



# CAUGHT IN THE MIDDLE

Roadblocks in middle management's  
path to healthcare innovation

NIDHI JALWAL



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By Nidhi Jalwal

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SPECIAL THANKS!



Matthew Vandertuyn, Experience Designer at Penn Medicine Center for healthcare innovation for constantly guiding me on my way.

Ma, Papa and Bhaiya for always believing in me and lending me constant inspiration. And Rohit for always being awesome at supporting me.

Love you all!

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# CAUGHT IN THE MIDDLE

## Roadblocks in middle management's path to healthcare innovation

By Nidhi Jalwal

*A Thesis submitted in partial fulfillment of the requirements for the  
Degree Master of Industrial Design in the College of Art, Media and Design*

The University of the Arts  
Philadelphia, Pennsylvania

May 2014

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ABSTRACT

Middle managers have received little attention in healthcare organizations, yet they have a key role in healthcare innovation as facilitators. They influence healthcare innovation by distributing information, synthesizing it, mediating between strategy and day-to-day activities, and selling the ideas. Teamwork designs have become more popular in healthcare organizations. Because middle managers oversee these team initiatives, their potential influence has grown. My aim was to design ways to illuminate the impediments that middle management faces as innovators within large healthcare organizations.



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# INTRODUCTION

It was early morning for the Center for Innovation at Penn Medicine. Everyone was prepping up for a collaborative work session with the Abramson Cancer center on a new project. The team arrived a little low in numbers but high in spirits. Introductions began and the CFI team thought that getting update on the recent patient portal project would be great; the cancer center has worked with them on 3 projects in the last year. After a 30 sec. silence, Patrick Higgins, the operational manager of the cancer center broke the silence by reporting a not so successful process towards implementation of the outcomes of the project. The entire team looked a little unhappy but not surprised at all. Later when asked, it was the 'doesn't this always happen in this organization!' Look that the CFI team got from Patrick.

Pat falls below the fourth or fifth level of the company and consequently does not have much direct contact with the executive board. He oversees team members and a mix of managers who supervise only team members. Coming back to the patient portal project, here is what happened after CFI handed in their recommendations: The group that was already working towards the project really appreciated the findings by CFI. The insights also involved further testing in different areas so there was an organic formation of interest groups towards the implementations of different experiments.

The team dispersed without any real plan to take the ideas forward. Some of them agreed to take certain responsibility but the collaboration was not well coordinated and Pat often didn't get timely responses to move further. After a couple of weeks, the team that took over the discharge documentation piece told Pat that they needed a few more things and the whole group was not going to meet for another 3 weeks so that is still on hold. The project implementation is also claimed by the marketing and IT department who have it queued for the third quarter of the year and can't act on it now with the rest of

the team at the Abramson cancer center. Meanwhile Pat is on several such projects and prioritizing isn't something that comes from the leadership. He struggles to make the most out of the meetings and to really push things forward but the lack of facilitation between various parties involved make the whole situation way too time consuming.

When such phenomena happen over and over again, the employees start to lose interest in spending their time inefficiently towards something that isn't going to happen for a really long time. Managing logistical barriers of time and resources has been really tough for any middle manager in a large healthcare system where they are held responsible for the performance of their teams.

*In this book you will read about many such roadblocks that middle managers face using University of Pennsylvania's Health System as a case study. Also, you will read about my research process as a designer in illuminating these roadblocks.*





John Moore during an interview session expressing his barriers to innovation





## DESIGN AND HEALTHCARE

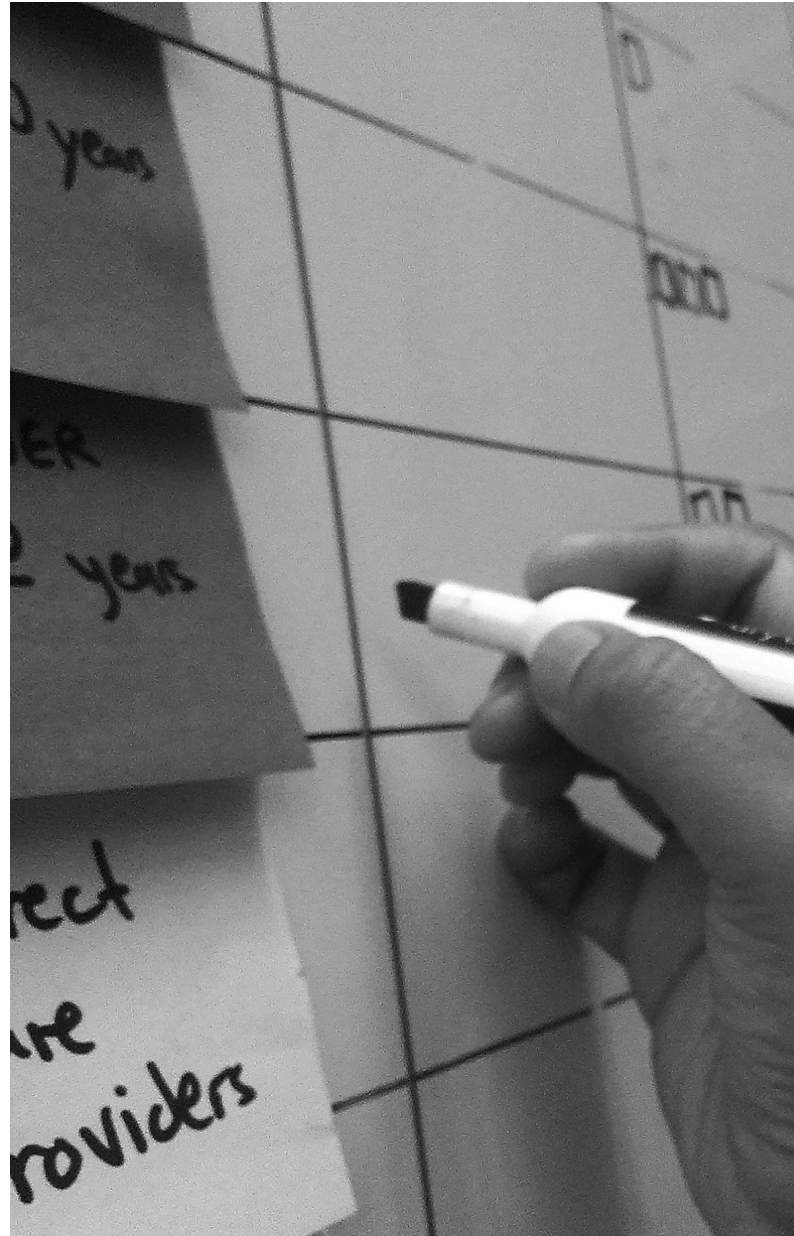
# DESIGNER IN A LARGE HEALTHCARE ORGANIZATION

We might begin by noting that ‘design’ is both a noun and a verb and can refer to the end product or the process.

I started working with the Center for Healthcare Innovation (CFI) in January 2013 on their employee health project. Undoubtedly one of the most challenging parts was trying to absorb the entire system. During this period, I established contact with a number of employees to understand their care preferences. While researching the factors that keep the employees away from using Penn Medicine as their care provider, I couldn’t help but note the underlying hurdles they face in their day to day work. Being a large organization comes with its own pros and cons, and in the end everything seemed to boil down to the three things healthcare is based upon: Access, Cost and Quality.

I continued to work with them over the summer and then the following fall semester. The work my teams did was greatly appreciated by the people involved but there were always roadblocks during implementing our research. Apparently we were not alone in confronting these obstacles: Staff at the Center for Innovation always commented on various procedures that they are subjected to but has no control over.

These conversations and the center’s constant efforts to define their role in the system developed my interest in digging deep into the problem. As part of the larger project, ‘Innovation Capacity Building’, I began my research in collaboration with Matthew Vandertuyn (Experience Designer at CFI) and Katy Mahraj (Project Coordinator at CFI) around the month of September 2013. We started by collecting all the work done in past years in this regard and by interviewing various employees of the system. During this research and my previous projects at Penn medicine, I have worn different hats which helped me understand and define my role as sometimes one or more of the following. These are also mentioned in the book *How Designers Think* by Bryan Lawson as a few roles that designers often play.





## A SUPPORTING ROLE

This is the role I played at the beginning of most of my projects. Design is useful in articulating a required need. As part of the Center for Innovation, I worked in coordination with various other departments. In a supporting role, I sometimes suffered from working with downstream information. For this particular project, I began as a small part of the larger project at the center, but as I moved forward, I found myself evolving into a functional position.

## IN A FUNCTIONAL POSITION

After completing my learning curve in the organization for a year, I evolved my contribution into a functional role. As part of my thesis research, as you will read in this book, I matured in my view of Design. My maturing role became more evident with the constant support from CFI. I could communicate independently and was able to hold meetings by myself. However, even though I started to navigate my way more effectively through the system, I still needed to negotiate with the decision makers to get things done, and had to live with recommendations as I still had little say in decisions made.

## A PARTNERSHIP

All my work at Penn Medicine has primarily begun due to an established partnership between my department at the University of the Arts and the Penn Center for Innovation. This position has both its pros and cons. As an outsider to the system, I could easily illustrate its shortcomings and recommend solutions. However, that also meant I had little to no say in the implementation of my research. As time went by and the partnership grew stronger, I gained a lot of trust within the organization. It took quite a lot of skill to be successful in this role as I had to frame complex design problems into a language the business can understand.

## DESIGN LEADERSHIP

The future of the function of design within an organization is Design Leadership. With a strong partnership in place, the logical next step is for me to own the competence of design within Penn Medicine. Here the role of design is naturally very strategic, where design plays a part in facilitating key initiatives. Through my past projects, I have been successful in identifying potential opportunities and articulating solutions that are vital for Penn Medicine. My thesis is an attempt to push the internalization of design into Penn's daily operations.

# DESIGNING IN A LARGE HEALTHCARE ORGANIZATION

I came to understand problems and get ideas about solutions through a process of conversation. This process involved understanding the way a situation is perceived by ‘talking it through’.

Earlier in 2013 when I initiated my communications with employees at Penn, I started exploring the nuances of the system. Normally those conversations were not recorded and so their importance as part of the process was understated in my design research. These conversations and my personal experiences in the system were indeed important as that’s what sparked my interest in studying it in more detail.

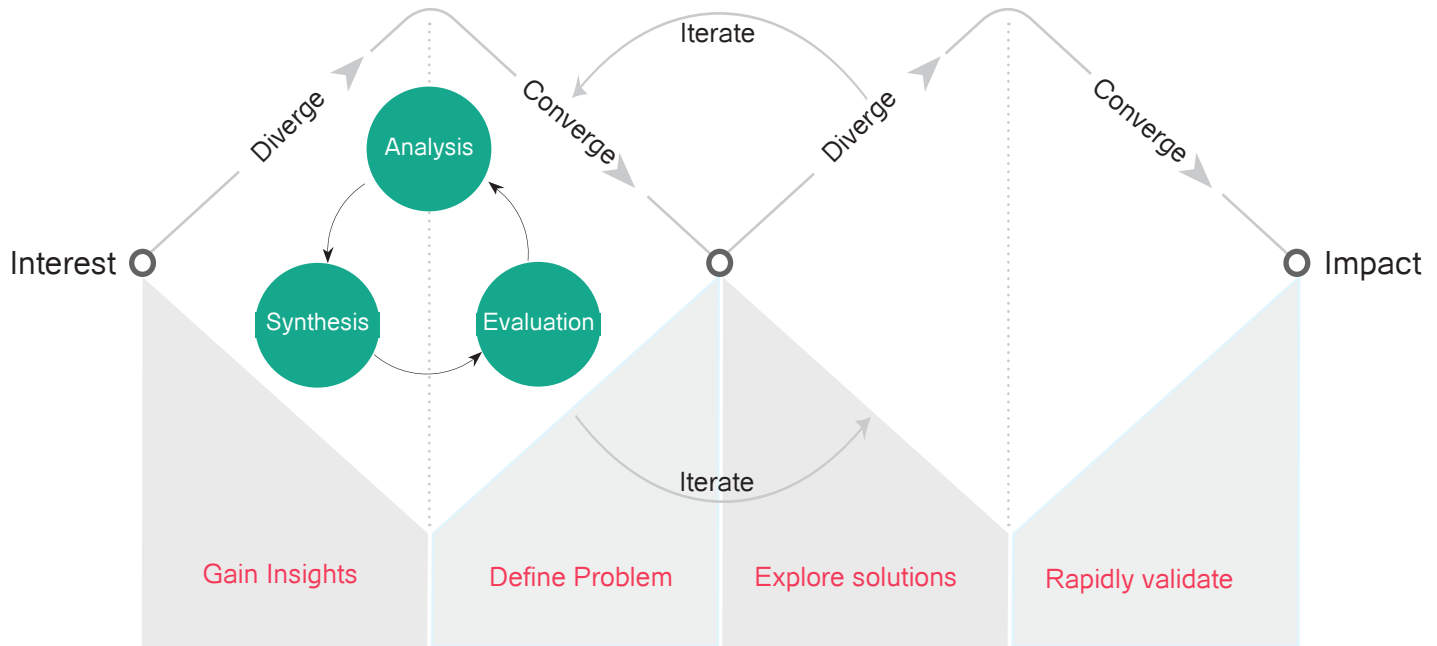


“You do have to ferret around... to find that which is then suddenly obvious to you.” –Designer Kenneth Grange



Interviews with staff members

# LEARNING PROCESS



Double diamond approach to innovation followed by Center for Innovation

The center for Innovation follows the double diamond approach to innovation. In this process one must converge and diverge multiple times to first define a clear problem and then explore solutions. This project was an effort to do a systems analysis and define the roadblocks that employees face at Penn Medicine while implementing change. I thus see it fitting in only in the first diamond. In the past 8 months, I have been in a constant loop of analysis, synthesis and evaluation. The process was iterative and involved multiple rounds of inquiry.

As a designer my role in this project has been to identify and frame the problem. Through the conversation I had and the narratives that I collected, I was able to identify and frame the problem very well.

# ACTIVITIES

## Assessed needs and context

- Interviewed 10+ employees + 2 experts from other health systems
- Collected stories and insights
- Visited the research done in prior years



## Synthesized stories into hypothesis:

- Developed a root cause analysis
- Mapped the present process of innovation
- Synthesized system wide surveys
- Defined the area of opportunity (in this case middle management)



## Dug deeper into the area of opportunity:

- Interviewed 5+ employees to understand their perception of the middle management
- Created project timelines with 12 managers/project leads to define the possible pitfalls in the process

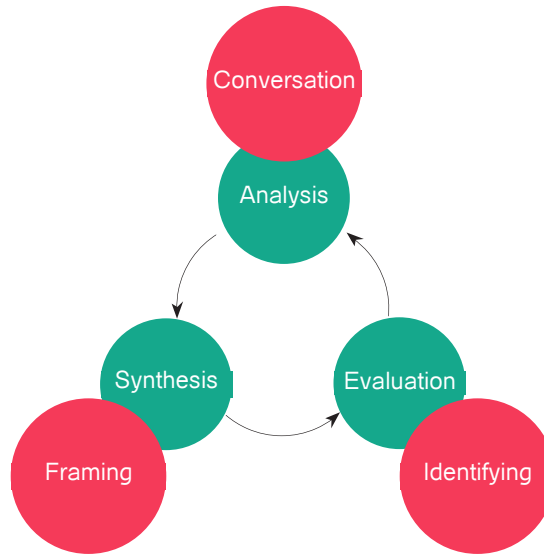


## Reviewed outputs and impact:

- Evaluated the project timelines
- Developed final conclusions







## IDENTIFYING

Through the activities mentioned on the left, I formulated and gave structure to an ill-structured or wicked problem. People introduced in this book, their roles and personalities are exposed to a new way of seeing how they react to events and behave as the story unfolds. Whether it is redefining the problem or identifying its constituent elements, making information visible is a clear design skill.

## FRAMING

As a designer, I follow the notion that problems appear different when looked at from different points of view. This involves selectively viewing the design situation in a particular way for a period. Thus I developed the timeline tool to track how a project progresses over time to handle its massive complexity while simultaneously suspending issues around specificity in the process.

## CONVERSATIONS

The timeline tool facilitated the conversations where interviewees told me specific stories. That helped me develop consistency in my design as they leapt in their conversations from abstract ideas about ‘barriers to innovation’ to their own experience of how that is normally realized in the organization. As I have plenty experience in the organization, I was often able to narrate parts of my stories and demonstrate shared understanding and empathy towards my interviewees.




“If there is any one secret of success, it lies in the ability to get the other person’s point of view and see things from his angle as well as your own.” – Henry Ford

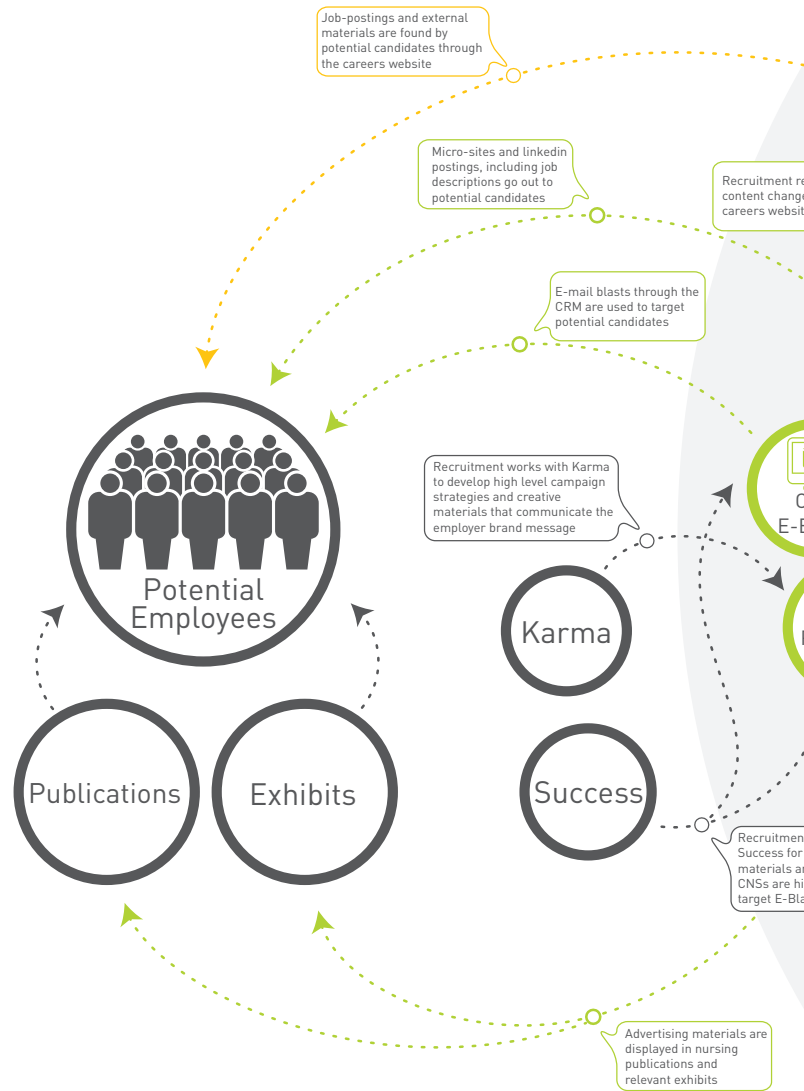




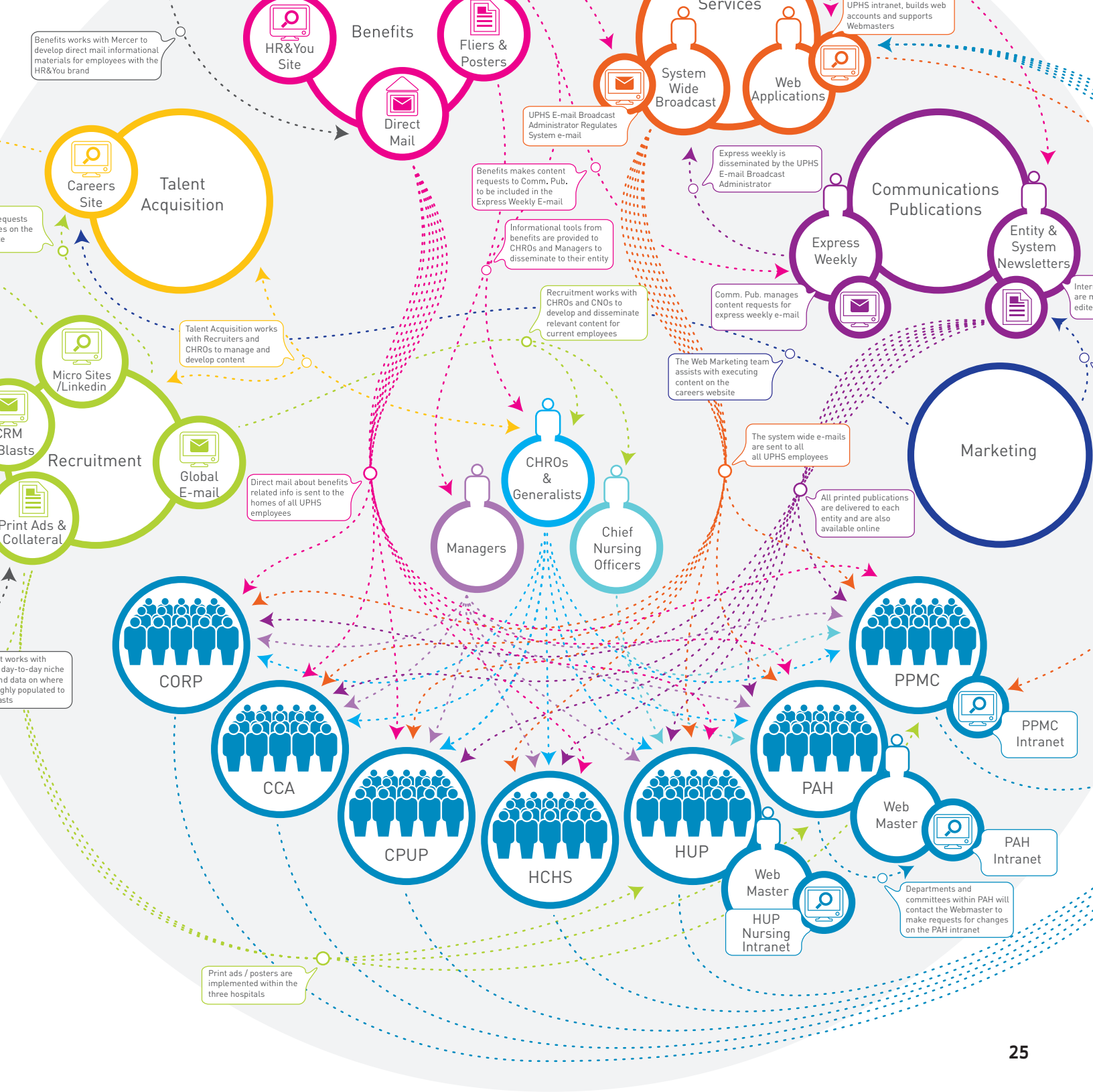
UNIVERSITY OF PENNSYLVANIA  
HEALTHSYSTEM

The University of Pennsylvania Health System is a diverse research and clinical care organization in Philadelphia, Pennsylvania. It currently operates under the direction and auspices of Penn Medicine, a division of the University of Pennsylvania. Four major facilities namely Hospital of University of Pennsylvania (HUP), Perelman Center for Advanced Medicine (PCAM), Pennsylvania Hospital (PAH), Penn Presbyterian Hospital (Presby) and over 65 clinical care associates (CCA) in the greater Philadelphia and New Jersey area constitute the Penn Health System.

