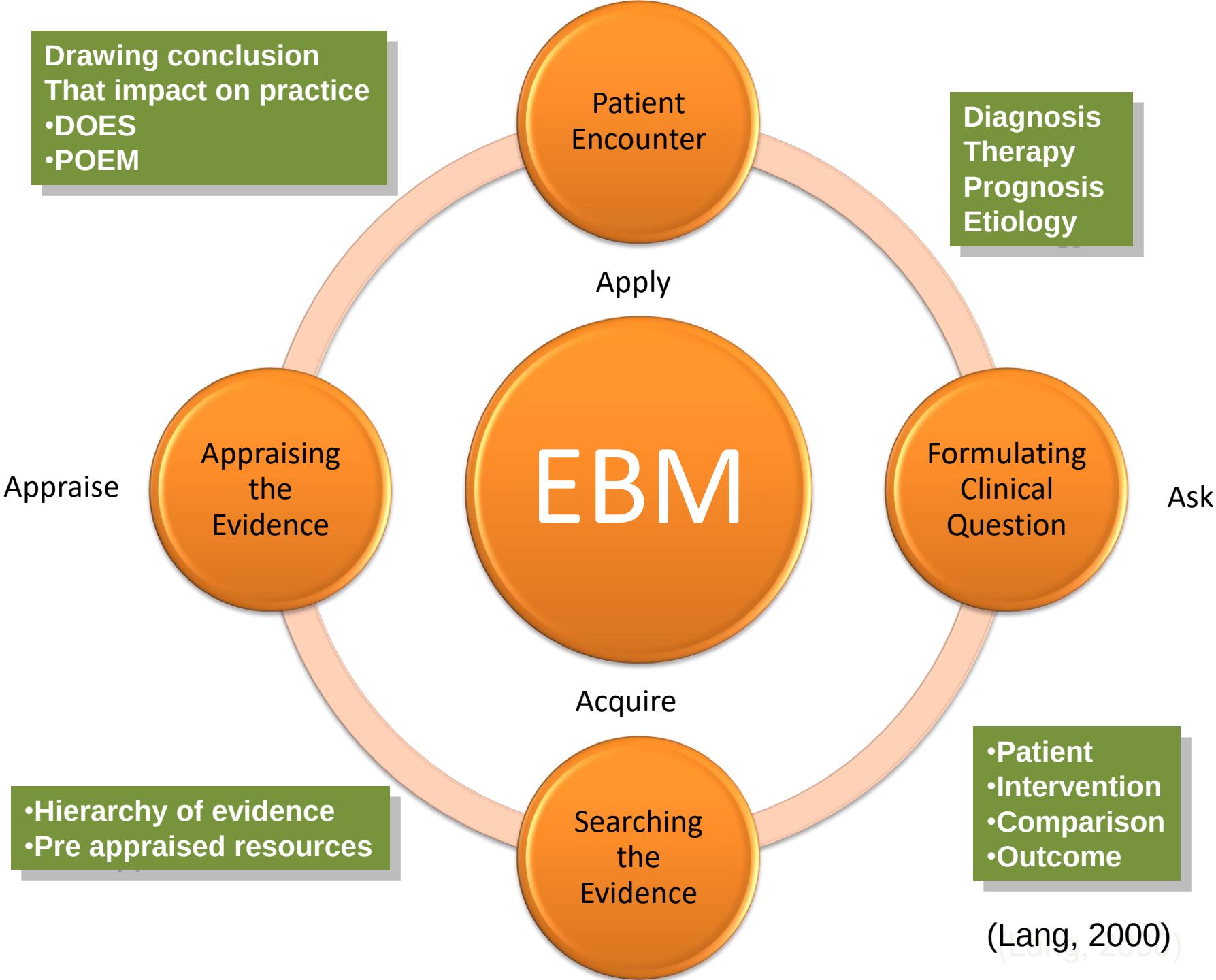
ASKING ANSWERABLE CLINICAL QUESTION


Drawing conclusion
That impact on practice
•DOES
•POEM
Patient Encounter
Diagnosis
Therapy
Prognosis
Etiology
Apply
Appraise
Appraising the Evidence
EBM
Formulating Clinical Question
Ask
Acquire
•Hierarchy of evidence
•Pre appraised resources
Searching the Evidence
•Patient
•Intervention
•Comparison
•Outcome
(Lang, 2000)

Outline

- **Background and foreground question**
- **Asking question and research methodology**
- **DOE vs POEM questions**
- **what is PICO?**

دکارت

از میان اشیاء عالم ، عقل بهتر از هر چیز دیگری ، برابر تقسیم شده است. زیرا هر کسی بهره خویش را از عقل ، آنچنان تمام میداند که حتی کسانی که در همه چیز از همه دشوار پسند ترند معمولا بیش از آنچه هم اکنون از آن دارند آرزو نمی کنند.

A five-step process for using an evidence-based approach in general practice

(1) Define the problem

(2) Track down the information sources you need

(3) Critically appraise the information

(4) Apply the information with your patients

(5) Evaluate how effective the application of information is

The First Step in EBM

Develop a well-built, structured, answerable clinical question

پرسشگری سقراطی

مسائل اساسی را مطرح می‌کند

سطح ادعاها را کنار می‌زند و در آن‌ها تعمق می‌کند

جوانب مشکل‌دار اندیشه‌ها را بررسی می‌کند

به دانش‌آموزان کمک می‌کند تا ساختار تفکر خود را کشف کنند

سبب می‌شود دانش‌آموزان نسبت به وضوح، دقت، مربوط بودن، و عمق موضوع حساسیت پیدا کنند

به دانش‌آموزان کمک می‌کنند با تعقل خودشان به نتیجه برسند

به دانش‌آموزان در واکاوی تفکر کمک می‌کند ـ بررسی اهداف، مفروضات، پرسش‌ها، دیدگاه‌ها، اطلاعات، استنتاج‌ها، مفاهیم، و استلزامات

