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Activate Your Reflection Algorithm and De-biasing strategies

"Reflection Algorithm"

- **Type 1, intuitive thinking and the use of heuristics**
  - Often we are on "automatic pilot". This is OK. We are using "short cuts" or "rules of thumb". It helps us get through the day and they work most of the time. Examples of these rules of thumb include:
    - If you hear hoof beats it's probably a horse.
    - Treat the patient, not the numbers.
    - Occam's Razor – the simplest explanation is probably the correct explanation.
- **So what does it mean to "activate your reflection algorithm"?**
  - It means that you recognize it is time to turn off "automatic pilot". It's time to slow down. It's time to get more analytical. It's time to look more closely at the data, possibly to gather more data, or to look at this problem from a new angle. It's time to strategize.
- **When do you know you need to "activate your reflection algorithm"?**
  - "This is weird." Recognize incongruity. Recognize atypical presentations.
  - "This doesn't make sense?"
  - "Does this history make sense?" For example,
    - 15 year old with abdominal pain and vomiting for three days with poor po intake and urinating *well*.
  - "I did not think the labs would come out like this – I didn't predict this."
  - "Patient is not responding to treatment the way I expected."
  - "This patient is sick."
  - "I'm not comfortable with this. There is something bothering me."
  - The patient is sicker than I would expect based on the history.
  - "This patient's pain is out of proportion to what I see on the PE", e.g., necrotizing fasciitis.
  - Did I "reach" the patient? Is the patient feeling comfortable?

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De-biasing Strategies

Once your "Reflection Algorithm is activated these strategies might help find the correct answer by minimizing certain cognitive biases.

- Self –Questions
  - What else could this be?
  - If I'm missing something what would it be?
  - Does this diagnosis explain all the findings?
  - How else could I look at this? Reframe.
  - What does *not* fit?
- Rule of 3's
  - You should generate at least 3 diagnoses
  - You should use the same treatment no more than 3 times without reflecting (Is this the correct diagnosis? Is this the correct treatment), for example:
    - No more than 3 boluses of fluid
    - No more than 3 albuterol nebulizers
    - Bad things occur in 3's (just because you admitted two patients today, does not mean there can't be a third who needs admission)
- Verbal Mediation Strategy
  - By literally talking out loud (or at least, to yourself) you improve problem solving.
    - "I think it is this diagnosis because….."
    - This is similar to when the physician summarizes the history to the patient during the interview. It is common for the physician (and patient) to realize that they are missing something or that something was not accurate.
- Accurate Problem Representation (see Handout)
  - Generating a good Problem Representation enhances problem solving
- Aphorisms
  - Crazy people get sick too
  - Hope for the best, plan for the worst
  - Use aggressive skepticism:
    - Indication for pregnancy test is being a pubertal female who is not post-menopausal regardless of the sexual history.
    - If ED makes a diagnosis of cholecystitis and admits patient to floor, the admitting doctor should say, "It is *probably* cholecystitis but I'll just make sure everything fits."
- The phrase, "Ruled-Out" should be ruled out of our vocabulary. We should instead think in terms of probabilities.