

# Using Systems Thinking to Explore Complex Challenges

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National **MCH** Workforce  
Development Center  
Advancing Health Transformation



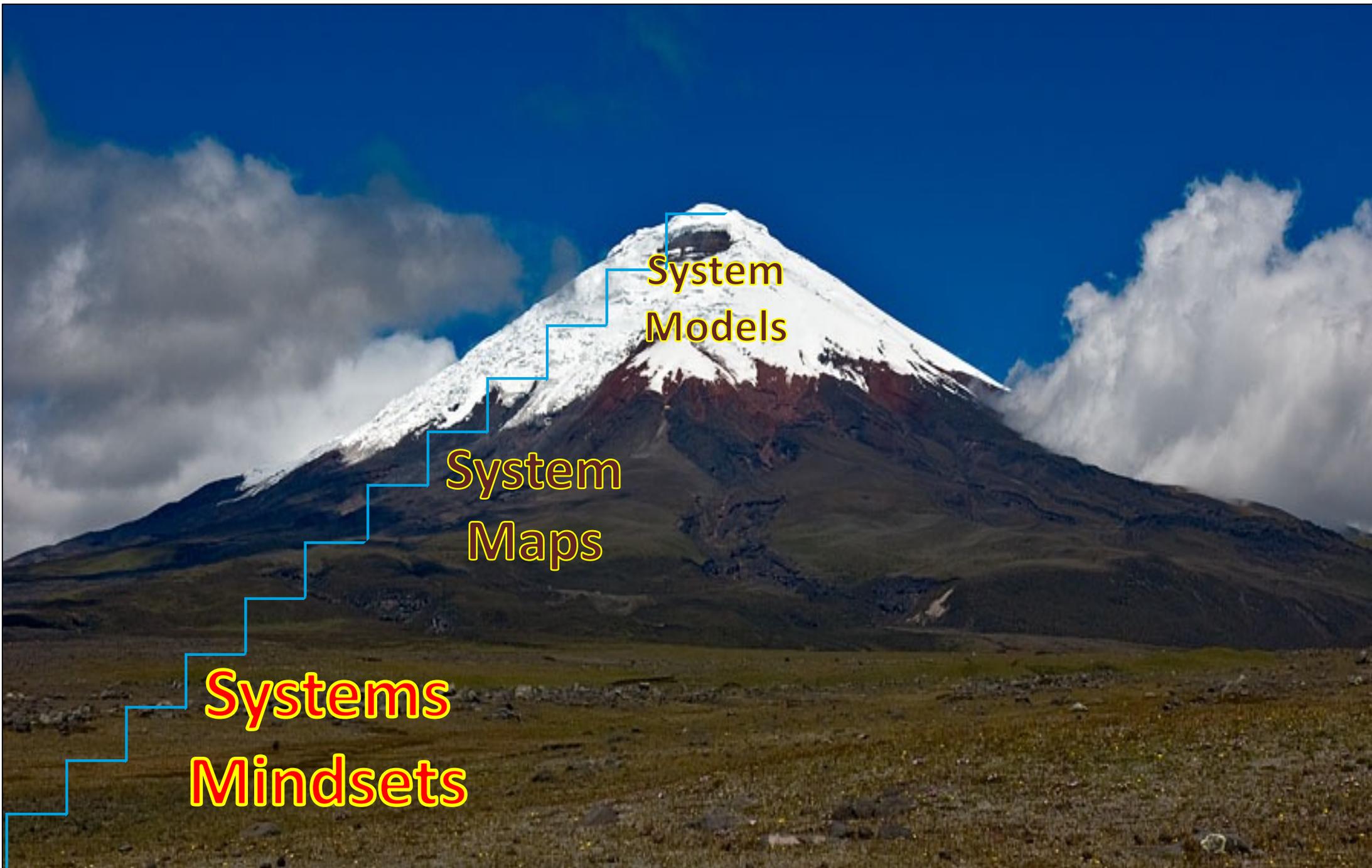
What comes to mind when you think of

**SYSTEMS?**



# Learning Objectives

- Recognize systems thinking as an approach to understanding **complexity**
- Identify characteristics of **systems structures** in your work
- Reflect on the importance of sharing **mental models** to drive collaborative efforts
- Inform selection of **targets for action** or innovation within your system based on your team's challenge and aim statement



**System  
Models**

**System  
Maps**

**Systems  
Mindsets**



# A SYSTEM IS...

**A set of elements**

**interconnected in a structure**

**that produces characteristic results.**

*- adapted from Meadows and Wright, 2008*



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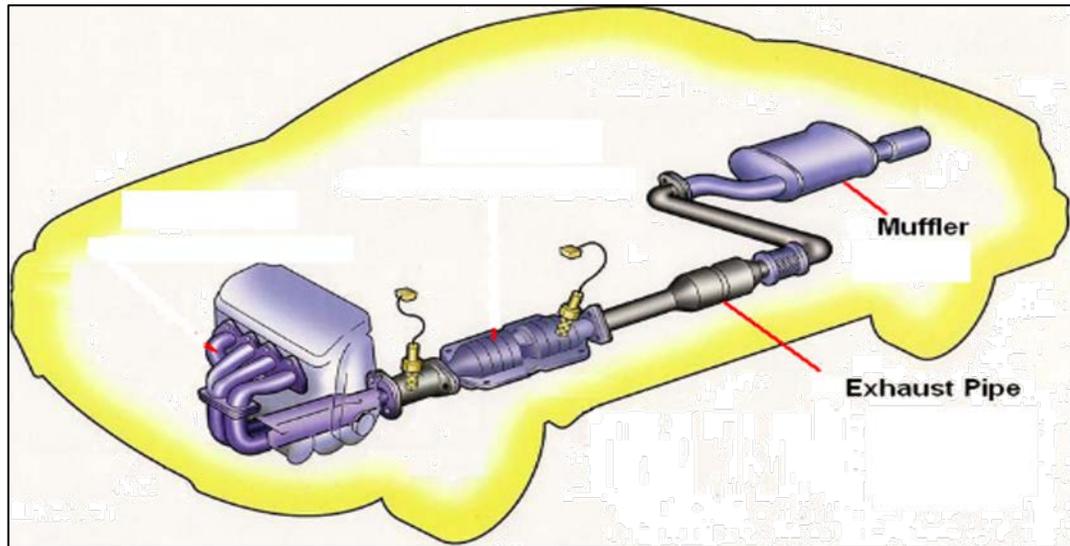


