

Im a g i n i n g F a i l u r e s

Identify Blind Spots in Research Administration and Compliance

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2023 SRAI Annual Meeting

Im a g i n i n g failures beforehand offers advantages in improving the quality of outcomes and preventing mishaps in research.



Seattle Children's®



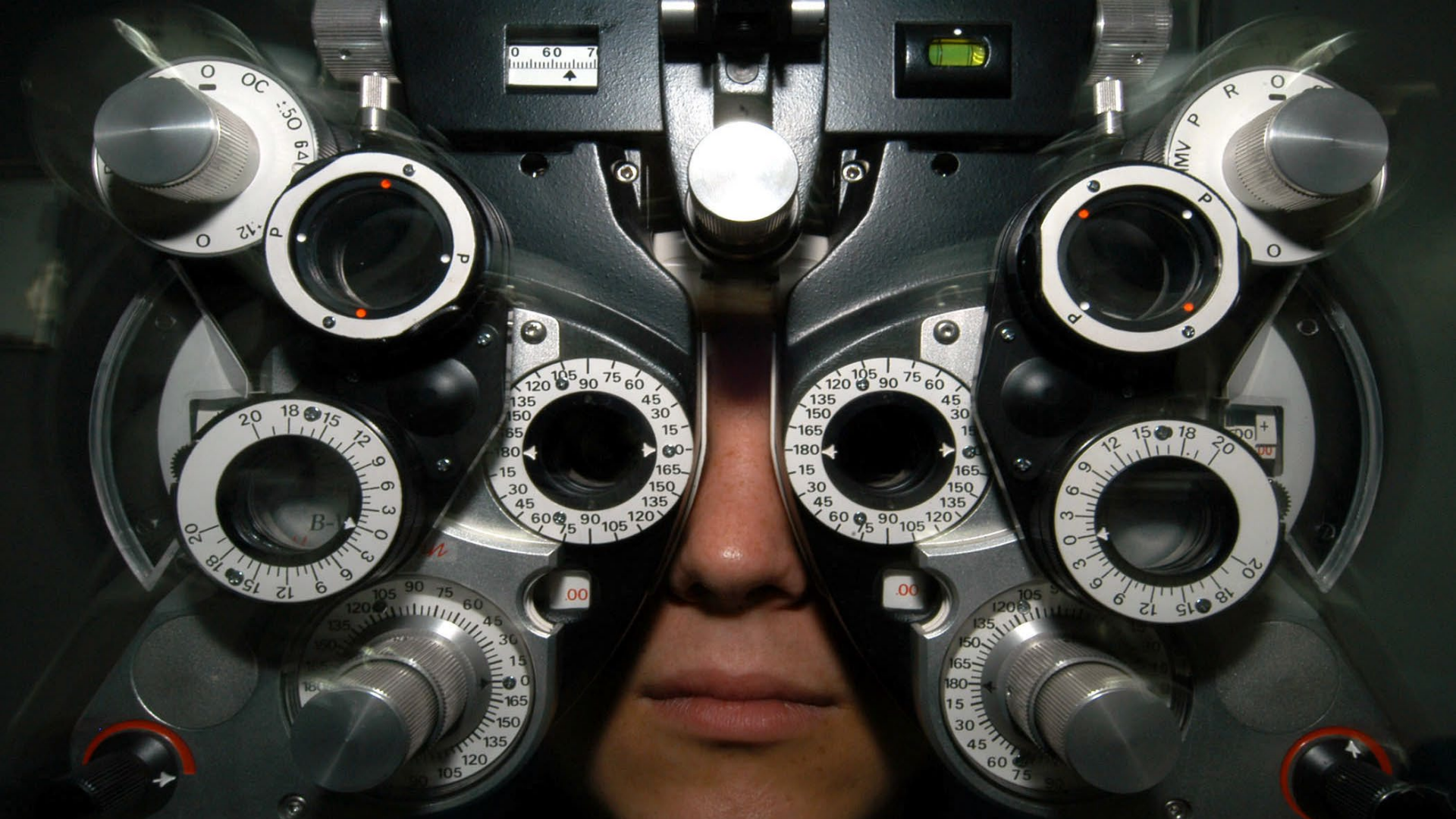
Speaker Disclosures

David Staley, MA

I don't have any conflicts of Interest to report.
The views and opinions expressed in this presentation do not reflect the opinions of Seattle Children's Hospital; they are my own.

