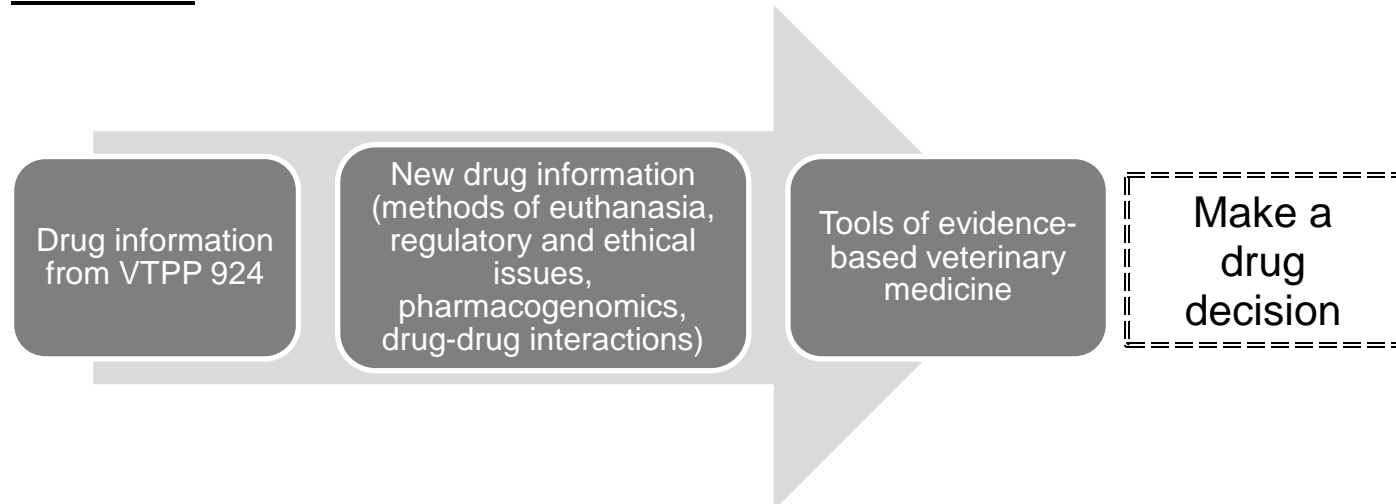


**COURSE SYLLABUS**  
**Veterinary Pharmacology II - VTPP 925 – 3 credit hours**  
**January 8 – February 26, 2018**

**Course Goals**



**Learning Objectives**

<b>Building blocks for New Graduate Outcomes</b>	<b><i>New Graduate Outcomes addressed in Pharmacology Courses</i></b>
<ul style="list-style-type: none"> <li>•investigate and evaluate available therapeutic options for a given disease/diagnosis in terms of potential benefits and risks</li> <li>•evaluate pre-formulated treatment plan in a clinical scenario</li> </ul>	2.1 <i>The graduate will formulate a comprehensive therapeutic plan for medical and surgical problems based upon their diagnosis for common domestic species</i>
<ul style="list-style-type: none"> <li>•formulate and justify pain management plan in a clinical scenario</li> <li>•communicate a pain management plan to client and healthcare team in a clinical scenario</li> </ul>	3.3 <i>The graduate will recognize the clinical signs associated with pain in all common domestic species, assess the type of pain, classify the level of pain, formulate a pain management plan, and apply a therapy to effectively prevent and alleviate animal suffering and pain</i>
<ul style="list-style-type: none"> <li>•formulate drug treatment plans in clinical scenarios that support the judicious use of pharmaceuticals (drug residue, withdrawal times, antimicrobial resistance)</li> <li>•apply knowledge of chemical and physical adulterants in a clinical scenario</li> </ul>	7.5 <i>The graduate will apply knowledge of noninfectious adulterants in the human and animal food supply to effectively promote and maintain a safe food supply</i>
<ul style="list-style-type: none"> <li>•demonstrate professional conduct</li> <li>•recognize inappropriate behavior and suggest possible corrective actions</li> </ul>	8.2 <i>The graduate will demonstrate professional conduct</i>
<ul style="list-style-type: none"> <li>•recognize the principles of evidence-based medicine and evaluate a clinical scenario based on them</li> <li>•formulate a relevant question to address a personal knowledge gap and utilize appropriate resources to address it</li> <li>•critically appraise the relevant information and published evidence by applying knowledge of study design</li> </ul>	9.1 <i>The graduate will identify, review, and critically evaluate biomedical literature and apply it to the practice of contemporary, evidence-based veterinary medicine</i>
<ul style="list-style-type: none"> <li>•recognize the legal responsibilities of the veterinarian in relation to patients, clients, society, and the environment in a clinical scenario</li> </ul>	12.1 <i>The graduate will recognize the legal responsibilities of the veterinarian in relation to patients, clients, society, and the environment and operate within these professional parameters</i>
<ul style="list-style-type: none"> <li>•describe ethical methods of euthanasia</li> <li>•identify resources available for clients regarding euthanasia</li> <li>•explain AVMA-approved methods of euthanasia</li> </ul>	13.3 <i>Determine when euthanasia is an appropriate option for a patient or population, effectively communicate the option with owners, and describe how to perform euthanasia safely, effectively and humanely</i>

