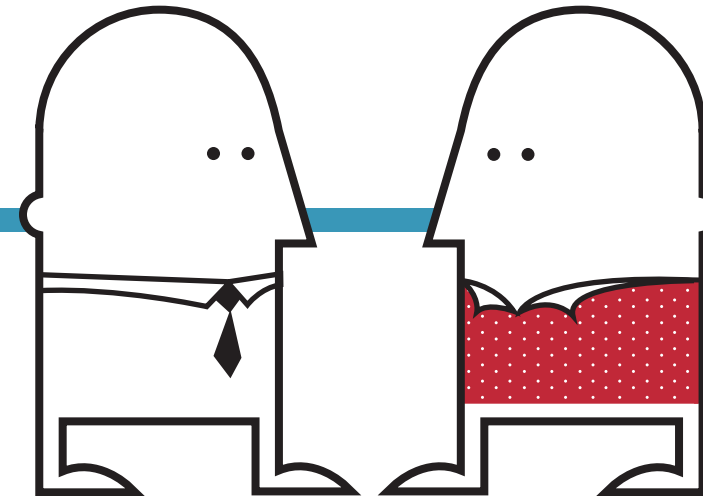
-Tim Brown
Change by Design

COMPLEXITIES OF CULTURE

UNDERSTANDING THE
STRUCTURE OF GROUPS

“Basic assumptions are so taken for granted that someone who does not hold them is viewed as a “foreigner” or as “crazy” and is automatically dismissed.”

-Edgar Schein
Psychologist

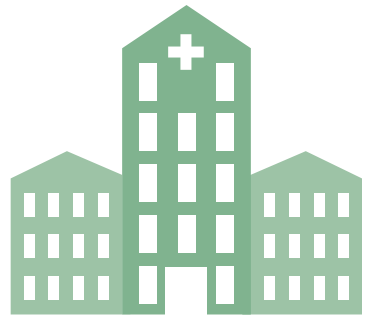


***“That’s not how we
do things around here”***

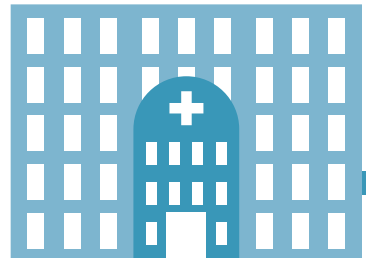
The word culture is sometimes used to describe a state of sophistication like when we say someone is very cultured. Anthropologists consider culture to be the customs and rituals that define a society. When exploring organizational cultures, we are using a different definition altogether. *(Schein 13)*

Macrocultures

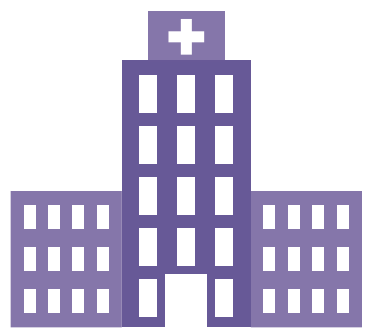
what exists within an industry



Mayo Clinic



Kaiser Permanente



Johns Hopkins

Edgar Schein defines culture as “a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.”

(Schein 18) We understand that culture is shared basic assumptions within a group, however, Edgar also acknowledges that there are

Organizational Culture

what makes each place unique

different levels of culture. Organizational cultures do not exist within a vacuum. Instead, they frequently exist within other cultures and other cultures exist within them. (Schein 2) Here we discover that to change an organization’s culture, there are also other cultures that need to see change.

Edgar Schein describes four types of cultures; macrocultures, organizational cultures, subcultures, and microcultures. Macrocultures are large cultures that span beyond

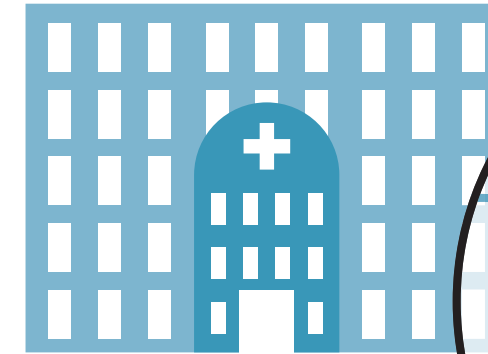
organizations. Examples of these include religious cultures, industry cultures, and national identities.

(Schein 2) The world of academic health centers is a macroculture. What define this are the shared basic assumptions that are true across the industry so that an organization like the Mayo Clinic in Minnesota shares cultural similarities with the Johns Hopkins Institute in Baltimore.

Within macrocultures, there are organizational cultures. These are the shared basic assumptions that make two organizations in the same industry different from one another. What is a cultural norm at Johns Hopkins might not be acceptable at the Mayo Clinic and vice versa. Subcultures are defined by the basic assumptions within different departments. The differences in these subcultures is what distinguishes cultural norms in HR from accounting. A contributing factor to the difference in these subcultures can simply be from differences in work tasks. Even more granular than subcultures are microcultures. This is what is true for small groups within departments. (Schein 2)

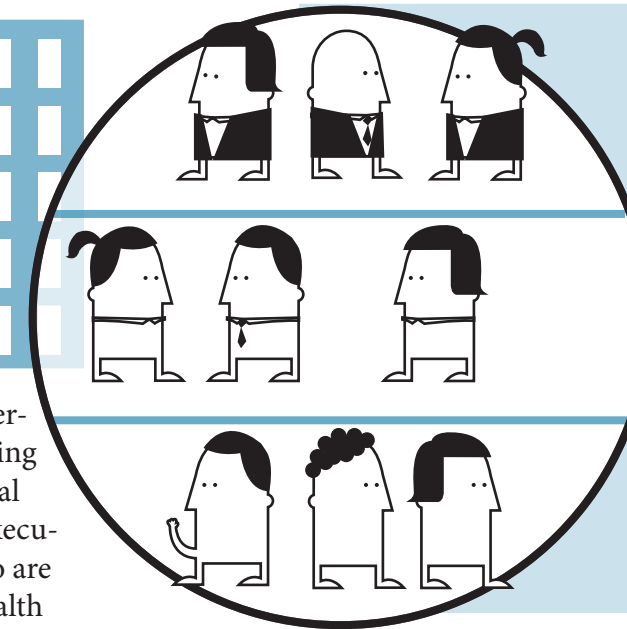
Subcultures

what exists in different departments



Edgar Schein defines three different types of subcultures according to where they fall in a traditional hierarchy. At the top are the “executives.” These are the people who are responsible for the financial health of the organization. The executive culture determines what “is” and “is not” within the organization. This group is made up of c-suite executives. Next, there are the “designers/engineers.” This culture is responsible for determining how things are going to get done within the culture. This subculture is usually made up of managers. Then there are the “operators” and this is where the “what” and “how” actually happen. (Schein 58)

When new methodologies or learnings are introduced into organizations (in my case innovation) they need support from the executive subculture. They are responsible for saying “okay, we are going to make



Executives
maintaining financial health of the organization

Designers/Engineers
those who know how things are to be done

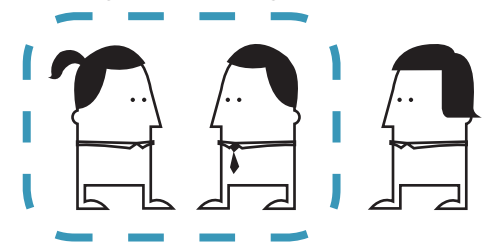
Operators
where the goods are sold

learning about innovation a priority.” This then allows the designers/engineers to teach people about innovation. In my experience, the designers/engineers are experts in innovation, and they introduce the new methodologies in boot camps, workshops, and roadshows. This is how the operators learn about their new subject. However, getting the operators to apply the learning is a large hurdle to jump over.

As we understand there to be different subcultures within an organization, proposing a new method of doing work directly affects the employees at the front-line (operators). Because of this,

Microcultures

groups within groups



new methodologies should consider the subcultures that already exist as they are being introduced. This will help improve the uptake of new learnings and ease the process of applying new learning to an already established subculture.

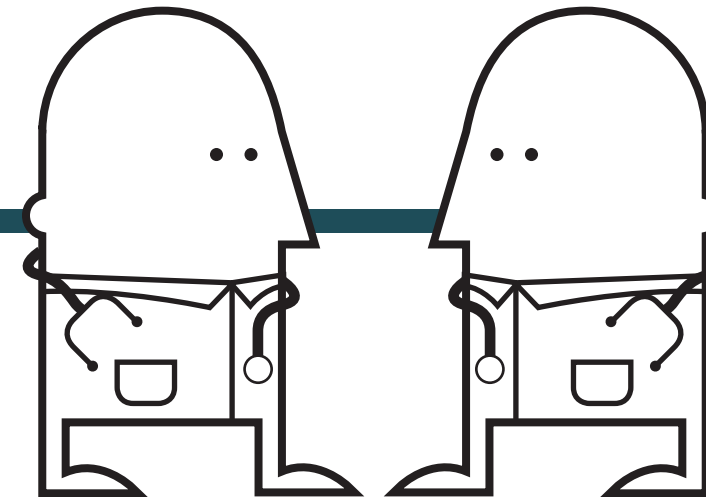
COMPLEXITIES OF HEALTHCARE

DISCOVERING CHALLENGES
WITHIN THE INDUSTRY

“Without a heightened readiness to accept change, major transformation change and reinvention are unlikely to occur.”

*-Reinventing the Academic
Health Center*

*Darrell Kirch, Kevin Grigsby, Wayne Zolko, Jay Moskowitz,
David Hefner, Wiley Souba, Josephine Carubia, Steven Baron*



“Doctor.”
“Doctor.”

Back in the year 2000, Dr Catherine DeAngelis authored an editorial titled *“The Plight of Academic Health Centers.”* Here, Dr. DeAngelis expresses her concern with the trend in health centers adopting the ethics of business into the healthcare model. According to the editorial, ethics that govern a capitalist society cannot apply to the ethics of healthcare.

There is a struggle...

Academic health centers compete for patients while also sharing their medical discoveries. Imagine that your hospital pioneered a discovery, which you shared with the industry, but a patient goes to another hospital to receive that care. This is a norm in healthcare but it is not sustainable in the world of business. Because this is not a sustainable business model, academic health-care centers have been discouraged from sharing discoveries to help themselves stay competitive. This goes against the nature of these institutions of learning that teach discoveries of modern medicines to health professionals that disperse throughout the world. These academic health centers are complex organizations that make up a unique industry. (DeAngelis)

There is a struggle in balance within academic health centers. They need to be financially stable while respecting the professional responsibilities within the health-care industry. (DeAngelis) This struggle between adhering to capitalistic tendencies that is motivated by quantitative metrics and addressing humanistic concerns that are aimed

at qualitative metrics, permeates through these academic healthcare organizations. However, the Affordable Care Act is encouraging more focus on addressing the qualitative metrics.

Today, provider organizations are at risk for both care outcome and their complex patient populations. Healthcare organizations are being held accountable for their quality of care by the administration of Press-Ganey surveys. These surveys gather feedback from recent patients about their experience of care. The scores from the surveys determine the rate of reimbursement from insurance providers. As a patient's quality of care improves, the healthcare organizations' reimbursement increases. This change in compensation has healthcare organizations more interested in adopting qualitative thinking into their quantitative cultures.

The Advisory Board highlights that medical centers are responding to the recognized need for change in care delivery by establishing centers for innovation. Dr. DeAngelis shares a quote from an expert in

“In the initial stages of research, particularly when time constraints permit, collecting data should be secondary to getting to know people and establishing rapport.”

-Kelly Devers PhD & Richard Frankel PhD

Study Design in Qualitative Research—2: Sampling and Data Collection Strategies

reshaping healthcare, RJ Bulger, which emphasizes the need “to restore the marriage between humanistic concerns and scientific and technical excellence in health care delivery practices.” These centers for innovation are designed to address this very issue. Academic health centers are not just about pioneering innovative solutions to complex diseases; they must also discover new approaches to delivering their care.