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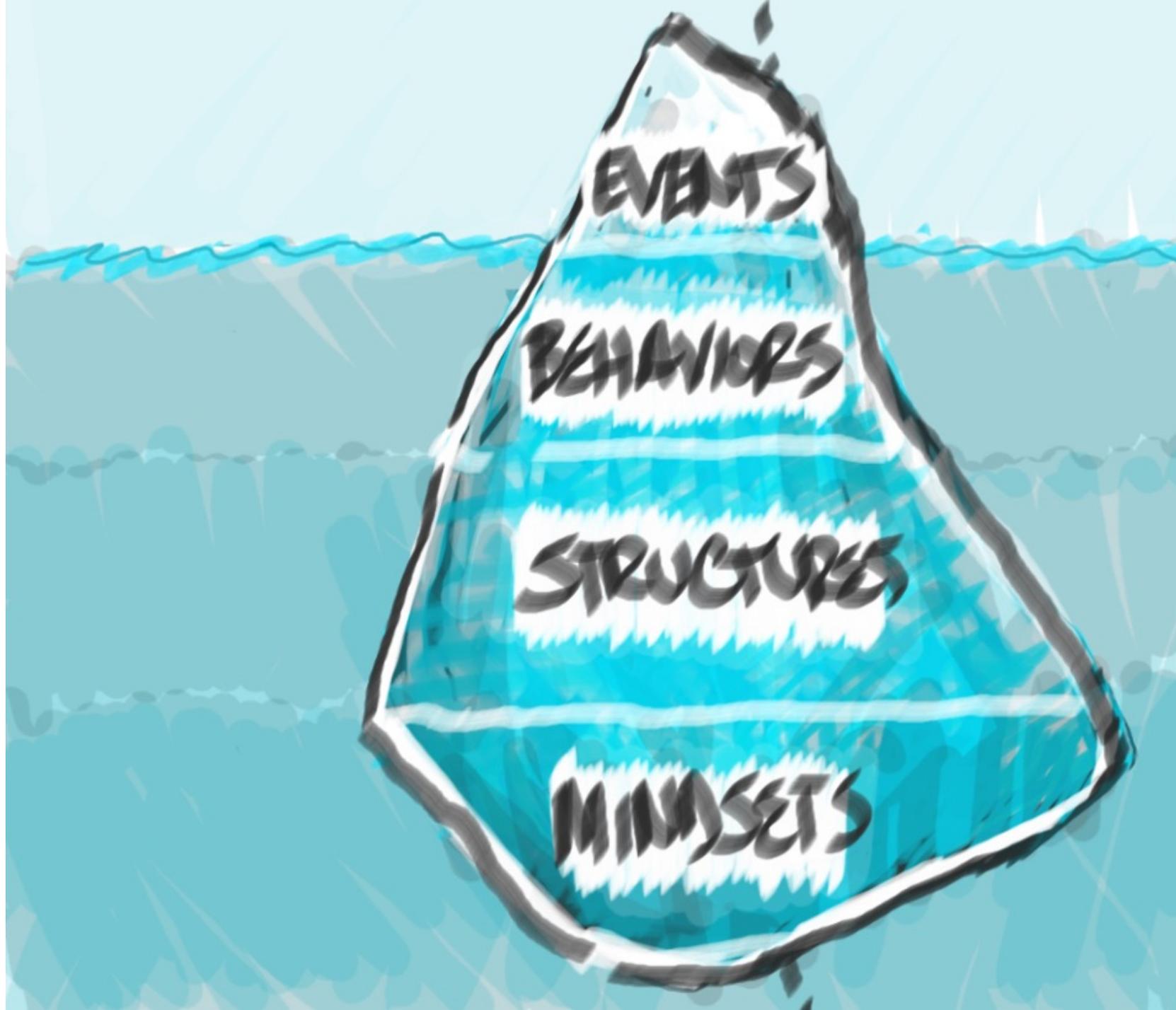
# Nested Systems & Boundaries





