COMMUNITY MEDICINE

Notes

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Evidence based medicine

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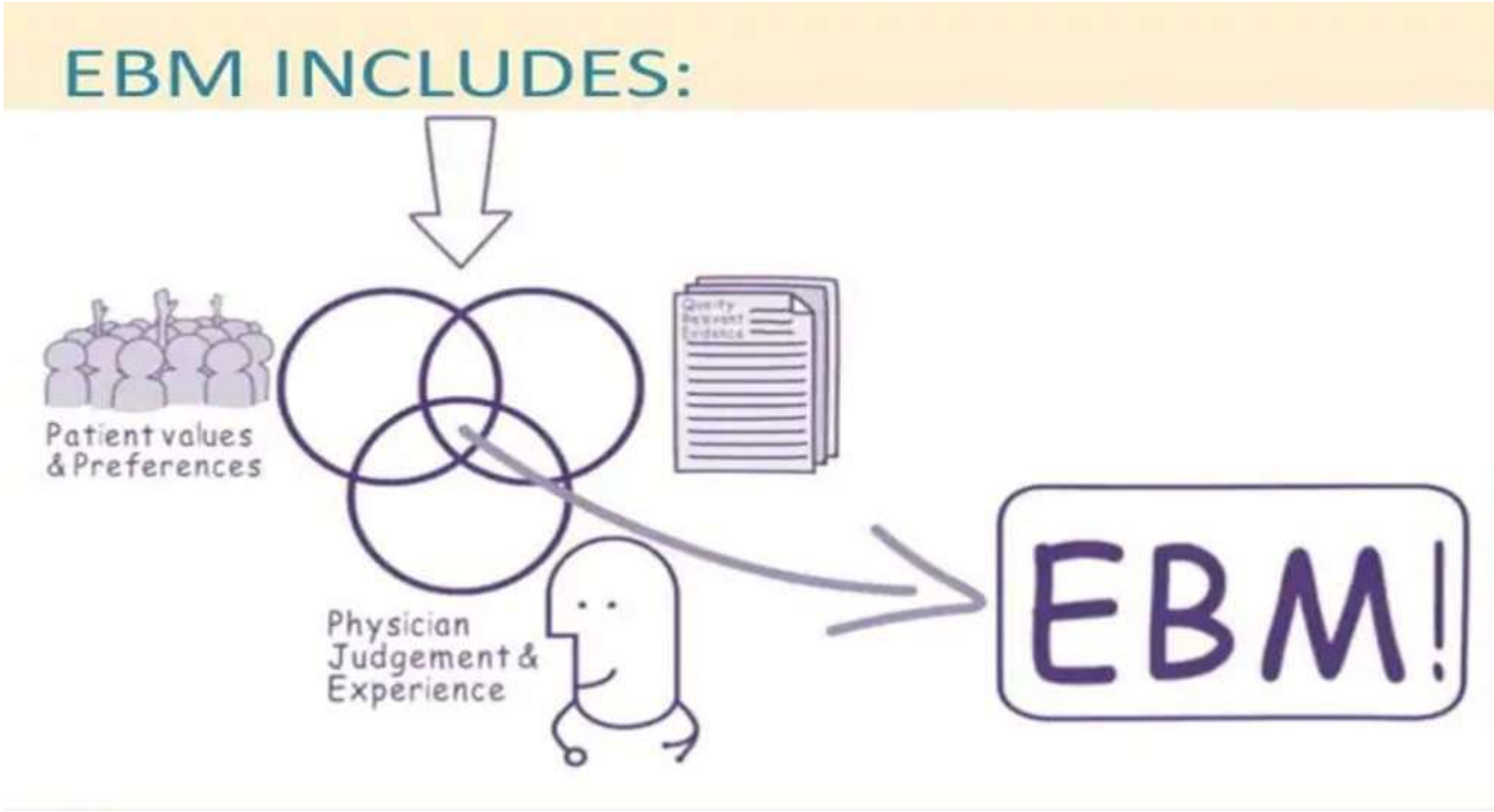
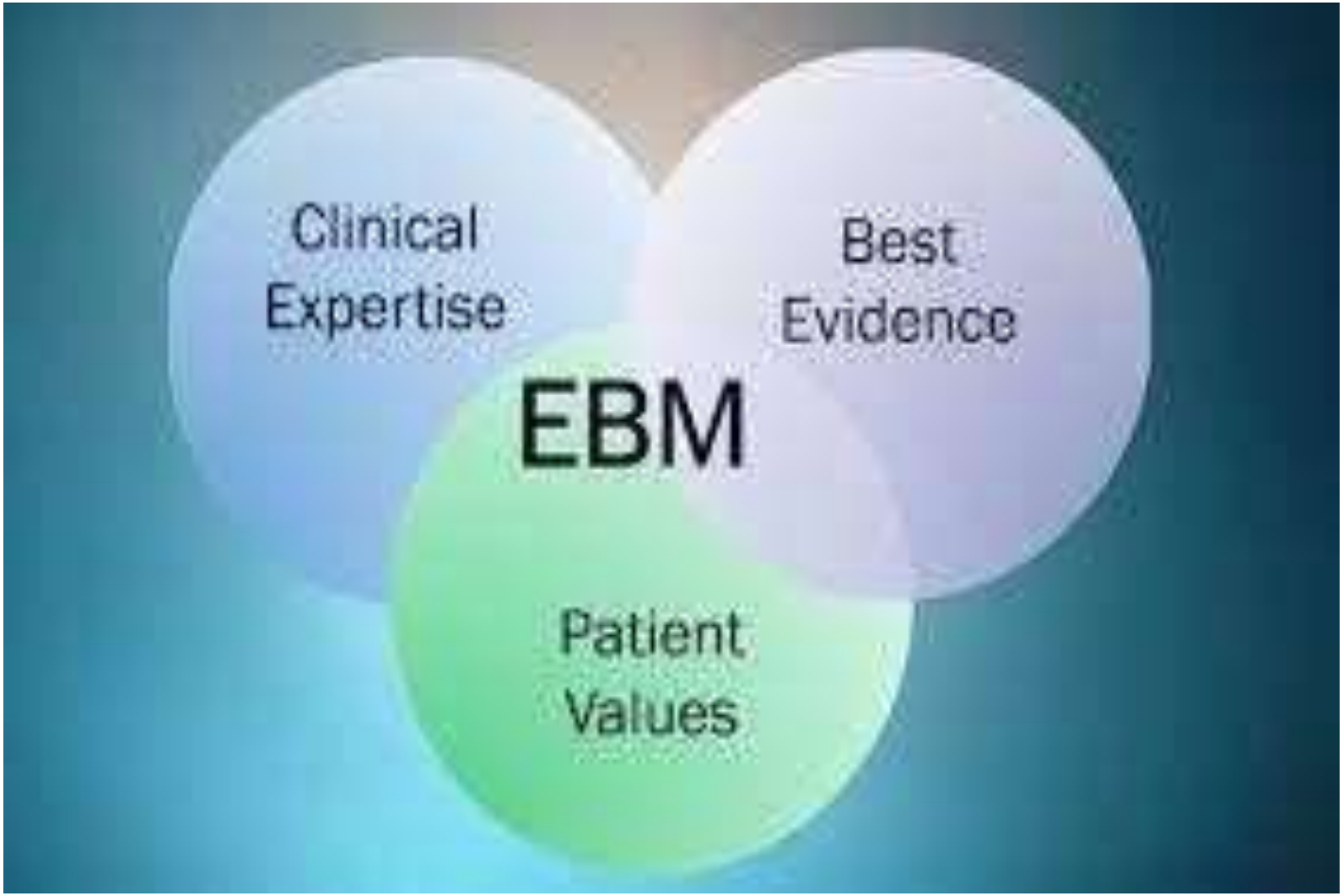