But building a center for innovation for an academic health center is tricky business. The cultures have been influenced by an industry where success is determined by scientific and technical data and

status is gained with academic titles and journal publications. Their organizational structures consist of complex hierarchies that climb vertically from nurse to boards of trustees and horizontally with differentiations between academic branches and medical center branches. *Reinventing the Academic Health Center* is a case study, which examines how a lack of consideration for these complex cultures hindered the progress of merging two separate medical centers. Because of a lack of consideration for these two different cultures, the merger was dissolved just three years after its inception. (Kirch, Grigsby, Zolko, Moskowitz, Hefner, Souba, Carubia, and Baron)

Nine critical success factors for change

steps to transform culture within an academic health center

- performing a **campus-wide cultural assessment** and acting decisively on the results
- making values **explicit and active** in everyday decisions
- aligning corporate structure and governance to **unify the academic enterprise and health system**
- aligning the next tier of administrative structure and function
- **fostering collaboration** and accountability-the creation of unified campus teams
- articulating a succinct, **highly focused**, and compelling vision and strategic plan
- using the tools of mission-based management to **realign resources**
- focusing leadership recruitment on **organizational fit**
- “growing your own” through broad-based **leadership development**

So how do we influence change in academic health centers effectively?

The opposite page has nine recommendations that should be considered when facing organizational transformation. These were derived from the merger project. (Kirch, Grigsby, Zolko, Moskowitz, Hefner, Souba, Carubia, and Baron)

Implementing this list can take months and more likely years. It is important to note that the majority of these steps focus on understanding, adjusting, and accommodating organizational cultures. This is emphasized in the very first step.

In a separate case study titled *Study Design in Qualitative Research*, where methods of employing qualitative research in healthcare delivery are outlined, emphasis is again placed on navigating organizational culture. In fact, there is an entire section explicitly outlining how to identify and gain access to individuals and care sites. In this section, the authors acknowledge the challenges a gatekeeper has

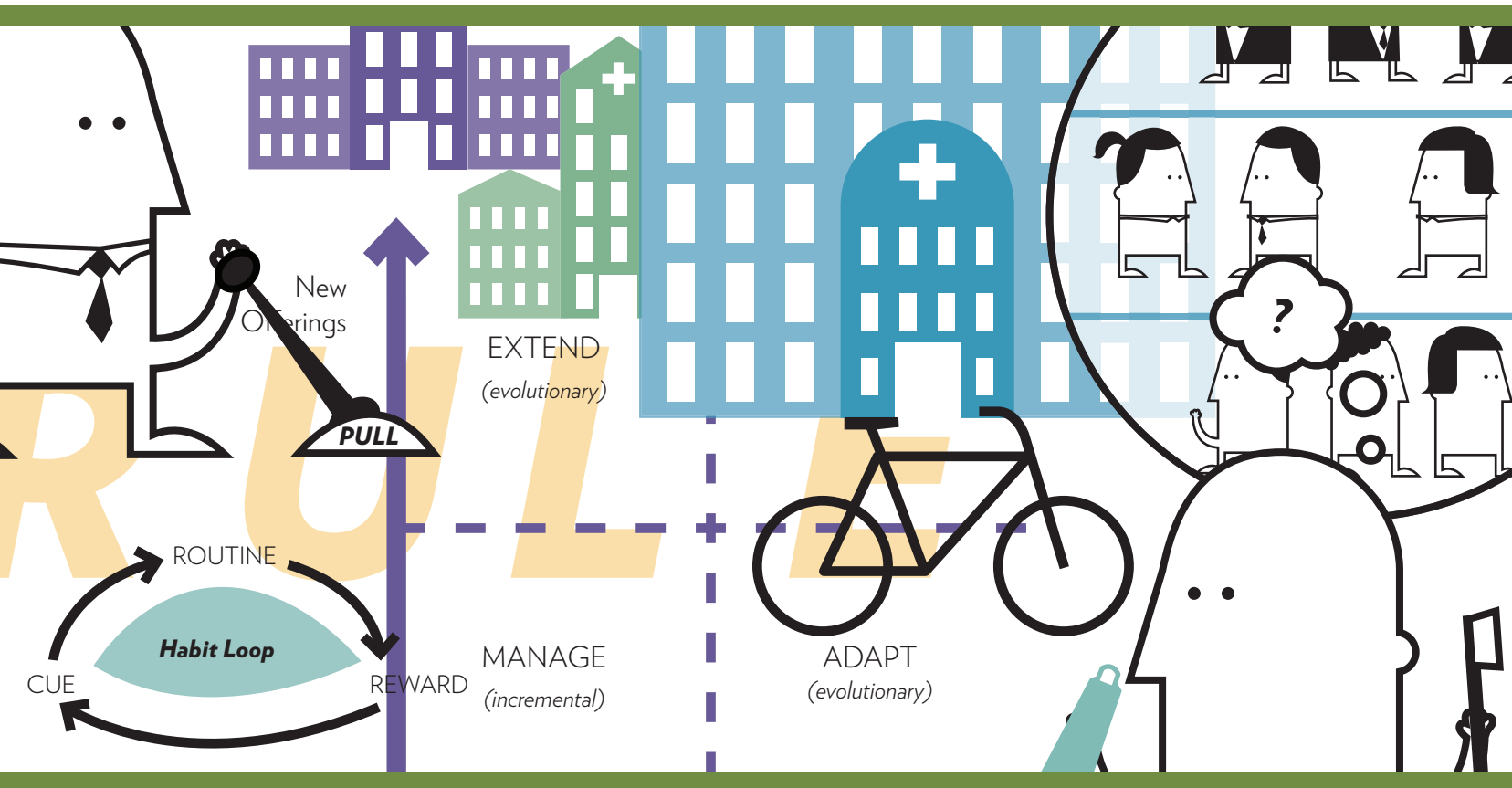
when faced with granting access for research. Gatekeepers are concerned with disruption associated with being involved in exploratory studies that may lead to revealing undesirable outcomes. These studies may reveal their department is “bad” or “wrong.” Gatekeepers may also be concerned with exposing researchers to proprietary or competitive information. Ultimately, gatekeepers wish to balance the need to protect the privacy of their department, its employees and the people it serves. (Devers and Frankel)

This type of anxiety-driven protection is reminiscent of what Dr DeAngelis was speaking to. In order to ease the gatekeeper’s anxieties, the researcher must build healthy rapport. However, once access is granted, the researcher may need to distance themselves from the gatekeeper in order to be perceived as unbiased during their studies. While all of the delicate

navigating of organizational cultures is for the purpose of gathering data, the data collection is secondary to getting to know people and establishing rapport. The emphasis on building rapport again points toward the importance of a qualitative approach that is secondary to the quantitative outcomes. (Devers and Frankel)

Academic health centers are complex organizations. Current changes in legislation are changing the way these organizations are reimbursed for the care they provide. This new legislation is forcing academic health centers to look at how they are currently delivering care, and making changes where improvements need to be made. In order for new methods of research, discovery, and delivering care to take hold, it is necessary to consider the unique environments in which they are being employed.

THESIS STATEMENT



In order to achieve
***SUSTAINABLE CULTURAL
ORGANIZATION CHANGE***

Designers should collaborate with their audience to develop concepts that feel familiar and foster agency.

Concepts should not be too advanced and their implementation should accommodate the change cycle.

IMPLEMENTATION

BACKSTORY

57

understanding the context

OPPORTUNITY

61

establishing a collaboration

WORK WITH TEAM

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adding a designer to support a team

BACKSTORY

Understanding the context



“The challenge of teaching innovation lies in getting people to apply the learning.”

-Roy Rosin
Chief Innovation Officer

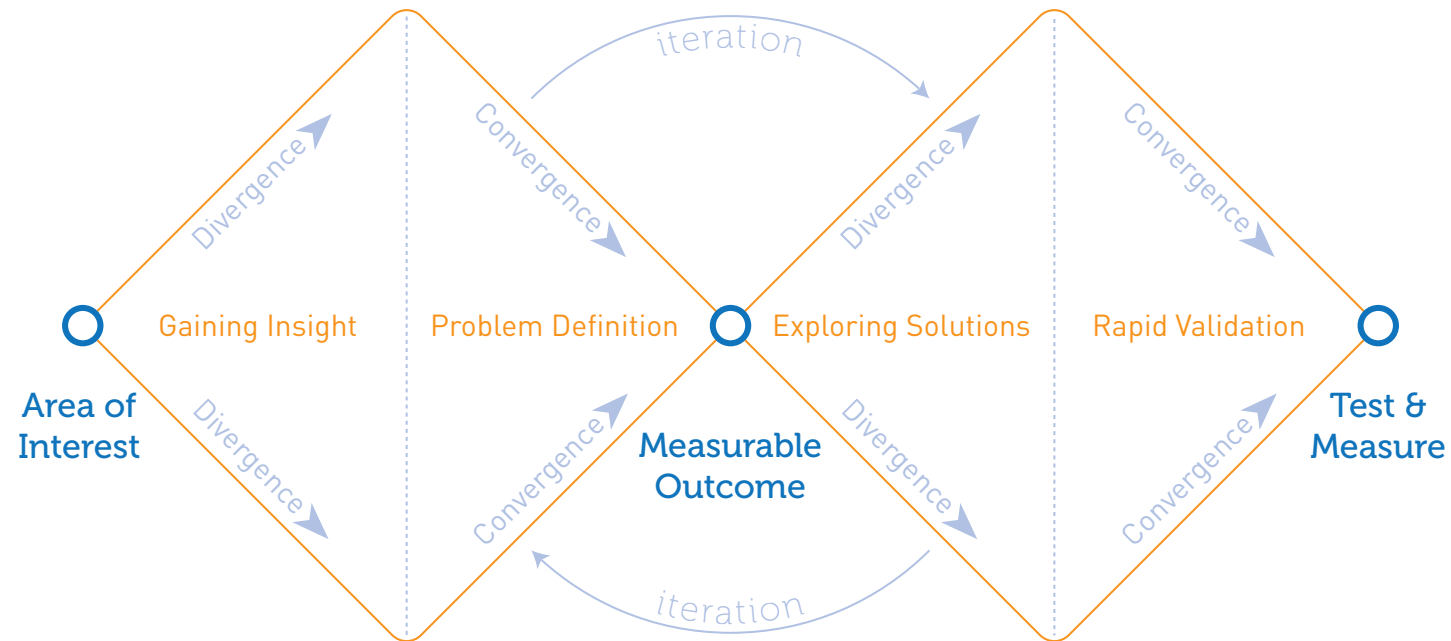
PennMedicine offers a process improvement program call “Performance Improvement In Action” (PIIA) to its employees. Here, employees learn six-sigma based methodologies including how to analyze the current state of processes, identify areas for improvement, perform root-cause analysis, implement counter-measures, and sustain improvements. Each PIIA program invites 10 teams from various departments within PennMedicine to participate in the 90-day course. There are five, day-long workshops during those 90 days where the methodologies are introduced. The fifth session is the final day of the program where the teams present

their work to executive stakeholders. During the second workshop, the chief innovation officer introduces innovative thinking. This methodology helps strengthen the discovery, counter-measure development, and implementation part of the program.

Roy Rosin is the chief innovation officer who is from PennMedicine’s Center for Innovation. This Center works across the University of Pennsylvania Health System and the Perelman School of Medicine. Their work helps accelerate the development and implementation of ideas. Their process emphasizes exploring the complexities

of problems and rapidly testing ideas to validate assumptions. This methodology is heavily founded in design thinking and is introduced in the second session of the PIIA program.

How does PennMedicine define innovation?



Innovation as defined by the Center for Innovation is a process with four components. This process allows ideas to be tested quickly, using minimal resources, to learn about the likelihood for a successful concept. The discoveries that are gained by testing concepts inform the next iteration. This process is cyclical in that ideas are continuously refined before devoting significant resources to scale a concept.

1 GAINING INSIGHTS

The process begins with understanding the complexity of a problem by **gaining insights**. This is considered a divergent part of the process as observations are made and stories are gathered from interviews to understand what is going on. These observations provide empathy and context around people and their experience.

2 PROBLEM DEFINITION

The next step is convergent as the **problem is defined**. In this part of the process, the insights gained inform where the root of the problem lies. As the problem is defined, it is now possible to identify the source of the measurable outcomes.

3 EXPLORING SOLUTIONS

Once the problem is defined, the next step is to **explore solutions**. This is a divergent part of innovation because multiple concepts should be generated. Each solution should address the problem in different ways. Once these ideas are tested, they can inform the development of a single concept. Exploring multiple solutions will more quickly yield an impactful concept as each solution can be tested to reveal both strengths and weaknesses within ideas.