	
Annual Operating Revenue	\$4.3 billion
Licensed Beds	1,714
Physicians	2,247
Adult Admissions	78,262
Outpatient Visits	1,589,733
Employees	21,069

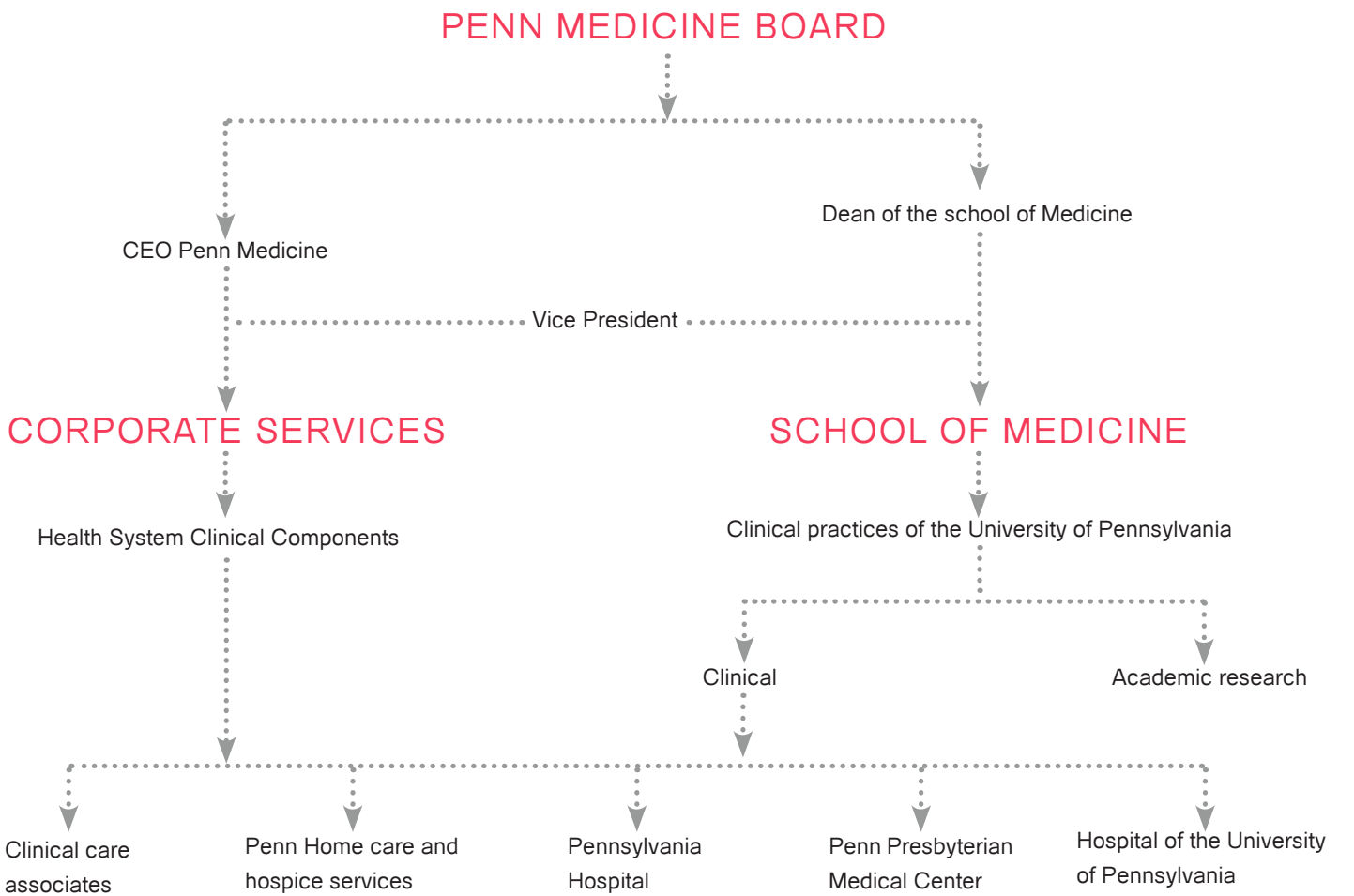


Complexities of a healthcare giant. Communication Map of the human resources at UPHS | Graphic by Matthew



# WHAT DOES AN ACADEMIC HEALTH SYSTEM LOOK LIKE?

Its important to understand how the structure looks like to get an idea about the complexity of it. Corporate services provide support to the clinical components at Penn Medicine. The School of Medicine operates independently from the clinical components. An interesting thing to note here is that though the Dean of the School of Medicine and CEO of Penn Medicine hold equal power in theory, The Dean exercises more of it in practice.





University City, Philadelphia





A hallway in Pennsylvania Hospital



# IMMINENT DISRUPTION: THE HEALTHCARE REFORM ACT...

With the healthcare reforms that are soon going to be in place starting 2015, hospital systems across the country are aggressively trying to change their processes and adopt new ones to fulfill requirements. Penn Medicine is no exception to this change; being third in the nation for NIH grant funding the financial implications of meeting these new criterion are huge.

For example, the hospitals will not be reimbursed for patients that are re-admitted within 30 days of discharge. That implies that the hospitals have to not only pay attention to why the re-admissions are happening but also take active steps to reduce them in order to maintain financial benefits. This point itself has given birth to a number of projects across Penn Medicine where different departments are trying to employ tools/ methods to follow up and support patients after discharge. Later in this book you will read about the journey of two such projects: the Cardiac post operation follow up and the Cardiac Intensive Care Unit Follow-up.



## Retirement UPHS Retirement Contribution Plan

UPHS Retirement Contribution Plan

- **How much does UPHS contribute?**  
UPHS makes an automatic contribution of 4% of pay annually.
- **When am I eligible?**  
You become eligible to participate in this plan on the first day of the calendar quarter on or after completing a year of eligibility service (1,000 hours in the 12 consecutive month period beginning on your employment date) and you have reached age 21.
- **What other requirements must be met?**  
You must be employed on December 31 and have worked 1,000 hours in the year to receive a contribution.
- **When am I vested?**  
You're fully vested after three years of service (you must work 1,000 hours in the year to count as one year of service).
- **Where are my contributions invested?**  
Contributions are invested in your Vanguard or TAA-CREF account.
  - CHCANJ employees, contributions are invested in your Vanguard account.

New Employee Training Session

## PREVIOUS EFFORTS TO FOSTER INNOVATION AT PENN

Penn Medicine has taken several efforts to respond to the healthcare reforms act and increase their quality of care. It is important for us to understand what has happened in that past so we can evaluate their effectiveness in the system.

- 2008 Wharton Collaborative: Chairs & Chief Leadership Symposium was held to bring the leadership together.
- 2009 Penn Medicine Academy launched to provide training and further educational support to the employees at Penn.
- 2010 The Penn Medicine Leadership Forum (PMLF) was launched. It could be explained as a learning environment where teams work on organizational challenges.  
Over the course of about three months, these teams receive leadership training on relevant topics to address the needs of the project.
- 2011 PMLF launched the Performance Improvement in Action (PIIA) as one of its component. In this particular experience, groups focus on continuous improvement in order to create the ideal patient experience.  
During the same year, Center for Healthcare Innovation (CFI) was also launched as an effort to support innovation at various levels in the organization. CFI follows a design approach to innovation and collaborates with different teams like an inside consultancy.
- 2012 Penn Medicine Innovation Tournament. 'Your Big Idea' challenges are an effort to crowd source ideas from the employees and engage the front line staff. Winning ideas are supported and funded by the organization every year.
- 2013 CFI started Innovation grants in a similar fashion as the Innovation tournament. The difference was that they were looking for opportunities to explore rather than proposed solutions.  
In the same year, Dream IT was launched as a health IT accelerator collaborative.



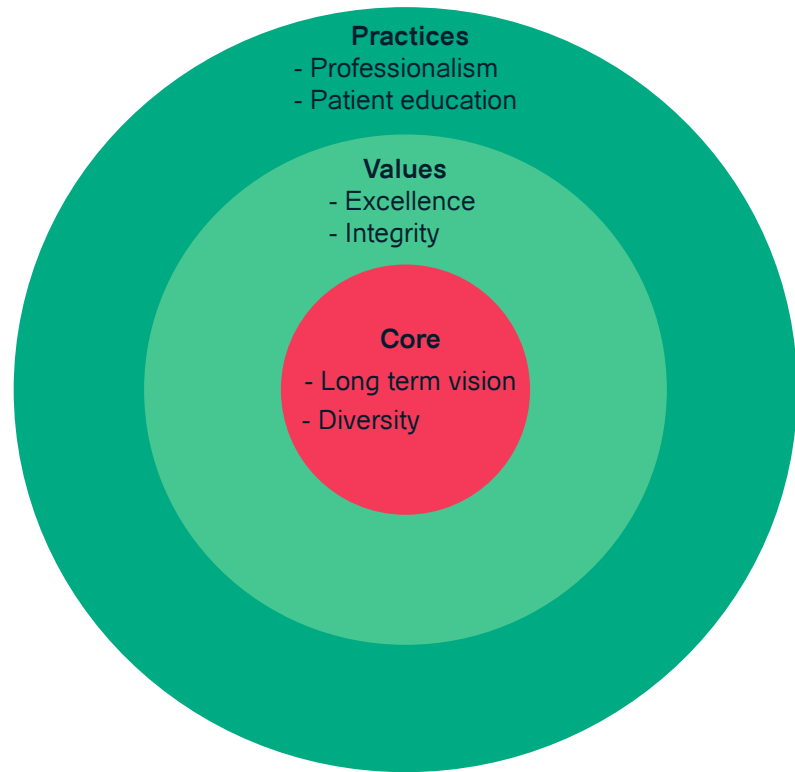


# EXISTING ANALYSIS OF ORGANIZATIONAL STRUCTURE

# WHAT ARE THE BUILDING BLOCKS OF AN ORGANIZATION?

To discover how an organization functions I began with its building blocks and how change can be induced to build a new culture of innovation. The inspiration was drawn from my personal experience at University of Pennsylvania's Health system, where I saw constant push for achieving innovation while the path to change was not well paved. Looking at W.L. Gore's diagram of an organization's culture gave me an idea of how (a) the core, (b) its values and (c) its practices form the three different layers of the culture. It talks about these three layers almost in a hierarchical way with culture filtering down from the core to the practices. This was the first step towards understanding how big organizations could be seen as different elements, but it doesn't talk how to restructure for better organizational performance.

To understand restructuring better, I read 'Innovation's OrgDNA', a paper by Booz Allen Hamilton (BAH) where they suggest that there is no one right organizational structure for a given organization. Different structures work successfully under different circumstances. One important takeaway from this study is that structure is a poor predictor of how an organization will really behave. Independent of their structures, some organizations utilized their resources efficiently and achieved success in the marketplace. Other companies (even with the same structure) seem paralyzed by such challenges, unable to respond effectively. That leads us to the deeper factors at work. Factors that, to use a biological metaphor, constitute a company's Organizational DNA.



W. L. Gore's diagram of its culture

### Decision rights

- Who decides what.. And how?

### Information

- How is performance measured?  
- How are activities coordinated and knowledge transferred?

### Motivators

- What objectives, incentives and career alternatives do people have?

### Structure

- What does the overall organization model look like? (Including the lines and boxes on the organization chart)



Booz Allen Hamilton compares the Organizational DNA to what genetic code is for human beings. The four building blocks of the same are Decision rights, Information, Structure and Motivators. In this study Booz Allen Hamilton also talks about a few different types of organizations and categorizes them into functional and dysfunctional.

Organizational DNA (Booz Allen Hamilton, 2005)



# PENN MEDICINE: AN OVERLY MANAGED ORGANIZATION

From my point of view after completing a year with Penn Medicine, I recognize it as, what BAH calls, an Overmanaged Organization. Penn Medicine is a matrix organization where the power is distributed within various entities and departments. However, that makes collaboration even more difficult as decisions don't just run in a chain of commands. The system is highly bureaucratic with multiple layers of management. This results in slow movement of both ideas and decisions as they pass through these layers, each with its own unique barriers. All this handling also introduces additions or modifications to the original ideas/decisions. Long cycle-times are thus created in the development processes. Some examples of such long cycle times can be read in the case studies section of this book where a few projects have been running over 2 years still reaching nowhere.

The same multiple organizational layers at Penn also limit transparency. With many levels of communication and decision making, it becomes much harder for leadership to get an accurate view of front line staff's expectations and performance. Similarly, the front line staff of the organization becomes ignorant to the mission statement that should influence their priorities. Unclear decision authority across levels blurs the accountability. This results in situations where everyone is responsible and yet no one is responsible at the same time. Penn Medicine's complex structure with University of Pennsylvania intermingled in it as another organization working separately (still very dependent on each other) adds a layer of complexity that wasn't addressed directly in this paper by Booz Allen Hamilton. I was still struggling to identify the key players and the process of inducing change in such an organization.





# WHAT ROLE DOES ENVIRONMENT CHANGE PLAYS IN INNOVATION ADOPTION?

Since I was looking at barriers to innovations in the organization, I went through the paper 'Theories of Organizational Structure and Innovation Adoption: The Role of Environmental Change' by Fariborz Damanpour and Shanthi Gopalakrishnan to understand the larger picture, a little better. This paper cites Tornatzky and Fleischer, according to whom the environment is recognized as one of the important contextual factors that influence innovation.



“Past research along these lines has typically distinguished between two conditions of the environment - stable and unstable - and has associated two organizational structures - mechanistic and organic - with these conditions. It states that organizations functioning in a stable environment have mechanistic structures and are presumed to be non-innovative, while those in an unstable environment have organic structures and are presumed to be innovative.”

-Burns and Stalker, 1961; Daft, 1982; Damanpour, 1991; Nicholson et al., 1990.

As you might be thinking, the above analysis seems a bit outdated; however a useful relationship that I drew from this paper was that organizations effectively innovate in four environmental sets of conditions: stable and predictable EC1.; Stable and unpredictable EC2.; Unstable and predictable EC3.; And unstable and unpredictable EC4. Penn Medicine could be seen falling into EC1 stage with high predictability and stability. This stage is featured with a slow rate of innovation adoption. The type of innovation mostly is technical and incremental with the mechanistic organizational form.

# WHAT ARE THE PATHWAYS OF INNOVATION?



Engaging stakeholders at the Cancer Center

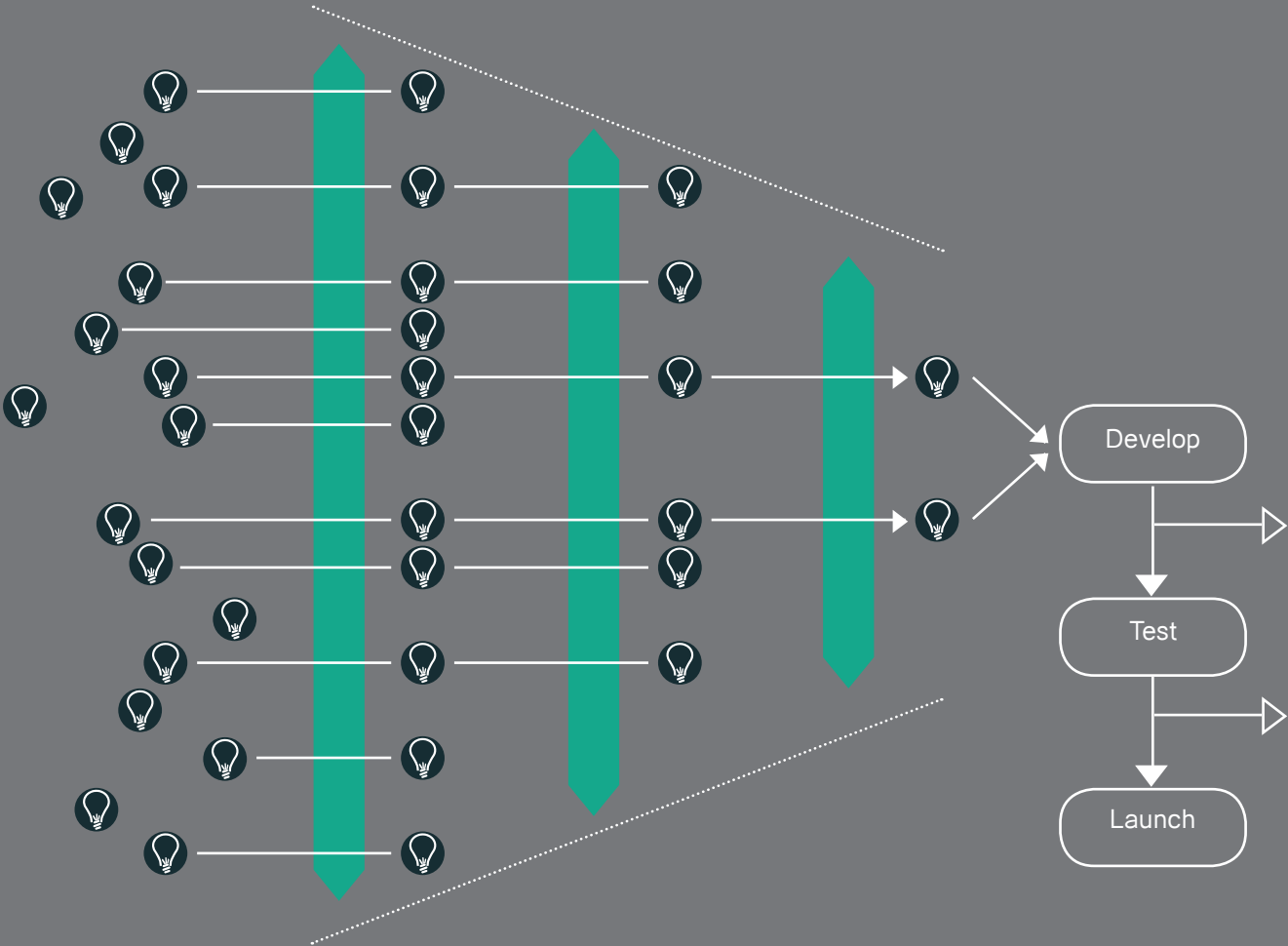
One thing to point out here is that in most healthcare organizations, the external force for change is weak. The organization's main concern is operation and not innovation and that makes the internal examination as the key area of focus. The book, *Innovation Tournaments* by Christian Terwiesch explains four pathways to innovation in an organization as:

- Edge (for instance innovation within a department)
- Edge to edge (more a one department involved)
- Core to edge (Process initiated by the leadership)
- Edge-core-edge (Process completed within a department, then sent as a model to other departments via leadership)

The book also talks about the five levels of the innovation maturity model where companies progress along the same pathway from level 1 to level 5. Reactive -> Structured -> In control -> Internalized -> Continuously improving. This I found particularly interesting as clearly Penn medicine is still trying to reach the 'In control' stage and the model lays down the characteristics of each stage which could be helpful for me to think about as I scale my project. The book however mostly focuses on crowd sourcing of ideas and not really on a structural change and thus missed the kind of direction I was looking for.

'Theories of Organizational Structure and Innovation Adoption', the paper that we referred to explaining the role of environment change did a better job in identifying two stages in this process of change - initiation and implementation (Duncan, 1976). According to the ambidextrous theory, **“attributes of structural complexity more strongly influence the initiation of innovation than its implementation, while attributes of bureaucratic control have reverse effects.”**

# WHAT DOES THE PRESENT PATHWAY TO INNOVATION LOOK LIKE?



The present cascaded process of innovation | Graphic inspired by the book *Innovation Tournament*

The process of innovation within Penn Medicine is mainly cascaded in nature in which ideas evaluated are either advanced or eliminated. Present project flow has opportunity filters run-on, for example the first one could be the confidence of the employees or peer support to take the first step, the second could be institutional barriers (both PIIA and CFI can't support all the projects that come to them) and the third could be scalability or approval from the leadership. The process of innovation within Penn Medicine is mainly cascading in nature in which ideas evaluated are either advanced or eliminated.

A concrete example of that would be 'Your Big Idea' Challenge. In the year 2012, 1739 total ideas were submitted, 200 ideas were shortlisted after first screening. The list was shortened to 40 ideas after 90 second pitches out of which 10 ideas were further selected after 4 min pitches. Finally, there were 2 winning ideas after pitches to leadership that received full funding and support.

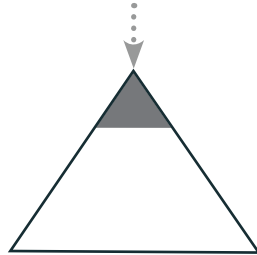
This cascaded process can be iterative, however, allowing the initial opportunities to release others or letting the eliminated ones be improved and rendered back into the process.



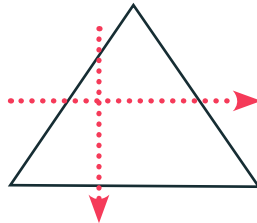
Suggested iterative model of innovation | Graphic inspired by the book *Innovation Tournament*

# HOW CAN WE RESTRUCTURE THE ORGANIZATIONAL DNA TO IMPROVE INNOVATION PERFORMANCE?

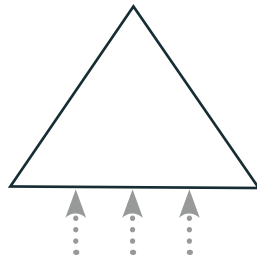
Engage the top and lead the change



Cascade down and break barriers



Mobilize the basis and create ownership



Roadmap to transition in an overly managed organization.  
Innovation's OrgDNA by Booz Allen Hamilton

I understood the building blocks and various factors in play but the starting point for such a cause still remained daunting. As I completed Innovation's OrgDNA by Booz Allen Hamilton, I understood that such rewiring of an organization's DNA requires a systematic approach to organizational change. The first step in their approach is making a compelling case for change that comes from the leadership. This would include setting and communicating the vision of the organization. That would be followed by evaluating the present state of the organization by engaging the middle managers who would then encourage and support the front line staff to come on board.