**Lectures:** Tuesday 1:00 – 2:50 pm  
Thursday 1:00 – 2:50 pm  
VENI 107A

**Monday Exercises:** 1 – 2:50 PM (Groups B, F)  
3 – 4:50 PM (Groups A, C, D, E)  
VIDI 103

**Required materials:** VTPP 925 class notes – **Handed out in class as needed**

Moodle course website at <http://moodle.cvm.tamu.edu>

*Statistics for Veterinary and Animal Science*, 3<sup>rd</sup> edition; A. Petrie and P. Watson; Wiley-Blackwell, 2013

*Plumb's Veterinary Drug Handbook, Eighth Edition, 2015* (used in VTPP 924)

**Suggested**

*Veterinary Pharmacology and Therapeutics*, 9th edition; Jim E. Riviere and Mark G. Papich, eds; Wiley-Blackwell, 2009 – **ON RESERVE IN LIBRARY**

**Course instructors**

Dr. Virginia Fajt, VTPP, VIDI 334, vfajt@cvm.tamu.edu

Dr. Carly Patterson, VTPP, VIDI 315, cpatterson@cvm.tamu.edu

**Core Competencies:**

The assignments and activities in this course may lead to the completion of the following competencies:

CANS-PICO - Create a PICO-based clinical question that addresses a knowledge gap

CANS-PUBMED - Search PubMed, identify potentially useful references to address a knowledge gap

CANS-CAB - Search CAB, identify potentially useful references to address a knowledge gap

CANS-CAPP - Critically appraise published references

These competencies lead to a competency which can only be achieved in 4<sup>th</sup> year rotations: CANS-EVI - Apply evidence from peer-reviewed literature to a clinical case. You will use EBVM competencies to find and appraise the evidence needed to apply to clinical cases, so we are working on those building blocks during this course.

(Core competencies related to pharmacology and therapeutics that start with “Discuss appropriate use of...” or “Choose, calculate, and administer...” will not be addressed in this course since the intent is for these items to be completed in clinical patients. Your pharmacology coursework will prepare you to perform these tasks in clinical patients in your 4<sup>th</sup> year.)

## TENTATIVE SCHEDULE OF LECTURES and EXERCISES

	<b>Mon.</b>	<b>Tuesday</b>	<b>Thursday</b>	<b>Friday</b>
<b>Week 1</b> 1/8-1/12	<i>No lab</i>	<u>Patterson</u> : Drug decision making scenarios	<u>Fajt</u> : Introduction to EBVM steps and Step 1: writing PICO questions	PICO question 1 (due by 11:59 pm)
<b>Week 2</b> 1/15-1/19	<i>HOLIDAY</i>	<b>Quiz 1</b> <u>Fajt</u> : Antimicrobials review/further concepts of AST/clinical guidelines	<u>Fajt</u> : Antimicrobials review/further concepts of AST/clinical guidelines	PICO question 2 (due by 11:59 pm)
<b>Week 3</b> 1/22-1/26	<i>EBVM - searching for evidence (Step 2)</i>	<b>Quiz 2</b> <u>Fajt</u> : Regulatory and Ethical Issues	<u>Patterson</u> : Rational decision-making for proteinuria	Search 1 PICO question 3 (due by 11:59 pm)
<b>Week 4</b> 1/29-2/2	<i>EBVM - critical appraisal (Step 3)</i>	<b>Quiz 3</b> <u>Fajt</u> : Bias; Assessing statistics: P values, NNT, ARR, etc.	<u>Fajt</u> : EBVM - make a clinical decision (Step 4)	PICO question 4 (due by 11:59 pm)
<b>Week 5</b> 2/5-2/9	<i>No lab</i>	<b>Quiz 4</b> <u>Patterson</u> : Euthanasia	<u>Patterson</u> : Corticosteroids use and abuse	Appraisal 1 Apply 1 (due by 11:59 pm)
<b>Week 6</b> 2/12-2/16	<i>No lab</i>	<b>Quiz 5</b> <u>Savarino</u> : Pharmacy concepts	<u>Patterson</u> : Nutraceuticals	
<b>Week 7</b> 2/19-2/23	<i>Open lab</i>	<b>Quiz 6</b> <u>Patterson</u> : Analgesics scenarios	<u>Patterson</u> : Pharmacogenomics and Species Differences	
<b>Week 8</b> 2/26-3/3	<b>Makeup quiz</b> (during testing period)  <i>Open lab</i>			Search 2, 3 Appraisal 2, 3 Apply 2, 3 (due by 11:59 pm)

