Just Ask.

Thesis Project

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Potter County Jail, Amarillo TX:Photo: Kevork Djansezian/Getty Images

of note, there are 3 types of photographs in this report:

The colored photos show real-time prep work, and staged collaboration. The black and white images reveal context, in ways no words could - depicting jails similar to the ones wherein this work took place. The first are ours, the second are borrowed.

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Preface

In a few pages, you will enter the halls of healthcare clinics inside American jails. The clinics oscillate with swells activity, as patients are escorted to and from them all day long by correctional officers, back and forth from the housing areas to the clinics and back to again. While healthcare provision is the primary purpose of the spaces, the context of incarceration shapes everything about them – from the cages in the waiting rooms, to the locks on all medical supplies. At first, you will likely find them abrasive and perplexing, pools of clashing agendas punctuated by constant noises that reflect the discord. They are not quiet spots. But, if you can see under the clamor, you find another world - of unmet human need, relentless energy, interminable patience, and profound empathy. After a while, the shared humanity outshines the friction.

As social design graduate students completing our master's thesis, we moved inside these spaces for 10 months, getting to know the systems, and more importantly, the people therein: their stories, ambitions, pain points, values, fears, needs, and aspirations. Our fundamental goal was to identify challenges in healthcare delivery to which we could help create solutions – things that might enable these services better meet patients' needs.

Our process comprised three basic parts. We first worked to understand the complexities of the context from those who knew it best: people who provide and receive healthcare in these settings, for years. Then, we collaboratively identified challenges and opportunities for improvements to care services. Finally, we facilitated the design and prototyping of possible solutions.

For two reasons, all that we learned in this process will not fit between the margins of this written report. First, the work is not yet finished. What follows is the preliminary synthesis and solutions in a project that is currently still underway; final findings and a report will be created and hopefully published later this year. Second, while this endeavor has primarily been about social design and innovation, it has taught us about many other things: humanity, humility, leadership, oppression, criminal justice reform, and courage, to name a few. As these relate to our design process, we will divulge them along the way. Otherwise, we hope that our future work will continue to unpack and share our learnings, lessons from a world that has many to give.

Before we start, we must first say just one thing about incarceration. There are horrific things happening now in America in terms of incarceration: the combination of discriminatory policies and patterned discrepancies in law enforcement has created a gravely unjust system which victimizes people of color, and people who are poor: the phenomenon of"mass incarceration". We owe it to those oppressed by this system (especially to some who courageously shared their stories with us) to explicitly clarify our logic: we are not proposing that improving healthcare services in jails is, in any way, a solution to mass incarceration. Ideas about new paradigms for incarceration that focus rehabilitation <u>are</u> honorable ones, and are certainly part of this project. But alone, these models imply that the most broken part of the system is its occupants, and not the system itself. The system needs rehab and reformation – and we are ever humbled and inspired by those working on this much larger endeavor. In the meantime, for the people who are in it now, their health is at stake. Today. It is for them, and the people who provide them with healthcare, that this project was done.

~

About this report:

Our work lies at the intersection of healthcare, criminal justice, architecture, and social design. As such, we imagine you to align with one of these persuasions. However, our goal is to explain it in a way that is comprehensible and meaningful to anyone, no matter your background. Our writing therefore goes beyond storytelling: we provide ample context and background information so that you can understand some of the history and significance of the work; and , additionally, we describe human-centered and social design tools and frameworks, explicitly delineating our application of them in the project. We want you to understand all of it, so that even if you know little now, you might be able to walk away from this document with enough understanding and tools that you could apply both in your current work. And, while we tell enough to demonstrate the formality and rigor of the project, we also include the personal parts too: interactions that taught us lessons, unplanned events gave us pause, inside information that we think would be tremendously valuable for you, should you want to follow this 'recipe'.

The final result should have something for everyone: straightforward and scientific logic for the healthcare professional; diagrams, sketches and concepts for the architect; larger than life ethnographies with carefully explained insights (and fonts) for the designer. For everyone - we hope that it is accessible, and worthwhile in its illumination of a place that much of society does not often see.

Thanks ever so much to those who collaborated with us, and supported us, in this work. You know who you are.

Until next time,

Jessie & Sofia
April, 2018

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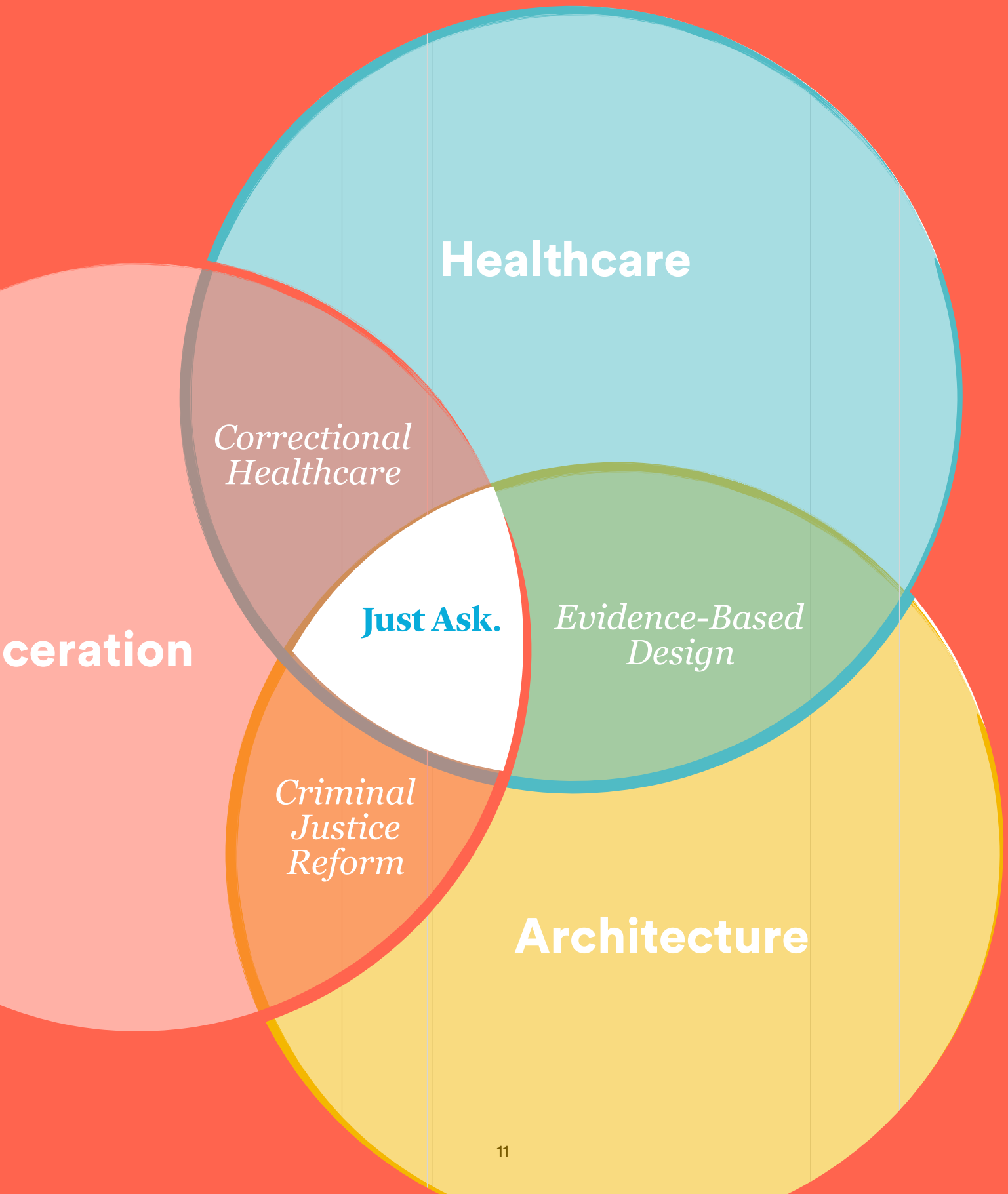
Incarcer


Healthcare
Correctional Healthcare
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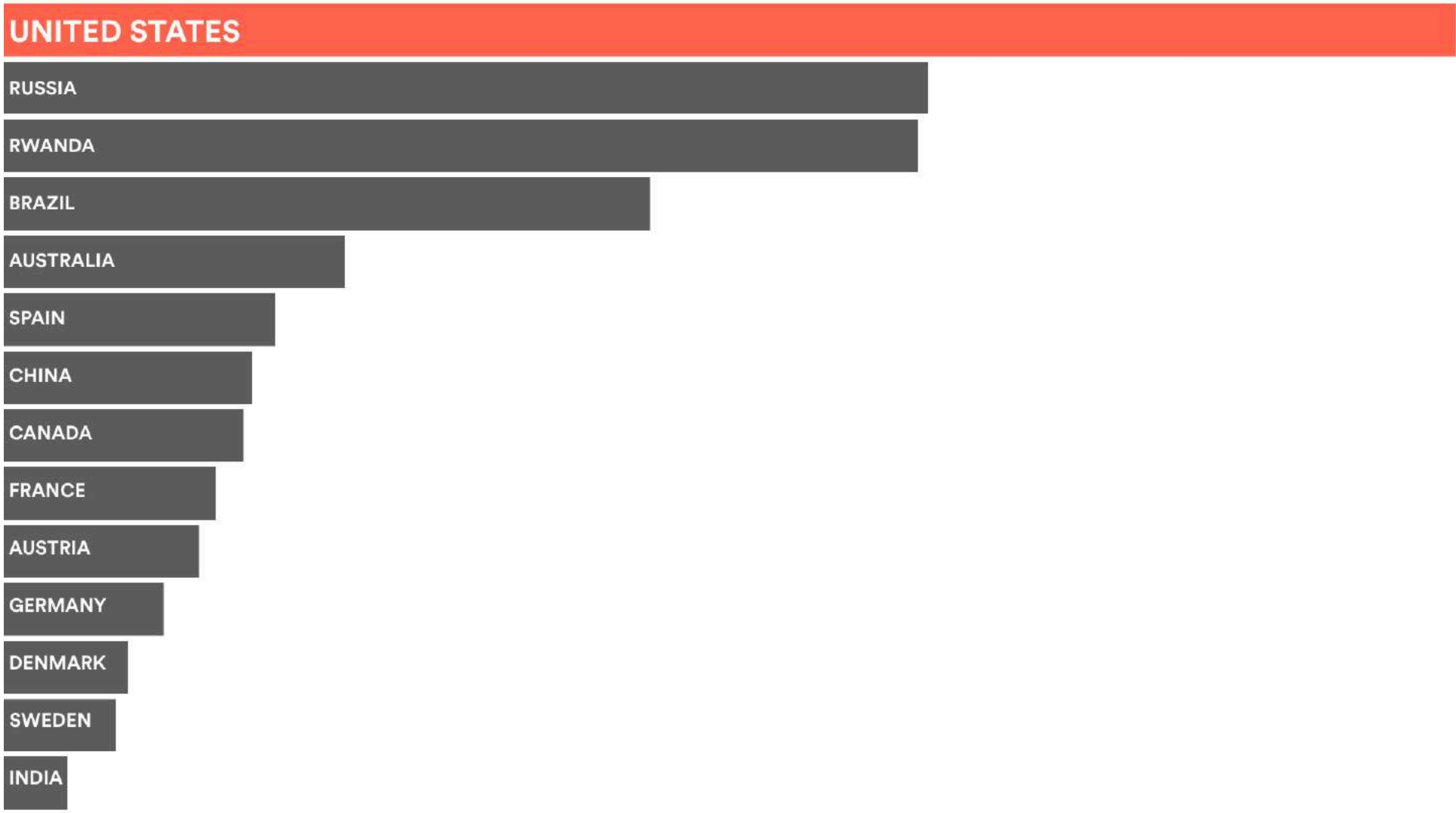
Just Ask.
Evidence-Based Design
Criminal Justice Reform
Architecture


UNITED STATES
RUSSIA
RWANDA
BRAZIL
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SPAIN
CHINA
CANADA
FRANCE
AUSTRIA
GERMANY
DENMARK
SWEDEN
INDIA

Background & Context

Incarceration in America

Current Status & Recent History

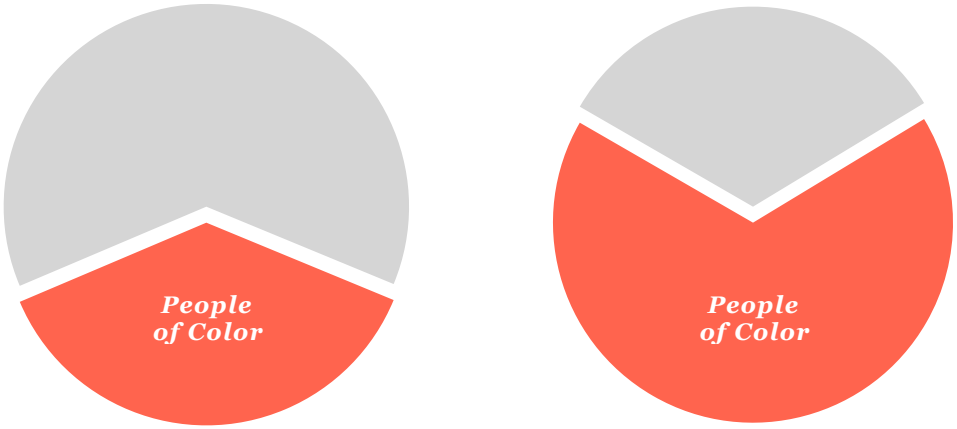
Incarceration in Present-Day America

America has a problem. Despite having only about 5% of the world's population, 25% of people who are incarcerated globally are in imprisoned in America. In other words, the country incarcerates more of its population than any other country on earth, by a long shot.

Alone, this is a social problem. Sadly, this aspect of it is just the tip of the iceberg. For the 2.3 million people who are locked behind bars at any given time, over 60% of them are people of color, despite this group making up less than 30% of America's population.

Black men have a 1-in-3 chance of being incarcerated in their lifetime, compared to the 1-in-17 chance of their white counterparts. By the time they reach middle age, they are more likely to have be jailed than they are to have completed college, or joined the military. And, they are 6 times more likely to be incarcerated for drug offenses, despite using drugs at the same rate as whites. In short, the with discriminatory policies and practices, the system is horrifically unjust.

Incarceration and Race



Total American Population ***Total American Incarcerated Population***

The circumstances just described have rightly been named “mass incarceration”. And the phenomenon is rather recent, beginning in the 1970s as a result of federal and state policy changes, first begun user president Nixon as part of the "War on Drugs”, and continuing through further changes made under president s that followed, notably Clinton and the “Mandatory Minimums” that were instituted in his presidency. Combined, these changes have resulted in the jail and prison population in the United Stats increasing over 400% in the last 40 yeas.

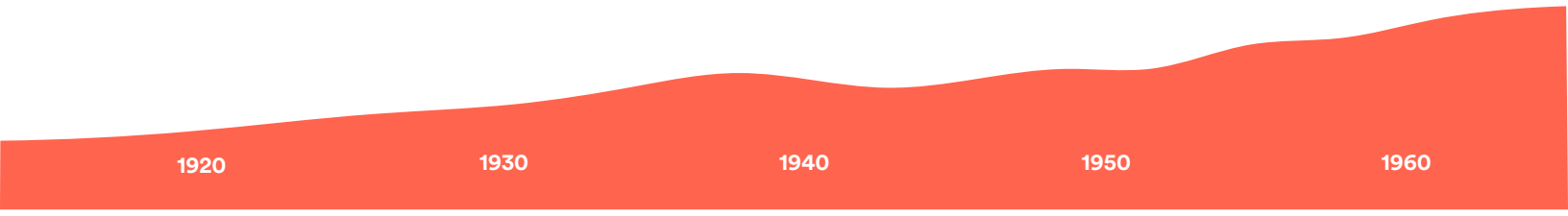
Brief History Of Incarceration

While the recent changes in the US have been deeply significant and problematic, it is important to note that incarceration-as-punishment itself is a new phenomenon in the history of the world. Prior the late 1700’s, governments in many societies had long held people in jails as they waited for trials, or for *other* form of punishment. But, the practice of holding people in a building for a set period of time as a response to them breaking a law came just before the turn of the 18th century, when societies in Europe began to see incarceration as an opportunity for repentance, and redemption.

In the years since, incarceration has been framed with multiple purposes: punishment or retribution, sequestration of dangerous people to protect society, create deterrence for society by exemplifying consequences of breaking the law, and rehabilitation or reform for people who break the law.

Criminal Justice System

The American Criminal Justice System consists of three parts: law enforcement, courts (adjudication), and corrections. It is complex: operating on local, state, and national levels, with thousand of policies and practices that are as different as they are similar. But, the very basic premise is the same. Law enforcement is done by the police, tasked with arresting this who break a law. Upon arrest, individuals are either detained in a corrections facility prior to court, or permitted to go via bail or bond: money, property, or promise of either in exchange for not being detained. Finally, if courts determine guilt and punishment of incarceration (via a trial or plea bargain),people are then sentenced to go to a correctional facility for a certain period of time.



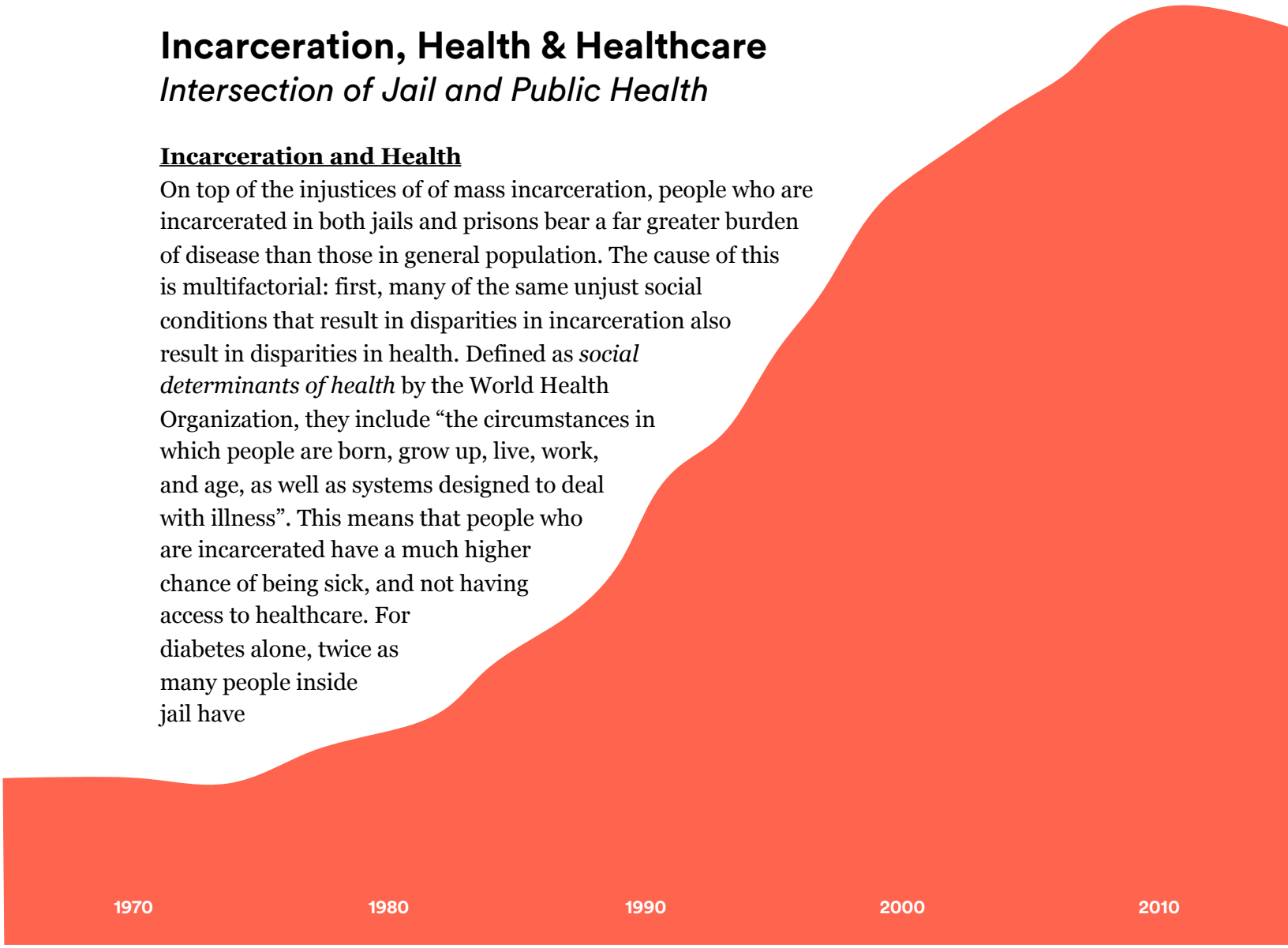
For the correctional facilities used in each step in this process, *jails* detain people who have been arrested and cannot afford to pay to be released until their processing with the courts; or, to detain people whose crime is considered so terrible that they are not offered bail or bond. Jails are *also* used to hold people *after* a trial or plea bargain for sentences up to about 1 year. Prisons, on the other hand, are used to hold people who have been sentenced to "serve time" for *greater* than one year. As such, jails are busy places that are constantly in flux; for the 2.3 million people who are incarcerated at any one time in America, 10 to 11 million rotate through in and out jails each year. In contrast, prisons are generally more stable places keeping people for longer amounts of times.

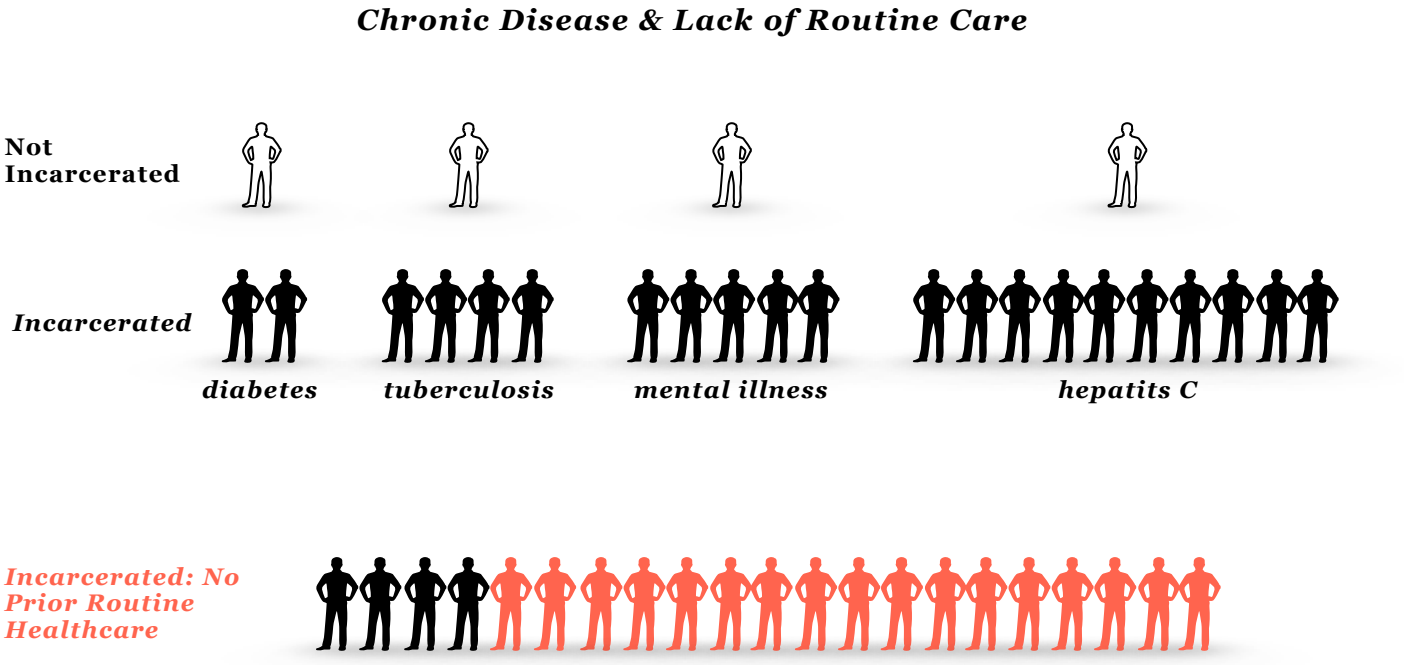
Incarceration, Health & Healthcare

Intersection of Jail and Public Health

Incarceration and Health

On top of the injustices of of mass incarceration, people who are incarcerated in both jails and prisons bear a far greater burden of disease than those in general population. The cause of this is multifactorial: first, many of the same unjust social conditions that result in disparities in incarceration also result in disparities in health. Defined as *social determinants of health* by the World Health Organization, they include “the circumstances in which people are born, grow up, live, work, and age, as well as systems designed to deal with illness”. This means that people who are incarcerated have a much higher chance of being sick, and not having access to healthcare. For diabetes alone, twice as many people inside jail have





the disease, compared to people who are not incarcerated. For tuberculosis it the rates for 4-fold, for mental illness 5-fold, and for hepatitis C, almost 10-fold. And, almost 80% of people who are incarcerated who are chronically have not received routine medical care before incarceration.
For addiction and mental health, the situation is even worse, and its cause more complex. Again, with the "War on Drugs" in the 1970s, policy and policing changes that continued through the early 2000s meant that substance abuse was increasingly criminalized, instead of addiction being treated as a medical condition. Aside from the failure to treat the condition, these political actions have resulted in what is called mass incarceration, producing America's incarceration rate.

This means that more than half of people who are incarcerated today struggle with drug dependence. Separate of this phenomenon, the last 50 years have also seen the deinstitutionalization of people with mental illness. Because community care has not provided ample treatment, the primary institutions where people with severe mental illness are housed and receive healthcare is now jails and prisons. So similarly, more than half of people who are incarcerated have symptoms of a psychiatric disorder.

