Medical Errors

How Your healthcare May Be Harming You

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SESSION 2
DIAGNOSTIC ERRORS

Plan for the Course

- Session 1: Introduction and Definitions
- **Session 2: Diagnostic Errors**
- Session 3: Medication Errors, Surgical Errors
- Session 4: Communication Errors
- Session 5: US Healthcare System/Industry
- Session 6: Science and Technology
- Session 7: Comparison with Other Countries
- Session 8: Solutions, Reduction, Prevention

ELEVEN
FOOT POLES
→
FOR THINGS
YOU
WOULDN'T
TOUCH WITH
A TEN
FOOT POLE
$2.98
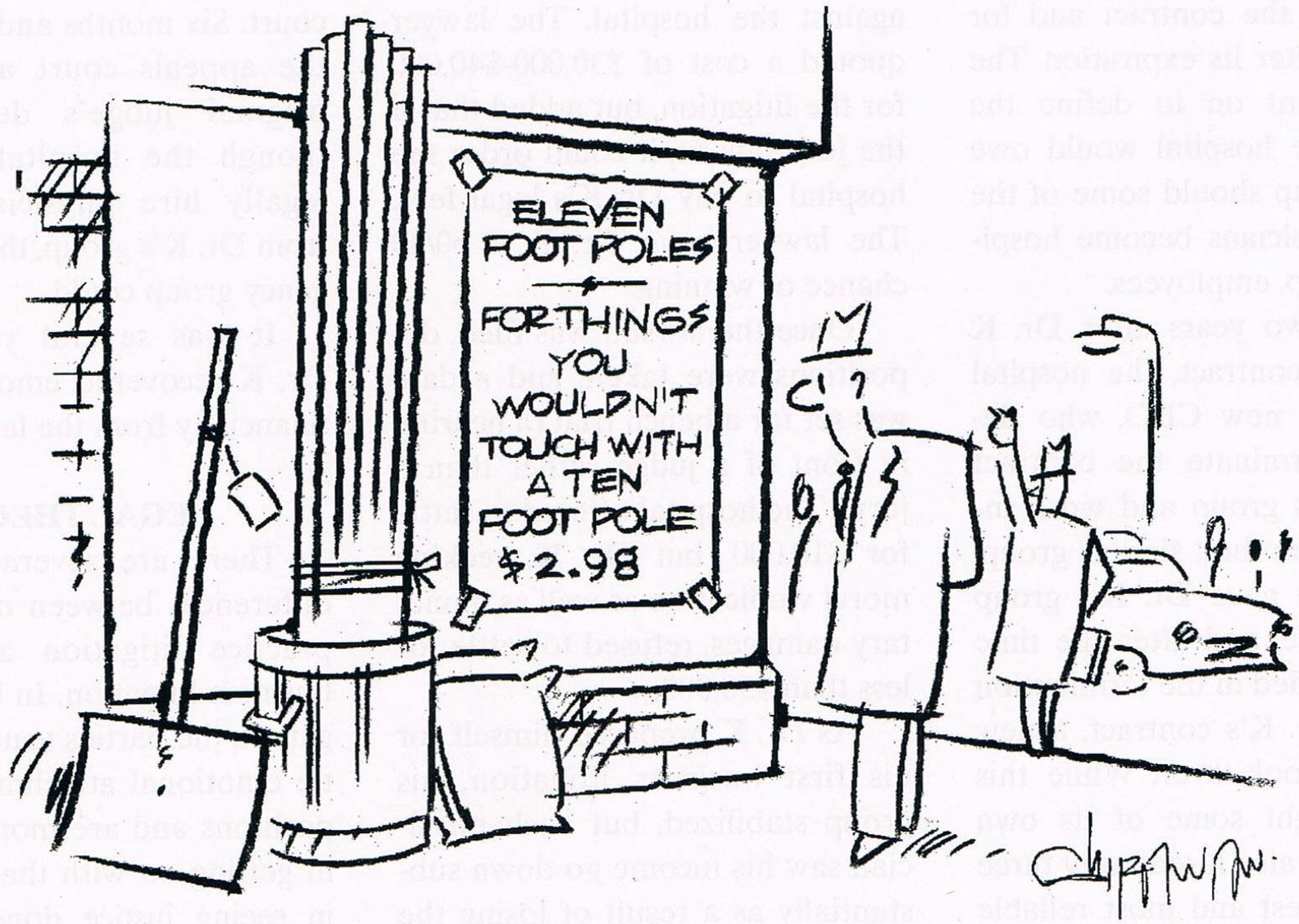
Plan for the Session

- Medical knowledge
- Diagnostic Errors
- ER misdiagnosis
- Preventing Diagnostic Errors
- How Doctors think
- Diagnostic shortcuts (Heuristics)
- The Chief Complaint
- Diagnostic Pathways

MEDICAL KNOWLEDGE

Medical Knowledge

- In the 1930's, most medical interventions could be categorized as one of three P's:
  - **P**lacebo: psychological/psychosomatic effects
  - **P**alliation: relieve pain, itching, improve ill-being
  - **P**lumbing: laxatives, emetics, purgatives, enemas

- As medicine progressed, a profusion of facts hid a deeper, more significant problem: reconciling
  - medical knowledge: certain, fixed, perfect, concrete
  - clinical wisdom: uncertain, fluid imperfect, abstract

Mukherjee 2015

It's easy to make perfect decisions with perfect information.

Medicine asks us to make perfect decisions with imperfect information.

Mukherjee, 2005

Medical Knowledge

- You can't see what you don't know to look for.

- If you don't expect to see something, how hard are you likely to look for it?

- If you don't know where you're going, how do you know when you get there?

Medical Harm

- According to a WHO fact sheet, adverse events due to unsafe care is one of the 10 leading causes of death and disability in the world.

- In low- and middle-income countries, 134M adverse events occur in hospitals each year, resulting in 2.6M deaths.

- In high-income countries, one in every 10 patients is harmed while receiving hospital care.

- The harm can be caused by factors, such as misdiagnosis, medication errors, infections, and equipment failures.

DIAGNOSTIC ERROR ER MISDIAGNOSIS

Diagnostic Error

- A missed, wrong, or delayed diagnosis that is detected later by a definitive test or finding.

- It is important to distinguish between the error (a process) and the resulting harm (an outcome).

- Not all misdiagnoses result in harm, and harm may be due to disease or a related intervention.

Diagnostic Error

- Failure to diagnose an illness in an accurate and timely manner, occurs in about 5% of adults in US outpatient care settings.

- About ½ of these errors have the potential to cause severe harm.

- A study of primary care clinics in Malaysia found the occurrence of diagnostic errors at 3.6%.

Diagnostic Errors (US)

- In the US, autopsy research done in the past decades showed that diagnostic errors are a large part of about 10% of patient deaths.

- Medical record reviews demonstrate that diagnostic errors account for 6% – 17% of all harmful events in hospitals.

Diagnostic Error

- Preventable harm may result from:
  - delay or failure to treat a condition actually present
  - treatment provided for a condition <u>not</u> actually present

- This happens when the working diagnosis was wrong or unknown.

- TEIH report mentions diagnostic errors 2 times, compared with 70 for medication errors.

ER Misdiagnosis

- About 250K people per year die because of ER misdiagnosis, when doctors fail to identify conditions like stroke, sepsis and pneumonia.

- AHRQ estimates 7.4 M (~5.6%) of the 130 M annual visits to hospital ER's in the US are inaccurately diagnosed.

- ~370 K (5%) patients may suffer serious harm.

ER Misdiagnosis

- ER doctors at an academic medical center were less prone to errors because of easy consultation with specialists familiar with atypical symptoms, and because of their access to more complex tests.

- Not enough money is being spent on how to improve diagnosis, but most research dollars focus on treatment, because it's more glamourous.

- The bottom line is that diagnosis is hard.

ER Misdiagnosis

- We need to address how different patients are assessed in the ER.

- The Society to Improve Diagnosis in Medicine says that women and people of color have 20 to 30 % higher risk of being misdiagnosed in the ER.

- Equity in diagnosis must be the fundamental core of ER practice.

ER Misdiagnosis

- Diagnosis is still largely viewed as an individual art rather than evidence-based science.

- More errors that occur in diagnosis and treatment are attributed to flaws in clinical reasoning.