BAH talks about this roadmap to transition (to the left) adding,

**“A key here is enlisting a core group of midlevel managers to act as change agents or zealots to lead the change effort. This core will need to work cross-functionally to detail the organization design and to communicate and promote the changes across all levels in the company. This core group will prepare the organization operationally and emotionally for change. To be credible and effective, senior management must empower this group with the necessary decision-making authority.”**



79% of business and HR leaders worldwide believe they have a significant retention and engagement problem. – Deloitte Global Human Capital Trends report, 2014





Perelman Center of Advanced Medicine





Patrick Higgins sharing his experience as a middle manager



## WHY FOCUS ON THE MIDDLE?

The Boston Consulting Group and World Federation of People management Association conducted a survey that revealed a global engagement problem in employees that continued even after the Great Recession. While studying the decline in engagement amongst different layers of the organizations, it was to note that the disengagement was found most dramatic among middle managers. In 2009, the scores for performance management and recognition dropped by 14% when compared with 2007, and the scores for people management capabilities dropped by 10%.

As I have seen a lot of push from the leadership to foster innovation in the organization, I started pondering more about the role of midlevel managers in it. From my interviews with them, it did feel like they are in need of support. . After all midlevel managers directly engage the front end employees. They act as a bridge between the leadership and them for not only resources but also for responsibility and credibility. Physician Carmen Guerra says, “We are not tasked to innovate here. Committee work is not considered as real work on which we are judged on and thus I end up paying for trying to innovate by spending personal time on projects.”

These midlevel managers or as I call them, change leaders, are working in coordination with various levels of the organization trying to carry on innovation which could be seen as entrepreneurial activities. *The Lean Startup* by Eric Ries explains these entrepreneurs who operate inside an established organization as “intrapreneurs” because they facilitate Changes within an organization could resemble to building a startup. These change leaders need support. One of the examples of successful implementation of empowering the midlevel managers was done by Intuit’s Design for Delight campaign where they created a group of innovation catalysts specifically to support these managers and thus moving towards a culture of innovation (From the article ‘Innovation Catalyst’ published by Harvard Business Review).



“In a large company of 200,000 employees and 12 to 15 hierarchical layers, the challenge is to reintroduce entrepreneurial behaviors and to better decentralize in order to empower the middle managers.” - Marc Janssens de Varebeke, performance director of GDF Suez, one of the world’s largest energy utilities

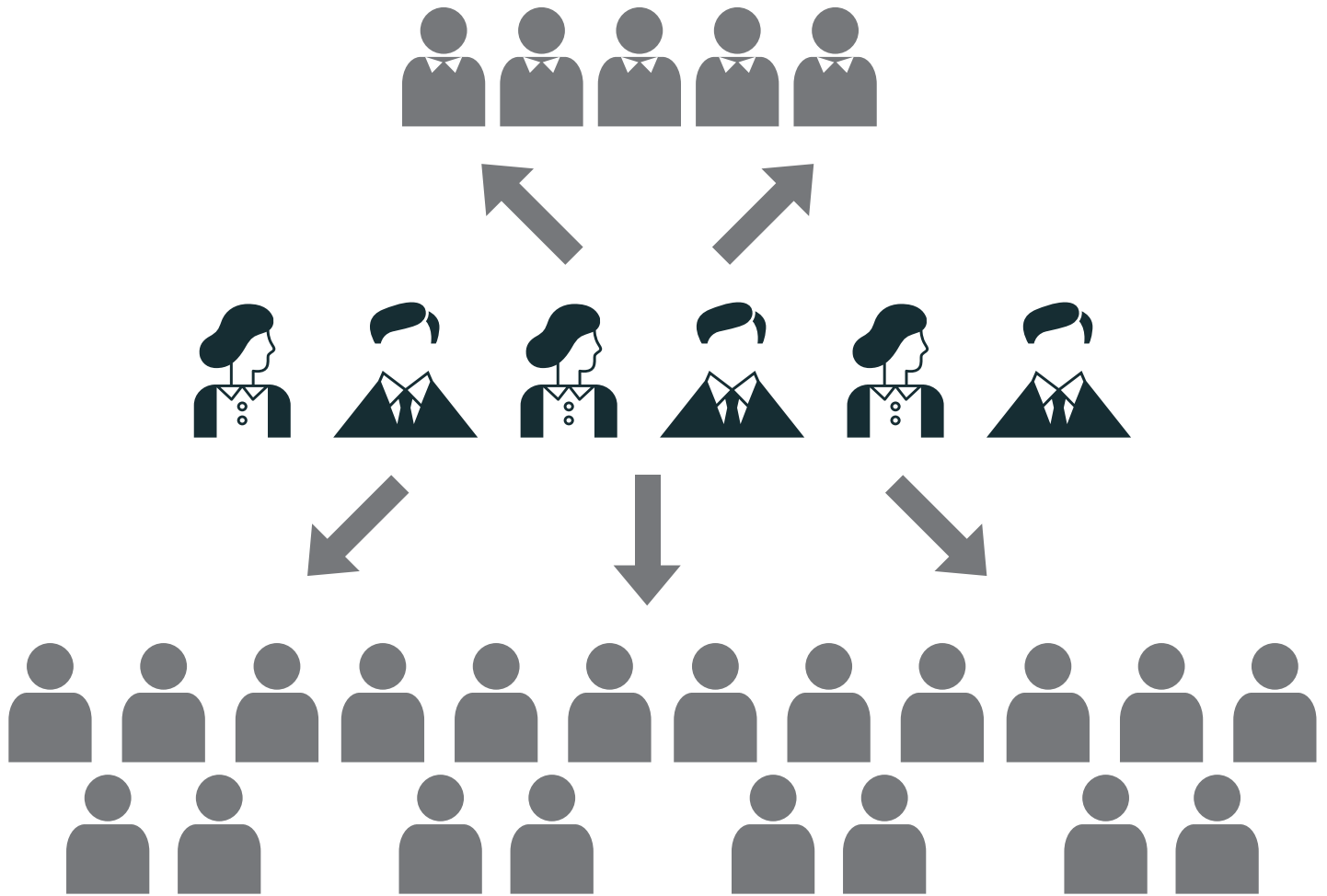
*In the Middle*, a book by Barry Oshry notes that it's unfortunate not many middles discover and use their unique system power. Oshry highlights the confusion that middles about their role as they are answerable to both leadership and their front line teams.

“They manage specific units, performing independently, ignoring their vital role as System Integrators. Middles seem to be in perpetual motion with never-ending lists of meetings to attend, items to accomplish, errands to run, constant intrusions, and so on. They receive little support or gratitude up or down... Initiation, independent thought and action are seldom the provinces of Middles.”

Middle management also tend to take failures very personally. This view point got clearer as some of my interviewees continued to hold themselves responsible for their team's failure. To this point, you heard different writers talk about what to achieve and also how to achieve in order to move towards a culture of innovation.



“Middle managers face a particular challenge. They feel pressure from their bosses to achieve ever-challenging objectives, and they feel pressure from their teams, which do not always understand the direction. They are squeezed in the middle. One of our major challenges is how to improve communication at this interface.”  
- Karen Ferguson, executive VP of global human resources at Schneider Electric, France.



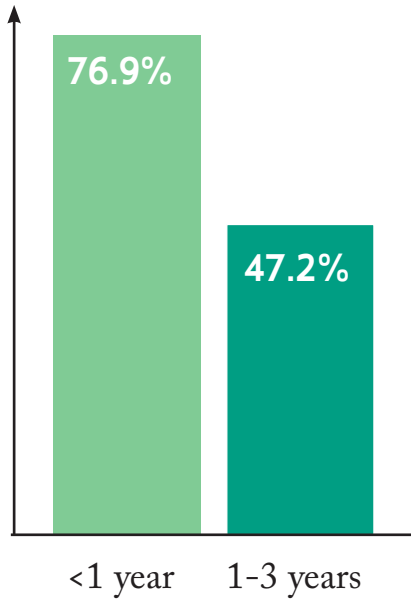
Middle managers are in a politically unique position in between the leadership and front line staff where they can affect change the most

In context of the work of the midlevel managers (where I have decided to focus) There are a lot of system specific obstacles that they face in their path to innovation which still remained unexplored. “When implementing ideas it often looks good on paper but when they really go through it they meet obstacles and just abandon it”. And thus the aim of this project is to design ways to illuminate the impediments that middle management faces during their functions of innovation within large healthcare organizations.



A recent Harvard Business Publishing study found that more than two-thirds of companies feel the need to entirely revamp their middle manager development programs.

## MIDDLE MANAGEMENT AT PENN MEDICINE



More than 70% Managers at Penn Medicine suggest teamwork as the system top driver improvement opportunity. – Employee Engagement Survey, 2011

Manager engagement across the system reduces drastically after the completion of their first year at Penn Medicine according to the Employee Engagement survey, 2011.





# BARRIERS TO INNOVATION



# WHAT DID PEOPLE SAY?

I carried out multiple rounds of inquiry, engaging various levels of the organization. Through my interviews with Leadership, Senior Managers, Operational Managers, Physicians, front line staff and experts from other health systems, I tried to understand barriers that the employees encounter in their work at Penn.

While leadership is perceived to be all about bureaucracy and making money, the front line staff seems to be always busy with patient care. One can immediately notice that there is no place for middle management in the chart.



The proposition of Penn employment by the frontline staff at Penn Medicine



Karen Furtek talking about her barriers

There is an absence of coordination between different teams within a department in terms of what projects they are working on. The managers need better coordination, communication, alignment of processes as sometimes different teams are working towards the same goal, consuming the resources twice or thrice. Creating ownership of processes is a difficult thing to do. Improvement/innovation doesn't fall in anyone's job description. Thus, all of that is considered as extra work for which no one could be held responsible.

Initiation of the process is more difficult as the staff doesn't know whom to connect to and who to involve. The majority of the front line staff expressed this. However, after being in the job for years they all seem to have figured out one or the other go-to person. Often times their manager seems to fill in the role of that mentor. The pace of communication in committees is less efficient. There is immense power play and people talk in circles. Making a decision collectively is tough and so is making ideas visible to others.

Leadership doesn't always hear. There are too many leaders who often don't talk to each other. Employees don't feel connected to the mission of the organization. Speaking specifically about the managers, there are lots of requests/ ideas and it's hard to prioritize. Also, there is not enough knowledge sharing in the system across. People do think that they can learn from each other on one hand but feel devoid of resources for the same.



**“There is not a specific person we can go to with our ideas or needs”**

- Carmen Guerra, Physician



**“We have to bring new ideas to various committees; it is a long and tedious process that has a lot to do with cost”**

- Patrick Higgins, Operational Manager



**“I don't understand how things happen here. Everything is behind the scenes”**

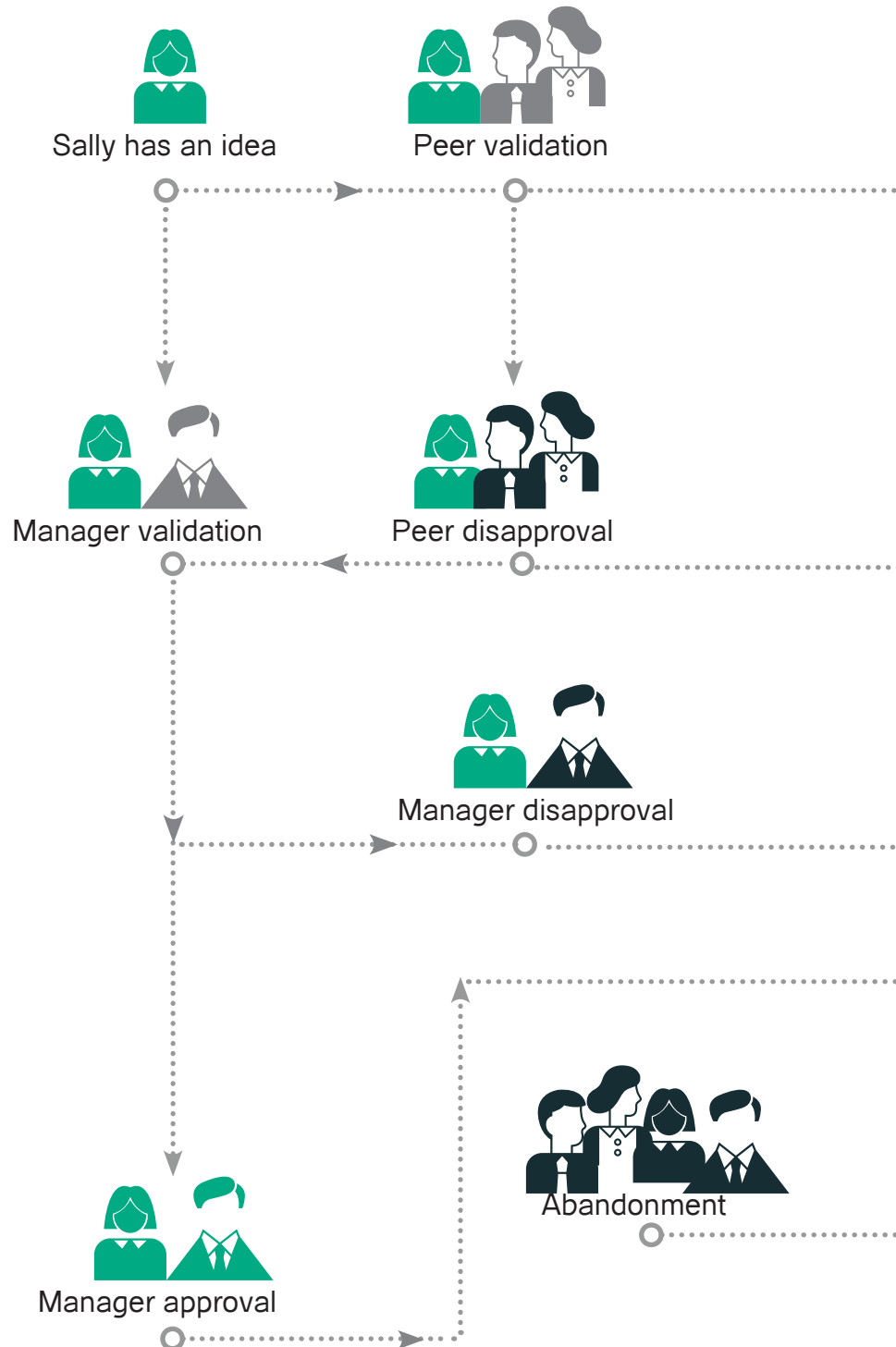
- Karen Furtek, Patient care representative

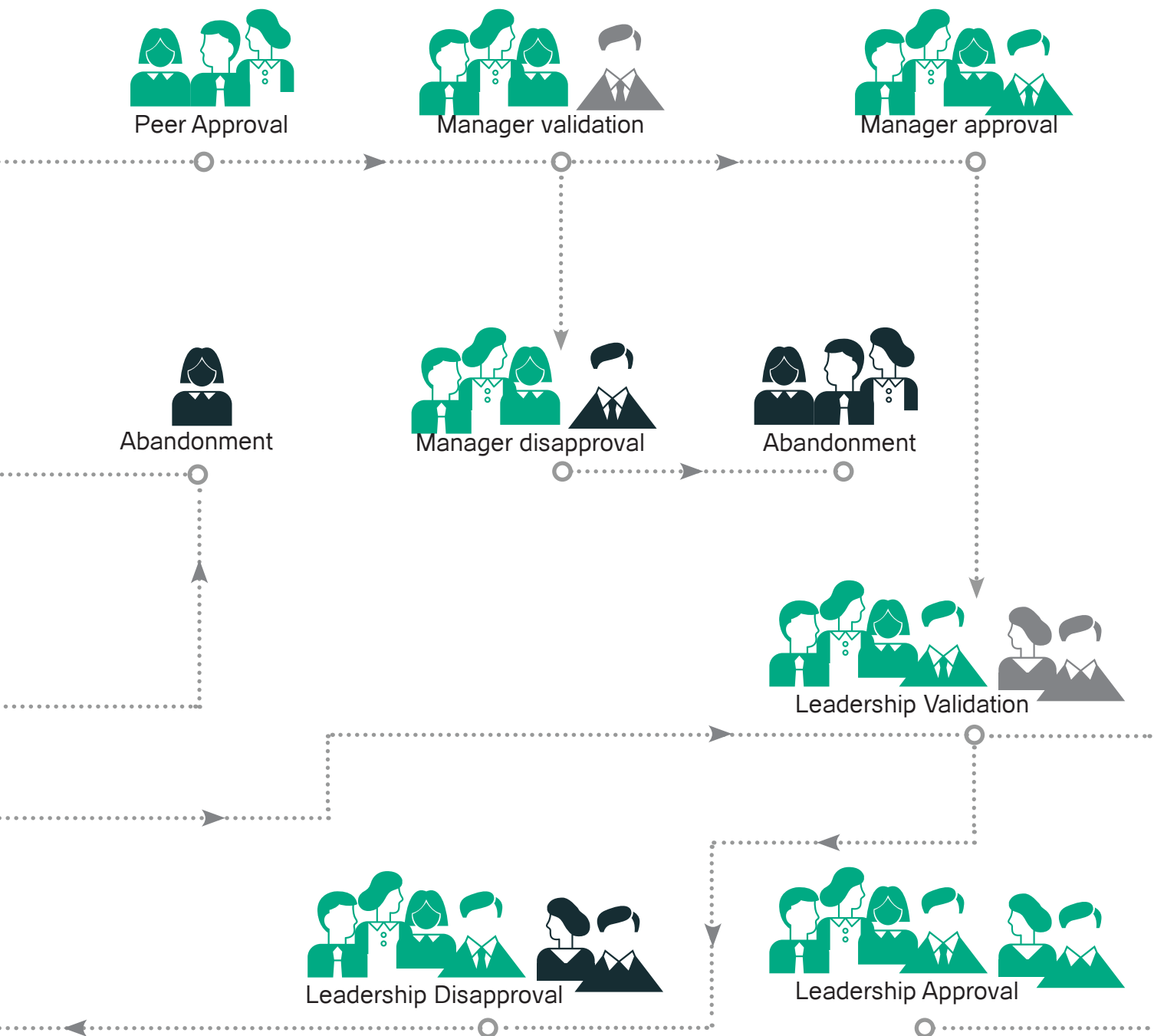
## WHAT IF SALLY HAS AN IDEA?

This process map draws different routes that a front line staff member might take in order to get leadership approval to work on something they care about. After going through the entire process, if Sally was lucky enough to get leadership approval that is when a committee is formed around the idea. And that really just marks the beginning of the project.

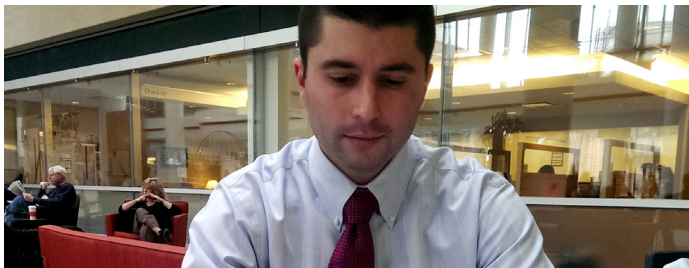
An important thing to note is the role of the manager as a bridge between the leadership and other team members. It's very important for Sally to loop in a passionate driver for her idea. The manager not only makes a strong case for Sally to get leadership approval but is also responsible for providing her with resources. Sometimes also connecting her with the right stakeholders/decision makers.

“When implementing ideas it often looks good on paper but when they really go through it they meet obstacles and just abandon it.”





## SOME OF THE PEOPLE INTERVIEWED



### Patrick Higgins

Pat joined Penn medicine in 2009 as a Patient Service Representative. He then moved on to be a new patient coordinator and now works as Program Development Manager at the Abramson Cancer Center. Having to work with patients very closely in the beginning of his career, Pat is very sensitive to their needs.

He says that he was diagnosed with Type 1 Diabetes (which he thinks is Juvenile) when he was fourteen years old and over the past thirteen years one thing that has become crystal clear to him is that there is no simple way to keep track of his health information. Keeping track of everything is quite complex: a consistent array of papers which are easy to lose and hard to sort through in a way that abstracts any meaningful, longitudinal, organized information. He can't even imagine being a Cancer Patient and having to manage that amount of information.

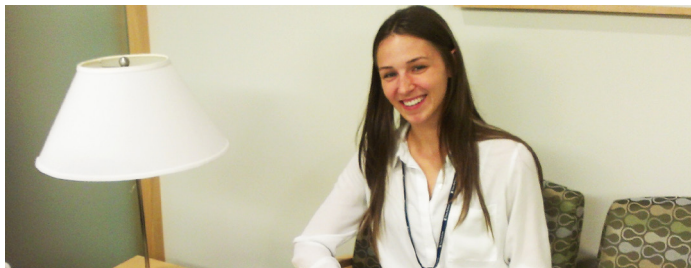
His empathy towards the patients has led him to coordinate various projects with different teams within and sometimes even outside the cancer center but one can find Pat spending most of his time trying to navigate the system and coordinate with different people effectively. He finds the initiation of a project most difficult and struggles not only with getting the right people in the room but also has questions about making the sessions (meetings) with the team efficient to convert static ideas into impactful implementations.



### Judy Scheuler

Penn Medicine's VP of Organizational Development and Chief Human Resources Officer Judy, is extremely passionate about professional development of her employees. She believes in re-conceptualizing the way care is delivered in the absence of evidence and developing solutions that don't yet exist. She sees the present efforts from Penn medicine, for example the Performance Improvement in Action (PIIA) focusing more on existing solutions and evidence based practice using methods like lean six sigma. However, for her the success is when an 'Innovation Improvement in Action (IIIA)' is created around organizational challenges. This IIIA would be embedded with interdisciplinary resources and act as a learning lab to change the way care is delivered where the synergy will be more in team ideas.

Judy however sees end user engagement and time management as one of the biggest barriers in building a culture of innovation at Penn Medicine. She would ideally like to provide safe pathways for innovation to stretch people's thinking but believes that the organization needs to prioritize where to focus their efforts first.



## Karen Furtek

Karen joined UPHS as a patient service representative around a year and a half back. She works at the Perelman Center of Advanced Medicine. As a front face to the patient, Karen has a lot of insights into their needs. Her enthusiasm to help patients is really visible when she talks about various things that she is interested in improving, one of which is scheduling and navigation as it directly relates to her job.

This temple University (Philadelphia) graduate of the class of 2011 seems a little confused when it comes to work flow in her own department. She voices a concern of not knowing who to go to and issues/problems that 'don't fall into anyone's job description'. However, she says that everyone around her has organically developed someone as their to-go person, who is generally their practice manager.

Apart from being a full time patient care representative, Karen is also included in a couple of other projects like increasing the patient portal usage and struggles with time management and prioritization of work at Abramson cancer center.



## Dr. Carmen Guerra:

Dr. Guerra is a cancer screening and preventive care specialist in the division of General Internal Medicine. She also works as an Associate Professor of Medicine and Associate Chief of Staff for the Abramson Cancer Center.

Extremely passionate about the impact of literacy barriers on cancer screening, she defines innovation as a better way of doing things. By better she means, faster, cost effective or patient-centric. She keeps mentioning the fact that people are not tasked to innovate at Penn Medicine and performance is not measured on that basis. Similarly, committee work is not 'real work'. There are no incentives, in fact the employees pay (time) to make innovation happen.

