Part 1: Introduction

You have all learned from the first series of modules that the three components to the evidence based medicine approach are:

1. The clinician's knowledge and expertise
2. Patient values
3. Research evidence

This tutorial will focus on the third component: research evidence. These modules will help you advance your ability to find pertinent literature for clinical questions and systematically develop answers using the research evidence. The value of this capability cannot be overstated.

Before we discuss the third component, let's touch on the first: a clinician's knowledge and expertise. Because of the volume and velocity of the research output, your education and grasp of the field of medicine can only take you so far.

It has often been stated that the half life of medical knowledge is about 5-10 years. C. Sidney Burwell (Dean of Harvard Medical School) recognized this in 1947 and told the graduating class that "half of what you are taught as students will in ten years have been shown to be wrong, and the trouble is, none of your teachers knows which half."

Compounding this is the staggering size of medical knowledge, which is far too vast for anyone to learn. According to the National Library of Medicine, there are 27,000 medical terms with over 200,000 names for these terms. According to Diagnosis Pro, there are 15,000 diseases and 30,000 abnormalities, which means one would have to learn one new disease every day for 41 years! Not to mention that there are more than 3200 drugs.

10-15 years ago this intro would have been followed by a plea to keep up with the research literature in your field: find some key journals and read them to stay atop of the new evidence. However, today that is simply just not possible. The health research (and literature) is too large to be covered by nightly or weekly reading. It has been estimated that there are 5000 biomedical articles published each day. PubMed adds 1,500 articles per day, 95 of these are clinical trials.

So the objective of this series of tutorials is to simply help you extract and apply the relevant evidence found in the literature. In a sense, to efficiently build a "case" for answering a single clinical question and making a confident "verdict" one you have assembled your answer.

As we progress, we will use a clinical scenario involving mild to moderate geriatric depression that will no doubt see much more of in the coming future.

Developing a "case" really involves three simple steps:

1. Forming a clinical question, including developing the P.I.C.O. from which you construct a good search query.
2. Efficiently search for and extract the highest level of evidence available to answer your question.

3. And finally, using the evidence uncovered to make a case for an answer.

Before you dive into step one, practitioners need to make certain they are quite familiar with the condition(s), and possible interventions

Having completed the first tutorial series, you should already know that there are several background resources available at your fingertips.

- UptoDate, etc

As your experience and familiarity with the disease, condition, disorder and any interventions in question increase, the less time you will be spending on the background sources.

You have completed the first module.

Part 2: Forming a Clinical Question and Subsequent Search Query

Let's presume, in our example, we are fairly confident in our grasp of this condition (depression in the elderly). We know from experience or background sources that there are several treatments that have should promise in mild to moderate depression such as:

- Prescription antidepressant drugs: tricyclic antidepressants, ssris , monoamine oxidase inhibitors, etc.
- St John's Wort
- Exercise

After consider the needs and desires of the female patient who has no desire to take prescription drugs for this and is not in a position to add more exercise to an already busy schedule, we find St Johns Wort an intriguing option.

Now we have the makings of a PICO:

- P or Patient and Problem is an adult 70 yo female with mild to moderate depression
- I or Intervention is St Johns Wort
- C or Comparison is none
- O or Outcome is to reduce the severity or duration of the depression
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