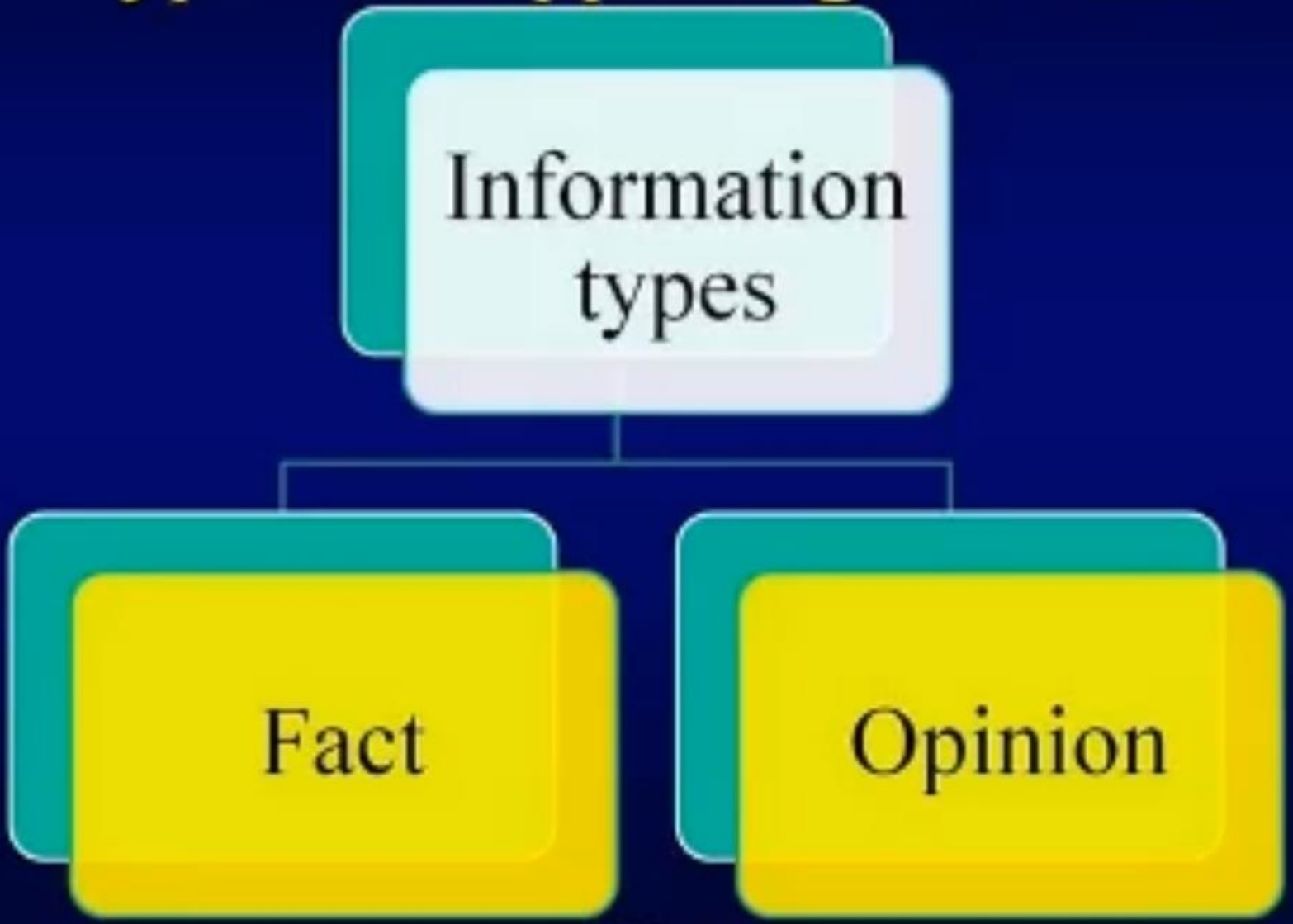
1. Factual Disagreement
2. Verbal disagreement
3. Interpretive disagreement
4. Evaluative Claim


ادعاclaim
واقعی
معنا
تفسیر/برداشت
ارزشی
منابع معتبر
تعریف عرفی کلمات
بهترین تبیین
انسجام
پیامد
توافق اخلاقی بر اصول بنیادی و خود مشهود
1. Factual Disagreement
2. Verbal disagreement
3. Interpretive disagreement
4. Evaluative Claim

عینی یا ذهنی Objective vs Subjective

- امر ذهنی:
- مایملک خصوصی من است
- فقط و فقط من به ان دسترسی دارم
- رابطه علی بین ذهن من وان در ایجاد و بقاء ان هست
- دسترسی ما به واسطه حواس نیست
- امر عینی:
- مایملک مشترک عده ای از انسانهاست
- ایجاد یا بقاء آن مبتنی بر هیچ ذهنی نیست
- ما آن را کشف میکنیم (ایجادش نمیکنیم و دلیلش من نیستم)

Types of Supporting Material



Primary vs. Secondary Sources

- Primary Source – First hand or original information that comes from a reliable source.
- Secondary Source –Information that has been gathered and interpreted by more than one source.
- *Other things being equal*

A clinical scenario

- **The patient is a 77-year-old man admitted for dyspnea and fever. He fell ill 4 days ago with low-grade fever, chills, myalgias, rhinorrhoea and a non-productive cough. One day ago he developed dyspnea on exertion, purulent sputum, lateral chest wall pain with inspiration and a shaking chill.**

  His general health is fairly good;

  He has had essential hypertension for 12 years, well controlled on diuretic therapy.
  He has not smoked.

A clinical scenario (cont.)

- On examination, his respiratory rate is 28, his heart rate is 108 and his temperature is 39.2°C.
- He have subtle cyanosis
- His chest expands symmetrically
- He has no wheezing
- There is bronchophony and egophony in the left lower posterior lung field.

A clinical scenario (cont.)

- Initial blood tests show leukocytosis and hyponatremia.

- The team suspects acute community-acquired pneumonia with hypoxemia, and plans chest radiographs, sputum studies, supplemental oxygen and antimicrobial therapy

what are your questions about this case?

What Questions Do Clinicians Ask at the Point of Care?