What is Evidence based medicine?

- Evidence based medicine is honest (conscientious), wise (judicious) and clear use of current best evidence in making decisions about the care of individual patients.
- The integration of the best evidence from systematic research with physician experience and patients values
- مش فقط الوضع المادي وانما أيضا الخبرة والبحث مشان أتأكد اني وصلت لأفضل حل مع المريض تاعي


Clinical
Expertise
Best
Evidence
EBM
Patient
Values

EBM. Why? اهميته لنا كأطباء

- On graduation , the graduate has a crowded brain with so much up-to–date background knowledge while nil experience.
- يعني بس نتخرج بكون في كمية هائلة من المعلومات ولكن ما عنا خبرة لسا
- On facing patient, he/ she asks: “which piece of all my knowledge I need here”?
- بنكون مضطربين مش عارفين اي جزء بالزبط من المعلومات بنحاتجه بالموقف اللي بنكون فيه

As time Pass

- The Knowledge inside his/her brain gets little and little. Instead he/she now has clinical experience which sometimes entails doing the same mistakes with increasing level of confidence .
- مع الوقت رح تقل المعلومات ولكن تزداد الخبرة فللأسف بنصير نسوي الأخطاء بثقة أكبر انه والله عندي خبرة

As more time Pass

- He/She is now an expert.
- He/She feels not in need for new knowledge.
- He/She is not accepting that there is something better than what he/she is doing.

Benefits of Evidence-Based Medical practice (proponents

- **New skills of literature research& evaluation**

. بعلمنا انه مش كل بحث بيوقع بايدي فهو مناسب وانما لازم اقيمه بالاول

- **Appraisal of research for patients benefits.**
- **Better self satisfaction with work on scientific background.**
- مش شغال عالعمياني
- **Legal support for our choices.**
- لو حصل خطأ طبي بكون حامي حالي اني مشيت على اسس وقواعد وابحاث معمول فيها بالتالي انا ما غلطت

- **Better results of our practice.**
- **Solution for conditions that usually have unsatisfactory results.**

حلول للمشاكل السابقة

EBM HAS TRIPLE AIM OBJECTIVE

- ❑IMPROVED QUALITY
- ❑IMPROVED PATIENT SATISFACTION
- ❑REDUCED COSTS

نستخدم الافضل والاقل تكلفة عالمريض

EBM METHOD:

It is done by 5 steps

Step 1:

نقيم الحالة → Assess the patient condition

5A

Step 2:

PICO To ask a question

Step 3:

ندور على أحسن الأبحاث والحلول → Aquire the best evidence

Step 4:

→ Appraise the evidence نقيم هذه الأبحاث ونعرف مدى قابلية تطبيقها على المريض

Step 5:

نطبقها → Apply the evidence to patient

Step 1:

Assess the patient condition:

- History.
- Diagnosis :
  - Physical Examination
  - Objective data-Lab details like X rays, blood tests
- Differential diagnosis should be conducted in all the diseases.

Step 2:

ASK A QUESTION:

- Asking a clinical questions to patient by pharmacist after assessment?
- PICO is the useful tool in asking a clearly focused question.
- The complicated clinical question can be dissected into small parts (PICO) and in a way that the patient can clearly structure the question.
- The terms of PICO can be used in searching for medical literature.

P: patient problem

I: intervention طريقة التشخيص او العلاج

C: comparison هل كان بياخد اشي من قبل ومين الأفضل

O: outcome النتيجة اللي بدور عليها

4 ELEMENTS WHILE ASKING THE QUESTION:

the patient or problem being addressed	**P**atient
the intervention or exposure being considered	**I**ntervention
the comparison intervention or exposure when relevant	**C**omparison
the clinical outcomes of interest	**O**utcome

EXAMPLE:

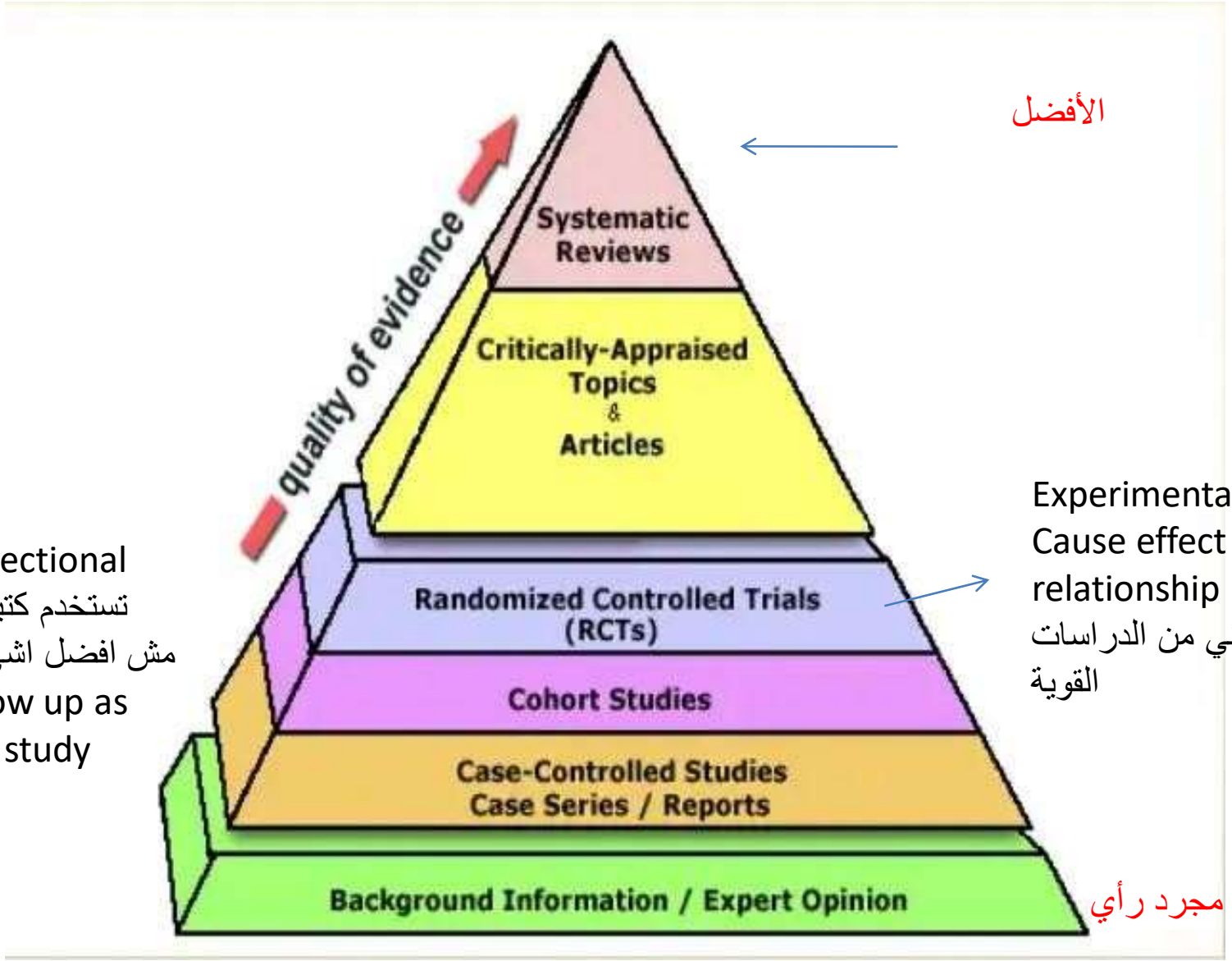
Adults who have suffered a heart attack in the past month	**P**atient
Aspirin	**I**ntervention
No treatment/placebo	**C**omparison
Death	**O**utcome

Step 3:

TO AQUIRE BEST EVIDENCE:

High quality evidence is obtained from:

- Textbooks
- Medline or Pub med search
- Clinical research
- Systematic reviews
- Browse online electronic databases



الأفضل

Experimental
Cause effect relationship
فيعني من الدراسات القوية

Cross sectional
تستخدم كتير ولكنها مش افضل اشي لانه ما فهاfollow up as cohort study

مجرد رأي

Step 4:

APPRASIAL OF EVIDENCE:

Apprasial means

Verifying the results valid?

What are the results?

Are the results suited to our patient?

- Screening for internal validity and relevance.
- Determining the intent of the article.
- Evaluating the validity based on its intent.
- Critically appraise articles yourself.

صفات المريض تبعي تختلف عن صفات المريض اللي بالبحث
فلازم اتاكد انه هالعلاج مناسب ايضا لمريضي او لا

Internal validity : Cause effect relationship

External validity: can I do generalization to this result or not?