# Systems Iceberg

**A way to think  
about system  
complexity &  
identify  
opportunities  
for change**

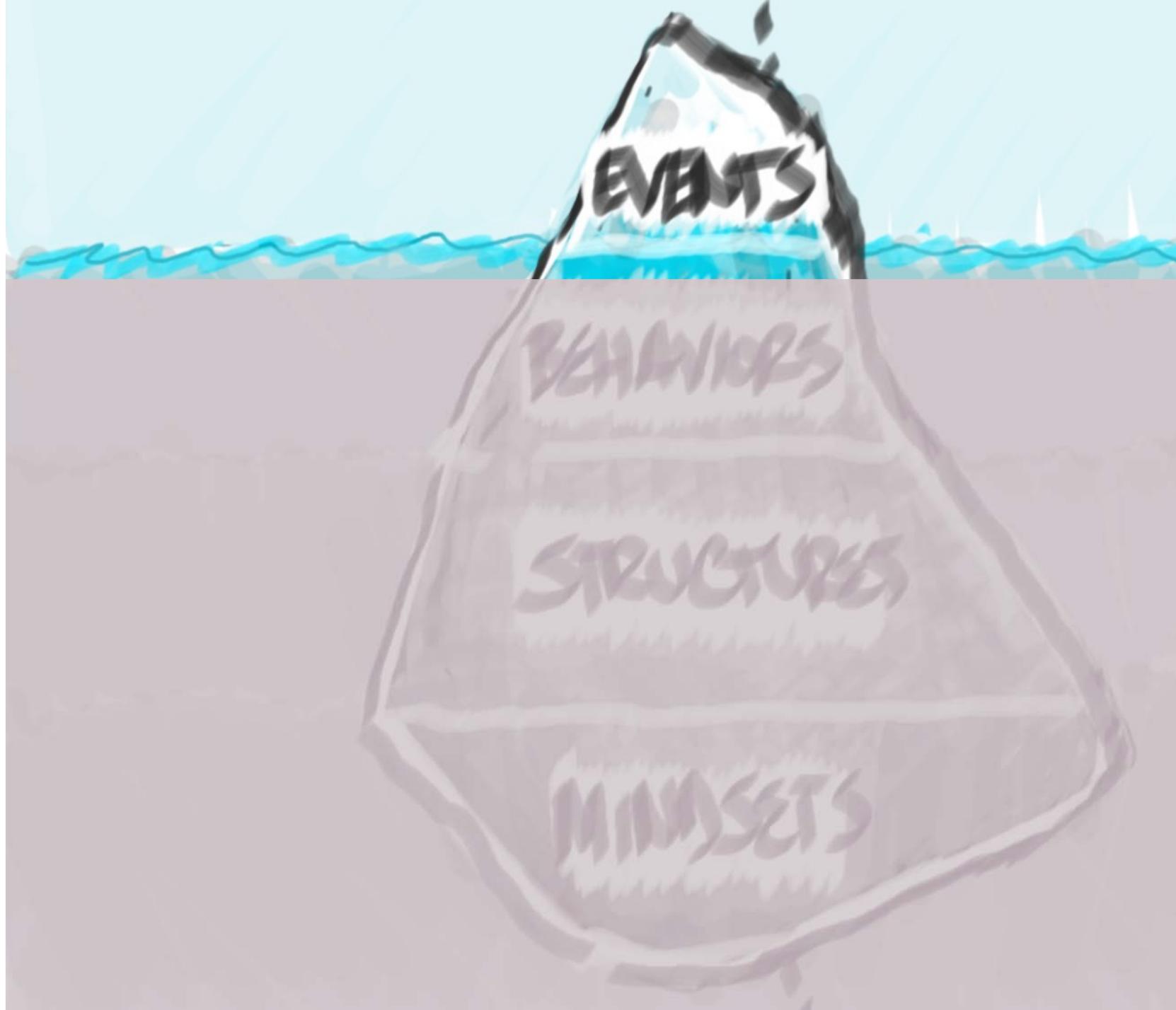




# Systems Iceberg

**EVENTS** are just  
the tip of the  
iceberg...

- The **visible part of a system**; to identify an event, you might ask yourself, “**What is happening right now?**”
- If we only think about the event level when considering solutions, we might treat the **symptoms of our problem** without addressing the root cause.
- Think about **events in the context of outcomes**





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**Event: Traffic  
congestion**

**Outcome:  
Economic  
productivity**

**Outcome:  
Quality of life**

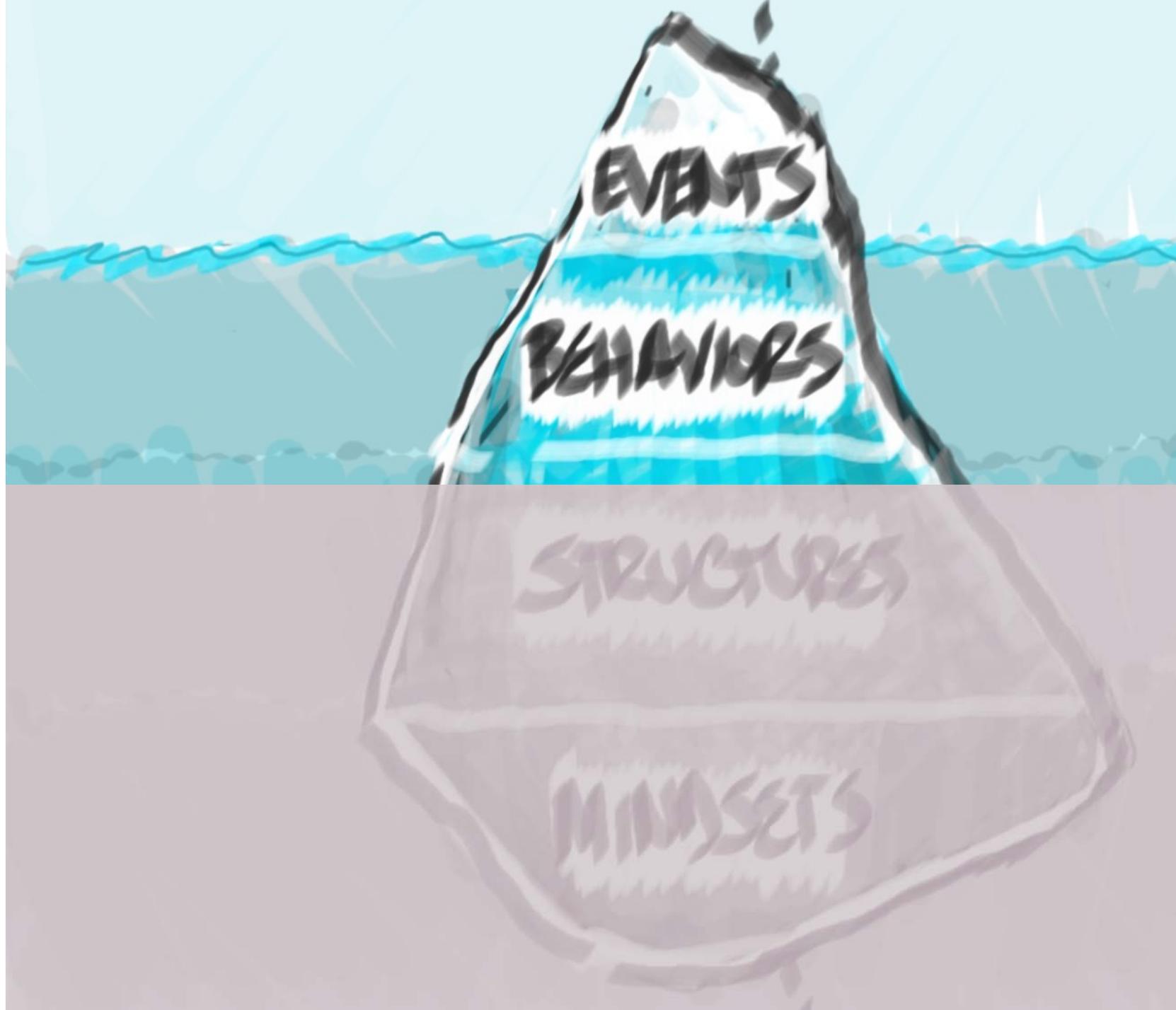
**Outcome:  
Morbidity &  
Mortality**



# Systems Iceberg

Patterns of  
**BEHAVIORS** lead to  
the events we're  
concerned about...

- Some are just **under the surface**;  
others are deeper within the system
- Consider “**What has been happening  
over time?**”
- Include individual and system  
behaviors: **What is the system *doing?***
- Helps us to **hypothesize what might  
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Quality of life