- Estimated ER diagnostic errors occur 5% to 10% of the time, while in settings with continuity of care, error rates are lower.

Preventing Diagnostic Errors?

- It is easier to identify the barriers to error prevention than to remedy them.

- One barrier is that physicians often do not get feedback on errors.

- Learning from past diagnostic errors is hard because mistakes may often be too far away in time or place for the clinician to be aware of them, and even less, to learn from them.

Preventing Diagnostic Errors?

- Some errors are systematic, so they are repeatedly made in both routine and extraordinary situations.

- Suspending Doctor "A" after a missed diagnosis may not improve the care of future patients.

- If the errors result from cognitive faults, which all clinicians may commit, a replacement Doctor "B" may be just as fallible.

Diagnostic Errors

- Errors in diagnostic thinking are attributable to reasoning shortcuts, and some teachers and clinicians believe that eliminating them would eliminate diagnostic mistakes.

- The goal is not to demonize or deny these errors in medical decision making but to understand how they are typically made and how to take corrective action to avoid them.

- The bottom line is that diagnosis is hard.

Preventing Diagnostic Errors?

- Studies suggest that faulty judgments arise from using shortcuts which are typically correct and produce the desired results with minimal delay, cost, and anxiety.

- The clinician's bias is to continue using the same method that worked well in the past.

- They recall only the times it was right, never the times when it was wrong.

Diagnostic Error

- Insanity is doing the same thing over and over again and expecting different results. (Albert Einstein)

- Smart people learn form their mistakes, but the real sharp ones learn from the mistakes of others. (Brandon Mull, Fablehaven)

- We learn from failure, not from success. (Bram Stoker, Dracula)

Anchoring

Availability

Blind Obedience

Confirmation

Framing Effect

Hindsight

Premature Closure

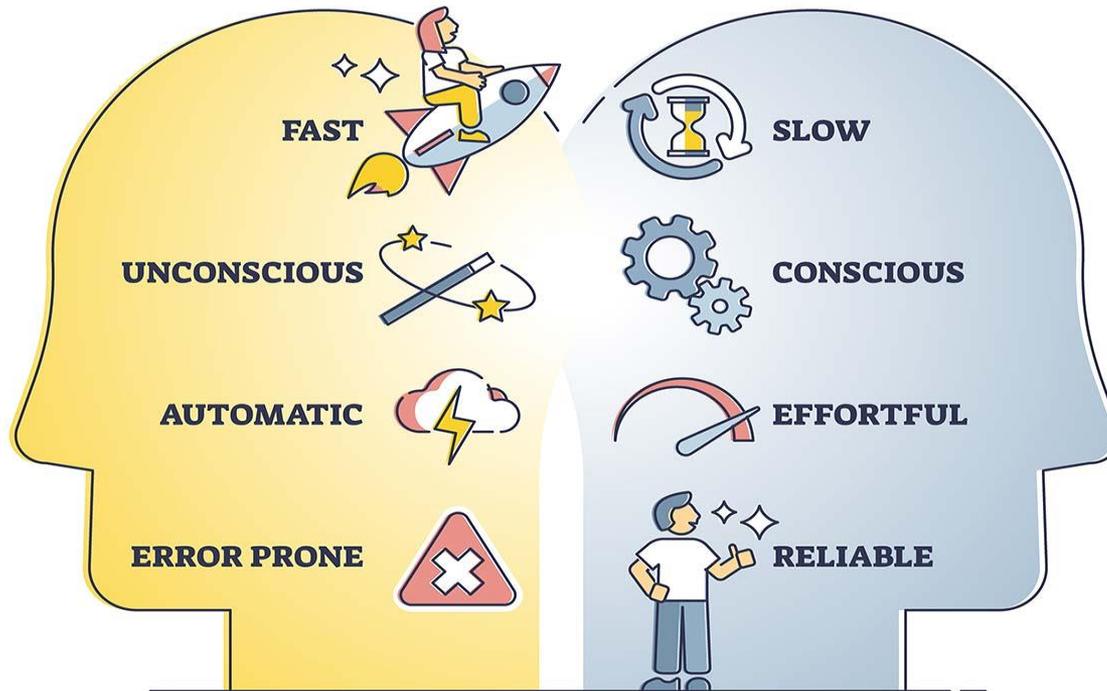# DIAGNOSTIC SHORTCUTS (HEURISTICS)

Heuristics vs Scientific Reasoning

Shortcuts in Reasoning

- Scientific evidence should eliminate the uncertainty that leads to missed diagnoses, but this is unlikely because of the expense and delays.

- Excess testing and exhaustive literature searches would probably generate false-positive reports and conflicting data that would increase the cognitive load on clinicians.

- Clinicians will continue to rely on shortcuts in reasoning and use strategies to decrease their potential harm.

The Laws of Medicine

- A Strong Intuition is more powerful than a weak test.

- *Normals* teach us rules, *Outliers* teach us laws.

- For every perfect medical experiment, there is a perfect human bias.

Shortcuts/Heuristics

May Become Cognitive Biases

- Availability

- Anchoring

- Blind Obedience

- Confirmation

- Framing effect

- Premature Closure

- Hindsight

Availability Heuristic

- The *availability heuristic* is a prime example of a heuristic shortcut.

- It relies on immediate examples that come to a person's mind when evaluating a specific issue.

- It leads people to judge likelihood of a diagnosis by the ease with which examples spring to mind.
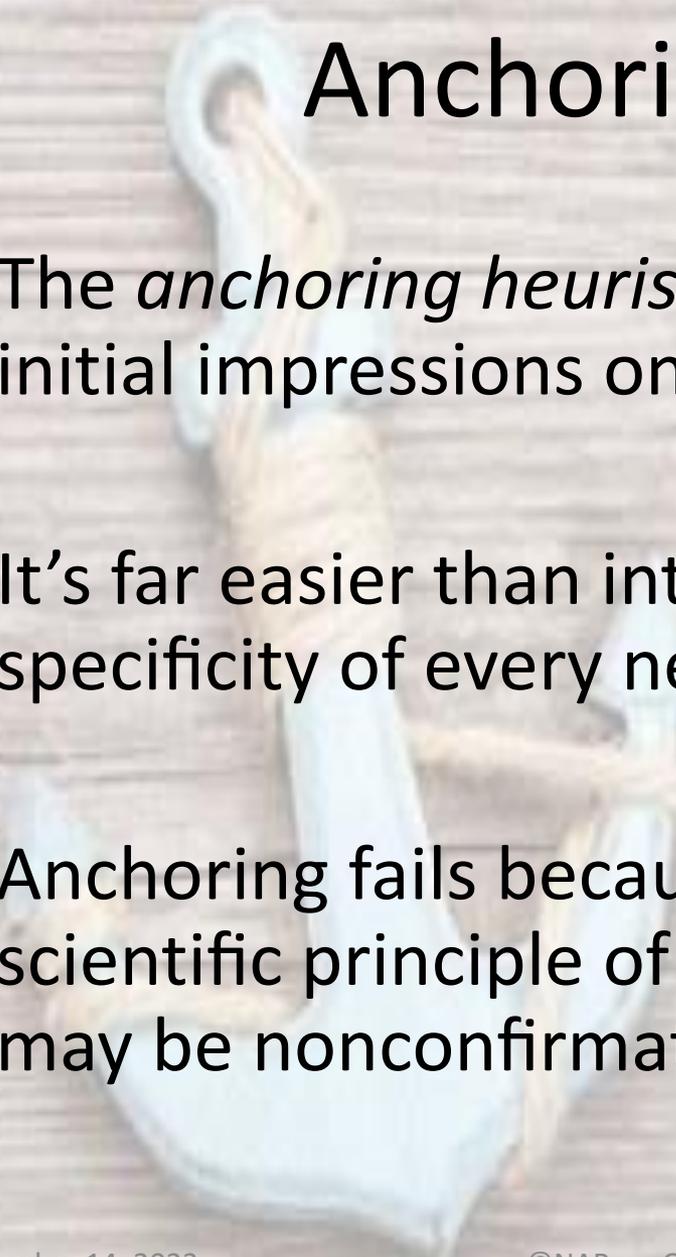
Anchoring Heuristic

- The *anchoring heuristic* leads people to stick with initial impressions once they are solidly formed.