4 RAPID VALIDATION

The final step of the process is **rapidly validating** ideas. The emphasis here is to test an idea quickly and cheaply to gather feedback. Testing ideas can yield significant insights in understanding a problem. This part of the process can either reinforce the original direction or reveal the need to change the focus of the concept. Failed ideas are not considered true failures as they greatly inform how to improve a concept.

The Center for Innovation recognizes the process of innovation may significantly change original ideas from where they started. Because of this, the innovative process is not considered linear but rather cyclical. An idea can go through the process multiple times before it becomes a strong concept that is ready for scaling.

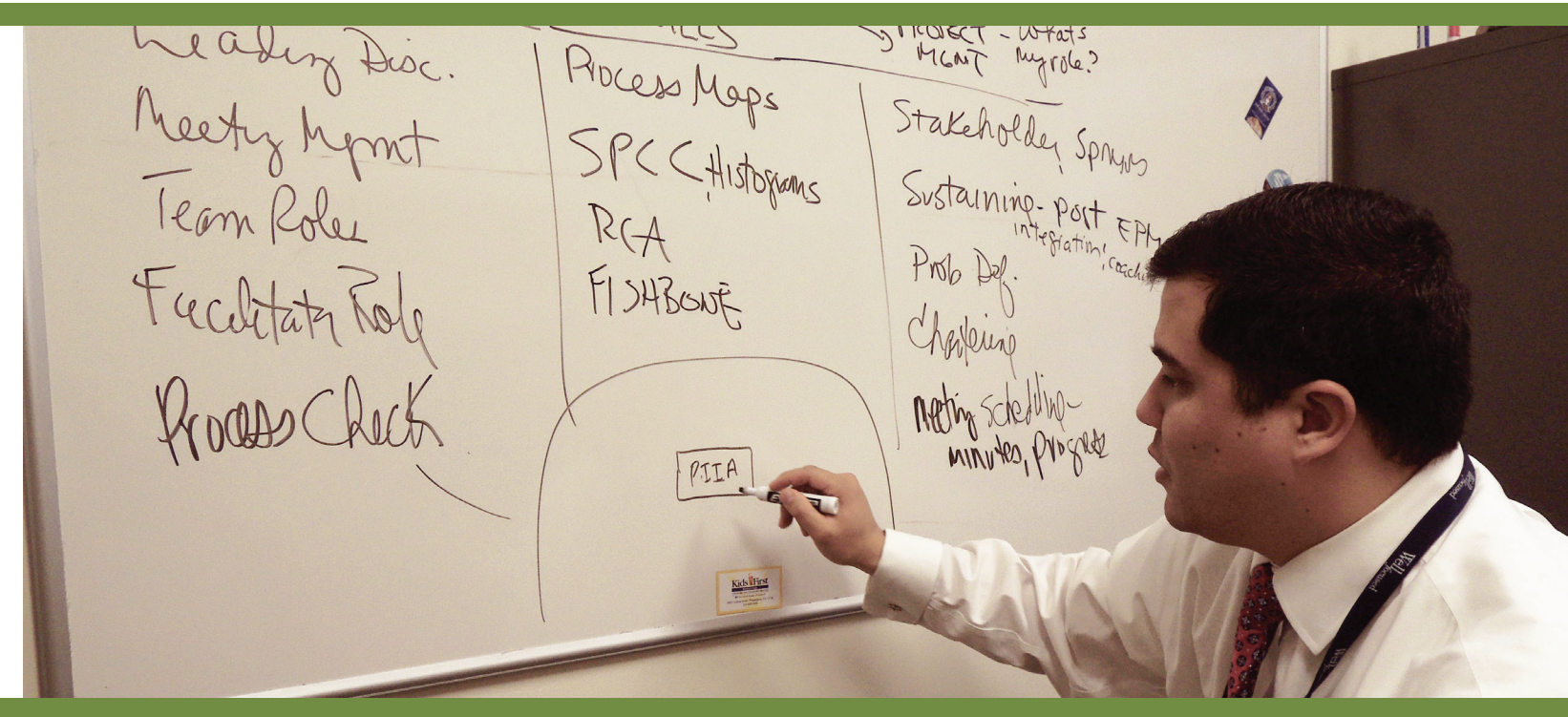


Roy Rosin introduces innovation at a PIIA workshop. Attendees apply the learning to their projects



Designer, Meghan Conley gains insights through observing the work at a call center.

OPPORTUNITY



When talking to both Chris Klock, performance improvement consultant and the facilitator of PIIA, and Roy Rosin, they both expressed frustrations around the implementation of the learning from their workshops. Chris didn't think that the teams were addressing their problems as strongly as he would like them to. Roy Rosin felt the same way about his teaching of innovative thinking. People are walking away from the workshops with a strong understanding of new methodologies but these teams either aren't applying their learning appropriately or aren't applying the learning at all. The disconnect between the enthusiasm generated in workshops and applying the learning is essentially an issue of culture change. Because these new methodologies suggest a change in how employees are working, employees aren't naturally applying their learning in their sub-cultures.

In order for
PennMedicine to achieve

SUSTAINABLE CULTURAL ORGANIZATION CHANGE

A designer should collaborate with the audience to guide the team through the innovation process in a manner that feels familiar and fosters agency.

This will inherently be unique to the team's subculture and can more readily accommodate their change cycle.

WORK WITH THE TEAM



ADDING A DESIGNER TO
SUPPORT A TEAM

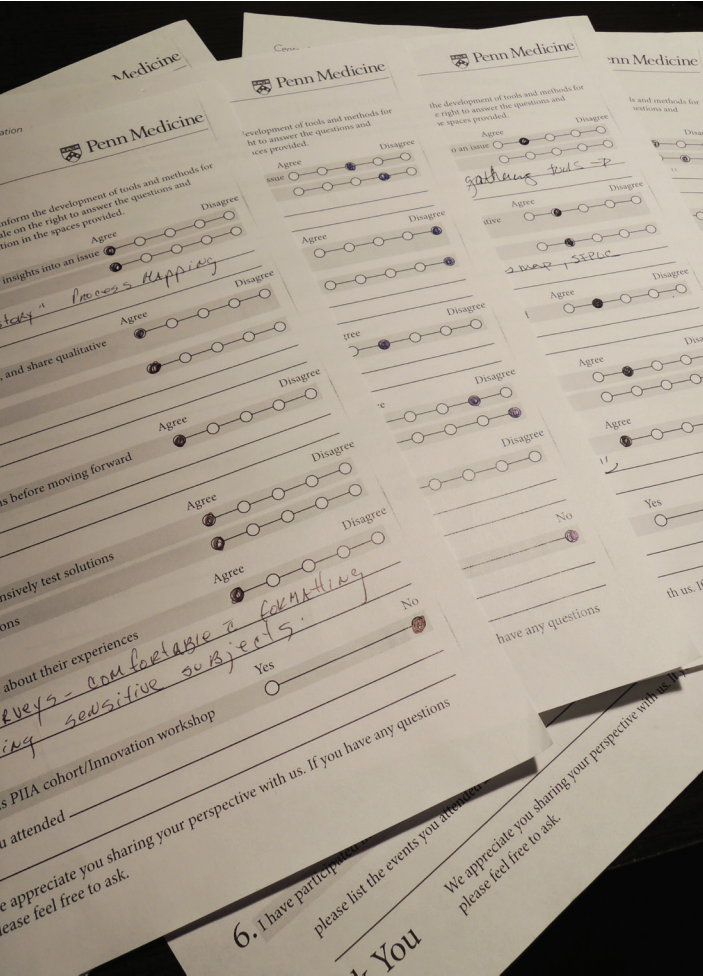


I joined a team of nurses from the cardiovascular and heart center who were invited to participate in PIIA. The team of nurses wanted to address issues around inaccurate, inconsistent information being communicated to patients in their cardiovascular care unit. I joined the team as a supporting member after their second session of PIIA. This was when the nurses were first introduced to the innovation process. The following pages highlight how the designer's role is distinguished from the team.

Developing an Understanding

discovering how much support if needed

I asked each team member to fill out a survey to better understand the team’s capacity for innovative thinking. The survey asked participants to share their level of understanding and comfort with each phase of the innovative process. This acted as a guide to understand which parts of the process I needed to offer more support.



Supporting Innovation



a supporting role to help teams navigate innovation

The role of the designer, in this instance, is a supporting one. As a team goes through PIIA, they should feel full ownership of their project as this will strengthen their understanding of their learning. Adding a designer to the team that is working through the process of innovation, enables a team to produce more valuable work. Developing this type of collaboration allows the designer to share their skill-set, reducing obstacles as teams transition from learning to applying their learning. This support extends the learning from boot-camps and workshops beyond the classroom.

Gaining Insights



developing a deep understanding in the area of focus

Outside of PIIA, the team began gaining insights by administering surveys that asked patients to rate their experience with each of the members on their care team. This would help the nurses identify “who” was responsible for the poor communication. While administering the surveys, the nurses realized that they weren’t getting the answers they were expecting. Most of the patients were responding by giving each member of their care team a high score for great communication but would then share a personal story about a negative experience.

Although the surveys were not designed to capture this data, the nurses captured these stories in the margins of the paper. Patients were hesitant to give negative scores to the professionals who were responsible for their recovery. When the team met to review the information they gathered, they didn’t identify

the “who” that was contributing to the breakdowns in communication. Instead, they discovered the “what.” These unanticipated results lead to some confusion about how to move forward. As the team of nurses explored this issue through administering surveys with patients, they were able to identify three opportunities where patients need clarity in communication.

The first discovery was around **what patients should expect during treatment**. The team discovered that while patients understand they will have surgery, they don’t fully understand what the process entails. Patients want to know how long they will be in the hospital, where they will be physically, and what type of procedures they will be experiencing before and after their surgery.

The nurses also discovered that **patients don’t understand their**

model of care. A patient’s care team is made up nurses, physical therapists, social workers, and surgeons. As the nurses spoke with patients, they discovered that there is not a clear understanding of the difference between the roles of the care team. This leads to confusion about where a patient should direct their questions.

The third discovery was that **patients want to know how they are progressing** through their care. Patients expressed the need to receive information that identifies their progress on a personal level. While every patient experience has the same procedures, each individual’s experience is unique. This means that some patient progress might look different than others. This can make both the patient and their families nervous. Nurses need to reassure both the patient and their family on their progress.



TEAM’S RESPONSIBILITY

The team is responsible for **discovering their area of focus**. They understand who potential stakeholders are that need to be considered for the project. Collectively, **questions are developed** to gain a better understanding of the area of focus and the team uses these questions to **engage with people**.

THE VALUE OF COLLABORATION

Members of the team are experts in their field while designers are well versed in developing valuable questions for inquiry. Allowing the team to determine the direction ensures a relevant focus while their initial understanding of the problem expedites the project.

DESIGNER’S ROLE

The designer is responsible for **supporting the development of questions**. They need to push the team to create questions that address both **quantitative and qualitative needs**. These questions should not only ask “why” but also gain an understanding of the **reasoning behind the “why.”**

Defining the Problem

deciding which needle to move

Once the nurses identified their three themes they were hesitant to pursue these topics because it did not translate to their initial surveys. This is where I was able to lend guiding support.

I explained to the team that their information was extremely relevant and that they were exploring the more specific issues around inaccurate, inconsistent communication. I continued by reminding them that this was their first survey and encouraged them to just look at it as a way to refine their focus. Once they understood this was just part of the process, I helped them craft new questions that would allow them to gather baseline data on their new topics.

Part of PIIA emphasizes the importance of setting baseline data that can be used to show the impact of an implemented concept. The team then redesigned their survey to capture their new baseline data.

There are inaccuracies and inconsistencies in communication between care providers and patients

OR?

“How am I doing?”

Patients want updates on daily progress

OR?

“Who’s on my care team?”

Patients don’t understand the different roles that make up their care team

“What should I expect?”

Patients don’t know the details about their treatment and recovery

These are all related to the same issue



IMPLEMENTATION /69

Work with the Team

TEAM'S RESPONSIBILITY

The team facilitates conversation about the insights they have gained and discovers common themes that speak to their focus. During this phase, the team is responsible for reflecting on the insights they have gained to define the problem.

DESIGNER'S ROLE

The designer guides the discussion as a supporter not a facilitator. The designer reminds the team that they should look at the insights they gained as granular information of their initial focus. The designer helps the team define the problem but does not define the problem for them.