She recently submitted her cost saving idea for the 'Your Big Idea challenge' and has to prove how her idea saves cost when Penn medicine is not giving her access to the financial data she needs to participate further. She thinks herself oblivious to the hierarchy of the matrix organization and doesn't know who really is making decisions here. Talking about the projects she has been involved in, she claims that the pace of any project is super slow. The committee meetings are dreadfully long, at times yield no results and are not evaluated ever in terms of efficiency.

# HOW TO VISUALIZE PROJECT LIFECYCLES AT PENN?

I interviewed UPHS’s managers working on projects that are ‘innovative’ or in other words require organizational change at any scale. To achieve the goal of collecting specific examples of projects and understanding their journey over time in detail, I developed a timeline tool to facilitate conversations during the interviews. This tool is an artifact that helped communicate and develop understanding between myself and the managers I interviewed.

The managers were asked to tell a story of a specific project that they lead or were a part of, marking events that happened as they progressed in time against how they saw the progress of the project. They used green dots to indicate progress and red dots for pitfalls. Small post-it notes were used to write details of each event marked.

PROGRESS

Name of the project: \_\_\_\_\_

Your role in the project: \_\_\_\_\_

Duration of the project: \_\_\_\_\_  
from \_\_\_\_\_ to \_\_\_\_\_

TIME

It was really interesting how different people used these dots, the events they noted and what was perceived as a success. To avoid missing on any detail, I recorded every conversation I had and captured points that people didn’t put on the paper.



Name of the project: Psychosocial distress

Your role in the project: Facilitator

Duration of the project: June 2012 to present

from \_\_\_\_\_

Quarterly Meeting  
Review Best  
Practices, pilots;  
Iterative  
Begin explaining  
my Pain Medicine

Learned too small  
% of oncology  
patients using  
my Pain Medicine  
needed new  
Plan

Presenting idea of  
process for  
multisystem across  
the system with  
mixed reviews.

Selected a tool  
for screening  
and began  
discussing  
process  
Lots meeting,  
discussion

Learned self  
tool ~~method~~  
would not  
universal  
A tool vs  
process

1 year



## HOW DOES ASKING PEOPLE TO CONVERT A VALUE JUDGMENT INTO A TANGIBLE MARK HELP?

Talking to people and asking them to transfer their value judgments to this artifact reduces the anxiety participants might feel. The tool transfers their experiences to paper and make them anonymous. The creation and communication of new knowledge also has to be supported by diversity and consensus amongst the participants. Using marks to quantify these values not only helps us develop a neutral ground for all but it also helps us facilitate evaluation of these personal stories on a common scale.

People love to talk at Penn but they run away from getting specific, the timeline tool helped me in understanding specific cases. Where some people wrote less and talked more, others liked to do two projects and compare them with each other telling a story of learning from one project and applying that to another. And there were people who went down to great details and wrote a lot, needless to say spoke a lot as well.

Developing these timelines gave people an opportunity to express their frustrations. More importantly, it sparked conversations and gave time for reflections as different contributors of the team talked about the same project. They also sometimes pointed back to certain events and talked more about how it all relates. My work as a designer begins with engaging and learning from them. The tools not only helped me facilitate those conversations but the timelines helped me synthesize all the stories in a common format making them easier to digest. Taking the timelines back felt like taking a piece of people's work with me and was marked by an immediate connection between us. The empathy I was able to create through my work lent me support from the people I interviewed to move further in my project.



## **WHAT ARE THE ROADBLOCKS AS WELL AS MOTIVATORS IN A PROJECT LIFECYCLE CYCLE?**

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In the following section we will talk about specific projects within Penn and their progress over time.



# CASE STUDY: WHOLE BODY PHOTOGRAPHY AT THE DERMATOLOGY CLINIC

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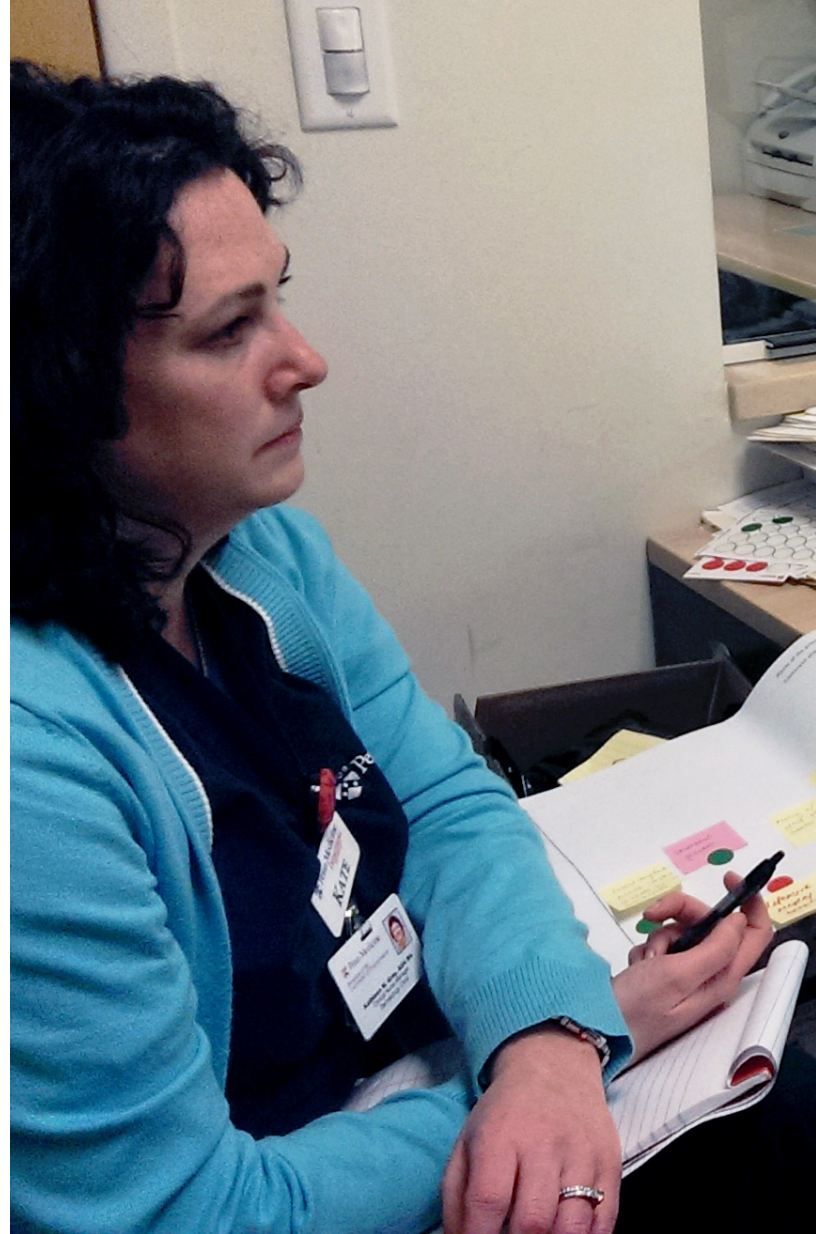
Person Interviewed: John Moore & Kathleen Gray

Interviewee's Role: Team member (John), Project lead (Kate)

Project Length: 6 months

Project Type: Process improvement

This project was an effort to reduce the lag time Melanoma patients faced to receive their full body photographs. A sensitive topic to start with, the team was lucky to get dedicated time for this through PIIA. They made some significant progress in finding out the pain points and reducing the lag time from 70 days to 8 days. Kate, the nurse manager spoke about the facilitator as a huge benefit that they received via PIIA. John mentioned having dedicated time to work/ deadlines given by PIIA and putting things on paper as something new that worked the best for the team. The major barriers that the team hit in these months were creating buy in from stakeholders and figuring out the financial implications of the project.

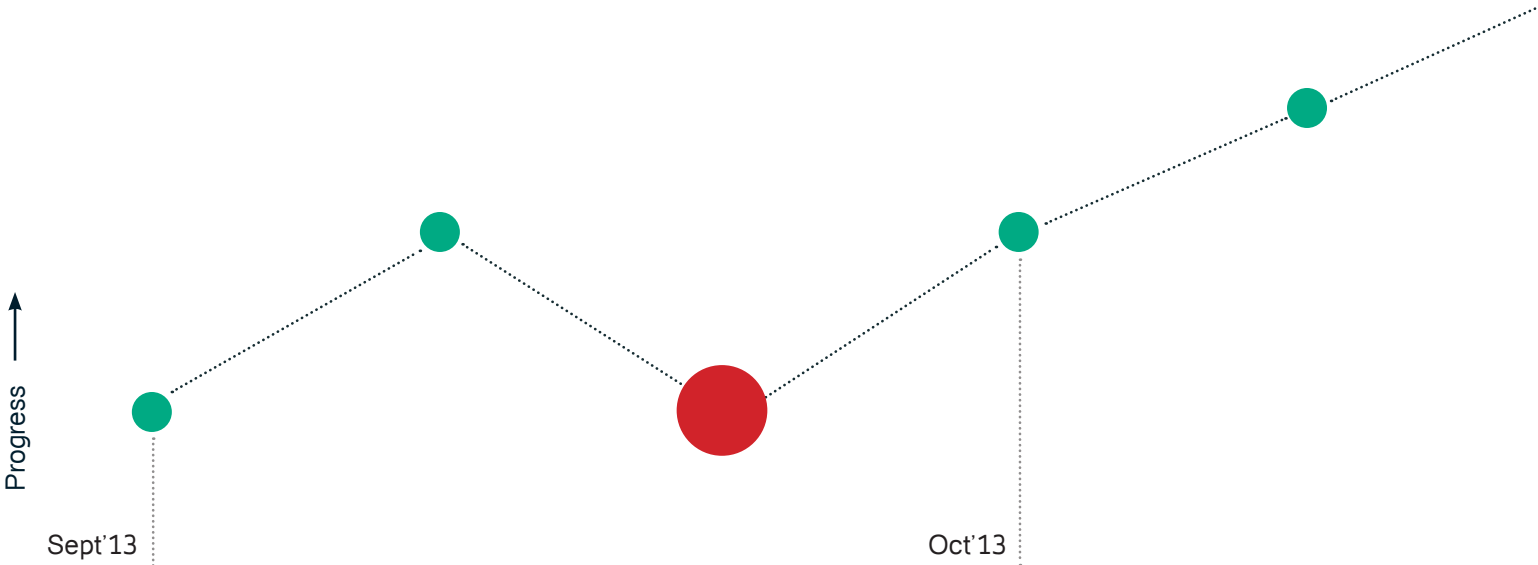






# CASE STUDY: WHOLE BODY PHOTOGRAPHY AT THE DERMATOLOGY CLINIC

“For us putting a process on a piece of paper was huge.”



Patient and provider complaints regarding 10 week lag time (out of need).	Started researching and breaking down various steps involved in the present process.	Team members became defensive as taking photographs of patients naked body is sensitive. From, “Why would we even do this?” To “This is how we have always done things here”.	Support from PIIA.  Once a month team meetings.  Performed stakeholder analysis to create buy in and explain value.	Continued drilling down the process to understand the problem.
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## CASE STUDY: LYMPHOMA SITE DISPERSION

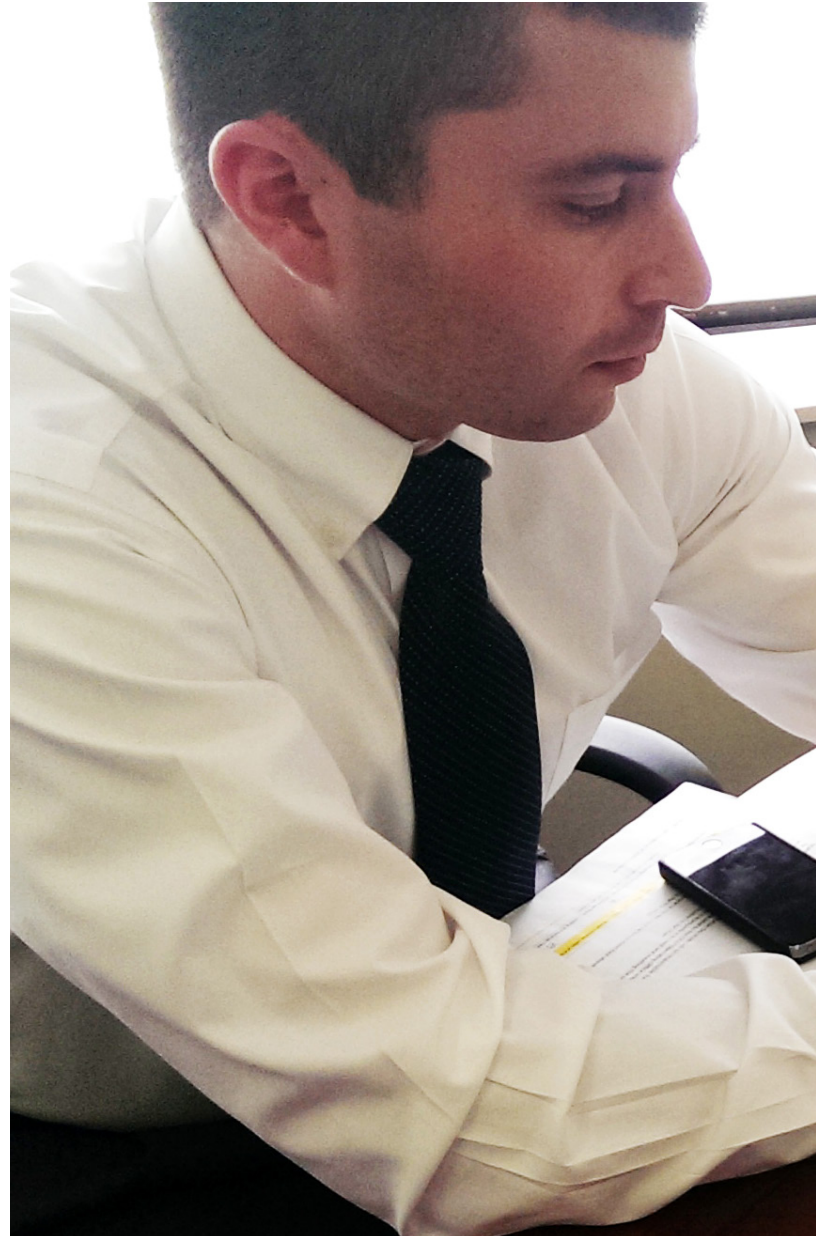
Person Interviewed: Patrick Higgins

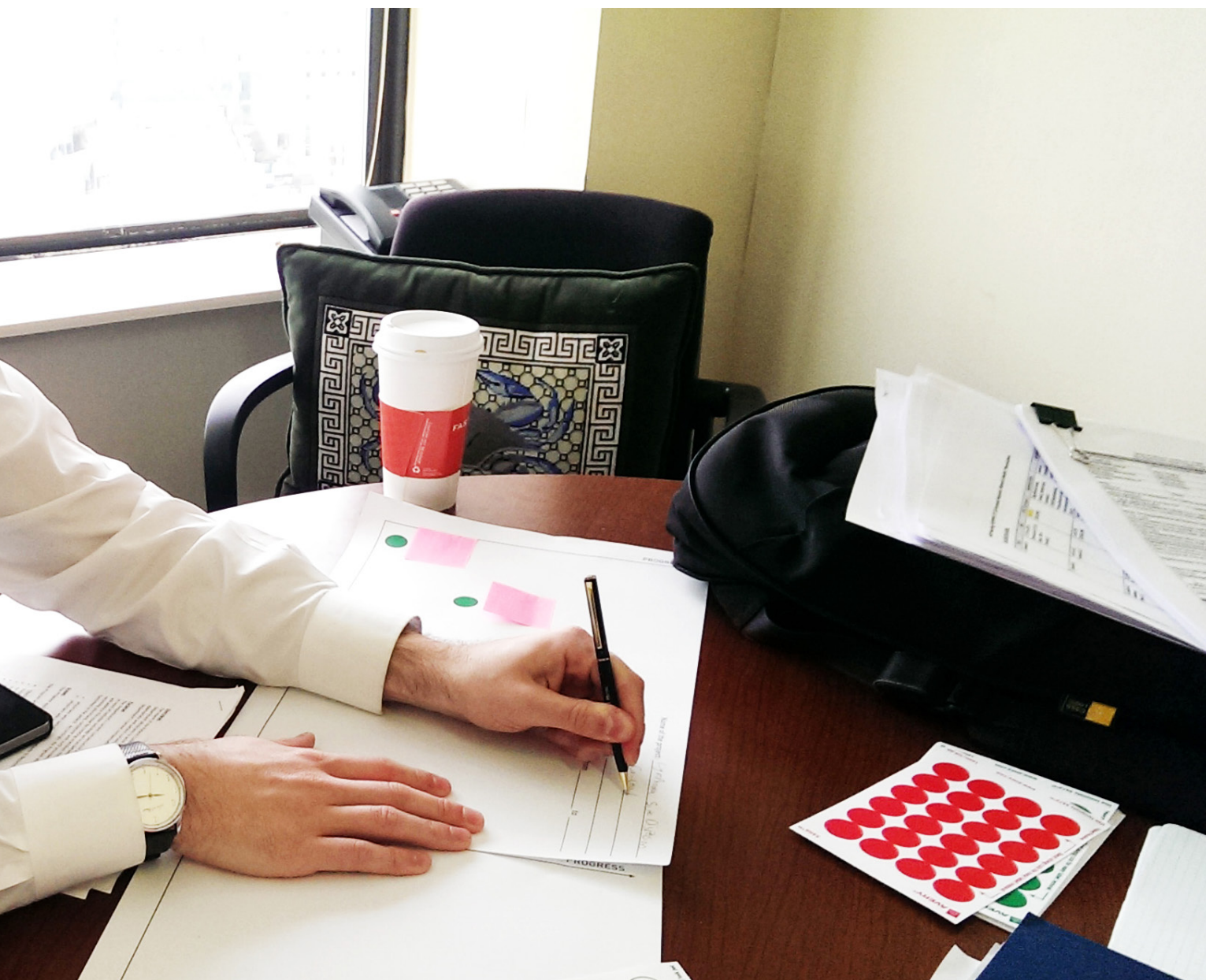
Interviewee's Role: Co-lead

Project Length: 9 months

Project Type: New process

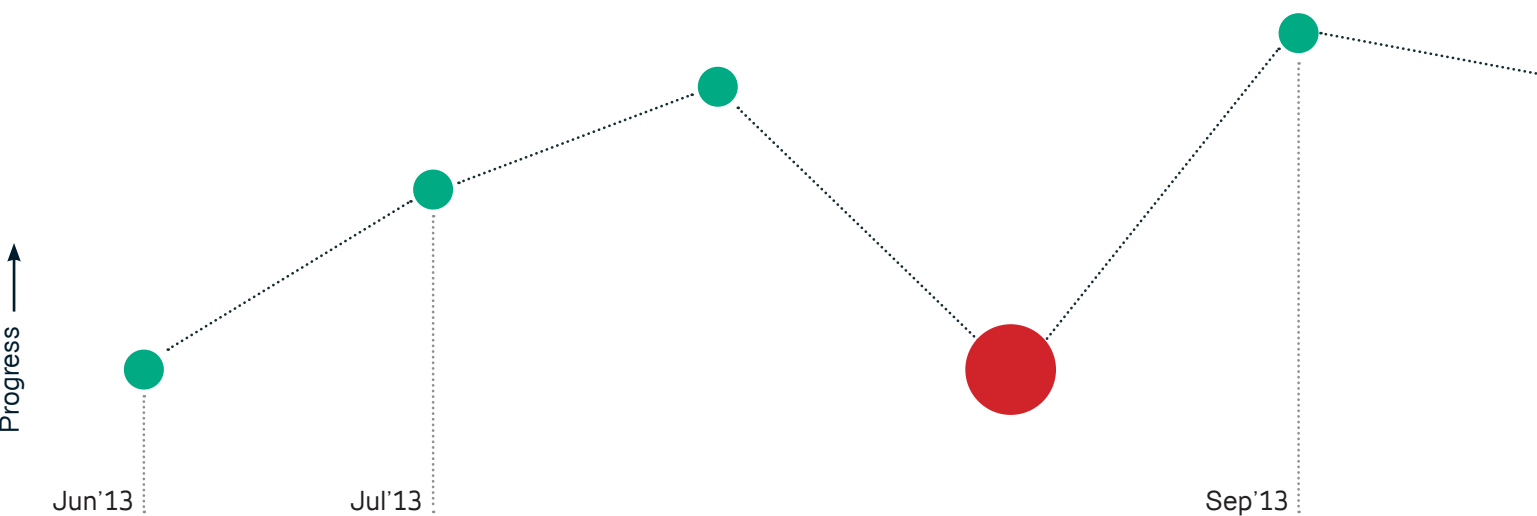
The project came out of Pat's observation of the long wait for new patients at PCAM. The team was trying to balance the load of patients by dispersing them to their Valley Forge's facility. It was completely dependent on lymphoma physicians across different sites of ACC. Given that, Pat experienced some resistance towards change. Elder physicians felt uncomfortable due to technological glitches that were sometimes part of the new process. This new process involved training the community physician at Penn's Valley Forge facility via web conferencing. Working with the Innovation center for some time, they were also able to validate the requirement of another physician at PCAM who would soon be joining them but Pat complains about not having any time to step back and analyze the work. This project actually looked like an effort where different physicians kept joining the forces to move towards success.