- It's far easier than integrating the sensitivity and specificity of every new finding encountered.

- Anchoring fails because it conflicts with the scientific principle of checking for evidence that may be nonconfirmatory.

Blind Obedience

- Over-reliance on diagnostic or consult results which leads people to stop thinking when confronted with an apparent authority, human or technological.

- Doctor may know that the test (machine) is wrong, but contradicting technology is not a good idea.

- Doctor knows that the big professor may be wrong, but contradicting the "boss" is also a really bad idea.

Confirmation Bias

- Tendency to interpret new evidence as confirmation of one's existing beliefs or theories, and to favor data that confirms those beliefs or values.

- It can be managed by education and training in critical thinking skills.
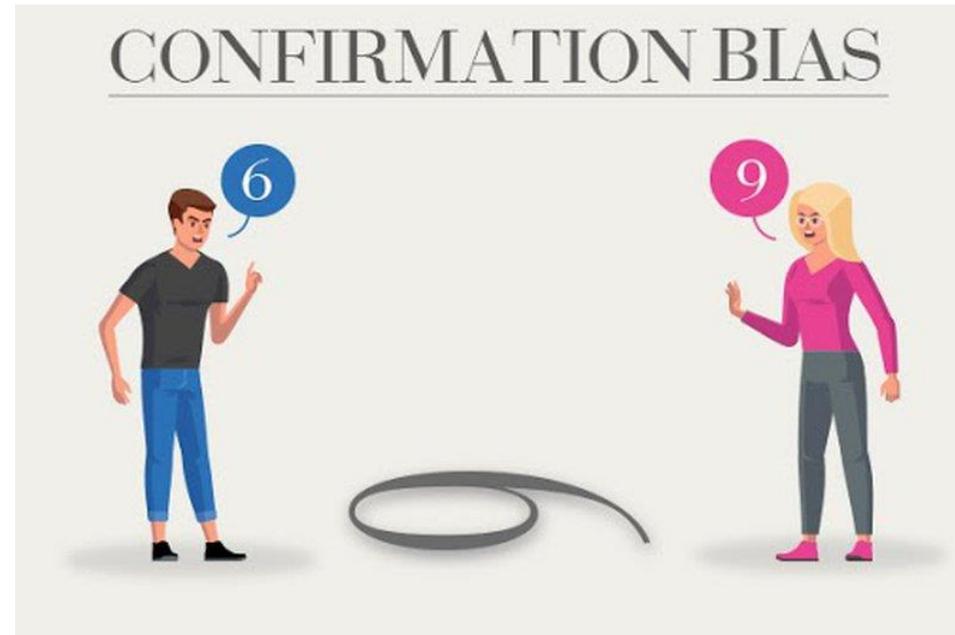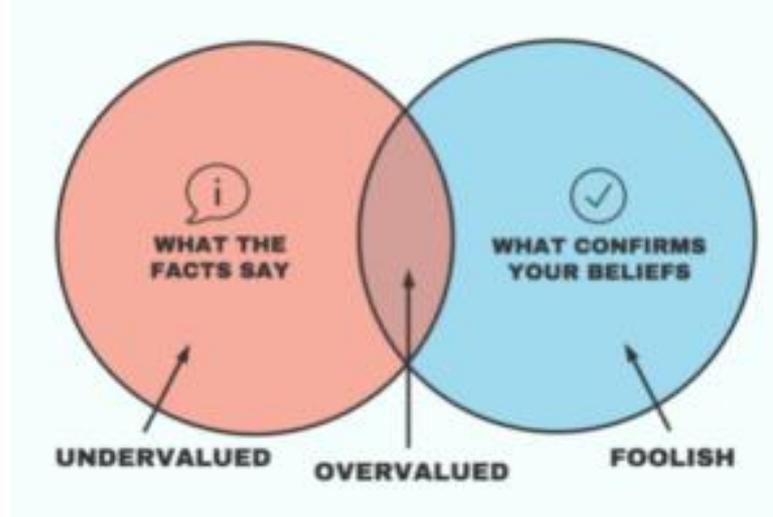
Confirmation Bias

Behavior Towards Information

Contradicts views

- Ignore
- Dismiss
- Undervalue
- Gets no relevance

Supports views

- Seek out
- Interpret
- Overvalue
- Remember

Confirmation Bias

Biased search for information, biased interpretation of it, and biased memory recall explain 4 effects:

Attitude polarization: disagreement *becomes* extreme despite same data

Belief perseverance: beliefs persist after the evidence is shown to be false

Irrational primacy: more reliance on earlier information encountered

Illusory correlation: false perception of association between 2 events or situations

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Diagnosis may be affected by 1 or more of these.

The Hindsight Bias

(Creeping Determinism)

- Bias with the tendency to see events, even random, as more predictable than they really are.

- It's a significant source of overconfidence in an individual's ability to predict the outcomes of future events.

- It's also commonly referred to as the "I knew it all along" phenomenon.

The Hindsight Bias

- More likely to occur when the outcome of an event is negative rather than positive.

- It can be seen in physicians "recalling" clinical trials results.

- Overconfident hindsight bias is often related to the number of years of experience the physician has, and may lead to malpractice lawsuits.

The Hindsight Bias

Counter Strategy

- Medical decision support systems can assist physicians in diagnosis and treatment, and have been suggested as a way to counteract hindsight bias.

- However, these decision support systems have drawbacks, as going against a recommended decision results in more punitive jury outcomes when physicians were found liable for harm.

Framing Effect

- Individual's choice from a set of options is influenced more by how the information is worded than by the information itself.

- The framing of an issue in a positive (gain-oriented) or negative (loss-oriented) light, impacts how people make decisions.

- Happens when different doctors tend to come to different decisions depending on how information is presented.

- Small changes in wording affect decisions about management.

Framing Effect

- Individuals are more likely to accept risks when the information is framed positively but seek to avoid risks when the information is framed negatively.

- This operation has a 90% <u>chance</u> of success (positive frame).

- This operation has a 10% <u>risk</u> of failure (negative frame).

- You're concerned about your blood sugar level, and you choose a chocolate that is 85% sugar-free (positive frame) over one that is 15% sugar (negative frame).

Framing Effect
Actual Study

- Participants of a study were asked to choose between 2 options for treatment for 600 people afflicted with a <u>fatal</u> disease.

- Treatment A was likely to result in the deaths of 400 people.

- Treatment B had 66% possibility of everyone dying and a 33% possibility of no one dying.

- These 2 options were then presented to the participants with a negative framing (how many would die) or a positive framing (how many would live).

Framing Effect

- 72% of the participants chose treatment A option when it was framed positively: saving 200 lives.

- Only 22% chose Treatment B option when it was framed negatively: 400 people would die.

- Choices that people make when they can choose options are influenced by the substance of the information and by the framing of it.

Framing Effect

- If 400 out of 600 die, that's 2/3 or 66%.

- If 200 out of 600 survive, that's 1/3 or 33%.

- The results for both options are the same.

- The difference is in the wording.

A Clinical Case

- Mr. Davis, a 65-year-old African-American man, comes to the ER of an academic medical center with several days of upper back pain, general body aches, a sore throat with difficulty swallowing and subjective fever.

- On exam, he was afebrile, with mild oropharyngeal redness and clear lung fields.

- He is diagnosed with a viral upper respiratory infection, and, after blood and throat cultures were obtained, he was discharged with instructions to maintain fluid intake and to take ibuprofen for pain.

A Clinical Case

- Next day blood culture is reported positive for *Staphylococcus aureus*. He is told to return to the ER.

- On exam, his face is flushed , with mild discomfort attributed to neck and back pain, no fever and his throat appears normal, without redness or pus.

- Urinalysis showed 3 to 10 <u>red blood cells </u>per high-power field, with 6 to 10 squamous epithelial cells per high-power field.

Framing of This Patient

The patient could be legitimately framed as:

– *"pharyngitis, myalgias, and blood cultures positive for Staphylococcus"*, which might lead to a diagnosis of viral illness with contaminated blood cultures.

OR:

– "fever, back pain, and hematuria" generating a different differential diagnosis list, including lupus, Tuberculosis or hypernephroma.

