Introduction to Evidence Based Medicine

Color Index	IMPORTANT	NOTES	GOLD	EXTRA

OBJECTIVES

- Definition
- How to construct a clinical question using PICO
- Sources of Evidence:
  - Clinical evidence
  - Guidelines
  - Up-to-date
  - Cochrane
- Skills in searching for evidence

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Sources	Drs Slides and Notes

Case Scenarios

Ibrahim is a 30 years old teacher, he is known to have allergic rhinitis. He presented with a flare up of rhinitis symptoms, and he wants to get refills of the antihistamine pills

You wonder should you prescribe intranasal steroids or refill the antihistamines?!

When confronted with a clinical question whom would you consult?

1. **Experts and colleagues**: A great source of information. Quick, affordable and accessible. But potentially very biased:
   - Not updated
   - Variability

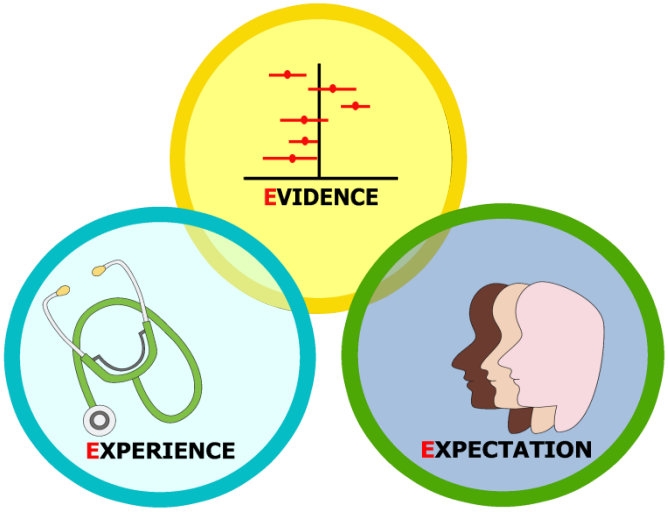
2. **textbooks**: Rapidly out-of-date (2-4y).
A good source of background information (pathophysiology).
But a poor source of information for most foreground questions (clinical).

3. **others**

What is EBM?

The integration of the current best evidence (from research) with our clinical expertise and patients' values.

