

Designing for Behavior Change: A Human-Centered Approach to Research and Intervention

American Heart Association
Health Care by Food



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Cooperative Studies Model: Human-Centered Design



Stacey Chang



Natalie Privett, PhD

Designing for Behavior Change: A Human-Centered Approach to Research

Learning Objectives:

1. Understand and apply human-centered design (HCD) principles and the COM-B behavior change model to research and interventions.
2. Use journey mapping and personas to analyze user experiences and identify critical behaviors across the "Food is Medicine" journey.
3. Design targeted interventions by integrating insights from HCD tools and behavior change models to inform your research strategy and approach.

Designing for Behavior Change: A Human-Centered Approach to Research

1

Foundations of Human-Centered Design and Behavior Change

Understand the principles of Human-Centered Design and Systems Design, apply the COM-B model, and differentiate between systemic and individual interventions.

2

Mapping the Journey: A Human-Centered Approach to "Food is Medicine"

Apply journey mapping to reframe "Food is Medicine," focusing on user experiences and integrating insights into research.

3

Designing Targeted Interventions: Combining COM-B and Journey Mapping

Create nuanced behavior change strategies by merging COM-B and journey mapping, refining the "Food is Medicine" journey to enable critical behaviors

4

Personas in Action: Driving Insights for Behavior Change

Develop and apply personas within the COM-B and journey mapping frameworks to generate actionable insights that inform your research strategy.

The background of the slide is a solid red color with a repeating pattern of white heart shapes, each containing a torch. The hearts and torches are arranged in a grid-like fashion, creating a textured effect.

Session 1:

Foundations of Human-Centered Design and Behavior Change

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Session 1 goal:

Understand the principles of Human-Centered Design and Systems Design, apply the COM-B model, and differentiate between systemic and individual interventions.

Designing for Behavior Change: A Human-Centered Approach to Research and Intervention

Learning Objectives:

1. Understand and describe the principles of human-centered design and systems design by exploring their key concepts and applications.
2. Learn the COM-B model of behavior change, a human-centered framework, and apply it to your research.
3. Differentiate between systemic and individual interventions, examining the key characteristics and the implications of each approach for designing study interventions.

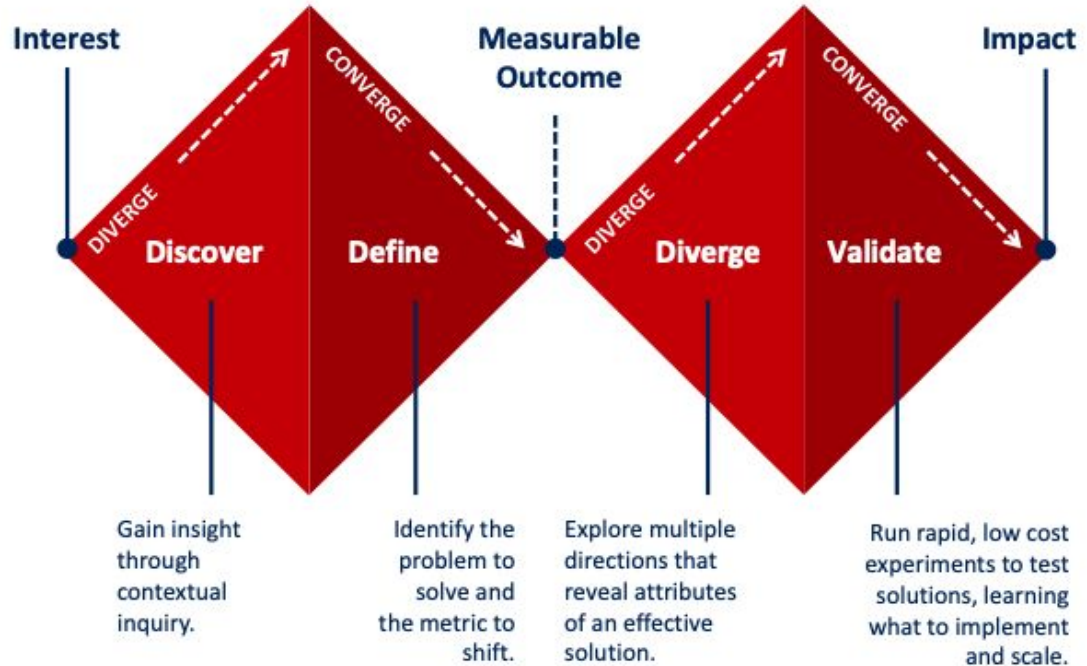
Why Human-Centered Design?

To better understand current behavior and more rapidly iterate

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Across GusNIP, program redemption rates of vouchers is only about 65%.

HCXF aims to use rapid-cycle iterative testing in contexts in which programs would be broadly implemented to increase engagement.



Source: Kevin Volpp,
adapted from Design Council

Human-Centered Design

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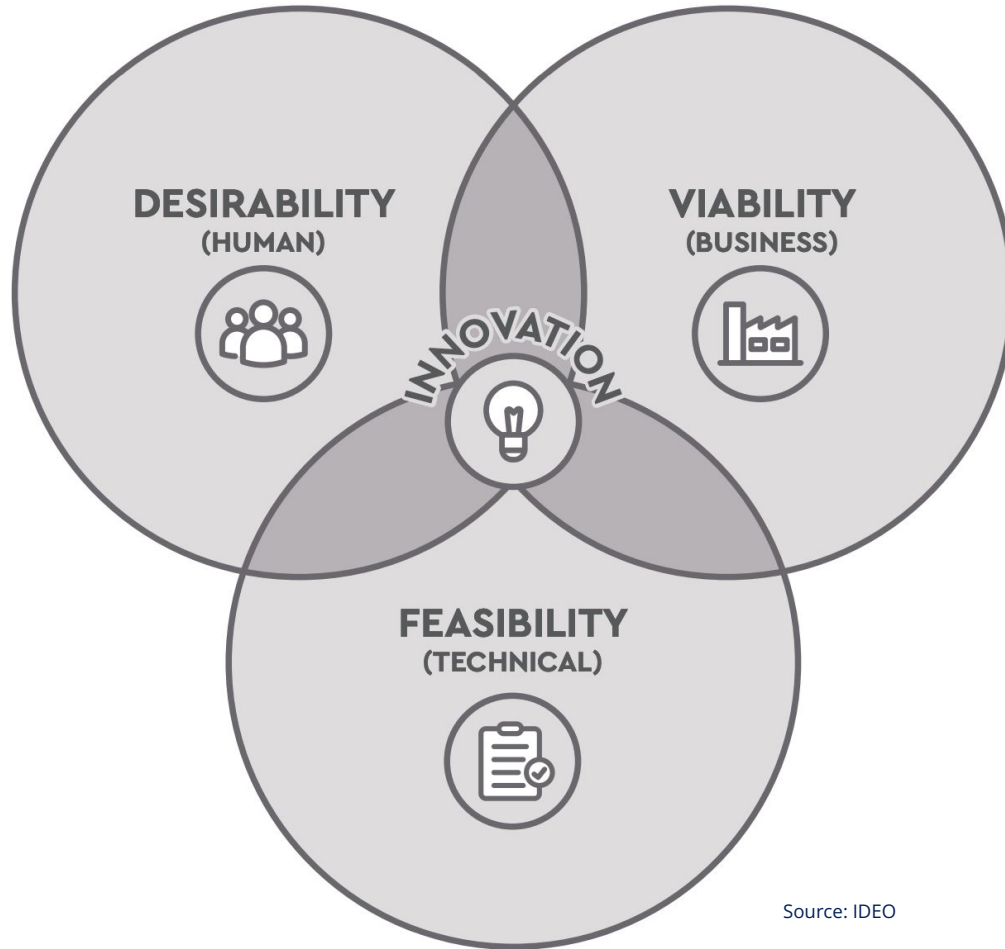
Source: New Origin Studio



Source: New Origin Studio

“It’s not just what it looks like and feels like.
Design is how it works.”