THE VALUE OF COLLABORATION

Allowing the team to frame the problem helps strengthen their sense of ownership. The designer's experience building problem statements from discoveries, helps guide the team as they refine their focus. This collaboration helps prevent teams from focusing in on one, granular component of the larger issue.

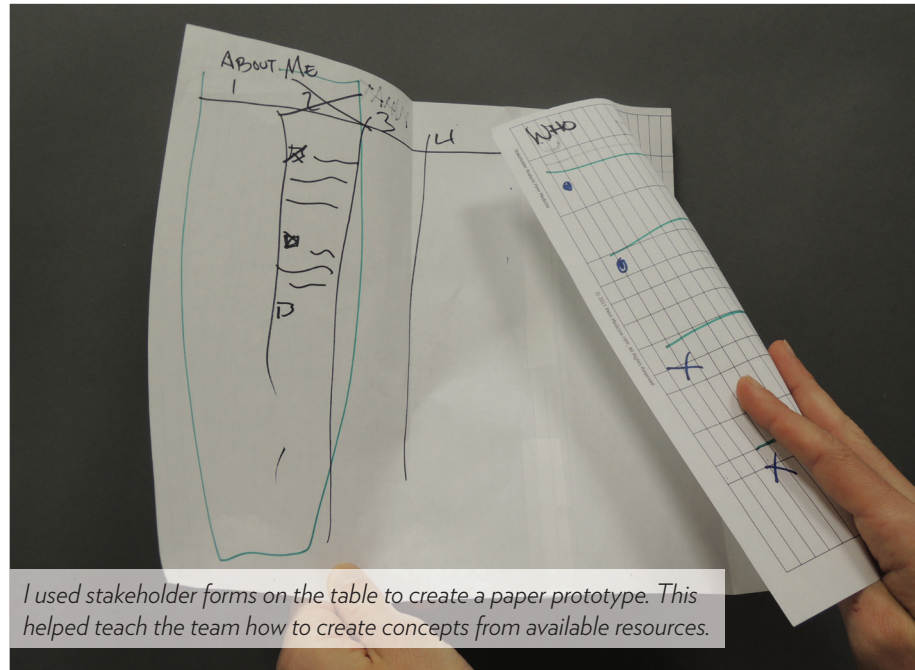
Exploring Solutions



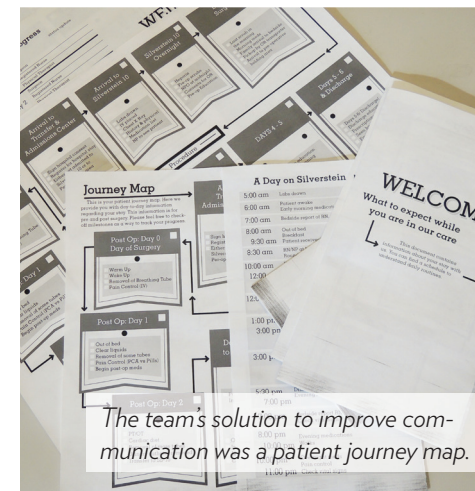
designing a concept to act as a counter-measure to the problem

The team talked about a guide/check-list/flow chart that could explain each step a patient would experience throughout their care. For a few minutes this remained as just conversation about a concept. The nurses were developing an idea but no one was capturing it. Because the concept was stuck in conversation, the team could not build out their idea.

I took two sheets of paper and folded them to reflect a tri-fold pamphlet. I then drew a rough sketch of how they interpreted the concept and asked “is this what you



I used stakeholder forms on the table to create a paper prototype. This helped teach the team how to create concepts from available resources.



The team's solution to improve communication was a patient journey map.

are envisioning?” This propelled the conversation exponentially. The conversation shifted from theoretical to concrete. Now the team had something physical to point at. They expanded on the work flow idea and suggestions included daily schedules for the different floors the patients will be located. This will allow the patients to understand the daily routines during their stay at the hospital.

By the time the meeting ended, the team had flushed out two schedules, and the entire experience a patient would go through when receiving cardiovascular/heart surgery. This information was the foundation for their patient journey map. I told them I would be happy to turn their idea into a printed prototype that they could then use for gathering feedback. The next time we met, they were able to hold their concept in their hands.



TEAM'S RESPONSIBILITY

The team is responsible for generating ideas on how to address the problem. They brainstorm ideas, discuss how a concept should be designed, and how the concept will function. They are responsible for developing a concept that they can use to get feedback.

THE VALUE OF COLLABORATION

Solution exploration and idea development are parts of the innovative process that have been proven to be difficult. The designer's skill-set helps alleviate this issue. The team works with the designer to develop solutions that are appropriate for the focus. As a designer is more experienced with developing concepts for feedback, they can encourage the team to not be dismissive about potential ideas.

DESIGNER'S ROLE

The designer develops the concept with the team, regularly seeking feedback to ensure the concept is designed as intended. A designer's expertise allows the team to build concepts, starting with paper prototypes and moving into polished products. The designer is responsible for ensuring the team develops a concept whose content addresses the problem.

Rapid Validation



testing ideas using minimal resources to better understand the problem



I presented the team with a printed prototype using the information they provided. By seeing a tangible concept, the team was able to build their idea further. Seeing the information printed, they realized changes needed to be made before they could get feedback from their peers. They knew that all of the acronyms needed to be clarified. After reviewing the concept, revisions were made and a plan was crafted on how the team would get feedback from both fellow employees and patients. The team not only wanted to make sure that the information is accurate, but that it addressed the area of focus.

I made the necessary revisions and delivered new prototypes. I joined the team as they got feedback. Some of the feedback highlighted the faults of the original concept. Patients seemed to be appreciative of the concept but it didn't have a personalize component that answered questions that are unique to each patient. Some employees felt uncomfortable about having a process that specifies where a patient will be day by day. This could lead patients who become outliers to grow more concerned about their situation. Because of the many factors that influence the progression of a day in these care units, it was unrealistic for the staff to commit to these schedules.

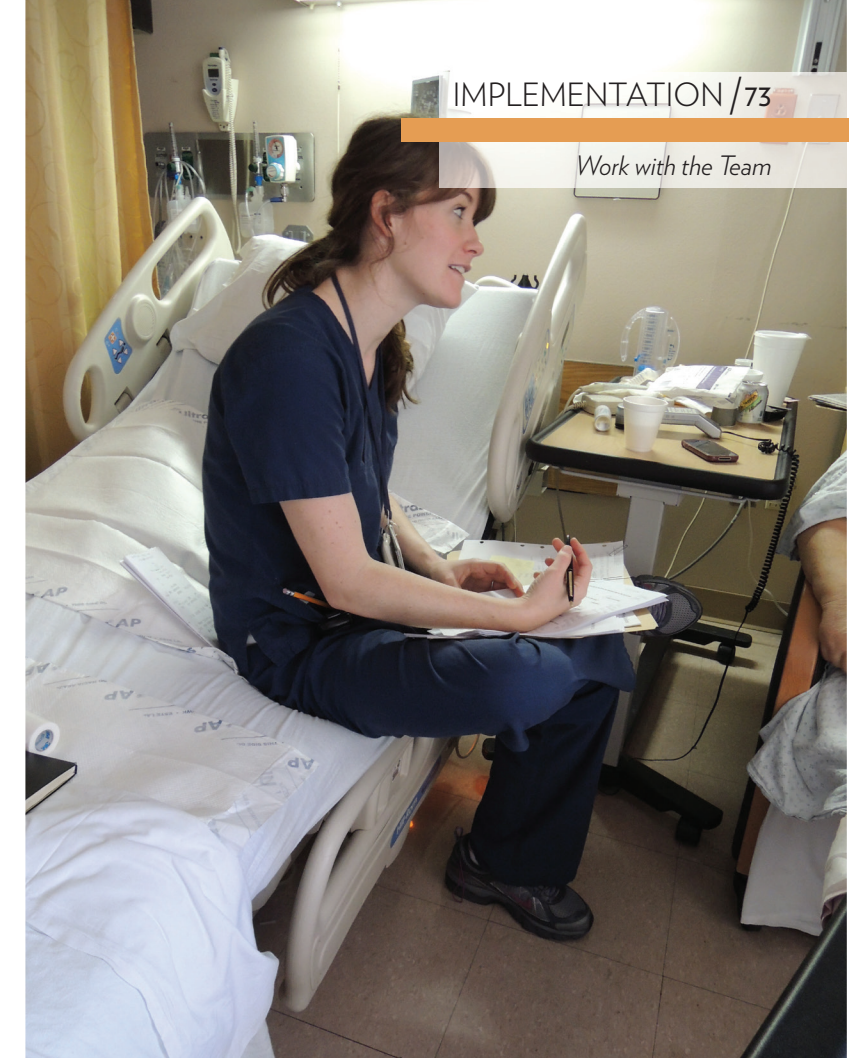


TEAM'S RESPONSIBILITY

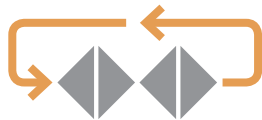
The team generates a plan to deploy their countermeasure and methods are created for gathering feedback. The team presents the countermeasure as a prototype that is intended to gather feedback. Documentation of the feedback is captured for sharing.

THE VALUE OF COLLABORATION

Rapidly testing ideas is part of the design process. Team members may experience a strong sense of ownership with their first concept which could inhibit gathering feedback. The designer can help prepare the team for positive and negative feedback. The team has a strong understanding how to gather feedback and where to focus efforts.