Morbidity & Mortality

Traffic congestion

Economic productivity



People drive to work



Highway construction

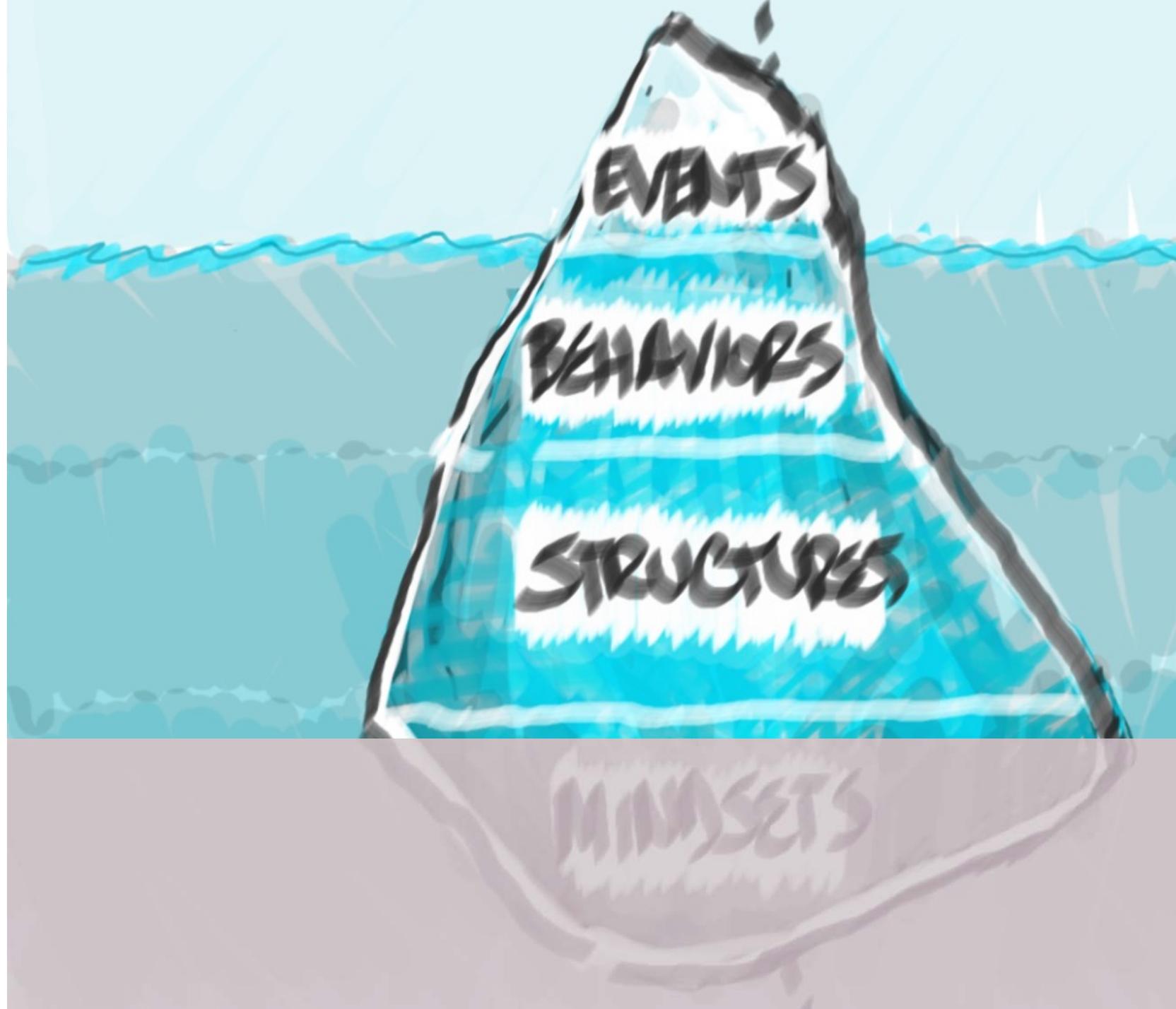


# Systems Iceberg

**System**

**STRUCTURES set  
context for how  
elements interact  
to drive behavior**

- Describe causes of the patterns we observe
- Includes physical environments, policies, and other rules
- Ask “What elements influenced the patterns?” and “What are the relationships between them?”





# Systems Iceberg

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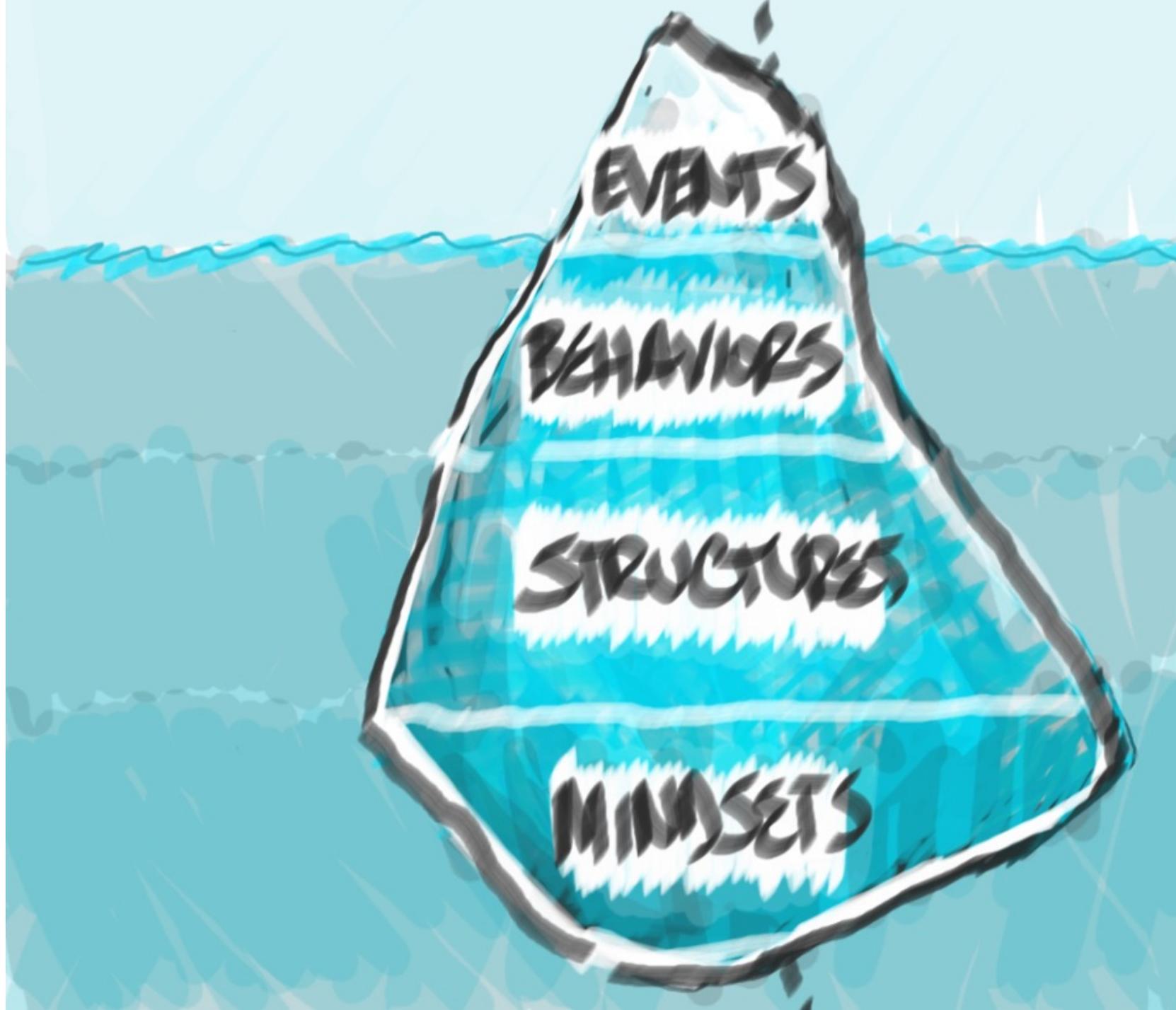




