Understanding, Diagnosing and Teaching Residents with Clinical Difficulties

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We do not have an affiliation (financial or otherwise) with a pharmaceutical, medical device or communications organization.

Je n’ai aucune affiliation (financière ou autre) avec une entreprise pharmaceutique, un fabricant d’appareils médicaux ou un cabinet de communication.
One of the busiest ED’s in the US

One of the oldest and largest residencies
✓ 62 Emergency Medicine Residents
We all work in residency leadership and manage these issues daily
Group Introductions
Key Objectives

• Understanding How Residents Learn
• Most Common Clinical Difficulties
• Useful Bedside Teaching Strategies to Address Difficulties

When you leave you will have a toolbox to help diagnose and manage the most common challenges residents face
Timetable

0830-0900  Small Group Exercise
0900-0920  How Residents Learn
0920-1000  Diagnosing Resident Difficulties
1000-1015  BREAK
1015-1035  Bedside Teaching Strategies
1035-1130  Small Group Exercise
Initial Small Group Questions

• What is your initial reaction to this patient presentation?
• What are the problems with the presentations?
• What feedback do you give the resident?
How Residents Learn and Make Decisions

Richard Bounds, MD
Teaching Clinicians

Teachers must understand how learners:

- Take in new information
- Think and reason
- Make decisions
- Make errors
Cognitive Load

Total brain power used for a given task
Working Memory
Incoming Information -> Sensory Memory
Schema

• Cognitive structures or mental maps
• Allows us to take several different elements of an experience and combine them into *one whole* element
Schema

• Cognitive structures or mental maps
• Allows us to take several different elements of an experience and combine them into one whole element
• Practicing your schema → automation
Incoming Information → Sensory Memory → Working Memory → Long-Term Memory

- Sensory Memory: Information is received and held briefly.
- Working Memory: Information is processed and used temporarily.
- Long-Term Memory: Information is stored permanently.

Processes:
- Rehearsal: Information is repeated to be encoded into long-term memory.
- Encoding: Information is transformed for long-term storage.
- Retrieval: Information is retrieved from long-term memory when needed.
How do we apply Cognitive Load Theory to our teaching?
Imposed by the learning task
EXTRANEOUS CL

Imposed by the manner in which information is presented to learners

INTRINSIC CL

Imposed by the learning task

GERMANE CL
EXTRANEOUS CL
Imposed by the manner in which information is presented to learners

INTRINSIC CL
Imposed by the learning task

GERMANE CL
Devoted to processing information, constructing & automating schemas
EXTRANEOUS CL

INTRINSIC CL

GERMANE CL

Distractions

Task/Skill

Encoding
EXTRANEOUS CL  
INTRINSIC CL  
GERMANE CL  

Minimize  
Manage  
Maximize
Make it "bite-sized"
KEEP IT SIMPLE
Cognitive psychology

Understanding how people reason, formulate judgments, and make decisions.

Heuristics
Heuristics = mental shortcuts in reasoning

Lighten our cognitive load in decision-making

BUT heuristics lead to errors in reasoning
Heuristics = mental shortcuts in reasoning

Availability
Anchoring
Framing
Availability Heuristic

• Depends upon how easily examples spring to mind

• Easier, than systematically analyzing probabilities
Availability Heuristic

Often clinically appropriate . . . common diagnoses are seen more often!
Anchoring Heuristic
Anchoring Heuristic

• We tend to stick with our initial impressions once they are formed
• Easier than integrating the sensitivity/specificity of every new finding or piece of information
Anchoring Heuristic

Conflicts with the scientific method
(searching for disconfirming evidence)

Pay attention to your “gut,” or that feeling that something doesn’t fit
• Sudden onset R flank pain
• Waxing and waning
• Dark urine
• History of kidney stones
• R CVA tenderness
• Sudden onset R flank pain
• Waxing and waning
• Dark urine
• History of kidney stones
• R CVA tenderness
• Diffuse abdominal TTP, voluntary guarding
Anchoring Heuristic

Leads to premature closure

Think to yourself, “if the patient unexpectedly ________, what would be the cause?”
Framing effect

- People come to different decisions based on how the information is presented, or “framed”
- Subtle wording can sway impressions
Framing effect

- People come to different decisions based on how the information is presented, or “framed”
- Subtle wording can sway impressions

Improperly framed data underlies most provider miscommunications
Framing effect

• Look at case from an alternative viewpoint
  – another provider
  – a family member

*Deliberately “play devil’s advocate”*
Teaching Clinicians
Teaching Clinicians

Teachers must understand how learners:

– Take in new information
– Think and reason
– Make decisions
– Make errors
TeachingClinicians