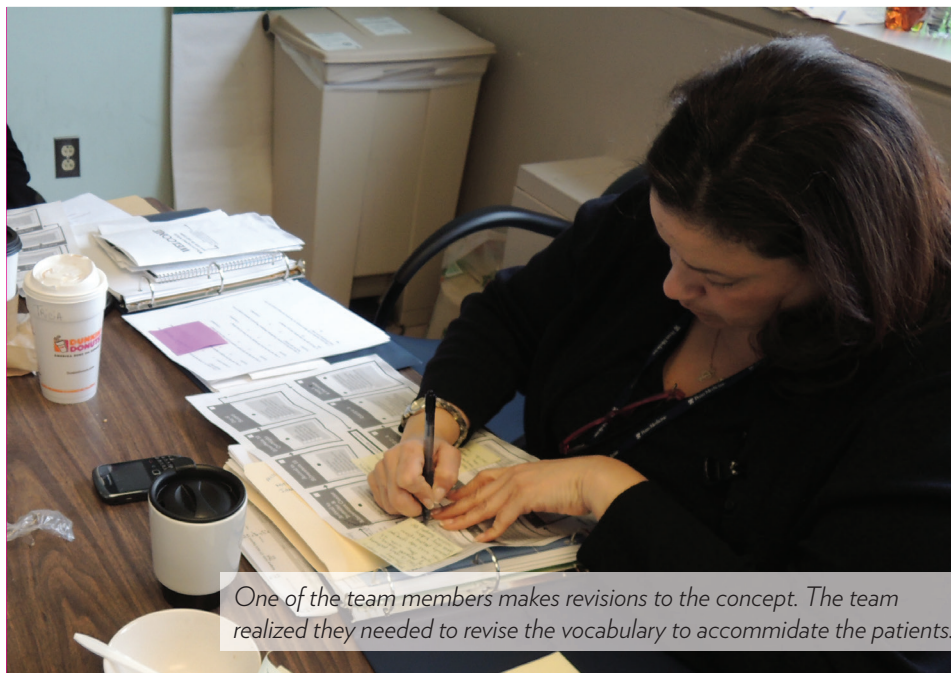
Iterating



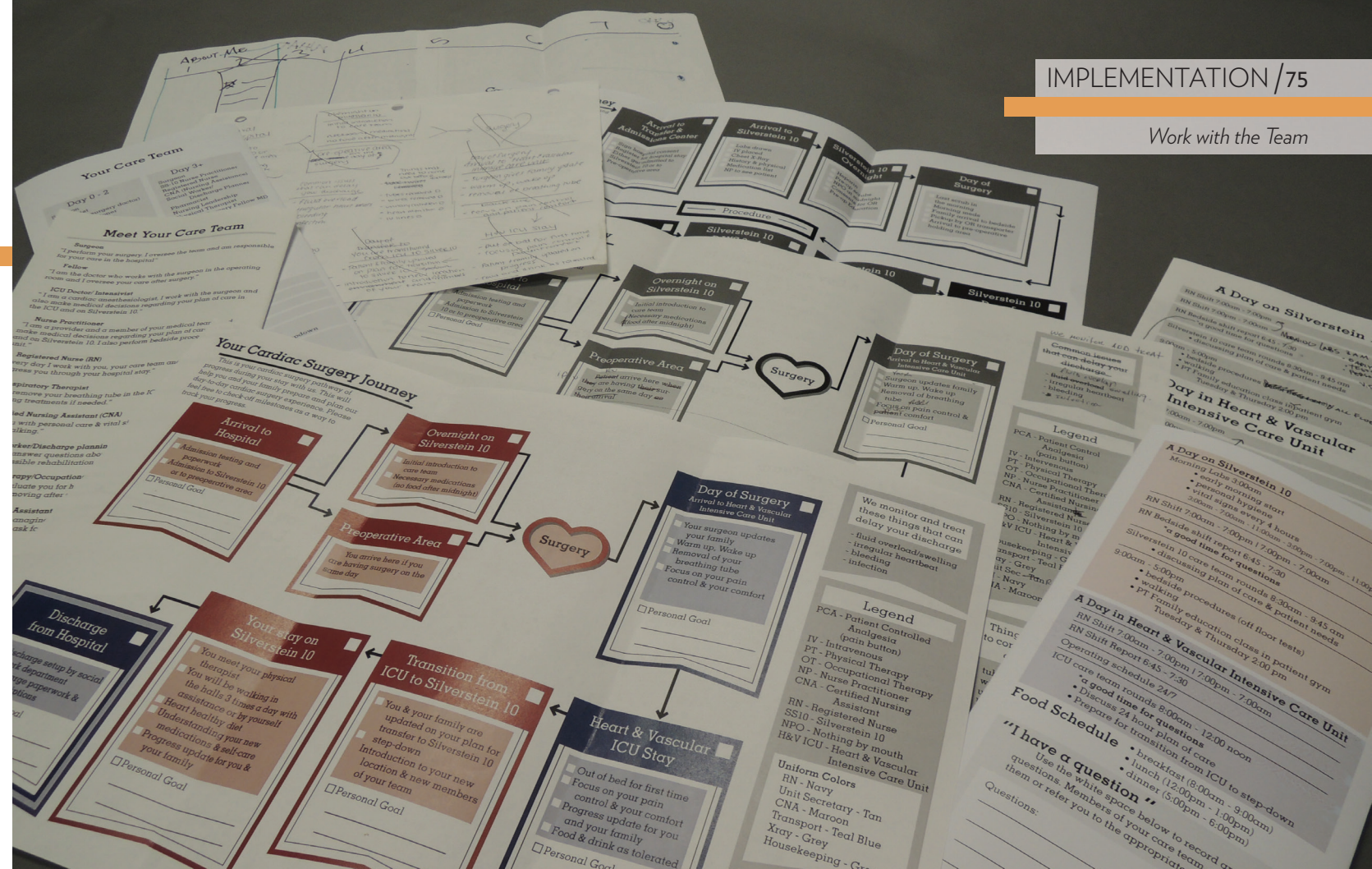
refining concepts from feedback

Some of the nurses seemed slightly discouraged from this feedback but I assured them it is all part of the process. I told them that it is highly unlikely for anyone to get a concept perfectly right on their first try. The team was reminded of how they had to change their surveys as they gained insights to the problem. I explained how this feedback would help refine the next iteration. This seemed to make them more comfortable with their feedback.

Changes were made to accommodate the feedback. Where the journey map originally specified



One of the team members makes revisions to the concept. The team realized they needed to revise the vocabulary to accommodate the patients.



Feedback revealed the visual flow of the concept needed revising.

how many days a patient would be in each unit, the language was changed to from “day” to “milestone.” This helped accommodate the differences between patient experiences. The team built off of the legend by adding a check list of “things that need to come out before discharge.” This list allows patients and families to check off when they got tubes, wires, catheters, heart monitors, and IV lines removed.

The team also added a list of issues they “monitor and treat” for the patients. The purpose of this list is to reduce the patient and their family’s anxieties about potential unexpected issues. The nurses know that a patient’s discharge can be delayed by swelling, irregular heartbeat, bleeding, and infection. Delivering this information early helps reduce anxieties by showing that the care team is prepared to treat these issues.

TEAM'S RESPONSIBILITY

Feedback is shared within the team. They then identify areas where the concept received strongest critique. The team uses this feedback to inform how they refine the concept.

DESIGNER'S ROLE

The designer guides the team as they dissect the feedback. This role helps the team identify areas for improvement. As revisions are planned, the designer ensures refinements address the team’s area of interest.

THE VALUE OF COLLABORATION

Designers are familiar with rapidly testing ideas and to refine concepts. The designer helps the team discover what needs to be refined in order to strengthen the counter-measure. Because this may be the teams first time developing a prototype, they may be hesitant to refine their first concept. The designer can explain the iterative nature of developing concepts and how even failed ideas inform successful iterations.

REFLECTION

PROJECT OUTCOMES

79

discovering the value from this work

IMPACT OF THE DESIGNER

83

discovering how the role made change

DESIGN'S TAKEAWAY

91

learning what this means for the industry

PROJECT OUTCOMES

DISCOVERING THE VALUE
FROM THIS WORK

*“The concept the team was
able to develop really addresses
the problem well.”*

*-Scott Falk
PIIA Co-facilitator*



REFLECTION / 79

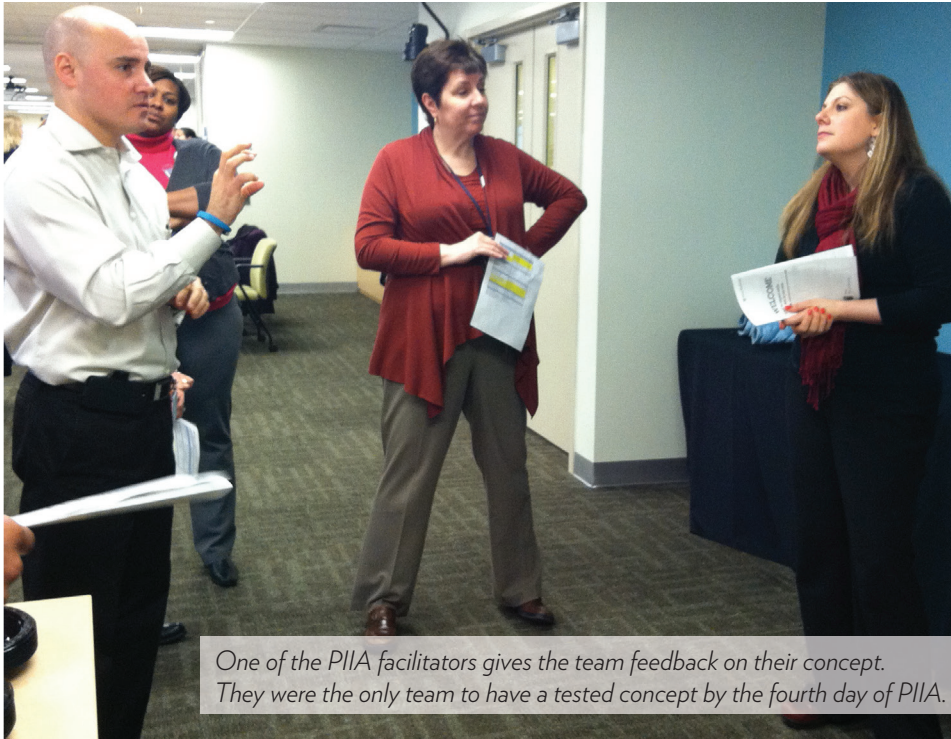
Because the team of nurses was executing a project through PIIA, they were working along side 9 others teams. The other teams did not have the additional support of a designer to help guide their application of innovative thinking. The PIIA program format allows two opportunities for teams to present their work. These presentations allowed the progress of the cardiovascular care team to be compared to the teams who did not have an additional supporting role.

Was there a difference?

The fourth day of PIIA is an opportunity for teams to refine how they present their work. This helps prepare them for their presentation on the fifth and final day of PIIA. Because the teams have not fully completed their projects by the fourth PIIA sessions, teams can only speak to what they have been able to accomplish up to that point. When the other nine teams presented their work, it was clear that they had not made the same progress as the cardiovascular care team.

Most teams were still developing concepts and gathering baseline data. This was more than one month after the introduction to the concepts of innovation that promotes testing ideas quickly. Conversely, the cardiovascular care team had not only tested an idea, but also developed multiple versions by the time of this presentation.

The progress of the cardiovascular care team caught the attention of the PIIA facilitators. The facilitators were impressed by the fact that the team actually had a concept that had already been tested. They noted



One of the PIIA facilitators gives the team feedback on their concept. They were the only team to have a tested concept by the fourth day of PIIA.

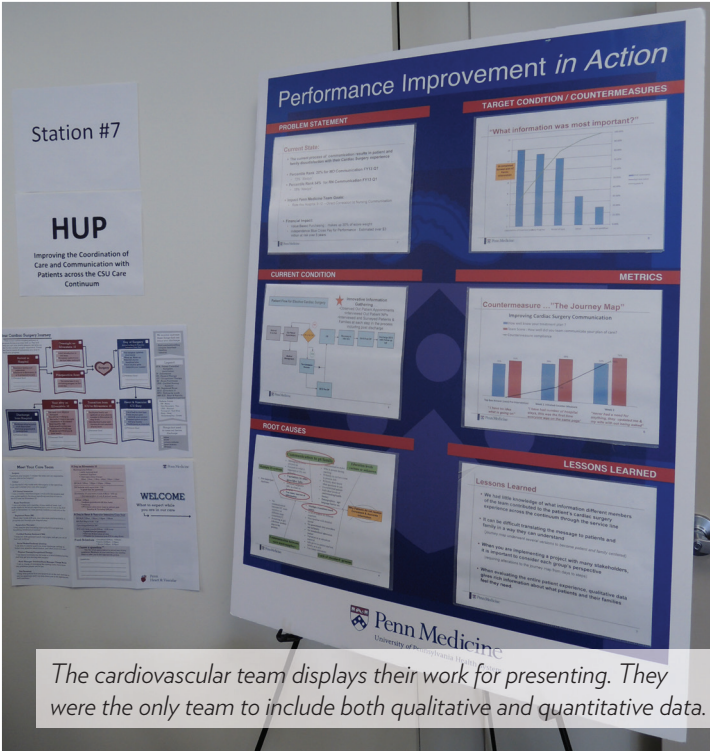
that the team was able to recognize the specific issues within the breakdown of communication, and address each of those issues in one concept. The PIIA facilitator was also impressed by how they were able to address both quantitative and qualitative data. This positive feedback reinforced the effectiveness of having a supporting role beyond the workshop.

The final day of PIIA all of the teams presented their projects again. This time the projects were not only being presented to others teams within the PIIA program, but outside executive leaders were invited to view the work. The final results were similar to the presenta-

tions from day four. By the fifth day, the majority of the teams had a concept that was implemented. However, there seemed to be difficulty balancing where to focus efforts with the process of innovation. Some teams had thoroughly developed concepts that had only been tested with a limited number of people or there concept had yet to be tested. Other teams had committed substantial resources to administering surveys to gain insights but this left little time to design and implement a counter-measure. This was not true with the team of nurses as they had not only a flushed out concept but also something that had gone through multiple iterations.



The cardiovascular care team presents their project at the final day of PIIA. The team read quotes from patient stories to reinforce the value of the work.



The cardiovascular team displays their work for presenting. They were the only team to include both qualitative and quantitative data.



Another team presents their work at report-out. The teams that did not have a supporting role were still developing concepts.

IMPACT OF THE DESIGNER

DISCOVERING HOW THE
ROLE INFLUENCED CHANGE



"I am already applying these skills to another project I am working on."