Premature Closure (PC)

- Reluctance to pursue alternative possibilities once a commitment is made, and accepting a diagnosis before it has been fully verified.

- "When the diagnosis is made, the thinking stops".

- Paradoxically, PC can be more compelling in situations where several options are available.

- When just 1 alternative is available, generally it will be checked, but when many alternatives are available, the inclination is to do nothing.

Diagnostic Momentum
(Bandwagon Effect)

- Once a diagnostic label has been assigned, by another individual, momentum takes hold and reduces ability to consider other alternatives.

- Can affect future work-up of patient and how handoffs are "framed."

- Another type of anchoring heuristic

Ascertainment bias

- Shaping decision-making based on prior expectations (e.g., stereotyping, gender bias).

- "Frequent flyers" with recurrent complaints can affect decision-making or, in the case of falls, a patient who "always uses the call bell" may predispose staff to expect that behavior.

- Ascertainment bias occurs when some members of the target population are more likely to be included in the sample than others.

Ascertainment Bias
Clinical Example

- A patient with co-morbidities of renal failure, diabetes, obesity and hypertension arrived to the ER via EMS.

- The patient was "known to the organization," having been to the ER several times previously for back pain, and had been seen earlier that day for a cortisone shot (ascertainment bias).

- Though the patient's chief complaint was chest pain, it was reported to triage as back pain, a secondary complaint (framing effect).

Ascertainment Bias

Clinical Example

- Triage assessment focused on back pain rather than chest pain (anchoring, confirmation bias, diagnostic momentum).

- The primary nurse prepared the evaluation using information from the triage indicating "back pain" (framing, diagnostic momentum) and did not independently evaluate the patient.

The patient was found dead in a room shortly after arrival.

Cognitive Diagnostic Biases

Bias	Description	Prevention
Anchoring; Diagnosis Momentum	Sticking with a Diagnosis	Check new evidence, verify with legitimate statistics
Availability	Use Diagnosis that most easily comes to mind	Know prevalence & incidence
Blind Obedience	Showing undue deference to authority or technology	Tactfully reconsider human work or assess test accuracy
Confirmation	Prefer findings that confirm own Diagnosis or plan	Differential Diagnosis, checklist, literature review, consultation
Framing	Being swayed by subtle wording when assembling elements that confirm the Diagnosis	Consider from another angle to find other causes/associations
Hindsight	Overconfidence in own clinical skills in diagnosis or surgery	Decision Support Systems; peer to peer communication
Premature Closure	Fail to seek new info after initial Diagnosis found	Review, get 2nd opinion; what's the DX I don't want to miss?

Questions? 1

How It Helps, and How It Doesn't

The Trap of Clinical Pathways

Cookbook Medicine

CYA Medicine

THE CHIEF COMPLAINT

Chief Complaint (CC)
Presenting Complaint (PC) or Reason for Encounter (RFE)

- A concise statement describing the symptom, problem, condition, diagnosis, or other reason for a medical encounter.

- In ERs, headaches, abdominal or chest pain and respiratory symptoms are among the most common chief complaints.

- A Medical Office Assistant (MOA) triage nurse, or registration clerk records a patient's CC at the beginning of the medical care process.

Chief Complaint (CC)

- The CC recorded by the MOA or Triage Nurse becomes the documented reason for the patient encounter.

- This works most of the time, but sometimes *pain in the chest* is transmitted and recorded as *chest pain,* a trigger phrase that launches a *diagnostic pathway.*

- A serious workup now ensues that tries to determine not what the patient has (*rule-in*) but what the patient does not have (*rule-out*).

Medicare Patient Information

Medicare reimburses providers by documented complexity of problem.

Type of History	Chief Complaint	History of Present Illness	Review of Systems	Past, Family, Social History	PAY
Problem-focused	Required	Brief	N/A	N/A	1
Expanded problem	Required	Brief	Problem-Pertinent	N/A	2
Detailed	Required	Extended	Extended	Pertinent	3
Comprehensive	Required	Extended	Complete	Complete	4

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Diagnostic Pathways

For example, this may also happen with:

- headache with nausea (R/O brain tumor, meningitis, stroke, subarachnoid bleed)
- abdominal pain (R/O appendicitis, tumor)
- left arm pain (R/O myocardial infarction)
- shortness of breath (R/O pulmonary embolus)
- Blood in sputum: R/O pneumonia, TB

Cookbook Medicine

- The practice of medicine by following predetermined guidelines or protocols, rather than using individualized clinical judgment.

- Argument <u>against</u>: cookbook medicine reduces the quality of care or the art of medicine.

- Argument <u>for</u>: cookbook medicine is based on evidence and best practices, and it helps improve the consistency and effectiveness of medical care.

Cookbook Medicine

- Practice guidelines are developed by a process of review of the literature, grading of the evidence, and recommendations based on the benefits/harms balance.

- Guidelines should support clinical judgment, not replace it, and promote shared decision making with patients.

- Cookbook medicine reflects a tension between scientific rationality and humanistic values in medicine, but both approaches are needed to provide optimal care.

Evidence-Based Medicine

(Evidence-Based Practice)

- Decision-making approach that integrates the best available evidence with physician clinical expertise and patient values.

- It's not cookbook care care, or a healthcare cost-cutting tool.

- EBM ideally uses patient-oriented outcomes, such as morbidity, mortality, and quality of life, rather than disease-oriented evidence like physiologic variables or test results.

- EBM relies on the expertise of a conscientious clinician who partners with the patient.

Cookbook Medicine

- How does cookbook medicine relate to other concepts such as:
  - evidence-based medicine
  - clinical practice guidelines
  - clinical pathways
  - algorithms
  - decision support systems

- Are they synonymous or different? How?

CYA Medicine

- CYA stands for "cover your ass" referring to unnecessary prescribing, or ordering excessive tests, procedures, or treatments for patients, to avoid being sued for malpractice.

- This practice is also known as defensive medicine

THE DIAGNOSTIC PROCESS
HOW DOCTORS THINK

Detectives and Physicians

Detective	Physician
• Take on the case	• Accept the patient
• Interrogate victim	• Obtain patient History
• Get physical evidence	• Do Physical exam
• Interview witnesses	• Family corroboration
• Ancillary tests	• Ancillary tests
• Organize information	• Classify/analyze information
• Formulate hypothesis	• Initial working diagnosis
• Look for culprit(s)	• Begin treatment (s)
• Re-evaluate.	• Re-evaluate
• Look for new information	• Look for new information