RESEARCH

- **Physicians reported**
  - **1 question / 4 patients (½ day)**
  - **15 questions / 25 patients per day**
- **Primary care doctors**
  - **2 questions / 3 patient**
- **Questions relation**
  - **33 % ~ treatment**
  - **25 % ~ diagnosis**
  - **15 % ~ pharmaco - therapeutics.**

- **2/3 clinical questions → unanswered.**
- **Are the unanswered questions important? → 50% of the answers → direct impact on patient care.**

A medical student's questions:

1. **What microbial organisms can cause community-acquired pneumonia?**

2. **How does pneumonia cause egophony?**

3. **What is the incidence of community-acquired pneumonia?**

Background question

- **Notice that the student's questions ask for** general **or** *"background"* **knowledge about pneumonia, the disorder that explains much of this patient's acute illness.**

- **Epidemiology, Prevalence, Incidence, Pathophysiology, …**

  (as in the first parts of textbooks)

Background questions

Ask for general knowledge about a disorder

Two essential components:

1) **A question root (who, what, where, when, how)**

2) **A disorder, or an aspect of a disorder**

A practitioner's questions:

1. **In this patient, are clinical findings sufficiently powerful to rule in or rule out pneumonia?(Dx)**

2. **In this patient, is a Chest X-Ray necessary for the diagnosis?(Dx)**

3. **In this patient, is the probability of *Legionella* infection sufficiently high to warrant considering coverage of this organism using initial antibiotic choice? (Tx)**

4. **In this patient , do clinical features predict outcome well enough that as a "low risk" patient, he can be treated safely at home?**

Foreground question

- **These questions ask for specific knowledge about diagnosis, prognosis, and treatment of patients with pneumonia, which might be called *"foreground"* knowledge.**
- **Due to high turnover of foreground Q, always we have foreground Q and we should search in opposite to background Q**

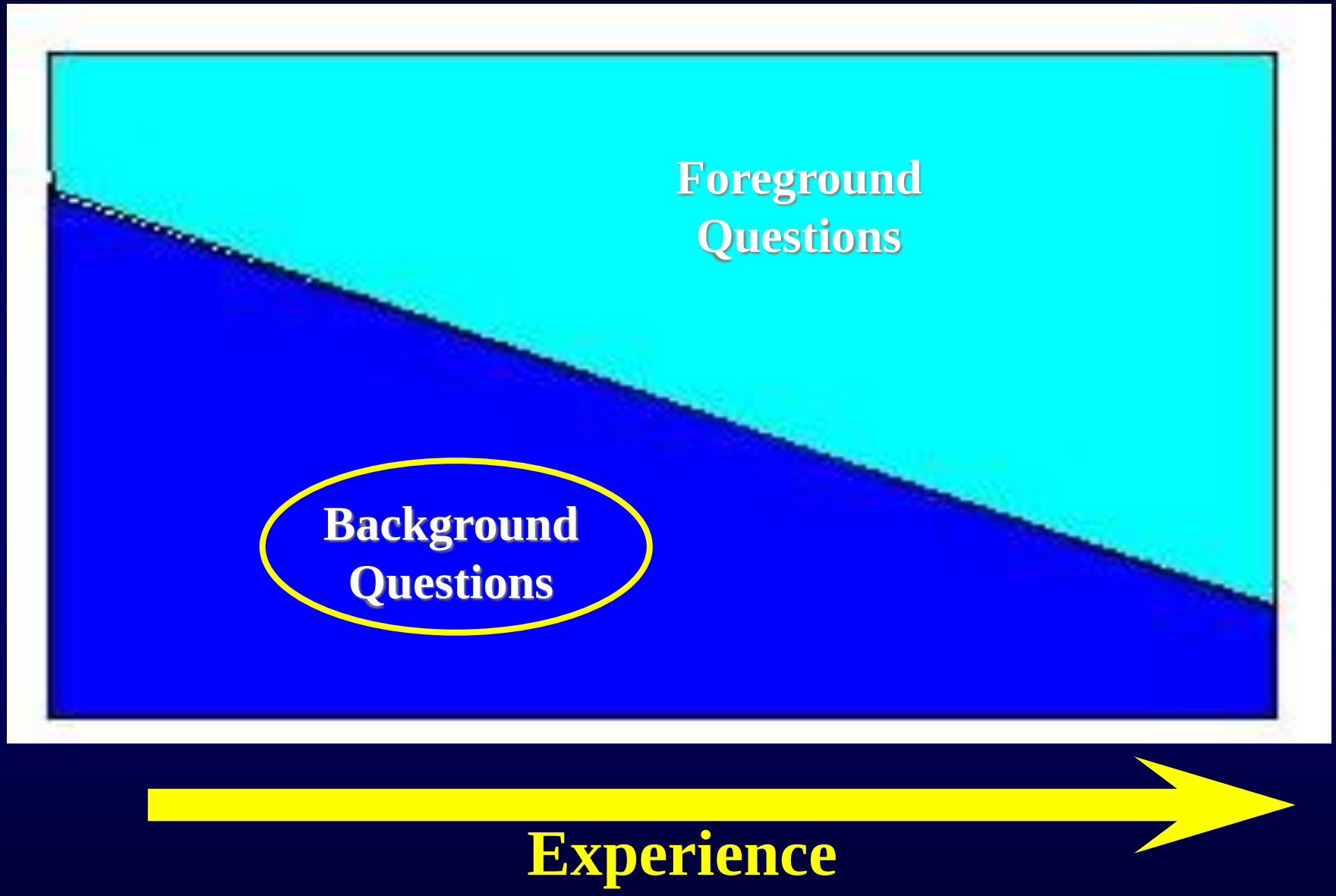
Foreground

1. **The patient and/or the problem**

2. **The main intervention (defined very broadly, including an exposure, a diagnostic test, a prognostic factor, a treatment, a patient perception,…)**

3. **Comparison intervention**

4. **The clinical outcome .**


Foreground
Questions
Background
Questions
Experience

Types of Questions

- **Background questions:**
  - About the condition
  - 5W questions (who, what, when, why, where, how)
  - General knowledge
  - Look up the answers in textbooks

- **Foreground questions:**
  - About the options
  - Specific information
  - Look up the answers in the literature (articles)

Back Pain

B

Which of the following are background questions & foreground questions? F

- What is the pathophysiology of back pain? B
- What are the causes of back pain? B
- How can we diagnose back pain? B
- What is the best diagnostic test for back pain? F
- What are the treatments available for back pain? B
- What is the best treatment for back pain? F

Background questions

Background questions are broad questions that arise when you need general knowledge about a patient's condition, potential interventions, relevant diagnostic tests, or gold standard practices.