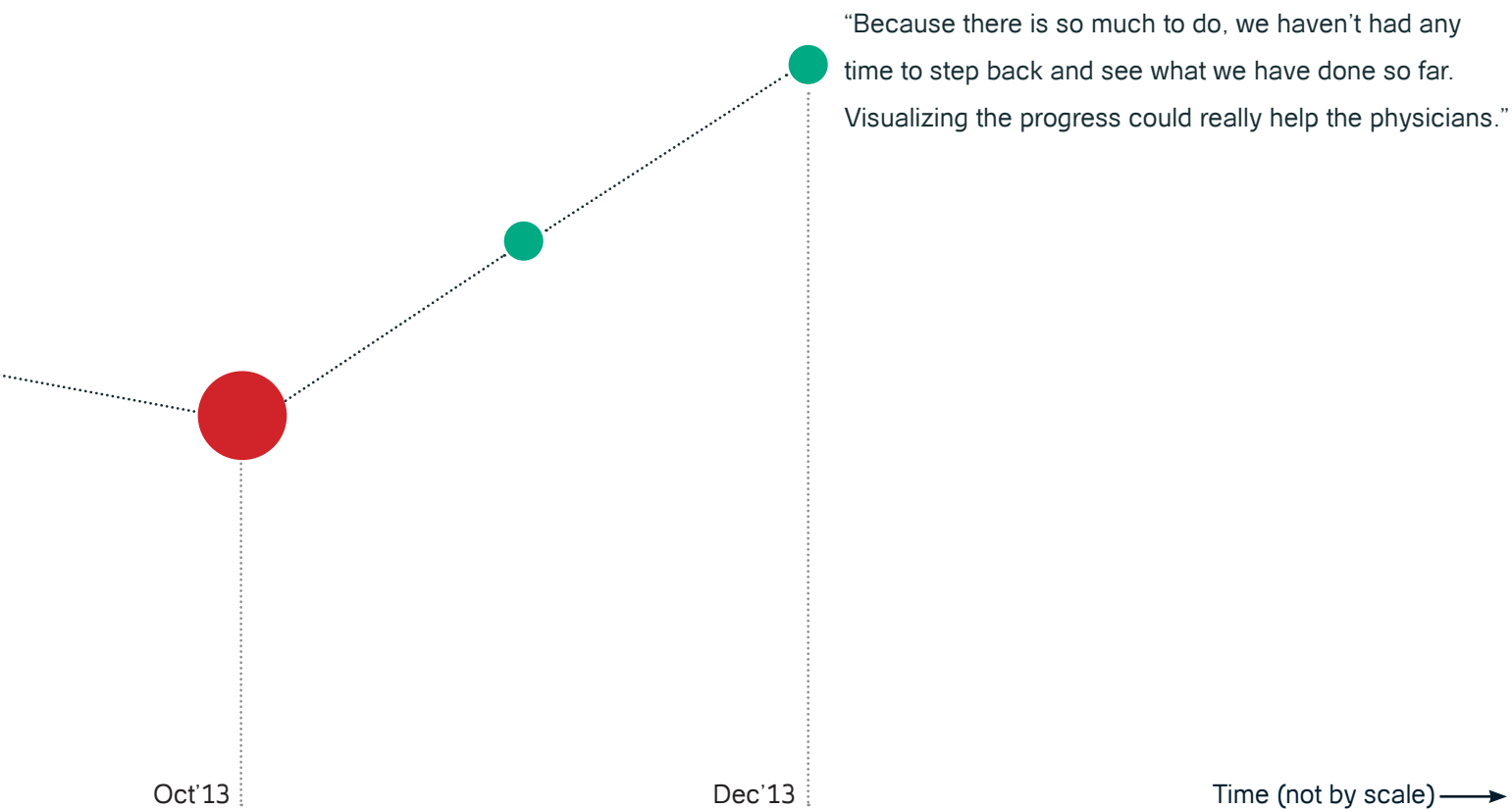


# CASE STUDY: LYMPHOMA SITE DISPERSION

“Meetings were not structured with agendas. It was primarily us realizing that there is a problem and meeting to try and fix it.”



Project initiated out of observation of a need to reduce the new patient lag time.	Accessed lags to calculate the average wait time.  Identified Valley Forge as excess capacity.	Got buy in from the three main lymphoma physicians at PCAM.  Valley Forge physician was happy to be involved.	Scepticism to new ideas (and using a community physician).  “We have never done this before”  Team uncomfortable with technology glitches.	Integration accepted with Valley Forge due to good results.  Use of weekly meetings for training the community physician via web conferencing.
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Chester county referral glitch.

Integration with the Pennsylvania Hospital.

Recruited new physician at Valley Forge to support demand.

Referrals increased.



# CASE STUDY: OTORHINOLARYNGOLOGY WEB REBUILD

Person Interviewed: Daniel Donovan

Interviewee's Role: Project manager

Project Length: 5 months

Project Type: Website re-build

This website rebuild project started back in 2010 and stopped. Late in 2013, it was handed over to Dan as a legacy project. He faced a lot of difficulties just understanding the scope, players and agreements of the project due to lack of documentation. Later, he waited and waited to first get information/approval from his department's marketing counterparts and then from the Otorhinolaryngology department. Months into the project, the team finally decided to launch the website with just initial comments that they collected during an in-person review with the marketing departments. A lot of content remains outdated as there is no one (physicians/fellows/practice managers) to provide input.

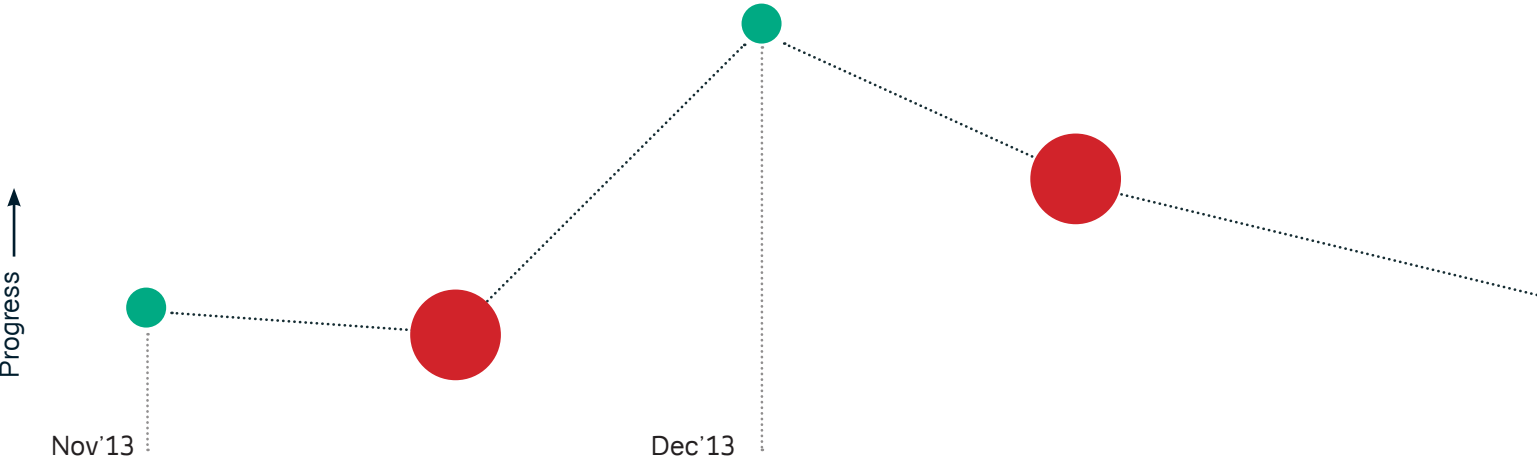






# CASE STUDY: OTORHINOLARYNGOLOGY WEB REBUILD

“That’s where projects halt, sometimes for months and sometimes for years because we are waiting for approval!”



Existing project, handed off from leadership.

Dan joined to handle the project management.

Lack of institutional knowledge or project context .

Piecemeal content, design changes over three months with marketing counterparts.

Changes were submitted to the marketing dept. (as they handle the client) for review.

Project development stops, need departmental inputs.

“In some cases, the business manager of the practice acts as a focal point for feedback. When that happens, it’s fantastic. When no one is assigned to it, everyone has to do it.”



No dedicated project manager from the client to give feedback. Waiting for approval.

Relying on emails to solicit agreements rather than meeting.

In person meeting.

Launch plans and final to-do's established

# CASE STUDY: CARDIAC SURGERY POST OPERATION FOLLOW UP

Person Interviewed: David Savastio

Interviewee's Role: Project manager

Project Length: 16 months

Project Type: New process

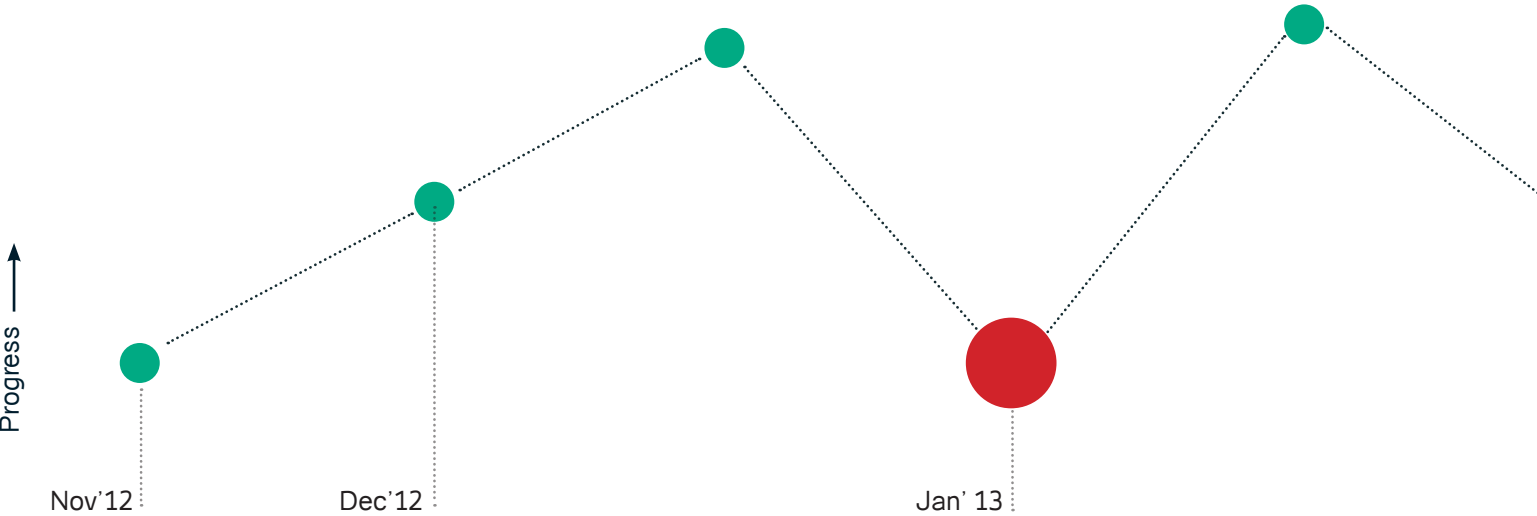
In efforts to reduce readmissions the cardiac surgery department started following up with patients post operation. This project dealt with developing their system and data reporting. While David acknowledged that the new process to be implemented was fairly simple, it still took them over a year to complete it. The IS department struggled to sync with the reporting language that wasted both time and effort as they often did not receive what they asked for. Also, during this period, the team changed and new people lacked the knowledge that was needed to jump start on this one thus dragging the project longer. In the end, David learnt how to manage such projects in the system and saved some time on the next one.





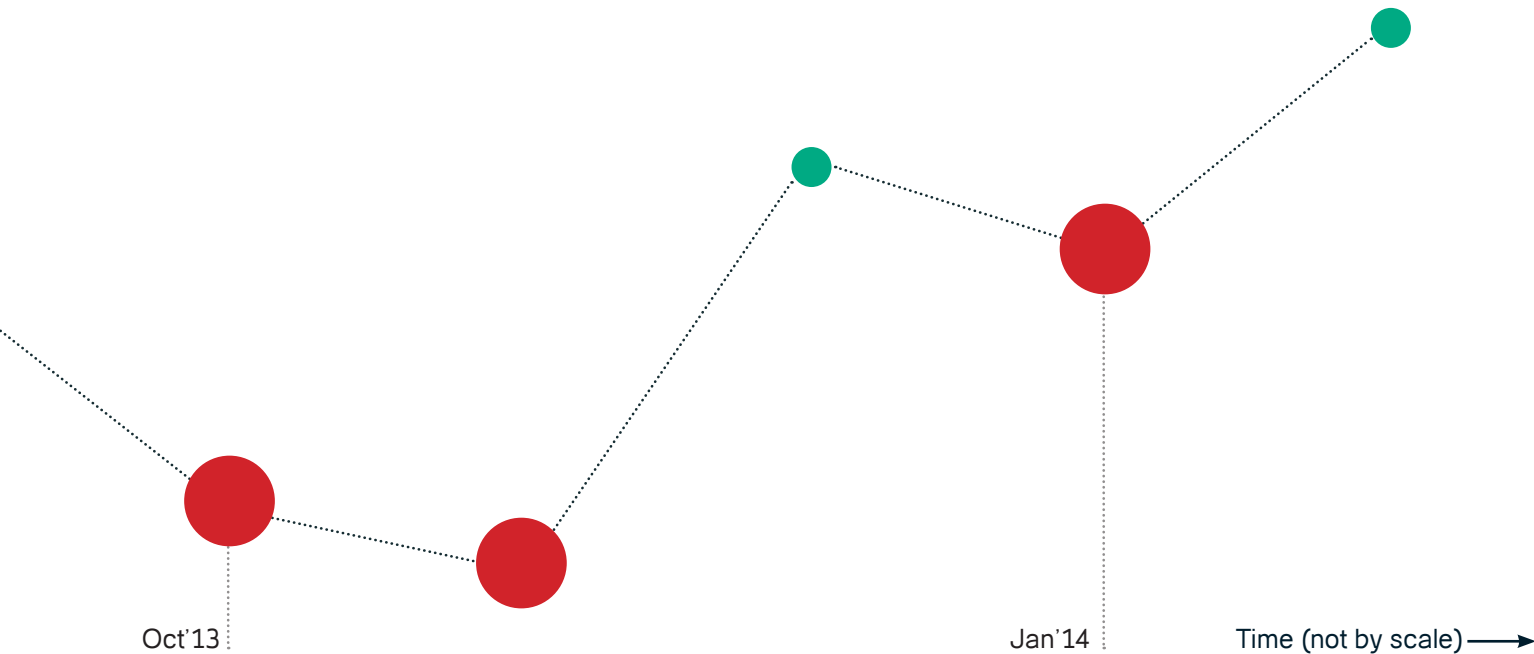
# CASE STUDY: CARDIAC SURGERY POST OPERATION FOLLOW UP

“There is so much information in the system that no one person can know it all. So you start divvying the work load. Now, you have to worry about centralizing and organizing.”



Department wanted to try this new follow up system.	Questions were built based on the research in EPIC.	Request for reports was put in.	Misunderstanding of requirements by reporting.	Understanding how to communicate with reporting.
Lynn did the ground work with patients.		“How to populate the report and generate useful information?”	No common language between IS and reporting. Difference between perception and understanding.	

“New role equals to new education,  
but we don’t have time to learn here.”



Staff change, getting people up to speed is difficult.	No institutional knowledge. Previous reports were lost with the staff change.	Reports Re-constructed.	Technical glitch.	Report running automatically.
		Dependent on others. “What information can you give us?”	Discouraging for people on the team.	Not the best but good.



# CASE STUDY: CARDIAC INTENSIVE CARE UNIT POST OPERATION FOLLOW UP

Person Interviewed: David Savastio

Interviewee's Role: Project manager

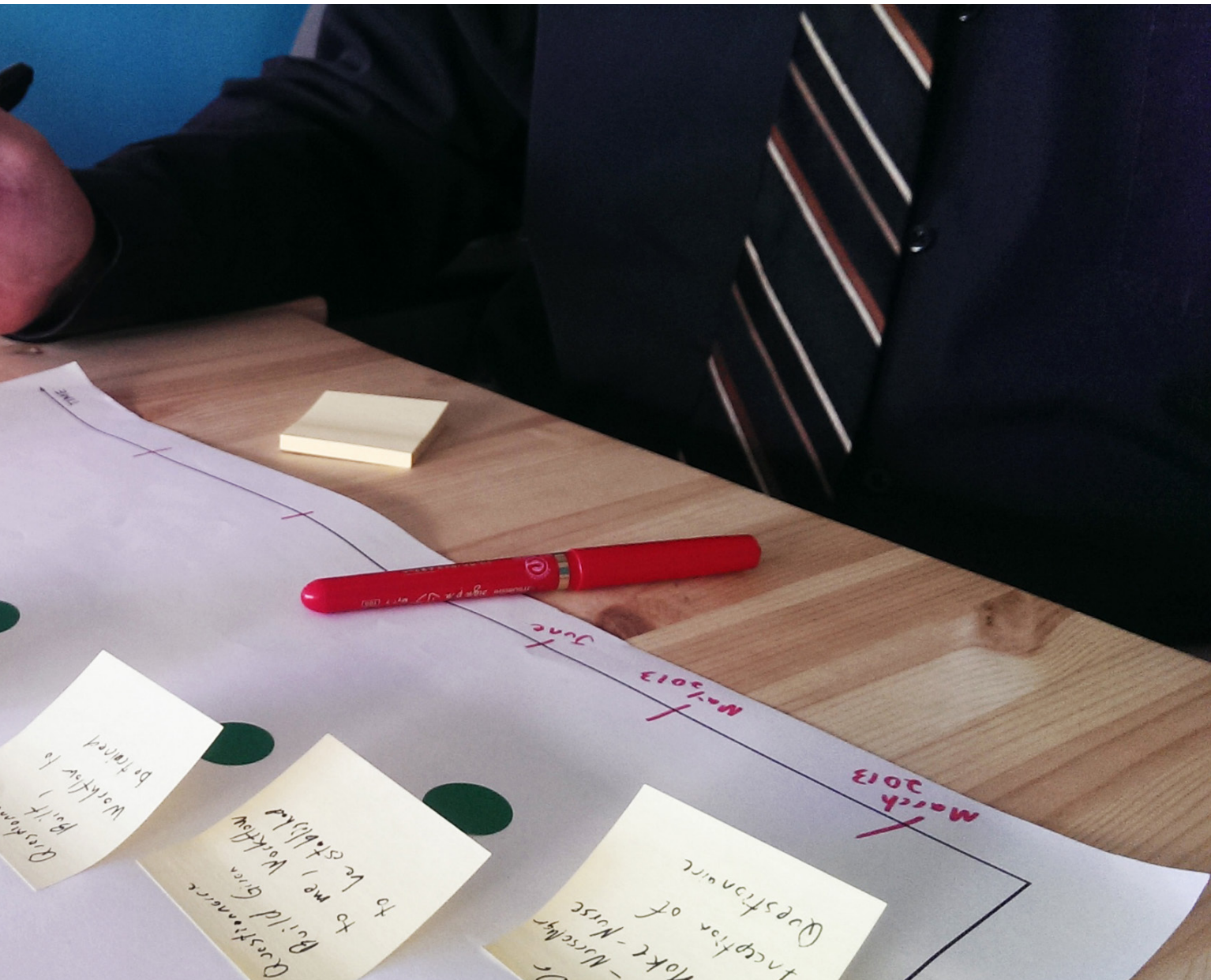
Project Length: 8 months

Project Type: Process Implementation

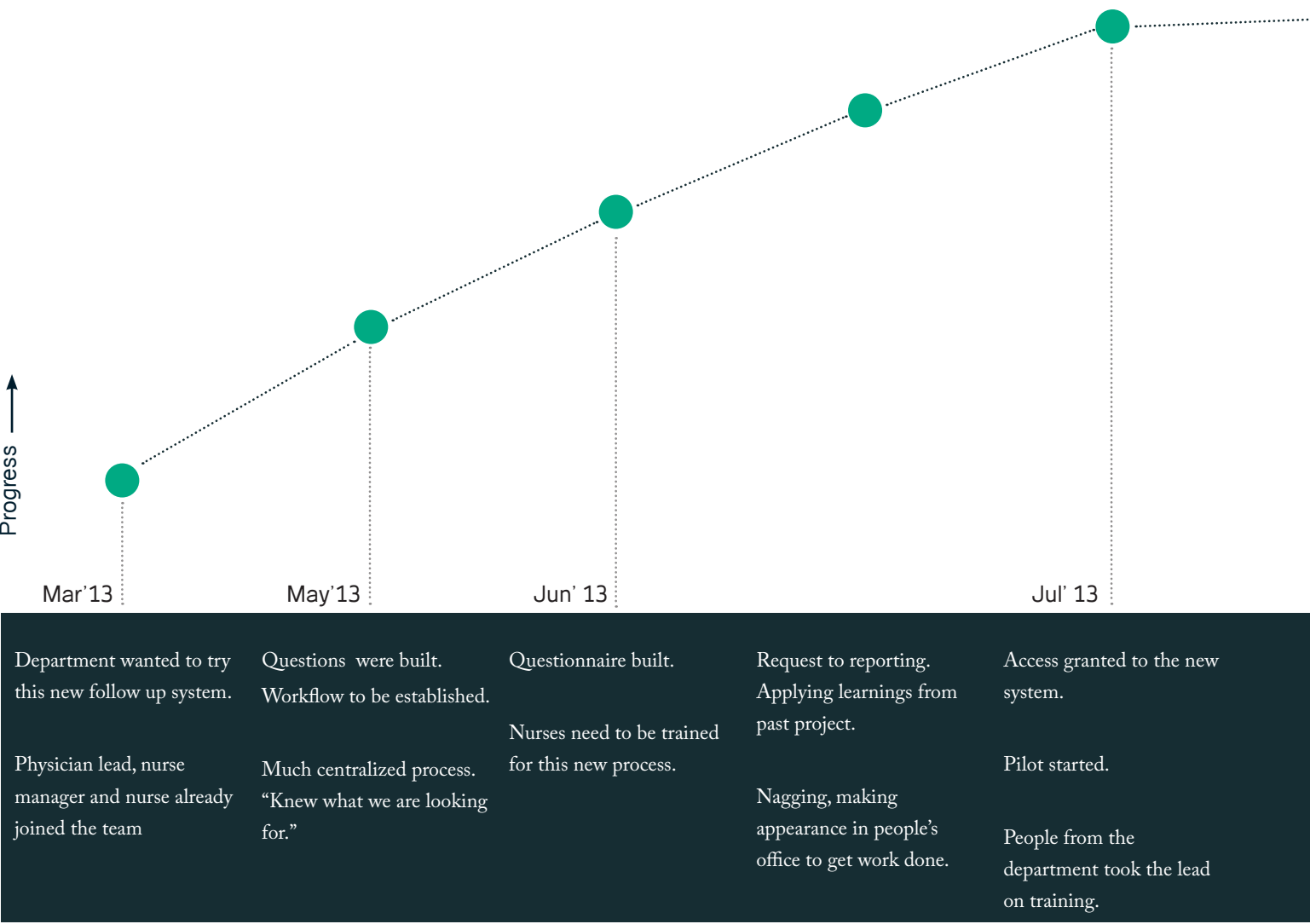
In efforts to reduce readmissions, the cardiac ICU wanted to adopt the process that cardiac surgery recently tested. This project dealt with developing the same system and data reporting, only for the ICU this time. It was really easy for David to manage the project as he applied the knowledge of previous project on this one. The communication channels with reporting were easily managed and he was working with a more centralized team. From the cardiac department's side, there was already a physician and nurse lead identified that helped the project progress better. Things went as expected and they finished this project in half the time they took for the previous one.








# CASE STUDY: CARDIAC INTENSIVE CARE UNIT POST OPERATION FOLLOW UP





"If you are not doing the work by yourself, there are a lot of nuances you are bound to miss. That's my bias, I like to sit with people I work with and understand them to be more efficient. If a project is more centralized, I can do that!"

Oct'13

Time (not by scale) →

Everything went live.

