

COMMON COGNITIVE BIASES

Use of various strategies may help prevent many of the cognitive biases. Here are some examples of common biases and strategies for dealing with them.

ANCHORING — Focusing on one particular symptom, sign, or piece of information, or a particular diagnosis early in the diagnostic process and failing to make any adjustments for other possibilities — either by discounting or ignoring them.

EXAMPLES

1. A 48-year-old woman with known osteoporosis presents with severe back pain after a day of vigorous gardening. A plain X-ray shows a vertebral compression fracture. Her physician attributes the fracture to her osteoporosis.
The physician's failure to consider other diagnoses results in a delay in the diagnosis of metastatic carcinoma.
The physician "anchored" on the osteoporosis diagnosis rather than developing a differential diagnosis to explain the fracture.
2. A 22-year-old man presents during flu season with nausea, vomiting, and abdominal pain. The patient does not have diarrhea. The abdomen is soft and mildly tender diffusely without rebound, and with normal bowel sounds.
The patient is diagnosed with gastroenteritis as the physician focuses on the vomiting and de-emphasizes the abdominal pain and absence of diarrhea. The patient is discharged.
Appendicitis is diagnosed two days later.

HOW TO THINK BETTER

- ▶ Gather sufficient information.
- ▶ Develop a differential diagnosis.
- ▶ Consider the worst case scenario.

Reconsider the diagnosis if:

- ▶ there are new symptoms or signs
- ▶ the patient without treatment is not following the natural course of the assumed illness and is not improving
- ▶ the patient is not improving as expected

PREMATURE CLOSURE — Uncritical acceptance of an initial diagnosis and failing to search for information to challenge the provisional diagnosis or to consider other diagnoses.

EXAMPLE

A patient presents with a sudden, severe headache and vomiting following a banquet. The patient believes this is due to food poisoning.

As the neurologic examination is normal, the physician accepts the patient’s provisional diagnosis.

The patient deteriorates and a leaking cerebral aneurysm is eventually diagnosed.

HOW TO THINK BETTER

- ▶ Gather sufficient information.
- ▶ Develop a differential diagnosis.
- ▶ Identify any “red flag” symptoms and investigate appropriately. Consider the worst case scenario — what you don’t want to miss.
- ▶ Consider consultation with a colleague or specialist.

SEARCH SATISFACTION — When one abnormality has been found, calling off the search and failing to look for others.

EXAMPLE

A trauma patient is rushed to the OR with a ruptured spleen. Fortunately he survives the surgery; however, he continues to complain of severe lower abdominal pain.

Three days post-op a fractured pelvis is diagnosed. This finding had already been discovered on the initial radiological examination following arrival in the emergency department but had been overlooked due to the ruptured spleen.

HOW TO THINK BETTER

Having identified one abnormality, ask yourself if there is anything more going on?

ZEBRA RETREAT— If it’s uncommon, this isn’t it — backing away from a rare diagnosis.

EXAMPLE

A 28-year-old woman on the birth control pill presents with calf pain following a slip at work. Her family physician diagnoses a calf muscle strain.

The patient dies two days later from a massive pulmonary embolus.

Muscular strain following an injury is a more common diagnosis, however, in this case the diagnosis should have been Deep Vein Thrombosis (DVT).

HOW TO THINK BETTER

Physicians are often taught “if you hear hoof beats, think horses not zebras,” and generally this is good advice. But, by considering the worst case scenario diagnosis and then ruling it in or out, you will be less likely to misdiagnose the patient.

BANDWAGON EFFECT (diagnostic momentum) — Diagnostic labels may stick to a patient. If everyone else thinks it, it must be right!**EXAMPLE**

The nurses in the emergency department ask you to see and quickly discharge Miss Jones. They explain that she is a “regular” in the department and is seeking narcotics.

Tonight Miss Jones presents again with abdominal pain. Fortunately, you perform a thorough history and physical exam and diagnose a ruptured ectopic pregnancy.

HOW TO THINK BETTER

- ▶ Assess patients appropriately.
- ▶ Consciously decide to arrive at your diagnosis or differential diagnosis independent of the labels applied by others.
- ▶ A diagnostic “time out” to reconsider the differential diagnosis may be helpful.

ATTRIBUTION ERROR — A form of stereotyping: explaining a patient’s condition on the basis of their disposition or character rather than seeking a valid medical explanation.**EXAMPLE**

An intoxicated homeless man presents with a large ulcer on the plantar surface of his right foot. As he is unclean, unkempt and without shoes, you assume the ulcer is traumatic in origin and there would be little chance of improvement given his lifestyle.

Further investigation reveals he is not intoxicated, but rather diabetic.

With appropriate therapy and support the patient is able to manage his diabetes as well as heal the foot ulcer.

HOW TO THINK BETTER

Every patient and every healthcare provider are unique individuals.

Unfortunately, we may be biased toward a patient with a particular illness, particularly a psychiatric illness or drug or alcohol addiction.

Avoid the rush to stereotype a patient based on his or her culture, gender, illness or disability, religious or sexual orientation, and so on.

Acknowledge that you may not have the best rapport with a specific patient and take particular care with the impact of this on your decision making and judgment.

AUTHORITY BIAS — Declining to disagree with an “expert.”

EXAMPLE

The hospital you are working in as a medical student is short of beds. The senior resident sends you to the medical ward to quickly discharge a 67-year-old patient admitted the day before with COPD. You are told the patient has improved and can “go home” to follow up with the family doctor.

When you go to see the patient, the family members take you aside and voice their strong concern about discharging the patient.

You decide to re-examine the patient, and find the patient in mild respiratory distress. You repeat the vital signs and the patient now has a temperature of 39 C.

Concerned, you telephone the resident, and learn that this is something the family doctor should deal with.

What should you do now?

HOW TO THINK BETTER

All members of a team should have a voice and any team member should speak up respectfully if there is a concern about the safety of a patient.

AVAILABILITY HEURISTIC — Recent or vivid patient diagnoses are more easily brought to mind (i.e. are more available) and overemphasized in assessing the probability of a current diagnosis. A heuristic is a mental shortcut.

EXAMPLES

In influenza season, it is tempting to consider all patients with fever and myalgias as having influenza.

Similarly, you may see every slightly irregular light brown nevus as a potential melanoma after you were surprised by an unexpected diagnosis of melanoma in a recent biopsy. This can lead to inappropriate biopsies of clinically benign lesions.

HOW TO THINK BETTER

- ▶ Be aware of the influence of recent diagnoses on your diagnostic acumen.
 - On the one hand, watch for red flags or symptoms or signs inconsistent with a common, less serious diagnosis.
 - On the other hand, don’t over-investigate or over-treat based on an unexpected recent diagnosis in another patient.