These types of questions are easy to answer through a single source of quality information such as textbooks, encyclopedias, drug manuals, practice guidelines, etc.

Answering background questions will provide you with an overall understanding of your clinical problem and help you develop a well-focused foreground question.

Example background questions:

- What causes back pain?
- What is the clinical presentation of a lateral ankle sprain?

Foreground questions

Foreground questions are highly focused questions that arise when you need specific knowledge to inform your clinical decision-making about particular patients.

These types of questions are complex and cannot be answered by a single source of information. Instead they require comprehensive searching for the most recent and high-quality knowledge.

Answering foreground questions will help you make sound clinical judgements and determine the best course of action for patient care.

Example foreground questions:

- Is physiotherapy more effective than chiropractic treatment to cure lower back pain in adults?
- What is the most effective pain medication to treat lower back pain in an adult?

WHY BOTHER FORMULATING QUESTIONS CLEARLY?

Answerable Clinical Questions:

1. **Help focus our scarce learning time on evidence that is directly relevant to our patients' clinical needs.**
2. **Help us focus our scarce learning time on evidence that directly addresses our particular knowledge needs, or those of our learners.**

(Strauss et al, 2005)

WHY BOTHER FORMULATING ANSWERABLE CLINICAL QUESTIONS?

Answerable Clinical Questions:

3. **Suggest high-yield search strategies**
4. **Suggest the forms that useful answers might take**
5. **When sending or receiving a patient in referral, they can help us to communicate more clearly with our colleagues.**

(Strauss et al, 2005)

WHY BOTHER FORMULATING QUESTIONS CLEARLY?

Answerable Clinical Questions:

6. **When teaching, ACQ help our learners to better understand the content of what we teach, while also modeling some adaptive processes for lifelong learning.**

(Strauss et al, 2005)

WHY BOTHER FORMULATING QUESTIONS CLEARLY?

Answerable Clinical Questions:

7. **When our questions get answered, our knowledge grows, our curiosity is reinforced, our cognitive resonance is restored, and we can become better, faster, and happier clinicians.**

(Strauss et al, 2005)

Answerable

- **Why do we not answer more of these questions?**
  - **lack of convenient access to reference materials**
  - **time needed to search for information**
- **Two characteristics that predict whether physicians will seek and find an answer to a clinical question are**
  - **the urgency of the problem and**
  - **their confidence that they will find an answer**

ANSWERABLE CLINICAL QUESTIONS

How do you choose which question to answer?

- **Important to a patient's well-being (in terms of outcomes that they care about)**
- **Feasible to address in the time available (you think you might be able to find an answer)**
- **Likely to recur in your practice (common to family practice)**
- **Involve an intervention that is feasible and not your current practice**
- **Interesting to you**
- **Medico-legal issue**

Hallmarks of a good question:

- **Relevant - Will the answer matter?**
- **Answerable - Can the question be answered by research data?**
- **Clear – unambiguous, definite, objective**
- **Worthy - Is the answer worth the work?**

Formulating a clinical question

- **This skill can be improved by:**
  - Breaking **the question down into its component parts**
  - Classifying **the question into a specific domain**
    - **therapy, diagnosis, prognosis, harm…**

Common types of questions and related evidence

- **Causation / Etiology**
  - ✓ **Cohort > Case Control > Case series > Case reports**

- **Diagnosis**
  - ✓ **Cross-sectional > and/or cohort > case controls**

Common types of questions and related evidence (cont.)

- **Therapy**
  - ✓ **Systematic review of RCTs > RCT > Cohort, Case-control > Expert Opinion**
- **Prognosis**
  - ✓ **Cohort > Case-control, ...**

Question components : PICO

- What types of **P**articipants?
- What types of **I**nterventions?
- What types of **C**omparison?
- What types of **O**utcomes?

What Types of Participants?

(Patient / Population)

- **Disease or condition of interest**
- **Potential co-morbidity**
- **Setting**
- **Demographic factors**

First component

- **Think about who / what you wish to apply this evidence to… e.g.**
  - **People with a particular disorder?**
    - **e.g chronic recurrent cystitis**
  - **People in a particular care setting?**
    - **e.g. community**
  - **particular groups of people**
    - **e.g. sexually active young women?**
    - **the elderly?**
    - **children?**
- **How would you describe your clients / setting?**

What Types of Intervention?

- Type of **treatment**
- Type of **diagnostic** test
- Type of **causative** agent
- Type of **prognostic** factor

Second component

- **The intervention / topic of interest (e.g. cause, change in practice etc.) e.g.**
  - **Use of cranberry juice (as a drink)**
  - **Might want to specify how much / how often**
  - **For complex interventions may need to give specific detail / consideration to the description…**
- **What exactly am I considering…?**

Third component

- **The comparison or alternative (not applicable to all questions) e.g.**
  - **Anti-biotic therapy?**
  - **Nothing?**
  - **Fluids alone?**
- **What alternatives actions might I try?**

Fourth component

- **The outcome… e.g.**
  - **Cure**
  - **Duration of disease**
  - **prevention**
  - **Death**
  - **Side effects**
  - **Pain (reduced)**
  - **Wellbeing**
- **What am I hoping to accomplish (what outcomes might reasonably be affected…)?**

Patient oriented outcomes

- **Mortality/Survival**
- **Disease free period**
- **Quality of life**
- **Work absenteeism**
- **Disability/ Duration and severity of illness**
- **Pain**

What Types of Outcome?