Steve Jobs



Source: IDEO



Forbes



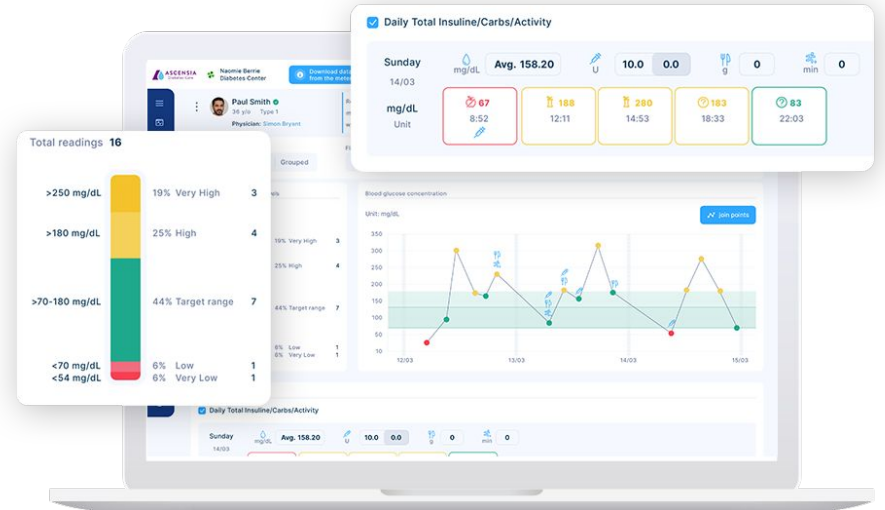
Pfizer Kills Exubera

Oct 18, 2007, 09:51am EDT

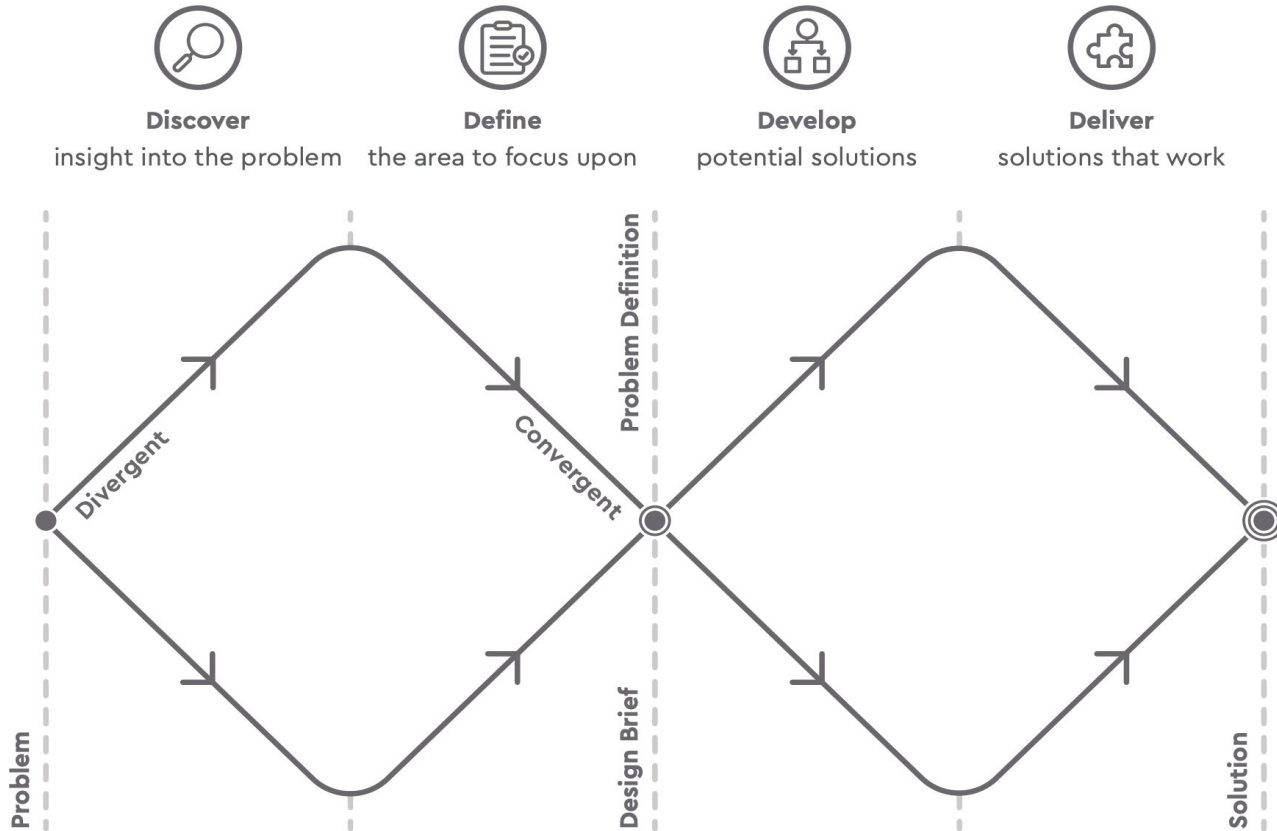
Pfizer Chief Executive Jeffrey Kindler announced "an important decision" Thursday morning, in the press release that carried Pfizer's third-quarter financial results. Pfizer was ending production of Exubera, its inhaled insulin, and taking a \$2.8 billion charge.

"Despite our best efforts, Exubera has failed to gain the acceptance of patients and physicians," Kindler said in a statement. "We have therefore concluded that further investment in this product is unwarranted."





Human-Centered Design



Behind the veneer



Source: IDEO

Between the lines



People do not always do what they say they do.

People do not always do what they think they do.

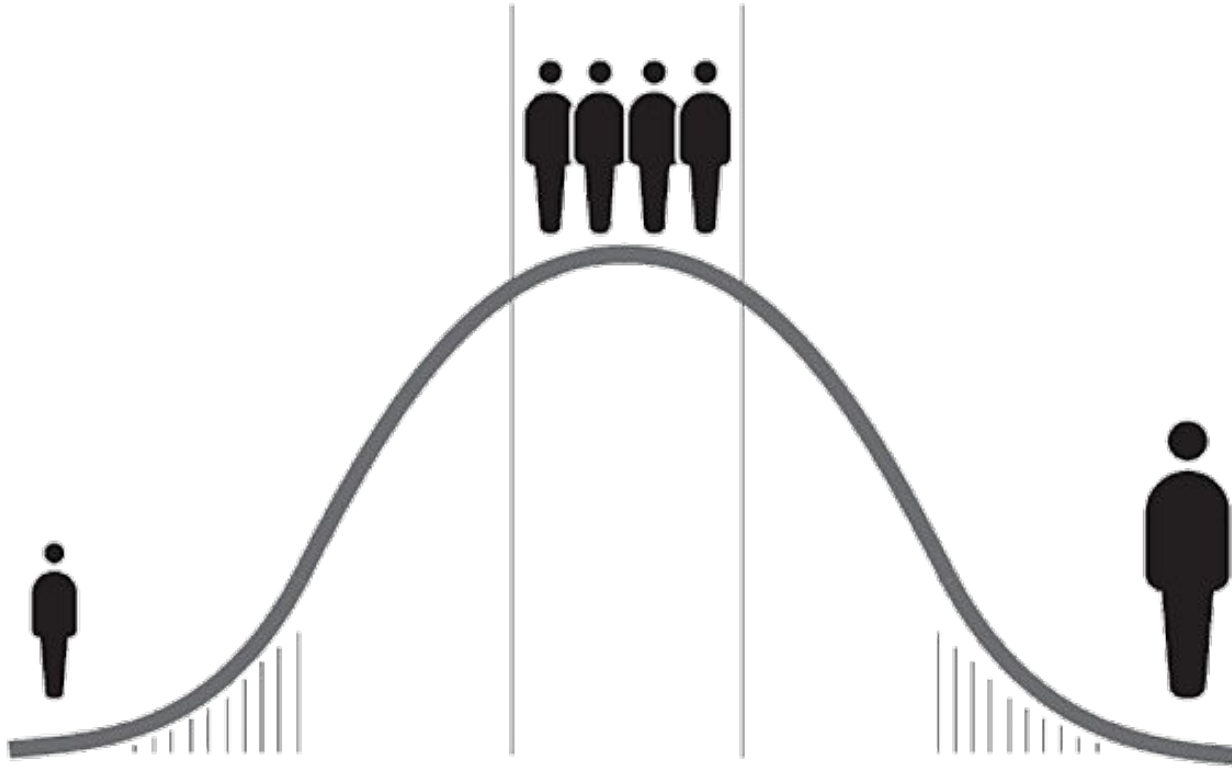
People cannot always do what you think they do.

People cannot always tell you what they need.



Source: IDEO

Appreciating variation



Source: IDEO

Appreciating variation



Exercise 1

Who are your typical users?

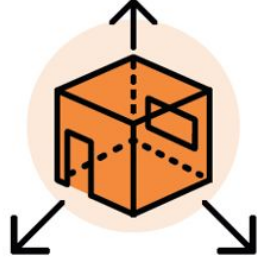
Who are the extreme versions of your users?

In what ways are they extreme?

Areas of Practice



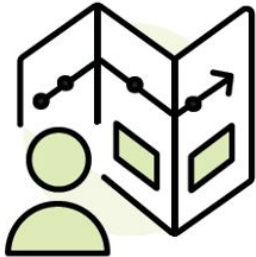
Product Design



Environments Design



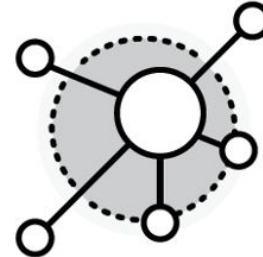
Communication Design



Service Design



Organization Design

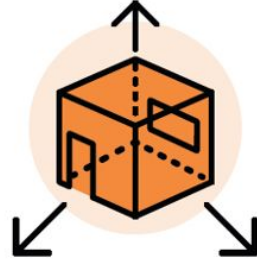


Systems Design

Areas of Practice



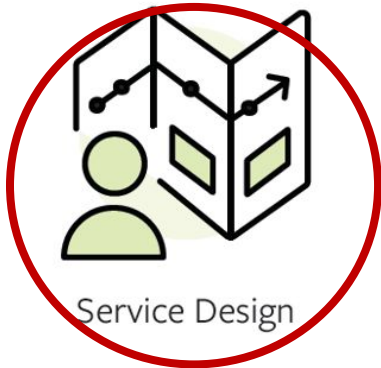
Product Design



Environments Design



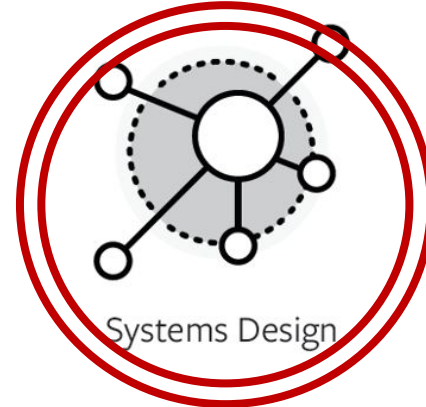
Communication Design



Service Design



Organization Design



Systems Design

Systems Design

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Complex Adaptive Systems

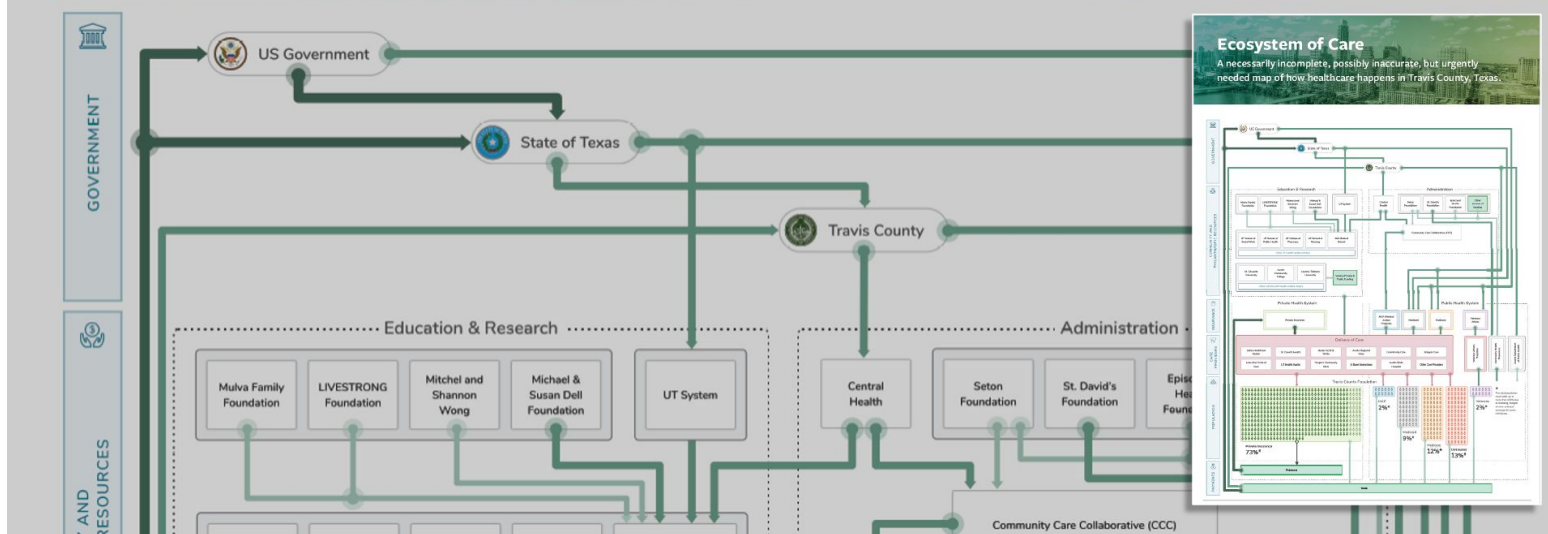
Very few of our most difficult modern challenges can be solved in silos, or with point solutions. Our biggest challenges are those of a systemic nature.

