Evidence-Based Medicine: The Basics

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General presentation for the Library Education Series
Can be modified for custom presentations
Outline

What is evidence-based medicine?
Why?
Five-A
Asking the right clinical questions
Hierarchy of evidence
What is EBM?

“Evidence-based medicine involves the combination of clinical expertise and professional wisdom with the best outside evidence to make important decisions about patient care.”

Take-home point #1

Investigating and applying evidence is an emerging or established interest in almost every discipline.

Evidence-based dentistry
physical therapy
education
nursing
audiology
Why EBM?

- Emphasis on accountability
- Justify treatments
- Tied to reimbursement
- Patients increasingly finding their own information
Take-home point #2

There is great controversy about how to best implement evidence-based practice.

Patients and health care providers may not be equipped to search for, or evaluate, the best evidence.
One model: Five-A

Ask a focused clinical question

Acquire appropriate evidence to answer the question

Appraise the quality of the evidence

Apply the evidence to your patient

Assess the patient dilemma

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Asking questions

• Background
  • Basic concepts
  • Textbook learning

• Foreground
  • Specifics affecting patient care

“What causes migraines?”
Take-home point #3

There is a difference in asking:

“What are the best treatments for migraine?” versus “In pregnant women, is sumatriptan better than other drugs at reducing migraine frequency or severity?”

The first question is merely a literature review topic.
The second question forces you to find evidence centered on your patient(s).
You wonder about the utility of ginger in preventing or reducing nausea and/or vomiting during pregnancy.
Forming Foreground Questions

<table>
<thead>
<tr>
<th>Patient</th>
<th>Intervention</th>
<th>Comparison</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnant women</td>
<td>Ginger</td>
<td>No ginger or other antiemetics</td>
<td>Reduced severity of nausea and/or vomiting</td>
</tr>
</tbody>
</table>

In ________, is ______ compared to ________ effective at _______________.

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## Types of Foreground Questions

<table>
<thead>
<tr>
<th>Type</th>
<th>Content</th>
<th>Best study designs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapy</td>
<td>Comparing two drugs or treatments</td>
<td>Meta-analysis</td>
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<td></td>
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<td>Systematic review</td>
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<td>RCT</td>
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<tr>
<td>Diagnosis</td>
<td>Sensitivity &amp; specificity of diagnostic tests</td>
<td>Prospective blind comparison to a gold standard</td>
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<tr>
<td>Etiology or Harm</td>
<td>Risk of developing conditions</td>
<td>RCT</td>
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<tr>
<td></td>
<td></td>
<td>Cohort study</td>
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<tr>
<td>Prognosis</td>
<td>Anticipated clinical course of a disease</td>
<td>Cohort study</td>
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<tr>
<td></td>
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<td>Case control</td>
</tr>
</tbody>
</table>
Take-home point #4

Searching for evidence is not merely about locating randomized controlled trials

Some fields may not have many trials and/or Trials may be difficult or unethical to design

Need to think about your foreground question, not just look for an RCT
Hierarchy of Study Designs

- Meta-analyses
- Systematic reviews
- Randomized controlled trials
- Prospective blind comparisons
- Cohort studies
- Case-control studies
- Case series and case reports
- Animal and laboratory research