# Systems Iceberg

## **MINDSETS** underpin system structure

- These are the **assumptions, beliefs, and values** that people hold about the system.
- Ask “**What beliefs keep the system in place?**”
- **Inform mental models** and can be conscious or subconscious
- **Can resist or support improvement** relative to the change you want to see





# Systems Iceberg

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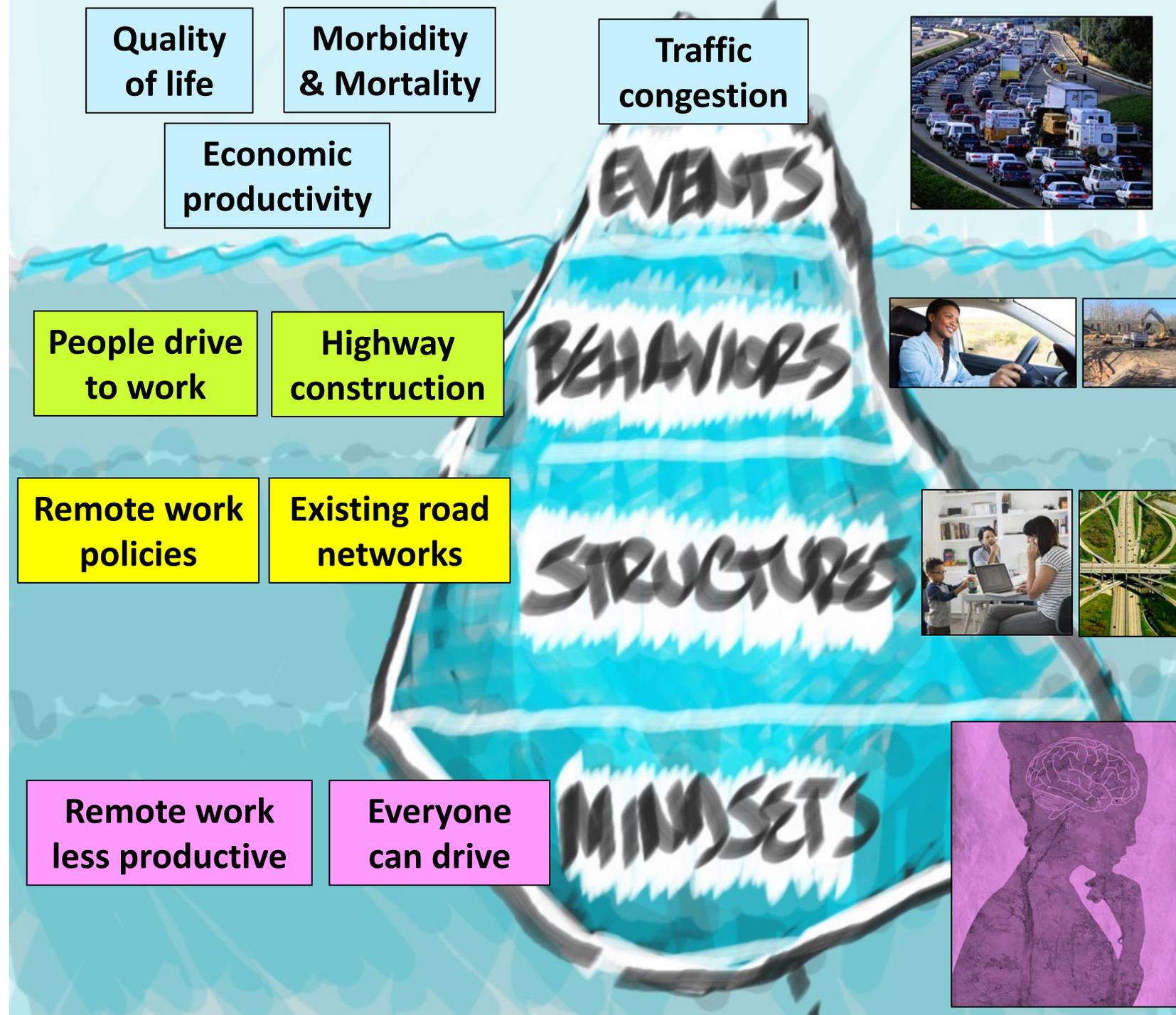
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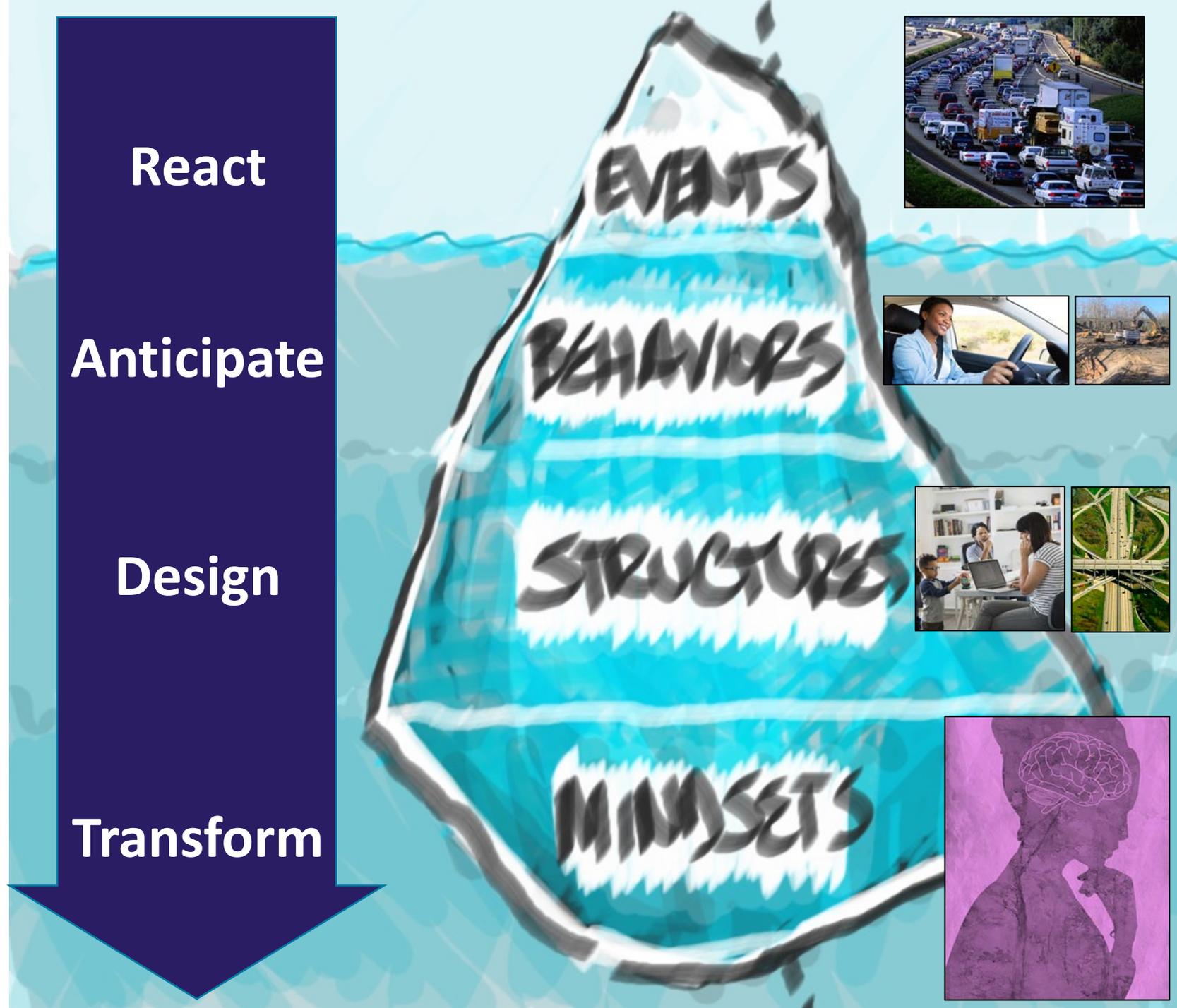
A way to think about system complexity & identify opportunities for change