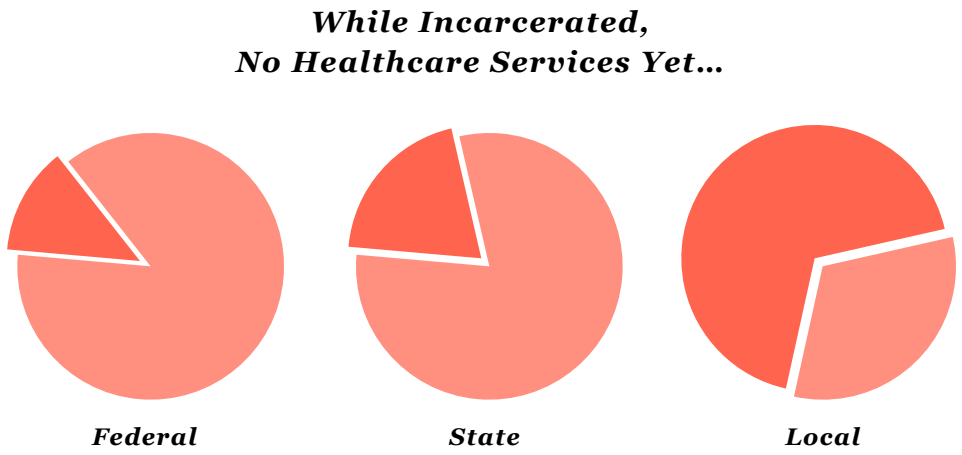
Mental Illness & Drug Dependence in the Total Incarcerated Population

Incarceration and Healthcare

Shortly after they began to hold people for extended periods of time, "prison medicine" began, responding to the health needs of people who could otherwise not access any healthcare.

In America, healthcare inside of jails and prisons was unregulated until the 1960s and 1970s, when a series of lawsuits about the failures of prison healthcare brought national attention to its shortcomings. In a landmark Supreme Court case in 1976, Estelle. Gamble, the precedent was finally set people who were incarcerated were entitled to access to care for diagnosis and treatment; professional medical judgment; and administration of the treatment prescribed by the physician. And, that if prison authorities didn't address the medical needs of those inside, this constituted "cruel and unusual punishment'; and, that "deliberate indifference to serious medical needs of prisoners constitutes the 'unnecessary and wanton infliction of pain'... proscribed by the Eighth Amendment".

Currently, over half of the jails and prisons in America outsource the job of healthcare provision to private companies. In total, according to the Bureau of Justice Statistics, states spend about eight billion dollars annually on healthcare for people who are incarcerated. However, national statistics on the services that are provided with these funds are not good. A study in 2009 revealed that "13% of federal inmates, 20% of state inmates, and 68% of local jail inmates had received no medical examination since incarceration... and following serious injury, 12% of state inmates and 24% of local jail inmates were not seen by medical personnel" . In terms of the 50% of people who are incarcerated having a mental illness, only "22% of state prisoners and 7% of jail inmates receive mental health treatment while incarcerated".



Correctional Healthcare as Public Health Safety Net

Clearly, there is huge, unmet need. Or, as one correctional healthcare policy expert more optimistically states, "inmates are beacons of public health opportunity". In other words, because the people who are incarcerated are very sick, and because they often lack access to community care, in reality jails and prisons serve as public health safety nets for millions of people. And, there are healthcare providers and programs that are trying to seize this opportunity, and meet the needs of people who are incarcerated. For example, a correctional health service of large urban jail system has the goal to treat addiction for every patient who comes through the system needing it. For narcotic and opioid addiction, the organization uses the standard of care in community: methadone treatment. And, they have found that the treatment program has resulted in not only better addiction treatment outcomes, but in cost savings in overall healthcare, reduced recidivism, and reduced HIV transmission, among many impacts. However, less that 1% of correctional facilities in America provide methadone treatment for opioid addiction.

Architecture and Incarceration

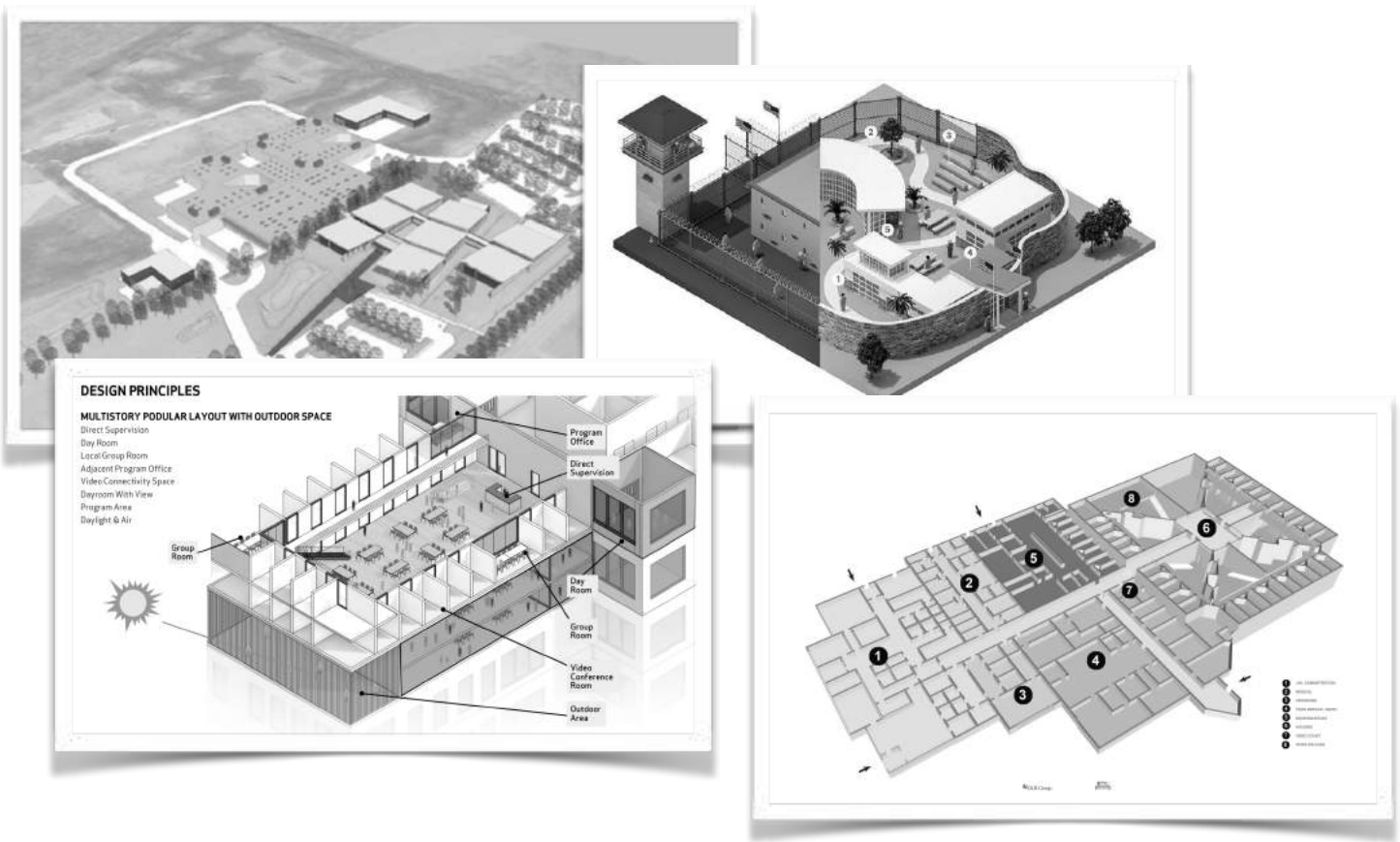
Current Work & Proposals

Role of Architecture

Because of mass incarceration, there is a a growing call in the US that is calling for criminal justice reform. From social movements like Black Lives Matter, to nonprofit organizations like The Fortune Society, Real Justice, The Sentencing Project, and The

Marshall Project, Americans are exposing what is happening and demanding true justice, and change. Most of the job to be done involves the creation of a system that doesn't criminalize and punish people with non-violent drug offenses, doesn't discriminate, and also treats (instead of incarcerates) people whose crimes are the result of mental illness and addiction. However, for individuals that society still deems must be kept away for public safety, another important aspect of the work is the creation of facilities that are more humane. For this latter change, governments, agencies, and private firms are brainstorming about what future facilities might look like, proposing spatial solutions for jails and prisons that focus on rehabilitation. Attention has been given to the the humanitarian concerns and psychological effects that spatial conditions inside jails and prison can have - especially the use of solitary confinement. And, attentions has also been given to the impact of the build environment on its inhabitants - taken largely from that has been done in healthcare environments outside the setting of incarceration.

Proposals for New Incarceral Facilities



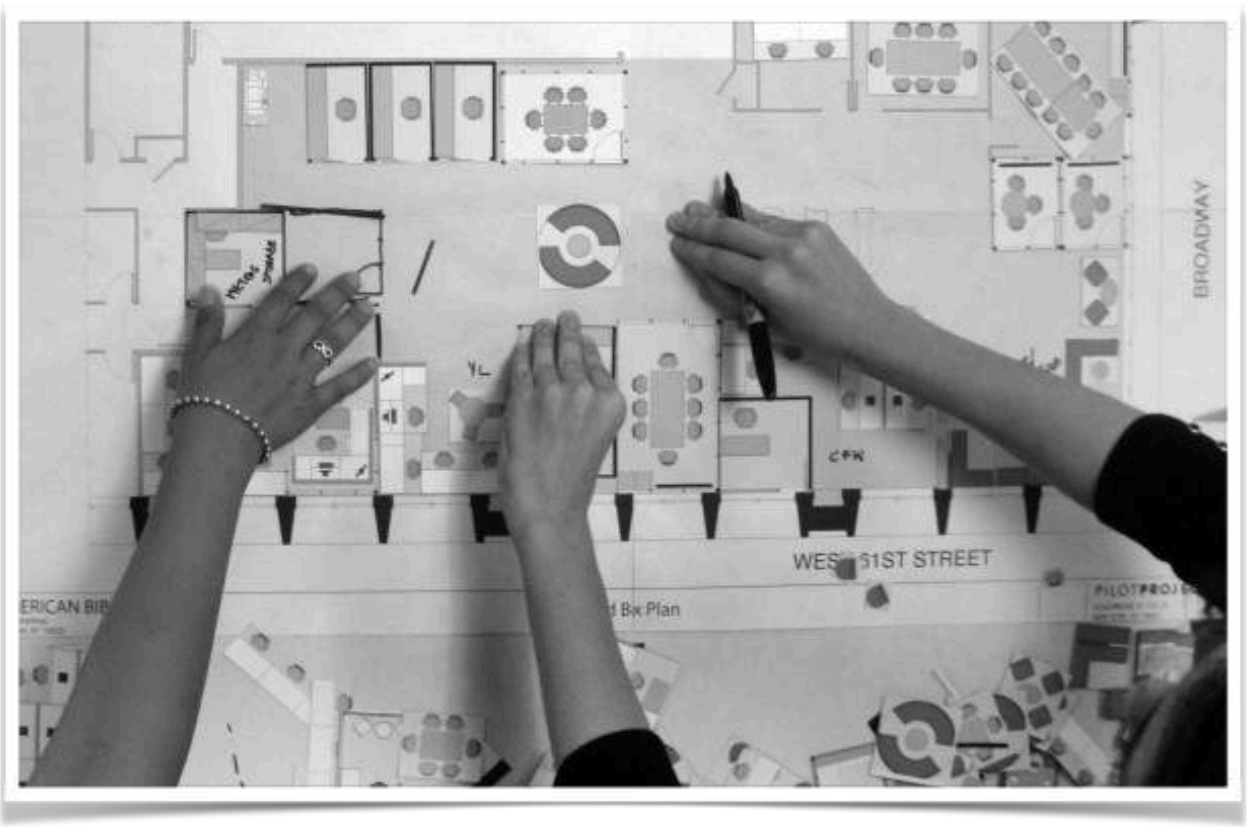
The Built Environment and Health
Research & Specialization in Architecture

Evidence Based Design

Pioneered relatively recently, an interdisciplinary study arising at the intersection of architecture and health is Evidenced- Based Design (EBD). Research that evaluates the impact the built environment on the human body guides design decisions achieve better outcomes. For example, for patients who are recovering from surgery in a hospital, research has shown that recovery time is faster, and less painful, if the patients have a window to the outside world in their rooms. Studies have also shown how the physical environment can impact patient safety, demonstrating improved patient outcomes and staff outcomes with higher capacity ventilation systems, certain acoustic environments, and various types of interior lighting. EBD is a growing field that is proving to play an increasingly important role in architecture and design, in its use of evidence to predict how physical settings might impact hEalthcare outcomes.

Evidence-Based Design

Participatory Architecture



Architectural Methods

"User" Needs & Participation

Different Types of EBD Data

The outcomes that EBD measures are largely quantitative, such as surgical recovery times. These outcomes are selected implicitly - assumptions about desirable phenomena that are used as a proxy to measure improved human experience. In other words, professionals in these fields assume that people would consider a shorter recovery to a better experience of life. Of course, it should be noted that these outcomes are also important for factors additional to quality of life, like the cost of care in terms of economic constraints. For quality of life alone, some EBD also uses qualitative data to understand the impact of design on the lived experience: rather than measuring an outcome, the inquiry goes directly to people, asking about qualities of lived human experiences. For this data set, there is no proxy: in order to ascertain lived experience, the people who undergo the experience in question *must* be asked.

Participatory Architecture

There are two different ways that architects can leverage this qualitative data about lived experiences to inform their designs of the built environment. First, they can do

copious primary research, and then apply their findings to new designs. Or, they can simplify the process and instead just bring the people who are current or future occupants into the process of its creation. This direct involvement of the occupants in the design process is called "*participatory architecture"*. The advantage of this practice is that it actively ensures that occupants' needs are getting met; without it, if the architect has engaged in the former process, he or she must return to the occupants after creating a design, to evaluate if the design has met the occupants' needs. Another advantage of participatory architecture lies in contexts that contain issues of social justice. If the power that is held by the occupants is lesser than that of the people who control the space, and this power dynamic is considered to be potentially unjust, participatory architecture offers a tool of sharing power, thereby also promoting social justice. However, even when not related to social justice, *participatory architecture* still deals with power, challenging the power of the architect, who is traditionally considered the "expert". Participatory architecture reframes expertise, recognizing the occupant to have expertise of their own experience, and therefor become co-creator of the designs.

Conclusions about Context
Implications for this project

Given the complex array of settings, players and unmet needs at the intersection of incarceration, healthcare and architecture, opportunities for problem solving abound. In terms of the current proposed solutions mentioned before, despite being both laudable and inspirational, very few of them mention the current, unmet needs of people inside jails today; and, they do not emphasize (nor often even include) healthcare spaces. For this project that lasted one year, our attention was thus increasingly drawn to an opportunity in the very center of this intersection: can the occupants of spaces that contain healthcare provision in correctional settings help design them, to improve their likelihood of engendering better lived experiences, and thereby producing better healthcare outcomes? It is quite a question. And, is one that we had not understand until much of the project was underway.

Prior to this project, and prior to knowing much at all about correctional healthcare, we were just graduate social design students, looking for an opportunity to do something useful and applied with our thesis. What we did have an understanding of was human-centered, and social, design.

Design Process & Frameworks

Human-Centered Design
From Things to People

Fundamentally, design is *intention:* the intention behind almost anything that exists in the world. For example, a car can have a sleek design, being planned in a way that is intended to gain a certain kind of admiration. In this way, design can be a noun: a summation of intention, or *the plan*. Historically, product and industrial design comprised this framing, with *things* beings designed: a technology, system, service or product was the focus, with emphasis on the capacity or requirements of the non-human entity, such as car, tool, a public service, or computer... anything and everything people use. Again, the qualities that were selected were the desire of the designer, with the expectation or hope that it would also be desired by the people who were to use it, called the “user".

While these methods yielded interesting innovations, there was no guarantee that they would fulfill the desires or needs of the "users". As such, there was no guarantee that the products would be e successful. Additionally, this meant that designers (or organizations, or governments) were attempting to solve problems for people without asking what was desired, and without involving people (customers or constituents) in the design process. In contexts of power distribution and social justice, this phenomenon has since been criticized as coercive, or a misuse of power.

After the mid 1990’s, emphasis in the field of design slowly shifted from the *thing*, to the *people* who were going to use it. And with this shift came another: from design being the result of an intention (the noun) to design being the *process* of determining the intention, followed by the process of identifying what could achieve it. Instead of the focus in car design being on a quality like sleek, it moved to the future “user” of the car: what would he or she desire in a car? How could that desire be fulfilled? This shift, of putting people at the center of the design process, aptly garnered the term *human-centered design*, or *user-centered design*. And the process that does this, *design thinking*.

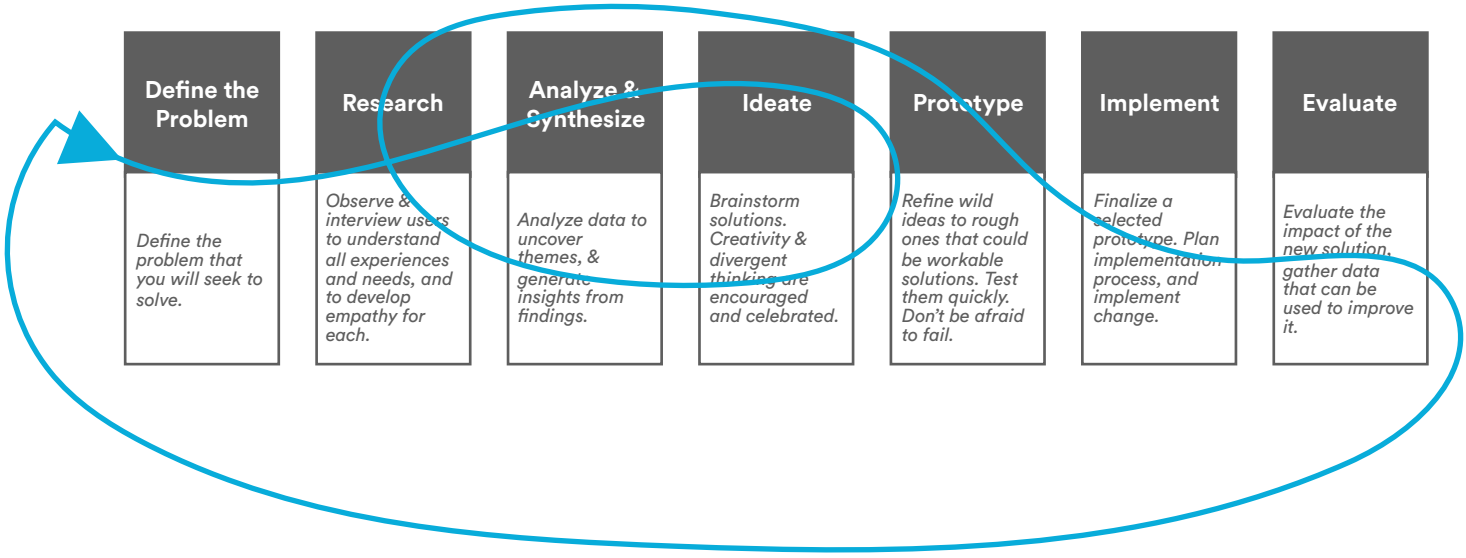
There are many problem-solving methodologies that use use *design thinking* in *human-centered* or *user-centered frameworks*. For example, UX, or user-experience design, is used in digital technology, and focuses on the user’s experience of a website

or app. Service design is used in service industries, and deals with users' experience of a public or private service. Not only do these methods create more desirable, relevant, and viable solutions, but in trying to meet people's needs, they can provide more opportunities for processes and outcomes with a higher level of justice and equality.

The steps and tools used in human-centered design methods draw on a variety of fields, including but not limited to anthropology, sociology and participant research, and industrial design. For example, as every method in HCD relies heavily on design research (qualitative investigation to understand users and their needs), tools like ethnography are borrowed from anthropology. Or, when solutions are being tested, the practice of rapid-prototyping (trying unfinished solutions quickly) is taken from industrial design.

Many times, the problems that design thinking takes on have entirely unknown solutions; or, the problem itself isn't understood. Thus, part of the process is just defining the problem. In this way, the process is more about creating solutions, than it is solving problems: the solution might involve a whole new system, logic or structure, or capacity than is not just the summation of what is currently lacking.

Human-Centered Design Steps



Social Design
From People to Purpose

As human-centered design and design thinking began to create solutions in the social sector, the framework continued to evolve. Now, not only were the users' needs important, but just as important were the kinds of needs that were being selected: was it a basic human need that was not getting met, causing people to suffer? Or, a more frivolous need that was not necessary for health and well-being? *Social design, social-impact design,* or *social innovation* still uses the process of design thinking, but takes it to a new level, adding *values* to the center of the framework, and aiming the framework at solving social, systems problems.

In *social design*, the most important inquiry is about shared visions of a future in which the basic human needs of everyone can be met, so that we can all equally thrive. Instead of looking just at *things* or at *people*, social design looks at the interaction between both and defines this as a *social condition:* the *things*, *relationships*, and the *impact* that sets of things and relationships have on people (or have on the degree to which their needs are met).

So, social design is a process that creates conditions under which people can better thrive. To do this, it first works to understand current conditions; then, it asks the question: how can the things and or relationships be changed so that the impact (result) is different? Finally, it guides the making of new things and relationships (improvements to current ones, or brand new ones) that will better meet needs, thereby creating a new new social conditions.

When solving a social problem with social design, there are two basic approaches. Since a condition can be understood as the extent to which people needs are met by the things and relationships around them, changing the condition or creating a new one can either be approached with a certain set of *needs* in mind: for example, “people *need* to fee safe, what *things* and or *relationships* can we improve or create to help people feel more safe?”. Or , it can be approached with the *things* or *relationships* in mind: "right now, police do not always make people feel safe, how can we change policing and peoples relationships with police so that people’s *needs* of feel safe are better met?”

Process

Overview

Expand the Framework *Human-Centered Design + Social Design +*

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Understand the Context *Correctional Healthcare*
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Understand Challenges *Pre-Study in Jail Clinics*
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Define the Problem *Clinic Spatial Design*

Understanding

Follow Context Rules *Applying for IRB Approval*
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Measurement & Evaluation Plan *Measuring User-Lead Spatial ign*

Overview & Learnings

Expanding the Framework

Human-Centered + Social Design +

For this project, we primarily followed the human-centered design (HCD) process, guided by the values of social design. However, along the way, we found that the bare-bones HCD steps did contain enough opportunities for our work to embody the values of social design . And, more importantly, we found that even with sweeping values of improving conditions for people, we had additional values and beliefs about how this could and *should* be done in the context in which we chose to work. There are three areas in which the combined tools and values came up lacking; so, we articulated our additional values as new Design Principles, and created Steps that would enable us leverage them in our work.

Design For Systems Problems:

Problems exist in dynamic relationships between people. See the system, & design for it.

A result of our past experiences and current world views, we both believe that every social problem exists in a system as a dynamic between two or more [groups of] people. As such, it is our belief that addressing a challenge for one group, without taking into account others' perspectives, involvement, and needs, is short-sighted and unlikely to produce sustained and meaningful social change at scale. So, while the research and analysis methodologies of HCD work well to understand people's experiences and identify their needs, and while HCD making methodologies are great at solving for these needs, ultimately, HCD lacks tools for research, sense-making and making that might address problems which arise, dynamically, between multiple user-groups. So, we riffed. We maintained a systems outlook by constantly minding Rittel and Webber's discussion of wicked problems in "Dilemmas in a General Theory of Planning". And, for analyzing systems problems, we adapted the Theory of Change model by turning it into a sense-making tool, not unlike a simplified cybernetics diagram.

Design for Social Justice:

If you're trying to empower people, start now. Give your power away.

While HCD frameworks and social design values heavily emphasize "user involvement"to understand user needs, and thereby sometimes positions the users as the "experts", neither don't go so far as to suggest that the "user" takes leadership or ownership of an entire project. However, the goal of many social design projects is to

create a more just world wherein people's needs are more equally met. Similarly, social justice work is about creating equity: changing conditions such that people have more equal access to agency and power. Given that we were working in a space with extremely unequal power dynamics, we wanted our process to address this, too: we wanted to give some power to our users. And, knowing our presence would be limited to the time of our thesis project and that the sustainability and impact of the work would be proportional to the amount of leadership and ownership that we could transfer to others, we engaged in a handful of steps to try to give as much power and ownership away, as we were able.

Design as a Link in a Chain:
For big problems & solutions, design can't do it all. Play your part.

The HCD model usually moves from steps of research to steps of testing; and, more recently, to step of implementation and evaluation. If "implementation" is truly in the designer's domain, this means that the work is likely self-contained: the designer will be able to implement the project alone, or lead its implementation. However, design can be play a pivotal role in many fields, and in many f projects and undertakings that require processes and people that extend far beyond HCD and a design team. Arguably, for design to be done at scale, this is actually the norm, and not the exception. So, principles and steps are needed to address requisite aspects of participating in work that is larger than design. Key areas of focus include adapting to context, and the practice of both identifying who is downstream in the process of planning and implementation, and understanding exactly what they need as outputs of the design process to inform their work. At this stage, it is actually best if the designer imagines the downstream collaborator as another user, putting just as much intention into the format and capacity of deliverables to meet the next implementer's needs as was done in the design process itself.

Additions to the field: Helping Framework continue to Evolve

On the next two pages you will find a map of our thesis project process. At the top, the human-centered design framework sits as a reference. There are indeed some HCD steps that we carried out, true to form. Below it, our three new Principles buoy the new Steps that we created, and followed. For our values around systems problem-solving, and for some around social justice, we found that we could just adapt HCD steps to suit systems problems. For the others, we added additional steps. Yes, it is not as simple as 1-2-3. But, lest we conflate simplicity with ingenuity - doing systems design with goals of social justice in a setting wherein we're just a link in the chain... is not simple work. It was, however, still possible for the process design to cut through the complexity of context in a new way, and produce incisive insights that have the potential to guide meaningful, if not revolutionary, change.