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How Doctors Think

Inductive Reasoning

- Specific Observation (s)
- Pattern recognition
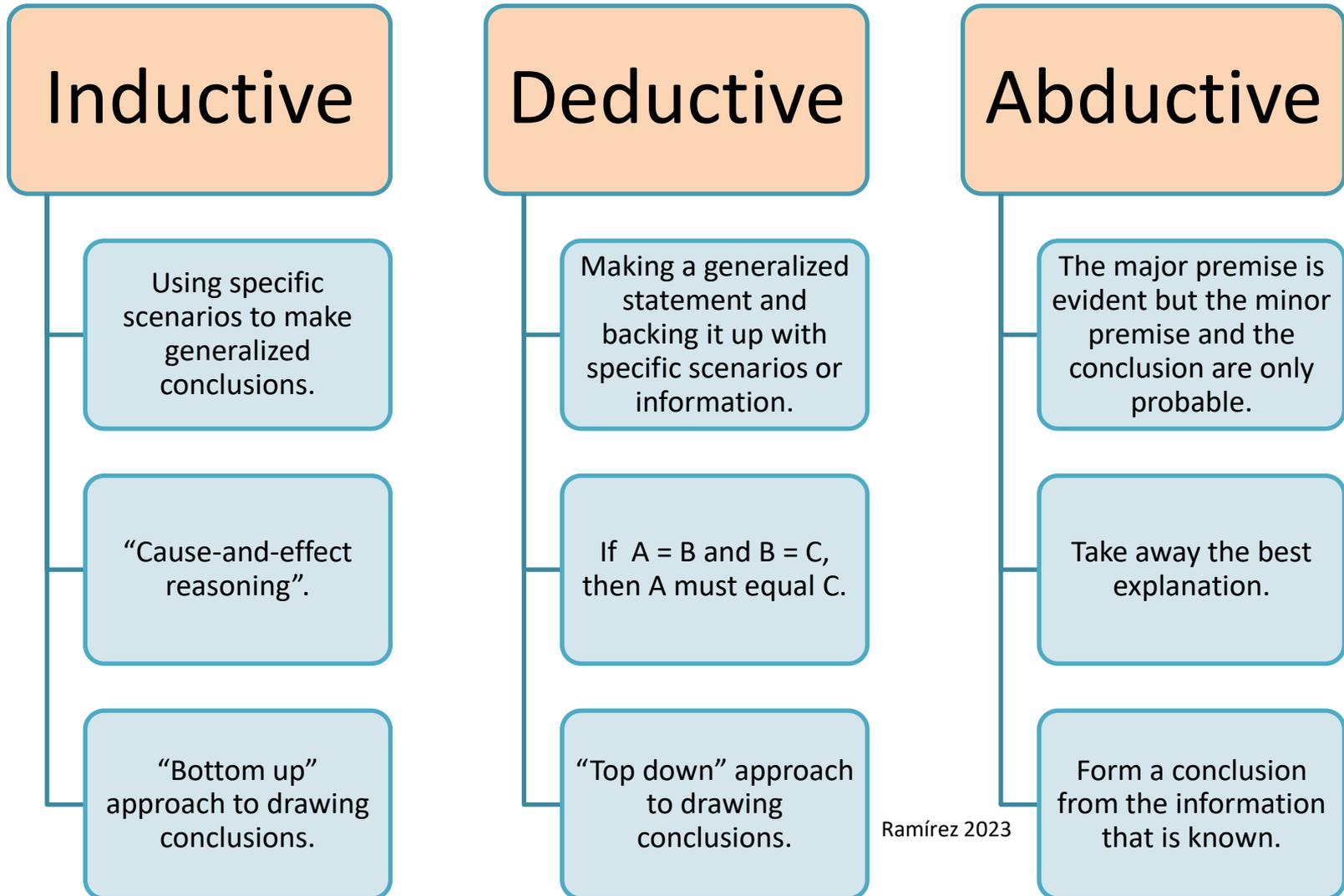- General conclusion

Deductive Reasoning

- Existing theory
- Formulate hypothesis
- Collect data
- Analyze data
- Reject/accept hypothesis

How Doctors Think

- If you can strengthen your argument or hypothesis by adding another piece of information, you are using <u>in</u>ductive reasoning.

- If you cannot improve your argument by adding more evidence, you are employing <u>de</u>ductive reasoning.
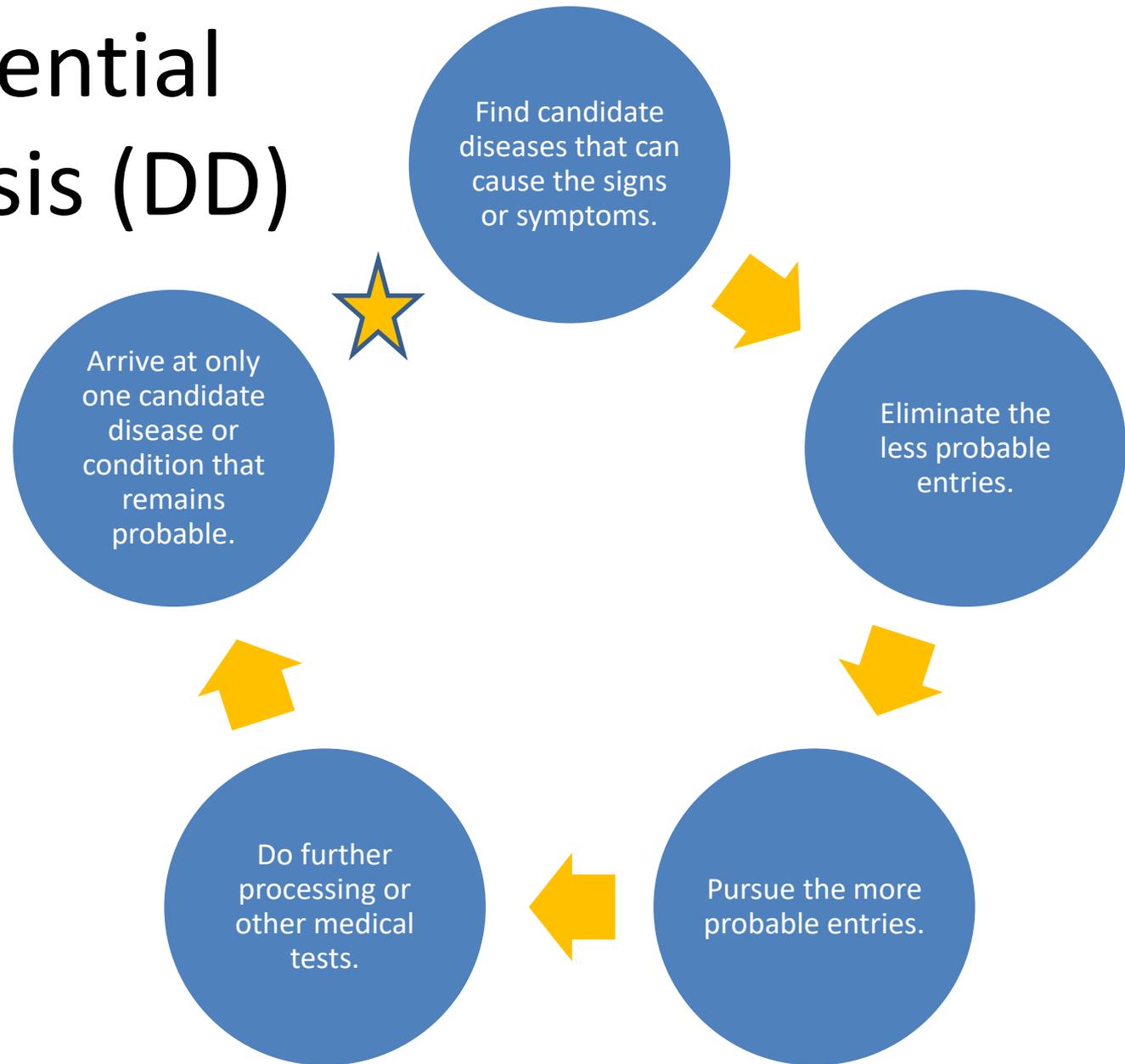
How Doctors Think

(Logical Reasonings)

Inductive

- Using specific scenarios to make generalized conclusions.
- "Cause-and-effect reasoning".
- "Bottom up" approach to drawing conclusions.

Deductive

- Making a generalized statement and backing it up with specific scenarios or information.
- If A = B and B = C, then A must equal C.
- "Top down" approach to drawing conclusions.

Abductive

- The major premise is evident but the minor premise and the conclusion are only probable.
- Take away the best explanation.
- Form a conclusion from the information that is known.

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Differential Diagnosis (DD)

- List of possible conditions that may be causing a person's symptoms.

- A doctor will base this list on a person's medical history and the results of a physical exam and appropriate diagnostic tests.