-Tricia Shustock
Cardiovascular Care Nurse

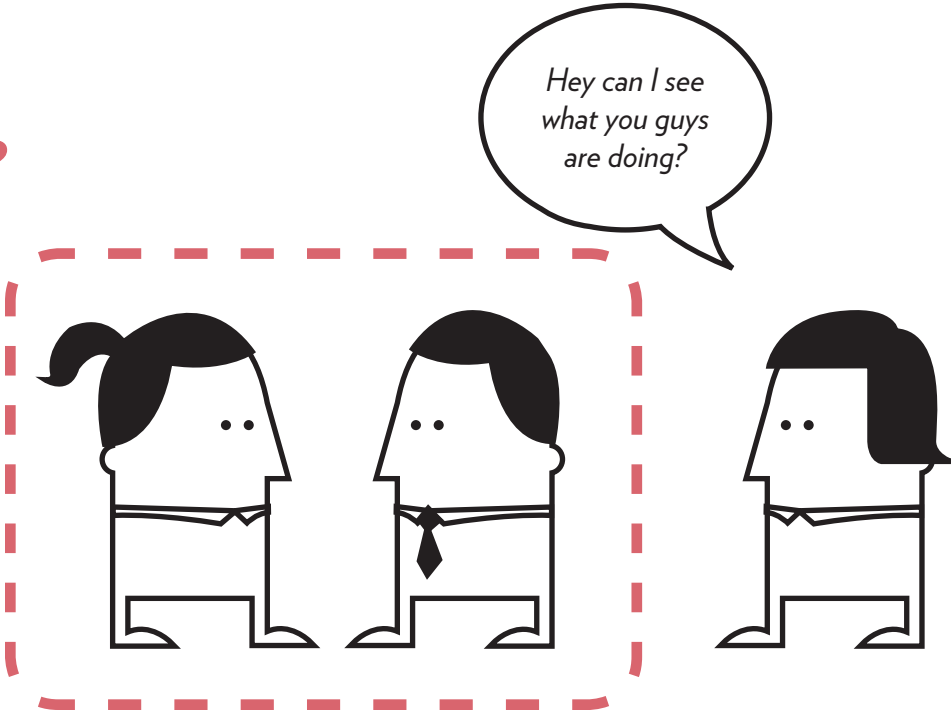
The feedback for both the designer's role and the team's work was positive. The cardiovascular care team was told that their concept was "quite remarkable." Throughout the project, the nurses said that they wished there was a full time designer available to them for other projects. The leader of the team said, "there is no way we would have been able to accomplish what we did without you."

How did this affect the culture?

One of the nurses said that the extra support helped them focus their conversations on concept development instead of just a complaining session. Roy Rosin, the chief innovation officer, said, “(the project) really got the point across of the value of having (a designer) on the team.” Chris Klock is also exploring different ways to get more designers to join the teams in PIIA. Furthermore, an employee of PennMedicine who was working on a project outside of PIIA asked the designer to join them on a project to help them improve the function of an operating room.

The value of having the extra support beyond the workshops was clear to both the members of the team and to the people who facilitate workshop; but did this work influence the culture at PennMedicine?

During the last couple of days of



the project, the cardiovascular care team was asked about the impact of this work. Did the outcomes of this work influence the culture of PennMedicine beyond this team? One member of the cardiovascular care team who works in post-op recovery said that she has applied the same work methodologies to another project she is working on with a different group. The team leader said that she had to print out extra copies of their journey map because another department wanted copies. She said that the other department saw what they were doing and was interested in doing something similar.

These two examples highlight how culture change can happen at the subculture and micro-culture level. Because these two care providers are part of multiple microcultures, they are able to bring their learning to different groups. This shows successful permeation of new methodologies into the culture of PennMedicine. Not only are employees who participate in workshops able to apply the learning appropriately, they are also able to bring their learning to other projects.

REFLECTION /85

Agree

Impact of the Designer

5. I feel comfortable talking to people about their experiences
please explain why part of my job 😊

6. What do you feel like you can do now that you could not do before this experience?
Breakdown the "why" ^{of now} things don't work, be able to lead projects in the future

Agree

Disagree

5. I feel comfortable talking to people about their experiences
please explain why surveying

6. What do you feel like you can do now that you could not do before this experience?
using surveys & data to show where we are and when we need to go measuring data

6. What do you feel like you can do now that you could not do before this experience?
Give deep into problems & a creative approach. MANY tools now in my toolbox

Thank You

We appreciate you sharing your perspective with us. If you have any questions please feel free to ask.

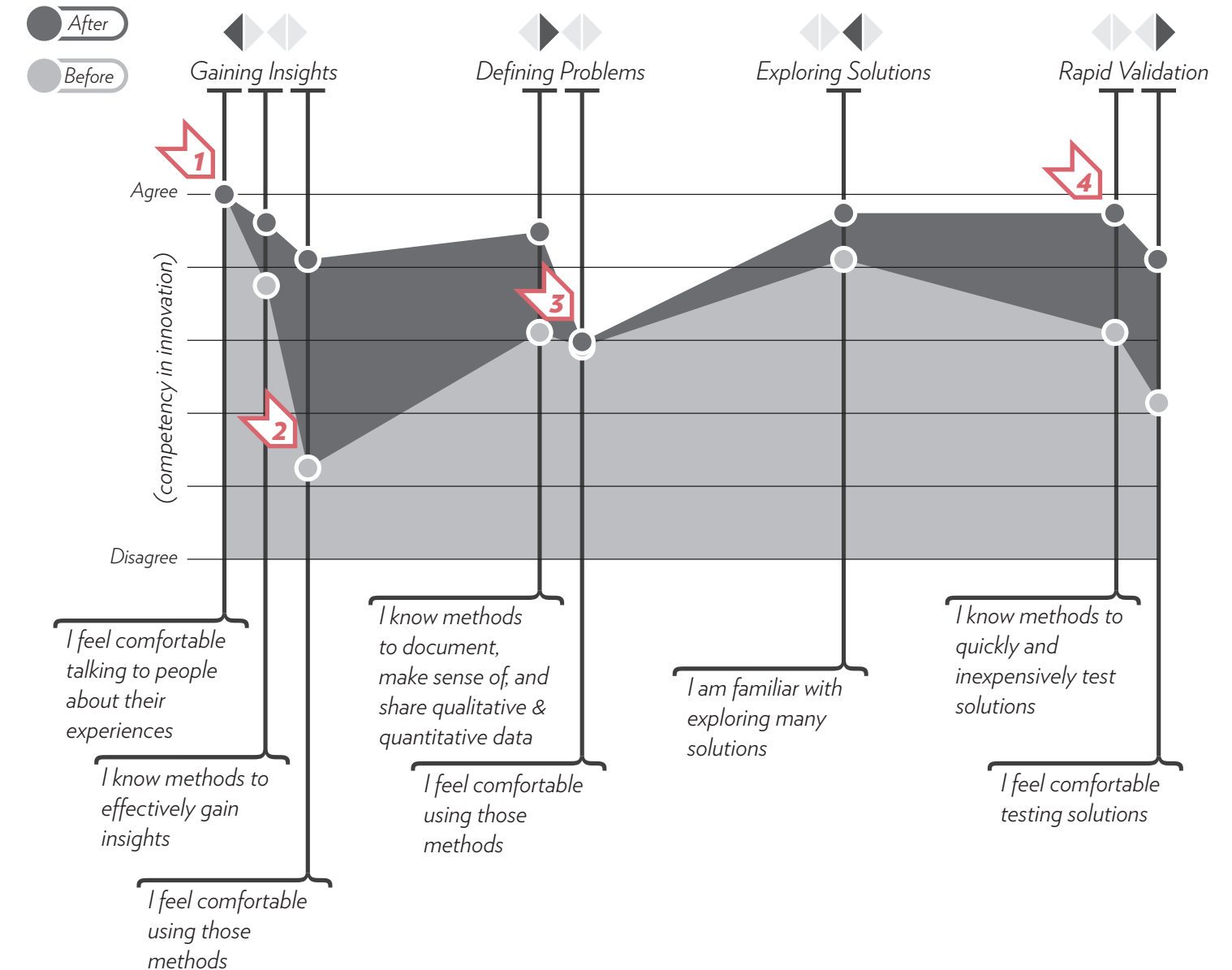
I have already used process mapping, SIPOC with another unit project !!!

Results from the Tools & Support Development Questionnaire

The graphic on the right displays data from surveys that were used to understand the team's competencies in innovative work. The team completed a survey before and after they worked with the designer. Comparing the data side-by-side reveals several discoveries that highlight the impact of this role.

DISCOVERIES

- 1 Because nurses talk to patients everyday, the cardiovascular care team always felt very comfortable with talking to people about their experiences.
- 2 The greatest change was seen in the team's comfort with gaining insights. This can be attributed to their new understanding of the use of qualitative data.
- 3 The area that saw the least change was in problem definition. Future supporting roles should aim to strengthen support here.
- 4 There was significant growth in the team's comfort in rapid validation. The team not only learned the importance of testing concepts but also the value of failed ideas.



Can anyone fill this role?

In order to achieve sustainable cultural organization change designers must engage with their audience to develop concepts that feel familiar and allow agency. But if we are trying to create a culture of innovators can't we just use expert innovators to fill this supporting role? You could but you wouldn't get the same results. While innovation is fundamentally derived from design thinking, designers have a skillset that expands beyond the four parts of the process of innovation.

Furthermore, my specific role as a designer at PennMedicine is unique because I have been working within this culture for over a year. This

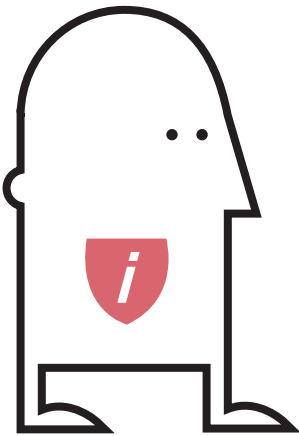
extended work within the culture has allowed me to gain a deep understanding of how people work at PennMedicine. This is especially true because the first project I worked on evaluated PennMedicine's culture of learning and communication. This speaks directly to *Reinventing Academic Healthcare's* first step of transforming an organization.

Evaluating the cultural climate surrounding learning and communication led to a number of discoveries beyond revealing how employees prefer hands-on learning. I also gained an understanding of the complex organizational structure,

the vast vocabulary of acronyms, and discovered that employees have a difficult time generating concepts. This helped me anticipate that the team of nurses might struggle when committing a concept to form.

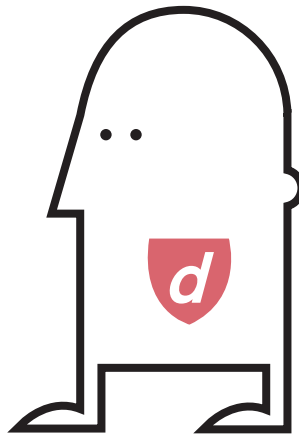
The fundamental difference between employing an innovative consultant and a designer is the designer's empathetic approach. Because I was part of the cultural study, understanding learning and communication, I gained empathy for the employees who struggled to bring ideas to reality. It was this empathy that greatly helped me refine how I worked with the team of nurses.

Innovation Consultant



- Gaining Insights
 - surveys
- Defining Problems
 - pareto chart
 - fishbone diagram
 - reviewing data
 - stakeholder map
- Exploring Solutions
 - brainstorming
- Rapid Validation
 - one night stand
 - minimum viable product
 - fake back end
 - vapor testing
 - the mizner

Designer



- Research (Gaining Insights)
 - generative research
 - shadowing
 - cognitive task analysis
 - time lapse video
 - participatory research
 - cultural probes
 - contextual interviews
- Synthesis (Defining Problems)
 - card sort
 - personas
 - customer journey map
 - abductive reasoning
 - affinity mapping
 - stakeholder map
- Prototyping (Exploring Solutions & Rapid Validation)
 - brainstorming
 - scenarios
 - experience prototype
 - paper prototyping
 - participatory design
 - wireframing
 - usability testing

The graphic above shows the varying skillset between a designer and a consultant. While the designer's list may not be complete, it does reveal how diverse their skillset may be.

DESIGN'S TAKEAWAY

LEARNING WHAT
THIS MEANS FOR THE
PRACTICE OF DESIGN



“Prototyping new organizational structures is difficult. Prototyping with people’s lives is also a delicate proposition because there is, rightly, less tolerance for error.”