Three **E**s *of* EBM Components



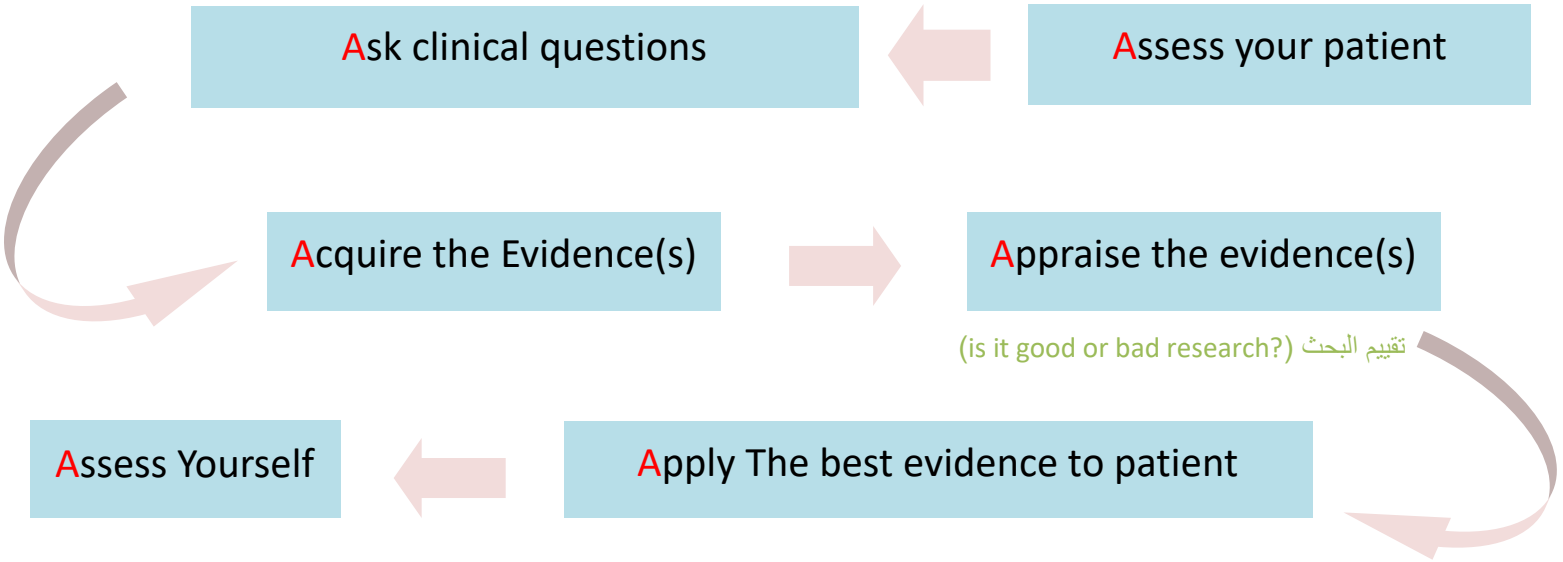
Rules of Evidence

- All evidence is **not** created equal.
- Evidence alone **never** makes clinical decisions.

Hierarchy of Evidence

- **Meta-analysis of RCTs:** Multi-centric large RCTs
- **Single Centre RCT**
- **Observational studies:** Patient-important outcomes
- **Clinical experience**
- **Basic research:** test tube, animal, human physiology

6 As to practice EBM



1. **Asses your patient**: history, physical examination, objective data (labs, x rays), formulate DDx.

2. **to answer clinical question effectively**: First, turn your scenarios into *'well-built' clinical Q.*

Four domains: **PICO**

1) the Patient (Problem)

2) the Intervention or exposure

3) the Comparison (intervention)

4) the clinical Outcomes

Example: Ibrahim (case scenario in the beginning)

1. Patient Population: patients attending with allergic rhinitis

2. intervention: intranasal steroids

3. comparison intervention: anti-histamines

4. outcomes: ??

"In Patients attending the family medicine clinic with allergic rhinitis, is the use of intranasal steroids as compared to antihistamines …….?

For healthy adults is it worthwhile to give aspirin as a prophylaxis to reduce MI and or stroke?

1. Patient Population: asymptomatic adults with no risk factors

2. intervention: aspirin

3. comparison: placebo

4. outcomes: incidence of CVA events

"In asymptomatic adults no risk factors, would the use of aspirin reduce the incidence of cardiovascular events?

Khalid is a 60 years old teacher, he is known to have hypertension. He presented to the ED with severe chest pain for the last two hours.

- In addition to history / exam and ECG, you wonder should you request for a timely diagnosis: troponin or creatine kinase- MB or both?

1. Patient Population: patients attending the ED with chest pain

2. intervention: Troponin

3. comparison: creatine kinase- MB

4. outcomes: accuracy of diagnosis of IHD

"In Patients attending the ED with chest pain, is troponin as compared to creatine kinase-MB more valid for the diagnosis of ischemic heart disease?

Components of Clinical Questions **(PICO)**

1. **Patient/Population**: In patients with acute MI, in women with suspected coronary disease, in post-menopausal women.

2. **intervention**: early treatment with statin, what is the accuracy of exercise ECHO, hormone replacement therapy.

3. **comparison**: compared to placebo, compared to exercise ECG, compared to no HRT.

4. **outcomes**: decrease cardio-vascular mortality, for diagnosing significant CAD, increase the risk of breast cancer.

A comparison of answer retrieval. Ahmadi SF Med Teach - 2011

	UpToDate	Clinical key	PIER	Essenti Evid +
Rate retriev	86%	69%	49%	45%
The mean time	14.6 min	15.9 min	17.3 min	16.3 min

Acquire the Best Evidence

Prefiltered Sources:

- UpToDate
- Best practice
- Dynamed
- Physicians Information and Education Resource (PIER)
- Clinical Practice Guidelines
- Cochrane Library?
- Medscape
- MD Consult

Unfiltered Sources:

- MEDLINE

(www.pubmed.gov)

- Google scholar

(www.google.com)

Other Prefiltered Sources:

- ACP Journal Club www.acpjc.org
- The database of abstracts of reviews of effects (DARE) www.crd.york.ac.uk
- Evidence Based Medicine ebm.bmj.com
- Evidence Based mental health ebmh.bmj.com

QUESTIONS

QUESTIONS (1)

EBM components are:

A) Evidence, expectations, Experience

B) Evidence, expectations, excitement

C) expectations, experience, endorsement

QUESTIONS (2)

EBM IS:

The integration of the current best evidence (from research) with our clinical expertise and patients' values.

TRUE

FALSE

QUESTIONS (3)

When confronted with a clinical question whom would you consult?

A) EXPERTS

B) TEXTBOOKS

C) EBM

ANSWERS A, A, C