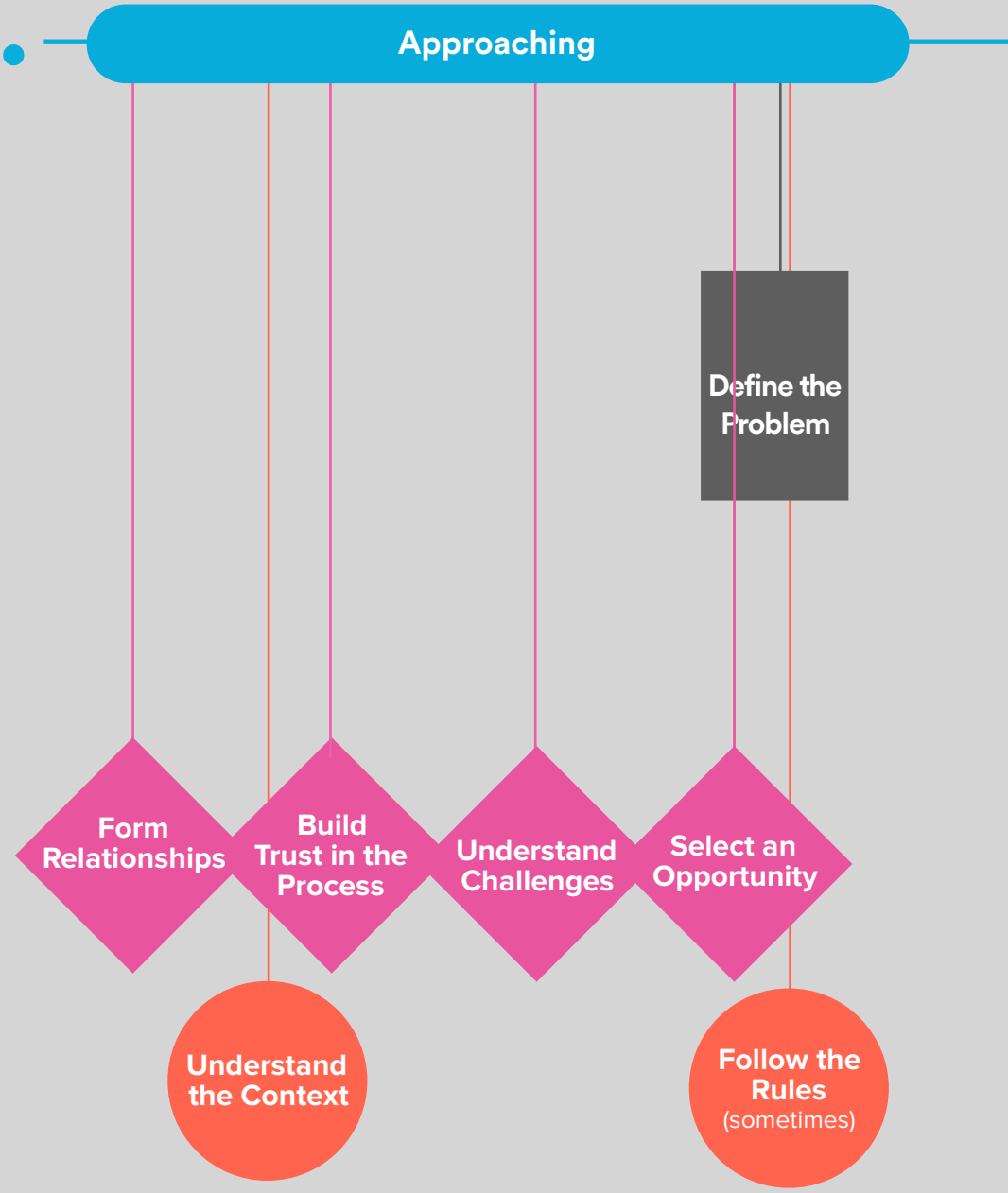
Just Ask.

Human-Centered Design

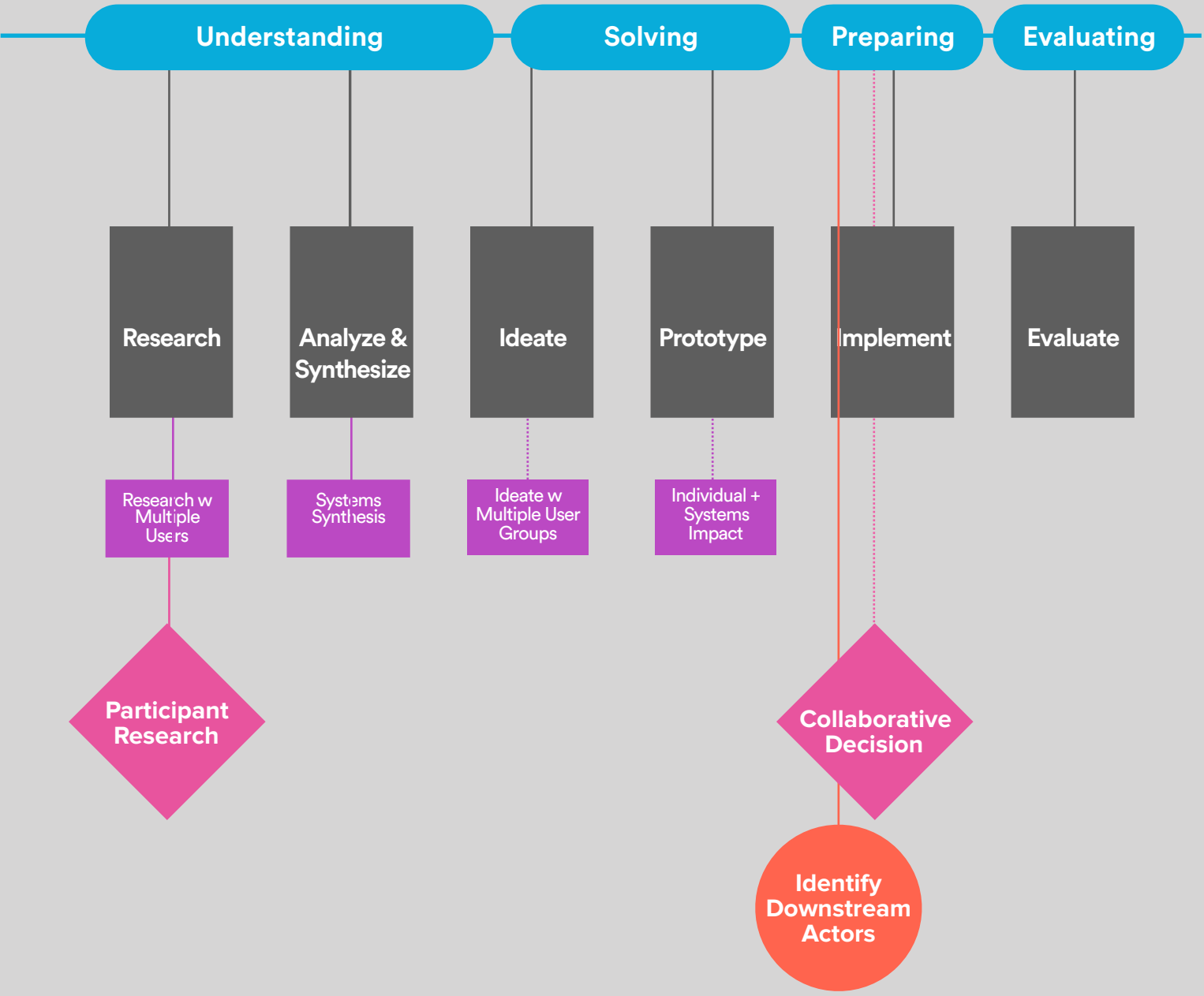
Design for Systems Problems

Design as Social Justice

Design as a Link in a Chain



About 1 year:
the process of this project.



Approaching

Form Relationships

With correctional healthcare providers

Our first priority was to get to know the people to whom we'd reached out, and let them get to know us. We wanted to avoid being rushed or focused on our project; we hoped to demonstrate that we were trustworthy, respectful, understanding. We emailed and spoke on the phone a few times, and made plans to meet in person. They were all very kind, and unbelievably busy.

Our first tasks was to get clearance, which we did as quickly and diligently possible. Then, one group of administrators asked if we could help out with a project that was unrelated to our work. This was a wonderful way to get to know them, and to get to know the context.

Understand the Context
Setting of correctional healthcare

Previous Experience

The realm of healthcare was not entirely new to us: Jessie came to design from nursing and global health, and Sofia had completed a few projects for healthcare organizations as a service designer in Sweden. However, the American context and clinical care in general was brand new to her –an asset for insightful observations, and a barrier to understanding lingo shortcuts, and medical practices that everyone took for granted. But, correctional healthcare and the setting of incarceration were totally new to both of us. So, at the time wherein we were getting to know the people which whom we were collaborating, we were also getting to know the context: the structures, policies, norms, and logic.

First Impressions

And, it goes without saying, it was different than anything we'd ever experienced. Our first impressions were of how **tightly controlled** everything was – a shock in its contrast to the world of design and innovation where we had been living, in the clouds, for quite some time. There were rules for everything, and we'd have been lost without the guidance of our collaborators. And even with them, we sometimes didn't get it right – forgetting once and showing up with our computers when they were not permitted. Thankfully, there were kind and understanding people who helped us find a solution.

We learned about hierarchies in both the healthcare and incarceral systems – who reported to who, and to whom questions should go. And, we learned about practices and policies of the healthcare organizations in this context: how healthcare was organized and delivered, how performance was measured by quality assurance departments that measured performance indicators and outcomes, and how quality improvement was carried out by teams that identified problems, and then proposed solutions. This last process often involved applications, organizational approval, and followed traditional healthcare QI frameworks such as Six Sigma or LEAN.

Potential Conflicts

From all of this, we realized that the design process was not only going to be new, but that in many ways it did not "fit" in our collaborators systems or norms. There were four areas of conflict that we identified:

- First, the design framework **contained so many unknowns** compared to frameworks like Six Sigma or LEAN. In design, you have to be prepared to uncover problems you don't know how to solve. And for many reasons, we quickly came to realize that this poses a risk to organizations whose responsibility is to literally, an on top of that, legally, manage problems. Given the litigiousness of American society, and the politicized context of incarceration, we realized early on that the paradigm of our approach was risky.

- Second, design also had **far less structure** and **far more subjectivity** than their methods. Based in extremely sound reasoning, both QI and the field of medicine use very controlled processes for creating change, since human life is at stake. It goes without saying, but design methods like brainstorming within small focus groups or rapid prototyping would be horribly reckless methods to for medicine to create changes in drug formularies. Instead, drug development and clinical trials follow painstaking rules for safety. Thus, while it was easy for the team to intellectually differentiate between pharmaceutical trials and design, we wondered if being immersed in a system of structured, incremental

change for years made it more challenging accept and trust an approach that was much less controlled.

! Third, design was going to **challenge traditional framings of expertise**. In their organizations (not unlike all healthcare systems, and arguably society at large), expertise is legitimized with things like educational degrees, work experience, and professional role title. Expectedly, the team initially proposed that we meet with clinical leadership to understand the challenges and goals of correctional healthcare. We said this was great! And, that most of our data would actually come from the "end-users", the people who were experiencing the problems first-hand. We could tell this was a bit perplexing – and worrisome. Should the knowledge of the staff at the bottom of the organization guide this project? What if they had an opinion or idea that didn't reflect the higher-level goals of the organization?

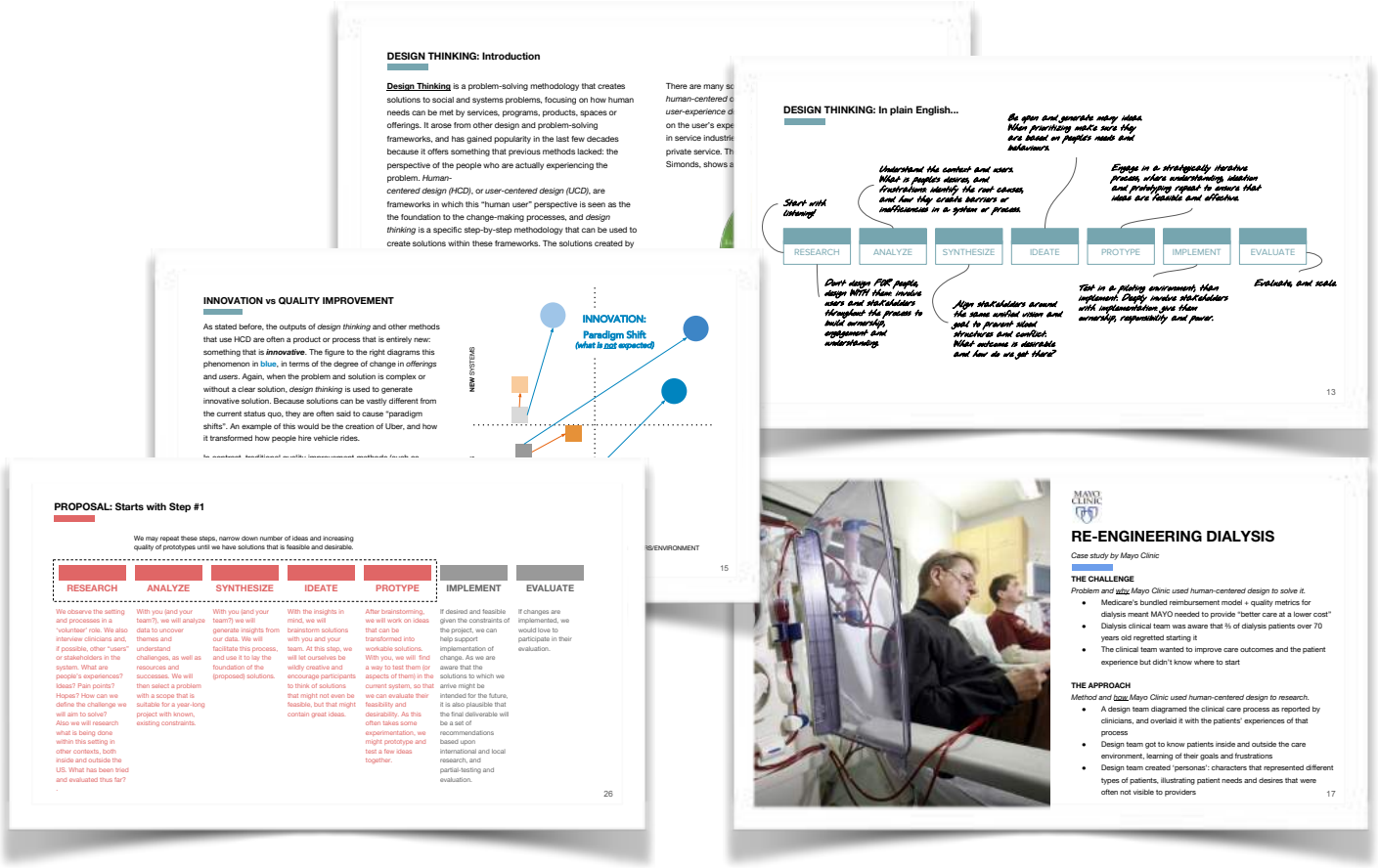
! Finally, the different **concepts and vocabularies** of design and correctional healthcare were going to need to be distinguished, and almost translated. Was design "research" the same as medical "research"? We realized that it was actually going to be challenging to explain the differences, when we were not experts in correctional healthcare.

Building Trust in Process
Introducing Design

So, we knew from our understanding of the context that we were about to propose some ideas and plans that might go against the practices, customs, and maybe beliefs in the correctional healthcare setting. And, not only did we want permission to do this design work – our goal was that they participate (if not lead) the process themselves! As such, our first task was to figure out how to describe design in a way that others might understand it, and also trust its logic. Since it was risky, we also needed to show that the benefits could outweigh the risks.

To do this, we prepared a slide deck that explained design, and shared examples of how the process was now used in many large hospital systems as a quality improvement approach.

Teaching about Design



"This is exciting and cutting edge, and also normal", we tried to imply.

We hoped that examples would help demonstrate design's legitimacy, trustworthiness, and potential value in the context of healthcare. The administrators were interested but also were short-staffed and didn't have time to dedicate solely to our project. But, we made a plan: we'd learn about the healthcare delivery in the clinics, and report back in about 6 weeks with findings, and suggestions of possible challenges that could be the focus of our project. To carry this out, the administrators kindly introduced us to frontline healthcare providers who worked inside the clinics.

Understand the Challenges

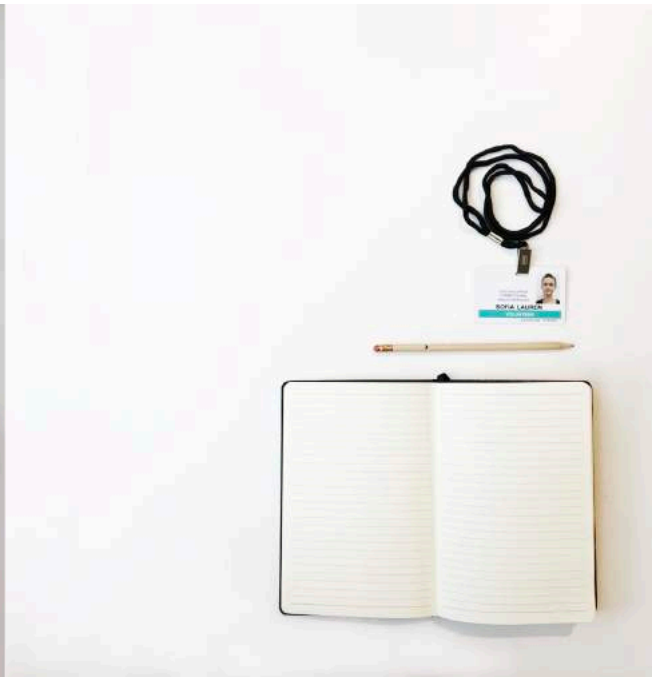
Pre-Study in Jail Clinics

Initial Access & Constraints

Aside from the challenge of geographical distances requiring long bus rides and 4am starts, there were also policies that impacted our design work. Tools that are usually considered requisite for design research, like a phone, camera, or voice recorder, were not permitted inside the jails. In this way, from the beginning, we needed to adapt the design process to the setting.

Typical Research Tools

Adapted Research Tools



The Setting

Once finally inside the jails, we were usually escorted by a security officer to the clinics. Sometimes they were close to the jail facility entrance, and other times quite far; we'd often have long walks down corridors, past housing areas, laundry rooms, cafeterias, and correctional officer stations.

The clinics either had locked doors that opened to the hallways, or an entrance off a hallway at which correctional officers were posted. Sometimes, the entrances were used by both staff and patients, who would be escorted from their housing areas to the clinics for appointments. he interiors of the clinics were clearly places of healthcare deliver: cubicles containing exam tables with blood pressure cuffs mounted above them, larger rooms with stretchers, offices wherein patients met more privately with providers and wherein administrators sat, made up most of the space. In many of the clinics, waiting spaces that were inside them served to hold patients just prior to and after appointments. They were austere rooms with metal benches locked to the floor, and metal mesh screen, bars, or glass as walls.

The People

There were three main groups of people inside the clinics – patients, healthcare providers, and correctional officers. Patients came to the clinic either via the process of intake health evaluation in their arrival to the jail facilities after arrest; or, by coming from a housing area in the jail to the clinic for emergency or routine medical care. The healthcare provider staff included nurses, physicians, physician assistants, mental health professionals, dentists, and x-ray technicians. And alongside them, correctional

officers were posted around the clinics, with the task of keeping the spaces safe, and escorting the patients back and forth from hosing areas for either scheduled or urgent care. If there was an emergency in a housing area, a medical team would be dispatched from the clinics to attend to the patients and transport them back to the clinics.

Impact of The Setting on the People

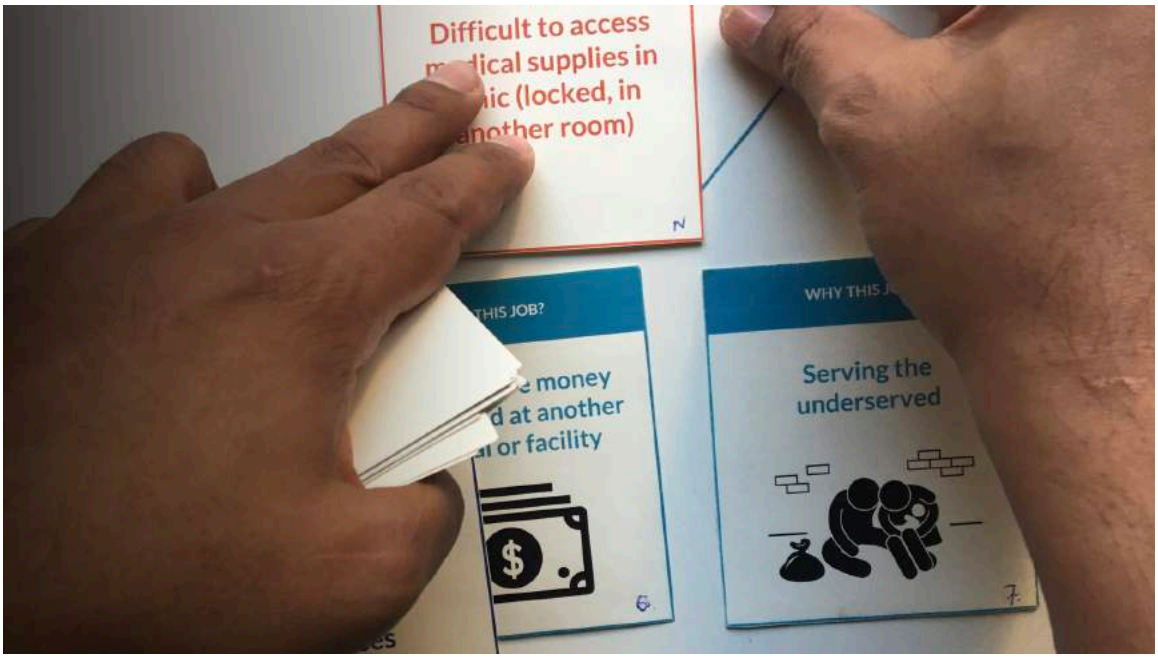
In many ways, the clinics functioned and looked like any outpatient healthcare clinic might. And, it many ways it did not. Patient movement around the clinics was limited, and communication between staff difficult due to distances between offices, and no limited technology with which to communicate: the landline. In order for patients to come to the clinic or move around it, they needed to be **escorted by** correctional officers; the numbers of patients requiring escort on a daily basis was large, and often more than the officers were able to complete.

The clinics were also often really noisy: people yelling, doors buzzing, correctional officer radios beeping. And the tile floors, solid walls, and metal doors meant the spaces only served as a speakers in reverberating sounds.

Pre-Study: Goals and Activities

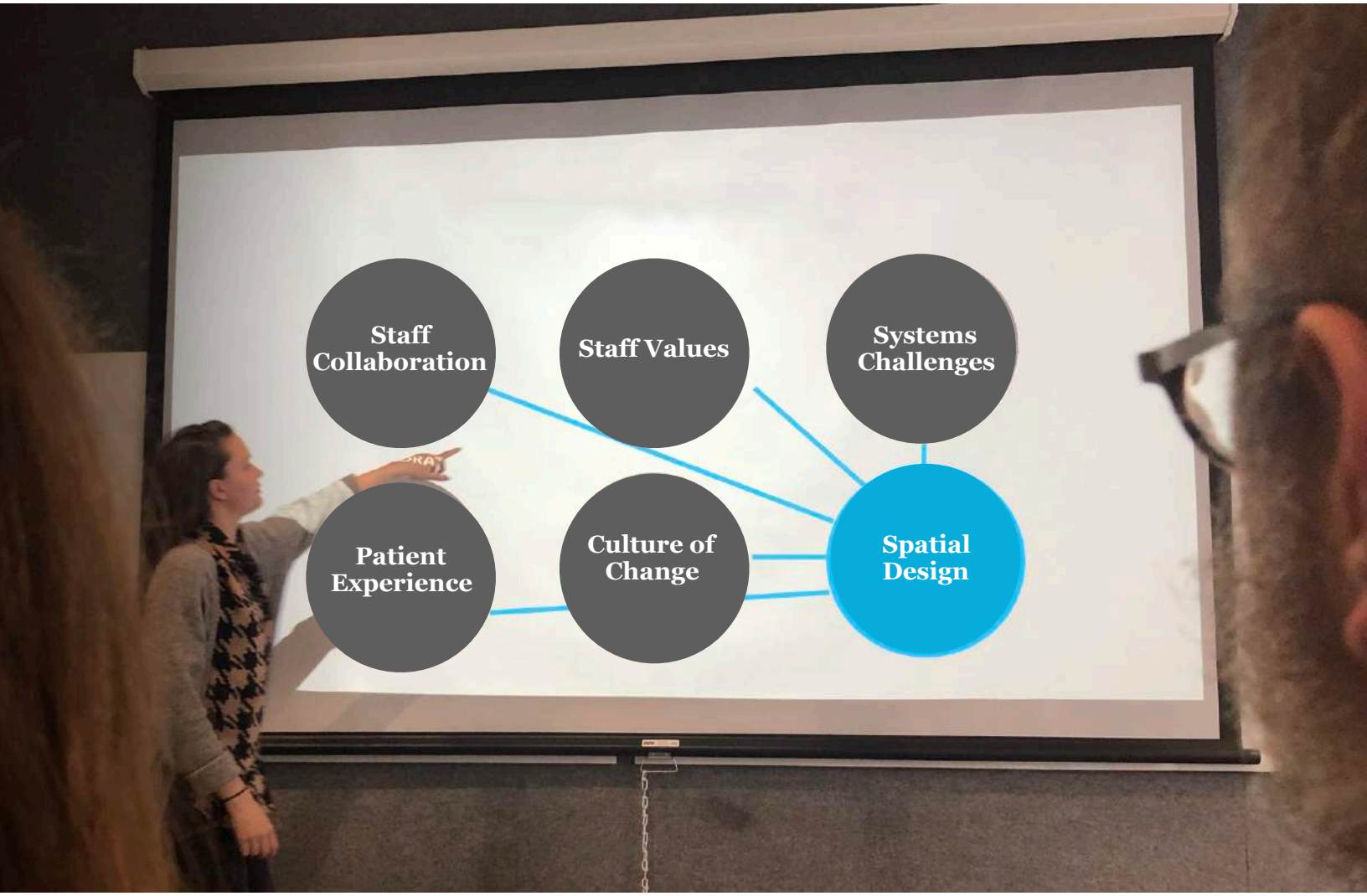
Being inside them, our goal was just to get to know the people who worked there. At first, they didn't know what to make of us – design students? Social design? What is that? Our approach was first to ask straightforward questions – how did the clinic work? What were the best things about the work? The most challenging? How long had they worked there? Had the places changed? What motivated them to pick that job? What kept them in that environments?

Over the course of a few months of regular visits, we learned so much. Many staff had worked there for decades, through a number of different management companies and organizations. Most had deep empathy for their patients, saying that what kept them in the work was their desire to make a difference. They said the job was hard, but that there was something about the place, and the work, that kept them coming back, year after year.



A provider sorts cards that elicit conversations about why he works in the jail.

Presenting Opportunities



Sofia presents findings back to administrators.

Pre-Study Findings

After visits that spanned 3 months, we had collected more than enough information. With our data in front of us, we clustered our findings, watching themes emerge. Ultimately, we identified 6 primary areas that seemed opportunities for impactful change. We returned to the administrators for a collaborative workshop, and presented our findings and insights:

1. Staff collaboration

The departments and disciplines engage in care processes that are often independent of each other, and they are sometimes far apart. However, they also often see the same patients, and need to coordinate their care; they wish it was easier to collaborate. How might staff collaborate more easily?

2. Staff values

Staff care deeply about their patients; helping people who don't normally have access to care is a reason that many say they work in this context. But, their values are sometimes masked by complaints about challenges in system functioning. How might the systems support their staff, empowering them to live their values and thus leverages them to create higher quality care?