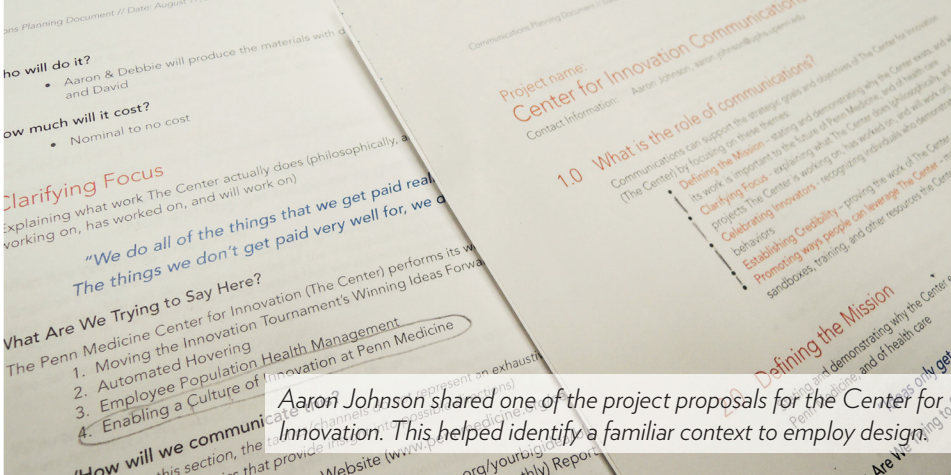
*-Tim Brown
Change by Design*

The practice of design should collaborate with the audience to develop concepts that feel familiar and foster agency. This will inherently accommodate the culture as well as the change cycle. As the thesis statement was discovered and developed, it shaped my relationship with PennMedicine. This strategy holds true in both developing a culture that employs innovative thinking and developing a successful design project. While these two concepts are different in scope they both involve the issue of change.

Was this applied elsewhere?

Exploring avenues to experiment with culture change within an academic health center is a delicate task. I introduced the project as a proposal to help the newly established Center for Innovation communicate its message. Projects that introduce and employ innovative thinking are frequently met with confusion. Because the methodology is new, some employees are unfamiliar with it, which slows the development of those projects. A contributing factor to this issue is the foreign vocabulary used to describe the innovative process.

The thesis proposal intended to explore PennMedicine employee understanding of innovation in order to identify a vocabulary that could help better explain the process. This exploration would not only discover a more readily understandable method of introducing innovation, but it would also identify which steps were perceived to be more complex. Upon presenting the proposal, there was some resistance to the project. The Center



for Innovation knew that it needed to improve how it was introducing innovation, but it was not ready to consider changing the vocabulary. At this point, I invited the Center for Innovation to suggest an alternative project. They shared a recently developed initiative that was created to develop methods of communicating innovation throughout PennMedicine. A revised thesis proposal was craft-

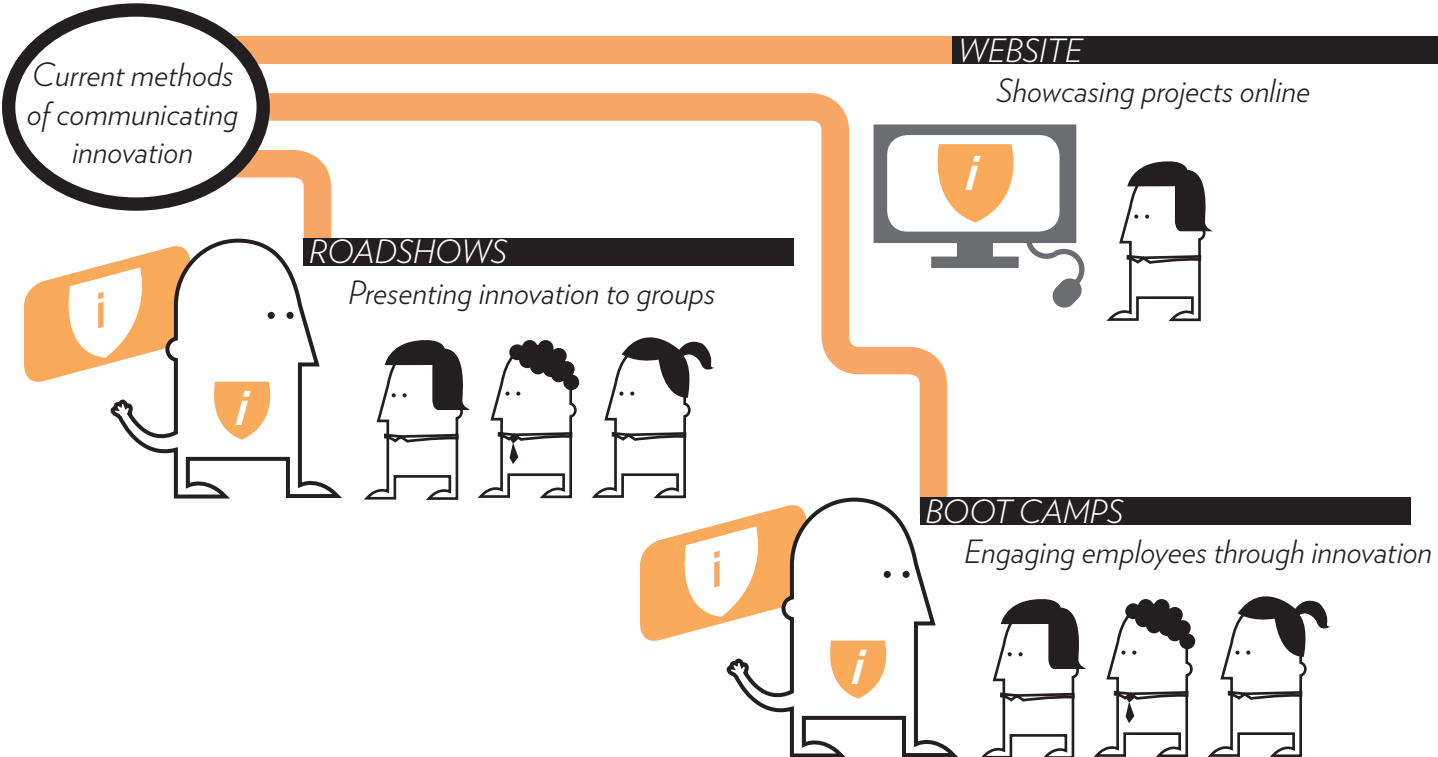
ed to contribute to the communication initiative. Revising the scope of the project was a joint process where the members of the Center for Innovation shared the struggle of communicating a message that motivates people to action. The focus of the thesis shifted to being aimed at improving how innovation is being introduced in workshops. The intent was to improve how participants in workshops are applying their new learning.



The Center for Innovation introduces their process through promoting it on their website, roadshow presentations, and workshops. One of those workshops is part of PIIA. Consideration was given to building support for both workshop within and independent from PIIA. Instead of proposing the development and facilitation of a workshop that is independent from PIIA, the focus aimed at strengthening how participants are apply-

ing their learning within the more familiar PIIA workshops. Using the PIIA format allows PennMedicine to have control over the project because they are facilitating the workshops. It is also much easier to get employees to participate in these established programs because they are already familiar with them.

People know what innovation is, they don't know how to do it



In order to achieve

SUSTAINABLE CULTURAL ORGANIZATION CHANGE

Designers should collaborate with their audience to develop concepts that feel familiar and foster agency.

Concepts should not be too advanced and their implementation should accommodate the change cycle.

The innovation component to the PIIA workshops is something that is an already established method of introducing innovation.

I used my original thesis proposal to invite the center for innovation to discover an application for my work.

The PIIA workshops allowed my thesis work to be directed by PIIA and the participating team.

How can change be sustained?

As the themes of familiarity, agency, and co-creation were discovered, I applied them to my relationship with PennMedicine. The exploration of cultural organization change was focused into a context where the academic health center would have control and influence over the project. They would also be able to monitor my work as a designer. This approach was also co-created by asking PennMedicine where they felt the application of improving culture change would be most appropriate. Because of these factors, along with the fact that the PIIA format was an already established, familiar context, PennMedicine more readily invited the collaboration.

This is cultural organization change but in order for this to be sustained, there needs to be the addition of a fulltime role. That role needs to be someone from within the culture of PennMedicine and not an external consultant. As I mentioned earlier, my understanding of the culture greatly strengthened my ability to work with the cardiovascular team. Furthermore this role should come from the center for innovation. Working in collaboration with the center for innovation reduced anxieties about having an outsider guide the team.

PennMedicine can sustain this change by continuing to consider the three themes of familiarity,

agency, and co-creation. The Center for Innovation should continue utilizing PIIA's familiar format to build a culture of innovation instead of trying to facilitate independent workshops. The projects that develop within PIIA are guided by the program but the teams ultimately have control (agency) over their work. The Center for Innovation should also employ designers to work with teams outside of the workshops. This ensures that innovation is getting applied correctly, and allows teams to utilize the skillset of the designer to strengthen their work (co-creation).

POSTSCRIPT

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feedback from the thesis defense

GLOSSARY

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frequently used design terms

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resources that informed the work

POSTSCRIPT

The feedback I received from my thesis committee raised an important question: Was my success as a designer dependent on my prior experience including my understanding of the complex healthcare client? Does this suggest that in order to develop a model for future designers, it is necessary to have extensive exposure to the client's organizational culture? The committee also emphasized the importance of recognizing the value of my personal role with the group. Both of these factors contributed to the success of the work.

Because I worked on a number of projects with the stakeholders at PennMedicine, not only was I familiar with their culture, but also they became familiar with my expertise. We built this rapport over a number of projects. However, the most significant experience was the initial cultural assessment. It was here that I gained a deep understanding of the culture at PennMedicine. This allowed me to de-

velop essential cultural understanding and expectations for designing within PennMedicine. At the same time, PennMedicine was able to understand that my design skills extended beyond visual aesthetics. As future designers engage with not only PennMedicine but also other complex organizational cultures, appropriate time should be spent building rapport and understanding the organizational culture.

To achieve this level of comfort, it may be necessary to begin designing with the organization at a basic, visual level, as this is the most common understanding of design. Using the client's understanding can be prohibitive but it can also eventually lead to opportunities. The cultural assessment was a component of a project that intended to redesign web-based tools for learning and communication. This point of entry was used to perform an evaluation of the culture. Here again, we see the importance of familiarity.

The thesis committee also pointed out that my engagement with the nurses mirrored, step-by-step, the evolution of my thesis statement. Not only did I create a role that leveraged the value of familiarity, agency, and co-creation; but the way I engaged with the nurses also considered these themes. This can be seen in how I created a paper-prototype using the familiar materials that were available. I also handed the prototype over to allow the team to have control over the development. The themes that were discovered through my research not only influenced my role as a designer, but it also shaped how I interacted with the cardiovascular care team.

GLOSSARY

Academic health center - an institution that consists of an allopathic or osteopathic medical school, at least on other health professions school or program and at least one affiliated or owned teaching hospital.

Affinity Web - a method of data organization intended to define categories based on likeness of information.

Agency - having control over one's own actions

Change Cycle - The four stages which are experienced while dealing with change. These stages are avoidance, resistance, commitment, and participation.

Chunking - the process in which the brain converts a sequence of actions into an automatic routine.

Co-creation - a strategy where services or products are unfinished to invite the user to participate in the development or finishing of a good or service.

Collaboration - the act of working with someone to produce or create something.

Culture - a pattern of shared basic assumptions learned by a group as it solved its problems of external adaptation and internal integration, which has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems.

Design Thinking - a discipline that uses the designer's sensibility and methods to match people's needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.

Familiarity - recognizability based on close association.

Golden Rule - an understanding that established habits can not be extinguished but can be changed by learning a new routine.

Gulf of Evaluation - the amount of effort that a person must exert to interpret the physical state of a system, service, or product and to determine how well the expectations and intentions have been met.

Gulf of Execution - the difference between the intentions and the allowable actions of a system, service, or product.

Habit Loop - a three-step process initiated by a cue, leading to a routine, which ends with a reward.

Innovation - taking an idea and exposing it to the real world through a disciplined application of specific tools and methods.

Learned Helplessness - a situation in which repeated failure with a task, results in an individual concluding that they are incapable of completing the task.

Macroculture - the culture that defines a nation, ethnic group, religion, or other large social group.

MAYA Principle - a guiding principle developed by industrial designer Raymond Loewy which states "the adult public's taste is not necessarily ready to accept the logical solutions to their requirements if the solution implies too vast a departure from what they have been conditioned into accepting as the norm."

Microculture - microsystems within or outside organizations

Organizational Culture - the basic assumptions that govern a private, public, nonprofit, or government group.

Paper Prototype - A concept developed with paper with drawn-on features which is meant to be a representation of a finished product.