- **For treatment, it includes all outcomes that are important to people, and lead to make decisions to define success of therapy**
- **For prognosis, outcome is the chosen endpoint of the disease**

(Mortality, Morbidity, Quality of life: Disease-free period, admission period, pain, work absence,…)

- **Outcomes:**
  a) **Patient oriented**
  b) **Disease oriented**

O: Outcomes

- POEM: Patient Oriented Evidence that Matters (Foreground)

- DOE: Disease Oriented Evidence (Background)

Examples of Hypothetical DOE and POEM studies

DOE		POEM
Drug A lowers cholesterol	Drug A lowers cardiovascular mortality	Drug A decreases overall mortality
Fouride increase osteoblast icactivity	Fuoride increse BMD	Fluoride increase fracture
Tight control of type 1 diabetes mellitus keeps FBS<140mg/dl	Tight control of type 1 Diabetes decreases Microvascular complications	Tight control of type 1 Diabetes decreases mortality and improves quality of life

Patient oriented outcomes

- Mortality/Survival
- Disease free period
- Quality of life
- Work absenteeism
- Disability/ Duration and severity of illness
- Pain

Diabetes and Target Blood Pressure

A 55-year-old white woman presents with type 2 diabetes mellitus and hypertension. Her glycemic control is excellent with metformin, and she has no history of complications. To manage her hypertension, she takes a small daily dose of a thiazide diuretic. During a 6-month period, her blood pressure is near 155/88 mm Hg.

Initial Question: When treating hypertension, at what target blood pressure should we aim?

Improved (Searchable) Question

A question of THERAPY

- *Patients:* Hypertensive type 2 diabetic patients without diabetic complications.
- *Intervention:* Any antihypertensive agent aiming at a target diastolic blood pressure of 90 mm Hg vs a comparison target of 80 mm Hg.
- *Outcomes:* Stroke, myocardial infarction, cardiovascular death, total mortality.

Impact of searching on correctness of answers to clinical questions

	Right to Right	Wrong to Right	*Right to Wrong*	*Wrong to Wrong*
McKibbon (GP or IM)	28%	13%	*11%*	*48%*

Impact of searching on correctness of answers to clinical questions

	Right to Right	Wrong to Right	*Right to Wrong*	*Wrong to Wrong*
McKibbon (GP or IM)	28%	13%	*11%*	*48%*
Quick Clinical (GPs)	21%	32%	*7%*	*40%*
Hersh (Med students)	20%	31%	*12%*	*36%*
Hersh (Nursing)	18%	17%	*14%*	*52%*

- Patient:
  - ✓Woman with Ovarian cancer, dyspnea
- Intervention:
  - ✓Ventilation-Perfusion scan
- Comparison:
  - ✓Pulmonary Angiography
- Outcomes:
  - ✓Pulmonary Embolism

Example

- A TV programme has highlighted a hospital in Suffolk in which a stroke unit has been set up that specialises in the treatment of patients who have suffered strokes.
- The hospital trust wants to know about the effectiveness of stroke units in terms of lives saved before deciding whether to invest in one.

Patient Or Problem	Intervention	Comparison	Outcomes

Patient Or Problem	Intervention	Comparison	Outcomes
Patients who have suffered strokes			

Patient Or Problem	Intervention	Comparison	Outcomes
Patients who have suffered strokes	Stroke units		

Patient Or Problem	Intervention	Comparison	Outcomes
Patients who have suffered strokes	Stroke units	Normal hospital care	

Patient Or Problem	Intervention	Comparison	Outcomes
Patients who have suffered strokes	Stroke units	Normal hospital care	Lives saved

Or

Do stroke units save lives ?

Example 1

You admit a 65 year old man with a stroke. On examination you find that he has mild weakness of the right arm and right leg and bilateral carotid bruits. You send the patient for carotid doppler ultrasonography and subsequently receive the report that he has moderate stenosis (50-69% by NASCET criteria) of the ipsilateral carotid artery. You've noticed in the pile of journals that is accumulating in your office that there has been some recent literature addressing surgical versus medical (ASA=acetylsalicylic acid=Aspirin) therapy for patients with symptomatic carotid stenosis but you are unsure what the results of these studies indicate.

A clinician could ask the following questions:

1. Can ASA (acetylsalicylic acid, Aspirin) decrease the risk of stroke?
2. Does a carotid bruit predict significant carotid stenosis?
3. How effective is a carotid endarterectomy in someone with moderate carotid stenosis?

How can we make well-built clinical questions from these clinical dilemmas?

Example 1. Prevention

Patient or **P**roblem	65 year old man with a stroke and moderate carotid stenosis
Intervention	ASA
Comparison	placebo
Outcome	stroke
Question	In a 65 year old man with a stroke and moderate carotid stenosis, can ASA decrease the risk of another stroke compared with no treatment?

Example 1. Diagnosis

Patient or **P**roblem	65 year old man with a stroke
Intervention	carotid bruit
Comparison	doppler ultrasonography
Outcome	carotid stenosis
Question	In a 65 year old man with a stroke, how precise and accurate is the presence of an ipsilateral carotid bruit for diagnosing significant carotid stenosis compared with doppler ultrasonography?

Example 1. Therapy

Patient or **P**roblem	65 year old man with a stroke and moderate carotid stenosis
Intervention	carotid endarterectomy
Comparison	ASA
Outcome	stroke
Question	In a 65 year old man with stroke and moderate carotid stenosis, can carotid endarterectomy decrease the risk of stroke compared with medical therapy?

Example 2

You admit a 75 year old man with a stroke (left sided weakness) who is having trouble ambulating, feeding, bathing and dressing himself. He has hypertension but it is well controlled with a diuretic. He is otherwise well and now that he is medically stable you decide after discussion with him to transfer him to a stroke unit. His family asks to see you because they are concerned about this transfer. They live very close to the acute care hospital and wonder why he can't stay on the general medical ward where he currently is. You arrange to meet with him and his family to discuss their concerns. In the meantime, you decide to review the evidence for the use of stroke units.

What clinical questions could you ask?

Example 2

Patient or **P**roblem	75 year old man with a stroke and residual weakness
Intervention	admission to a stroke unit
Comparison	general care
Outcome	functional status
Question	In an elderly man with a stroke, does admission to a stroke unit decrease the risk of death and dependency?

Example 3

You are a GP. Your middle-aged patient comes to see you because of painful, weak, and stiff left shoulder. A few days ago, while lifting some heavy furniture, he felt a pop in the shoulder. You suspect a rotator cuff tear and send him to an orthopedic specialist. Your patient returns after a couple of days, angry because the doctor at the hospital first ordered an MRI, but since the machine was not operational he used the ultrasound, ensuring your patient that “it’s all the same”. Your patient doesn’t believe this to be a valid diagnosis. Can you, by reviewing evidence of diagnostic procedures in such cases, persuade him to see the specialist again?