3. Systems challenges

No problems are isolated: where there are challenges for the patients, there are also challenges for the providers. As such, any solution for one group will impact the other. As such, for solutions to work in this context, a collaborative, systems approach will be necessary to create and test them.

4. Patient experience

Patients sometimes avoid the clinics because they fear what can happen to them there: while the correctional officers do their best to keep patients apart who should not mix (due to restraining orders or gang affiliations), because it is impossible to control things like the timing of urgent medical care, there is sometimes violence in the clinics due to patient disputes. This makes it unsafe for some patients. Additionally, because of the escort demand and schedules, many patients must sustain long waits in waiting rooms that are crowded, with limited access to a toilet and likely miss their meals, when they come to clinics. Because of safety and conditions, patients sometimes decide to not attend their appointments.

5. Culture of Change

For quality improvement projects in some of the healthcare organizations, when new ideas often come from administrators who are not always intimately familiar with the realities of the clinics, sometimes the solutions are not feasible, and sometimes the lack of staff involvement is offensive to staff who feel like their expertise and hard work is overlooked. Because of this, these initiatives can fail.

6. Spatial design.

The physical environment and spatial design of the clinics, from the uncomfortable waiting rooms to the distant departments to the significant noise levels, impacts both

patient and provider experiences, and at times forms barriers to care The administrators appreciated what we were able to uncover. “There is something to this approach… what took you a few months to learn took me years to understand.” One of them said. The administrators had worked in the context for years, and knew it well. Only one of the findings was a surprise: they were unaware that sometimes frontline staff feel overlooked by top-down quality improvement ideas, and unaware that the ideas are not always feasible. It as an interesting learning opportunity, and represented some typical challenges of a hierarchical organization in a complex setting.

Selecting an Opportunity

picking a thesis focus

Collaborative Understanding

We reviewed the insights as possibilities for the focus of our thesis, brainstorming what problems might be the most strategic for creating change. We wanted the administrators to own the project as much as possible, knowing that any ownership might mean that if the work turned out to be useful, they would be able to carry on the work after our thesis project was finished. The team explored options, voting on what they were most excited by, what they thought was most achievable, and what made them nervous.

User-Led Decision-Making

And with this activity, an unexpected additional insight emerged: spatial design was different than the others, because it impacted everything! We realized that challenges which would not typically be considered ‘spatial’ problems were actually caused or exacerbated by the physical environment in this context, largely because the setting was so restrictive. For example, what might be a short walk between departments in a hospital was a barrier to collaboration in this setting, because of it’s restricted nature.

We’d found our thesis focus.

Define the Problem
Clinic Spatial Design

thesis opportunity:

How might new spatial designs in jail clinics create conditions that better meet the needs of the people inside, so that patient's can leave jail in better health than when they arrived?

Understanding

Follow Context Rules

Applying for IRB Approval

Research Versus Quality Improvement

To begin more investigation about spatial design, we would need to interview providers and patients alike for our design research. After a few lengthy conversations and consultations with other in the field, it became overwhelmingly clear that we needed to apply for Institutional Board of Review (IRB) approval for our work as a research project. IRB approval is ethical approval: a independent group of multidisciplinary expertise, that is sanctioned to do so reviews applications for research on human subjects (including things like interviews) and either approves a 'research protocol' (the research plan, complete with things like interview questions) or rejects it, or asks for modifications. IRB approval is especially necessary for vulnerable populations, including children, and people who are incarcerated. It is required when a project is considered "research" that "generates new knowledge", without immediate plans or capacity to implement a solution. However, if a project is trying to solve a problem and has the plans and capacity to immediately implement a solution, the work is considered "quality improvement" and does not require IRB approval. Because we would not be able to literally build a new clinic to implement new spatial designs, we needed IRB approval. We wished we had known this from the beginning! It took us a few weeks to learn how to apply for approval; thankfully, we had incredible help from some of the administrators with whom we were working.

IRB Requirements and the Design Process

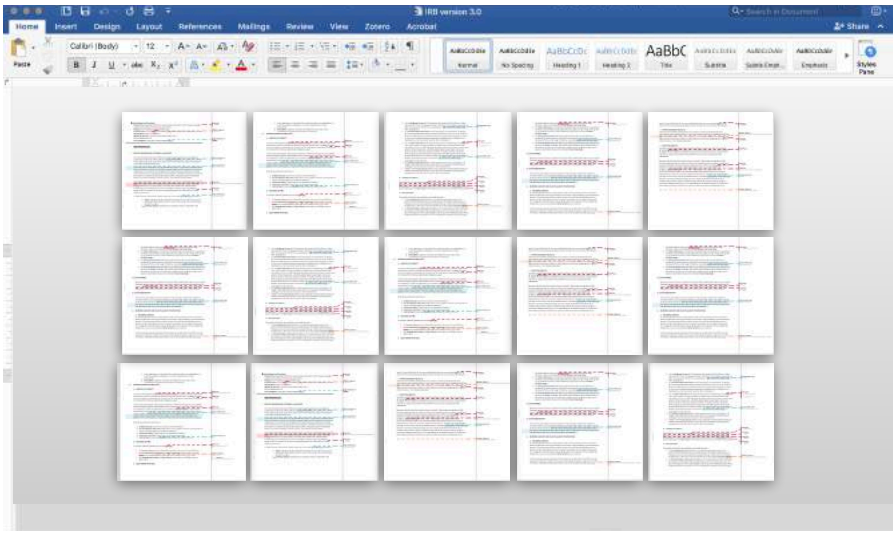
But, the real challenge was to adapt the design process to IRB format. For it, because the IRB must review everything that will be done, it becomes quite challenging to bake design into the protocol. Design relies on adapting its process to based on user needs and information, and IRB requires that the entirety of the project be planned from the time of application. For example, for design research staples like user-led interviews wherein the topic of the interview will literally follow

what the interviewee deems as important, how could the IRB approve questions if we couldn't predict what questions we'd want to ask? And trying to understand how prototyping would fit into the forms was almost impossible – as prototyping relies on continued improvements of questions and prompts, and traditional research demands the exact opposite: exact repetition of questions and prompts. We were able to frame paper prototyping activities as "research", and in this way made it work.
Nonetheless, while it was necessary to get IRB approval for the context, we were saddened that it did affect the potential of the design process. In asking around to design colleagues who work in healthcare contexts, we learned that this is a common challenge. We also learned that some large and established health systems that have long had design and innovation teams have created "fast track IRB" processes for design research, that permit more expedited processes and perhaps more flexibility.

After drafting a "Research Protocol" that included not only design research but also the creative parts of the project, we spent time editing it with the administrators. They had valuable feedback for some of our ideas and suggestions. And, this process also revealed huge differences in qualitative research that is done in public health and medicine, and in design research. Sharing the process brought up topics like data analysis: because we hadn't explained the methodologies with which we would analyze and synthesize data, it was assumed that we would use the traditional qualitative research methods of tagging concepts, or quantifying responses with things like a Likert scale. We were tremendously thankful for guidance on some valuable quantitative activities and analysis that could buttress our work, and at the same time, for some of the other activities tried to explain the meaningful capacities of design's sense-making: that research, analysis and synthesis relies on the quality of connection and communication between the design researcher and participant, believing that conversations about people's needs and struggles might reveal more actual truth about them, than a survey or scripted interview could

.

Collaborative IRB Editing



Submitted for IRB Approval

1 Employee Interviews

Fifteen 30-minute interviews with healthcare employees alongside on-site observations in the clinics, to understand the clinical care processes and the impact of current spatial design on these processes. (*Due to project constraints only 8 interviews with healthcare providers was collected. The rest are planned to be collected in the next step of this project).*

2. Patient Interviews

Twenty-five 20-minute patient interviews comprised of questions about clinic spaces, and the impact of the spaces on the patients' experience of their healthcare. (*Due to project constraints none of the patient interviews were collected. This is planned to be included in the next step of this project).*

3. Leadership Interviews

Three 30-minute leadership interviews, to understand the goals for future services and the ideas for future clinic design and overall vision. (*Here only one of three interviews was collected. One more is planned to me collected in the next step of this project).*

4. Focus Group

A group of eight multidisciplinary staff to meet twice for 3 hours: first, to discuss current clinic design challenges, and to design solutions via activities wherein they collaboratively create prototypes of new spaces using models; and second, when participants select the best solutions *(This is planned to be completed in a next step of this project.)*

Perform Research

Interviews & Observations

Sample selection

In total we visited 3 clinics, in separate jail facilities that served distinctive patient populations with slightly different healthcare needs. We wanted to see similarities and differences between healthcare services, and more specifically the similarities and differences in people's spatial design needs. With a comparison, we could understand what challenges were unique, and what challenges were common and recurring.

Methodologies

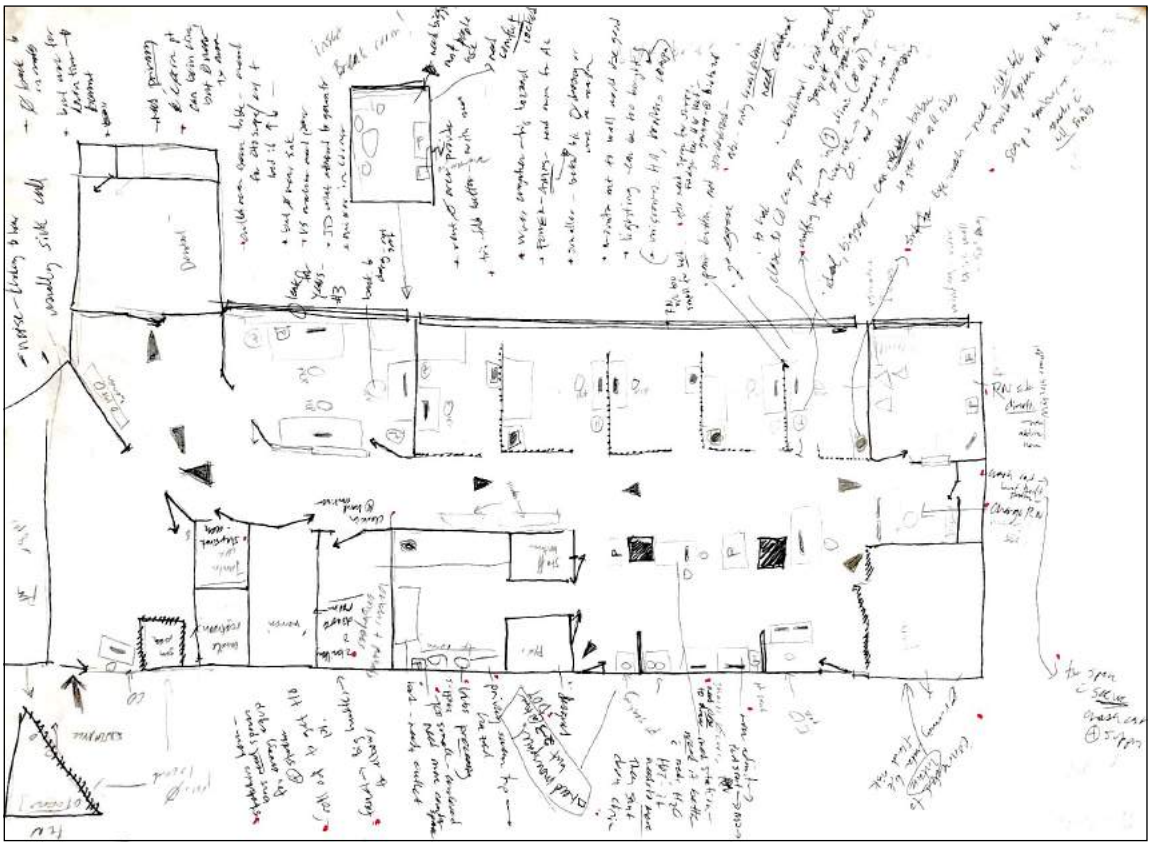
As explained before, while we needed to frame our work as "research " for the IRB approval, it was also comprised many strategic design activities. First, the interviews were conducted in the clinic environment to reinforce the reality of the context, allowing for the providers to point out the elements they described, and for the elements to remind the providers of what was important. Additionally, being in the setting allowed for us to observe it, as ask for clarification if we felt that what we were hearing did not match what we were seeing. The interviews were also not stationary: we walked around the spaces as we talked, making sure we and those being interviewed were exposed to the full environment. Then, we came back to a quite space to discuss more about what we had all seen.

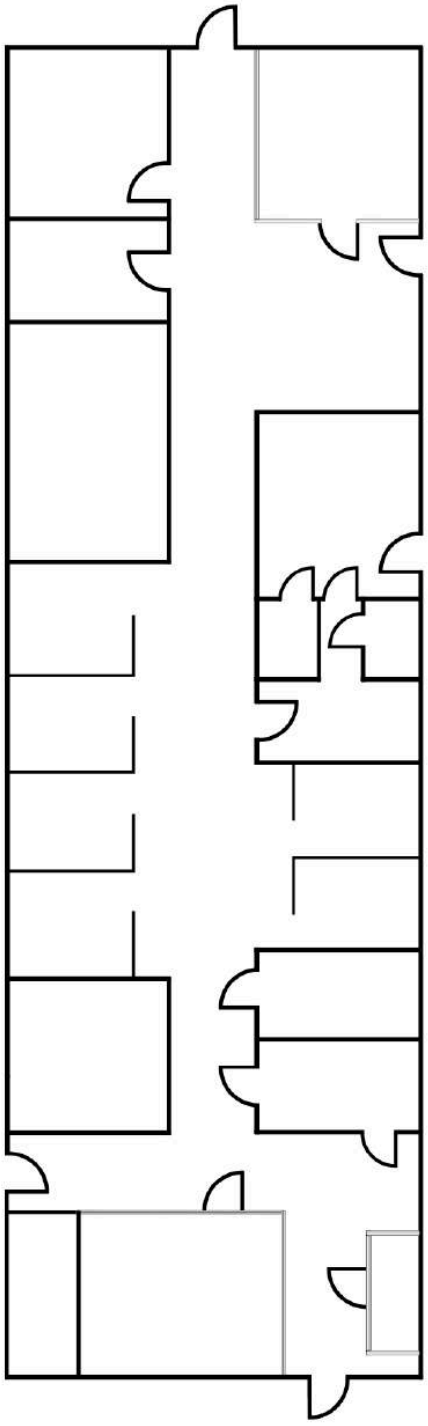
And, it is important to note again at this point that we were unable to use the tools that are almost considered requisite to design research, like a camera or voice recorder. As such, our data collection was limited to paper and pencil. While this didn't impact the information we were able to understand, it did impact the speed at which we could document and process it.

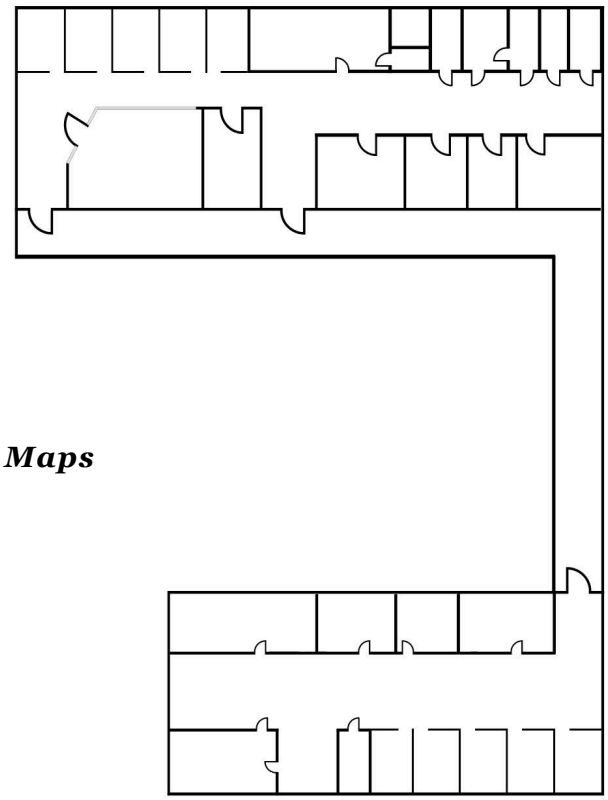
Mapping spatial challenges

So, instead of taking pictures, we made drawings of the floor plans in preparation for our observations and interviews. After the floor plans were finished, we did walkthroughs with staff, understanding and mapping out spatial conditions that created frustrations and pain points. We also used the maps to ask providers to describe how the they and the patients moved in the clinic. It was important for us that we interviewed multiple healthcare roles that each have different task and needs in the clinic. Along the way, pharmacists, physicians, nurses, administrators, therapists and counselors all piped in, each wanting to mention the spatial conditions that made it more challenging for them to do their jobs. And throughout the walk-throughs, our observations allowed us to keep asking questions. In spatial design and architecture, observations are especially valuable because people not always do what they say they do, nor are they always aware of what they do. We watched for how people interacted in and with the environment, and how they used the space. We especially noticed and followed-up on behaviors and interactions that seemed challenging, uncomfortable or otherwise unclear.

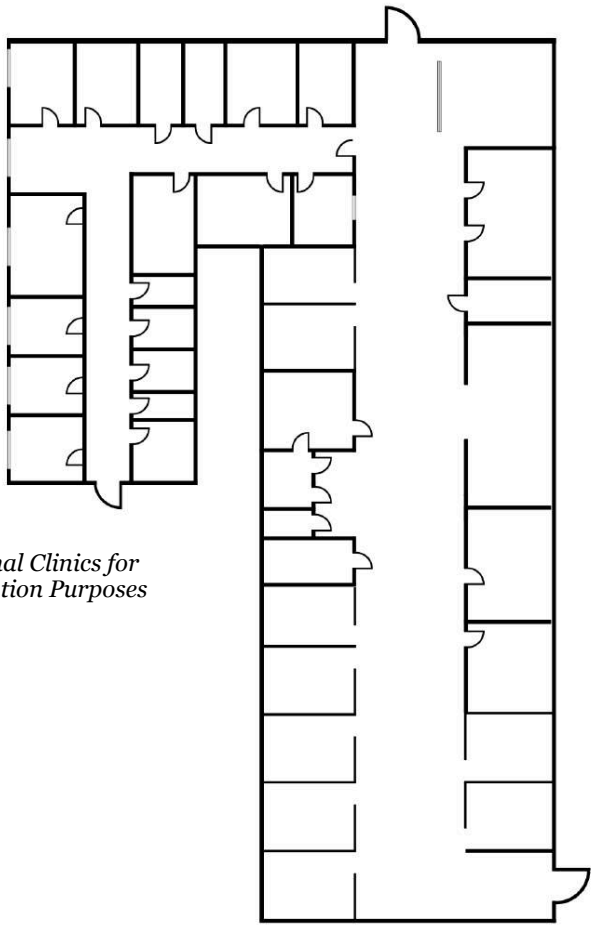
First Version Mapping







Refined Maps



Fictional Clinics for Illustration Purposes

Findings

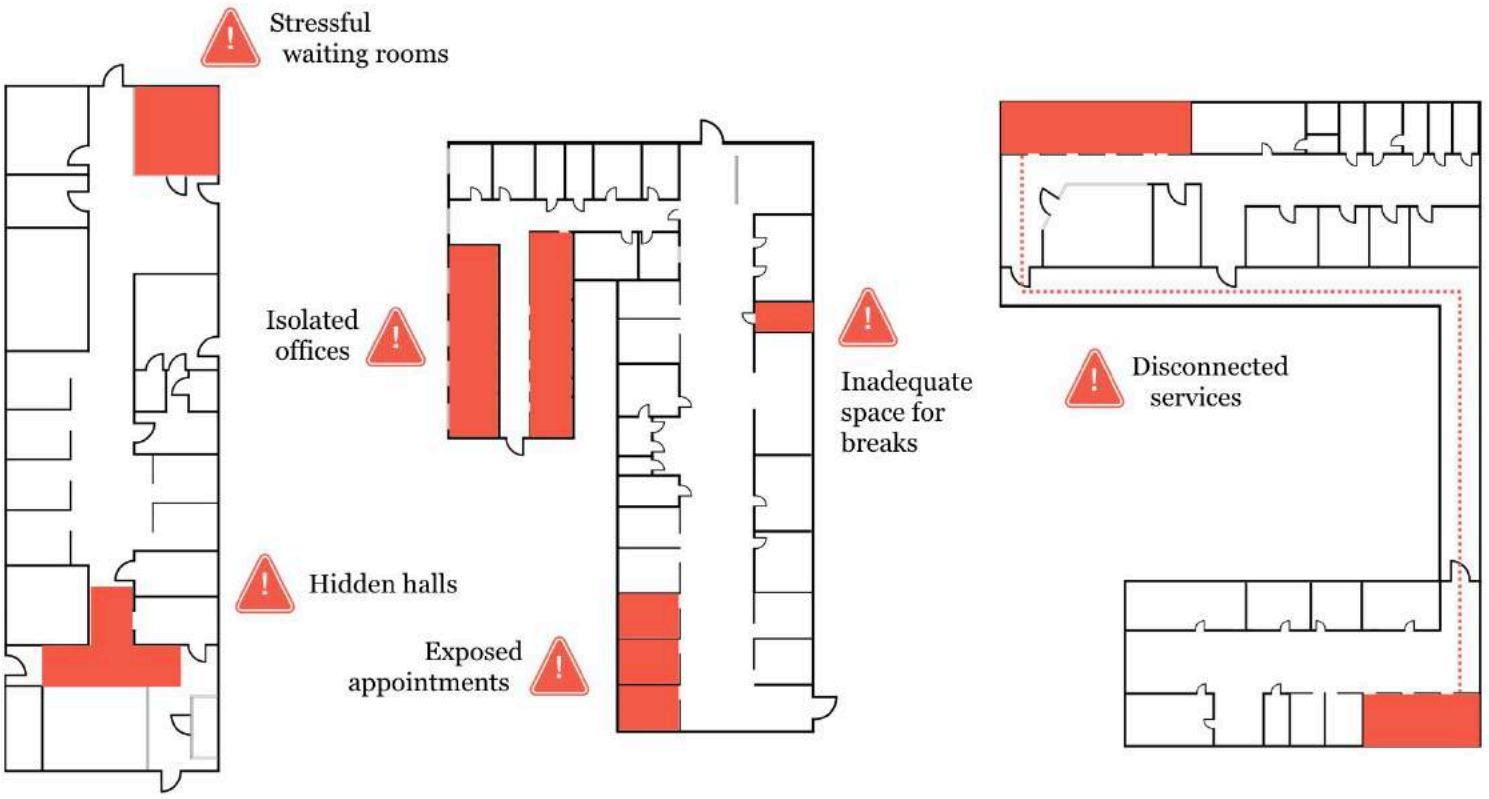
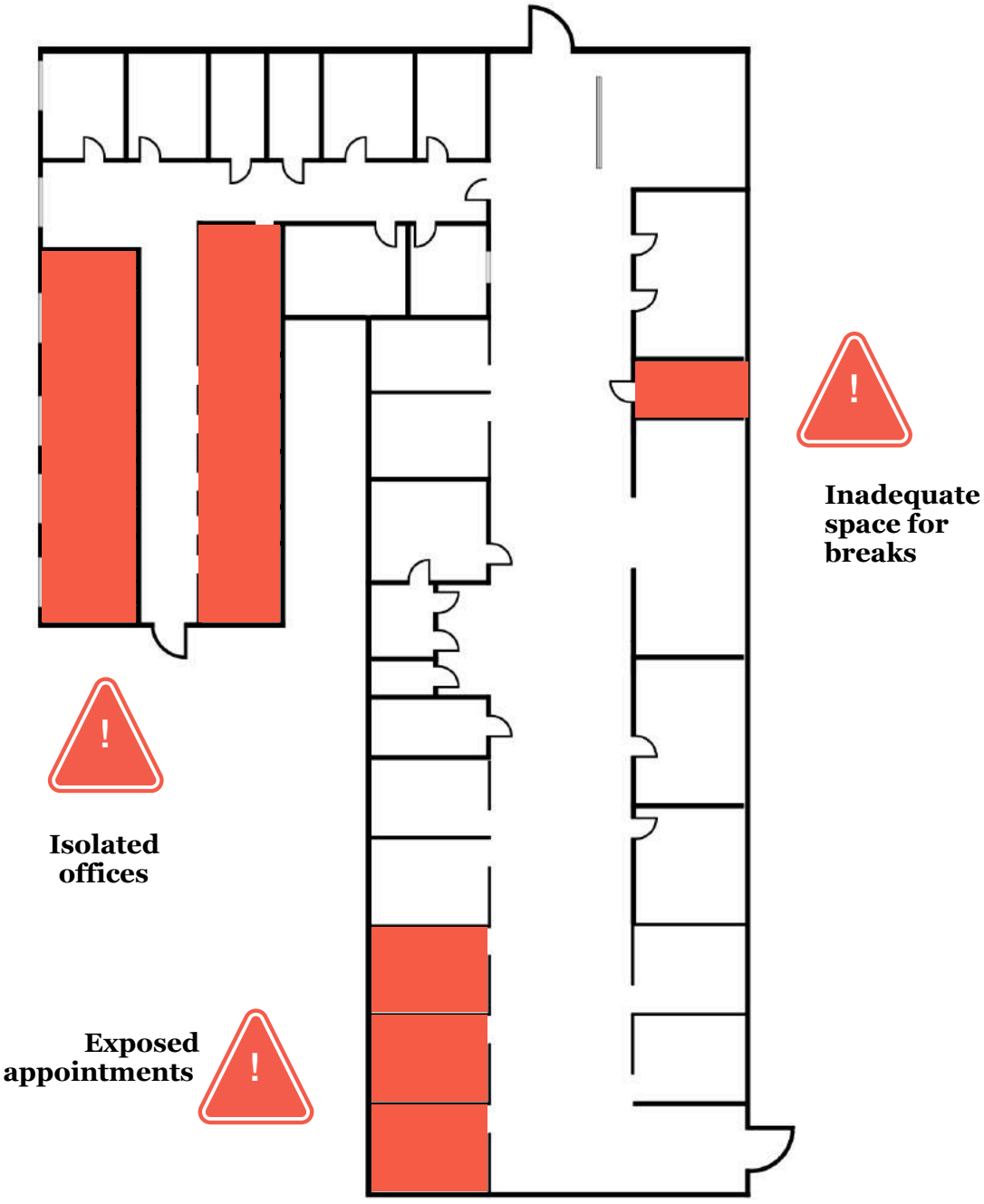

Stressful waiting rooms
Isolated offices
Hidden halls
Exposed appointments
Inadequate space for breaks
Disconnected services

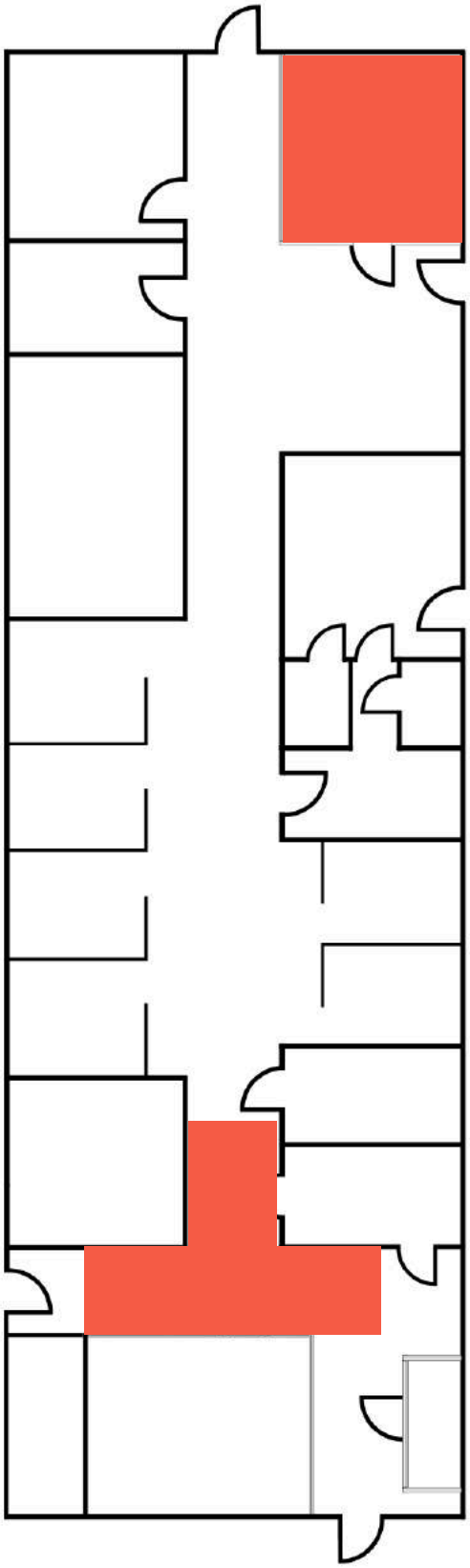
Image courtesy: D

Patient in Jail (for illustration purposes only)

“I’m on edge when I come down to the clinic… I always have to watch my back in here. It’s so hard to focus.”