Perspective

From Blurry to Clear



Learning Objectives

1

Examine

the strategy of using prospective hindsight.

2

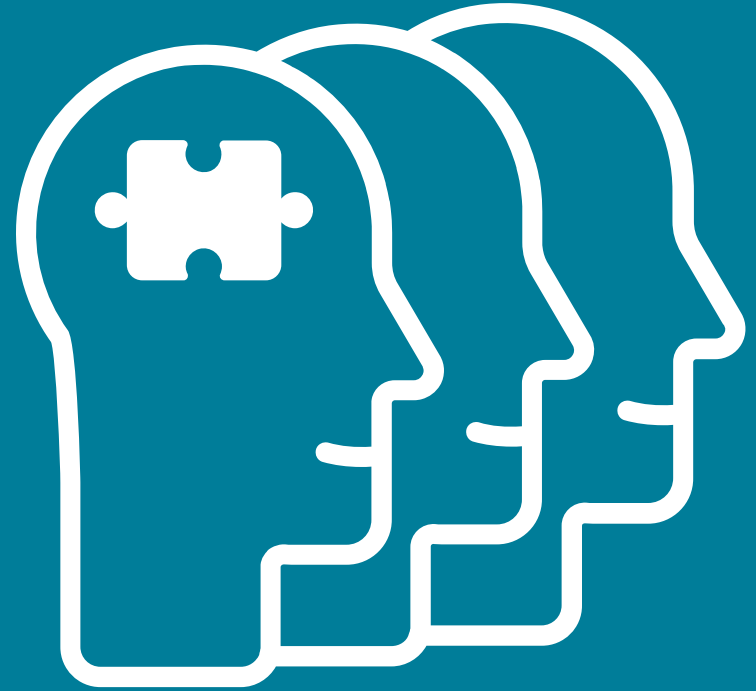
Assess

a research scenario to identify potential blind spots.

3

Suggest

changes to the research scenario to improve the outcomes.