Socially-constructed systems, like food and healthcare, are **non-deterministic**, both because they don't answer to a single authority and because their outcomes emerge from the dynamic interplay between inherently unpredictable stakeholders. Solving for complex system problems requires different tools and approaches.

Collectively seeing the system as it is

Ecosystem of Care

A necessarily incomplete, possibly inaccurate, but urgently needed map of how healthcare happens in Travis County, Texas.



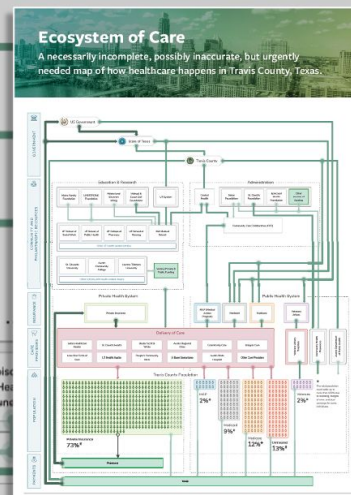
Source: Design
Institute for Health

Seeing the system as it is

Ecosystem of Care

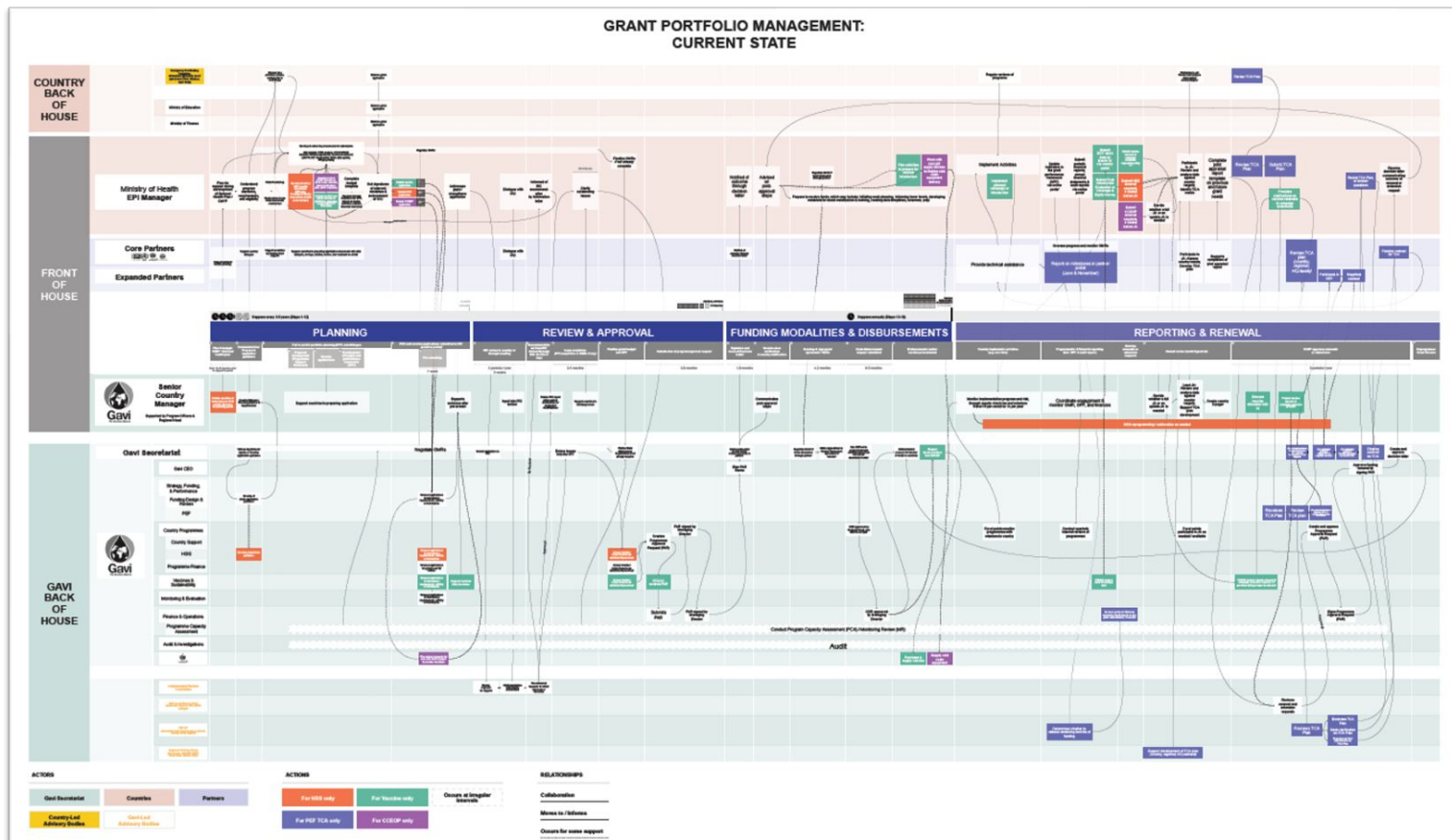
A necessarily incomplete, possibly inaccurate, but urgently needed map of how healthcare happens in Travis County, Texas.

"Not a system anyone would intentionally design."