# CASE STUDY: IMPROVING NEW MANAGER ON-BOARDING PROCESS/EXPERIENCE

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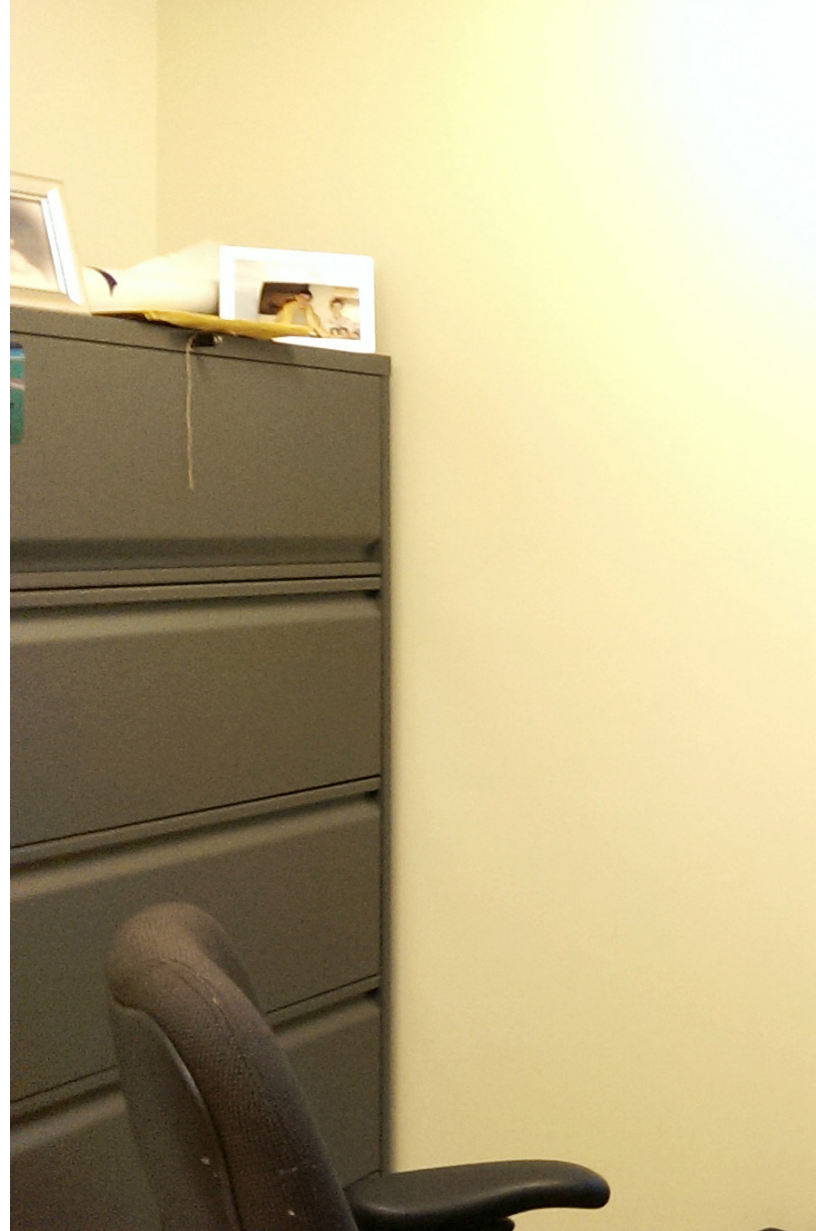
Person Interviewed: Bridget McCormick

Interviewee's Role: Project lead

Project Length: 4 years

Project Type: Process Improvement

As an organizational development consultant, Bridget was interested in developing tools and resources necessary for a successful transition to management for the employees of Penn Medicine. They have tried a number of things over the period of 4 years, even involving the Center for Innovation for a while. The project never yielded expected results. From the very beginning it has not been about not knowing what should be done, it's about how it could be done and more importantly, how we can measure success. She talks how the project isn't owned by any one person and it will never be urgent for the department to take concrete steps. However, an interesting fact is that a PIIA project has been started this month to understand why the managers are not able to apply the leadership skills they learned. More interestingly, the team doesn't have even one manager on it!





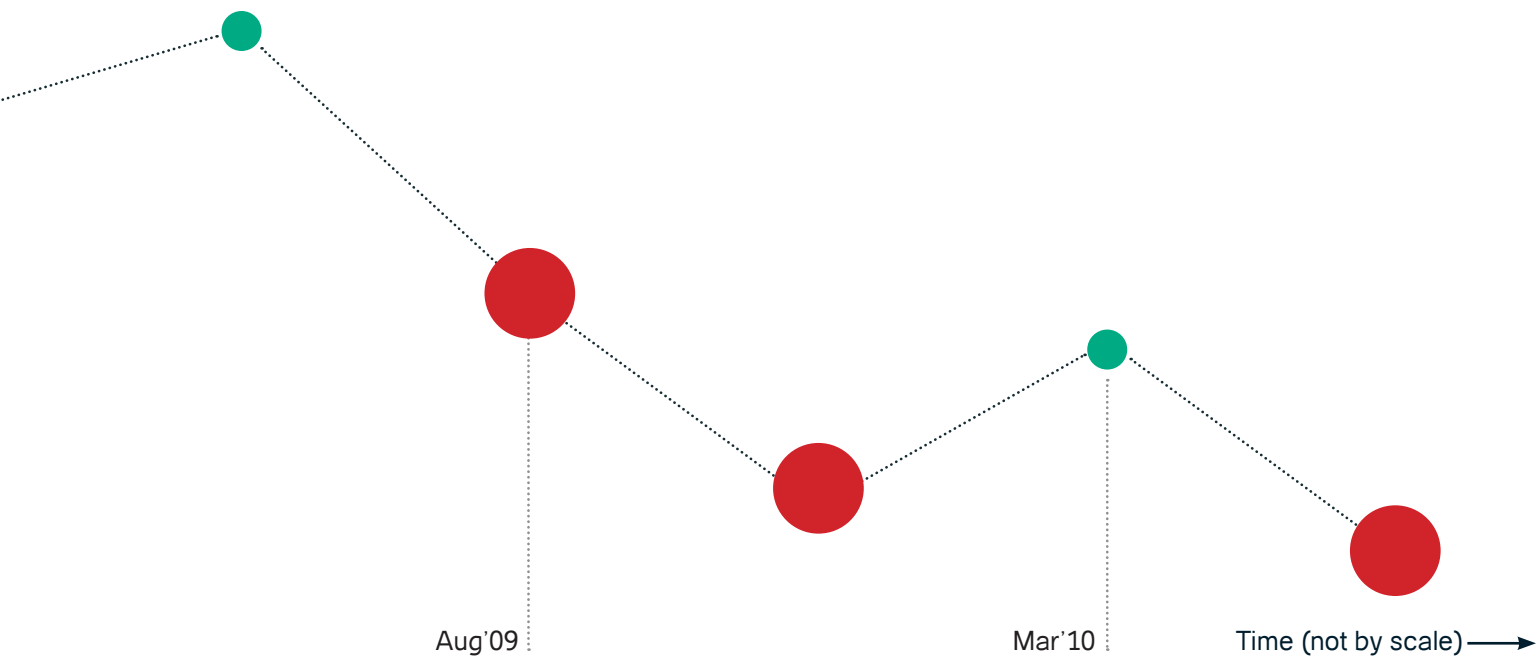


# CASE STUDY: IMPROVING NEW MANAGER ON-BOARDING PROCESS/EXPERIENCE

“There are always about 500 other things going on at the same time. I think people get lost in, Oh! Here is the flavor of the month we are trying to work on as opposed to thinking, oh wow! Here is another innovative thing we are working on”



“In order to be successful in managing the onboarding experience of new managers, there needs to be one person responsible for the whole process.”



Created a welcome video.

Worked with senior leadership to design coaching sessions.

CHRO's and generalists had difference in opinions and weren't on board with new manager coaching.

No followup on the new process. “How do we measure success?”

No person responsible for the project.

Another round of research  
New Manager Onboarding kit was developed.

Leadership was not impressed by the kit.

Tried an electronic version but the base processes and information structure was broken.



# CASE STUDY: PSYCHOSOCIAL STRESS SCREENING FOR CANCER PATIENTS

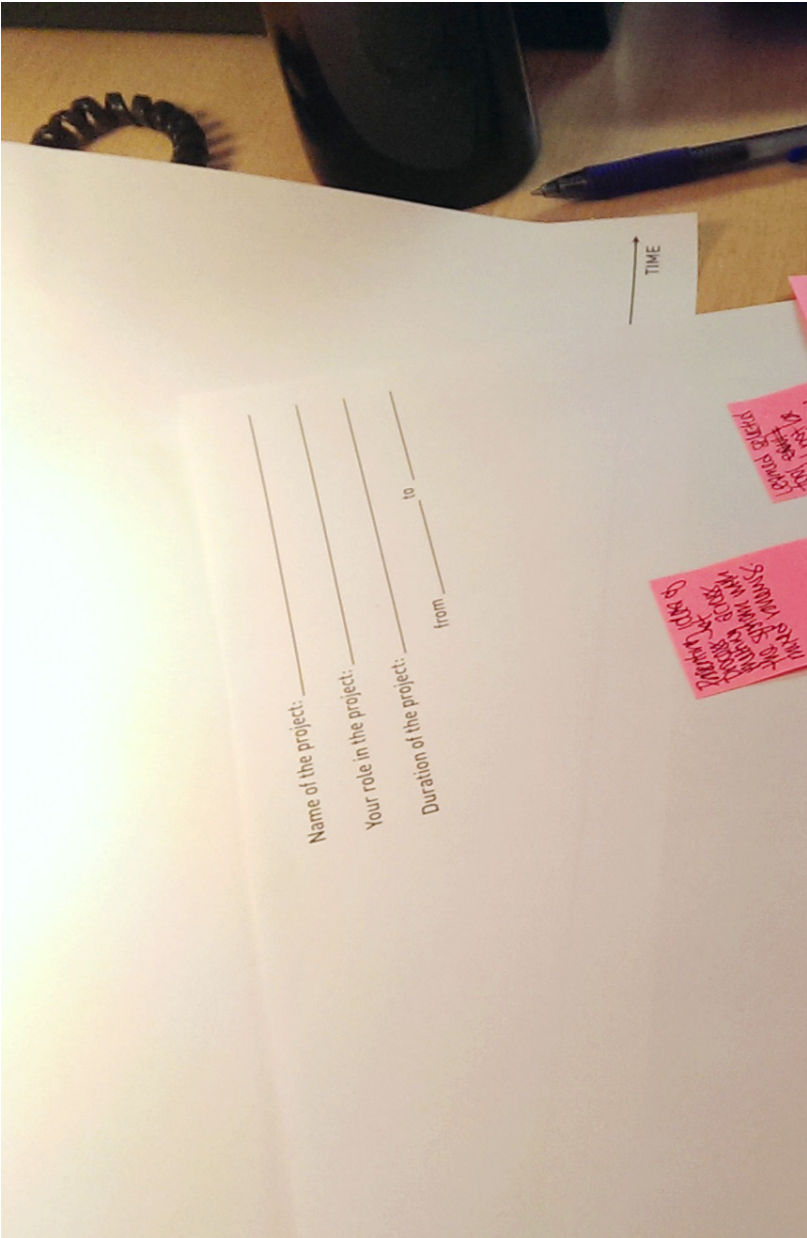
Person Interviewed: Heather Sheaffer and Carmen Guerra

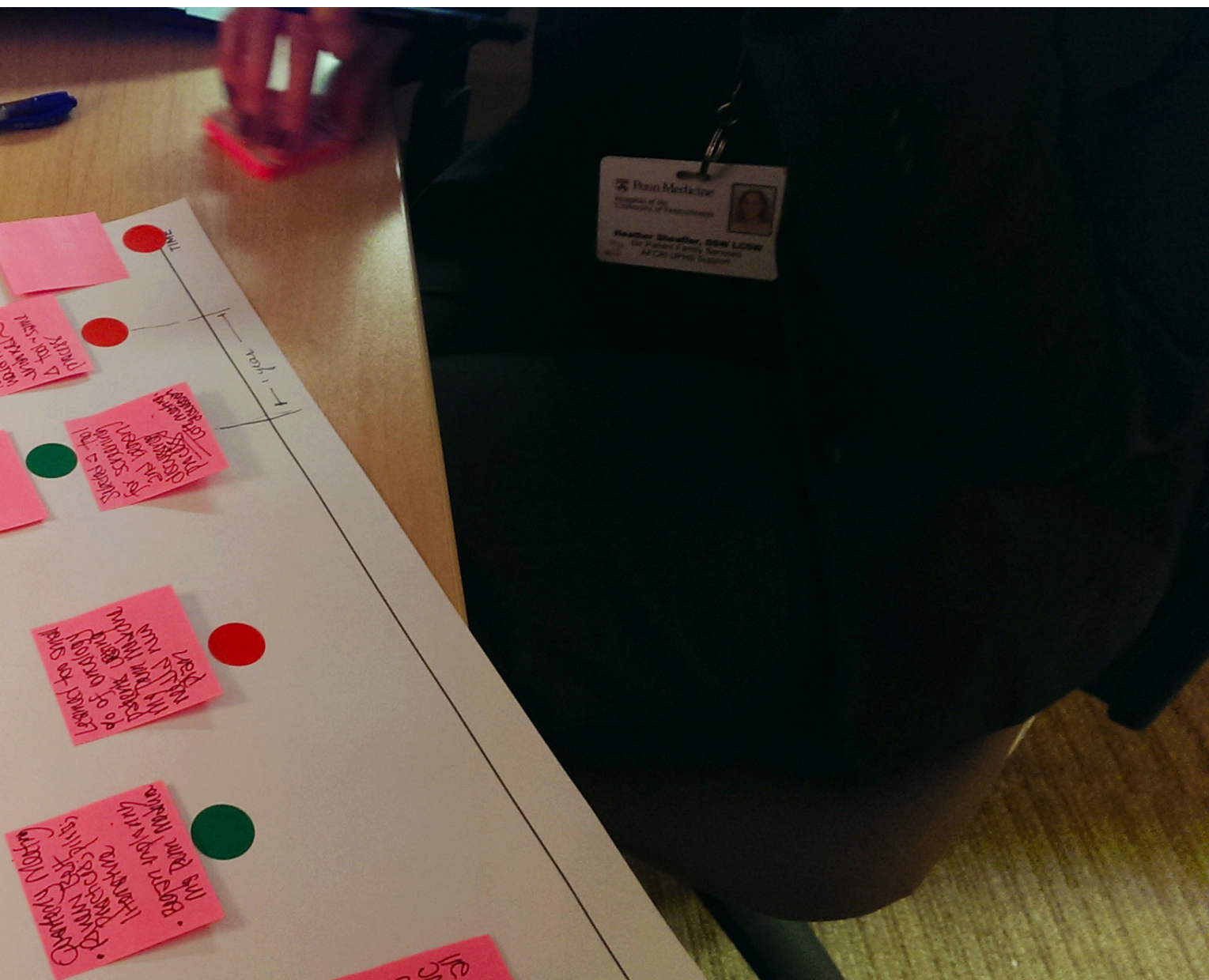
Interviewee's Role: Project facilitator (Heather), Team member (Carmen)

Project Length: 21 months (ongoing)

Project Type: New Process

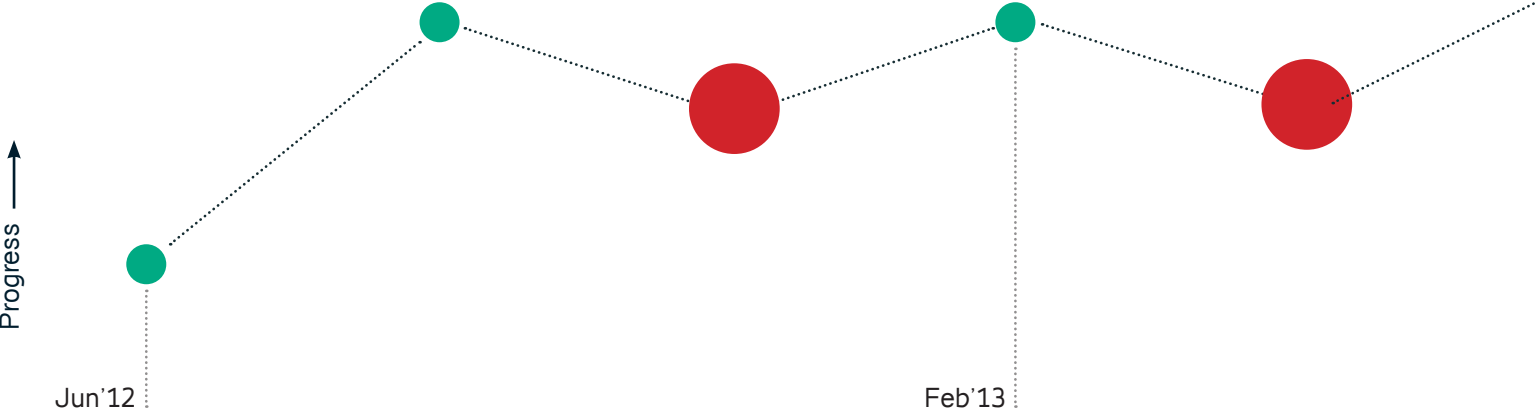
The commission on cancer standards posed a new requirement that all the cancer centers have to screen their patients for psychosocial stress starting 2015. The team experimented with different tools for doing the same. They tried to use MyPenn Medicine as a vehicle for the questionnaire. Upon failure and after deciding on the tool, they moved on to using iPads in the waiting room and then to simple paper forms. They also worked a bit with the Center for Innovation to validate some of their assumptions. After two years of research and trials, they decided to have the medical assistants do this screening. However, there was no representation from the MA population on the team. When Heather presented the project to the concerned leadership, she wasn't able to convince them that it's going to work and she received strong criticism for the work that her team had done. They are still trying to launch the pilot at present and hoping to convince the leadership by showing them the results.





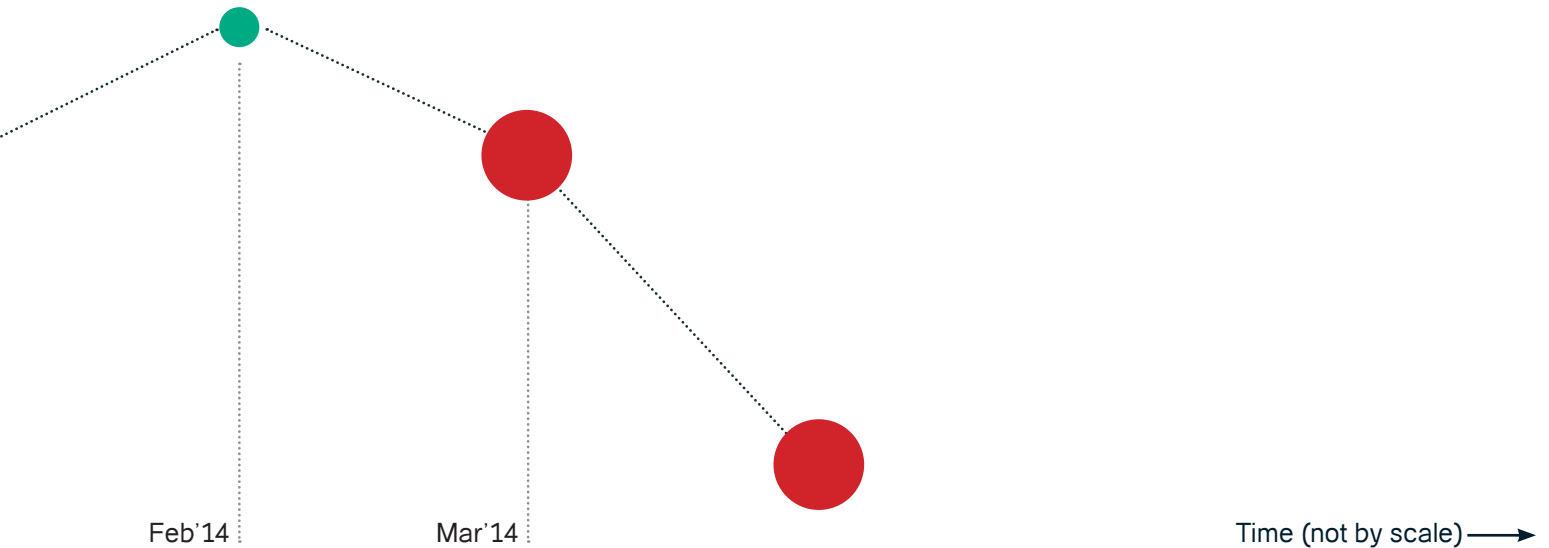
# CASE STUDY: PSYCHOSOCIAL STRESS SCREENING FOR CANCER PATIENTS

“My background as a social worker really helped me in managing team’s expectations and anxieties. For example, often times a certain team member would act out unnecessarily but I could bring the conversation back to the project.”



Task force formed to meet the 2015 COC standards at all entities.	Quarterly meetings.  Review best practices and pilots.  Began exploring MPM.	Learnt that very few Oncology patients are on MPM. Needed a new plan.	Presented ideas of process at meetings across the system with mixed reviews.  Selected a tool for screening. Lots of meeting facilitation!	Tried using iPads to ask questions from patients in the waiting room.  Patients hated it.
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"I wasn't able to convey to the people why/how we got to where we did. Instead of understanding the process, they just reacted to the conclusion."



Did paper prototyping with the Center for Innovation.

Decided to involve MA's in this process.

Learned selected tool will not be endorsed by COC through a pre-publication.

Presented task force's efforts and proposed plan to Oncology leadership who expressed significant concerns.