What clinical questions could you ask?

Example 3

Patient or **P**roblem	middle-aged man with a rotator cuff tear
Intervention	ultrasound
Comparison	MRI
Outcome	diagnosis
Question	Is diagnostic ultrasound imaging as accurate as MRI in detecting partial thickness rotator cuff tear in middle age?

Example:

You admitted 4 year old boy with the diagnosis of bacterial meningitis. Blood tests revealed existence of IgM-class antibodies reactive to antigens from H. influenzae. You wondered how sure can you only by this test confirm the diagnosis, but despite that questions, soon after taking blood sample for hemoculture, you introduced therapy with antibiotics. You are familiar with the fact that 20% of cases of meningitis caused by H. influenzae result in complete or partial hearing loss. You also remember that you read somewhere that risk of this sequel may be lowered by application of dexamethasone.

Ask clinical question, search the literarture, and appraise the results?

Asking clinical question

Patient or **P**roblem	4 year old man with H. influenzae meningitis
Intervention	antibiotics+dexamethasone
Comparison	antibiotics only
Outcome	hearing losss
Question	In a 4 year old boy with H. influenzae meningitis, does application of dexamethasone decreases the risk of partial or complete hearing loss?

Rx Educational Prescription

Patient's Name

Learner:

3-part Clinical Question

Target Disorder:

Intervention (+/- comparison):

Outcome:

Date and place to be filled:

Presentations will cover:

1. search strategy;
2. search results;
3. the validity of this evidence;
4. the importance of this valid evidence;
5. can this valid, important evidence be applied to your patient;
6. your evaluation of this process.

Educational Prescription

Date and place to be filled_____

Educational tasks to be completed before session

Learner:_____ Task:_____

_____

_____

Presentations will cover:

- **How you found what you found**
- **What you found**
- **The validity and applicability of your find**
- **How it will alter your management**
- **How well you think you did**

Advantages of the educational prescription

1. **It specifies the clinical problem that generated the question.**
2. **It states the question, in all of its key elements.**
3. **It specifies who is responsible for answering it.**
4. **It reminds everyone of the deadline for answering it (taking into account the urgency of the clinical problem that generated it).**
5. **Finally, it reminds everyone of the steps of searching, critically appraising and relating the answer back to the patient.**

Summary

- **Questions are design specific**
- **Answerable question, PICO (DOE, POEM)**
- **Background Vs Foreground questions**
- **Textbooks are more useful for background Qs**
- **Broad Vs Narrow Qs**

QUESTION CATEGORIES

Question Categories

- **Diagnosis** How to select a diagnostic test or how to interpret the results of a particular test.
- **Therapy** Which treatment is the most effective, or what is an effective treatment given a particular condition.
- **Harm or Etiology** Are there harmful effects of a particular treatment, or how can these harmful effects be avoided.
- **Prognosis** What is the patient's likely course of disease, or how to screen for or reduce risk.

Exercise

In patients with suspected depression what is the

In patients with acute bronchitis, do antibiotics reduce sputum production, cough or days off work?

Therapy

In women taking oral contraceptives, is there an association between their use and cardiovascular disease?

EXERCISE

In patients with suspected depression what is the accuracy of a two-question case-finding instrument for depression compared with six previously validated instruments?

P =

I =

C =

O =

EXERCISE

In women taking oral contraceptives, is there an association between their use and cardiovascular disease?

P =

I =

C =

O =

EXERCISE

In patients with acute bronchitis, do antibiotics reduce sputum production, cough or days off work?