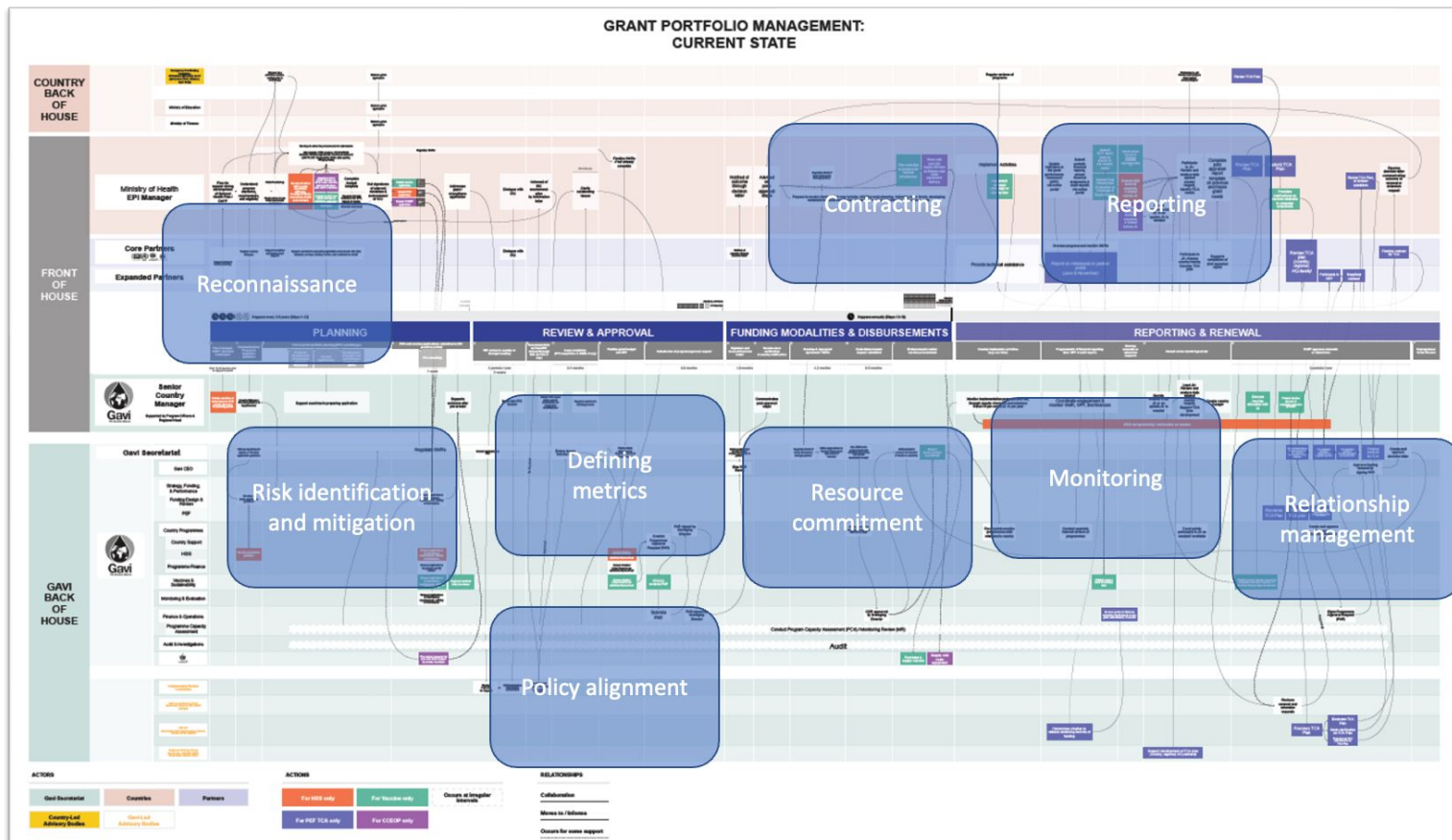
Source: Design
Institute for Health

Stakeholders and functions



Source: Design Institute for Health

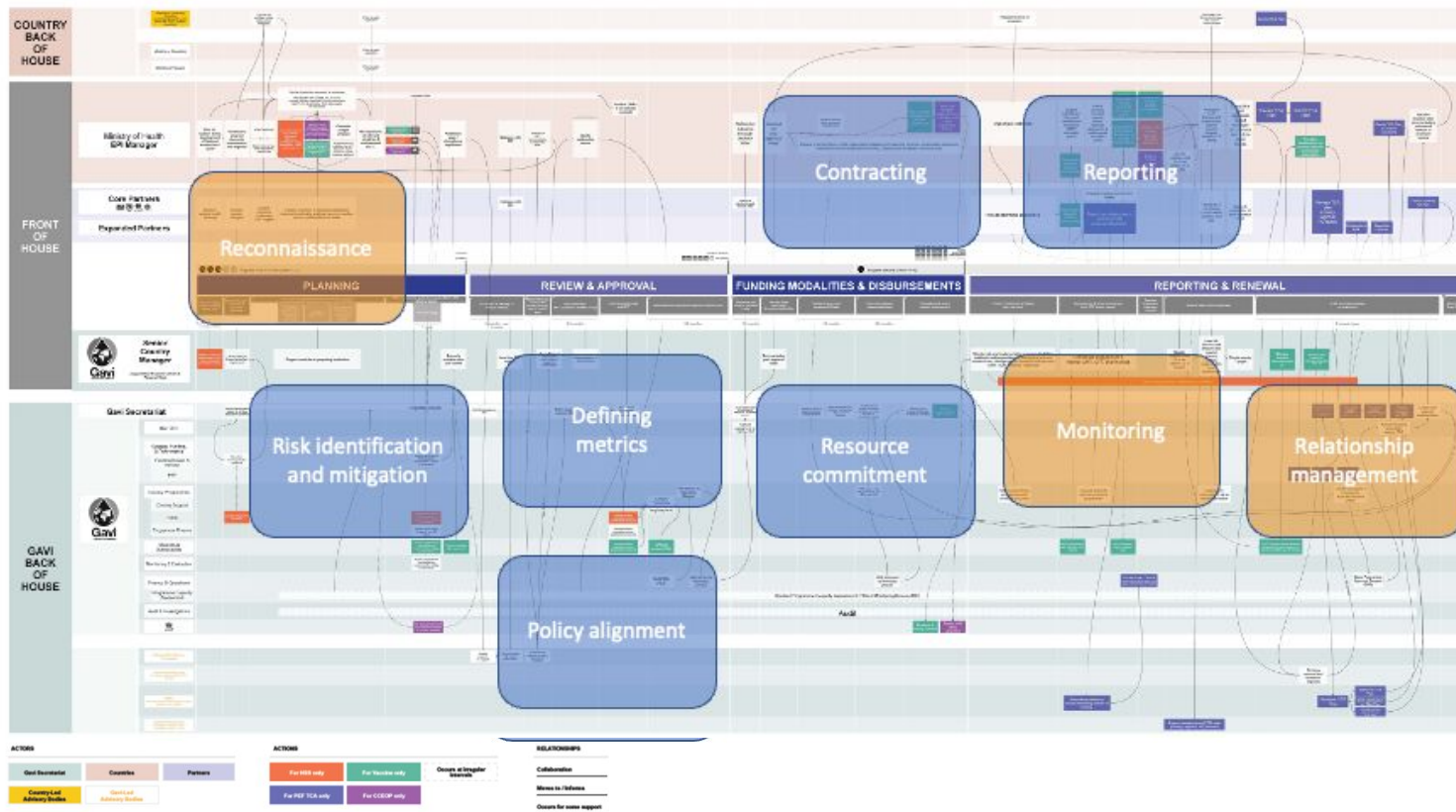
Stakeholders and functions



Source: Design Institute for Health

Stakeholders and functions

GRANT PORTFOLIO MANAGEMENT: CURRENT STATE

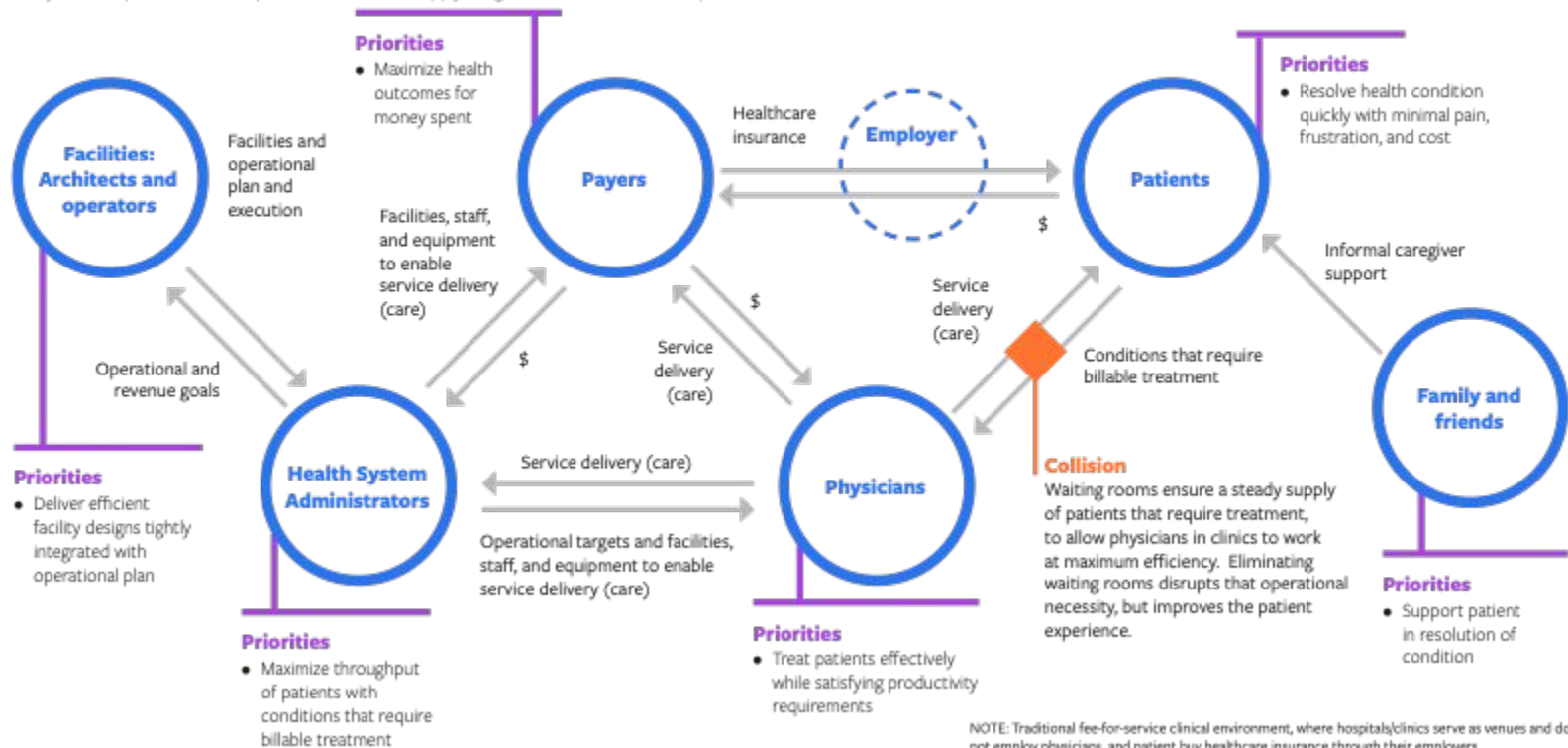


Source: Design
Institute for Health

Emergent properties

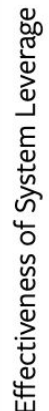
Emergent Property

Waiting is the result of a system of uncoordinated providers of care, each with a revenue stream that can be unlocked only with the presence of an ill patient. This creates supply congestion at each care intake point.



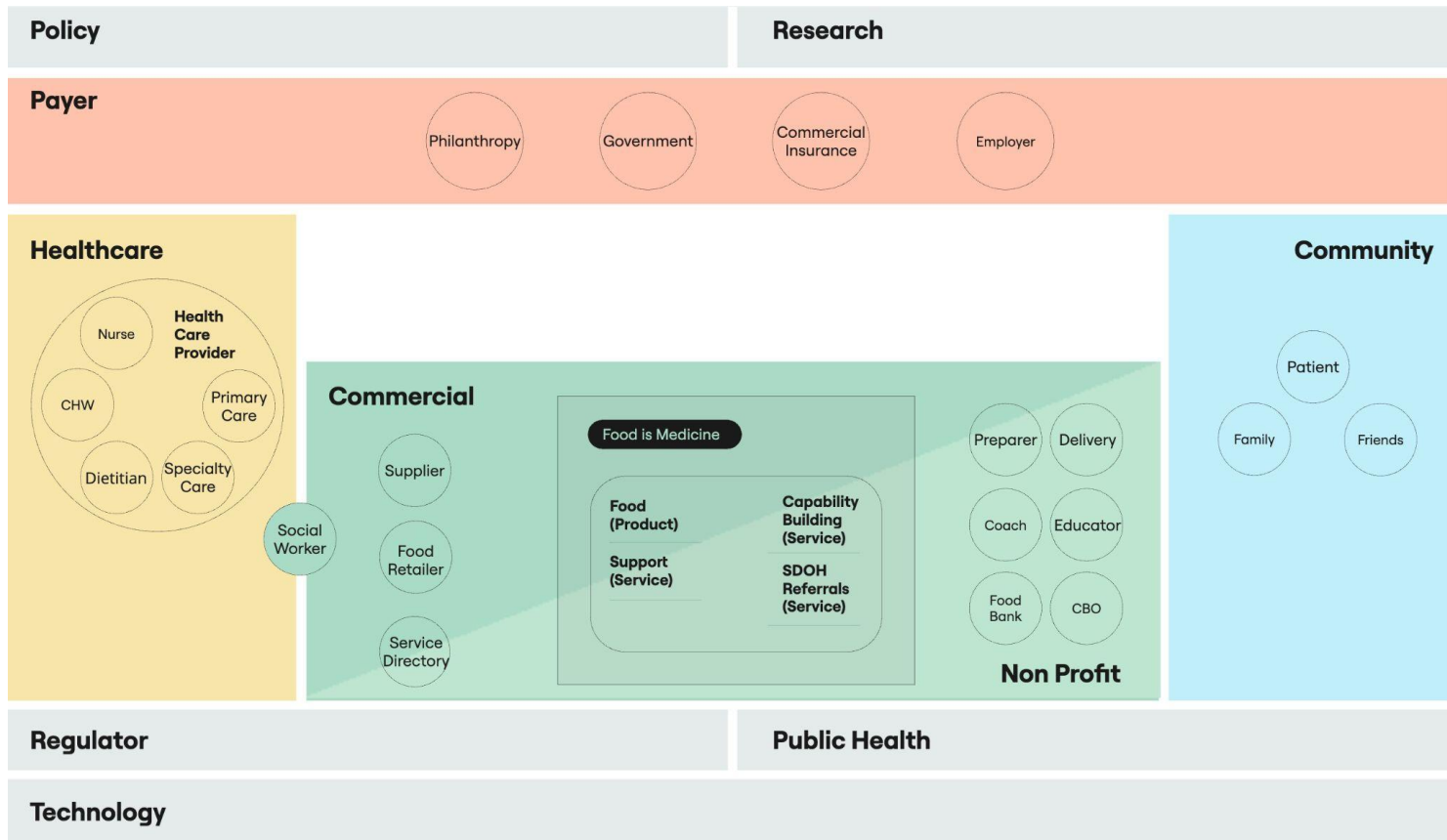
NOTE: Traditional fee-for-service clinical environment, where hospitals/clinics serve as venues and do not employ physicians, and patient buy healthcare insurance through their employers.