Problem-Solving

Identifying Gaps and Root Causes

Problem-Solving Areas



Activity



Complexity



Investments



Pressure



Scrutiny

High Volume
Resources
Oversight

Procedures
People
Location

Institutional
Department
Programs

Career
Funding
Performance

Legal
Regulatory
Reputational

Gap Analysis Model

Comparing current practices with desired practices



1

Current State

- Identify the current practice and outcome



2

Future State

- Define the desired practice and outcome



3

Gap

- Analyze the gaps: current practice and desired outcome



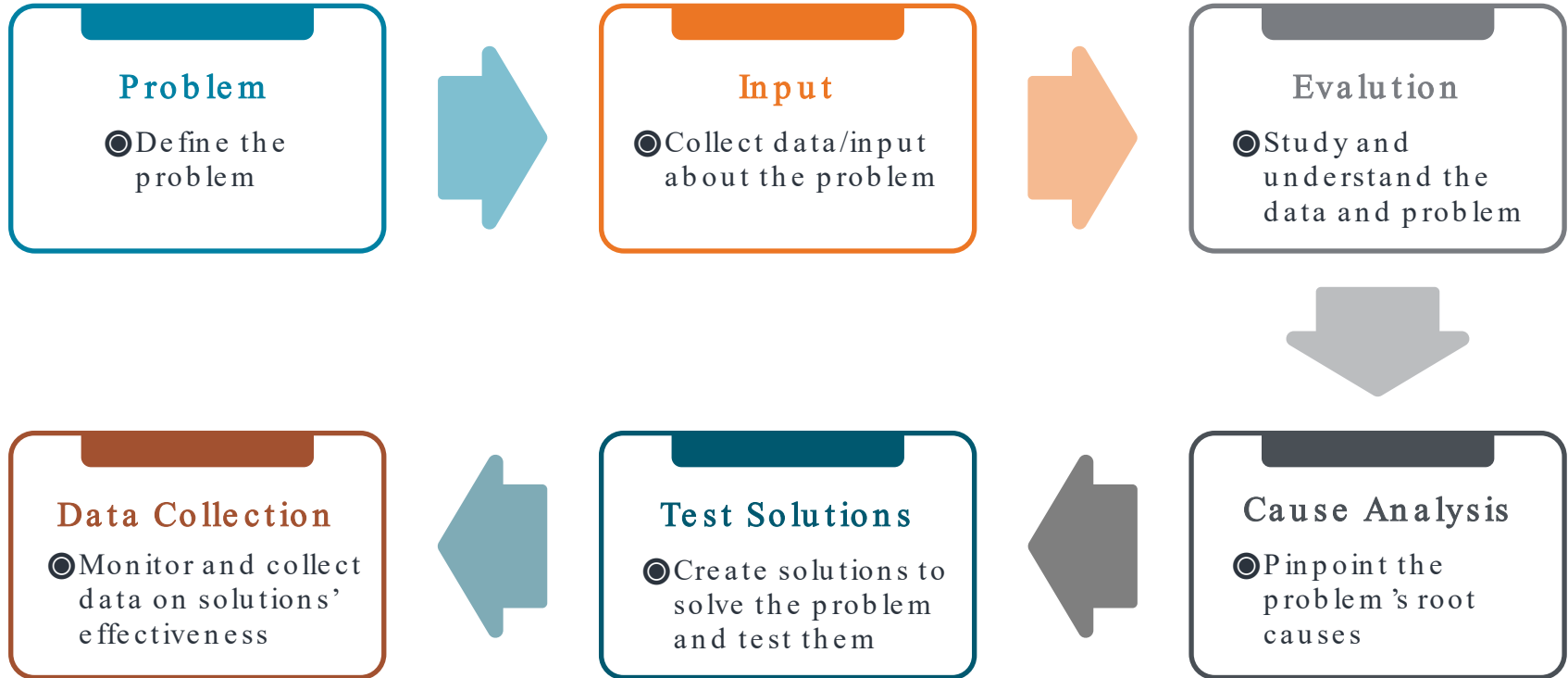
4

Action Plan

- Develop actions: bridge gaps with solutions

Root-Cause Analysis Model

Identifying underlying causes of problems



Unlikely Insight

Testing Thinking

Testing Thinking



Test thinking

- Implicit assumptions
- Wrong conclusions



Examine bias

- Confirmation bias
- Overconfidence bias
- Anchoring bias



Stay curious

- Simple questions

Seeking Unlikely Insight



Have theories

- Look for contradictions and possibilities



Seek insight

- Identify unlikely sources of insight



Evolve thinking

- See things fundamentally different

Hypothetical Opposites

Using Prospective Hindsight

Hypothetical Opposites

Research: Imagine events as though they have already occurred—the hypothetical opposites and consequences.

Finding: Prospective hindsight—imagining an event has already occurred—increases the ability to correctly identify reasons for future outcomes by 30%.

Mitchell, D., Russo, J., & Pennington, N. (1989). Back to the future: Temporal perspective in the explanation of events. Journal of Behavioral Decision Making, 2, 25-38.
<https://doi.org/10.1002/bdm.3960020103>



Hypothetical Opposite Steps

1

- ✓ Events
- ✓ Factors
- ✓ Situations

Imagine

2

- ✓ Problem
- ✓ Reason
- ✓ Root cause

Work
backward

3

- ✓ Insights
- ✓ Issues

Assess

4

- ✓ Assumptions
- ✓ Best practices
- ✓ Frameworks

Question

5

- ✓ Informed
- ✓ Self-aware
- ✓ Well-reasoned

Act

Research Scenario

Using Prospective Hindsight

Research Study Involving a Device

Interventions and Activities

Record blood flow changes in the brain when playing violent video games and then testing cognitive stress levels.

Devices

Functional near-infrared spectroscopy (fNIRS); it is not approved by the FDA for clinical diagnosis or therapy.