• Cognitive load theory
  – Don’t overwhelm the learner’s working memory
  – Repetition and practice → developing schema/automation
  – Minimize extraneous (distractions), focus on intrinsic (the task/skill), maximize germane (insight/learning)

• Heuristics (shortcuts) and diagnostic error
  – Availability – common things are common, but consider alternatives
  – Anchoring – avoid premature closure, listen to your gut
  – Framing – pay attention to communication and consider others’ perspectives
Teaching Clinicians

• **Cognitive load theory**
  – Don’t overwhelm the learner’s working memory
  – Repetition and practice → developing *schema/automation*
  – Minimize *extraneous* (distractions), focus on *intrinsic* (the task/skill), maximize *germane* (insight/learning)

• **Heuristics (shortcuts) and diagnostic error**
  – **Availability** – common things are common, but consider alternatives
  – **Anchoring** – avoid premature closure, listen to your gut
  – **Framing** – pay attention to communication and consider others’ perspectives
Diagnosing the Learner
Common Clinical Learning Difficulties

Jenna M. Fredette, MD
Her next couple of nights were only mildly better than the last.

I had to tell her to directly to go into critical rooms. She did not see many patients. Or she would see 2-3 at a time but have either no plan or a very disjointed one at best.
She seems like a nice person. I worry that she may be overconfident with a lack of knowledge which can be a dangerous combination.

I hope that my feedback helps to guide her since I tried to be as honest and blunt as I could.
Step One: Get on the Field
Get on the Field

Direct Observation

How many of you are present at the bedside while residents are seeing patients and formulating plans?
Get on the Field

It is nearly impossible to accurately diagnose and understand resident difficulties without going to the bedside and directly observing
Step Two: Create A Differential for the Learner
Data Gathering
Premature Closure
Difficulties Prioritizing
Can’t Paint the Overall Picture
Developing Management Plans
Difficulty #1: Data Gathering
Data Gathering Difficulty

Resident fails to detect key features that inform a differential
Clues

- Interview too exhaustive
- Physical exam unconnected to patient concerns
- Presentation is too comprehensive or disorganized
- Difficulty in formulating a differential diagnosis and justifying it
Why

✓ Lack of knowledge
✓ Insecure
✓ Inexperienced

Bias

✓ May be biased based on previous encounters
✓ Focusing on classic presentations and overlooking atypical presentations
Difficulty #2: Premature closure
Resident D
Premature Closure

Resident quickly focuses in on a single hypothesis and often conducts a short interview
Clues

✓ Resident seeks only info that supports their diagnosis

✓ Fails to notice additional history from a patient

✓ Fails to report information that may invoke a wider differential diagnosis
Why?

✓ Lack of time or experience
✓ Erroneous belief that the patient will spontaneously volunteer all symptoms

Bias

✓ Overconfidence
✓ Anchoring
Difficulty #3: Difficulties in Prioritizing
Difficulties in Prioritizing

Resident can’t prioritize the most important complaint
Clues

✓ Fails to identify a chief complaint
✓ Too much time exploring minor points
✓ Communication problems with the patient
✓ Conclusions that don’t match attending expectations

Tendency of the attending to “go see” the patient
Why?

- Psychosocial/personality issues
- Lack of knowledge
- Lack of experience
Difficulty #4: Can’t paint the overall picture
Resident T
Can’t Paint Overall Picture

Doesn’t make connections between pieces of information

Fails to integrate patient perspective
Clues

✓ Issues managed in isolation

✓ Application of guidelines in unduly rigid manner leaving no room for patient characteristics to be taken into account
Why?

- Lack of experience and appreciation for psychosocial factors
- Difficulty with uncertainty
- Poor grasp on patient centered care
Difficulty #5
Difficulties with Management Plans
Resident S
Can’t Create a Plan

Lack of integration and synthesis leads to inadequate management plans
Clues

✓ Plans repeatedly defer a decision
✓ Plans don’t “solve” anything
✓ Plans fail to address patient issues
✓ Failure to consider costs, resources, prevalence or urgency of problems
Why?

- difficulty in dealing with uncertainty
- inability of the resident to take the specifics of the patient into account and tailor the plan
Step One:
Get on the Field
Step Two: Create A Differential for the Learner
Data Gathering
Premature Closure
Difficulties Prioritizing
Can’t Paint the Overall Picture
Developing Management Plans
Pieces connect

Try to find the problem
Bedside Teaching Strategies

Amber Ruest, MD
Diagnosis
Objectives

- To demonstrate the importance of bedside teaching
- To provide a practical skill set of bedside teaching strategies that you can use daily
- To practice using these strategies given certain clinical scenarios
Case-Based Teaching Strategies

- One Minute Preceptor
- Activated Demonstration
- SPIT
Why??!
What??
How?
Who?!!...
One Minute Preceptor

Practical Prof
Get a commitment

✓ “What do you think is going on with this patient?”
✓ “What do you want to do?”
Probe for supporting evidence

✓ Probe for pertinent history and objective findings that support diagnosis and plan

✓ “What led you to your diagnosis?”