Source: Design Institute for Health

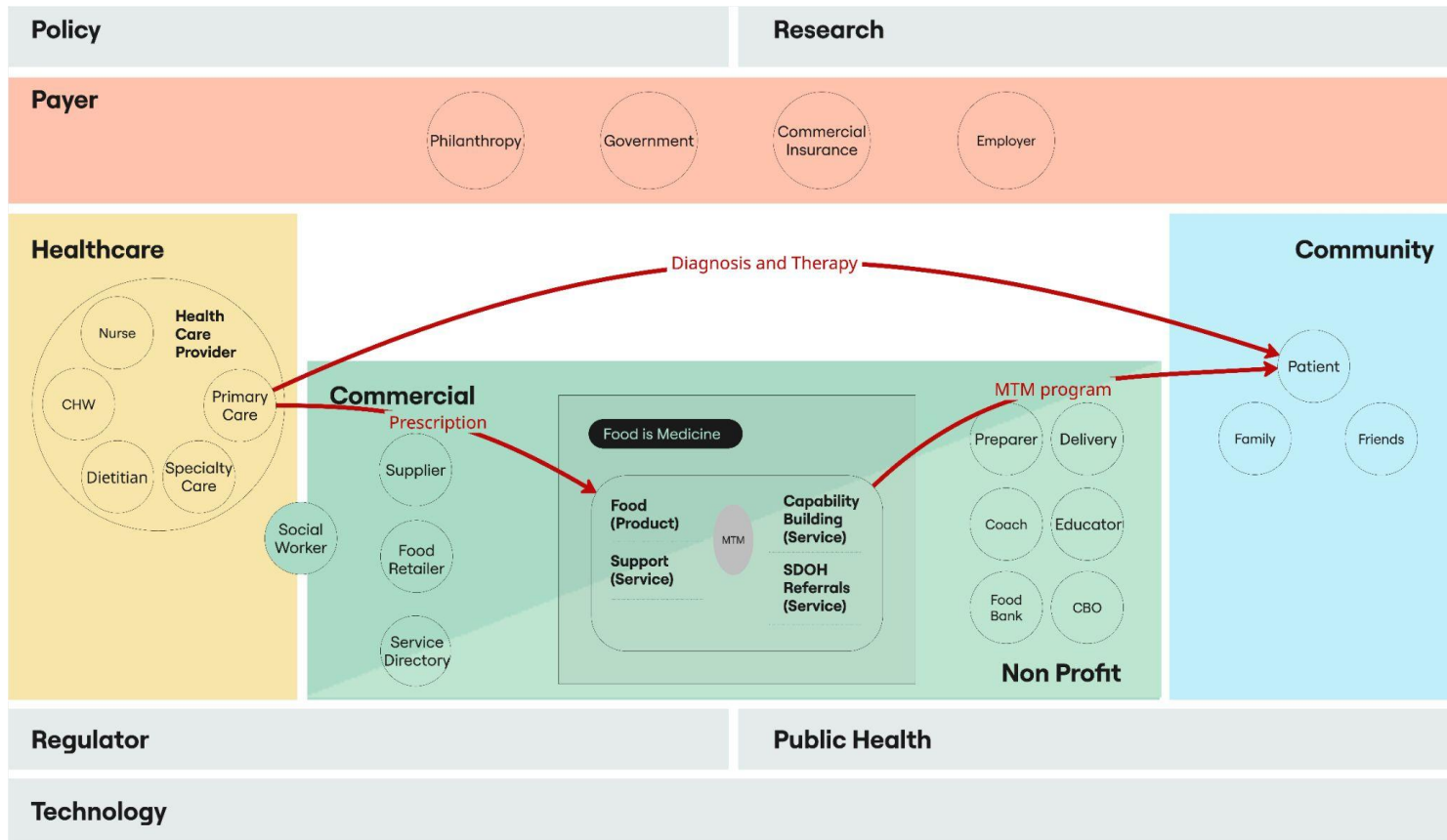


Source: Design
Institute for Health

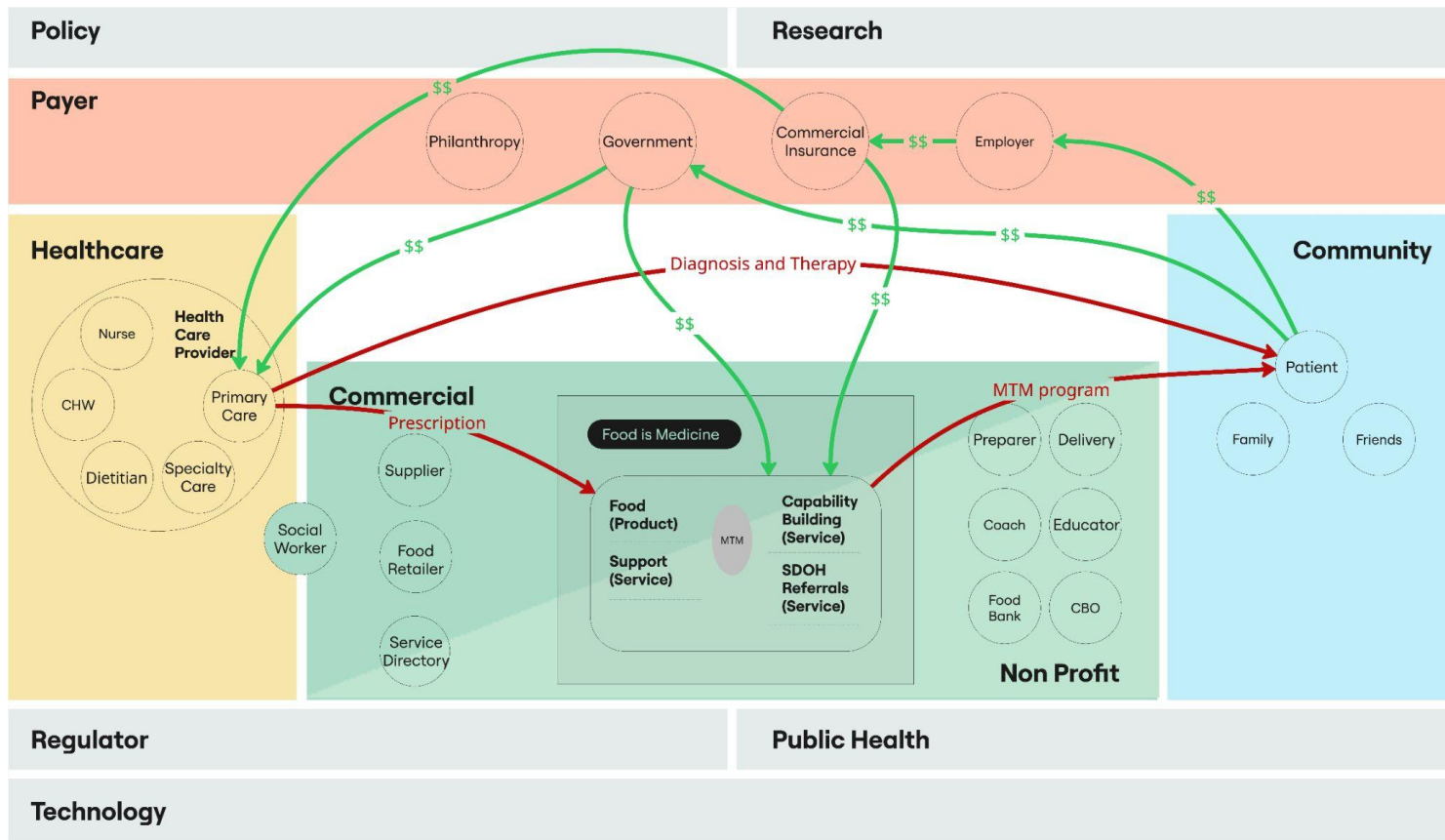
The Food Is Medicine Ecosystem



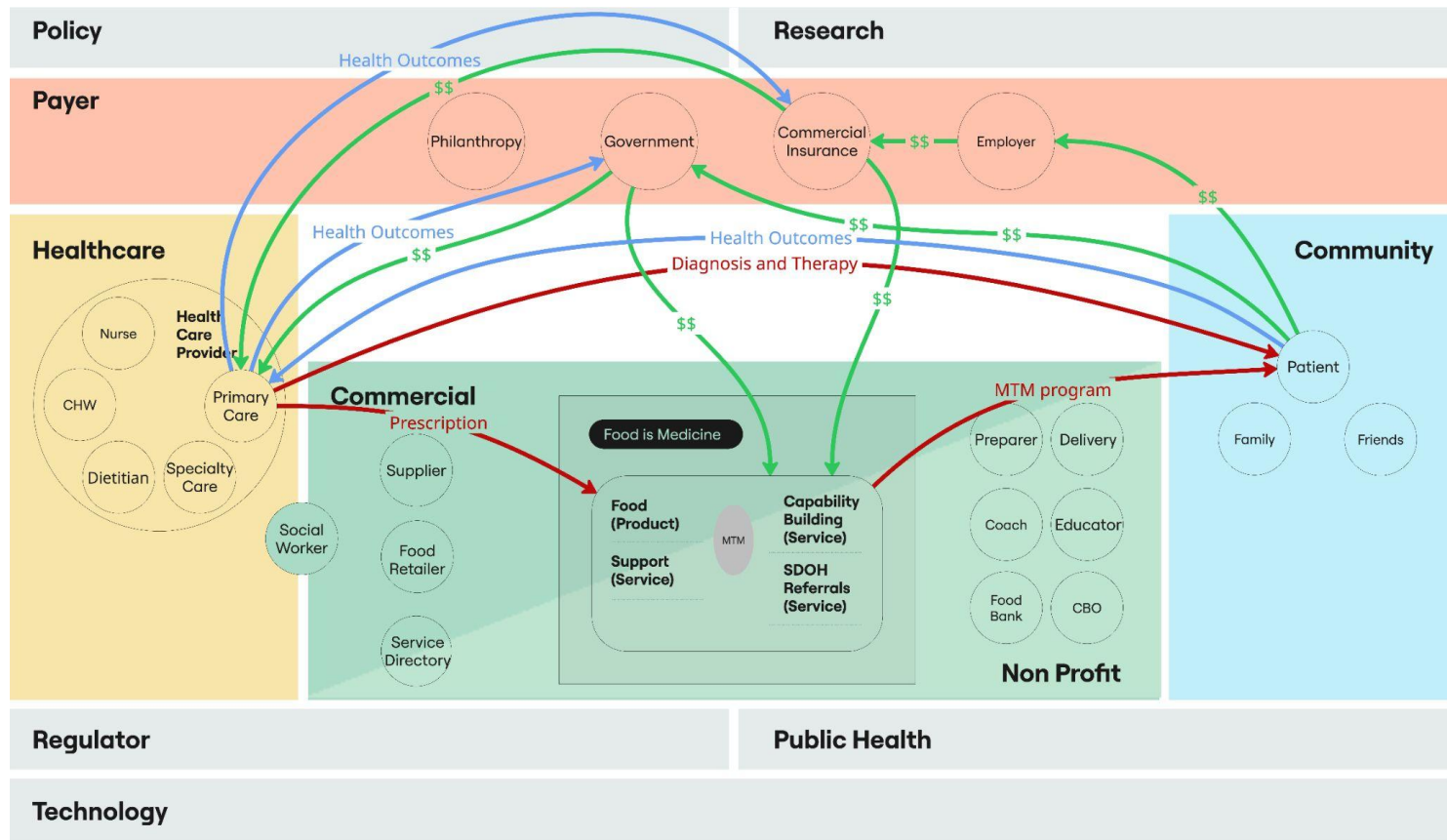
The Food Is Medicine Ecosystem