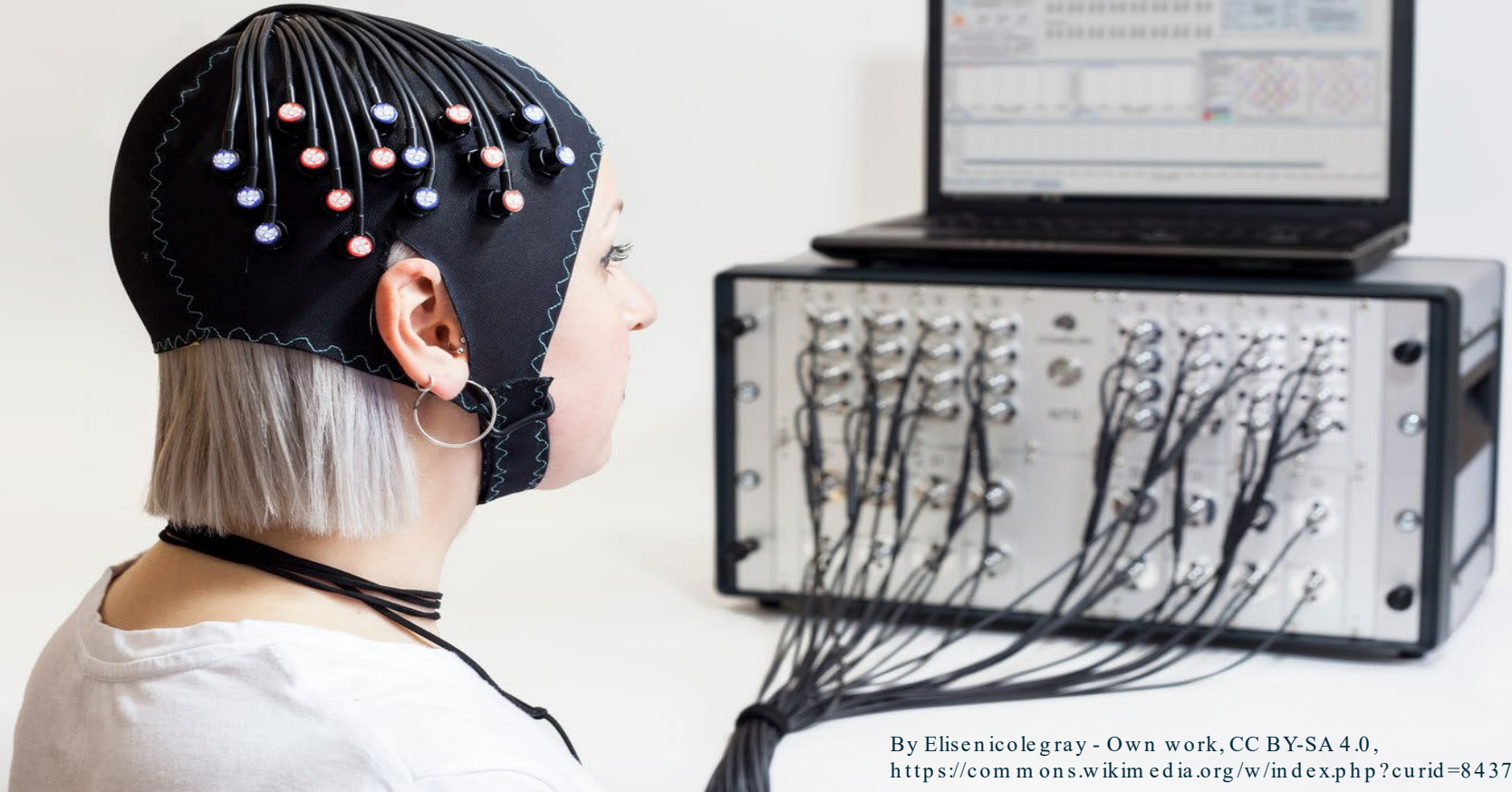
Objective

Evaluate the safety, effectiveness, or performance of fNIR in participants and controls in detecting blood flow changes related to stress levels in the brain.