Inadequate space for breaks
Isolated offices
Exposed appointments

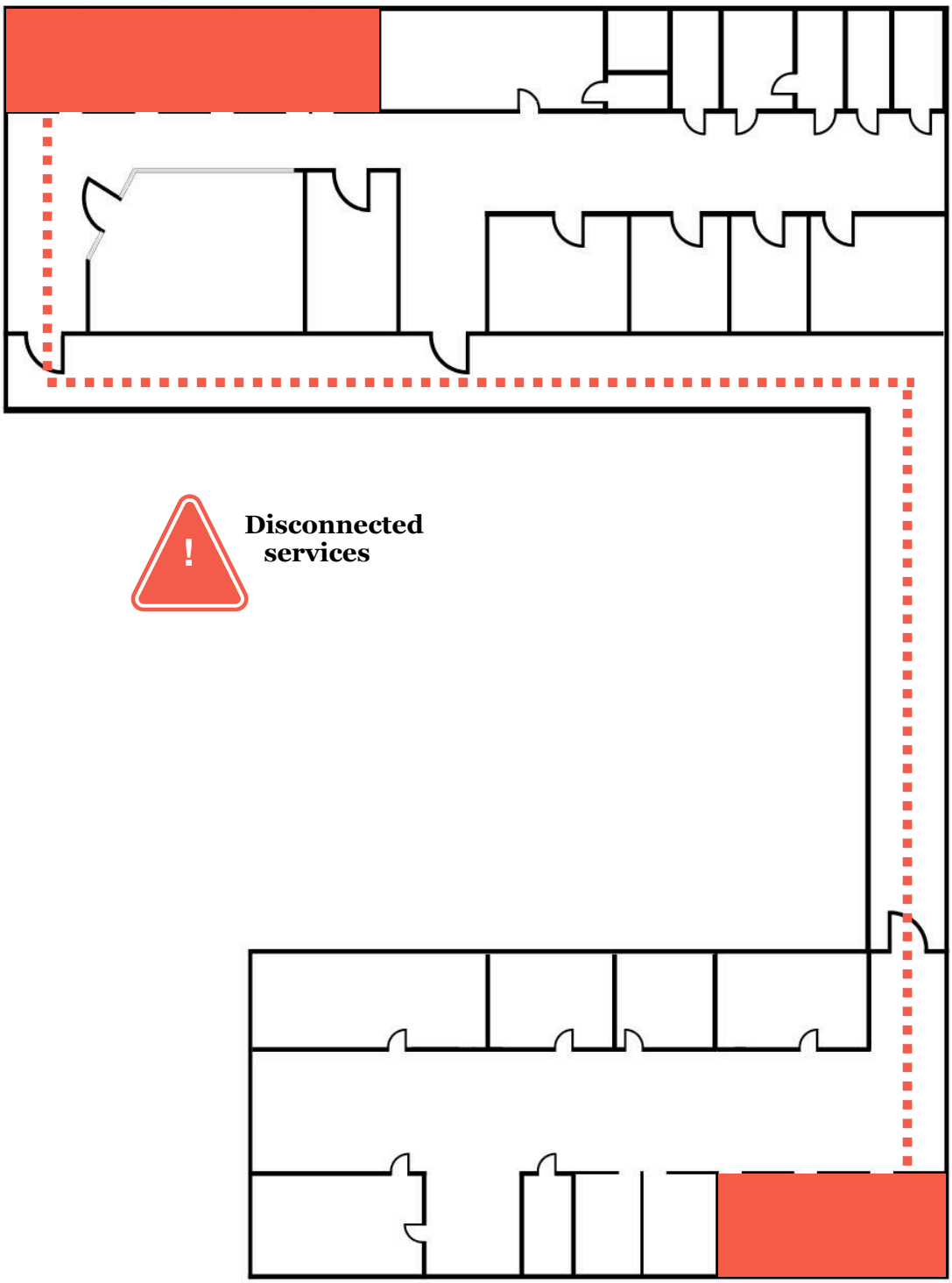
“I do my best to mind my own business. But … you’re trapped in this cage, sometimes you have to fight just to protect yourself.”



Stressful waiting rooms

Hidden halls

“We try to provide them with supplies… but the alarms go off, and we get stuck here…”


Disconnected
services

And more findings…

"In 5 years, I've experienced 3 times that I had to run out of space, because it was about to get violent…it happens. You need an exit."

"Pens [cages for waiting] can trigger someone to do something they wouldn't otherwise do."

"Having windows in the clinics ease your anxiety because you can see the weather outside when you get off work. You don't have to worry about it all day…"

"Currently, we have to use the physical therapy room for our meetings, since it is the only room we have that will hold 15-18 people which we needed… we have monthly meeting of providers to review performance indicators, and also daily morning meetings."

"The intake is the most important appointment by far, it is the only way to know what's going on for them [the patients], and this determines their care for the rest of their time here."

We really need one patient toilet in clinic for tests, etc; but, we don't incentivize patients to "hang out" in clinic, so just one is enough."

Analyze & Synthesize

Findings & Insights

Findings

From these interactive interviews and mappings, we were swimming in data - and not just from one user group, but from many! Not only had we heard from healthcare providers in different roles, but each providers had also explained so much about what their patients experience, and need. Since we were unable to complete the patient interviews prior to this paper, this was a great way to understand some fo the patient needs by proxy, until we can interview them directly.

Our first task was to de-code the interviews to keep them confidential, and then to transcribe the data and notes to a digital format - we created a data collection tool (a spreadsheet) with categories that had naturally emerged during the interviews and observations: largely based on location. And, we mapped the challenges onto our digitized clinic diagrams.

Processing Data

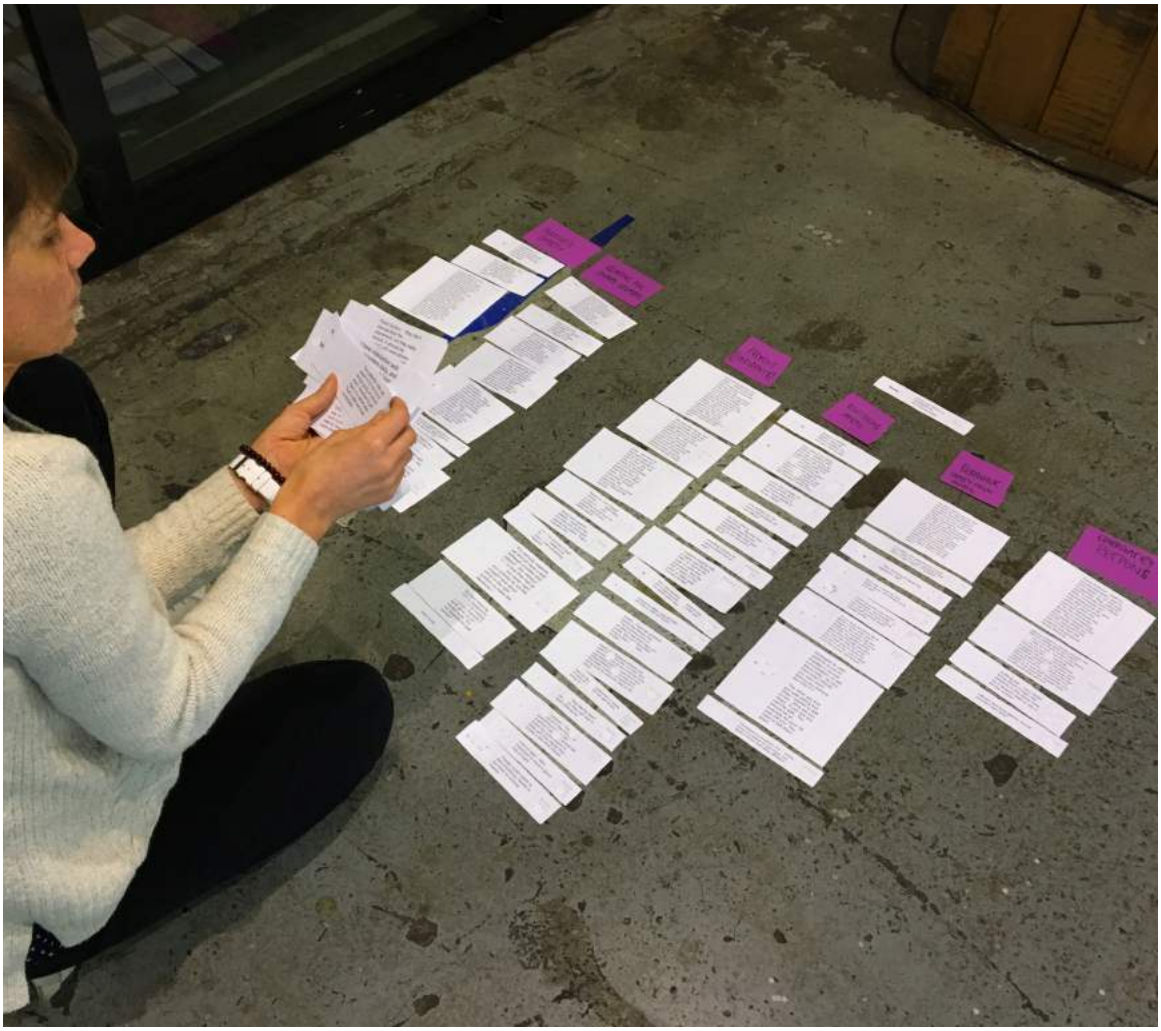
Synthesizing

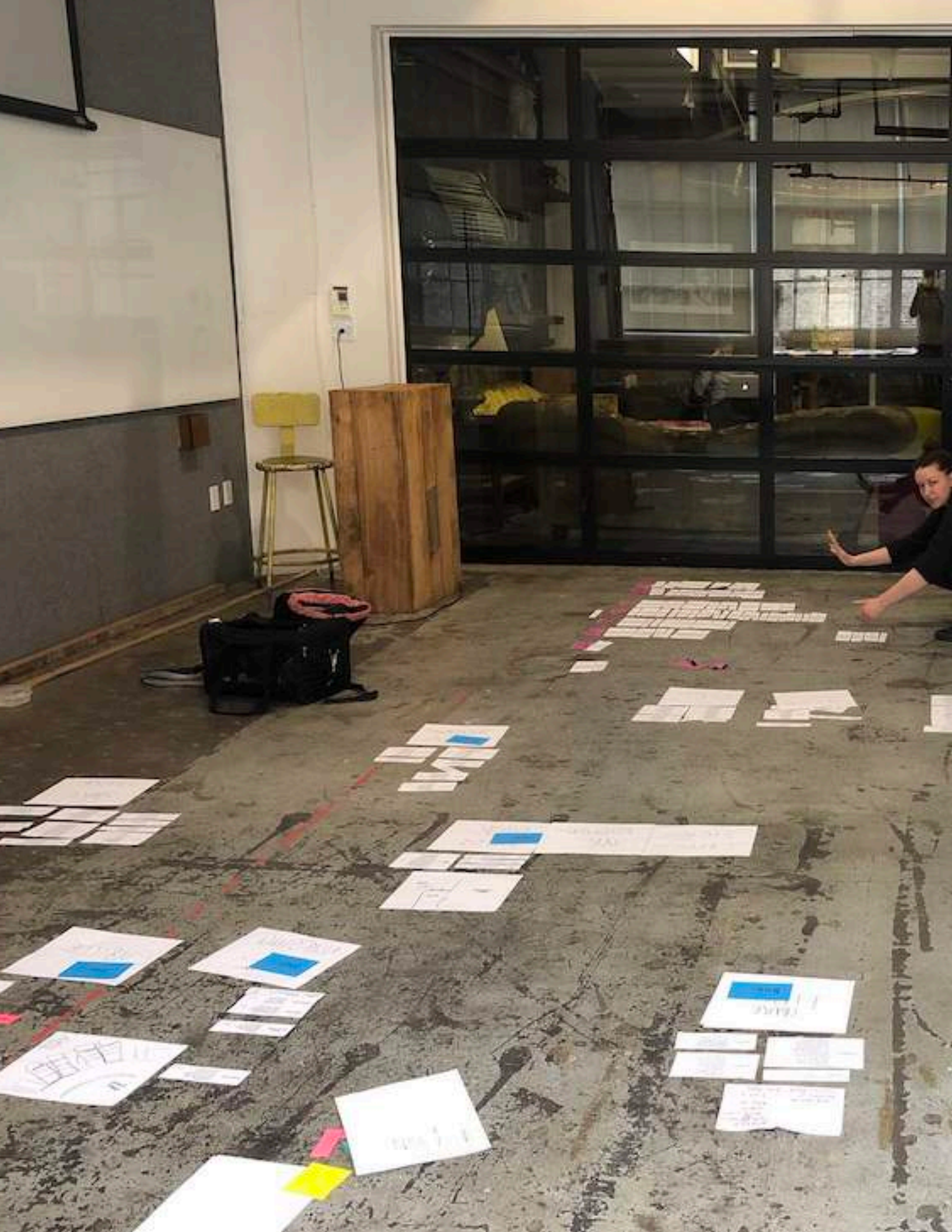
After digitizing all of the data, we printed all that comprised important and relevant information about the impacts of spatial design, cutting them into separate piece of paper so that we could cluster it in new ways. There were 527 important data points, and thus pieces of paper. Using this technique of affinity mapping, we found other combinations and patterns, such as challenges about safety, and patient privacy.

Systems synthesizing?

However, we found that because we had information from multiple perspectives, clustering the data for one role looked different than clustering it for another. And, no matter how we clustered, we could not find causal relationships, as the problems existed as dynamics *between* different roles, rather than just from the perspective of one. Essentially, while affinity mapping worked great for understanding individual

Affinity Mapping





perspectives, it didn't do much for understanding dynamics. And yet, our goal was to understand how the interaction of everyone's perspectives: the relationships between them, their needs, and the spatial conditions. What followed what not what we saw coming: in the moments of frustration trying to synthesize this data, we stumbled upon an unexpected insight; not about spatial design, but about design and systems problems: systems problem required a *different* kind of synthesizing.

Theory of Change as Systems Mapping

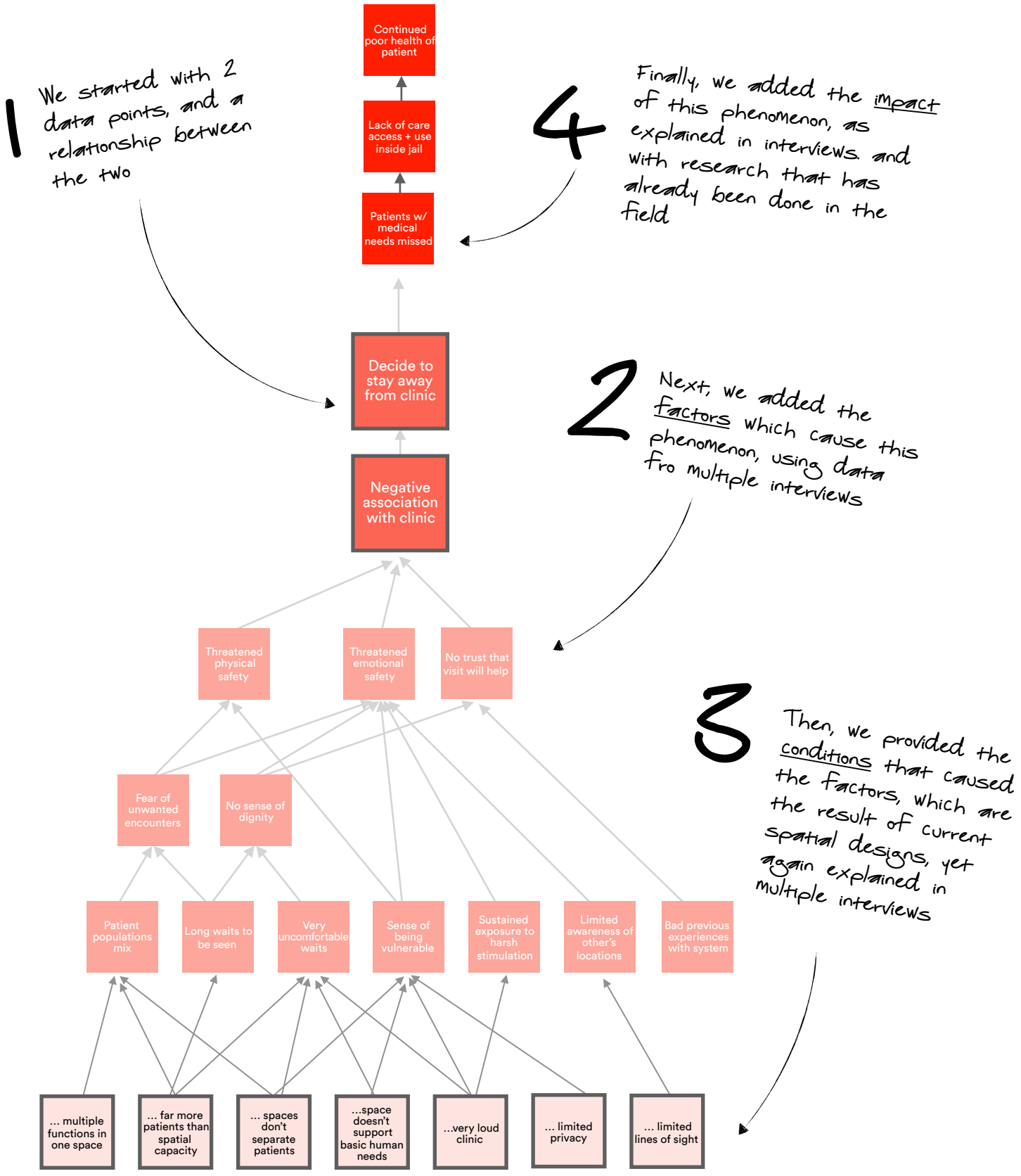
As luck would have it, we'd been working with mentors to understand how we could later create monitoring and evaluation metrics for our work. Within the process, they had introduced a tool called the Theory of Change (TOC). While the TOC is intended to be used to map the required pre-conditions for a solution to work, followed by the the impact of the solution, we realized that because it was a tool for understating relationships between conditions and roles, with just one modification it could instead map the the causes and impacts of a problem. And, not just a problem from one perspective, but one that existed dynamically as part of a system! Is was an exciting discovery: finally, something that could bring structure and logic to the complexity of our project. By diagraming our data and its interconnections, were were able to see how spatial conditions impacted healthcare providers and patients, and ultimately the success of the healthcare services.

For example, lets take the phenomena discovered in our interviews that patients dislike the experience of the health clinic so much that they sometimes decide not to attend their appointments. In four steps, we can map out causes an impacts, using other information gleaned in our interviews:

Just the single phenomenon of patients not coming to their appointments in the clinic is suddenly, and clearly, understood as a complex and multi-factorial issue. And, it's downstream impacts are troubling.

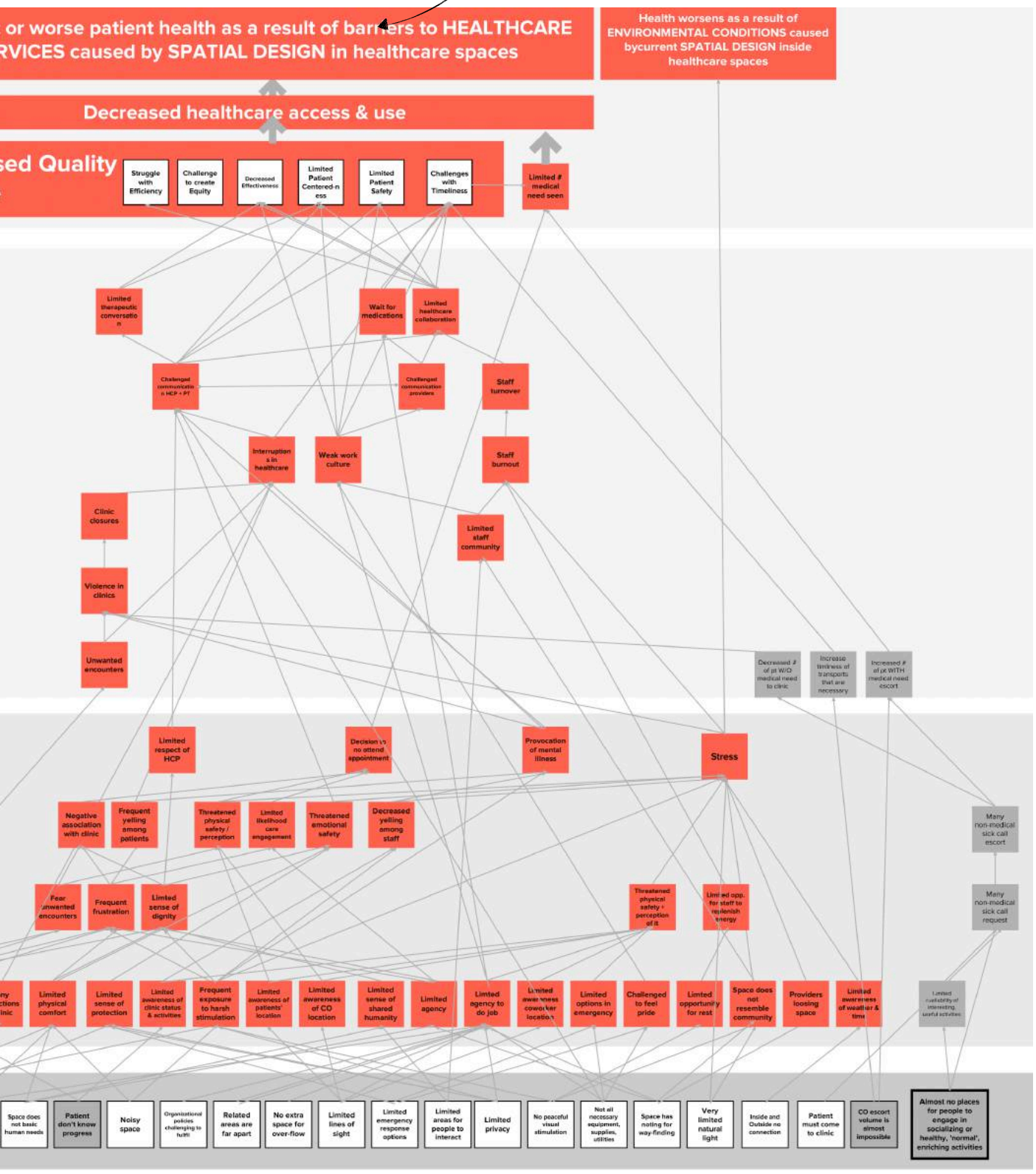
Thrilled that we'd found a tool that could meaningfully make sense of our findings and illuminate insights, we mapped some more. Sadly, there are too may findings for the purpose and capacity of this report. On the the following page, some of them are diagramed: systems challenges and the relationships between them, viewed at about 10% of its actual size. And it doesn't even include all the findings.

An online map of this information exits; ideally, this data would be digitally interactive, with the capacity to be explored with anecdotal stories and further explanations. Next time! For now, this diagram following indicates the complexity and comprehensiveness of our systems analysis.


1
We started with 2 data points, and a relationship between the two
4
Finally, we added the impact of this phenomenon, as explained in interviews. and with research that has already been done in the field
2
Next, we added the factors which cause this phenomenon, using data fro multiple interviews
3
Then, we provided the conditions that caused the factors, which are the result of current spatial designs, yet again explained in multiple interviews
Continued poor health of patient
Lack of care access + use inside jail
Patients w/ medical needs missed
Decide to stay away from clinic
Negative association with clinic
Threatened physical safety
Threatened emotional safety
No trust that visit will help
Fear of unwanted encounters
No sense of dignity
Patient populations mix
Long waits to be seen
Very uncomfortable waits
Sense of being vulnerable
Sustained exposure to harsh stimulation
Limited awareness of other's locations
Bad previous experiences with system
... multiple functions in one space
... far more patients than spatial capacity
... spaces don't separate patients
...space doesn't support basic human needs
...very loud clinic
... limited privacy
... limited lines of sight

Systems Map: The Relationships between Challenges

Related to thesis challenge:
patient leaves in worse health



Insights

From Systems Diagram to Insights

From this tool, countless insights emerged about challenges, needs, desires, and impacts, and the dynamic interactions between all of them. What follows in an example four different insights, including the one about patients opting out of appointments.

Patients sometimes decline their healthcare visits because they don't trust they can be safe during their healthcare visit in the clinic.

Just things like the orientation of chairs in the appointment cubicles expose patients to busy and sometimes violent hallways, or the wide open clinic spaces wherein many patients congregate can sometimes make patients feel more vulnerable.