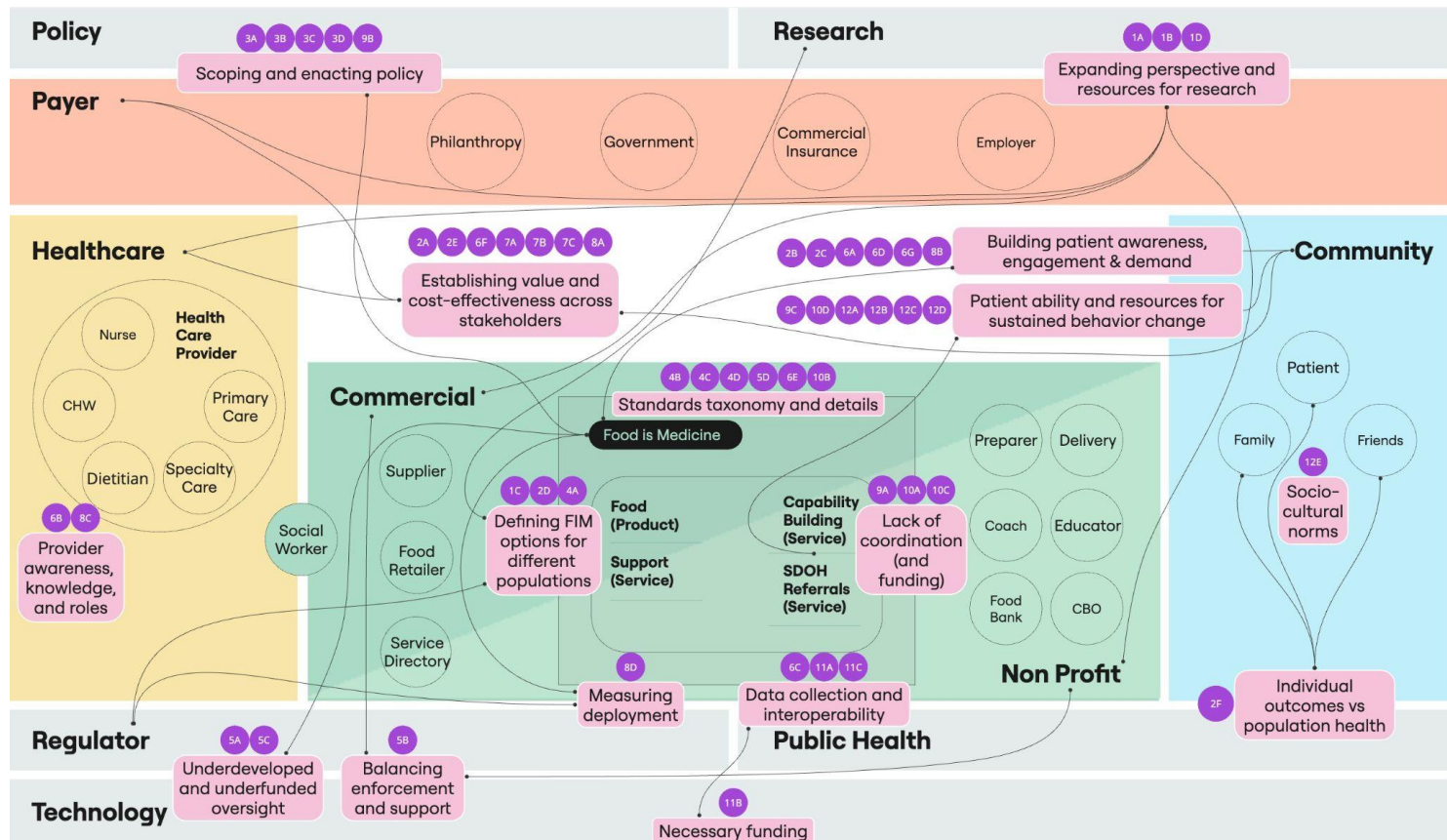
The Food Is Medicine Ecosystem



The Food Is Medicine Ecosystem



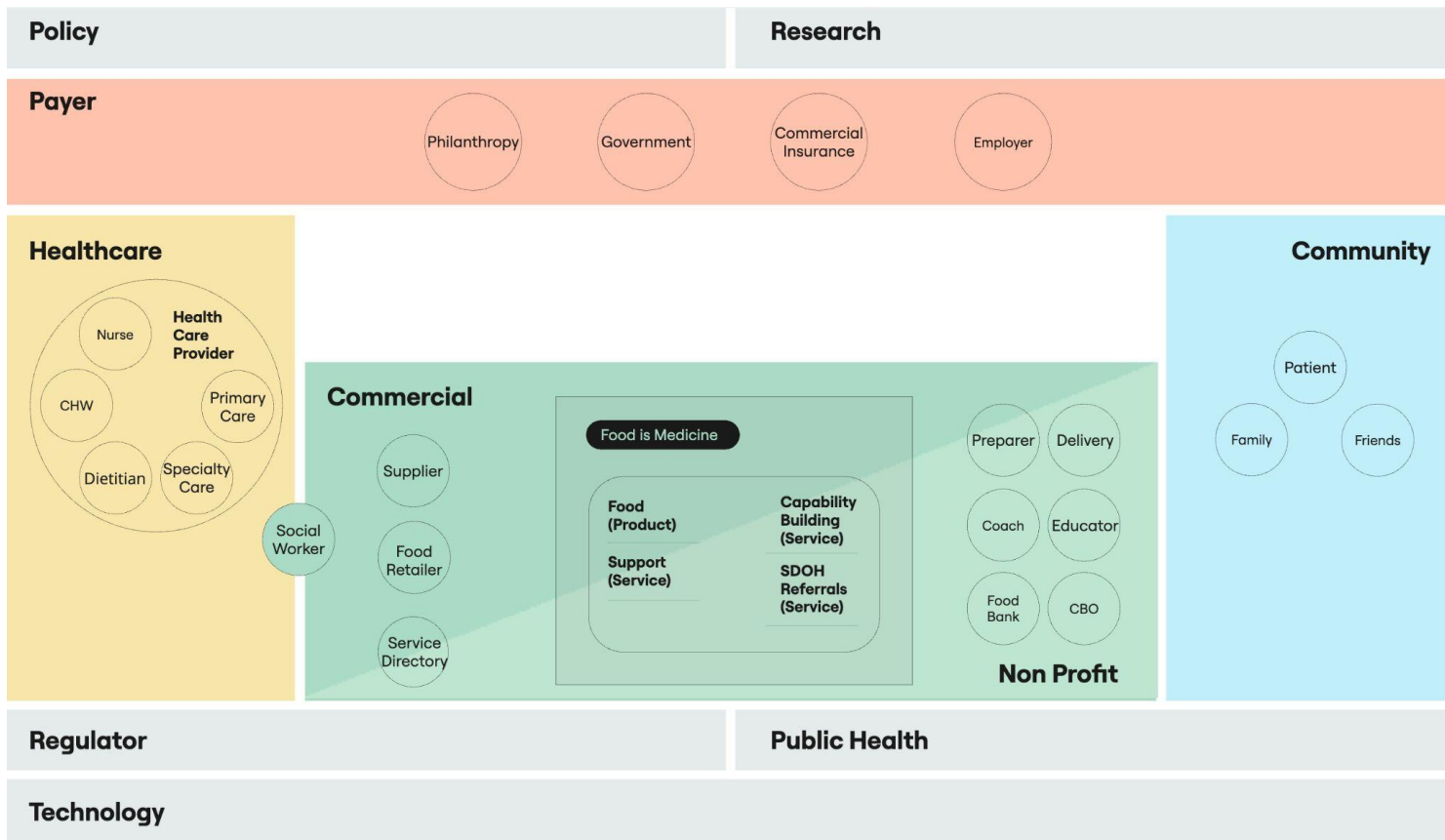
The Food Is Medicine Ecosystem



Exercise 2

Which stakeholders does your intervention include?

And what value exchanges are they making?