Determination

Is investigational (unapproved device or “off-label” use of legally marketed device)

Functional Near-infrared Spectroscopy (fNIRS)



By Elisenicolegray - Own work, CC BY-SA 4.0,
<https://commons.wikimedia.org/w/index.php?curid=84376563>

Blind Spots

Using Prospective Hindsight

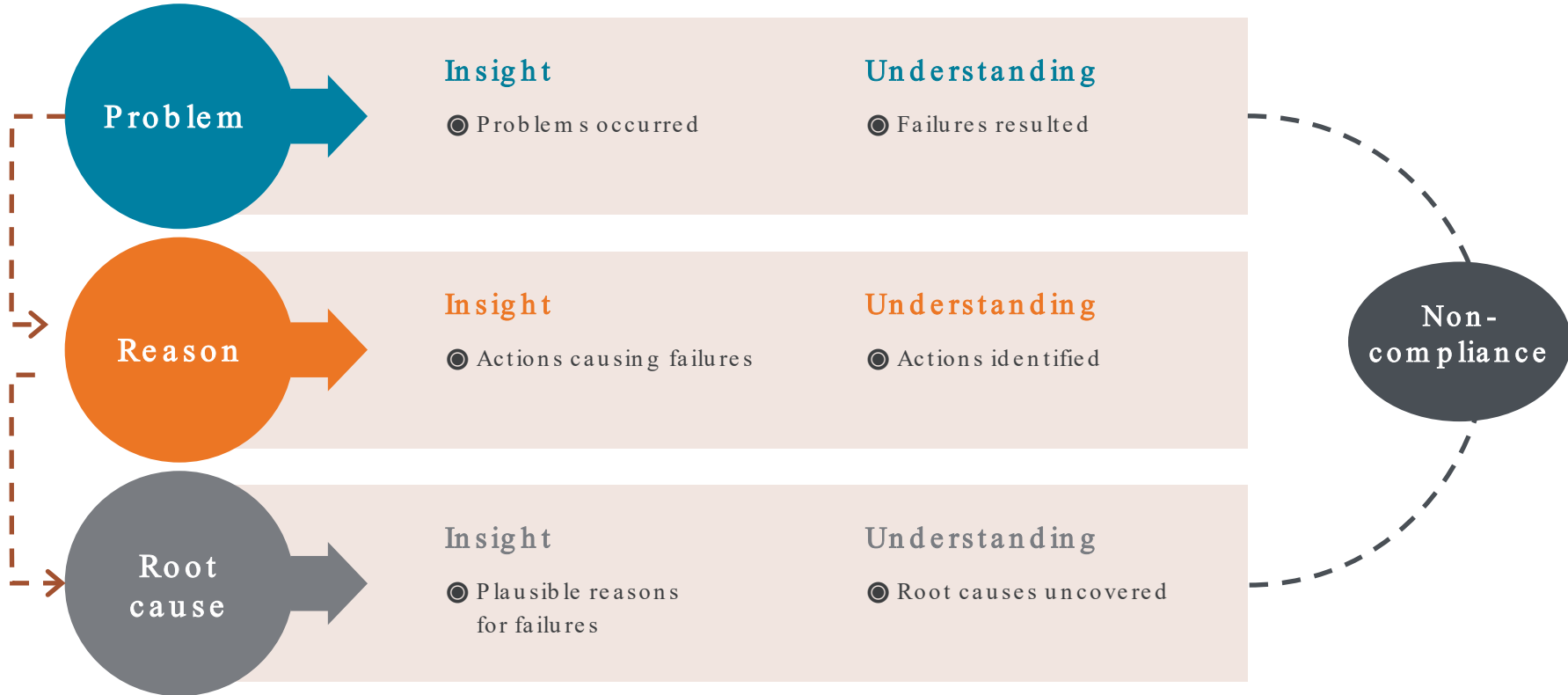
Imagining Failures

Assuming failures in outcomes to identity blind spots



Working Backward

Challenging thinking and retracing the actions of the failures



Avoid Jumping to Conclusions

Generating questions to evolve thinking and challenge assumptions

Information

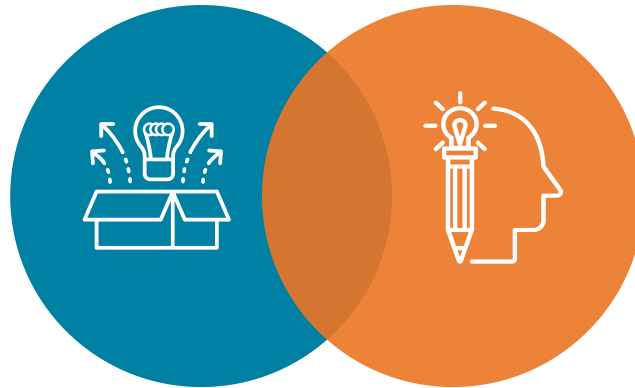
- What information am I missing but that I need?

