

EVIDENCE BASED MEDICINE



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OUTLINE:

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- Principles/components of EBM
- Objectives of EBM
- Steps involved in applying EBM process to a pharmacotherapeutic decision making
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DEFINITION:

Evidence based medicine (EBM) is an approach to medical practice that uses the results of patient care research and other available objective evidence as a component of clinical decision making.



CONTENTS OF EVIDENCE BASED MEDICINE:

1. Practice guidelines and standards setting bodies
2. Quality assurance systems
3. Research appraisal processes
4. Research commissioning process
5. Databases
6. Journals
7. Reference texts of latest and best evidence

PRINCIPLES/COMPONENTS OF EBM:

1. Best research evidence
2. Clinical expertise
3. Patient's value and preferences



OBJECTIVES OF EBM:

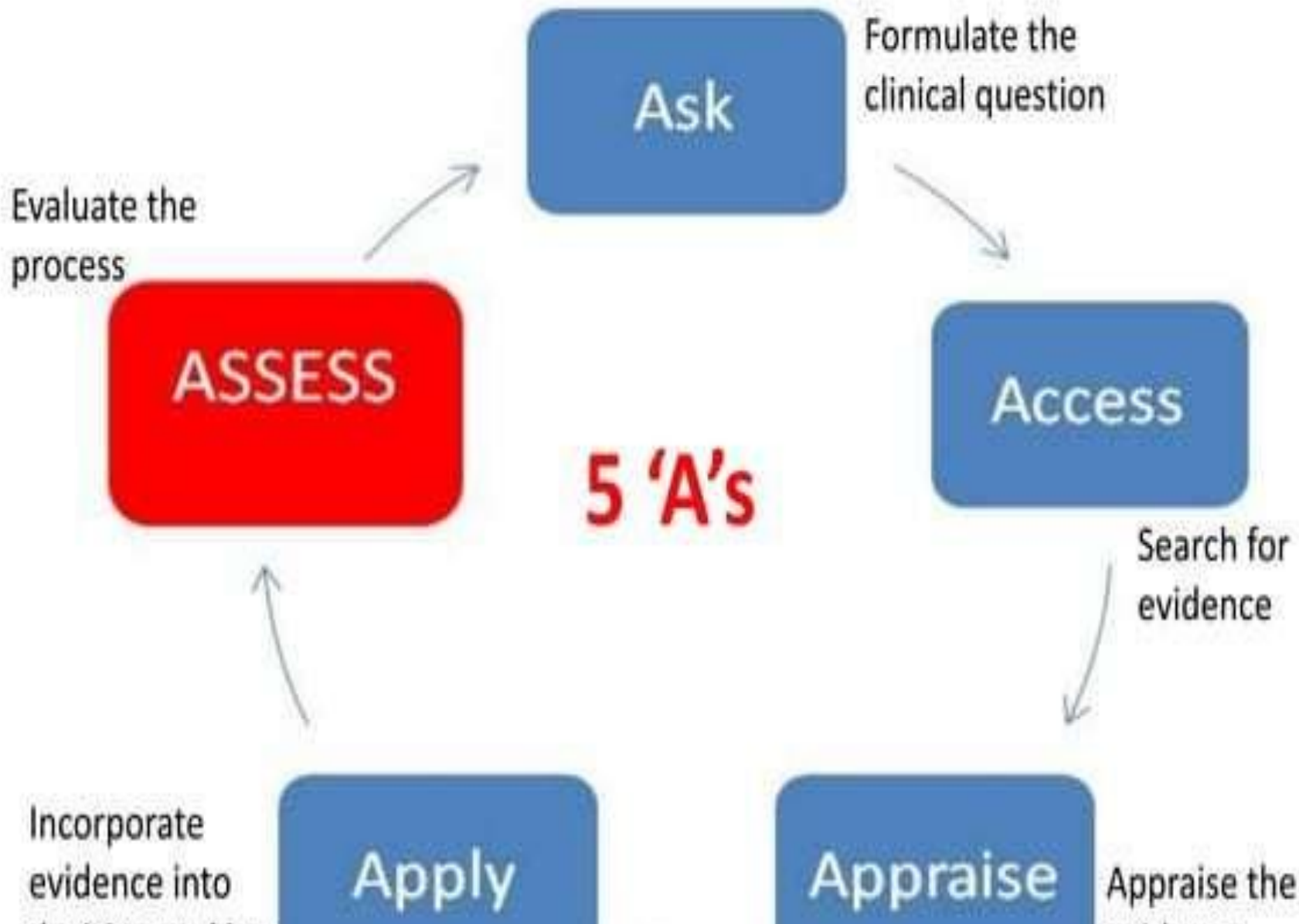
1. To recognise an information needed, while caring for a patient.
2. To identify the best existing evidence to help resolve the problems.
3. To integrate the evidence into a medical plan.