P =

I =

C =

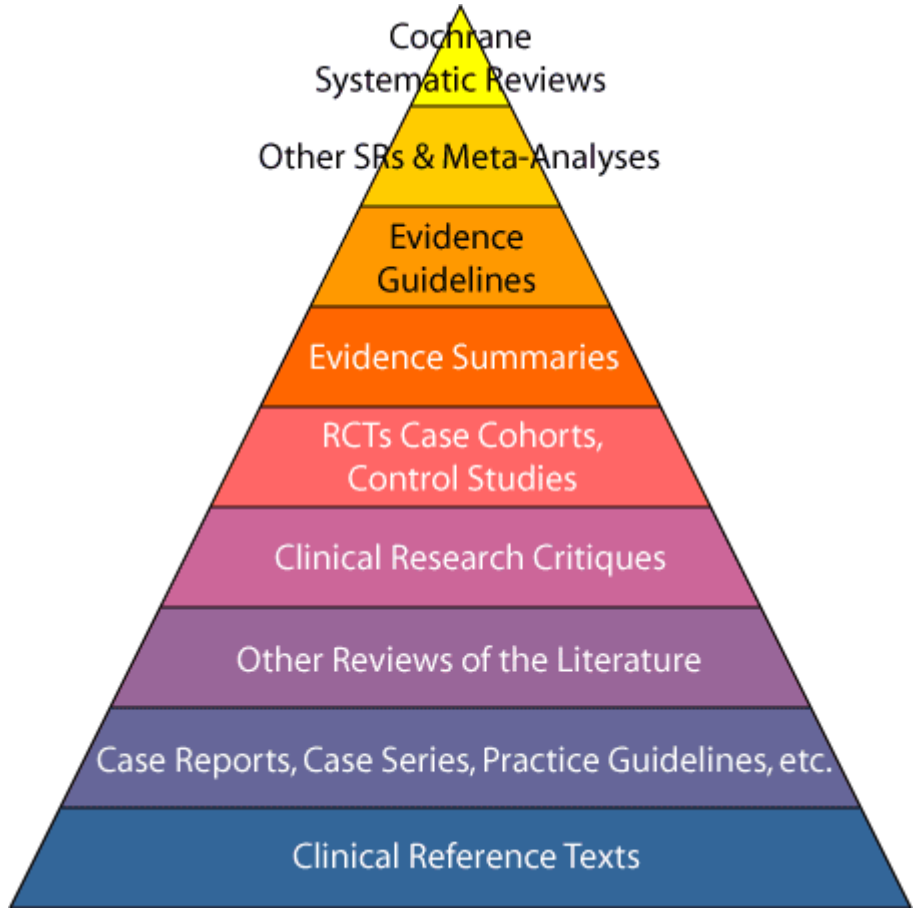
O =

PICO & Applicability

Type of Question/Domain	Type of Study/Methodology
Therapy/Treatment Selection of treatments or interventions that do more good than harm and that are worth the effort and cost	Double-Blind Randomized Controlled Trial Systematic Review/Meta Analysis of RCT
Diagnosis Selection and interpretation of diagnostic tests, in order to confirm or exclude a diagnosis, based on considering their precision, accuracy, acceptability, expense, safety, etc	Controlled Trial Systematic Review/Meta Analysis of Controlled Trial
Prognosis Estimation of a patient's likely clinical course over time and anticipation of likely complications of disease	Cohort Studies, Case Control, Case Series
Harm/Etiology Identification of causes or risk factors for disease	Cohort Studies
Prevention	*Randomized Controlled Trial,* *Cohort Studies*

Adapted from: Sackett et al.'s *Evidence-Based Medicine: How to Practice and Teach EBM*

PICO & Applicability



Information Pyramid

GUIDE TO PICO APPLICABILITY

PATIENT/PROBLEM	INTERVENTION	COMPARISON	OUTCOME
Wanita Usia Reproduksi yang tidak hamil	Urinalisis Sedimen Leukosit	Kultur Urin	Diagnosis ISK
PICO: Pada wanita usia reproduksi tidak hamil dengan kecurigaan mengalami ISK, apakah pemeriksaan urinalisis sedimen leukosit lebih dapat diterapkan dibandingkan kultur urin untuk diagnosis?			
Type of Question:	**Diagnostic**		
Type of study/methodology: Controlled trial/SR/Meta-analysis of CT			

Case #1

- Your next patient is a 72-year-old woman with osteoarthritis of the knees and moderate hypertension, accompanied by her daughter, a lab tech from the hospital. The daughter wants you to give her mother a prescription for one of the new COX-2 inhibitors. She has heard that they cause less GI bleeding.

Case #1

PATIENT/PROBLEM	INTERVENTION	COMPARISON	OUTCOME
72 year old woman with osteoarthritis of the knee and moderate hypertension	COX-2 Inhibitor	other NSAIDS	less GI bleeding
PICO:			
In a 72 year old woman with osteoarthritis of the knee, can COX-2 Inhibitor use decrease the risk of GI bleeding compared with other NSAIDs?			
Type of Question:			
Therapy/Treatment			
Type of study/methodology:			
Systematic Review/Meta Analysis of Double-Blind Randomized Controlled Trials			

Case #2

- You see a 70 year old man in your outpatient clinic 3 months after he was discharged from your service with an ischemic stroke. He is in sinus rhythm, has mild residual left-sided weakness but is otherwise well. His only medication is ASA and he has no allergies. He recently saw an article on the BMJ website describing the risk of seizure after a stroke and is concerned that this will happen to him.

Case #2

PATIENT/PROBLEM	INTERVENTION	COMPARISON	OUTCOME
70 year old man	Stroke		Seizure
PICO:			
In a 70 year old man does a history of stroke increase his risk for seizure?			
Type of Question:			
Prognosis			
Type of study/methodology:			
Cohort studies			