Observations

- How can I verify what I have observed?
- What assertions have I made?

Assumptions

- What might I be assuming?



Theory

- What have I predicted intuitively about various possible outcomes?
- What are their chances of succeeding?

Perspective

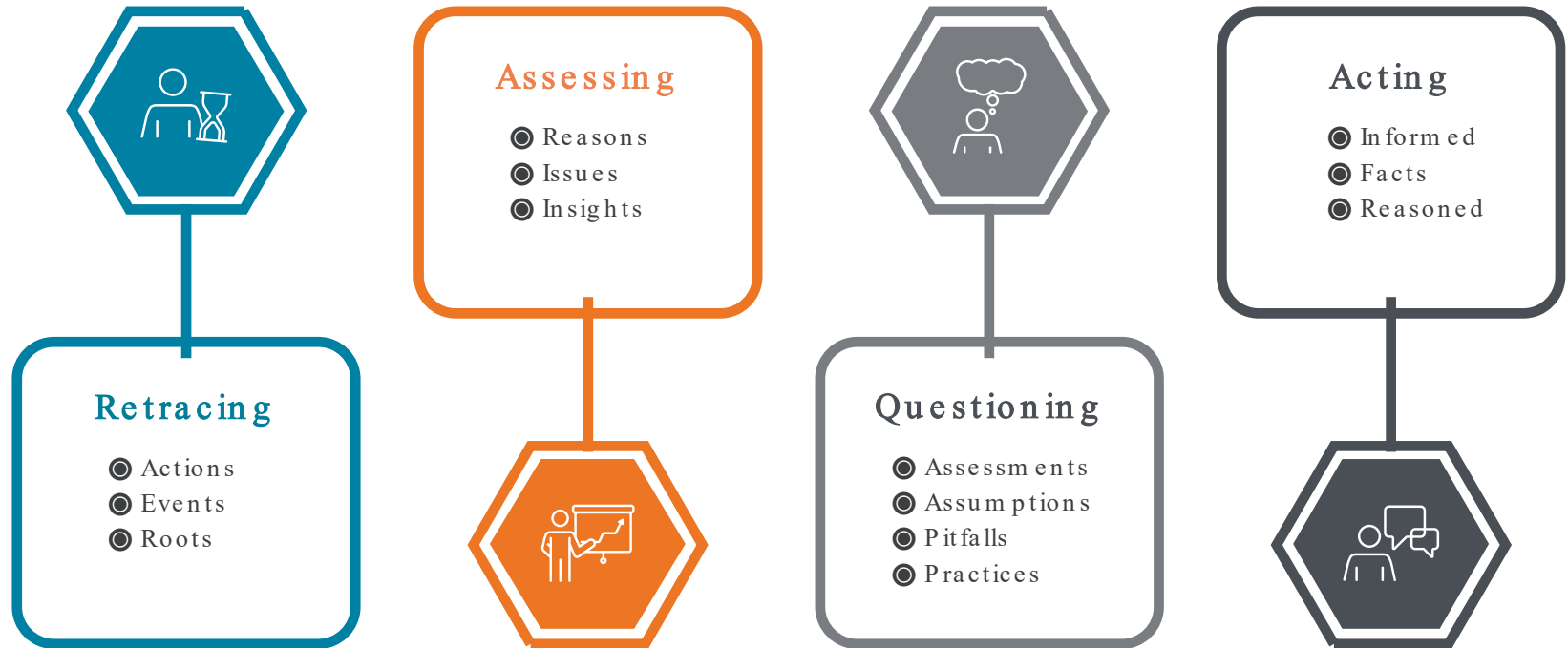
- How could I gain perspective and objectivity before acting?

Insight

- Where can I seek unconventional insight?

Assessing, Questioning, Acting

Generating plausible reasons, questioning assumptions, and acting informed



Hypothetical Opposites

Leveraging the strategic advantages of prospective hindsight

Tempering Overconfidence

- Grounding research professionals in preventing failures in research outcomes



Preparing Contingencies

- Seeing possible ways to creatively connect how to identify issues otherwise overlooked



Enhancing Countermeasures

- Evolving thinking, acting self-aware, and spotting blind spots



Key Takeaways