# CASE STUDY: REDUCING PATIENT WAIT TIME

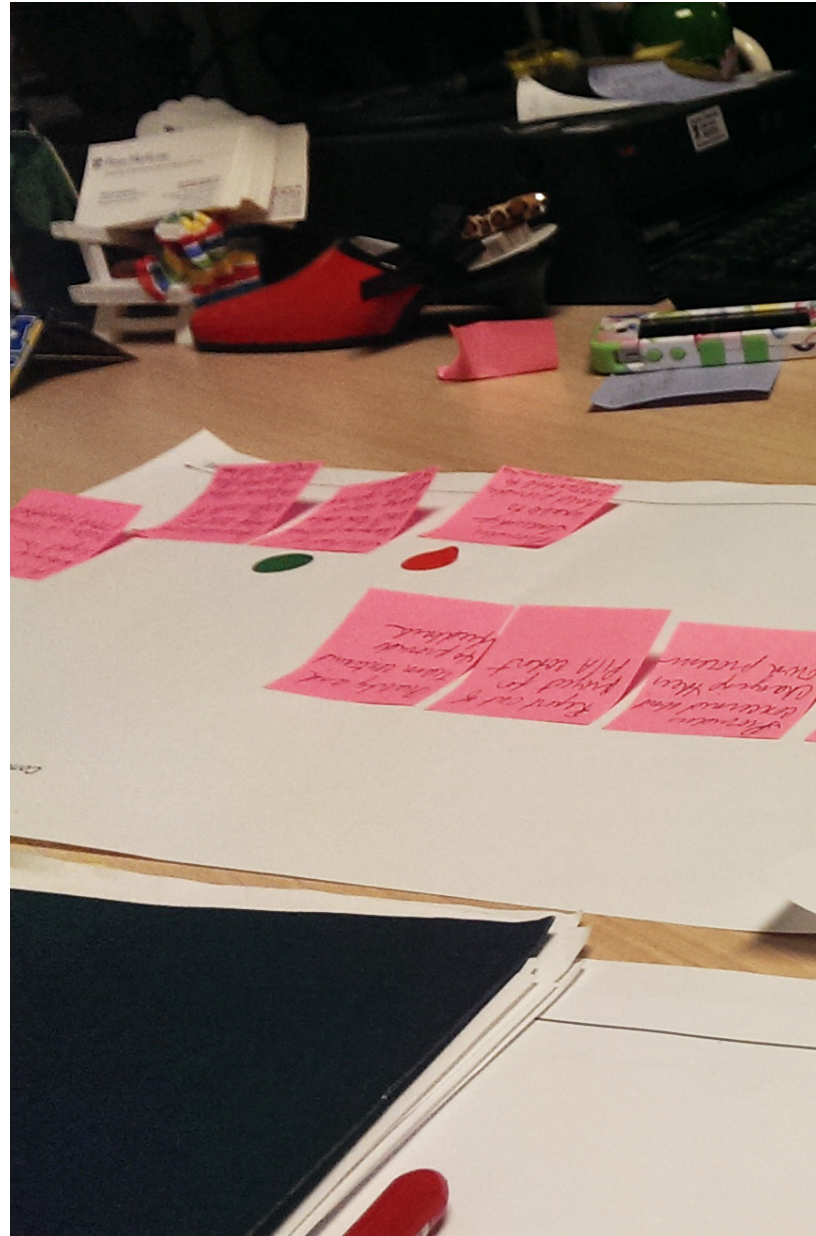
Person Interviewed: Dawna Gillspie

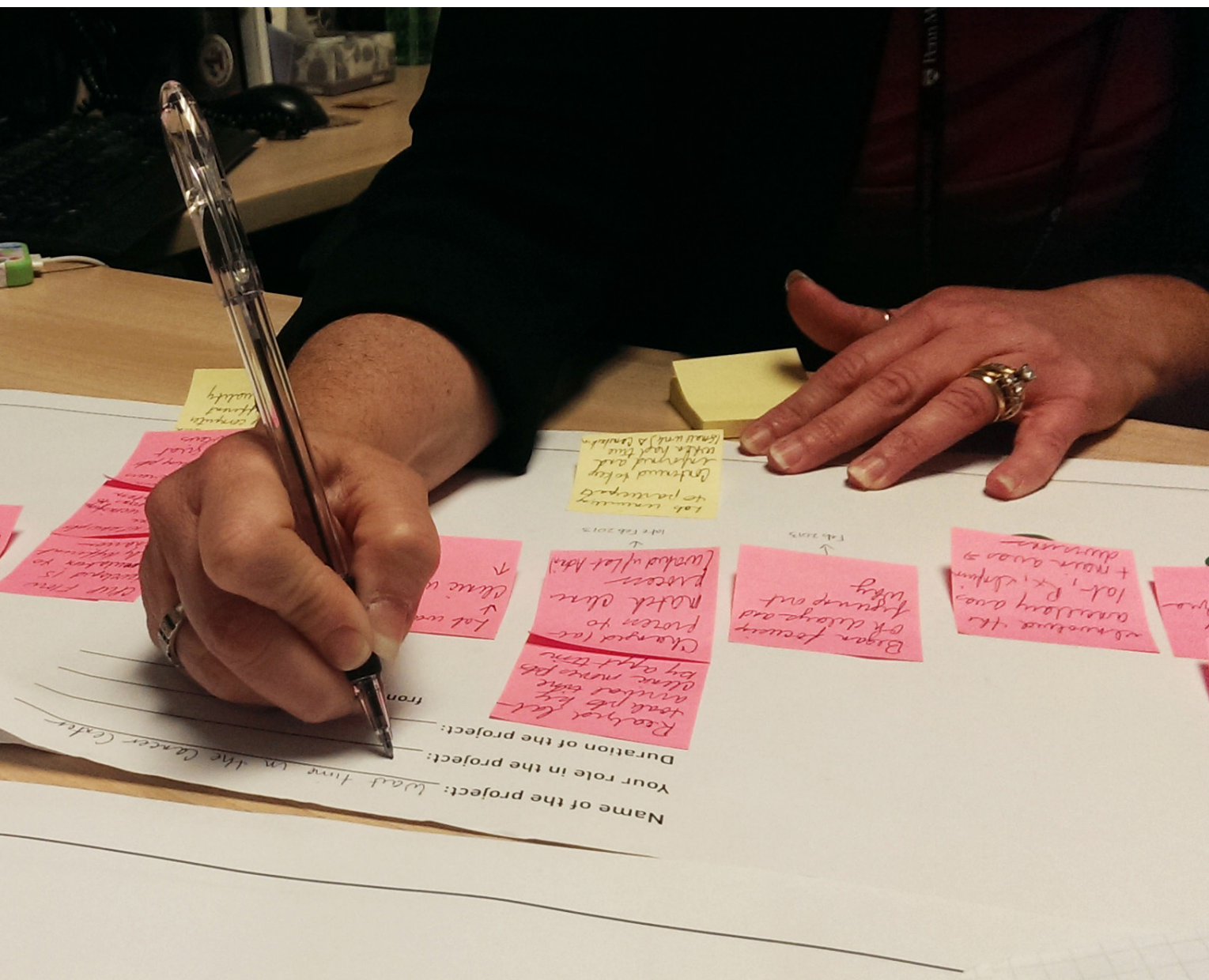
Interviewee's Role: Project manager

Project Length: 14 months (ongoing)

Project Type: Process Improvement

The project was initiated as a common interest in the department and got approved by the leadership to move it forward. The team did a great job with analyzing the stakeholders and doing the ground research through both data and observations. Initially they hit barriers in getting people from different areas (Pharmacy, lab, Rx, infusion, etc.) On board but by keeping them continuously informed, they engaged them eventually. After making a few changes successfully when they reached the crux of the problem and tried to change the provider's processes, the project took a completely different route. The leadership was unable to hold the physicians accountable. Thus instead of reducing the wait time more by changing provider processes, they are now focusing on methods to keep patients informed about the delays.

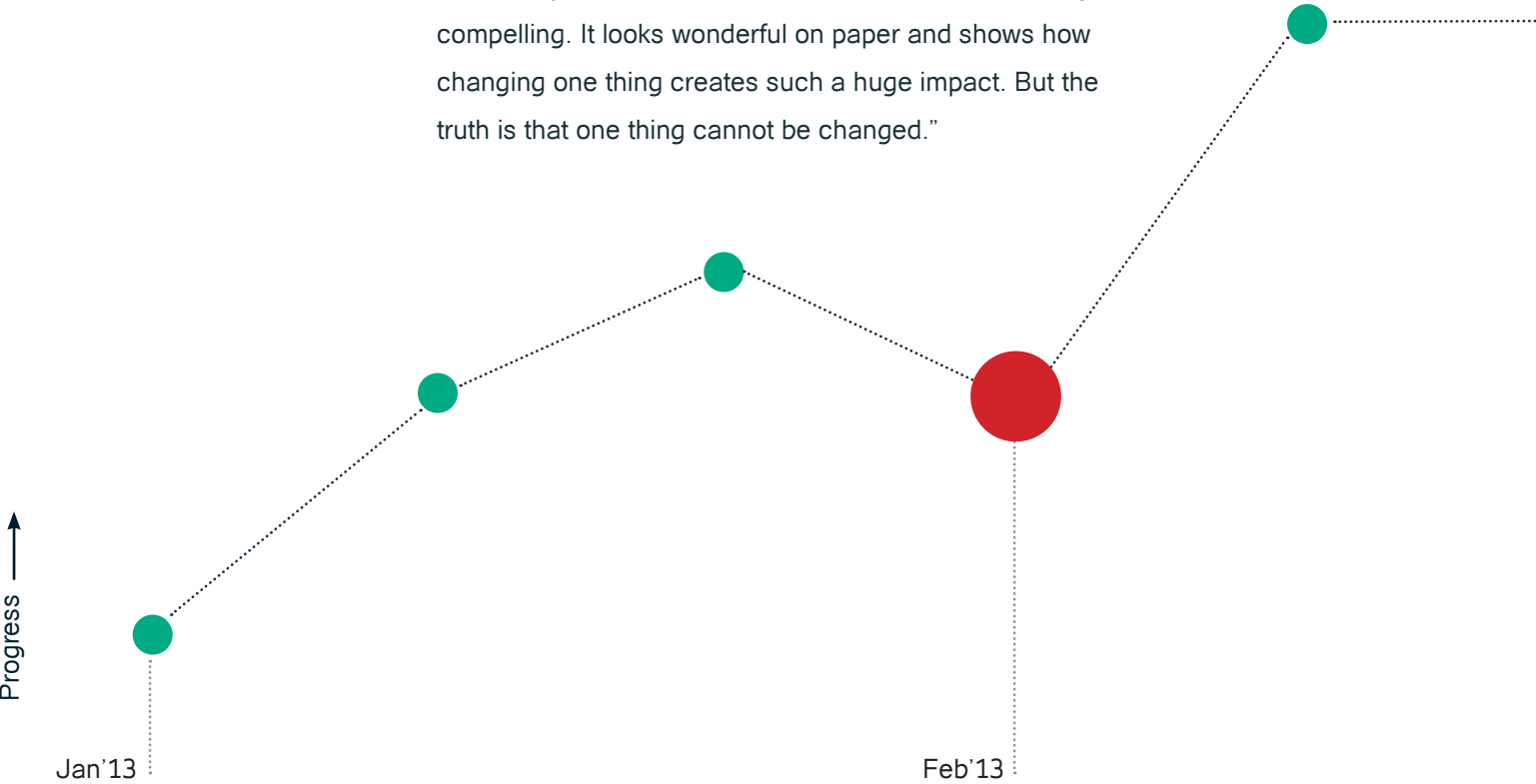






# CASE STUDY: REDUCING PATIENT WAIT TIME

“The computer simulations and its results are extremely compelling. It looks wonderful on paper and shows how changing one thing creates such a huge impact. But the truth is that one thing cannot be changed.”



Team was formed for a common goal.	Stakeholder analysis.	Tried involving the auxiliary areas (lab, infusion, etc) and main areas of the division.	People from Lab were not thrilled about being one of the causes of delay	Engaged Lab by keeping them informed.
Leadership approved the project as a department need.	Measured present wait times in all areas using their digital check-in software. Began focusing on reasons for the delays .			Changed the lab process to match the clinic process of taking patients in by appointment time.

“Everybody thinks it’s not them and when you start to discover that it is them then they try to make it a completely different problem. There is a fear of the unknown.”

Mar'13

Feb'14

Time (not by scale) →

Manually collected wait time of the patients in the clinic to understand its pitfalls.

CPUP flow developed  
IS simulation to apply different scenarios.

The simulations developed couldn't be applied.

Providers concerned about changing their processes.

Report out of project for PIIA cohort.

Quality and team continued to provide feedback with support from admin leadership.

Provider leadership unable to hold providers accountable to perform interventions.

Changed focus to informing patients about delays.

Patient flow report developed to make the delays in the clinic more visible.

# CASE STUDY: PENN MEDICINE WEST PHILADELPHIA GI OUTREACH AND ACCESS

Person Interviewed: Dr. Carmen Guerra

Interviewee's Role: Project conception + implementation

Project Length: 25 months (ongoing)

Project Type: New Process (outside the system)

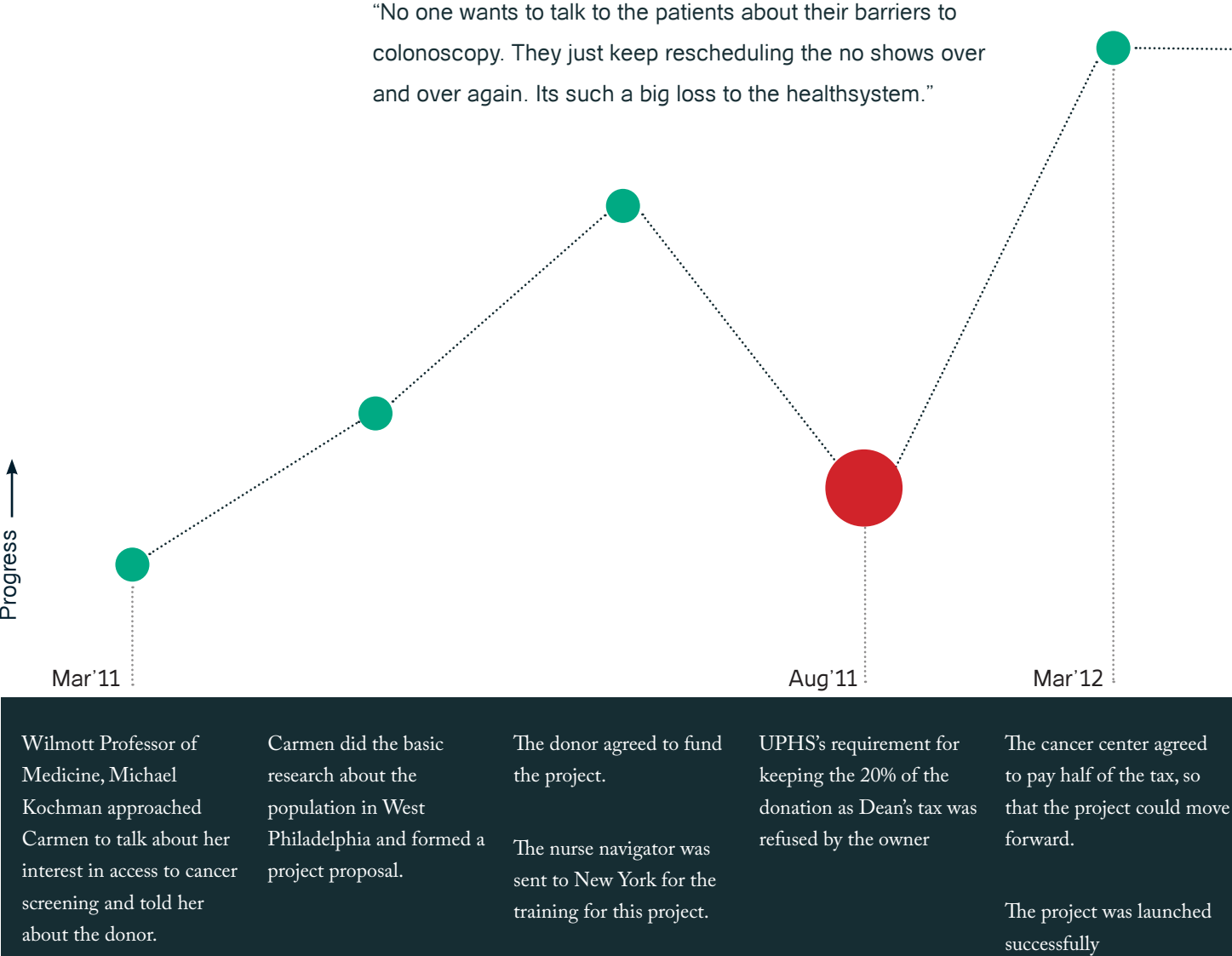
To help overcome the many obstacles and improve the colon cancer screening rates, Dr. Guerra launched the West Philadelphia GI Health Outreach and Access Program. It started with a big anonymous donation towards the project. After doing a lot of leg work, Dr. Guerra got to know that 20% of that donation would be taken away from her towards dean's tax, the donor refused to pay that and the project stalled for months. They resolved this by the cancer center paying half of the dean's tax and not taking it from the donor. Since it was a new model that she was trying to implement, adequate training was not available for the nurse navigator to begin with. Carmen also speaks about spending hours analyzing data and writing grants to keep this program supported and Penn Medicine hasn't even given her the cost data to support her cause that comes under UPHS's name.



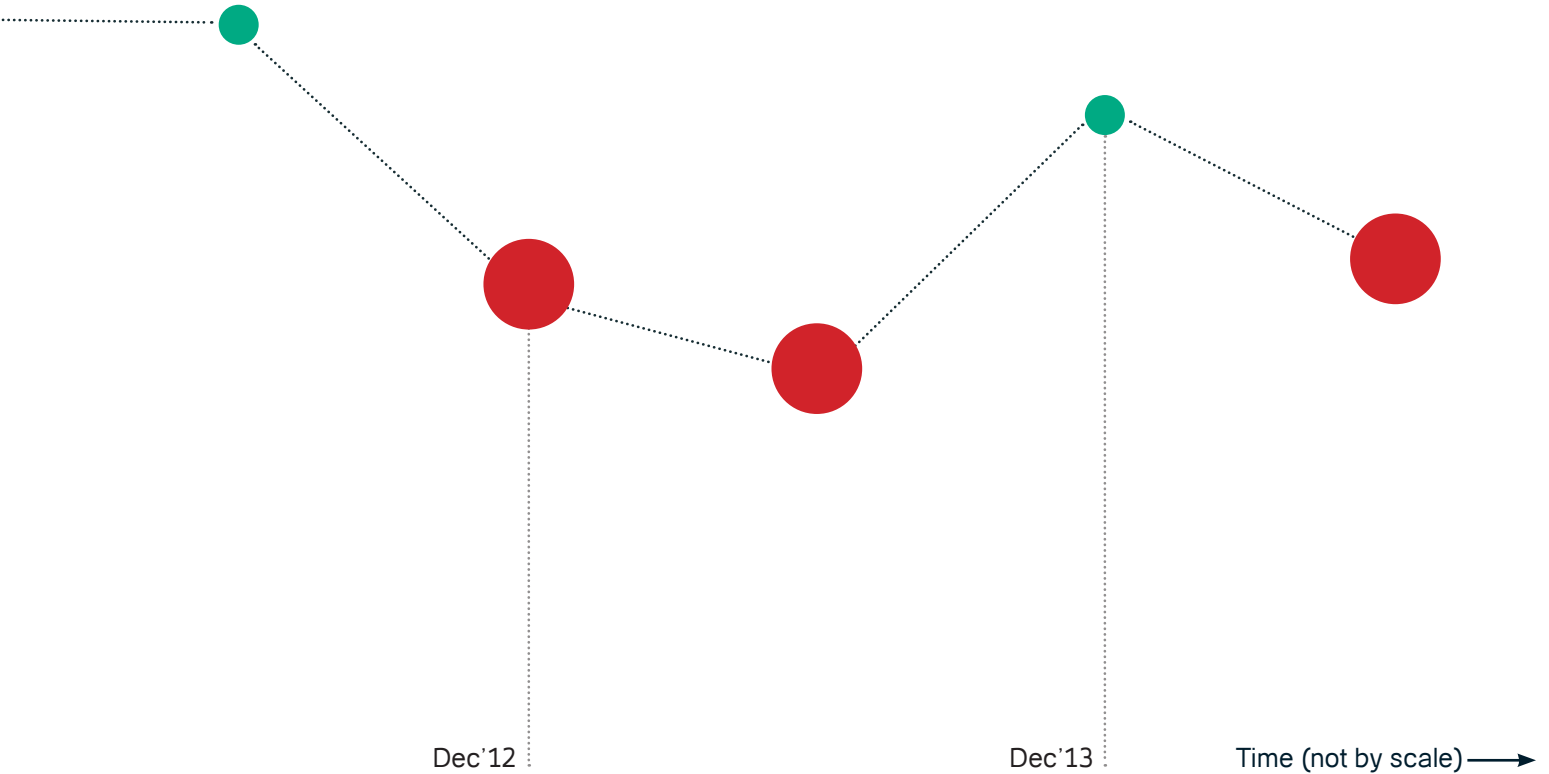




# CASE STUDY: PENN MEDICINE WEST PHILADELPHIA GI OUTREACH AND ACCESS



"She who controls her data, controls her destiny."



Understanding patient's barriers better and trying to involve other organizations to support the cause.

Not all the support needed was provided. For ex, American Cancer Society refused to provide transportation to patients who can't travel through SEPTA.

Carmen spends a lot of time trying to fund this program for a longer run by writing grants.

Good press worked in Carmen's favor and has helped them gain some more support.

UPHS not providing financial data needed to make the case for the project as its confidential.



# CASE STUDY: PATIENT REPORTED OUTCOME MEASURES FOR IBD PATIENTS

Person Interviewed: Dr. Shivan Mehta

Interviewee's Role: Project facilitator

Project Length: 3 months

Project Type: New Process

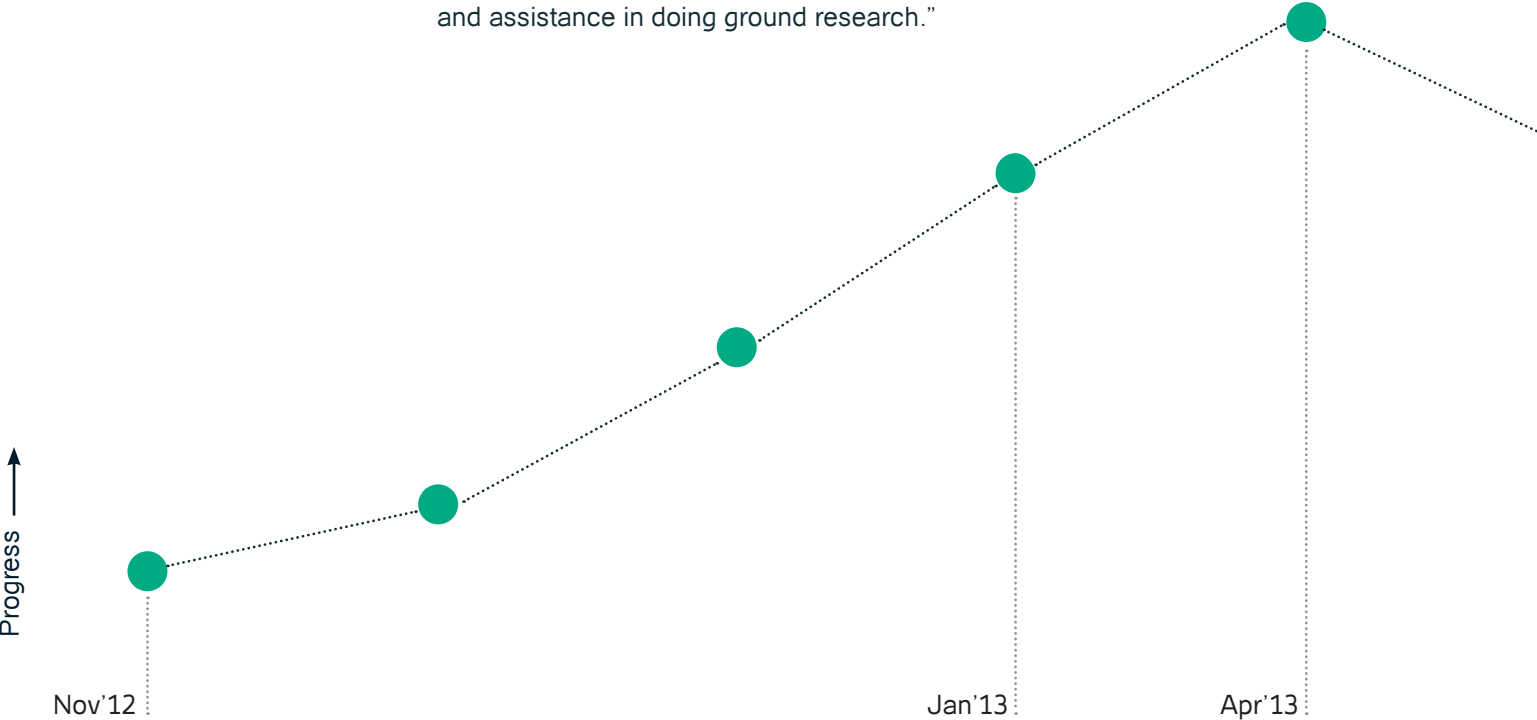
One of the key areas of focus for the Center for Innovation is Mobile and Connected Health. This project grew organically out of the interest and specific needs of the GI department. They were trying to understand patient and provider preferences outside the traditional clinic settings. Since, this project had a lot to do with the current EMR system with EPIC; it experienced tremendous delays and no real progress. The research done wasn't applied given constraints by EPIC. The project also lost the passionate physician driver as it discovered a different focus. EPIC continued with the smart form that they had already built but that also hasn't been launched in almost a year.





