Module 1: Introduction to EBM
(a 1 hour session with internet access)

Instructions:
Log on to http://www.hsl.unc.edu/services/tutorials/ebm/welcome.htm
or use the link on the dedicated computer screen to click on to double click the link

As you complete each of the following segments, check off the box to the left of the segment.

Read the:
☐ Objectives and
☐ How to use the tutorial segments →click Next

Read the segments:
What is evidence-based medicine
Patient care model:
☐ Steps in the EBM process
☐ Life-long learning model
☐ Why is EBM important
☐ Is the evidence available
☐ Evidence-based medicine issues →click Next

Read the segments:
The well built clinical question:
☐ The EBM process
☐ Anatomy of a good clinical question →click Next

Before moving on, review the following case and answer the question that follows in the space provided:

Case: You evaluate a 4-year-old child with a 3-day history of Rhinorrhea, low grade fever, and a cough. The mother brings him to the office today because last night he began having a coarse “barking” quality to his cough. You notice that he is comfortable and does not have stridor at rest. He is well hydrated and otherwise well appearing. You remember from previous reading that steroids may be helpful in treating what you presume to be croup. Alternatively, you could choose no treatment.
Construct a PICO question in the space that follows that would contain all of the elements of a good PICO question:

Answer:

Read the segments:
The types of questions and studies:
☐ Type of questions
☐ Type of study → click Next

Read the segments:
The literature search:
☐ Select a resource
☐ Formulate a strategy
☐ Review the results → click Next

Using the question you created in the box above for the case of the child with croup, find at one article that best answers your question, print the abstract and attach it to this sheet (or list the reference in the box below).

Answer:

In the segment:
Evaluating the evidence, click on the Diagnosis link in the Note box
☐ Read the supplement, Evaluating the validity of a diagnostic study
Be attentive to the concept of Likelihood ratios

You have now finished the self-guided segment, module 1.
When your group is done, you will meet with your faculty tutor for module 2.
Module 2: Introduction to EBM
(a 1 hour session with internet access and tutorial)

Part 1: Likelihood ratios, pre/post test probability, Fagan nomograms
☐ Your faculty tutor will review some concepts of EBM used in diagnosis questions with a PowerPoint presentation.

Consider your last few patient encounters in which you may have had some questions regarding the diagnosis of disease and whether a particular sign, symptom, or diagnostic test would have helped in the diagnosis of that child’s disease.

In just a few phrases, describe 2 of those instances in the boxes below:

Diagnostic dilemma #1:

Diagnostic dilemma #2:

Now formulate a PICO question for each of those in the 2 boxes that follow:
Part 2:
☐ Your faculty tutor will discuss the construct of these questions and help you perform queries to find the answers to these questions.

You are now finished with EBM Modules 1&2, Day 1.
Module 3: Introduction to EBM
(a 1 hour session with internet access)

Instructions:
Log on to http://www.hsl.unc.edu/services/tutorials/ebm/welcome.htm
or use the link on the dedicated computer screen to click on to double click the link

On the left vertical blue bar, click on the Evaluating evidence link.
As you complete each of the following segments, check off the box to the left of the segment.

Read the segments:
Evaluating the evidence
  ☐ Evaluating the validity of a therapy study
  ☐ Are the results of this therapy study valid (do not do the Return to Patient segment) → click Top of page box

Click on the Prognosis link in the Note box at the top of the page
Read the segments:
  ☐ Evaluating the validity of a prognosis study
  ☐ Are the results of this therapy study valid → click Evaluating the evidence link at the bottom of the page

Click on the Etiology/harm link in the Note box at the top of the page
Read the segments:
  ☐ Evaluating the validity of a Etiology/harm study
Pay special attention to relative risk and odds ratio segments

You are now done with module 3
Module 4: Introduction to EBM
(a 1 hour session with internet access and tutorial)

Part 1: Risk reduction
☐ Your faculty tutor will review some concepts of EBM used in treatment questions with a PowerPoint presentation.

Part 2: Case:
You are participating in an educational intervention delivered in the ED for children with asthma. The intervention is designed to decrease ED utilization for routine asthma care by improving knowledge of asthma and how to manage it at home. You observe that there are 50 patients total that undergo the intervention. There are also 50 similar patients with asthma who are followed at home in follow-up calls but do not receive the intervention. 10 patients who receive the intervention have a return ED visit. 15 patients who do not have the intervention do not return to the ED.

<table>
<thead>
<tr>
<th>Return visit</th>
<th>No ED visit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intervention</td>
<td></td>
</tr>
<tr>
<td>No intervention</td>
<td></td>
</tr>
</tbody>
</table>

Complete the table above based upon the information given.

The experimental event rate is calculated as the number of events in the experimental group over the total number in the experimental group.

What is the experimental event rate? ________________________________

The control event rate is calculated as the number of events in the control group over the total number in the control group.
What is the **control event rate**?___________________________

Now, to evaluate the treatment effect:

Remember from Module 3 that the **relative risk** is the risk of outcome in the treated group compared to the risk in the control group \( \frac{(a/(a+b))}{(c/(c+d))} \).

What is the **relative risk** of a return ED visit with patients undergoing the ED intervention?

Remember from Module 3 that the **absolute risk reduction** is the difference in risk between the control group \( X \) and the treatment group \( Y \).

It is also defined as the control event rate – experimental event rate.

What is the **absolute risk reduction** of a return ED visit with patients undergoing the ED intervention?

Remember from Module 3 that the **relative risk reduction** is the percent reduction in risk in the treated group as compared to the control group. It is also defined as the \( \frac{(control \ event \ rate \ – \ experimental \ event \ rate)}{control \ event \ rate} \). It is also defined as the absolute risk reduction/control event rate.

What is the **relative risk reduction** of a return ED visit with patients undergoing the ED intervention?

Remember from Module 3 that the **number needed to treat** is 1 divided by the absolute risk reduction.

What is the **number needed to treat** over a given period of time in order to prevent one bad outcome?

Once your group is ready for your tutor, gather together and log on to [http://www.hsl.unc.edu/services/tutorials/ebm/welcome.htm](http://www.hsl.unc.edu/services/tutorials/ebm/welcome.htm) or use the link on the dedicated computer screen to click on to double click the link.

On the left vertical blue bar, click on the **Test your knowledge** link.

□ Your faculty tutor will work through the exercise with you to complete the module by working through case #1.

Congratulations, you are now primed to enter the world of pediatrics with a new view towards evidence-based medicine.