- Many conditions share the same symptoms, so DD can help narrow down the possible causes and guide the appropriate treatment.
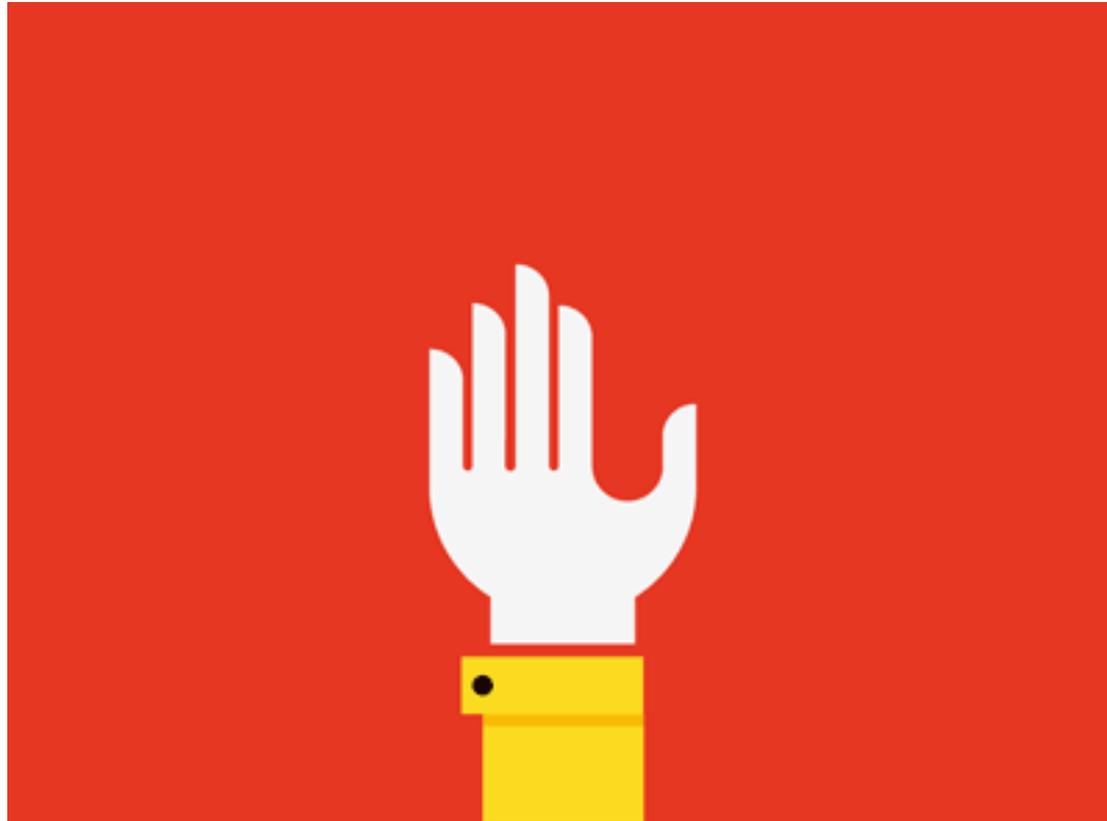
Differential Diagnosis (DD)

Find candidate diseases that can cause the signs or symptoms.

Eliminate the less probable entries.

Pursue the more probable entries.

Do further processing or other medical tests.

Arrive at only one candidate disease or condition that remains probable.

Differential Diagnosis (DD)

Conditions That Can Appear Similar to Each Other

- *Lyme disease and multiple myeloma*: Both can cause fever, joint pain, shortness of breath, numbness in the hands and feet, and fatigue

- *Diabetes and multiple myeloma*: Both can cause excessive thirst, frequent infections, fatigue, numbness in the hands or feet, and blurry vision

- *Arthritis and multiple myeloma*: Both can cause bone pain, particularly in the back or ribs

Non-differential Diagnosis

- A diagnostic approach that does not involve making a list of possible conditions that could cause a person's symptoms.

- Instead, the doctor may have one theory about the cause of a person's symptoms and tests for that one condition.

- This approach may be difficult or inaccurate when many conditions share some of the same or similar symptoms.

- This would involve several harmful heuristics or biases.
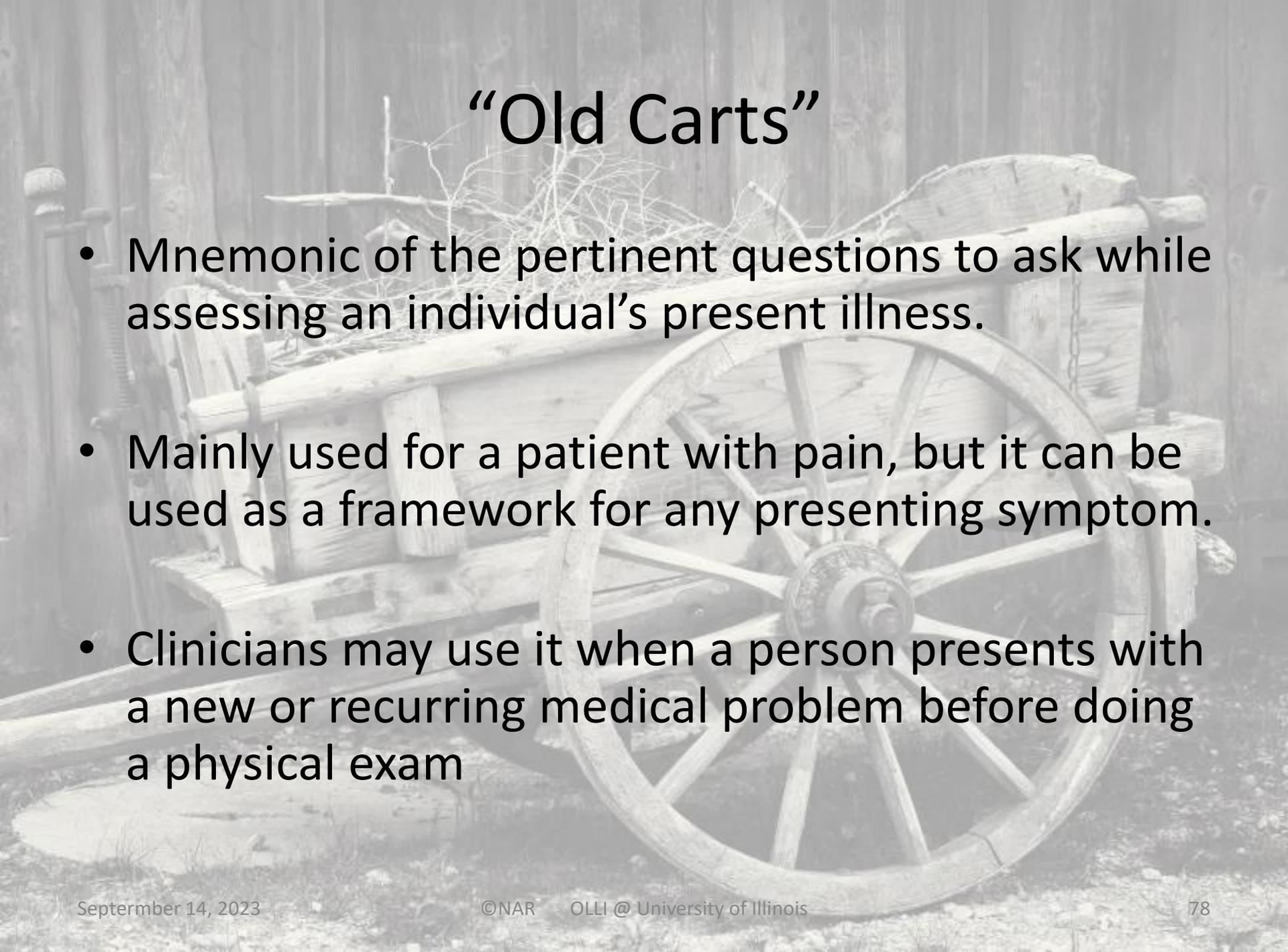
Questions? 2

OBTAINING INFORMATION

S.O.A.P.