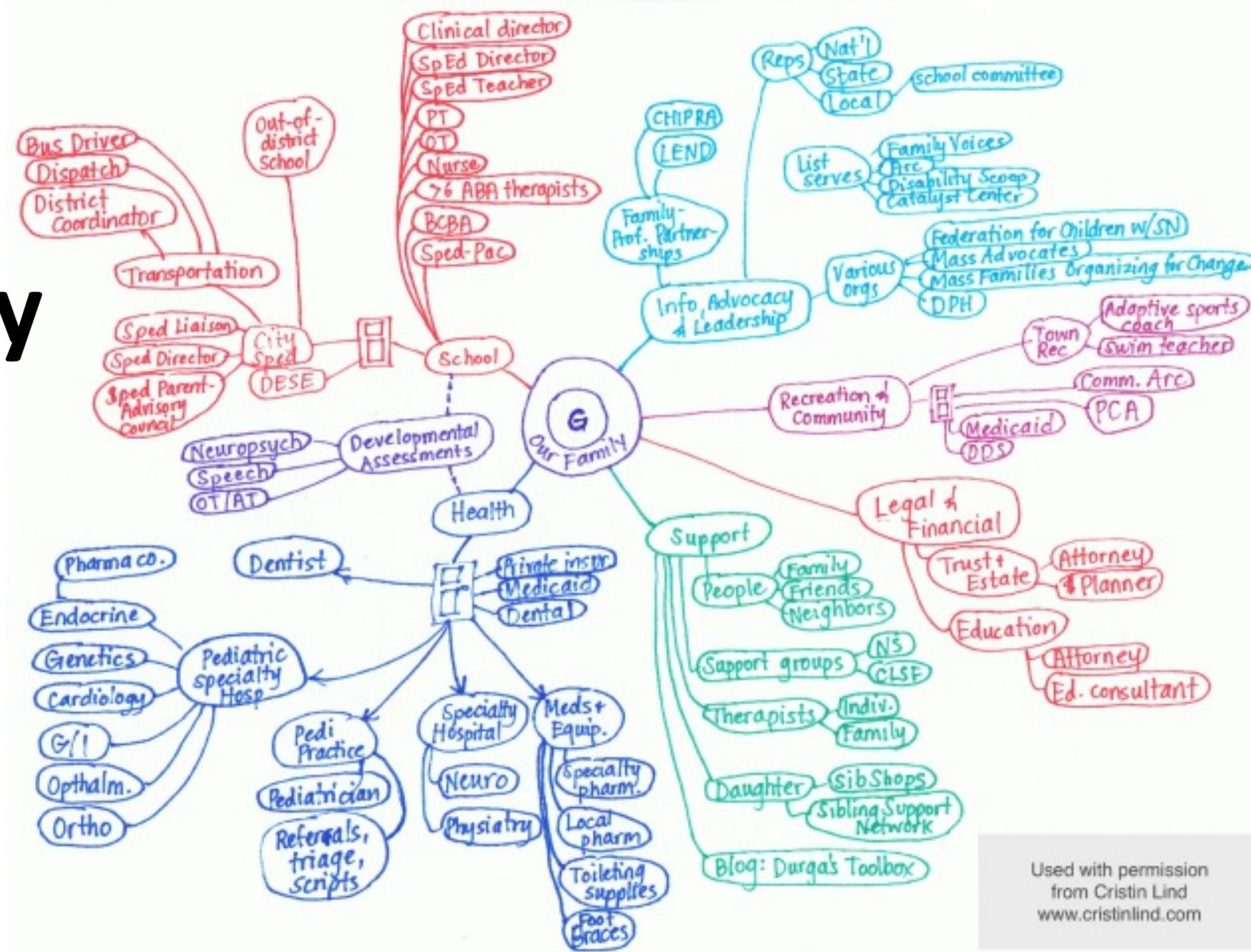
# Systems Iceberg

Increasing leverage for systems change as you go deeper under the surface





# Detail Complexity



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# A Systems Perspective

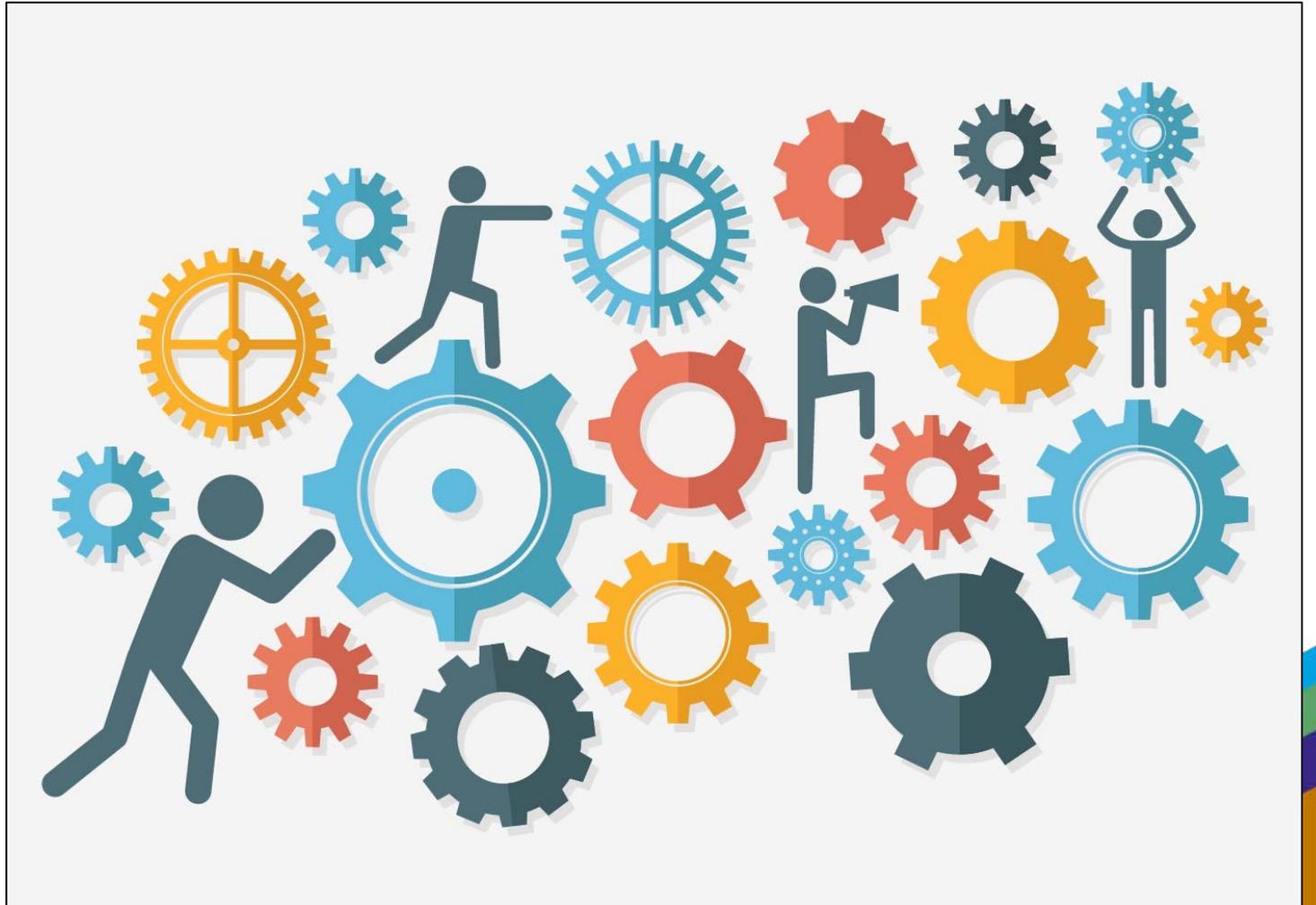


We want to **expand the way you see “the system”** affecting your focal challenge, starting with learning how to “scope” your frame appropriately over time.



# A Systems Perspective

No matter what your challenge is, it is **affected by a system** of interconnected elements





# A Systems Perspective



In our work, we rarely change the whole system, but rather **change something about the system** so it produces better outcomes.

