

The Well Built Clinical Question – PICO

A 19-year-old woman comes home from college with an acute maxillary sinusitis. You just heard about treating this with a shorter 3-day course of antibiotics rather than the usual 10 days of prescribed treatment. You wonder whether you should try the shorter course with with patient.

P – Patient or Problem

I – Intervention, Prognostic Factor or Exposure

C - Comparison

O – Outcomes

Types of Questions

▶ Diagnosis

- How to select and interpret diagnostic tests
- Differential Diagnosis – rank possible causes by likelihood, seriousness, treatability
- Diagnostic Testing – how to select and interpret diagnostic tests to confirm or exclude a diagnosis
- May concern
 - Precision
 - Accuracy
 - Acceptability
 - Safety
 - Expense

▶ Prognosis

How to anticipate the patient's likely course over time and anticipate any likely complications

▶ Therapy

How to select treatments that do more good than harm, treatments that are worth the efforts and costs of using them

▶ Etiology

Cause of disease or condition

▶ Other Types of Questions

- Clinical examination - gather and interpret findings from H&P
- Prevention - reduce chance of disease by identifying and modifying risk factors
- Diagnosis by early screening
- Cost-Analysis
- Compare cost and consequences of different treatment and tests

Types of Studies

Primary – original research <ul style="list-style-type: none">• Experimental (an intervention is made or variables are manipulated)<ul style="list-style-type: none">○ RCT○ Controlled trials• Observational (no intervention or variables are manipulated)<ul style="list-style-type: none">○ Cohort studies○ Case-control studies○ Case reports	Secondary – reviews of original research <ul style="list-style-type: none">• Meta-analysis• Systematic reviews• Practice guidelines• Decision analysis• Consensus reports• Editorial, commentary
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Case Series/Case Report

- Reports on treatment of individual patients
- Report on a single patient

Case Control Studies

- Studies in which patients who already have a specific condition are compared with people who do not
- Rely on medical records and patient recall for data collection

Cohort Studies

From a large population, follows patients who have a specific condition or receive a particular treatment over time and compared with another group that has not been affected by the condition or treatment studies

Randomized Control Trials

- Study effect of therapy on real patients
- Include methodologies that reduce the potential for bias
- Intervention group vs control group

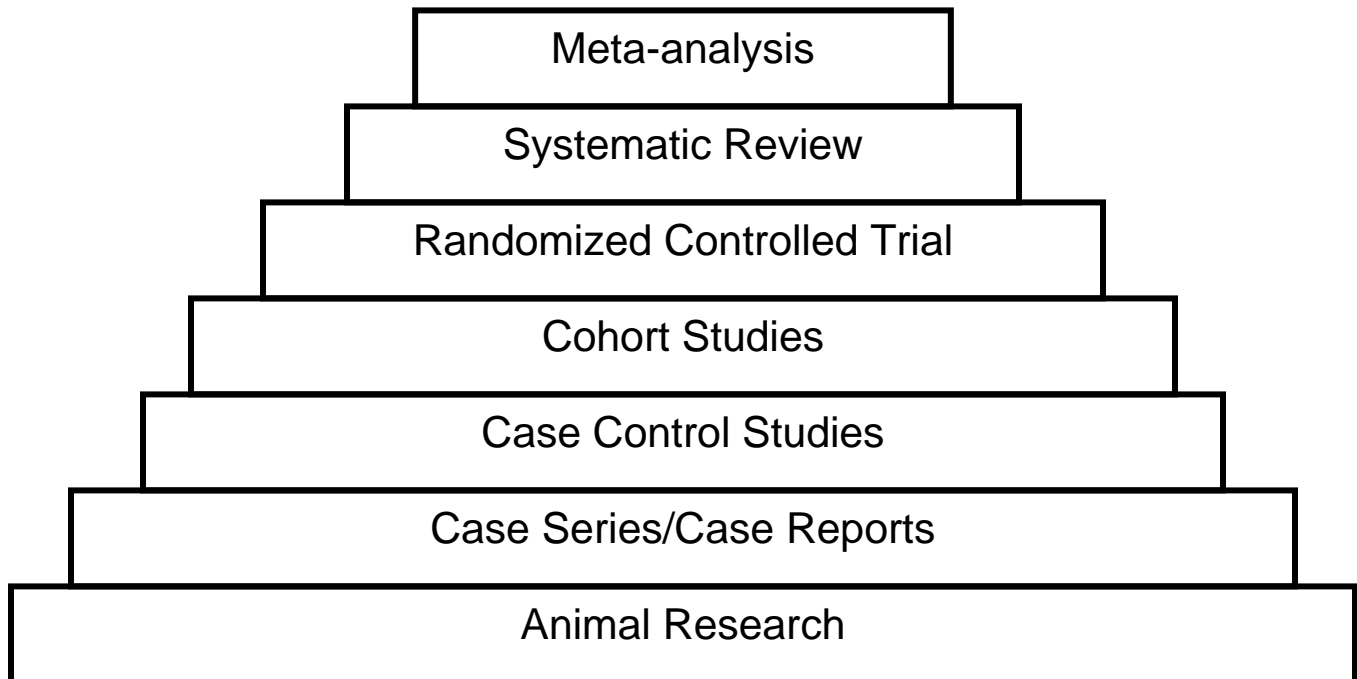
Systematic Reviews

- Extensive literature search is conducted
- Only uses studies with sound methodology
- Studies are collected, reviewed, assessed and the results summarized according to predetermined criteria of the review question

Meta-Analysis

- Examines a group of valid studies on a topic
- Combines results using accepted statistical methodology to reach a consensus on the overall results

Evidence Pyramid



Type of Question	Suggested Best Type of Study
Therapy	RCT > cohort > case control > case series
Diagnosis	Prospective, blind comparison to gold standard
Etiology Harm	RCT > cohort > case control > case series
Prognosis	Cohort study > case control > case series
Prevention	RCT > cohort study > case control > case series
Clinical Exam	Prospective, blind comparison to gold standard
Cost	Economic analysis
Questions of therapy, etiology and prevention which can best be answered by RCT can also be answered by meta-analysis and systematic reviews.	