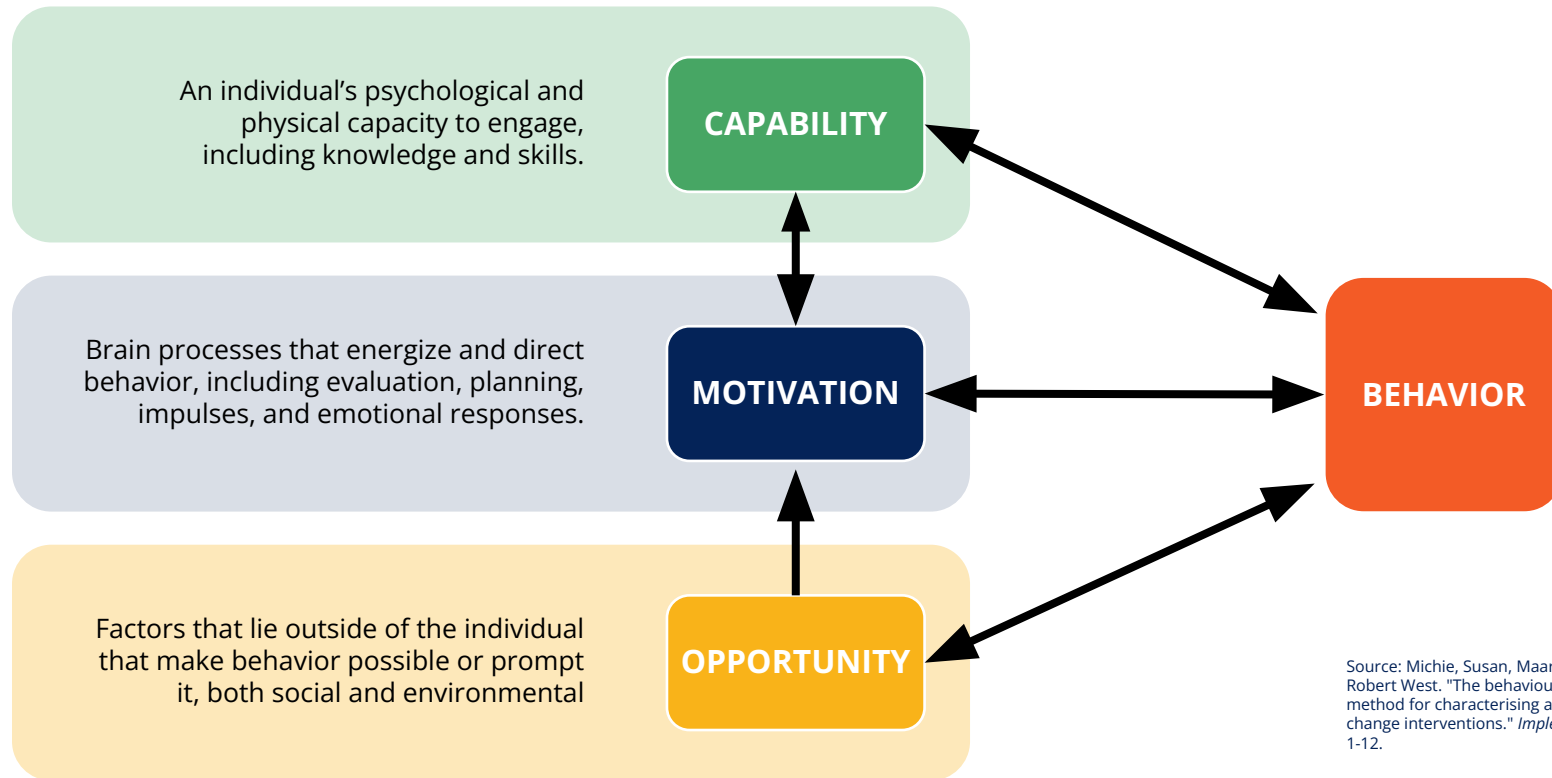


COM-B

A framework for behavior change

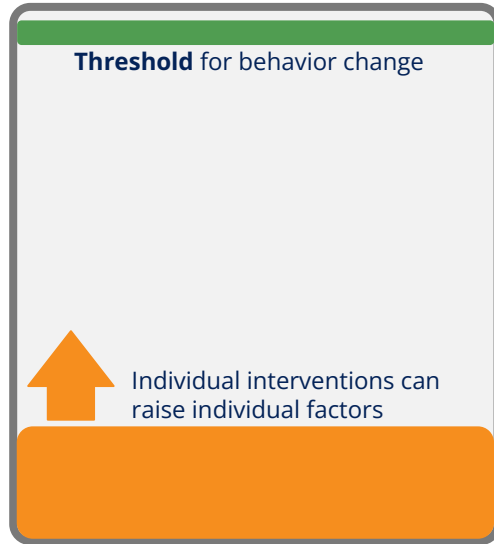
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COM-B: A model for behavior change



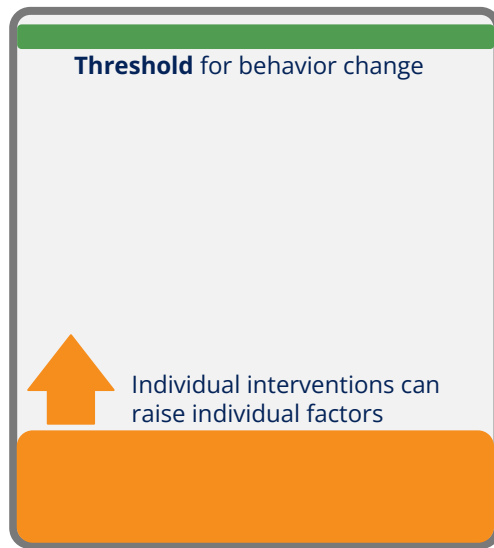
Source: Michie, Susan, Maartje M. Van Stralen, and Robert West. "The behaviour change wheel: a new method for characterising and designing behaviour change interventions." *Implementation science* 6 (2011): 1-12.

COM-B: A model for behavior change

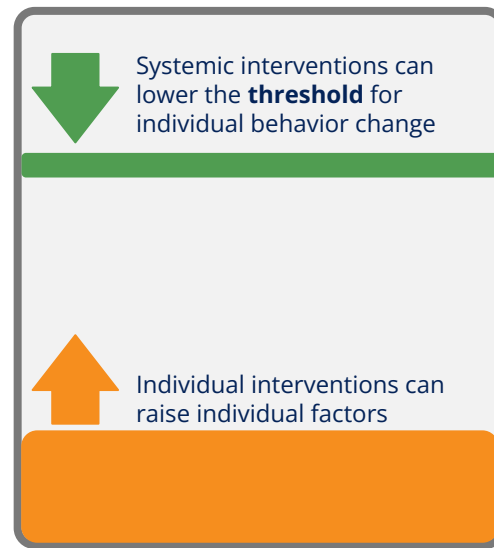


The original COM-B model describes individual factors (capability, motivation, or opportunity), and how interventions can shift those factors to enable behavior change.

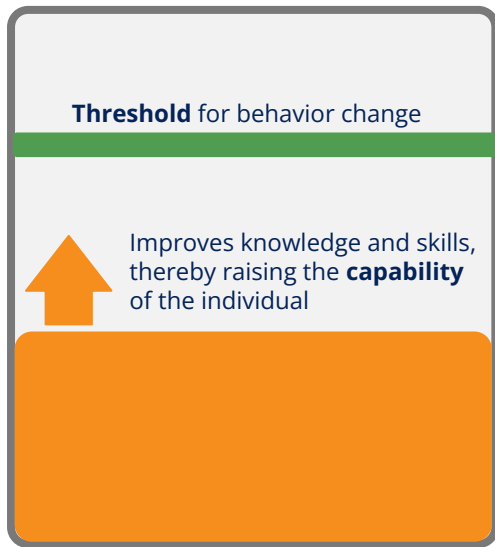
COM-B: A model for behavior change



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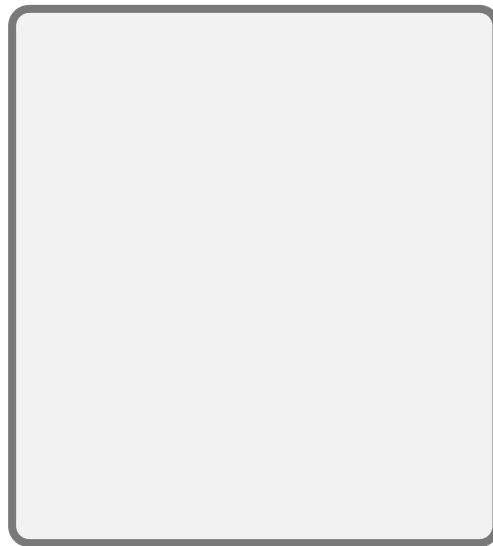


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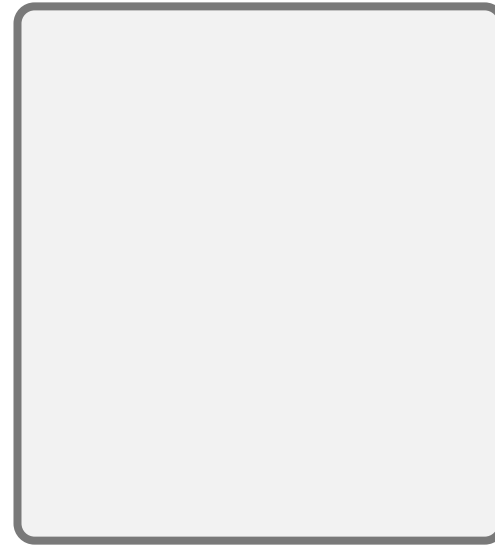
CAPABILITY

psychological or physical ability to
enact a behavior



OPPORTUNITY

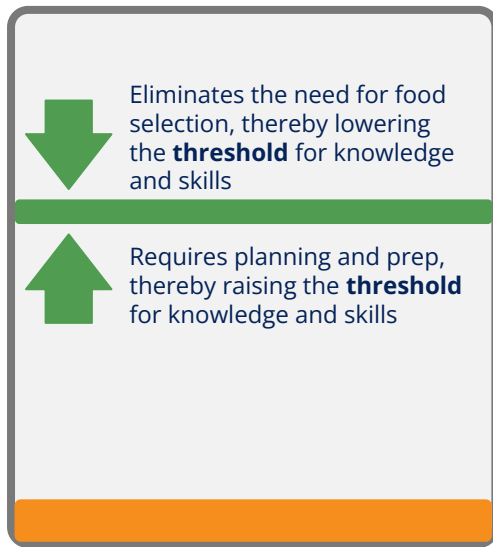
physical or social environment that
enables behavior