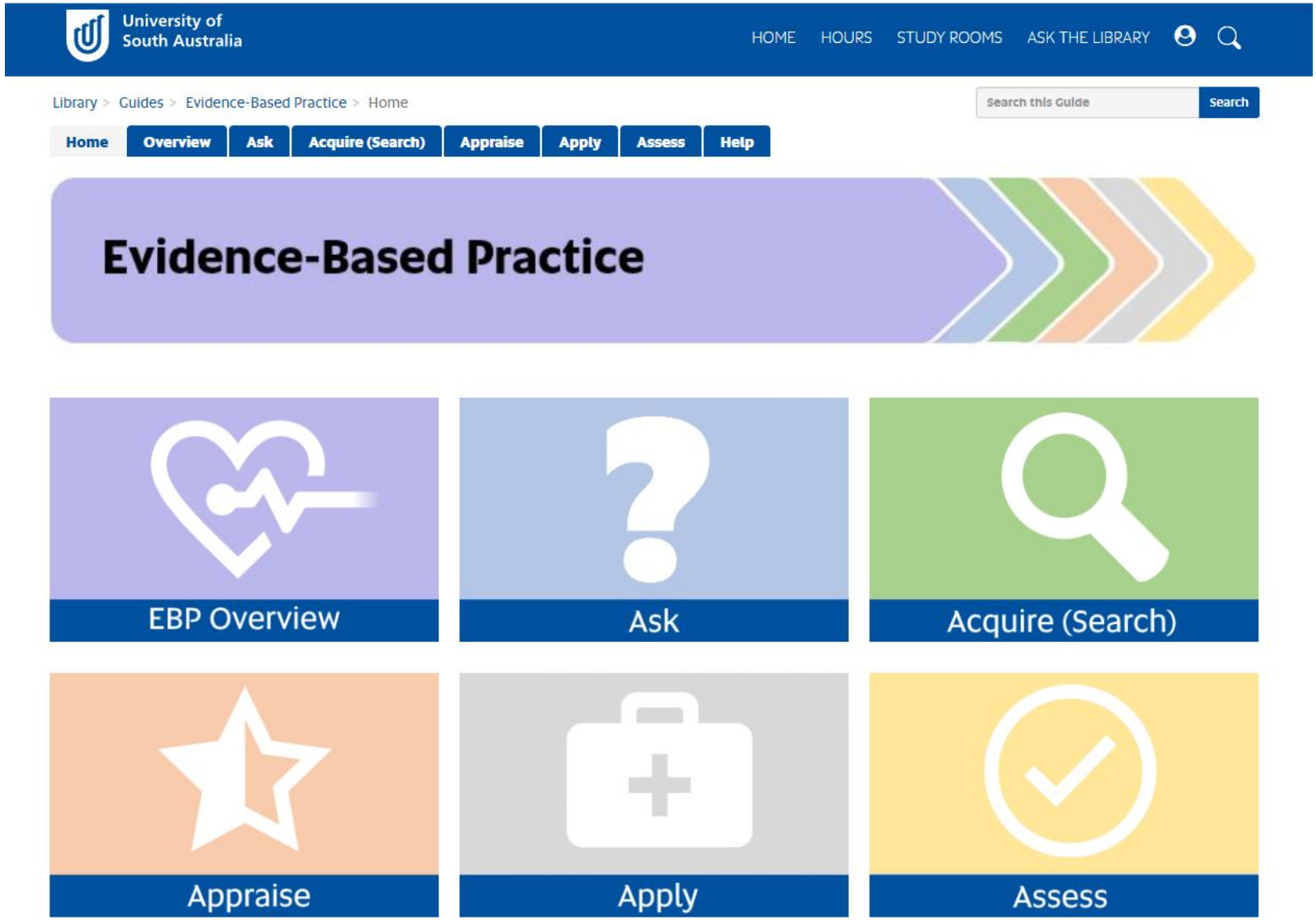
Case #3

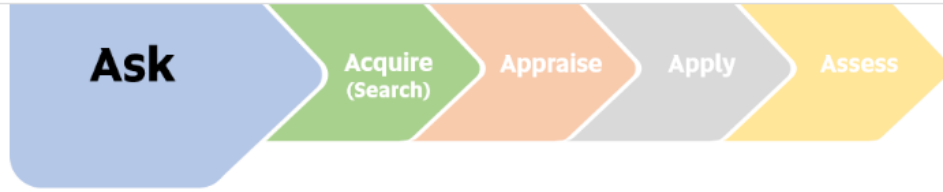
- You admit a 75 year old woman with community-acquired pneumonia. She responds nicely to appropriate antibiotics but her hemoglobin remains at 10 g/dl with an MCV of 80. Her peripheral blood smear shows hypochromia, she is otherwise well and is on no incriminating medications. You contact her family physician and find out that her Hgb was 10,5 g/dl about 6 months ago. She has never been investigated for anaemia. A ferritin has been ordered and comes back at 10 mmol/l. You admit to yourself that you're unsure how to interpret a ferritin result and aren't sure how precise and accurate it is.

Case #2

PATIENT/PROBLEM	INTERVENTION	COMPARISON	OUTCOME
Elderly woman with anaemia	Ferritin		Iron deficiency anaemia
PICO:			
In an elderly woman with hypochromic, microcytic anaemia, can a low ferritin diagnose iron deficiency anaemia?			
Type of Question:			
Diagnosis			
Type of study/methodology:			
Controlled Studies; Systematic Review/Meta Analysis of Controlled Studies			

https://guides.library.unisa.edu.au/ebp/Home





Step 1: Ask

Clinical problems often don't arise as perfectly formulated questions - they are complex and have many different aspects to consider. However, without a clear question it can be difficult to find the information you need to inform your practice.

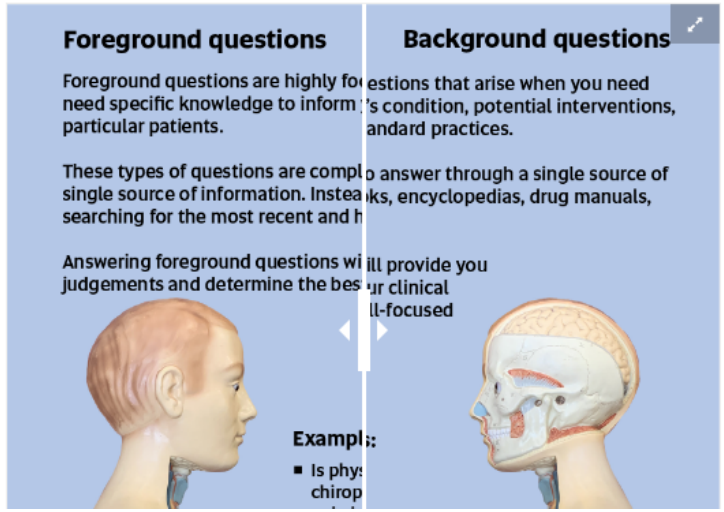
The first step of the EBP process is to convert your problem into a structured and answerable clinical question.

Types of clinical questions

Background / foreground questions | Learn more

There are two main types of clinical questions: background questions and foreground questions. Knowing whether you are asking a foreground or background question will help you decide where to search for information.

Drag the vertical bar below to reveal information about clinical question types.



Building your foreground question

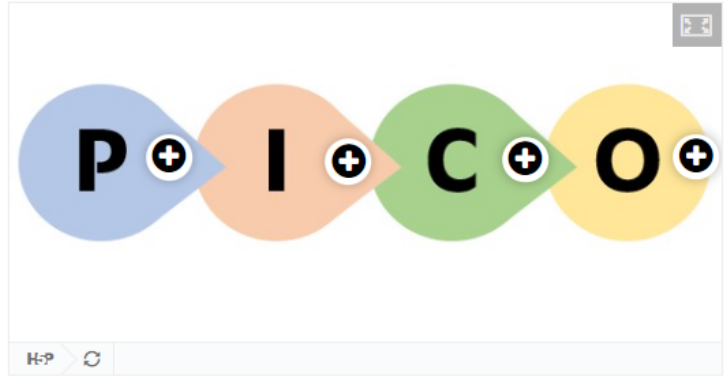
PICO framework | PICO example | PICO worksheet | Other frameworks

Learn more

The PICO framework can help you convert your clinical problem into an answerable question.

You can use the PICO framework to break your problem down into four components which describe the population, the intervention or treatment, the comparison treatment (if required), and the outcome you want to investigate. You can use these components first to build your question and later as keywords when searching for information.

Select the plus symbols below to learn more about each PICO element.



You can practice identifying PICO elements in example case studies here:

- Clinical examples using PICO (CIAP)

Once you have identified your PICO elements you need to bring them together to create a well formulated question. It doesn't matter in which order you use the PICO elements as long as it make a clear question. The following worksheet contains templates to help you turn your PICO elements into an answerable

THANK YOU