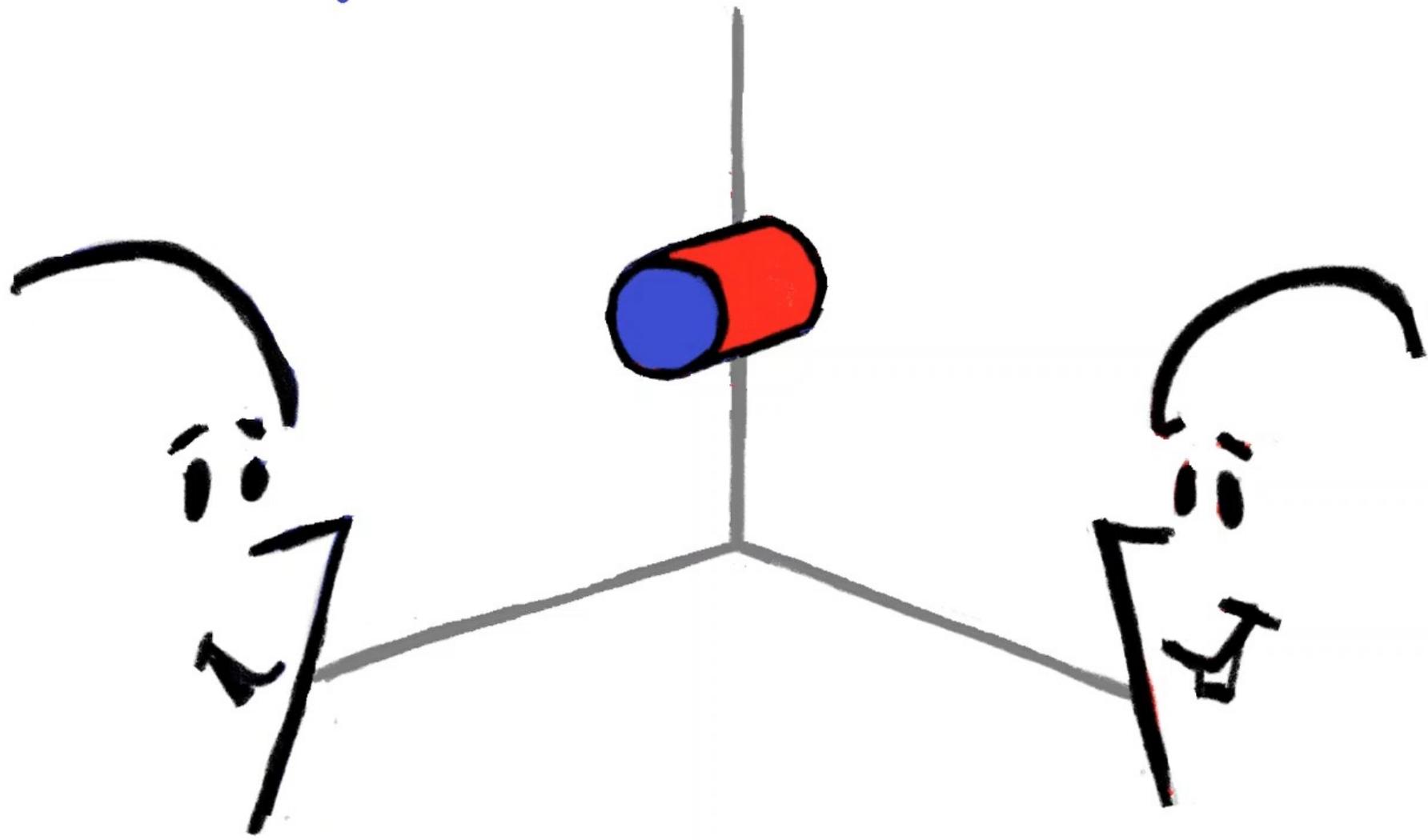


# What are mental models?





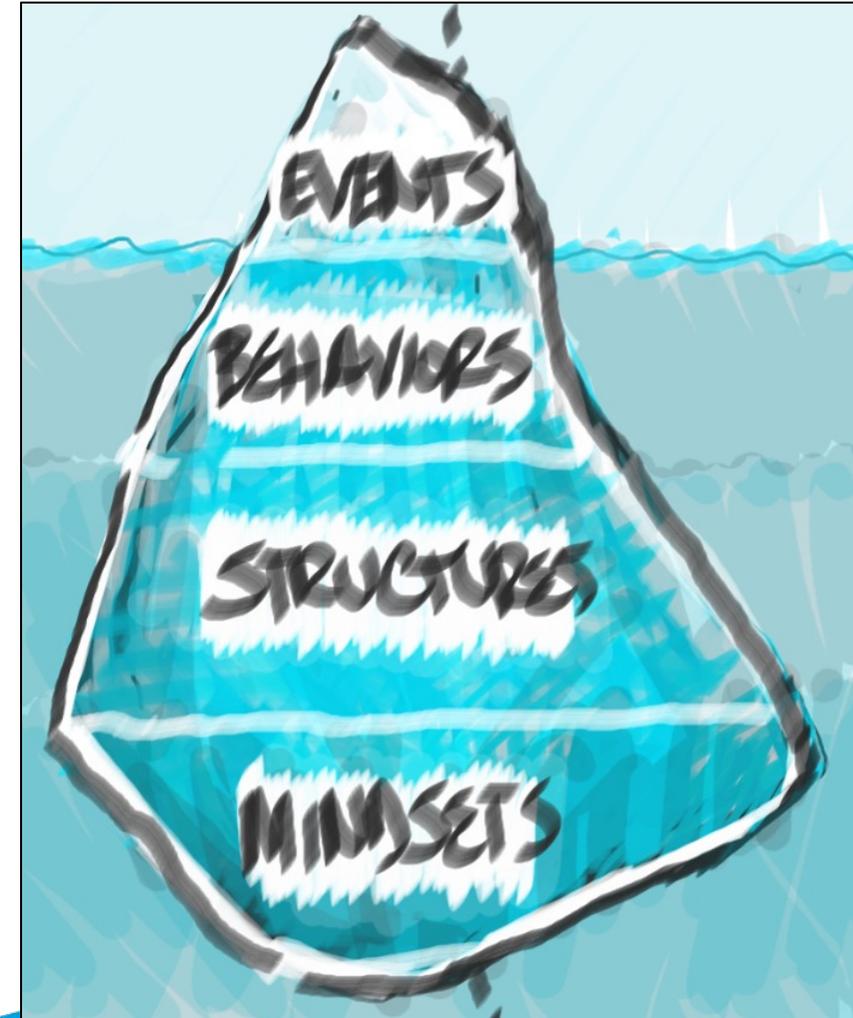
# Different Perspectives on the Same System





# Exploring Your Challenge with Systems Thinking: Iceberg Jamboard

- **Demonstration** with care coordination challenge
- In designated breakout room, collaboratively **build an iceberg based on your team's identified challenge/aim**
- **AFTER** you've considered the group's perspectives on events, behaviors, structures, and mindsets **THEN** add 5-6 **orange sticky** notes to identify **potential targets for action**
- **Be prepared to share some brief highlights** of your discussion and the targets for action with the larger group



# Systems Integration Toolkit

Technical workforce skills and evidence-based strategies are not necessarily sufficient to move the needle on maternal and child health outcomes; contextual factors such as challenging political environments, lack of leadership support, funding insufficiency, staff turnover, and historically inequitable programs and outcomes also influence Title V's ability to have an impact. **These systems thinking and mapping tools provide opportunities to see your work in the context of the 'big picture' and strengthen collaboration within agencies and across sectors.**

If you want to... Consider.... To help you...

Develop a <b>shared understanding</b> and decide on <b>key target points for action</b>	Causal Loop Diagramming	Identify leverage points that help shift the entire system and not simply treat the "symptom" of the problem. Have a facilitated conversation to share "mental models" and hypothesize as a group what's driving trends over time.
	Concept Mapping	Elicit stakeholders' opinions about a focal question, and to process this information to identify themes and priorities.
Understand the <b>network of stakeholders</b> that are needed for an initiative	Networking Mapping	Visually display connections between individuals or organizations in a system.
	Balance of Petals	Visualize the stakeholders needed for an initiative, what they need to contribute, and what value they receive in return. Through this exercise, teams discover which stakeholders are imbalanced in terms of what they give/get from a project.