Some spatial designs that are meant for safety might actually cause more violence.

For example, the waiting rooms that resemble cages are so degrading and stressful for patients that the designs *actually* end up creating conditions which result in more violence.

The distance between healthcare services hinders accessing to care & care coordination.

Many patients have multiple health problems for which they see multiple services, but when the services are located in different locations in the jail facility, it's hard to coordinate and transport the patients between healthcare visits. This results in lower levels of successful patient appointments.

The lack of shared common spaces between staff creates barriers for collaboration.

Because there are very few conference rooms, and break rooms are generally not large enough for all staff to fit for meetings, staff lack access to spaces wherein they can meet. This hinders their capacity to collaborate on the job, impacting lthe quality of their patient care.

Solving

Ideate & Prototype

Paper Prototypes

Ideation + Prototyping = Idea-typing?

With our insights in mind we entered the space of ideation and prototyping. And even if ideation is often shown as a discrete process step - ideas never keep themselves to a single moment. In reality, ideation and prototyping can happen simultaneously, as prototyping helps the users to come up with modifications on an idea, which can itself lead to totally new ideas. And, for spatial problems and solutions, these steps almost *have* to be in a single step, because it is almost impossible to truly prototype and test solutions separate of ideation: this type of testing is currently only done in either virtual reality, or life-size models. In the context of incarceral healthcare, neither of these were feasible. But this was a constraint that we could work around: the ideation and testing could be contained within the same process, of our users exploring new spatial design ideas that could be solutions.

Co-creation with users

As we discussed in the overview of this project, one of our deepest values was giving power and ownership to our users. So, even though it is more typical for designers and architects to ultimately own this part of the process, it was more important for us that we just *facilitate* the it. Inspired by participatory architecture, we created tools to explore ideas and prototyped architecture variables such as the allocation of space, the adjacency of different types of spaces (or of different processes or people), the required supplies for any one space or process, and the atmosphere of different spaces. For this, we created different sets of paper prototypes:


I want this new space to make me feel:
(pick 5)
COMMUNICATION
PRIVACY
SAFETY
SOUND
LIGHT
PEOPLE
OFFICE SUPPLIES + EQUIPMENT
MEDICAL SUPPLIES + EQUIPMENT
UTILITIES
FURNITURE
LOCATION
SIZE
mental health
Flex Space
Flex Space
Nursing Station
Medical Records
office
Janitors Closet
DOT
Med Room
Staff Toilet
CO post
CO post
Tele-Health
cubicle
Patient Toilet
patient waiting area
XRAY


Flex Space
patient waiting area
Staff
Break Room / Lounge
Medical Records
office
office
off
office
Tele-Health
cubicle
office
Nursing Station
Med Room
Staff Toilet
XRAY
CO post
Intake
patient waiting area

Cards to create clinic layouts

To prototype new allocations and adjacencies, we created colored card that represented different rooms needed to host different processes in the clinic. Then we asked the provider to map these out by thinking about how much space should be allocated to each, and which should be close to each other to create the best conditions for staff to provide care, and for patients to receive it.

Icons to design new rooms

To prototype new room designs and the conditions therein, we created cards with icons that represented the objects required for different care processes, including furniture, supplies, and technical capacity like electricity or plumbing. Examples included chairs, examination tables, desks, bright lights, dim lights, natural light, etc.

Mood boards and emotions to design atmosphere

To prototype desired atmosphere, we had photos from other healthcare clinics that represented different feelings and conditions as the result of things light light or color. We also tested desired emotion, and conditions like safety or privacy, with a long list of adjectives from which staff could pick and explain what they would like. For example, we listed words like “relaxed”, “trusting”, “peaceful”, “energized” from which the provider could pick to select emotions that they wished to have in a new clinic space.

As with the interviews, the ideation and prototyping werere conducted in the clinic environment, but in a non-clinical, calm area of it so that the providers could focus on prototyping. We primarily used the staff break rooms, and staff offices. The interviews and activities were set up with one participant at the time; however, it attracted both attention and curiosity from other staff, creating interesting dialogues between employees. This was a great benefit of having the ideation and prototyping activities contextualized in the clinic. The only obvious disadvantage of this location was that the activity were prone to getting interrupted by work duties, and sometimes the activity couldn't be finished in one single session. However, we also if wondered having the known, problematic environment and spatial conditions so close in mind when trying to come up with brand new solutions actually hindered people's imagination of what was possible.

Adjustments of prototyping tools

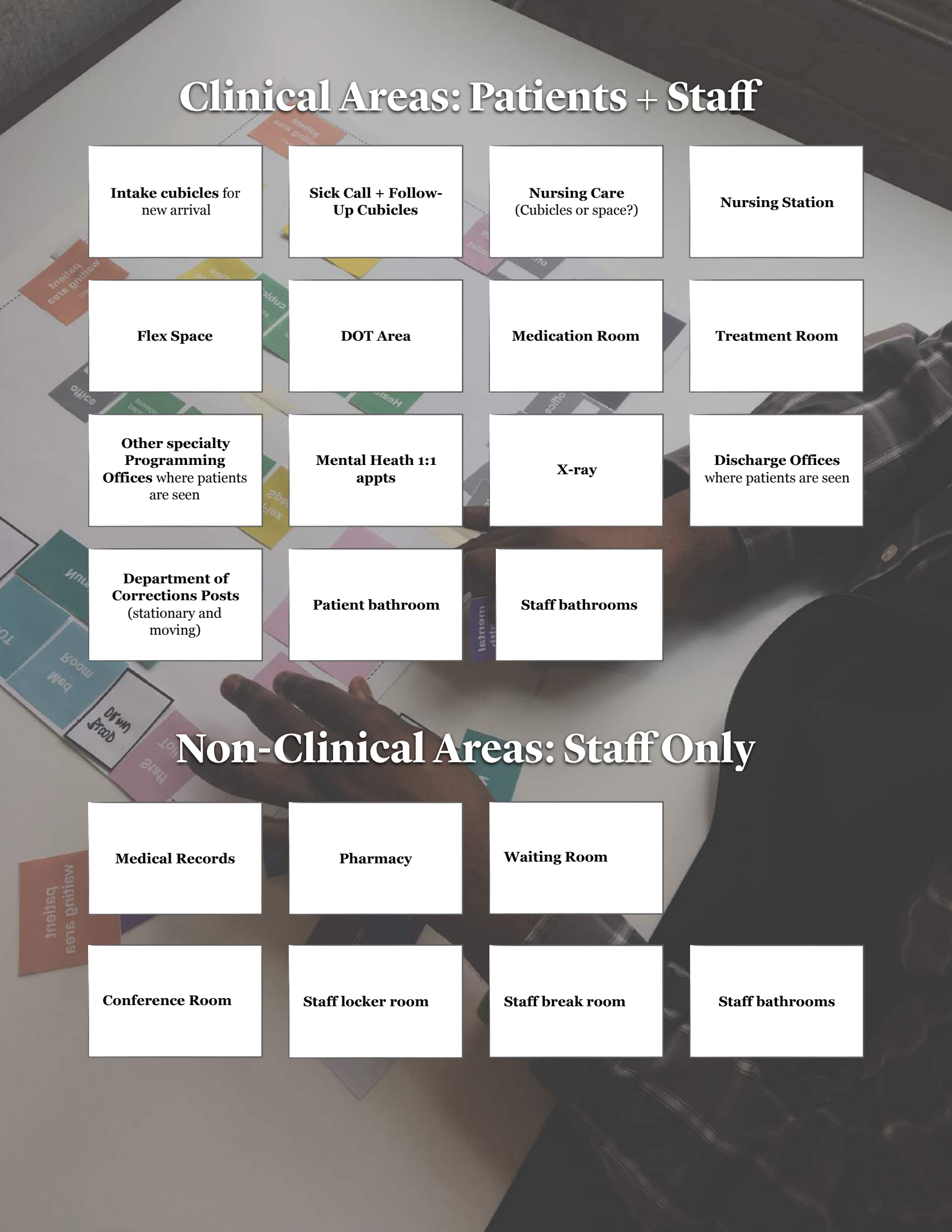
During the prototyping with staff we quickly learned which of our tools worked well to elicit new ideas from providers, allowing them to express their ideas, thoughts, and move beyond 'what is' to 'what might be'; and, we learned which were not as effective. We learned also that it really helped the participant to be given a specific scenario to solve with new ideas for spatial designs, instead of a wide open prompt like "design a new clinic". Ultimately, our first and second prototypes (with which staff staff created new clinic layouts and with which they designed new rooms) worked the best, being at a level where staff felt comfortable in being challenged to think how spatial conditions could better meet their needs. Sadly, we had limited freedom to iterate on the tools and prototypes because of the IRB.

Insights & Ideas

Throughout the ideation and prototyping activities, we constantly asked the providers about what motivated their decisions. This enabled us to understand *why* the solution was important: more than just the specific idea, what need was it meeting?

Aside from individual ideas for new systems and spaces, a fundamental finding was relative agreement on the types of spaces that should be in a clinic, as shown on the facing page.

The following pages illustrate how the prototype worked, alongside comments that providers actually said while doing it.



Clinical Areas: Patients + Staff

Intake cubicles for new arrival

Sick Call + Follow-Up Cubicles

Nursing Care (Cubicles or space?)

Nursing Station

Flex Space

DOT Area

Medication Room

Treatment Room

Other specialty Programming Offices where patients are seen

Mental Heath 1:1 appts

X-ray

Discharge Offices where patients are seen

Department of Corrections Posts (stationary and moving)

Patient bathroom

Staff bathrooms

Non-Clinical Areas: Staff Only

Medical Records

Pharmacy

Waiting Room

Conference Room

Staff locker room

Staff break room

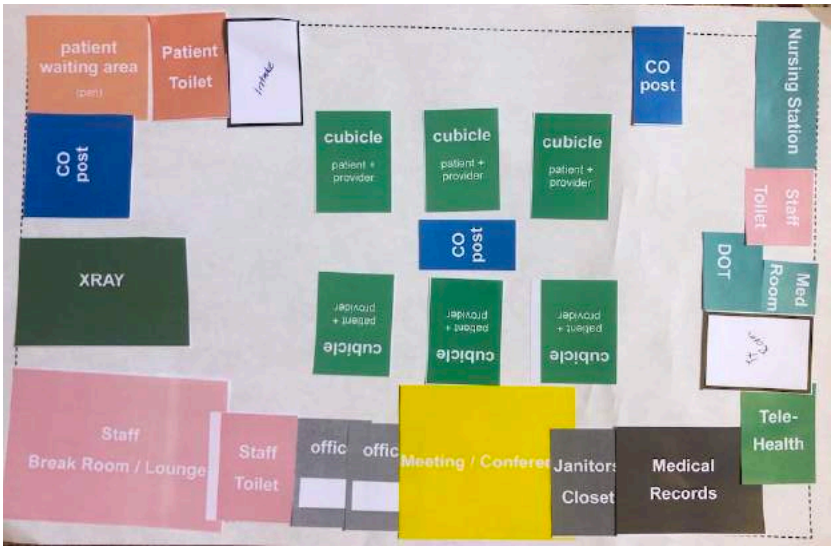
Staff bathrooms

"If my office had something for privacy, my patients could feel so much safer."

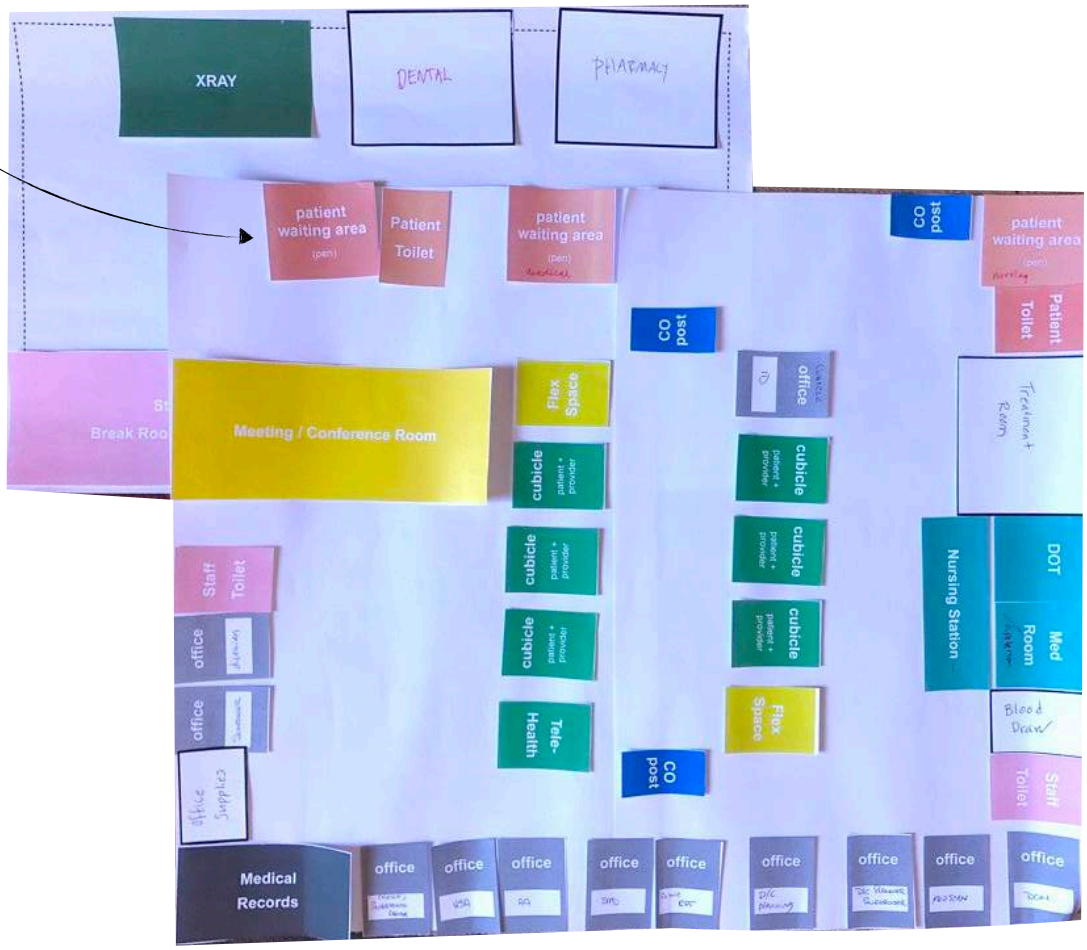
A provider explained that in order for patients to benefit from the therapy services in the jails, they *need* to feel safe in the conversations.

Prototypes Made by Providers

Waiting room outside



Waiting room outside



“If the waiting rooms could be outside the hectic clinic, and just gave something to do … it would be totally different.”

Another provider spoke of the waiting rooms, containing nothing but metal benches, and located near or even inside the clinics. There, he explained, tensions could easily rise between patients and staff.


cubicle
patient +
provider
mental
health
patient +
provider

“It would be amazing if our departments were this close - we wouldn’t have to work so hard to coordinate our care!”

Many services see the same patients, but without the chance to synchronize, patients get appointment schedules that are almost impossible to follow

Theory of Change

Understanding User-Lead Spatial Design

There were so many ideas! And again, we were overrun by copious information, only this time we knew exactly what to do with it. This time, it was ready to make the Theory of Change, because we were dealing with solutions.

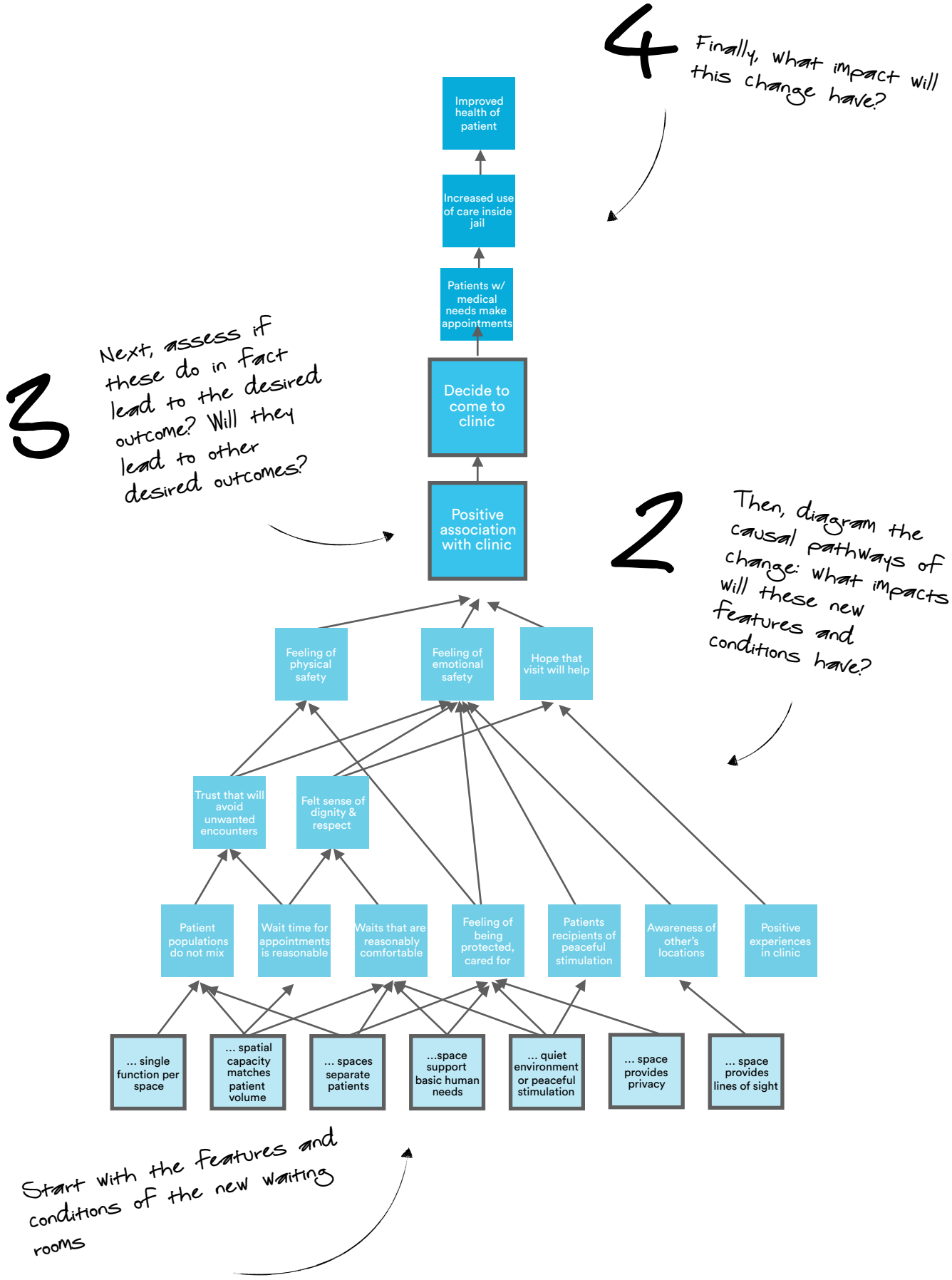
Theory of Change

A Theory of Change is a methodology and road map for creating intentional change in an organization or community. It defines long term goals, and then works backwards in planning them by identifying requisite preconditions for those goals to be achieved. Theories of Change diagram causal relationships between people, events, conditions, and actions. There is a flow - usually to the top of the page - moving from short-term to long term goals, and often ending with a vision at the top. The flow is also an "outcomes pathway", showing each outcome with logical and necessary steps before it. If rigorous work has been done to identify the goal and purpose of the desired change, the same for all of the small things that must change for the big change to take place, and deep understanding oft current barriers and catalysts - then, can solution' ideas be theoretically tested.

Likewise, if a solutions reached from a less logical or applied standpoint (brainstorming or in applying general "best practices" to a specific context), the theory of change provides opportunity test feasibility and viability. It is also a test to evaluate if enough is *actually* known about complex context: it quickly reveals blind spots.

Mapping One Solution

Essentially, in our data synthesis, we had created a "Theory of Stagnation", mapping the exact relationships, but with the current conditions only. This time, we were back to mapping the relationships between everything we'd heard and seen, but instead of problems, we were understanding new ideas for solutions. For the purposes of seeing the example through, and because it will straightforward: in the same way we mapped the problem of patients choosing to miss their appointments, in the Theory of change we can map solutions that are proposed, demonstrating how improvements might change the outcome. With solutions, we start at the base of the diagram, with the "output" of the change that is being tested. For this exercise, lets test the idea of a waiting room that is outside the clinic, and that is sized for the patient volume it needs to sustain, and that is more akin to a living room or library than a cage?


4
Finally, what impact will this change have?
Improved health of patient
Increased use of care inside jail
Patients w/ medical needs make appointments
Decide to come to clinic
3
Next, assess if these do in fact lead to the desired outcome? Will they lead to other desired outcomes?
Positive association with clinic
2
Then, diagram the causal pathways of change: what impacts will these new features and conditions have?
Feeling of physical safety
Feeling of emotional safety
Hope that visit will help
Trust that will avoid unwanted encounters
Felt sense of dignity & respect
Patient populations do not mix
Wait time for appointments is reasonable
Waits that are reasonably comfortable
Feeling of being protected, cared for
Patients recipients of peaceful stimulation
Awareness of other's locations
Positive experiences in clinic
... single function per space
... spatial capacity matches patient volume
... spaces separate patients
...space support basic human needs
... quiet environment or peaceful stimulation
... space provides privacy
... space provides lines of sight
1
Start with the features and conditions of the new waiting rooms

Goals of Correctional Healthcare

"Make it less bad?"

How to Use the Theory of Change

At this point, if it wasn't clear before, it is now starring us in the face: when working for organizational or societal change, the clearer the goal, the more effective the work will be. Not only is a goal needed for measuring progress and understanding defeat; it is also required to create strategy. Moving down from a overarching vision, a group can identify everything that needs to be in place for the vision to be achieved: "preconditions" that are themselves outcomes (or short-term goals), outputs that will achieve the preconditions, activities that will produce the outputs, and required inputs for the activities.

Challenges with Goals

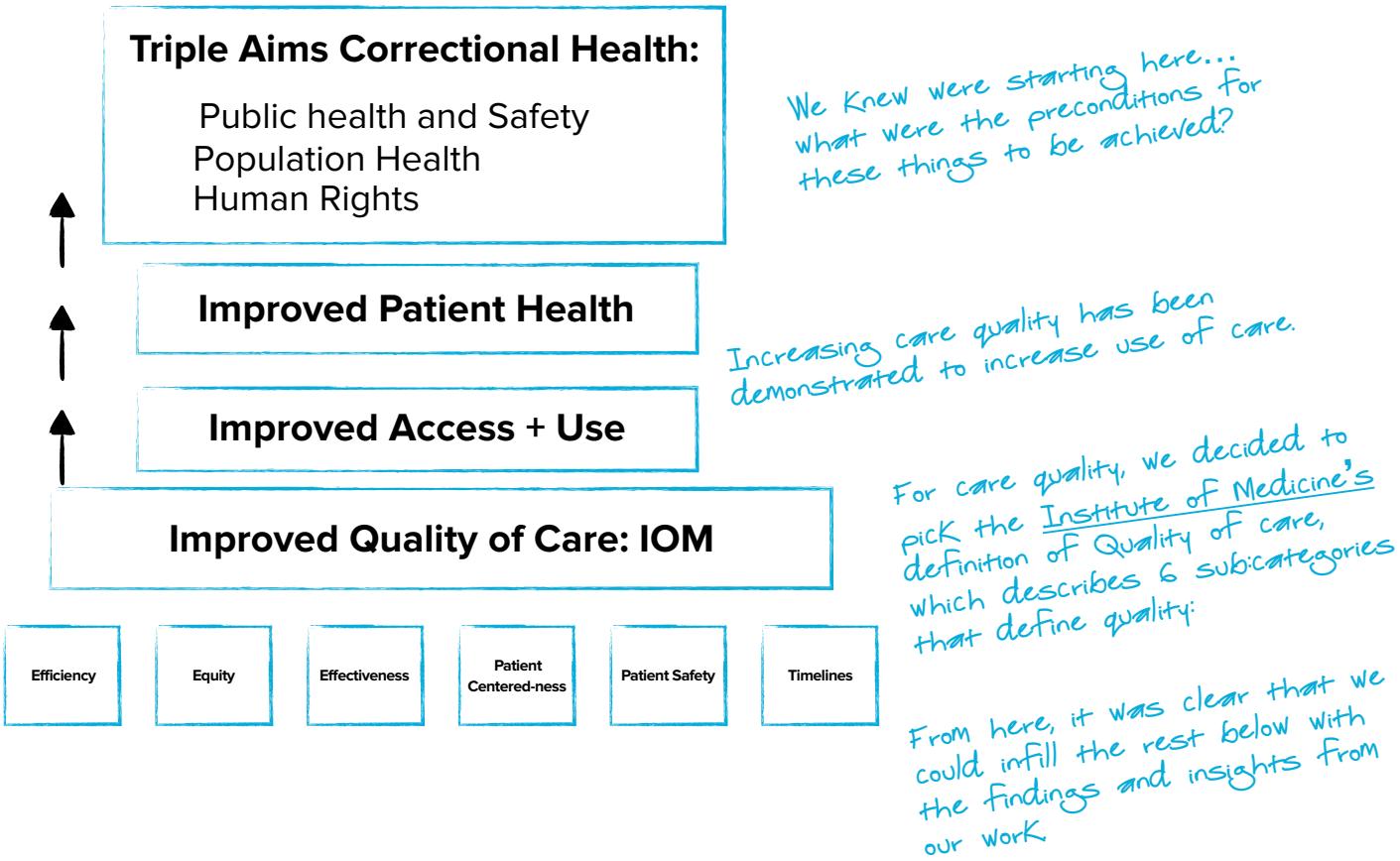
In correctional healthcare, goal-setting be like this can be challenging. In the setting of incarceration, wherein many conditions inherently exacerbate mental and physical health problems, healthcare plays the role of protecting people who are behind bars by trying to mitigate the environment. However, the health services themselves have very little control of this environment. As such, things like "blue sky" visions are almost impossible, because much of the goal is just to make jail "less bad" than it already is for patient 's health. And, because a "blue skies" is not a useful nor particularly ethical framing for a place wherein people are forced to remain, against their will.

Triple Aims of Correctional Health

For this project, we had stared with an opportunity for spatial design to improve care such that patients could leave jail healthier than when they arrived. But, what were our goals beyond that? Originally, we had proposed goal setting activities early on in our process, but those had long been cut. So, midway through, still wanting our goals to come from the people with whom we were working, we reached out to ask. We were directed to the Triple Aims of Correctional Health, as named in a paper authored by three physicians who work inside jails.

