

Beware Your Brain

Teaching Residents to
Avoid Cognitive Errors
In Diagnostic Reasoning

Beware Your Brain



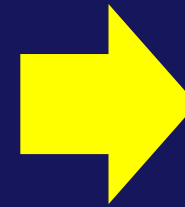
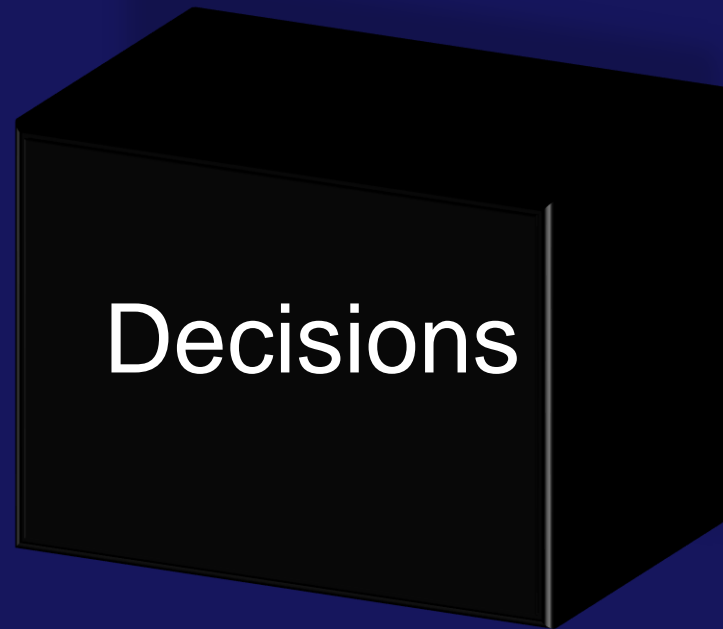
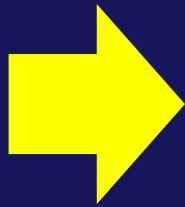
Beware Your Brain



What we do

Doctors Make **Decisions**

Problems
Questions



Solutions
Answers

Poor Decisions

Sometimes we make mistakes

Medical errors cause harm

40,000 – 100,000 inpatient deaths per year

What type of mistakes?

Procedural

Clerical

Cognitive

The Washington Post

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Misdiagnosis is more common than drug errors or wrong-site surgery

By [Sandra G. Boodman](#), Published: May 6

Until it happened to him, Itzhak Brook, a pediatric infectious disease specialist at Georgetown University School of Medicine, didn't think much about the problem of misdiagnosis.

That was before doctors at a Maryland hospital repeatedly told Brook his throat pain was the result of acid reflux, not cancer. The correct diagnosis was made by an astute resident who found the tumor — the size of a peach pit — using a simple procedure that the experienced head and neck surgeons who regularly examined Brook never tried. Because the cancer had grown undetected for seven months, Brook was forced to undergo surgery to remove his voice box, a procedure that has left him speaking in a whisper. He believes that might not have been necessary had the cancer been found earlier.

Poor Decisions Bad Outcomes

Claim setting	Relative Frequency
OB	
Medical	
Surgical	
Misdiagnosis	
Other	

Poor Decisions Bad Outcomes

Claim Setting	Cost
OB	\$123 Million
Medical	
Surgical	
Misdiagnosis	\$127 Million

25-Year summary malpractice claims 1986–2010

Malpractice allegation setting	Claims	%	Malpractice Payments (\$M)	%
Diagnosis	<u>100,249</u>	(28.6)	<u>38,781</u>	(35.2)
Treatment	95,635	(27.2)	18,836	(17.1)
Surgery	84,980	(24.2)	23,816	(21.6)
Obstetrics	<u>22,951</u>	(6.5)	<u>14,956</u>	(13.6)
Medication	18,697	(5.3)	4,811	(4.4)
Anesthesia	10,525	(3)	4,411	(4.0)
Monitoring	7,101	(2)	2,514	(2.3)
Other	10,568	(2.9)	1925	(1.6)
Total	350,706	(100)	(100)	0.59

Poor Decisions Bad Outcomes



Example Case

- Board Certified Family Physician
- Middle-aged white male patient
- Typical cardiac chest pain
- Positive cardiac risk factors
- Misdiagnosed with GERD
- Died of fatal MI 3 weeks later.

trap

Our Goal

Recognize mental traps

Prevent misdiagnosis



Psychology of Error

Mental Shortcuts

Two groups

Choosing the diagnosis

Availability, Framing and Blind Obedience

Validating the diagnosis

Anchoring and Premature Closure

Psychology of Error

Choosing the diagnosis

Psychology of Error

coast

<u>Cognitive Error</u>	<u>Description</u>	<u>Examples</u>

Availability



Psychology of Error

<u>Cognitive Error</u>	<u>Description</u>	<u>Examples</u>

Framing



Psychology of Error

<u>Cognitive Error</u>	<u>Description</u>	<u>Examples</u>

Blind Obedience



Psychology of Error

Validating the diagnosis

Psychology of Error

<u>Cognitive Error</u>	<u>Description</u>	<u>Examples</u>

Anchoring



Psychology of Error

<u>Cognitive Error</u>	<u>Description</u>	<u>Examples</u>

Premature Closure



Review

Availability

biased by ease of recall

Framing

biased by details surrounding the clinical data

Blind Obedience

biased by authority or technology

Anchoring

stuck on initial impression

Premature Closure

prematurely halting diagnostic workup

Our Goal

Help residents to

- **Recognize** mental traps that adversely affect their judgment.
- **Prevent** these mental traps from harming patients

Research Questions

How well do residents do the following **before** and **after** workshop

- **Recognize their risk** for cognitive error
- **Propose a strategy** to minimize this risk
- Achieve **diagnostic agreement** with their attendings

Avoid the unavoidable?

Seeing
when we
can't see