Step 5:

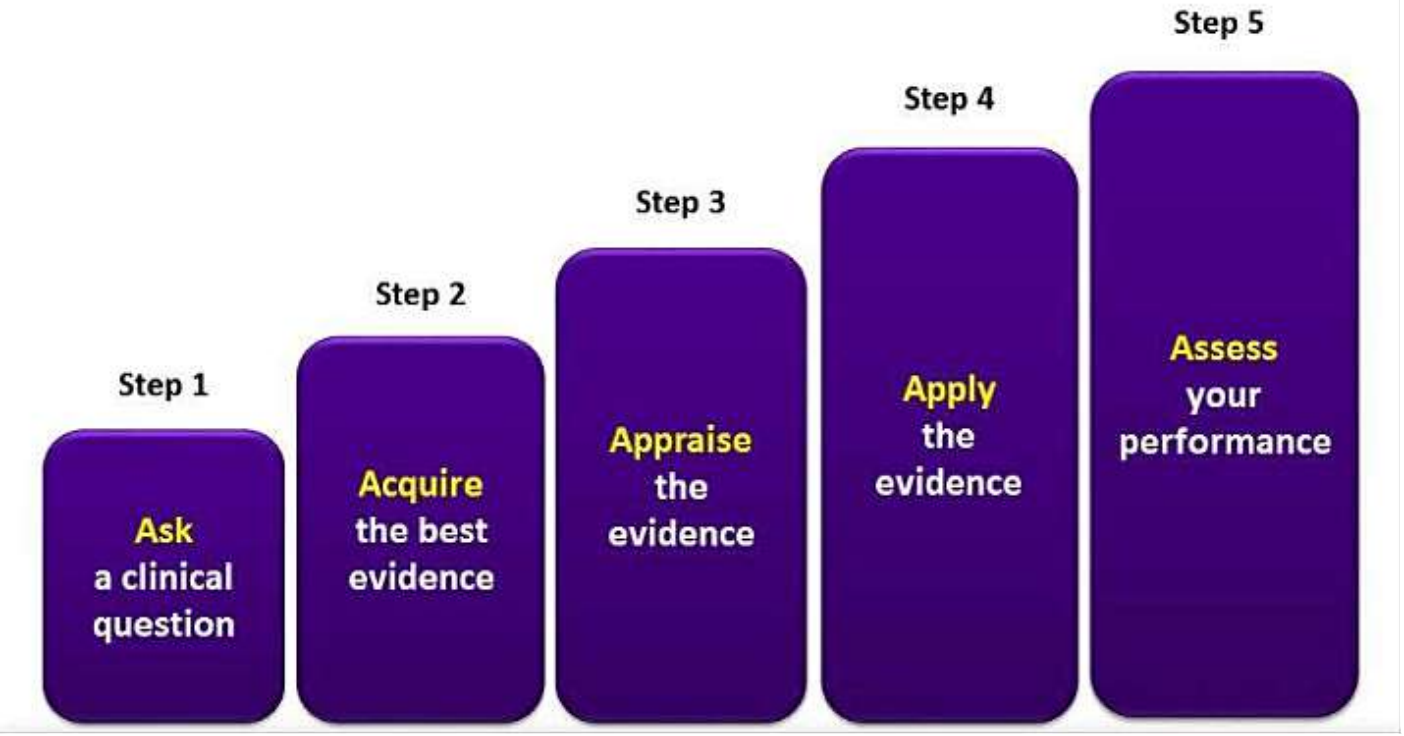
APPLY THE EVIDENCE:

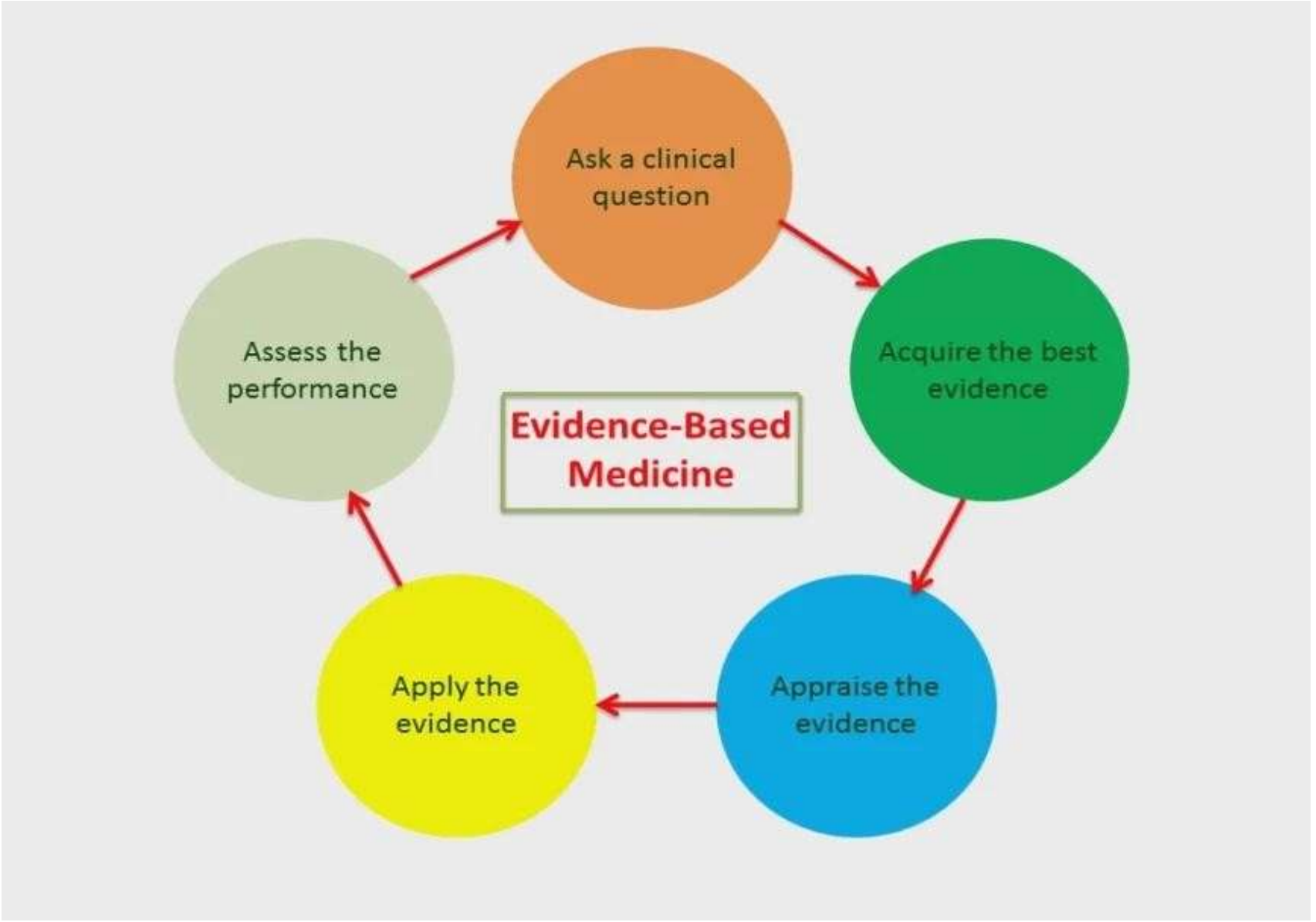
- Best documented critically appraised research evidence is already with us.
- Patient values to be considered while applying evidence are الاشياء اللي بتهمنا بس نيجي نطبق عالمريض
  - ❑ Economical/Financial status of patient.
  - ❑ No contraindication for drug to be applied.
  - ❑ Dosage form preferred.
- Integrate the evidence with clinical expertise and patient preferences.
- Evidence is applied on patient.

5 A model of Evidence Based Medicine Steps

- Assessment of patient& problem (patient)
- Asking proper question about the patient problem (PICO question)
- Acquiring the best available evidence that answer that question.
- Appraisal of the evidence for its validity& usefulness (Evaluation)
- Applying the results of appraised evidence to the patient(patient)

The 5 Steps of Evidence-Based Medicine




Ask a clinical question
Acquire the best evidence
Appraise the evidence
Apply the evidence
Assess the performance
Evidence-Based Medicine

Clinical scenario to show the difference between background questions & Foreground question = EBM question=PICO question= 4 parts question

- Hatem is 4 years old, presented with idiopathic thrombocytopenic purpura (ITP) , mild gum bleeding
- He is clinically stable, and his physical examination is otherwise normal
- Complete blood count is totally normal apart from severe thrombocytopenia(platelet count< 10000/mm)
- You decided to admit him and start treatment with intravenous immunoglobulin (IVIG)
- One student asked you if treatment with pulsed high dose methyl prednisolone would result in similar improvement & much lower cost for the hospital.

Background questions = Non EBM questions = Not developed specifically for certain patient

- What is idiopathic thrombocytopenic purpura (ITP)?
- What is the clinical signs & symptoms?
- How can we diagnose this disease?
- What are the treatment options for?