Subculture - Occupational groups within organizations

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APPENDIX

THEME DISCOVERY	107
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identifying familiarity, agency, and co-creation

TIMELINE	111
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the progression of the project

THEME DISCOVERY

THE DESIGN OF EVERYDAY THINGS

THE TIPPING POINT

Developing High-Impact Innovation Centers

THE POWER OF HABIT

HABIT CHANGE

HABITS ARE THE BRICKS OF ROUTINE

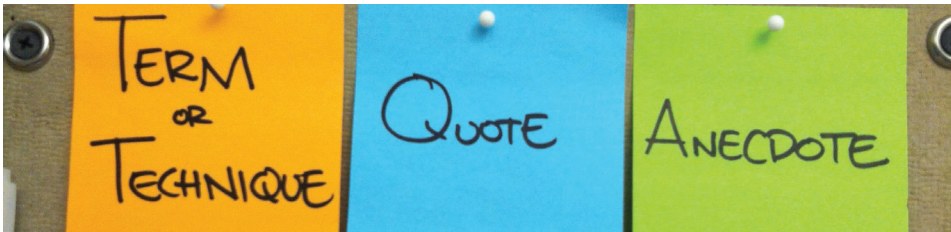
THE CUES & REWARDS YOU'RE HALFWAY TO CHANGING IT

YOU MUST UNDERSTAND HOW TO MAKE THE NOVEL SEEM FAMILIAR

IT MUST, INSTEAD, BE REPLACED.

APPENDIX / 107

[illegible]



The resources that were chosen to explore complexities of change cover a wide spectrum. The first reading was *The Power of Habit*, which delivers insights toward understanding human behavior and the complexities behind changing habits. This reveals how habits are formed, the neurological activity beneath habits, and methods to change habits.

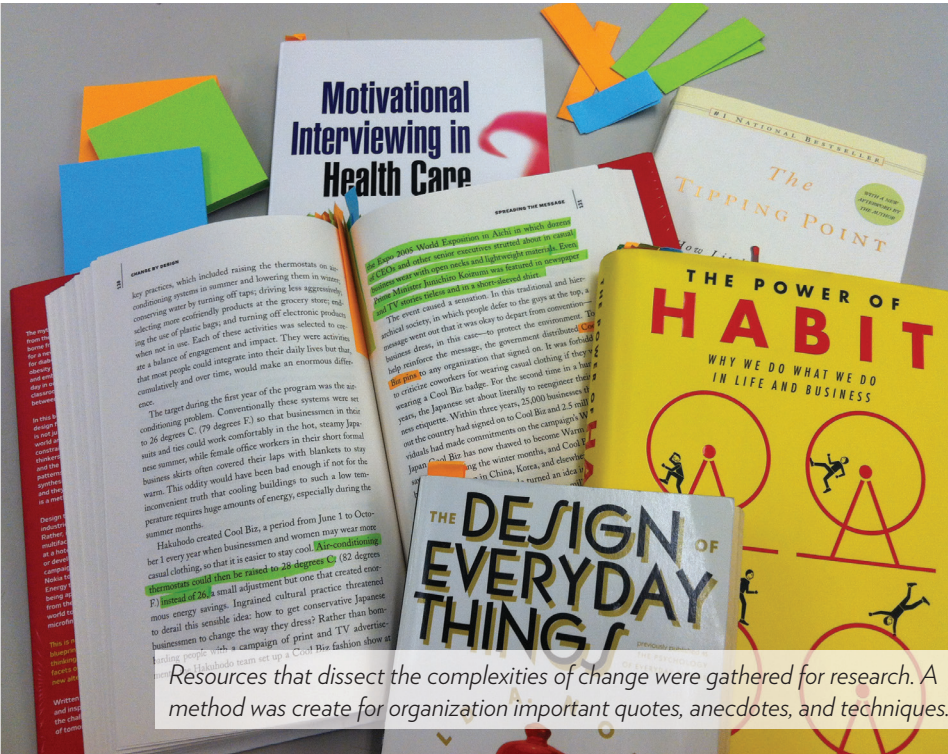
A second resource was *Motivational Interviewing in Health Care*. This speaks to the technique used by wellness coaches to help patients cope with change. This was important in understanding methods professionals use in guiding behavior change. Two similar case studies were also included that focus on helping individuals manage their care. *Services Having All People Engaged* is a case study that empowers a community to redesign their access to their care providers. The second study was *The Red health Report's Diabetes Agenda* where patients dealing with diabetes are invited to diagnose the severity of their condition and prescribe their own care plans. Both of these case studies explore the

complexities of change at a personal level.

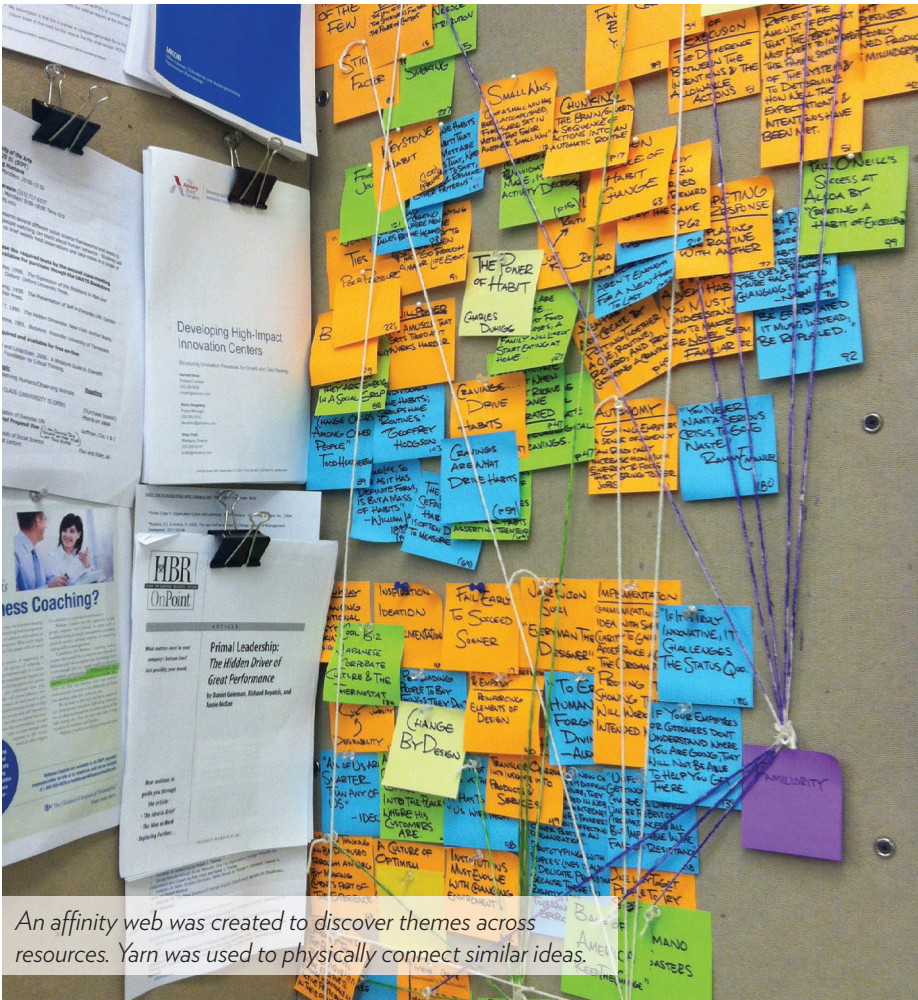
To get an understanding of how simple ideas spread throughout groups or cultures, *The Tipping Point* was also included in the list of resources. This book explores how popular trends take hold and how simple occurrences can have a ripple effect. This resource spoke about change using many anecdotes including on example where a law

enforcement initiative successfully changed the safety of public transit.

Tim Brown's *Change by Design* shared insights on how design-thinking can improve the internal functions within an organization. Emphasis is placed on understanding the complexities of organizational transformation and inspiring innovation. This resource was particularly useful in gaining insights on some of the underlying



Resources that dissect the complexities of change were gathered for research. A method was create for organization important quotes, anecdotes, and techniques.



An affinity web was created to discover themes across resources. Yarn was used to physically connect similar ideas.

obstacles faced by PIIA and the Center for Innovation.

The Advisory Board compiled a resource from insights gathered from 10 different healthcare organizations that have employed some form of their own Center for Innovation. This resource acted as a tool to understand obstacles faced when introducing innovation in healthcare. Necessary resources and considerations were revealed that

cater to the specific needs of the healthcare industry.

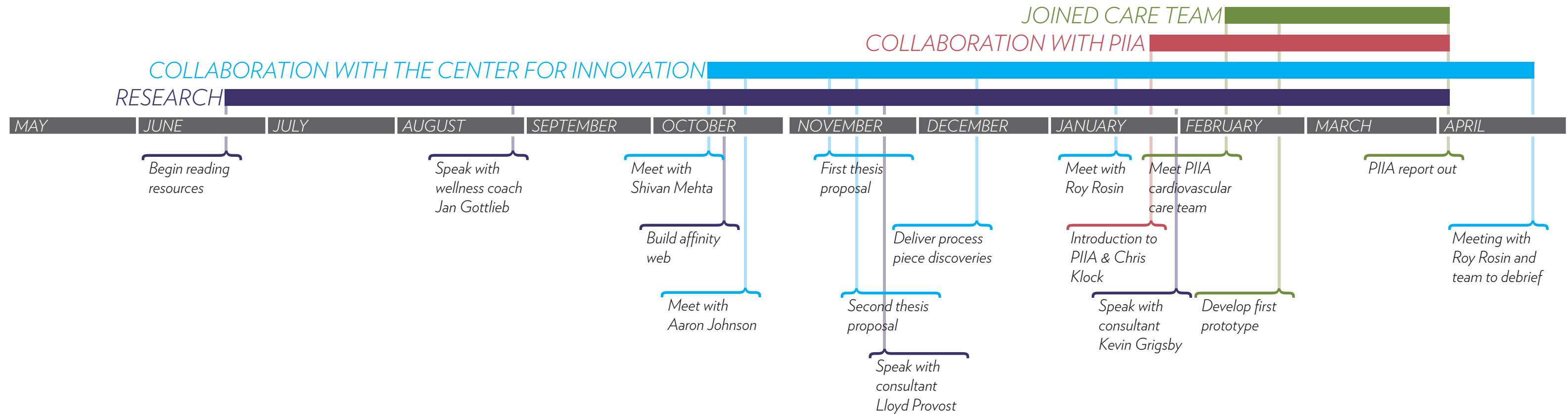
To understand the cognitive reasoning behind how people approach and use different designs, *The Design of Everyday Things* was also included in the list of resources. This revealed how a user's understanding of a design, greatly influences the success of the design. Considerations used to influence traditional product design were

gathered for application in service design.

Insights from readings were categorized by term/technique, anecdote, and quote. Each one of these categories had a coordinating color. As an insight was discovered it was highlighted by the appropriate color, and a corresponding post-it was used as a bookmark. This would allow quick referencing during synthesis.

To synthesize the data, all of the discovered insights were externalized onto post-its. The post-its maintained the proper color coordination to continue differentiation between quotes, terms/techniques, and anecdotes. Clusters were created according to the reference they originated from. Yarn was then used to create and affinity web, connecting similar insights. The affinity web revealed three overlapping themes between resources; familiarity, agency, and co-creation.

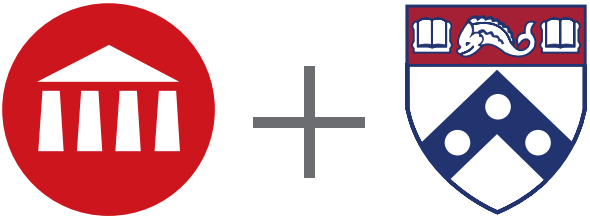
THESIS TIMELINE



About the author



Over the past two years, Ben has employed design with PennMedicine on a number of projects. His projects have ranged from improving check-in at an orthopedic practice, redesigning the new manager on-boarding experience, to discovering new methods of patient scheduling. While the majority of this work has involved improving already existing services, Ben’s interests lie in working with service providers to help them discover their own opportunities for change. He views health-care as an ideal industry for design to empower care providers to overcome the complex challenges of providing high quality services to patients.



The results from this thesis have been a collaboration between the University of the Arts and PennMedicine.