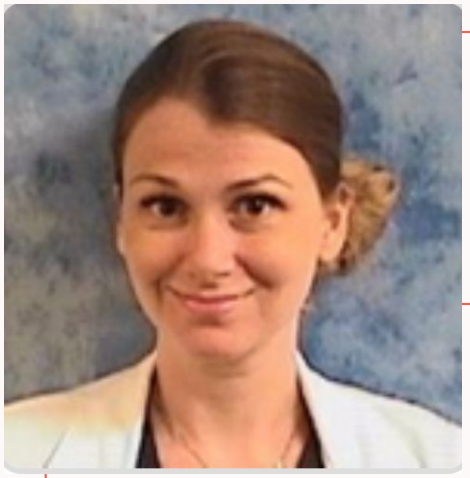

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DIAGNOSTIC TIME MACHINE

Ashley Camp, DNP, APRN,
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# Things I wish I caught earlier.

# Disclosures

- I have no financial relationships or conflicts of interest to disclose in relation to this presentation.

# Lecture Objectives

- **Describe** how cognitive shortcuts and biases shape clinical thinking and delay recognition of deterioration.
- **Explain** how system-level factors, including team dynamics and cognitive load, influence bedside decision-making.
- **Analyze** real-world cases to identify missed early warning signs and uncover contributing cognitive pitfalls.
- **Apply** habits of pattern recognition, reassessment, and diagnostic curiosity to avoid premature closure and improve clinical vigilance.
- **Empower** clinicians to question assumptions, escalate concerns, and foster a culture of psychological safety and second looks.

# That Feeling You Can’t Shake

- “I should’ve seen it.”
- “Something felt off, but I brushed it away.”
- “The next shift figured it out. Why didn’t I?”

Do you have a case that still keeps you up at night?

# Clinical Expertise Is Pattern Recognition

- Experts don’t think faster – they see more
- Pattern recognition allows for rapid decision-making
- Illness scripts form through repetition and experience
- Efficiency is essential in high-acuity environments

# Your Brain Isn’t Lazy - It’s Efficient

- The brain is wired to reduce effort
- Heuristics (mental shortcuts) speed up decisions
- Under stress, fatigue, or time pressure, shortcuts dominate
- Efficient ≠ accurate

# System 1 vs. System 2 Thinking

- System 1: Fast, intuitive, automatic
- System 2: Slow, deliberate, analytical
- Biases occur when we rely too heavily on System 1
- Awareness allows us to interrupt the autopilot

# The Illusion of Completeness

The brain favors coherent stories – even if they're incomplete

- "It made enough sense… so I stopped thinking"
- Biases that feed this illusion:
  - Anchoring
  - Premature closure
  - Confirmation bias

# Cognitive Load and Decision Fatigue

When You're Tired, You Don't Reassess

- The more decisions you make, the less thoughtful they become
- Multitasking, interruptions, and stress drain mental energy
- Under load, we default to System 1
    - Satisficing

# The Group Think Trap

- Biases are contagious – we inherit others' thinking
  - Diagnostic momentum
  - Authority bias
  - Triage cueing
- Silence ≠ agreement – it often reflects fear or fatigue
- Teams miss things together, not just individual providers

# Subtle Clues, Silent Alarms

- Vital signs drift quietly – we normalize the trend
- Cognitive changes often precede hemodynamic ones
- Low-level oxygen support hides early distress
- “Normal” labs don’t mean normal physiology
- Nursing concern is often the first true warning

# We thought he was just old.

- 78-year-old male admitted from SNF
- Chief complaint: weakness and poor intake
- PMH: HF, HTN, “some dementia” per chart
- HR 105, BP 100/66, T 36.4°C, $SpO_2$ 94% RA
- “Mildly confused, but probably baseline”

# What Happened Next?

- Overnight: less responsive, MAPs in 60s
- Foley placed: cloudy urine, minimal output
- Repeat lactate: 4.2
- Blood cultures and antibiotics ordered late
- Transferred to ICU for septic shock

# Why We Missed It

- Anchoring Bias – Initial impression = dehydration
- Search Satisficing – Plausible explanation found early
- Triage Cueing – SNF framed patient as non-acute
- Age Bias – “He’s just old” explained away his decline
- Attribution Bias – “He’s confused because he has dementia”
- Normalization of Deviance – Abnormal findings accepted as normal

# What This Case Reminds Us

- When you say, “they’re just old,” ask: am I attributing or assessing?
- Don’t confuse familiar with benign
- If something doesn’t sit right – pause before you anchor
- The absence of alarm ≠ the absence of danger
- A normal note from a previous shift isn’t a reason to stop thinking

# Just Stress and IBS.

- 49-year-old woman seen for bloating, fatigue, and intermittent abdominal pain
- Normal vitals; BMI WNL
- Anxiety noted; symptoms attributed to IBS
- No family history documented; no colorectal screening
- Reassured, started on probiotic and diet changes; no f/u

# What Happened Next?

- Six months later, patient presents to ED with worsening fatigue, weight loss, and abdominal distention
- CT scan shows obstructing sigmoid mass with liver metastases
- Diagnosed with metastatic colorectal cancer
- Patient reports she didn’t return to clinic – “it didn’t feel worth it”
- States she felt the first visit focused more on her stress than her symptoms