Addressing the shortcomings of many correctional health services today, the inequitable burden of disease that patients in this context bear, and the threats to their health inside facilities themselves, respectively, the goals are "public health and safety", "population health", and "human rights". Goals! We could create a theory of change from the top, and likewise build it up from the bottom with ides from staff, and well as

our data about their (and their patients') needs. And then, it just took playing with the ideas until they made sense, were evidence-based, and could be tied into conditions that resulted from spatial design.



Finding a Vision with Values

But, what about goals beyond aims of correctional health? While blue skies were out, we couldn't stop thinking about the values that so many providers held - about "serving the underserved", "taking car of vulnerable populations", trying to help "right a societal wrong"... people *were* in this work for reasons: values that motivated them, and kept them coming back year after year. Thus, even though these were not official organizational values for any of the providers with whom we worked, they were the values that, deep down, seemed to hold all of them together.

How to Use this Diagram

This version of the Theory of Change shows ideas for new spatial designs - and is not intended to be a guide, but rather a tool from which to gain insights about from a large quantity of data.

New Ideas & Conditions

The bottoms section is divided into the types of spaces that are reported to be needed within a correctional healthcare clinic, each containing requirements for conditions, and ideas about possible new features or solutions.

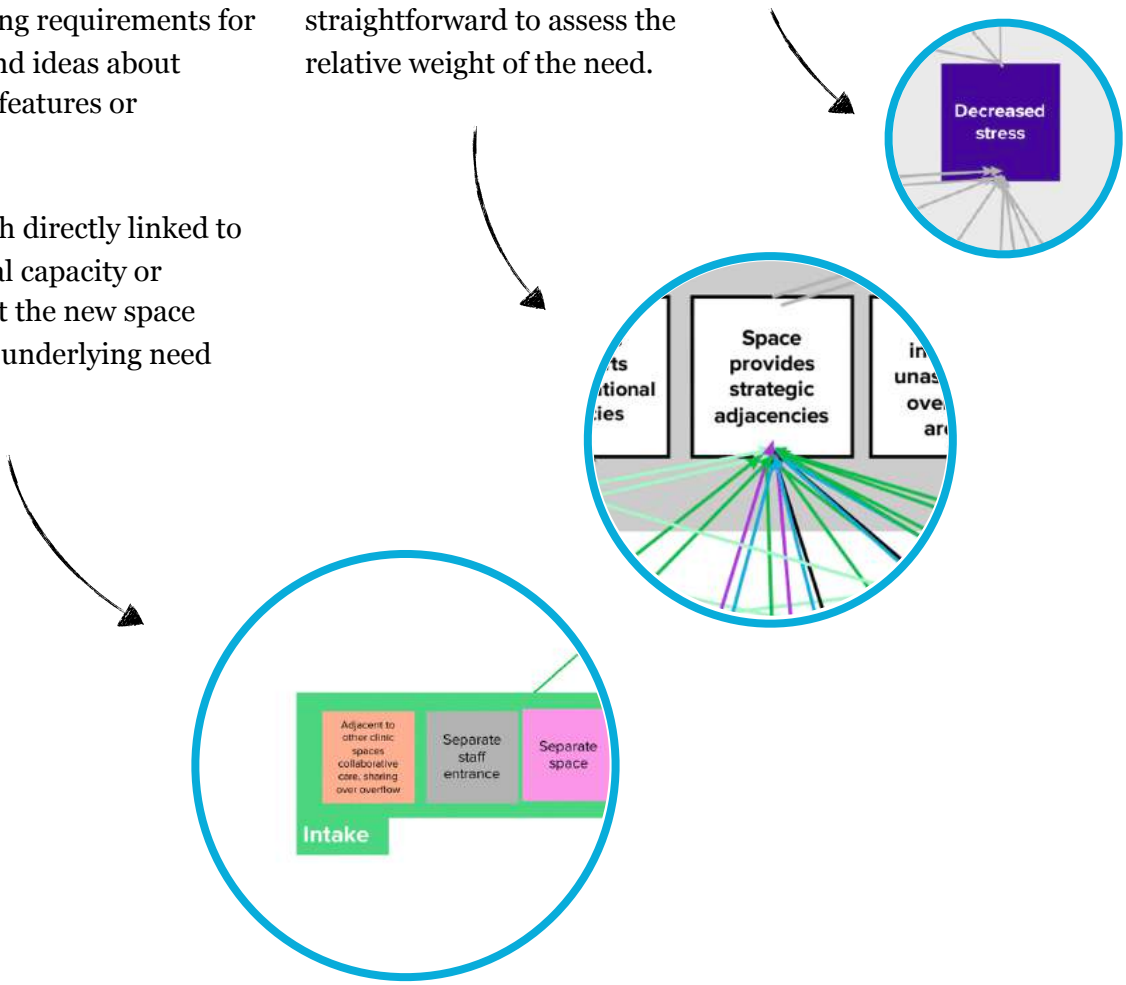
These are each directly linked to the categorical capacity or condition that the new space provides: the underlying need that it meets.

Underlying Needs

Just looking at the number of arrows pointing at the categories of underlying need, it becomes very quick and straightforward to assess the relative weight of the need.

Impact of Meeting Needs

Finally, the impacts of the needs being me can be assessed and understood in the same way.



Goals
of Vision

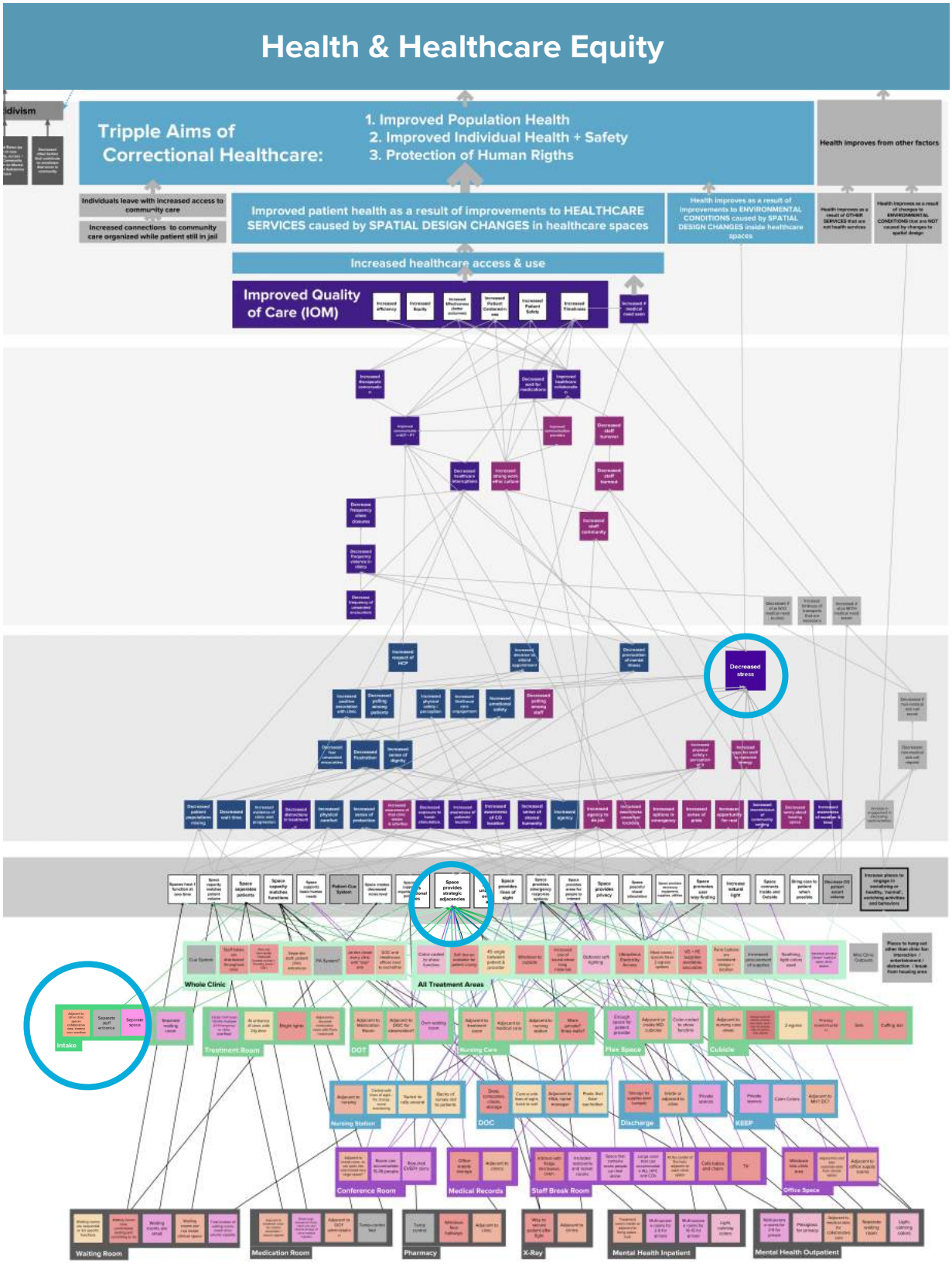
Outcomes 3
Impacts as a Result of Individual & Systems Changes

Outcomes 2
Impacts of new conditions on the System of Correctional Healthcare

Outcomes 1
Impacts of new conditions on Individuals

Outputs
Conditions of Future Spatial Designs that meet Underlying Needs

Activities
Future Spatial Design Features & Requirements



Preparing

Identify Downstream Actors

Reaching out to architects

Going back to our work as only a link in the chain, and recognizing that "a solution is only as good as its implementation", we knew that we had to research the most strategic medium for the delivery of our work. Because the project was likely part of a longer architectural process wherein multiple stakeholders are needed for the final implementation of the solution, identifying the downstream actors in order to understand the best format and packaging of the solution was vital: if our work was not in a useful format, it might not get used. And, what good would it be, then? Because the architect will use what our findings, insights and ideas to produce their creative part of the work, we needed to also do extensive testing with those 'users', too. We reached out to various architects inside and outside of the corrections space, and asked them a variety of questions: what information would be useful? Something that they have always wanted to know about the future occupants of their spaces but never have the time to find out? How do we best best illustrate and describe the users' needs, behaviors and dreams? Is it better to emphasize the things that are currently not working in the clinics, or to describe future ideas?

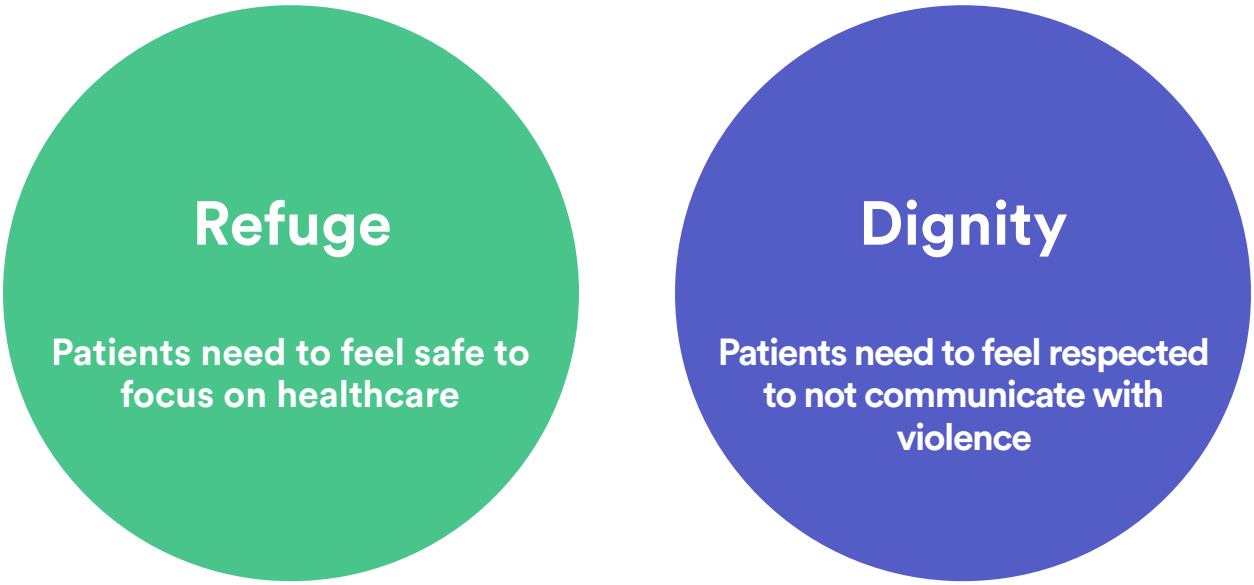
“I think the key is to be able to present it as a workable solution, and show the "why" of it as well –

that way it looks like an example of a solution, but there's enough context that a designer can riff off of what you have to cater a solution to their specific location...

In terms of importance, I would say to put the emphasis on the driving insight you've identified, then share the needs being designed for, and then present your solution as an approach that could work.”

~ architect

Spatial Design Principles



Solution:

Spatial Design Principles

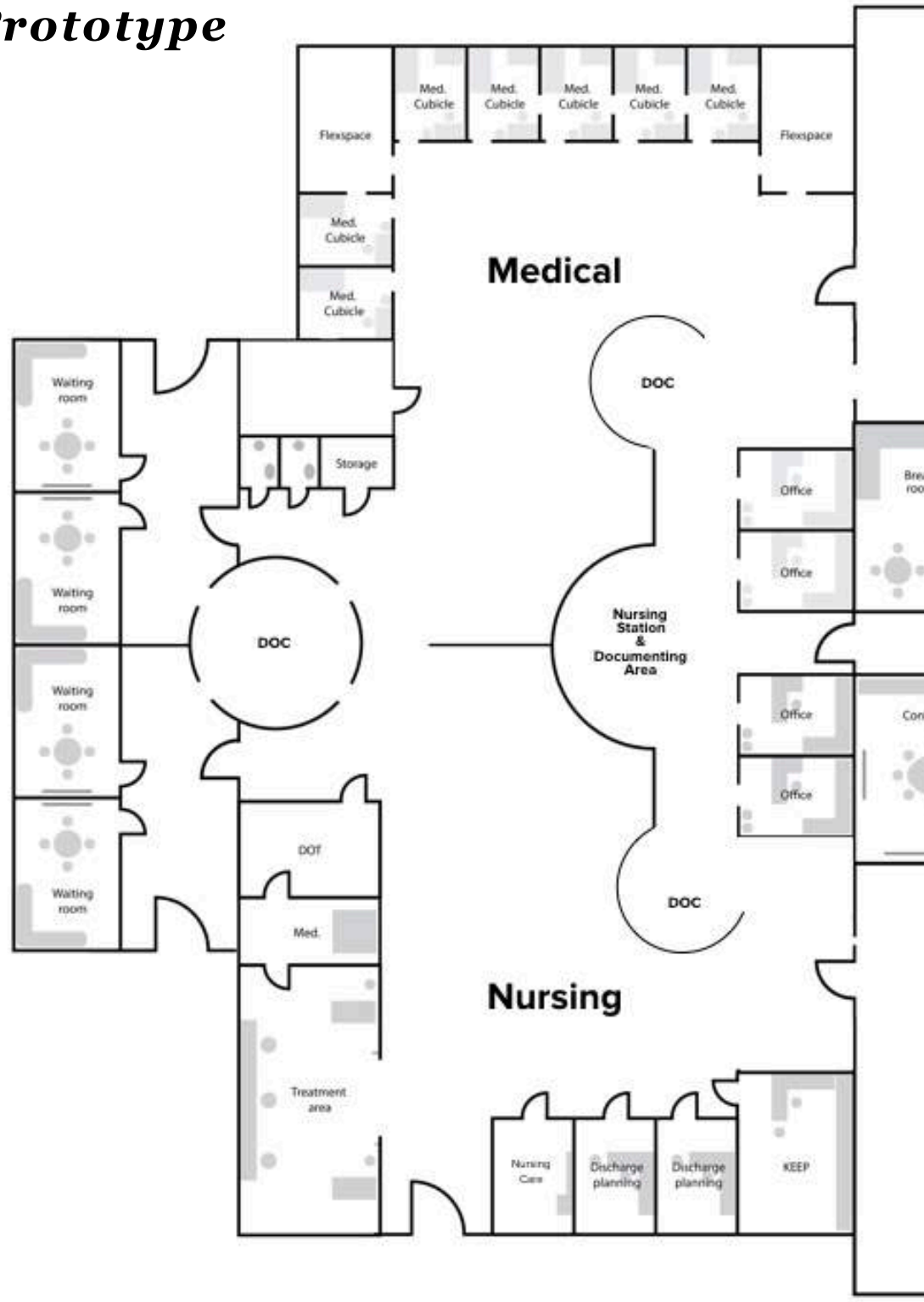
From conversations with 7 different architects, it became clear that we should package our insights about underlying needs into tangible recommendations in the form of *principles*. Design principles are widely recognized and understood by designers and architects to guide future spatial design solutions. Based directly on our insights, the principles wouldn't instruct the architect or the designer on an exact solution, but would instead serve as a "north star" and starting point for the creation of new designs.

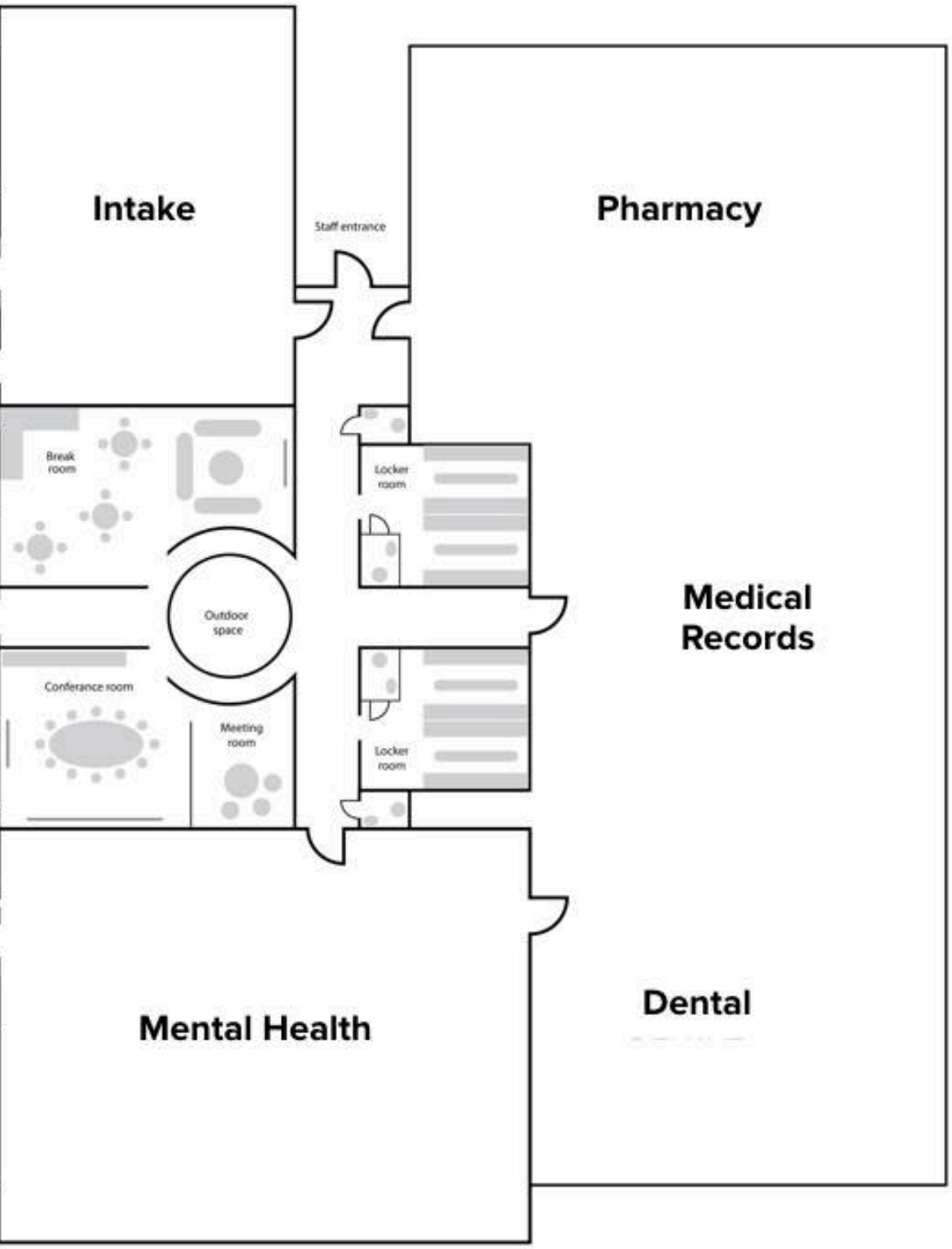
These principles address underlying needs that appeared over and over in our work, from interviews to observations to prototyping. They can easily be tailored to individual jails or clinics, as they do not require a specific place or time. Thus, their life cycle is long, and their potential for use is high.

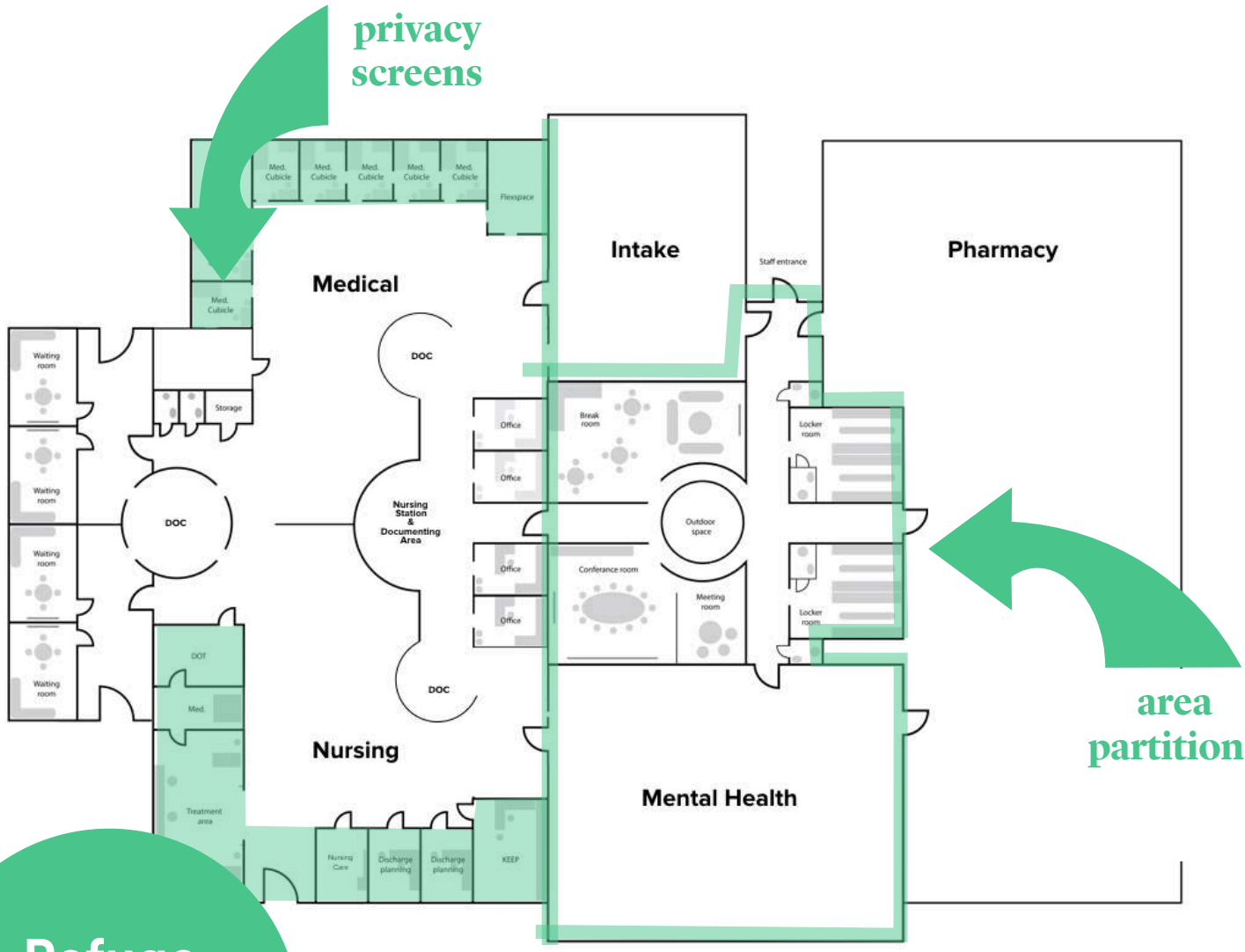
Solution *(following page)*
New Clinic Prototype

What might a clinic look like that embodies these principles? Our second deliverable is a new clinic layout, offering an example of how these ideas might manifest in spatial design, as applied to correctional healthcare. The new clinic prototype is a central, modular hub. Departments and services are adjacent, so that they easily can connect and collaborate, and at its center are shared staff conference rooms, break rooms, locker rooms, and a tiny outdoor courtyard space. However, despite everything being centralized, the departments and spaces are divided, preventing unnecessary mixing of patient populations. And, keeping the scale small, maintaining an atmosphere of protection. As such, patients easily can access all healthcare services in one visit should they need to, without sacrificing the feeling of being safe.