PICO = EBM question = developed specifically from certain situation

- In child suffering from ITP does treatment with steroids, compared to IVIG results in rapid cure (treatment question)
- In children suffering from ITP is complete blood picture as accurate as bone marrow aspirate in diagnosis (diagnosis question)

P: a stable status for child with ITP

I: treatment with pulsed high dose methyl prednisolone

C: treatment with pulsed high dose methyl prednisolone or with intravenous immunoglobulin (IVIG)

O: best treatment with low cost

Access

- **Access to evidence comes After developing the PICO question by :**
- **Efficient internet search for Relevant research with strong study design**

Efficient internet & journals search

- Meta analysis or Systematic Review(IF NOT FOUND)
- Effectiveness of a therapy (RCT)
- Effectiveness of a diagnostic test (Validity of a test) (specificity and sensitivity)
- Harm of a therapy by (RCT or Cohort or Case control)
- Prognosis of a disease by (Cohort)
- بلشنا حسب الأفضلية من الهرم من فوق اذا ما لقينا الأولى بننزل عالتانية و هكذا

Efficient literature search

Try to find :

1. Meta analysis or systematic review of well designed randomized controlled trials
2. Strong evidence of a well RCT of appropriate size.
3. Cohort study.
4. Case control study.
5. Multiple cross sectional studies

Systemic Review

- **Collection of *all* evidences in a particular field of research by *systematic search of literature and unpublished sources* and evaluation of these evidences *using predefined quality criteria*.**

  •بناخد مجموعة من الابحاث معمولة لنفس الموضوع وبحللها بطريقة systematic

- **Journalistic)non-systematic) review**

It differs from systematic review as only some evidences on a topic are collected with author's personal opinion.

هون مش كل الابحاث بناخدها وانما بعضها على حسب راي الكاتب(اللي بيعجبه)

- **(overviews written by experts in the field)**
  - ولكن بالحالتين بكونوا qualitative not quantitative مفيش ارقام

Meta-analysis

- **Meta-analysis is the systemic process of combining the numerical results of different research studies using statistical methods to obtain a numerical estimate of an overall effect**

- **It is combining the results of several clinical studies on the same topic to drive a definitive conclusion from varied and sometimes contradictory results**

بتشبه اللي قبلها ولكن هون بعد ماجمع الابحاث واحللهم , بدخل أرقام واحصائيات فبيعطيني بنسب ,مين البحث القوي ومين الضعيف بالتالي هو أقوى أنواع الresearch study

Meta-analysis versus systemic review

Similarity:

- Both entail systemic search of literature and unpublished sources to collect all what are similar to research question. كل الأبحاث سواء منشورة أو لا

Difference:

- Meta-analysis attempts to statistically analyse the aggregated results to drive single integrated conclusion while systematic review does not do so.

Literature Review

- **Summarizes** a topic that is **broad** in scope (e.x. cancer treatment)
- **Qualitative**
- May use sources that are **biased**
- Does **not** define what types of studies will be included (looks at everything)

Systematic Review

- Answers a **specific clinical question** (e.x. **PICO**) (e.x. Is Vitamin C or Chemotherapy a better cancer treatment in patients over the age of 40?)
- **Defines** a specific search strategy; lists what will be **included and excluded** in articles selected
- Can include a meta-analysis within the review (but no necessary)

Meta-Analysis

- Looks at studies from a systemic review
- Purpose: Combines similar studies and pulls **data** to get a **statistically** significant result
- Important because **statistical analysis** may overturn results of smaller clinical trials

يعني اوقات بس اجمع كل هاي الابحاث واعمللها احصائيات , فالابحاث الكبيرة رح تضيع عالابحاث الصغيرة والتي قد تكون مهمة

How Are Reviews Related?

النتائج اللي جمعتها من ال systematic review ,
عملتلها احصائيات

Evaluating the clinical literature. Why?

The clinician must always keep in mind that:

- **Not all the published papers in scientific journals or on the web contain the best results or conclusions about disease management.**
- **Results can be fabricated.**
- **Conclusion may be obtained from small study. Sample which cannot be generalized on all patients.**
- **Wrong techniques or methodology.**
- **Data were analyzed by improper statistical methods.**


Thank
you