See the <b>'big picture' system</b> you are trying to change	5 R's	See the system in which you are working by using this conversation guide to prompt for what success looks like (results), roles, resources to support change, and rules and relationships that must be understood or changed to improve outcomes.
	Process Flow Diagramming	Create a map of a current process and use it to help redesign and improve the process, to create a new process, or to document the role of people/organizations to clarify who does what in the process.
	Behavior Over Time Graphs	Share perspectives about what is causing trends over time and move closer to developing a shared understanding of the challenge.
Understand the <b>services or resources available</b> to meet a common goal	Whole System Mapping	Inventory programs, services, or resources within the system you want to strengthen.
	Asset Mapping	Map and analyze information about assets in a community or state to meet a common health goal.
Understand <b>how stakeholders think about a system</b> /their role in the system	System Support Map	Do a deep dive mapping exercise to depict an individual's responsibilities, needs, resources, and wishes. It can be used to support meeting MCH consumers' needs, setting your team up for success, or defining and strengthening a system of individuals.

## Where to start?

- ✓ Check out the System Mapping 5-minute Video Series: <https://www.mchnavigator.org/transformation/systems-integration-resources.php#>
- ✓ Reach out to the Systems Integration team at [jcohen@amchp.org](mailto:jcohen@amchp.org) or [klich@unc.edu](mailto:klich@unc.edu)



# Additional Resources

- You will find some trainings on the MCH Navigator:
  - <https://www.mchnavigator.org/transformation/systems-integration.php>
- We have facilitation guides and videos – contact the SI core to discuss your needs ([klich@unc.edu](mailto:klich@unc.edu))
- The Systems Thinking Website has lots of wonderful resources
  - <https://thesystemsthinker.com/>
- Hovmand's Community-based System Dynamics book
  - <https://systemdynamics.org/product/community-based-system-dynamics/>
- Scripts for conducting Group Model Building
  - <https://en.wikibooks.org/wiki/Scriptapedia>
- Donella Meadows' Thinking in Systems book is a great primer on systems thinking
  - <https://donellameadows.org/systems-thinking-book-sale/>
- Water's Foundation has lots of systems thinking capacity building activities, especially for K-12 students but many work for adults too
  - <https://www.watersfoundation.org/>