✓ “Why do you want to order ____?”
Teach general rules

- Teach case-specific pearls
- Avoid taking over the case

- Avoid a long didactic session - keep it short and sweet (1 min)
Reinforce what the resident did well

✓ Label this as feedback
✓ Builds self esteem
✓ Make the reinforcement behavior-specific
✓ “Specifically, you did a great job of...”
Correct mistakes

✓ Start by having the learner self-evaluate
✓ Then your assessment
One Minute Preceptor

Why?

✓ Targets individualized instruction
✓ Allows the attending to “diagnose the resident” – an opportunity often missed
Activated Demonstration
Activated Demonstration

Who?

✓ Any resident at any level of training
Activated Demonstration

What?

✓ The resident **observes** the attending with a specific learning assignment

✓ “This patient is here often, and usually wants opiates for his chronic pain. Watch how I handle this case, specifically in setting expectations.”
The resident shadows the attending

✓ “Activate the resident”
✓ Have them describe what they observed
Activated Demonstration

Why?

- Demonstrates attending’s clinical expertise, the “intangibles”
- Allows resident to observe attending’s style of history taking/exam
- Better with difficult cases, those that require advanced communication or professionalism
SPIT

Who?

✓ Medical students
✓ Interns
✓ Any level resident with more complex cases
SPIT

Why?

✓ Good for teaching *differential diagnosis*
SPIT

What?

Serious
Probable
Interesting
Treatable
SPIT

How?

Can formulate a SPIT differential at multiple points in a patient encounter

✓ Before seeing patient
✓ While in the room getting history, exam
✓ During presentation to attending
• Serious
• Probable
• Interesting
• Treatable
Summary

One-Minute Preceptor

✓ Diagnose the Resident

Activated Demonstration

✓ Observation of Attending

SPIT

✓ Serious, Probable, Interesting, Treatable
Follow-Up Case Questions

• Are there any biases or shortcuts at play in this case?
• What specific difficulties is the resident having?
• What feedback do you give the resident?
• How do you create a bedside teaching plan for this resident?
Case #1

• Marty is interviewing a 67yo female with right upper quadrant abdominal pain and fever. He spends most of his time asking questions about the patient’s medical and surgical histories as well as several details regarding her HPI. When he finally does get back to you (after wondering where he’s been for the last 25min), he tells you, “I have this 67yo lady with belly pain. She has had the pain now for 2 weeks, usually worse after a meal. She denies vomiting but does admit to occasional nausea. She has had some loose stool but denies any blood. She’s also had a mild headache and a sore throat recently. She says some people at work have been sick. She works in a dentist’s office as a hygienist. She doesn’t smoke, but drinks occasionally. She has tenderness all over her abdomen, and she’s tough to examine due to her pain. I think that’s it. Do you need any more?”
Case #3

• Patty, one of your stellar residents, is seeing her 4th patient of the evening brought in from a nursing home with altered mental status. Upon discovering that the patient has a slight fever and “dirty urine,” she immediately prepares the patient for shipment back to the NH, treating her with antibiotics for a UTI. “I’m tired of all these nursing home patients. Why can’t they just treat them in house and not send them out all the time?” Then, as you finish typing your supervisory note, the patient’s vital signs auto-populate (as part of the EMR) and you notice her systolic BP of 85 and HR of 114.
Case #4

• Intern Ralph is seeing a 52yo male whose triage chief complaint is low back pain and blood in the urine; however, upon further questioning, Ralph discovers that the patient also has right wrist pain and a sore throat, both of which have been present for several weeks. Ralph tells you, “I’ve ordered a CT for kidney stones, and asked for lumbar spine reconstructions, a urinalysis and some labs. I added on a throat culture and wrote for a dose of antibiotics – that should cover his urine too? In addition the wrist, I added on a CXR in case the pt fell and just isn’t telling us.”
Case #8

• Karen, one of your second year residents, tells you about a 28yo female with c/o palpitations and chest tightness that began after an argument with her boyfriend about an hour prior to coming in. “She feels better now and just wants to go home, but I’m worried about these extra beats on her EKG (her EKG shows occasional PVCs). I think we should order a CXR, troponin, TSH, and a D-dimer, and if that’s all negative, we might consider keeping her for a stress test in the morning – I really think the cardiologist should see her.”
Closing Thoughts
Emails

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