- **S**ubjective: what the patient says, feels, thinks

- **O**bjective: What clinician finds, H&P

- **A**ssessment: Tests, diagnosis, differential

- **P**lan: Treatment, follow-up, referrals

The Diagnostic Process
VINDICATEM Mnemonic

- **V** – **V**ascular
- **I** – **I**nfectious/**I**nflammatory
- **N** – Neoplastic
- **D** – **D**egenerative/**D**eficiency/**D**rugs
- **I** – **I**atrogenic/**I**ntoxication/**I**diopathic
- **C** – **C**ongenital
- **A** – **A**utoimmune/**A**llergic/**A**natomic
- **T** – **T**raumatic
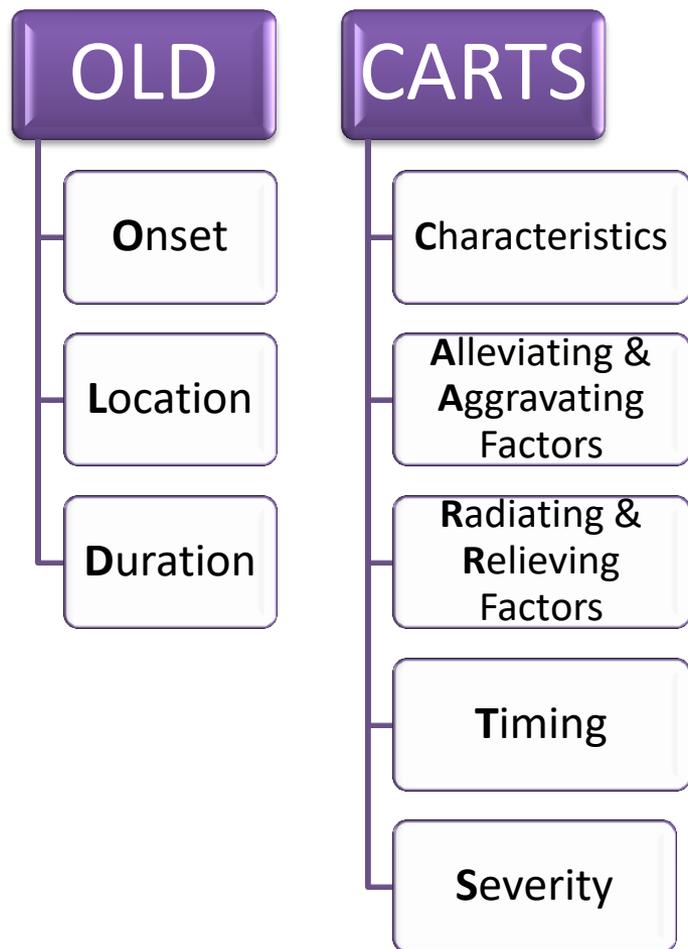- **E** – **E**ndocrine/**E**nvironmental
- **M**- **M**etabolic

"Old Carts"

- Mnemonic of the pertinent questions to ask while assessing an individual's present illness.

- Mainly used for a patient with pain, but it can be used as a framework for any presenting symptom.

- Clinicians may use it when a person presents with a new or recurring medical problem before doing a physical exam

Attributes of a Symptom
"OLD CARTS"

OLD
- **O**nset
- **L**ocation
- **D**uration

CARTS
- **C**haracteristics
- **A**lleviating & **A**ggravating Factors
- **R**adiating & **R**elieving Factors
- **T**iming
- **S**everity

SOCRATES

S Site

O Onset

C Character

R Radiation

A Associations

T Timing

E Exacerbating / relieving factors

S Severity

OPQRST
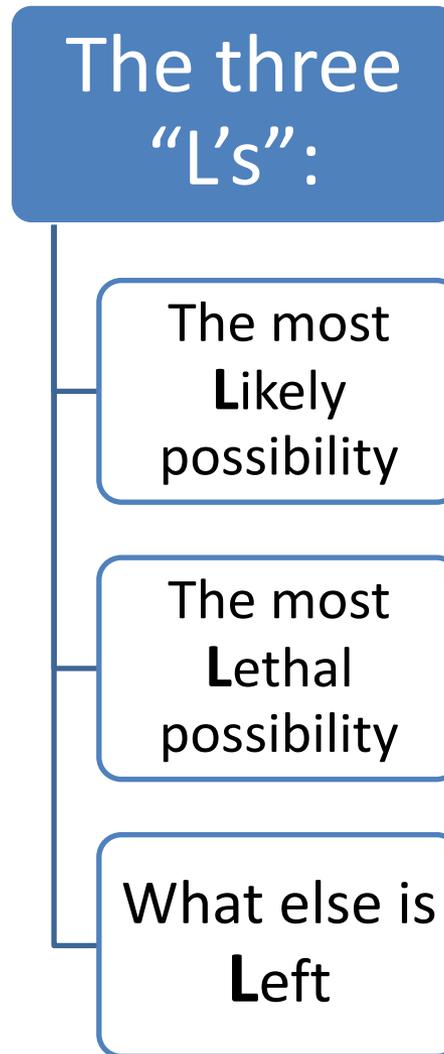
O Onset

P Provocation/Palliation

Q Quality

R Region/Radiation

S Severity

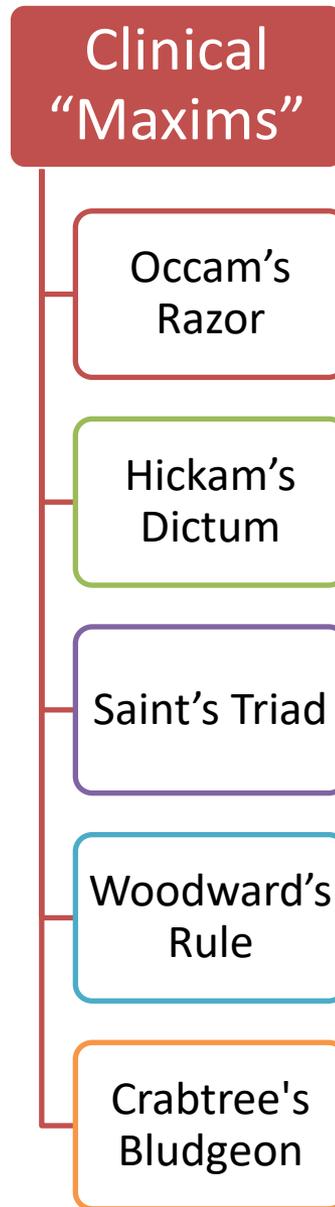T Time/History

The Diagnostic Process

The three "L's":

- The most **L**ikely possibility

- The most **L**ethal possibility

- What else is **L**eft

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Sherlock Holmes:
"When you eliminate the impossible, whatever remains, however improbable, must be the truth".

Clinical "Maxims"
- Occam's Razor
- Hickam's Dictum
- Saint's Triad
- Woodward's Rule
- Crabtree's Bludgeon

Occam's Razor

Hickman's Dictum

Saint's Triad

Woodward's Rule

Crabtree's Bludgeon

Procrustes

Ramírez Non-Laws

CLINICAL MAXIMS

Occam's Razor
(Law of Parsimony)

William of Ockham (1287-1347)

- *Pluralitas non est ponenda sine necessitate* ("Plurality should not be posited without necessity").

- Of two competing theories, the simpler explanation for an entity is to be preferred.

- Also:
  - "Entities are not to be multiplied beyond necessity", or
  - "Simpler solutions are more likely to be correct than complex ones."

Hickam's Dictum

John B. Hickam
Chief of Medicine, IU 1958-1970

A counter argument to the using of Occam's Razor in medicine.

"Patients can have as many diseases as they damn well please".

| **Occam's Razor**	**Hickam's Dictum**
Suggests that the simplest explanation is the most likely, and that diagnosticians should assume a single cause for multiple symptoms.	Suggests the possibility of more than one diagnosis for the same combination of symptoms.

Saint's Triad

- Concurrence of cholelithiasis, diverticulosis, and hiatal hernia, named after the South African surgeon, CFM Saint.

- No underlying pathophysiology explains the synchronous presence of these three conditions; it's a counterweight to Occam's razor.

- This has become very important in wealthier nations as patients live longer with multiple comorbidities.

