EBM Workshop:
Risk: The Bullwinkle Family in Brazil- Café con Azúcar

Learning Objectives:

To consider a question of prognosis / risk
Specific objectives:
- Clinical question formation
- Translation of the question to an effective search
- Critical appraisal of a cohort study
- Application of the evidence to the case

Vocabulary

- Incidence
- Prevalence
- Relative Risk
- Confounding variables
- Bias
- Stratified analysis
- Causality

Specific Questions to think about when you read

Validity Section
- Table I: Baseline characteristics—are the groups equal at baseline? Why or why not?
- Table I: For each characteristic that is NOT similar between groups, how would you expect it to impact the outcome (i.e. direction of bias)

Results Section
- Table II: What’s a person-year?
- Table II: adjusted analyses- what’s that?
- What two different ways can you discuss precision or our confidence in the results?

Bullwinkle Family Vacation:

You are the personal physician for Mr. and Mrs. Bullwinkle who are traveling on a six-month tour around the globe. Their first stop is Brazil. While visiting capital city, Brasilia, they pass by the building that is home to the Organización Internacional del Café. Posted on the door is a press release in English and in Spanish entitled “Coffee Drinkers at Lower Risk for Type 2 Diabetes.”

Mr. Bullwinkle is a 59-year-old veterinarian who earned millions through the creation of an empire in the pet psychotherapy industry. He has a personal history of GERD and hyperlipidemia. Current medications include simvastatin and omeprazole. His BMI is 30. He does not smoke. He does drink alcohol (1-2 glasses of red wine each night with dinner “to protect his heart”). His second cousin twice removed, has diabetes. Mr. Bullwinkle is very health conscious and believes in prevention. He is concerned about diabetes because of the misery that it has caused his second cousin and immediately sends you an e-mail message from his wireless Blackberry to inquire as to how many cups of coffee he should drink each day to protect him from the development of diabetes. Currently he does not drink any coffee, but prefers tea. He says he will ‘learn to love it’ for the sake of his health but will likely have to put
in a lot of sugar in order to be able to tolerate the strong taste. He does not like artificial sweetener and has concerns about its healthfulness.

Knowing that you are a busy clinician, he understands that you may not answer him today but will be looking for the answer tomorrow. He is already locating all-day coffee shops and has listed his name on the mailing list for the Organización Internacional del Café so that they can ship him the necessary supply of coffee beans.

(Note: your clinical practice has developed a novel billing system that will allow billing time for e-consultation for those patients who are well known to your practice and who pay cash. Mr. Bullwinkle fits both criteria. In addition, you have a code that allows you to bill for searching the medical literature.)

Clinical Question Formation:

**PICO**

**Patient Population:**

**Intervention / Exposure / Prognostic Factor:**

**Comparison:**

**Outcomes:**

**Type of Question / Type of Study desired:**

**Searching:**

You may select up to 3 search terms or concepts.

1. _________________________________________
2. _________________________________________
3. _________________________________________

**Teaching Strategies to consider:**

Workshop settings: To engage active learning in a workshop setting, you can divide the learners into small groups, each responsible for presenting a set of issues to the group. You can use file cards for giving out assignments as follows- to be presented in the following order:

1. Group 1: Clinical Question formation and search term choices (limited to 3 concepts). Also group 1 will need to consider how the question might be answered by each of the following 3 study designs: Randomized controlled trial, cohort, and case-controlled study and the pluses and minuses of each.
2. Group 2: Define and discuss incidence, prevalence, confounding variables and bias. Give general definitions as well as what role these concepts play in this paper.

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3. Group 3: Define and discuss relative risk, confidence intervals, adjusted analysis and confidence intervals.
4. Group 4: Application and discussion of causality
Citation: Coffee Consumption and Risk for Type 2 Diabetes Mellitus. Ann Int Med 2004;140:1-8.
Clinical Question: Is coffee drinking associated with decrease in risk for Type 2 Diabetes Mellitus

<table>
<thead>
<tr>
<th>Guide</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are the Results Valid?</td>
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<tr>
<td>Was the sample of patients representative?</td>
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<tr>
<td>Were patients sufficiently homogeneous with respect to prognostic risk?</td>
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<tr>
<td>Was follow-up complete?</td>
<td></td>
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<tr>
<td>Were objective and unbiased outcome criteria used?</td>
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Prognosis – Example #3

II. What are the results?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>How likely are the outcomes over time?</td>
<td></td>
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<tr>
<td>How precise are the estimates of likelihood?</td>
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</table>

How can I apply the results to patient care?

<table>
<thead>
<tr>
<th>Question</th>
<th>Answer</th>
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<tbody>
<tr>
<td>Were the study patients and their management similar to my own?</td>
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<tr>
<td>Was the follow-up sufficiently long?</td>
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<tr>
<td>Can I use the results in managing patients in my practice?</td>
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