# Why We Missed It

- Anchoring Bias – First visit framed as IBS based on age and symptoms
- Search Satisficing – Once IBS was assumed, other questions weren't asked
- Attribution Bias – Symptoms attributed to stress and anxiety
- Availability Bias – IBS is more common in younger women, so it felt "right"
- Gender Bias – Symptoms dismissed because she's a woman
- Zebra Retreat – Rare diagnosis not considered due to focus on common causes

# What This Case Reminds Us

- Anchoring can look like thoroughness – until it isn't
- When patients feel unheard, they may not return
- Diagnostic closure doesn't mean diagnostic certainty
- Curiosity must outweigh convenience
- Not all "zebras" present loudly – and that doesn't make them less dangerous

# Too young for a heart attack…

- 37-year-old male, otherwise healthy
- Presents to urgent care with chest tightness for 3 hours
- Describes it as “pressure” that started while moving furniture
- Denies shortness of breath, nausea, or diaphoresis
- Vitals normal, ECG done but not documented in notes
- Provider documents “musculoskeletal chest pain”
- Discharged with ibuprofen and advised to rest

# What Happened Next?

- Returns to ED 10 hours later with worsening pain
- Diaphoretic, pale, ECG shows anterior STEMI
- Cath lab: 100% LAD occlusion
- Undergoes PCI with stent placement
- LVEF 35% on discharge

# Why We Missed It

- Age Bias – “Too young for a heart attack”
- Premature Closure – Assumed musculoskeletal cause early and stopped evaluating
- Confirmation Bias – Focused on findings that supported initial assumption
- Normalcy Bias – Reassuring appearance reinforced a low-risk narrative

# What This Case Reminds Us

- When we say, “too young,” we’re making a judgment – not a clinical assessment.
- Once we anchor, even objective data (like an ECG) can be overlooked.
- Normalcy bias makes reassuring appearances feel safer than they are.
- Premature closure doesn’t feel rushed in the moment – but hindsight reveals how early it happened.

# We thought he was faking it.

- 54-year-old unhoused male
- Frequent ED visits for abdominal pain
- Chart labels: “frequent flyer,” “drug-seeking,” “manipulative”
- Admitted for unstable angina → DES to RCA
- Post-PCI: “My belly hurts. Bad.”
- Asked for Dilaudid by name

# What Happened Next?

- Vitals remained stable for several hours
- Notes: “Behavioral,” “drug-seeking,” “monitor symptoms”
- 6 hours later: hypotensive, acidotic, rising lactate
- CT abdomen: extensive bowel ischemia (SMA territory)
- Emergent surgery: massive bowel resection
- Remained in ICU intubated, prolonged course

# Why We Missed It

- Anchoring Bias – Pain attributed to behavior, not pathology
- Confirmation Bias – Behaviors interpreted through that lens
- Triage Cueing – ED impression of “not real” stuck with the team
- Moral Judgment Bias – Assumed pain expression = manipulation
- Framing Bias – “Frequent flyer, drug-seeking, manipulative”

# What This Case Reminds Us

- Framing shapes perception – when we expect manipulation, we interpret everything through that lens.
- Anchoring on a behavioral narrative can blind us to real pathology.
- Confirmation bias reinforces the story we already believe.
- Labels don’t just follow patients – they shape our thinking unless we actively challenge them.

# It worked last time.

- 4-year-old girl with asthma
- Presents to ED in respiratory distress
- Fellow presents: “Classic asthma exacerbation”
- Vitals: HR 162, RR 48, $SpO_2$ 91% on RA
- Given albuterol x3 and steroids in triage
- Fellow recommends observation and discharge if improving

# What Happened Next?

- Attending reviews vitals again – concerned about tachycardia and work of breathing
- Exam reveals quiet chest – not improving, but tiring out
- Orders ABG, CXR, PICU consult
- Patient admitted to PICU for impending respiratory failure

# Why we almost missed it.

- Anchoring Bias (Severity): Fellow locked in on “asthma exacerbation” early, but focused on mild severity
- Outcome Bias – “This worked before” justified early discharge plan
- Blind Spot Bias – Fellow unaware of how his own overconfidence shaped decision-making

# What This Case Reminds Us

- Confidence can mask bias – especially when the diagnosis feels familiar.
- Anchoring happens fast, especially in pattern-driven cases.
- Blind spot bias makes us unaware of our own cognitive traps.
- A respectful second opinion isn’t a challenge – it’s a safety net.

# Why do These Biases Matter?

- They don’t mean we’re bad clinicians – just human
- Awareness helps us catch the “off” moments earlier
- Recognizing bias isn’t enough – we need systems and habits that counter it
- Every case we reviewed today was diagnostically plausible… until it wasn’t

# What Can We Do?

- Normalize reassessing even after a diagnosis seems to “fit”
- Encourage curiosity over certainty in teaching and teamwork
- Build psychological safety: make it okay to say, “What else could this be?”
- Create systems for second looks – labs, trends, handoffs that include doubt

# Bias Doesn’t Feel Like Bias.

It feels like confidence.

It feels like efficiency.

It feels like “I’ve seen this before.”

It feels like being right.

Until we’re not.

Until it’s too late.

Until we look back and say: I wish I caught it earlier.

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# Thank you!