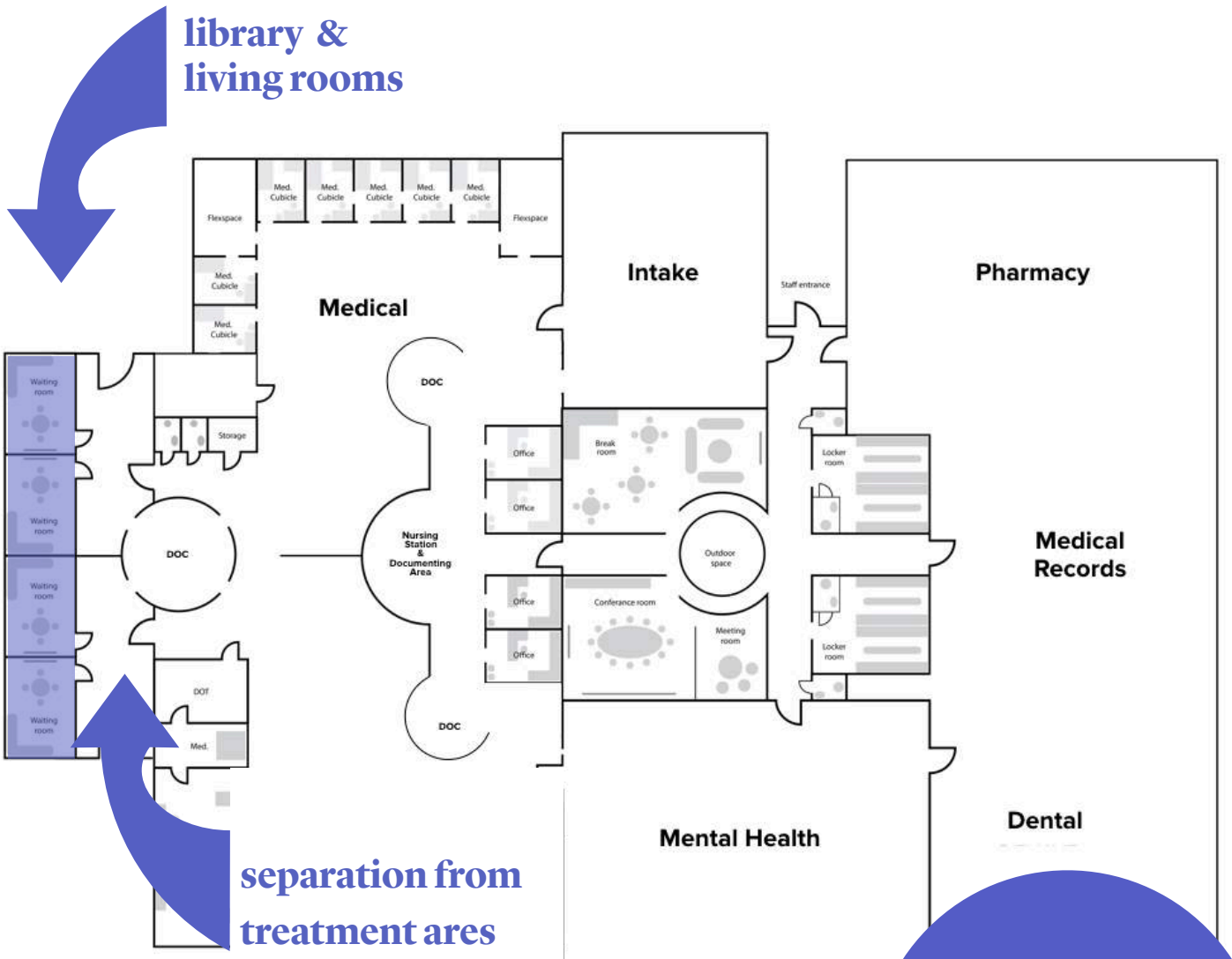
New Clinic Prototype




Intake
Staff entrance
Pharmacy
Break room
Locker room
Outdoor space
Medical Records
Conferance room
Meeting room
Locker room
Mental Health
Dental



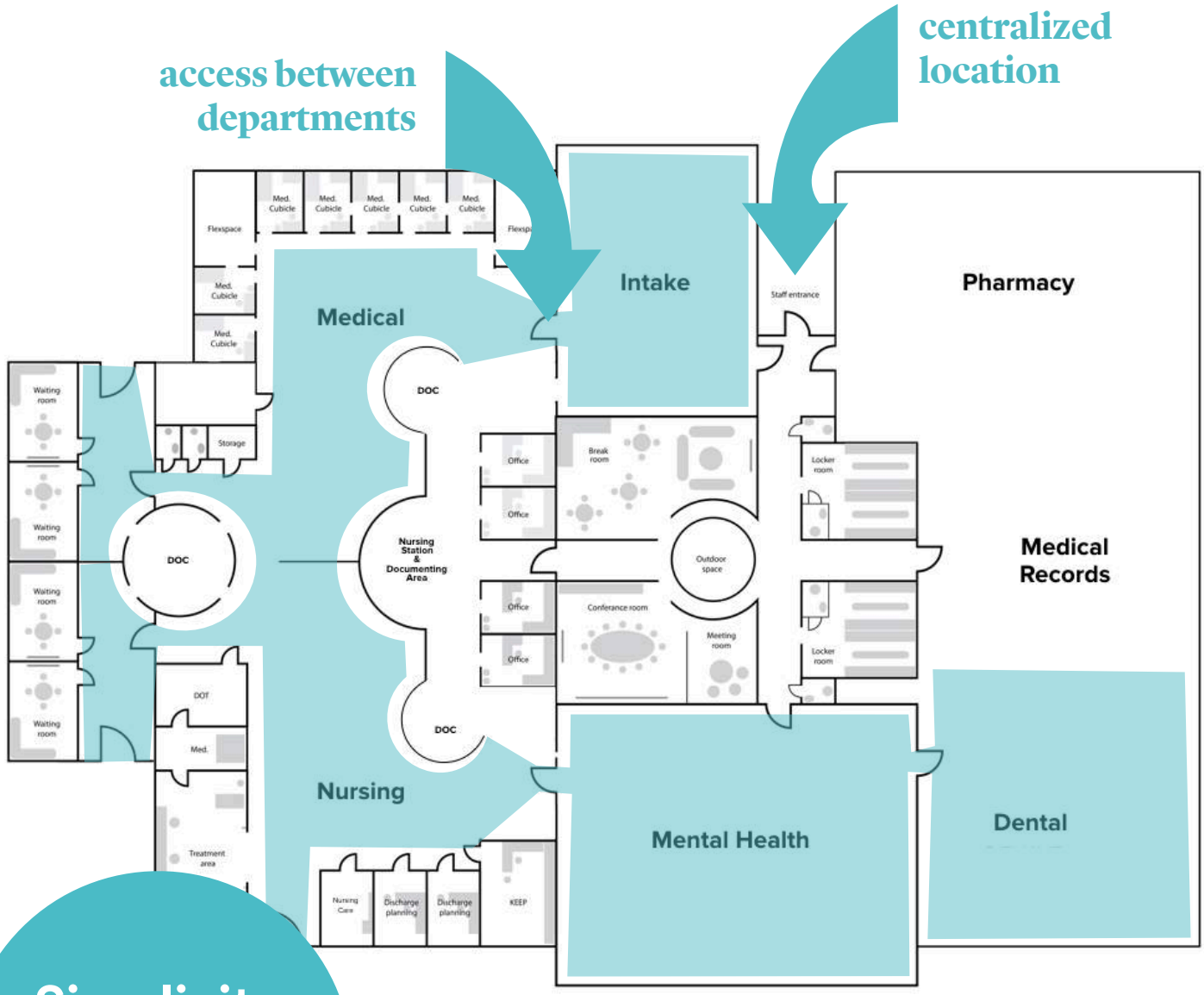
For patients to feel safe, screens like partially frosted Plexiglass form privacy walls for every area where patients are seen - permitting clinic oversight and making patients feel protected at the same time. Now, they can focus on their healthcare instead of their physical safety.



Dignity

Patients need to feel respected to not communicate with violence

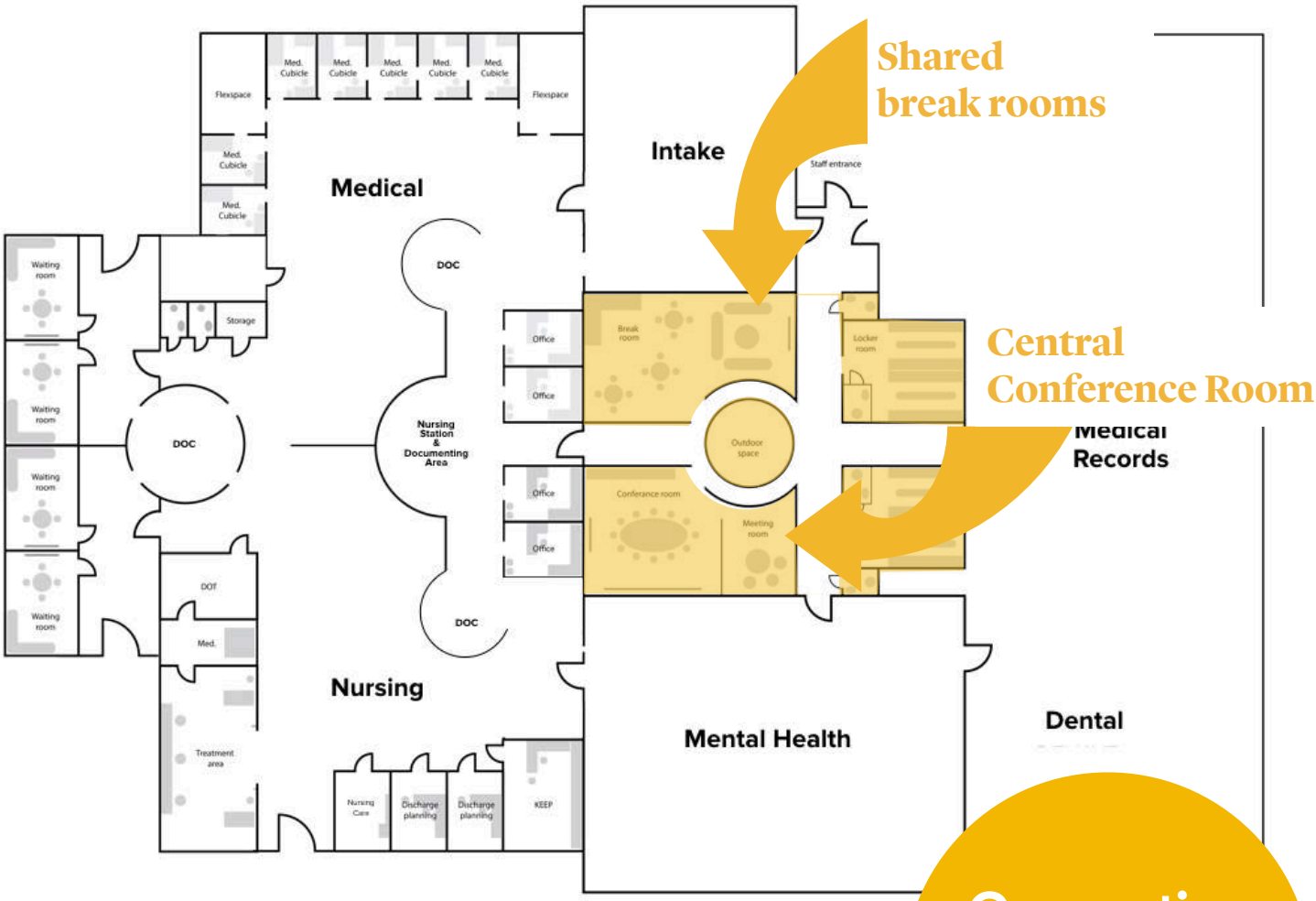
Small waiting rooms outside the clinic are libraries and living rooms - treating patients like people instead of liabilities. When human needs are met and people are treated with respect, the won't need to resort to violence to communicate their needs.



Simplicity

Patients need to experience care alignment to fully access services

When patients have multiple appointments, the clinic can now be a one-stop-shop, increasing the ease, and therefore likelihood, of accessing care.



Staff conference rooms & break rooms are shared and centralized, creating more opportunities for communication and collaboration. Care is now more efficient, and teams more effective.

Connection

Staff need to have opportunities to collaborate built in to their work flow

Evaluating

Measurement & Evaluation

User-Led Spatial Design

New Spatial Design

So, what might be the actual impact of spatial design changes on patients's and provider's experiences in correctional health clinics? Based on the theory of change, we have identified what we think could be indicators to measure the outputs and outcomes. Because this is such a huge amount of data and suggestions, a comprehensive M+E plan would need to be just as gargantuan, to account for everthing. Following our example from before, we created one as a guide on the facing page. The *line of accountability* is drawn across the M+E plan to designate which outcomes a given project will take responsibility for measuring and trying to accomplish.

Quantitative Indicators

From this, we could identify things to measure, including number of fights to measure increased safety, number of times that a patient doesn't have enough room to sit in the waiting room to measure that the waiting rooms don't feel crowded, and number of times that patients refuse to come own to clinic with correctional officer to measure if they are coming to their appointments more.

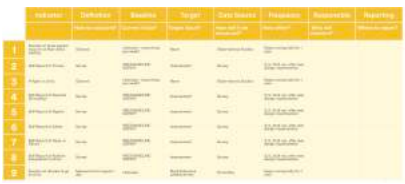
Quantitative Indicators

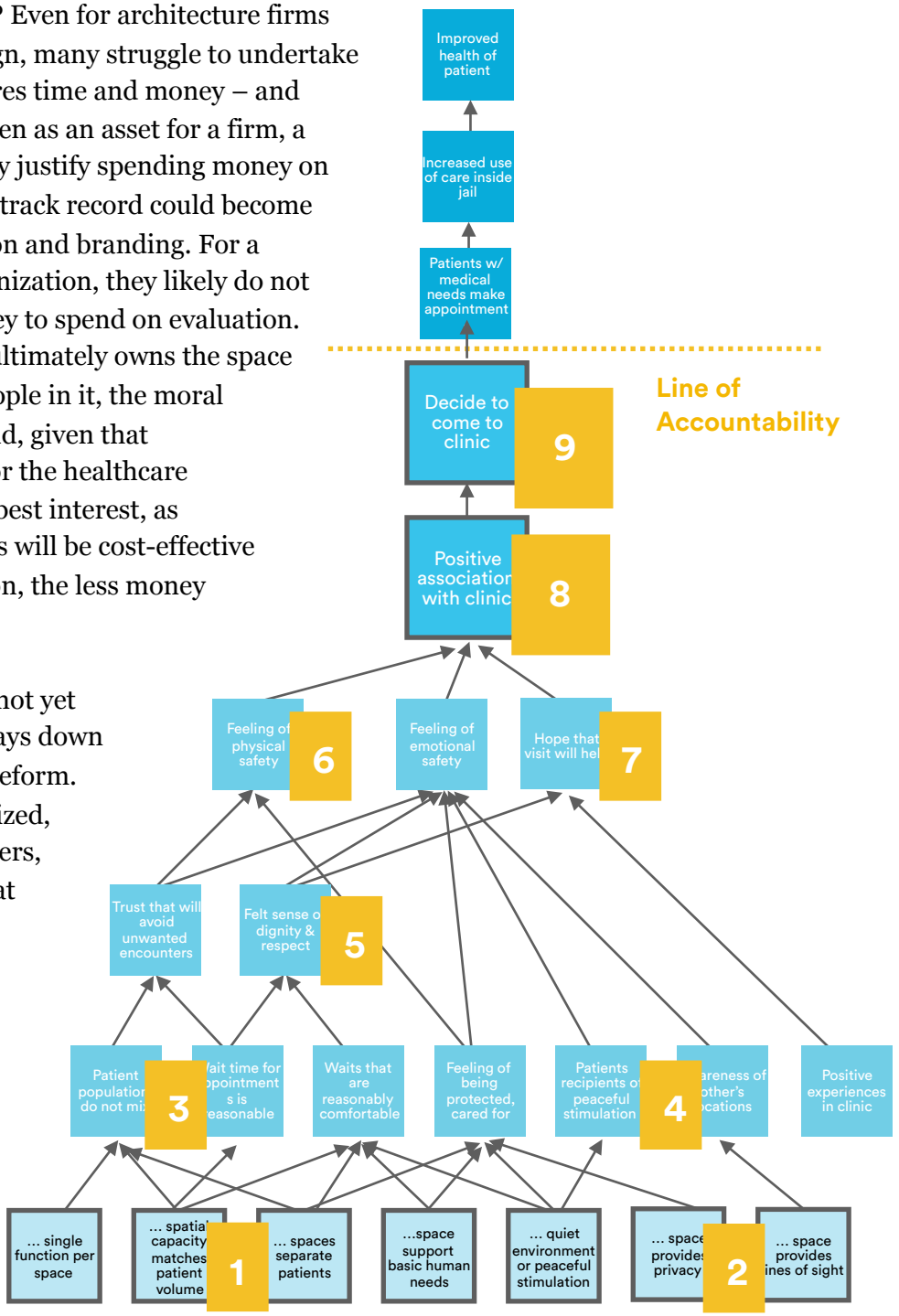
For the rest, in line with human-centered design, we are most concerned with the people's *experience* of the space – their direct account. So, for this, interviews and surveys should be given at a few intervals after the new space has been built – perhaps 3, 6, 12 and 24 months – with structured and semi-structured questions about each topic in question.

Responsible Party?

The million-dollar question is: whose job it is to measure the efficacy of these designs? Even for architecture firms that do evidence-based design, many struggle to undertake evaluations because it requires time and money – and who is expected to pay? If seen as an asset for a firm, a company might economically justify spending money on the evaluations so that their track record could become part of their value proposition and branding. For a correctional healthcare organization, they likely do not either have the time or money to spend on evaluation. Given that the government ultimately owns the space and has the power to put people in it, the moral responsibility lies with it. And, given that government is also paying for the healthcare services, it could be in their best interest, as hopefully these interventions will be cost-effective - the healthier the population, the less money it costs to take care of them.

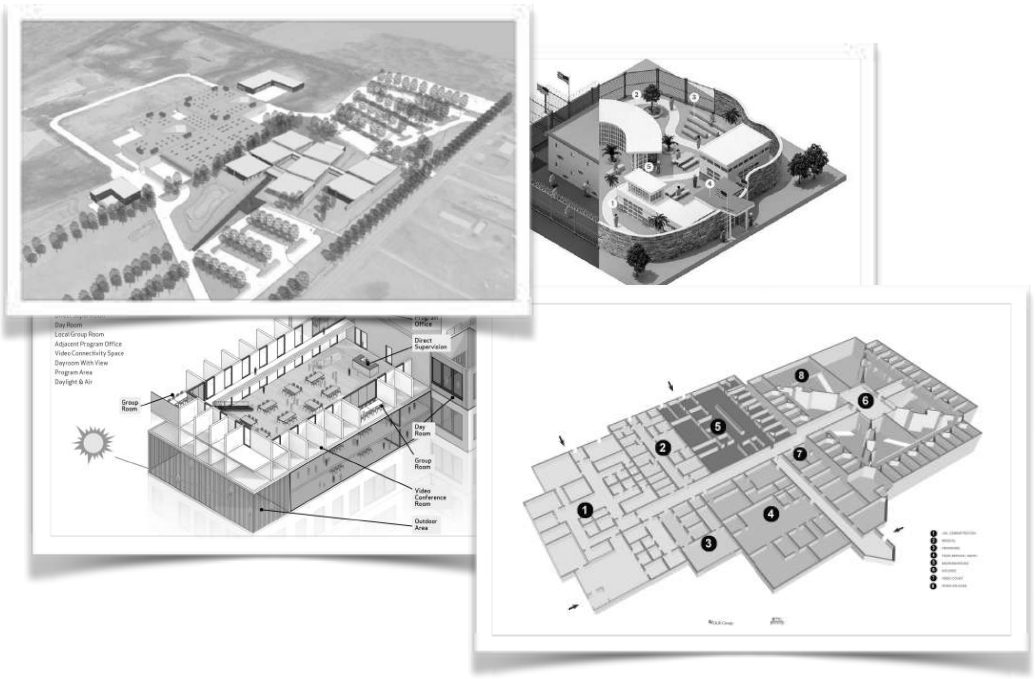
What this might look like is not yet defined – and likely some ways down the road of criminal justice reform. Until such things are formalized, it will be individual – designers, health care organizations that are keenly interested and able, and academics who measure the impact of spatial design in this setting.





Responsible Party?

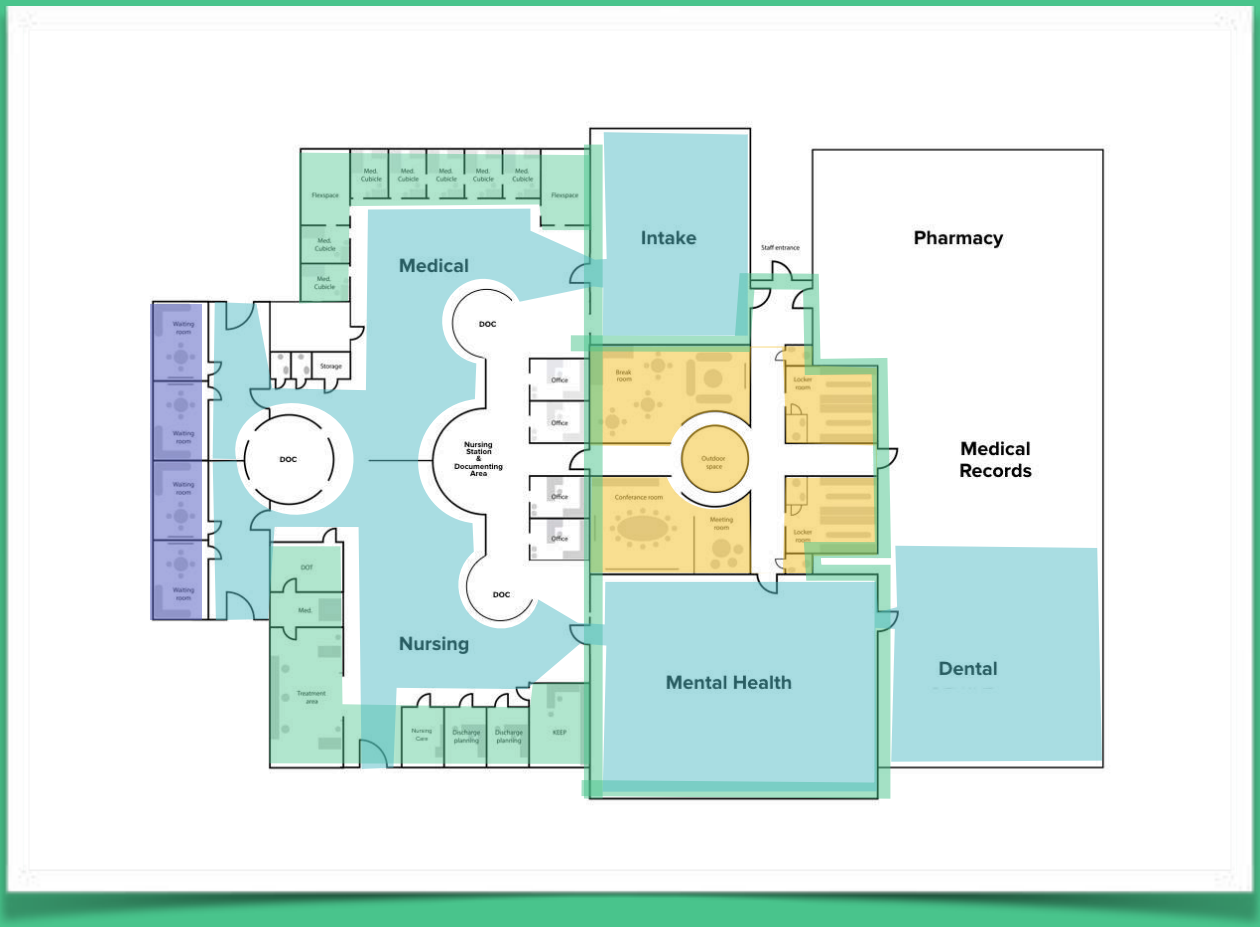
The other process that needs to be measured and evaluated for efficacy is that user-led spatial design. Logically, the only thing it can be measured against is outsider -led design, which largely describes most current architectural and design practices. And so the question becomes – is it a worthwhile endeavor to compare use-led spatial design projects with outsider-led ones, to evaluate which meet user needs more? For academic purposes, maybe? But trusting our capacity for critical thought, and minding the few resources we have – we think that time might be more well spent testing and iterating participatory prototyping tools and exercises, like the ones we created for this project. Tese tools need to be be optimized for eliciting users' needs and ideas; and, given that architects are still very much vital to the process, tools are also needed that facilitate collaboration between users and architects. While our project is just a pilot, there is little available information about cases of, let alone best practices in user-led architecture. If nothing els, we hope this work can serve as inspiration for more work in this emerging field.




patient waiting area
Meeting / Conference Room
Flex Space
Staff Toilet
office
OFFICE SUPPLIES
Medical Records
office
office
cubicle
patient + provider
cubicle
patient + provider
cubicle
patient + provider
Flex Space
patient waiting area
(pen)
CO post
Tele-Health
office
cubicle
patient + provider
cubicle
patient + provider
cubicle
patient + provider
CO post
Flex Space
Staff
Nursing Station
Med Room
BLOOD DRAW
Staff Toilet
patient waiting area
(pen)

Looking Forward

Next steps *Further prototyping*
the Future Needs... *Spaces for Healthcare & User-Expertise*


Intake
Pharmacy
Staff entrance
Medical
Medical Records
Nursing
Mental Health
Dental
DOC
Nursing Station & Documenting Area
Storage
Office
Break room
Outdoor space
Conferance room
Meeting room
Locker room
Waiting room
Flexspace
Med. Cubicle
Treatment area
Nursing Care
Discharge planning
KEEP

Next steps
Further prototyping

What work remains?

First, while this project write-up already contains an abundance of data, there is yet more data to be collected. For the IRB study, interviews with both staff, and more importantly, directly with patients, remain to be done. This will take place in the next month; and, will hopefully be published such that the findings can be made available to a wider audience.

Second, the Principles and Clinic prototype will be 'tested' in a workshop setting, with multidisciplinary staff 'running' different scenarios via paper prototypes and models of patients and providers, to evaluate the space. This will be vital in understanding how they need to be changed and improved.

Finally, further testing of deliverables formats with architects will be completed, to provide future guidance for deliverables with hopes to increase the likelihood of future use. Are the Principles (as insights) clear? Are the user needs well understood? Are the current, conditions (complex interactions of spatial designs and people) also well understood, so that they are not accidentally repeated?

Our hope is that with the Principles, not only can we evangelize the insights from this work, but that we can also evangelize the approach: the methodology that illuminated the insights. We hope that in their clarity, both can be a beacon for future work in the field. To start, administrators who are running correctional healthcare services can use this information to communicate with architects about their spatial design needs for future health clinics .

the Future Needs...

Spaces for Healthcare & User-Expertise

The Principles and Clinic prototype that have came out of this project are just a start. They don't represent all the ideas we heard, nor does it meet every need. But, as one provider said about the prototype, "now that could *really* work!"

Returning to the evaluation of user-led design in this context, and more importantly turning towards it's potential - based on two observations, we think we are onto something. First, everyone agrees that future jails should be places for rehabilitation. We've learned that for many people, this means getting access to medical and mental health support. Yet, these proposals don't often emphasize healthcare spaces. And second, and maybe not unrelated, the proposals sometimes seem disconnected from reality, as they do not mention the current, unmet needs of people inside jails today.

Both observations lead us to wonder: are the problems understood? As is true with most social problems - the people who are closest to the problems have the *most* knowledge about the them, but the least power to solve them.

We're hopeful that with emphasis on healthcare spaces, and by leveraging essential expertise, this work is cutting edge and crucial to the future - not because it has the latest technology, or the most refined plans - but because it is led by the people who have the *best* understanding of the problems we are all trying to solve.

So, what do they need to solve them? Let's

Just ask.