STEPS INVOLVED IN APPLYING EBM PROCESS TO A PHARMACOTHERAPEUTIC DECISION MAKING:

The four steps involved in applying the EBM process to a pharmacotherapeutic decision are:

1. Recognise information needs & convert them into answerable questions.
2. Conduct efficient searches for the best evidence with which to answer these questions.
3. Critically appraise the evidence for its validity and usefulness.
4. Apply the results to patient situations to best assist clinical decision making.



1. Building a focussed question:

A well-formulated question includes the following elements:

- i) The patient or problem being addressed
- ii) The intervention being considered
- iii) The comparison intervention
- iv) The outcomes of interest

The acronym 'PICO' can be helpful to remember the elements of a well-formulated question. (P=patient; I=intervention; C=comparison; O=outcome)

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Benefits of focussed question:

- i) Focusing the question clarifies the target of literature search.
- ii) Permits use of the appropriate guides for assessing external validity i.e., the applicability of the evidence found in the study to appropriate parts of the "real world".

2. Conducting an efficient search:

Health care professionals have four options as they try to identify the best evidence available to answer a well-framed question:

- i) Ask a colleague for his/her expert opinion.
- ii) Review practice guidelines (evidence-based/ expert-opinion-based) or a textbook for appropriate disease management.
- iii) Consult electronic databases of systematic reviews or meta-analyses.
- iv) Conduct a literature search using an electronic database like "MEDLINE".

3. Critically appraise/ Assessing validity:

Internal validity is determined by how well the trial ensures that the known & unknown risk factors are equally distributed among the treatment and control groups. To ensure validity, the conduct of the trial should minimize systematic bias and random errors in the trial as much as possible to provide results that are accurate & close to the truth as possible.

Four sources of bias are possible in trials of health care interventions: i) selection bias; ii) performance bias; iii) attrition bias; iv) detection bias

4. Applying the results:

Several patient-specific factors must be considered in the final analysis:

i) Compare the patient with those in the society:

Mainly done on the basis of:

- a) Similar disease state and stages
- b) Similar baseline characteristics

This assessment should ensure that the population studied has a similar disease state and prognostic factors as the patient now being treated.

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ii) Consider the patient's baseline risk:

This is done to check:

- a) The outcome of interest
- b) Potential risks associated with the therapy

iii) Consider the patient's values:

- Consider patient's beliefs, concerns and readiness for the intervention.
- Health care delivery characteristics like cost & accessibility must be considered.

MERITS OF EVIDENCE BASED MEDICINE:

1. Minimizes the error and optimizes the quality in patient care.
2. Reduces the cost of treatment.
3. Provides all the groups (involved in providing health care) with a rigorous and acceptable framework for making complex decisions.
4. Enables professionals to be confident in their decisions and to communicate them effectively to fellow colleagues and patients.

FACTORS INFLUENCING EBM:

1. Reproducible evidence strategies.
2. Overwhelming size of literature.
3. Inadequacy of textbook.
4. Difficulty in synthesizing evidence and translating into practice.
5. Increased number of RCTs (Randomized, Controlled Trials).
6. Available computerised databases.

REFERENCE/ BIBLIOGRAPHY:

Textbook of Pharmacotherapy: A Pathophysiologic approach by Joseph T. Dipiro.



Thank you!

with love