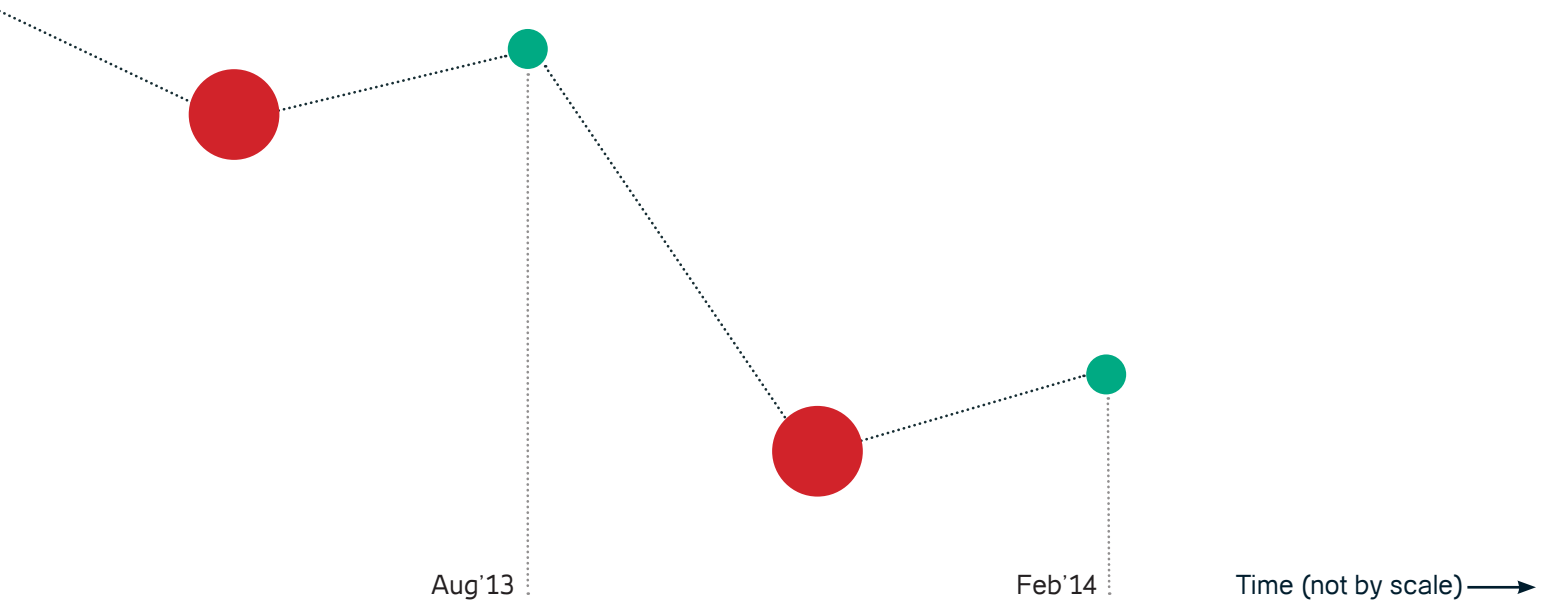
# CASE STUDY: PATIENT REPORTED OUTCOME MEASURES FOR IBD PATIENTS

“We need the right people to make it happen. We need an executive sponsor, a physician lead, a project manager and assistance in doing ground research.”



CFI talked to different stakeholders regarding mobile and connected health.	Learned that there are at least 10 different projects going on across the system.	GI clinic was building a smartform and the physician leads on that project wanted to do some early user testing.	With the help of physician leads, a specific project was designed.	Design and Medical student intern did the ground research.
	These small projects lacked coordination with EPIC.	Had buy in from EPIC	CFI team committed to it as their project.	Paper prototypes were tested in the clinic.

“If you can’t do it with EPIC then that’s where you are crippled. And nobody knows what goes on in EPIC; it’s another big system to deal with.”



Change in initial hypothesis.

Physician lead became less interested as it didn't support their initial hypothesis.

Findings were presented to EPIC.

Restricted by EPIC's capabilities and will to make changes in their already built smartform.

A lot of delays in the release.

Shivan and physician lead proposes the project just as research.





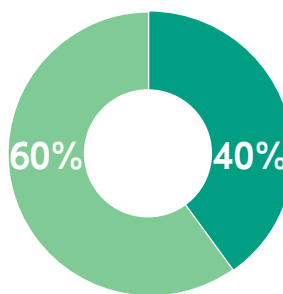
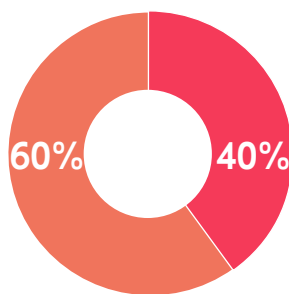
# DISCOVERIES AND CONCLUSIONS



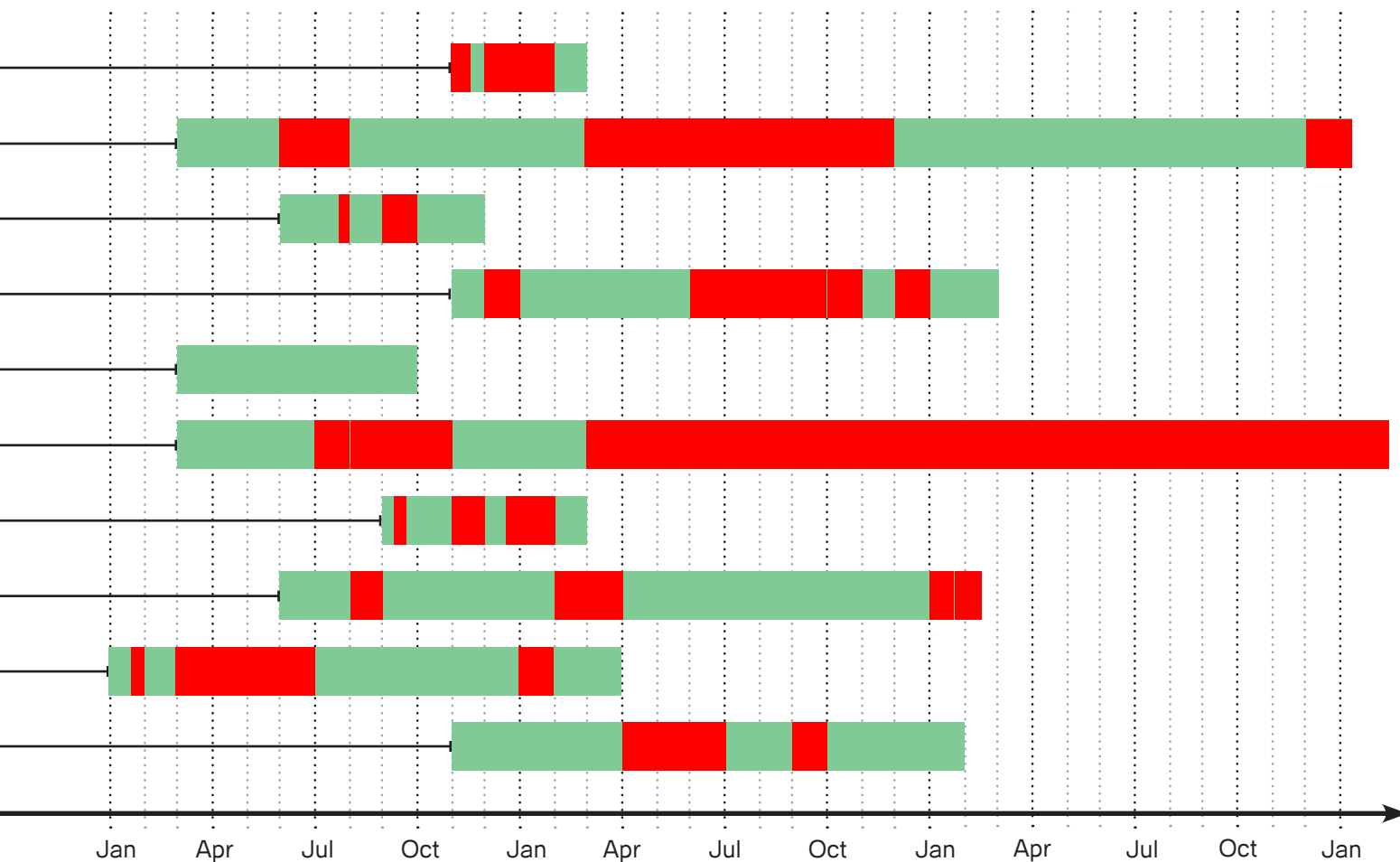
# CASE STUDIES AT A GLANCE

Otorhinolaryngology Web Rebuild	
Penn Medicine West Philadelphia GI outreach and access	
Lymphoma site dispersion	
Cardiac surgery post operation follow up	
Cardiac ICU post operation follow up	
Improving new manger on boarding experience	
Whole body photography at Dermatology clinic	
Psychosocial stress screening for cancer patients	
Reducing patient wait time in clinic	
Patient Reported Outcome Measures for IBD patients	

Case studies at a glance. Red color denotes the time where the project didn't progress



- Project timeline > 12 months
- Project timeline < 12 months
- Introducing New Processes
- Process Improvement Projects



Name of the pro

Your role in the

Duration of the p

Identified  
Valley forge  
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to new idea

Integration  
accepted

Project initiated  
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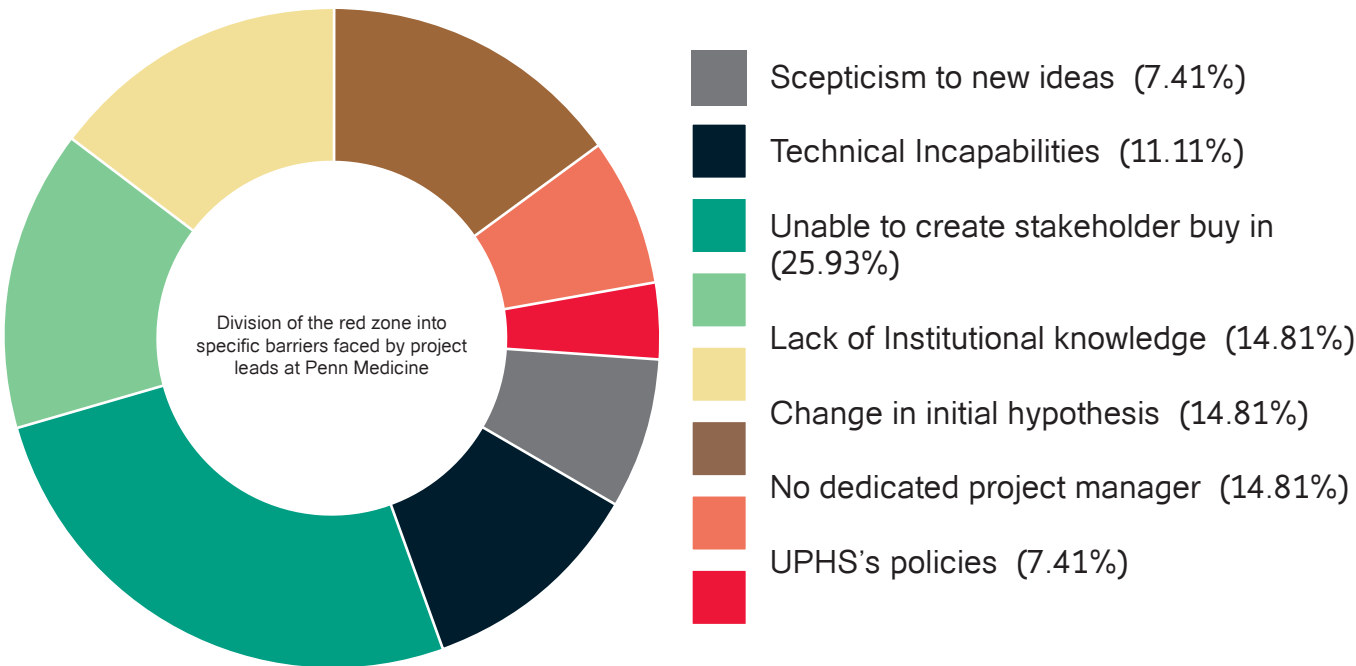
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# WHAT HAPPENED IN THE RED ZONE?



The roadblocks described above could be categorized into three types. UPHS's policies, cost barriers and technical incapacities sum up to organizational roadblocks, we don't have control over at present. Something to note here is that against the popular notion of everything being dependent on the cost, it came out to be the smallest percentage of why projects don't progress at Penn medicine.

Change in initial hypothesis has often led to scepticism towards new ideas which has ultimately led to disengagement of stakeholders. That's how the case studies seem to connect them. These three barriers when combined form the biggest chunk of these roadblocks.

Last but not the least, lack of institutional knowledge/project documentation has also led to delays in projects. But one could also relate that to one of the results of not having a dedicated project manager on-board which in itself is one of the major contributors in regressing a project.

# OPPORTUNITY FOR MIDDLE MANAGERS

## ENGAGING STAKEHOLDERS IS CRITICAL

Getting stakeholders on board from the very beginning is a critical step towards success and it is often overlooked. As one may see in the charts, not involving people who would eventually carry out the process of change or not involving decision makers has led to the downfall of the project. When stakeholders are kept informed over the time, they have eventually offered their support of the project.

Penn Medicine is a very old organization. What is inevitable here is the notion of “We have always done things that way. Why change?” Change involves the fear of the unknown and could be perceived as loss of power. The older employee population and people who hold more power in the system resent change. Physicians in particular have maintained a powerful autonomy at Penn. Changing their processes/behavior requires a great deal of effort and time and is often times avoided for this reason. Discovering loopholes in processes sometimes is taken as a personal attack and people do not want to believe they are the ones who need to change. Thus engaging them from the very beginning is crucial to the success of the project.

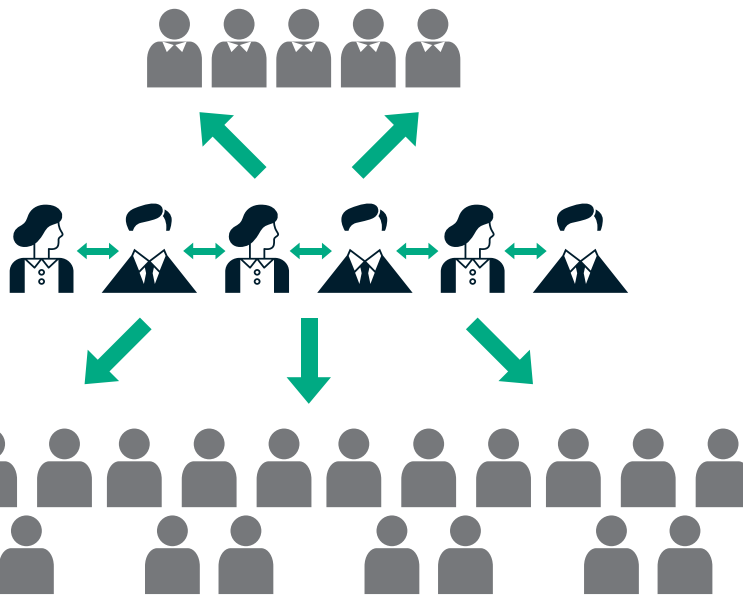
As mentioned on the previous page, middle managers can use their position and channels of communication to engage a variety of stakeholders, keep them informed and hold them accountable.

## DEDICATED PROJECT MANAGER IS A MUST

Projects at Penn often times don't have one point of contact or a project manager. In the absence of someone whose job is to continuously manage the communication channels, projects fall off from the list of other members of the team at some or the other point. Managing team expectations, anxieties, following up and facilitating progress requires leadership skills. At present, the middle managers at Penn Medicine who are responsible for these activities aren't getting the support they need.

Middle managers can wear the hat and be project managers to facilitate them successfully. Also, they can train or lend their support to the other members of the team to wear this hat. For this to happen successfully, the leadership need to communicate the priorities well for them to align to, as no one really knows what is more important.

There is no crack in the manager's time commitment to allow reflection or visit back previous work either. So they don't know what worked and what didn't. Managers facilitate inter-departmental collaborations. As such projects rely heavily on mutual support and approval; managers can really push the project through various communication lines and make it happen.



Using their position as system integrators, they can manage various channels of communication to engage stakeholders and reduce scepticism to new ideas by keeping team members informed. In addition to that they can wear the hat of 'project lead' efficiently and create institutional knowledge. The next steps for this project is to create means for the middle managers to do the same.

## INSTITUTIONAL KNOWLEDGE IS THE KEY

In an organization as big as Penn, projects keep changing their place in the priority list. Needless to say, they get dropped at times, only to be revived later. There is always a lack of good documentation of these efforts in the system. This impedes the relay of a project from one leader to another and becomes a big hurdle specially when there is staff change.

A middle manager playing the role of a project manager can follow the project through and keep the required information recorded. If such documentation were available, staff could come quickly fall into step, familiarizing them with the material so that less time is wasted.



## WHAT'S NEXT?

This project is a subset of Innovation Capacity Building by the Center for Innovation at Penn Medicine. The overall goal for the Center for Innovation is to do a current state analysis of the system, map out the vision for itself and develop the roadmap to achieve the same. Caught in the middle presents them with a thorough current state analysis and literature support to develop strategies for eliminating barriers to innovation.

As Penn Medicine continues its efforts to foster innovation where middle managers can create great impact, they need to be equipped with leadership skills and training to navigate these responsibilities. The Center for Innovation could develop a cohort to facilitate leadership development in middle managers. These trainings should not be made 'drop everything and take a few weeks to focus on developing skills' but should be available when they need it. When I mention skills, they are not just policy knowledge rather an innovation mindset that enables them to establish trust, build motivation and shape a positive team culture. With the right approach and tools middle managers can get the results they need through persuasion and collaboration.



Discussing strategies with the Center for Innovation's team

## WHAT'S THE SCOPE OF THE PROJECT?



Range of Expertise brought to bear on the project			Scale of designer's engagement
Cultural (Transformation)	Bring leadership's attention to the larger problem	A cohort to support managers and their teams	
System (Innovation)	Efficient and effective project management	Evaluate center's support strategy for	
Stand Alone (Intervention)	Analyze the role of managers and make it visible	Understand organization goals and center's role	
	Individual (Designer)	Interdisciplinary (CFI)	Cross-Sector (Leadership)

Pathways in Design for Social Innovation. The Social Design Pathways matrix was developed at the 2013 Winter house Symposium for Design EducaEon and Social Change.





REFLECTION



## MY THOUGHTS

The most interesting part of mapping out these projects for me was how people perceived progress. It was certainly different for shorter projects than the longer ones. While the projects that went on for less than 12 months emphasized smaller wins, the longer projects talked more about overall impact. During the course of a project it sometimes shifts focus to a different problem, to accommodate the roadblocks it faces. Such a change in focus was seen as a positive by some people and negative by others.

It took me a long time to find the right footing for me in the project. Design projects are like a roller coaster and at times ambiguous. You see in a design process one must converge and diverge multiple times to move towards impact. From my several interviews, I developed a deep understanding of roadblocks in a healthcare giant and its effects on its employees. I also found a niche in middle management to work with, but struggled to diverge again after focusing. Pinning down all the problems discussed by the employees to initiate or implement innovation, I found myself surrounded by things I have experienced myself as a designer. Separations from key stakeholders, lack of a decision maker, uncoordinated collaboration are just some of the many problems that both managers and designers face in the process of innovation. This project is thus really dear to my heart as I can see how design methodology and tools could potentially support the managers just as it supports designers. However in the timeframe of this project, I did not get very far with respect to design a response to the opportunity space identified. I struggled a lot with scheduling and thus could never work with a niche of middle managers together. While, I wanted to create these timelines nevertheless, I realized that this knowledge is not present in the system already to study and thus my role evolved into the one creating them.

Halfway through the project, I decided to focus on defining the barriers for the middle managers clearly and not deliver a more active intervention as I could not have tested it thoroughly under the tight time frame. Like any other project at UPHS, this one also took off slow, navigating its way through the organizational barriers.





Research posters in making

## POST-SCRIPT

This project was the first step towards understanding the complex situation of middle managers in large healthcare organizations. The project was successful in quantifying the impact of certain barriers in project lifecycles, thus providing insight to the Center for Innovation as to where they could focus their efforts the most. What it didn't do successfully is compare them to the barriers faced by the frontline staff and understand the difference. As these barriers can be faced by people at any position in the system, 'how might we separate the major roadblocks for a certain population?' Becomes a question that needs to be addressed.

I mainly interviewed the project leads and managers for creating the timeline and the next step is probably to do the same activity with other team members. While I did that for two projects mentioned in the book, it would have certainly been beneficial to do it with all the others as well. Not only that makes the data more legible, but it also helps in mapping different points of view at work on those projects.

As a next step for this project, I would again like to diverge and form a big picture. Apart from the points addressed above, I would like to see the Center for Innovation as my user when I deliver the research to them. What that means, is I would need to work with them to refine the findings a little more so that they can build some of their strategies off this research in the future. Synthesizing the stories into insights has been really challenging yet inspiring part of this research and one of the biggest achievements for me is to be able to wrap my head around this healthcare giant and its intricacies.

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*This project is a result of collaboration between the Penn Medicine Center for Healthcare Innovation and Master of Industrial Design program at the University of the Arts, Philadelphia.*

## ABOUT THE AUTHOR

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Nidhi Jalwal is a candidate in Master of Industrial design program at the University of the Arts in Philadelphia. An Indian student with her undergraduate degree in leather design, Nidhi has traveled, worked with several fashion designers, artists, communities and co-conceived a lifestyle accessory based start-up before moving to the US. Her passion for working with people and engaging different communities with design drew her to human centered design where healthcare interests her the most at this time. She has worked with the University of Pennsylvania's Health System for almost two years on projects like Employee Health, Cancer patient experience etc. And her experience has helped her develop a good knowledge of large organizations and systems analysis.





