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October 4-6, 2018 | Miami, FL

Mental and Communication Barriers in the Perfusion Environment

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Perfusion Safety Issues

- Air Emboli
- Blood Product Confirmation Mix Up
- CPB Connections Coming Apart
- Miscommunication During Case (Vent)
- The List Goes On and On.....



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Two Main Areas for Safety Concern

- Cognitive Error
 - Reflect and Resolve – IDEA
- Communication Breakdown
 - Conflict Resolution – TLA



LET'S TAKE A MINUTE TO DISCUSS HOW WE THINK

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What has happened in this Picture?



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List 4 Reasons What is Going On?



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Two Modes of Thinking

FAST	SLOW
Pattern matching	Analysis, Calculation and

Each has advantages, each can contribute to errors

Kahneman (2011) *Thinking Fast and Slow*

solution is found

- Generates plausible explanations rather than proofs

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When do we realize we are wrong?






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Let's Talk About Cognitive Bias

- Cognition:
 - The act or process of knowing; perception
- Bias
 - a particular tendency or inclination, especially one that prevents unprejudiced consideration of a question; prejudice.

Source: Dictionary.com

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Examples of cognitive biases that can cause thinking errors

- Framing bias
 - The way information is presented or the way a question is posed can influence the conclusion we form (report, hand off, taking over a case)
- Anchoring bias
 - A tendency to lock on to an early feature of a presentation, form an impression, and not adjust initial impressions in light of later information
- Confirmation bias
 - Tendency to interpret data as supporting a conclusion
 - Tendency to dismiss data that doesn't support a conclusion

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When Could Cognitive Error Occur?

- At Anytime....
 - Decision maker is fatigued
 - Sleep deprived
 - Feeling down/depressed
 - Resources are limited
 - Cognitive overload

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Confidence, Certainty, and Critical Thinking

- Although we may be confident in our conclusions, we can never be certain
 - Critical thinking is an error-prone process
 - We can't possibly know what data might be missing, what answers lie outside of our experience set, or what explanations await discovery
- All impressions, conclusions, and diagnoses are at best hypotheses drawn from the data we consider
- If our thinking generates hypotheses, then we should consider our actions and treatments as experiments through which we can assess the validity of our hypotheses

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Diagnoses, impressions, and conclusions should be considered "working hypotheses"

Identify assumptions
How did I reach my conclusion?

Assess alternatives
What is our plan B or exit strategy?

Don't assume I am correct
What would change my mind?

Explore expectations
What should I expect to see if I am right? wrong?



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IDEA with Pediatric Perfusion

- Scenario – 10 y/o Male, 30kg, Ross Procedure. After the case is done the patient deteriorates and CPB needs to be reinitiated emergently. The perfusionist went back on CPB after Protamine was given and reoxygenation of the patient was supposed to have occurred. After ten minutes, the venous return in the venous reservoir seems to be impeded for some reason.
- Identify Assumptions
 - What is causing this? Could it be venous cannula position, volume issues, vacuum source?
- Don't Assume I'm Correct
 - Is there any other information that would change your mind, could it be something else. If all other issues seem to be ok, could there be clot in the venous reservoir???
- E – Explore Expectations
 - After testing each variable, the issue is still there... Along with ALP going up...
 - Really, is this happening???
- A – assess Alternatives
 - Yes, my circuit is clotting off...
 - Plan B – Change the circuit....

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Other tips to help prevent a cognitive bias error: Practice with a questioning attitude

- Respond to that visceral response . . . STOP – move to **analytic thinking**
- Process out loud** – rethink things from the start. This can be more effective when done as a team!
- Look for **data to disprove** prevailing impression
- What **other interpretations** could I make from this picture?
- What has changed** in the past X hours?
- Can this change be **related to something we have done** to/for this patient? – could we be causing this?
- What else** could be going on?
- Who can I pull in as a **new set of eyes**?

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Communication and Safety

- One of the most effective ways to improve a safety culture and prevent injuries is to optimize safety-related communication throughout an organization. Unfortunately, employees often fail to "speak up" when they observe risky behaviors even when they know they should.

Williams and Geller, 2003. Communication Strategies for Achieving a Total Safety Culture

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Ideal Communication Model

➤ Luis Javier Rodriguez Lopez, Wikipedia. http://en.wikipedia.org/wiki/File:Encoding_communication.jpg

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When Things Go Wrong.....

➤ Luis Javier Rodriguez Lopez, Wikipedia. http://en.wikipedia.org/wiki/File:Encoding_communication.jpg

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Communication Styles

- Passive
- Passive Aggressive
- Aggressive
- Assertive

Do You See Any of These Styles on Your Team??

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Failed Communication Leads to Errors

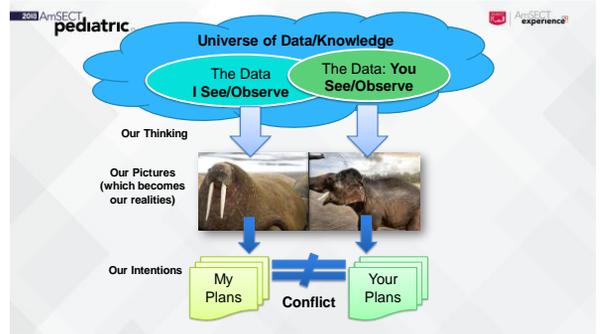
- About 1/3 of the Serious Safety Events are associated with ineffective verbal challenges
- What is “an ineffective verbal challenge”?
 - Failure to effectively **share thinking or to change thinking**

Don't just "Hint and Hope"

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You are at the zoo . . .

- Your child is talking about his favorite animal
- He is not sure what it is called, but describes it: Gray leathery skin and tusks

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How to Resolve Disagreement & Differences

Tell your thoughts to share your thinking

Listen actively to avoid thinking errors

Ask questions to gain clarity & build understanding



Goal: reach agreement to proceed in a way that all parties think is reasonable

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Areas of Contention With Communication in Perfusion

- CPB
 - Difficult Drainage
 - High Arterial Line Pressures
 - Blood Pressure Management
 - Blood Product Utilization
- ICU
 - VAD Troubleshooting with Surgery/ICU
 - ECMO Patient Management

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In Conclusion....

- Try to Reduce Cognitive Error
 - Whole picture with all information before decision making
 - Utilize IDEA as often as you can...
- Open Communication
 - Ideally to utilize TLA in your institution, center, perfusion group
- The Combination of Concepts