Woodward's Rule
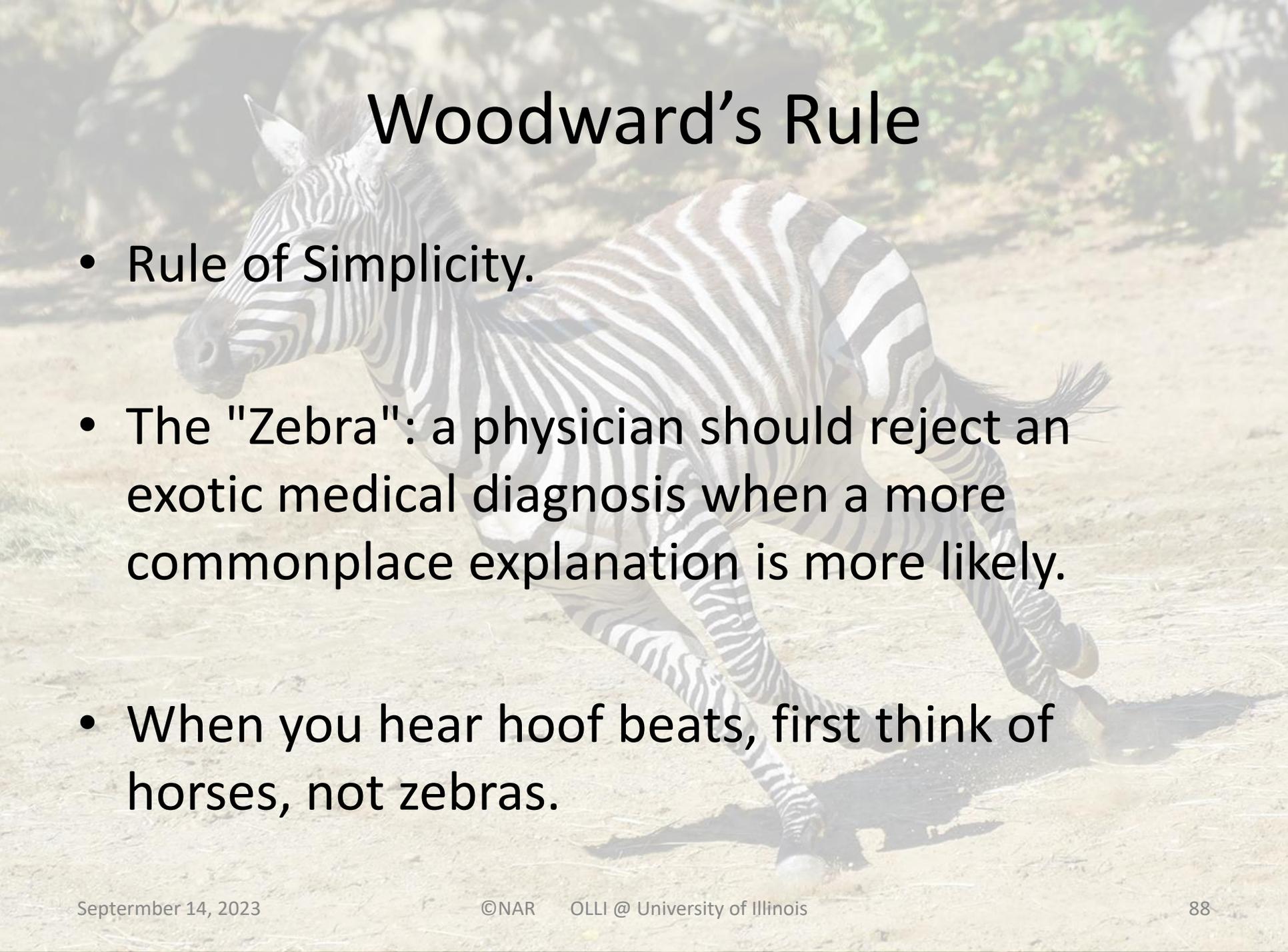
- Rule of Simplicity.

- The "Zebra": a physician should reject an exotic medical diagnosis when a more commonplace explanation is more likely.

- When you hear hoof beats, first think of horses, not zebras.

Crabtree's Bludgeon

"No set of mutually inconsistent observations can exist for which some human intellect cannot conceive a coherent explanation, however complicated".

Emphasizes the human tendency to try linking observations with unifying theories.

The validity of a unifying diagnosis must be tested and not accepted simply because it can explain all the symptoms.

Excessive focus on finding a unifying diagnosis risks directing efforts to find evidence that supports your own claim and ignores information to the contrary.

Procrustean
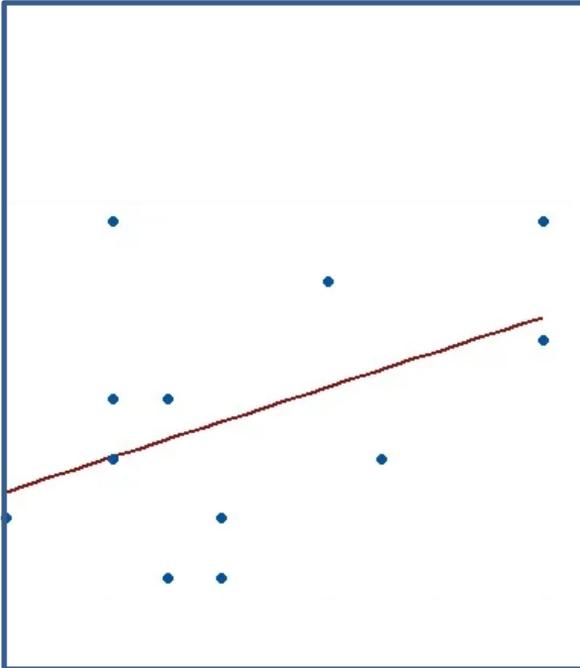
- A Procrustean solution is the undesirable practice of tailoring data to fit a preconceived plan or opinion.

- With a set of data, you choose the points that fit your curve and disregard/discard the rest, therefore, "proving" your theory.

- It is a rhetorical deception that forwards one set of interests at the expense of others, so Procrustes wins.

Procrustes

- Procrustes was a rogue smith and bandit who made his victims lie on an iron bed.

- He forced them to fit the bed by *cutting* off the legs that exceeded the bed's length or *stretching* those people who were too short.

- His logic was that if they fit his bed, then they would fit his criteria, no matter what.

Procrustean

- Situations where a totally arbitrary scale is used to measure the outcome of an issue.

- Obvious harm resulting from the misguided effort is completely disregarded.

- Facts and figures are altered (cut or stretched) to create results that fit the theory (bed).

A Bed for Procrustes

Clinical Maxims

Occam's razor: simplest diagnosis is the most likely to be correct.

Hickam's dictum: multiple disease entities are more likely than one.

Woodwards' rule: if you hear hoofbeats, think horses, not zebras.

Crabtree's Bludgeon : tendency to make data fit our explanation.

Clinical Maxims

Occam is a good general principle to follow

Hickam reminds us that Occam is not a rule

Crabtree cautions against overly elaborate explanations.

In the end, the wisest person to combine and use this knowledge effectively must be the clinician.
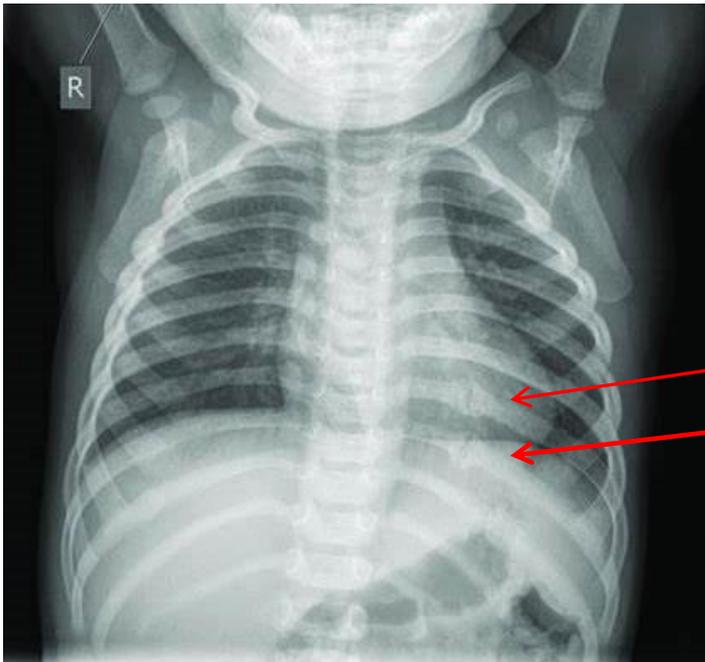
Ramirez's Non-Laws

- Every solution to a problem creates a new problem, usually harder to solve than the original one.

- When looking at a Chest X-Ray, first look at the cage, and then look at the birdie.

- Trust the patient and listen to them, but verify everything.

- A laundry list is always incomplete.

- Don't trip on your own shoelaces.

Patient's Defenses

A medical encounter should always address the primary concern of the patient.

Treating the disease is not the same as treating the patient.

Insist on clear instructions, explanations, and an analysis of risk/benefit.

Know what the tests are for and how accurate they are.

Beware when the diagnosis or plan don't make sense.

When you get a confusing story, don't settle for yes/no answers.

The more doctors involved the more the patient has to insist on clarity.

Final Questions?

Session 3: Communication Errors

September 21, 2023

- Adverse Drug Events (ADE)
- National ADE Action Plan
- The Five "Rights"
- Look-Alike/Sound-Alike Drugs
- Interactions between food and medications
- Surgical Errors
- National Patient Safety Goals
- Universal Protocol