## ASSESSMENTS

### To assess drug information:

#### Weekly quizzes

Every Tuesday starting January 16, there will be an 11-point quiz. All material from last semester is fair game, and the following topics will also be emphasized:

- Quiz 2: antimicrobials
- Quiz 3: drug regulations, proteinuria drugs
- Quiz 4: study design and critical appraisal
- Quiz 5: euthanasia, corticosteroids
- Quiz 6: comprehensive

### To assess EBVM skills (more details can be found on pages 7-10):

#### PICO questions (EBVM Step 1)

You will write 4 clinical (PICO) questions. These will be evaluated on the quality and relevance.

#### Search strategies (EBVM Step 2)

You will work with librarians and then on your own to develop search strategies for 3 of the PICO questions that you write.

#### Critical appraisal (EBVM Step 3)

You will practice critically appraising the literature, and you will be responsible for appraising one relevant article from Search 1, and at least three of the articles from the other 2 searches of the literature described above.

#### Apply the literature (EBVM Step 4)

You will answer 3 clinical questions based on the evidence you find and appraise.

### Grade Composition:

Quizzes via ExamSoft (6 quizzes, 11 pts each)	66 pts
Clinical questions (PICO) (4 questions, 3 pts each)	12 pts
Search strategies based on submitted PICO questions [3 searches; lose 5 pts each if not submitted or if poor quality]	0 pts
Critical appraisals using literature evaluation form [10 pts for each submission, <u>not</u> for each article appraised]	30 pts
<u>Answer clinical questions (“apply evidence”) (10 pts each)</u>	<u>30 pts</u>
<b>TOTAL</b>	<b>138 pts</b>

1. During the scheduled final exam period on Monday, February 26, there will be a makeup (comprehensive) quiz for anyone missing a previous quiz for an excused or unexcused absence only. This quiz cannot be used to replace a lower grade on the other quizzes.
2. Exams and quizzes will be administered in ExamSoft. You should have received a copy of 2VM exam policies.
3. We will not provide individual reviews of quizzes. We will instead provide in-class feedback on quiz questions.
4. Should an exam or quiz be missed for an excused absence, a make-up exam will be provided. Excused absences should be documented through the Dean’s Office according to CVM and University policy. Oral

make up exams may be used. The student should contact the instructor upon return to classes to schedule the make-up exam.

5. All iClicker questions (and classroom activities) will be for extra credit. In order to receive this extra credit, you will need to attempt to answer at least 80% of the questions or assignments administered during the semester. If you attempt at least 80% of the clicker questions, 1 point will be added to your total semester points. This extra credit will NOT be available if your final grade before the clicker questions is below 70%.
6. Late assignments will lose 25% for each 24-hour period late. This means, for example, that anything from 1 minute to 23:59 hours late will result in 25% loss of points from the assigned grade, and 24:01 hours to 47:59 hours will lose 50%. After 4 days, the assignment will receive a zero.
7. Grades will be assigned as follows:
  - A 124-138
  - B 110-123
  - C 96-109
  - D 90-95
  - F < 90

As detailed in the CVM student handbook accumulation of any combination of two “D”s and one “F” in three courses will result in dismissal from the professional curriculum.