MOTIVATION

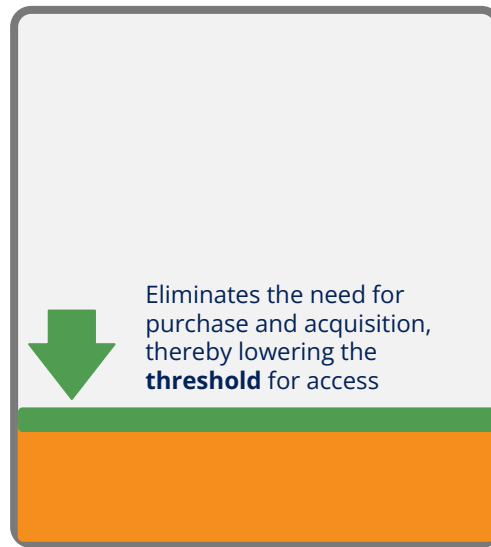
reflective and automatic mechanisms
that activate or inhibit behavior

Produce Boxes



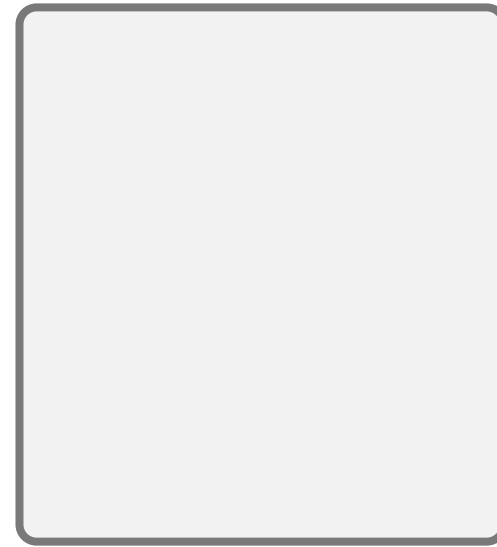
CAPABILITY

psychological or physical ability to enact a behavior



OPPORTUNITY

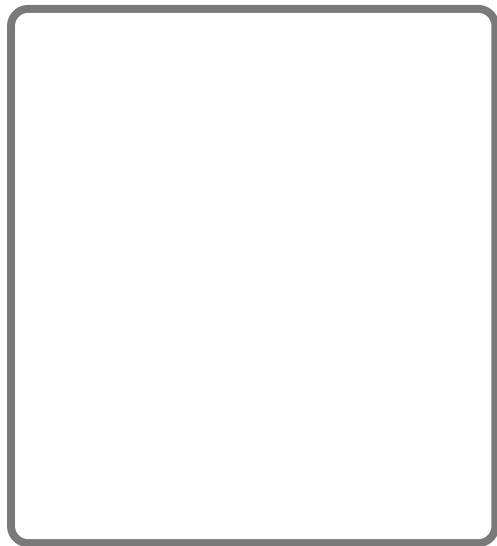
physical or social environment that enables behavior



MOTIVATION

reflective and automatic mechanisms that activate or inhibit behavior

Family and caregiver education



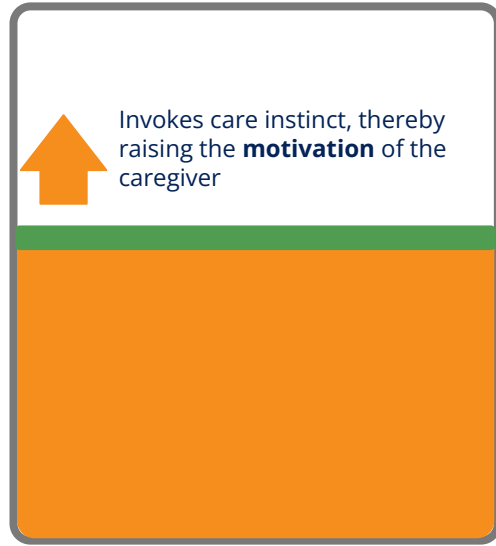
CAPABILITY

psychological or physical ability to enact a behavior



OPPORTUNITY

physical or social environment that enables behavior

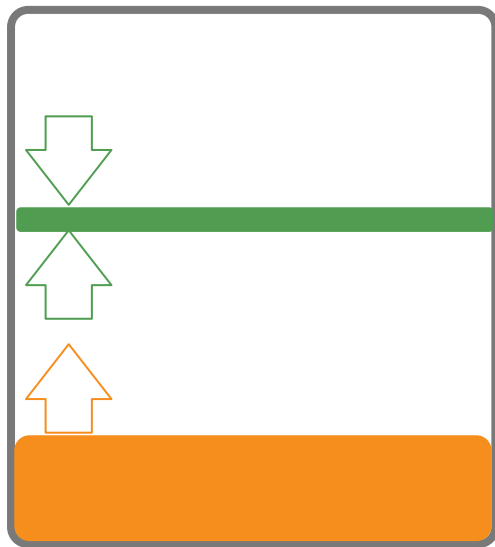


MOTIVATION

reflective and automatic mechanisms that activate or inhibit behavior

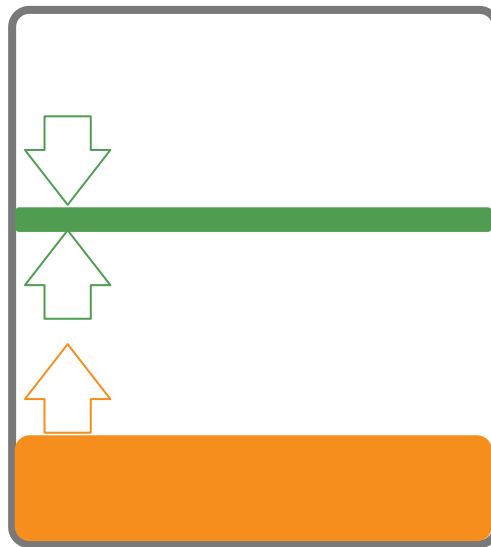
Exercise 3

Which elements of your intervention are individual interventions and which are systemic interventions? Do they target capability, opportunity, or motivation?



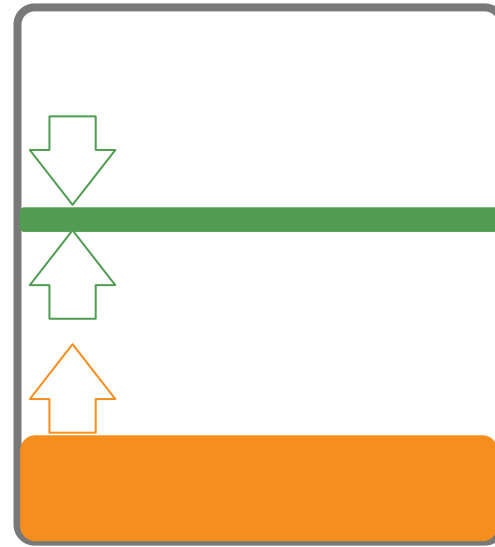
CAPABILITY

psychological or physical ability to enact a behavior



OPPORTUNITY

physical or social environment that enables behavior



MOTIVATION

reflective and automatic mechanisms that activate or inhibit behavior

Exercise 1: Who are your typical users and your extreme users? What makes them extreme?

Exercise 2: Which stakeholders does your intervention include? And what value exchanges are they making?

Exercise 3: Which elements of your intervention are individual interventions and which are systemic interventions? Do they target capability, opportunity, or motivation?

Designing for Behavior Change: A Human-Centered Approach to Research

A red circle with the number 1 inside.

Foundations of Human-Centered Design and Behavior Change

Understand the principles of Human-Centered Design and Systems Design, apply the COM-B model, and differentiate between systemic and individual interventions.

A gray circle with the number 2 inside.

Mapping the Journey: A Human-Centered Approach to "Food is Medicine"

Apply journey mapping to reframe "Food is Medicine," focusing on user experiences and integrating insights into research.

A gray circle with the number 3 inside.

Designing Targeted Interventions: Combining COM-B and Journey Mapping

Create nuanced behavior change strategies by merging COM-B and journey mapping, refining the "Food is Medicine" journey to enable critical behaviors

A gray circle with the number 4 inside.

Personas in Action: Driving Insights for Behavior Change

Develop and apply personas within the COM-B and journey mapping frameworks to generate actionable insights that inform your research strategy.

Human-Centered Design Task Force



Stacey Chang is a designer of new creative solutions to age-old dilemmas in health. He focuses on building complex adaptive systems that can respond to the dynamic challenge of producing health in human society, and currently advises a broad array of efforts seeking to build more sustainable, equitable, and effective models. Prior to founding New Origin

Studio, Stacey served as the Founding and Executive Director of the Design Institute for Health at the University of Texas at Austin. The Design Institute was a first-of-its-kind institution, dedicated to creating systemic human-centered solutions in clinical and community contexts.

Embedded as an integrated part of an operating health system and a medical education and training program, the Institute considered topics as broad as the design of products and services, the built environment, integration of social and medical interventions, the structure and strategy of national health systems, and new models for societal health at a global scale.

Before his academic tenure, Stacey served as the Managing Director of the Healthcare practice at IDEO, the global design and innovation firm. Clients included governments, research institutions, hospitals, pharma, insurance, medtech, and all the upstarts trying to rewrite the script, in both established and emerging markets.

Stacey presents frequently and is widely published, including in the New England Journal of Medicine, NEJM Catalyst, Harvard Business Review, and Politico. He has served as a TEDMED Editorial Advisory Board member, a Thought Leader for NEJM Catalyst, an Eisenhower Fellow, and an advisor to the Global Delivery arm of the Bill and Melinda Gates Foundation. He holds degrees in engineering from MIT and Stanford.

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Natalie Privett PhD leans into messy challenges and complex systems. She leverages deep expertise in systems theory, design, and health systems to reframe tenacious problems and design transformational action to advance health. Across her professional roles, Natalie has advanced systemic opportunities at every

level of health and care while also training future health systems change agents, from physicians to policy makers to designers.

Before joining New Origin Studio, Natalie was Director of Systems Design at the Design Institute for Health at the Dell Medical School at the University of Texas at Austin, a first-of-its kind academic institution dedicated to developing and applying creative design approaches to solving complex large-scale health system challenges. Concurrently, she also launched and taught in the Masters of Arts in Design in Health. Prior to University of Texas, Natalie served as Lead System Design Engineer and Assistant Professor of Health Systems Design & Global Health at the Mount Sinai Health System and Icahn School of Medicine at Mount Sinai in New York City. She was also previously Assistant Professor at New York University's Wagner Graduate School of Public Service.

Natalie has a MS and PhD in Management Science & Engineering from Stanford University and a BS in Industrial Engineering from Texas A&M University. She was a Global Health Research Fellow at the MIT-Zaragoza Logistics Center.