### **General Course Policies**

1. For many years Aggies have followed a Code of Honor which is stated in this very simple verse: **Aggies do not lie, cheat, or steal or tolerate those who do.** *Since the integrity of the veterinary medical profession is a reflection of the sum of the integrity of its members, veterinary medical students should conduct themselves toward colleagues, faculty, staff, clinical patients, clients and the public in an exemplary ethical and professional manner.* Scholastic dishonesty, in any form, will not be tolerated. There is no situation that warrants cheating and all professional students are expected to uphold complete scholastic honesty and integrity and should never consider cheating. Scholastic dishonesty includes, but is not limited to, looking at examination of another student, consulting notes or references during an examination, providing information or seeking information from another student during an examination or between laboratory and written examination sessions, accessing an unauthorized website during an examination, plagiarism, etc. (For more information: Office of the Aggie Honor System, phone number 458-3378, 102 Henderson Hall or <http://aggiehonor.tamu.edu>).

Whether or not the following statement is included on examinations, research papers, and other academic work, students are required to adhere to the meaning of the following statement: **On my honor, I have neither given nor received any aid on this academic work.** This pledge serves as both a commitment to scholastic integrity and as a reminder to the student and the instructor of the College Honor Code. Absence of the signed pledge does not remove an examination from coverage by the College Honor Code. ***The instructor reserves the right to dismiss from the course and administer a course grade of ‘F’ to any student involved in incidents of scholastic dishonesty.***

All examinations in this course are **closed book, closed note, and closed neighbor exams**. Video recording devices and other technological means may be used to supplement documentation of acts involving Scholastic Dishonesty. The instructors of this course regard Scholastic Dishonesty as a very serious offense and disciplinary action will be taken. Sanctions will include a grade of zero on the examination and a grade of “F” or “F\*” in the course. Upon appeal of an accusation of Scholastic Dishonesty, the Honor Council can institute additional sanctions including separation from the University.

2. All written material, some of the graphics in notes and handouts, and all materials posted on Moodle are copyrighted and are the property of Drs. Fajt or Patterson unless otherwise indicated. **Any attempts to copy, capture, or distribute material from the course website or printed materials, including but not limited to**

**quiz questions, quiz feedback, notes, PowerPoint slides, and published articles, will be considered honor code violations.** Thank you for your commitment to preserving academic integrity at the College of Veterinary Medicine.

3. Students are responsible for monitoring their e-mail in a way that assures that course communications are appropriately reviewed.
4. Course information, lecture materials, and readings will be posted on Moodle, which can be accessed at <http://moodle.cvm.tamu.edu>. Students are expected to stay up-to-date with postings on the course website.
5. As a courtesy to your professors and classmates, we request that the use of electronic devices be limited to class activities; laptops, in particular, can be distracting to those around you. **YOUR LEARNING WILL SUFFER IF YOU ARE SURFING, TEXTING, or otherwise NOT PAYING ATTENTION to course materials IN CLASS.** If inappropriate electronic device use is distracting or disturbing, please contact Dr. Fajt or Dr. Patterson.
6. Electronic communication has made our lives easier and communication more rapid. Please adhere to the following to facilitate communication with instructors:
  - a. We recommend that you try to avoid using e-mail for questions about course content and concepts. This type of communication is much better and often more efficiently accomplished face to face, whether in class, immediately after class, in the hallway, or in an instructor's office. E-mails are best used for setting up appointments or communicating logistical information, such as notifications about missing class.
  - b. If you have a question about the schedule or other course information, review the syllabus and other course materials prior to e-mailing the instructor to see if your question is answered there.
  - c. The subject line for all electronic communication should begin with "VTPP 925" to alert instructors to the purpose of your message.
  - d. E-mails will not be read immediately; most instructors set aside time each week to review student emails in an orderly fashion, so you should not expect an immediate response.
  - e. If you are using e-mail to set up an appointment, please include when you are available. For example, you might say: "Dr. Fajt/Patterson, I would like to make an appointment to talk about the next quiz. I am available from 1-3 on Wednesday and 10-11 on Friday this week."
7. We have a policy of refusing requests for authorized absences. As adults, you can make your own decisions about when to attend class. We do not take attendance, and we reserve the right to administer pop quizzes at any time during the course. We recognize that there are many opportunities aside from your courses to improve your skills or enhance your professional education, and we applaud any and all efforts on your part to participate in those opportunities. However, we require you to make your own choices about which activities are more important than class time. If you have questions about the difference between authorized and excused absences, see the Professional Student Handbook.
8. The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please see the course coordinator and contact the Department of Student Life Services for Students with Disabilities (Cain Hall, Room B118, 845-1637) at the beginning of the semester.
9. All students are requested and expected to complete the web-based CVM Course Evaluation form near the end of the semester. Students will be notified by e-mail and in class when the evaluation forms are to be completed. Information gathered from these evaluations is critical to quality control of the veterinary curriculum.
10. The University has established a formal process for handling of student grievances associated with any course. A "Classroom Communication Form" is available from the VTPP departmental office that may be completed and submitted to the department head should there be major concerns about the conduct of the course.

## STEPS OF THE EBVM APPROACH TO DECISION-MAKING

### EBVM STEP 1: Formulate clinical questions

1. Describe the patient (e.g., signalment, disease or condition of interest)
2. Describe the outcome in the patient that you are interested in, with a focus on specificity and clinical relevance.
  - a) Avoid words like “better” or “more effective” – you need to be specific as to what outcome you’re interested in, such as “decreased fever” or “negative bacterial culture” or “increased appetite.” Also, avoid the non-specific phrase “adverse effects”; you should be able to specify which adverse effects you’re interested in.
  - b) By thinking about how you would know that the outcome occurs and how you would measure the outcome, you will be more clearly delineating what you will be looking for in terms of evidence to support your decision-making.
3. Describe the intervention. For the question you will write and investigate for this course, you will focus on interventions that involve treatment, but intervention can also be an exposure (like disease risk factor) or a diagnostic test.
4. Consider the comparison you are interested in. The comparison could simply be with nothing (which would answer a question about an intervention having any effect on the outcome), or it could be compared with an existing treatment, diagnostic test, or risk factor.
5. **The table below is a starting point for writing PICO questions, although your questions should provide even more specificity of outcome measures.**

Table 1—Comparison of general clinical questions and PICO (a mnemonic for patient or problem, intervention, comparison, and outcome) questions to demonstrate how the PICO approach yields keywords to facilitate focused and directed literature searches.

General clinical question	PICO question
What is the best method to manage diarrhea in calves?	In young (< 2-month-old) calves in beef cow-calf herds, does environmental management reduce the number of calves developing diarrhea more than does vaccination? Keywords: bovine, calf, vaccine, diarrhea, environment
Should I use antimicrobial X to treat respiratory disease in cattle?	In lightweight (200–250 kg [440–550 lb]) cattle newly arrived at a feedyard, does antimicrobial X increase success of first treatment or decrease risk of death, compared with outcomes for antimicrobial Y? Keywords: bovine, feedyard or feedlot, antimicrobial X, antimicrobial Y
Which medication should I use to prevent postoperative pain in cats?	In apparently healthy cats undergoing elective ovariohysterectomy, does medication X reduce measurable signs of postoperative pain more completely or longer than medication Y? Keywords: feline, ovariohysterectomy, postoperative pain, medication X, medication Y

Key words are descriptors and, with their variations, can serve as a starting point for a structured literature search.

Excerpted from Larson and White, 2015

To write clinical questions for this semester, you can select one of the scenarios below, or you can investigate your own scenario

- Cat (8 year old domestic medium hair, 15-lb) with asthma
- Cat (9 year old 12-lb domestic short hair) presenting for forelimb amputation
- Dog (60-lb Pit Bull cross) with osteoarthritis of the hip
- Dog (45-lb mixed breed) with dilated cardiomyopathy and heart failure as a result of mitral insufficiency
- Foal (120-lb Quarter Horse) with gram-negative sepsis
- Horse (1000-lb Standardbred) with proximal/anterior enteritis
- Cow (2<sup>nd</sup> lactation, 1450-lb Holstein) with suspected gram-negative mastitis
- Calf (4-day old Brangus, 75-lb) with diarrhea, dehydration and acidosis

CLINICAL QUESTIONS ASSIGNMENTS:

Type your complete PICO questions into the text box under the appropriate assignment date on Moodle. (Do not upload a separate file.)

RUBRIC FOR CLINICAL QUESTIONS:

<b>3 points (Excellent)</b>	<b>2 points (Acceptable)</b>	<b>1-0 points (Needs work)</b>
PICO parts are specific and complete, and the question is highly relevant to clinical practice (that is, it takes into consideration mechanisms of action and known usages of drugs)	PICO parts are specific and complete	Missing important parts of PICO

Points may be subtracted for any of the following common mistakes:

Missing one of the elements (PICO)

Lack of specificity in any of the elements (words like “more effective” or “better” are not specific)

Asking about a drug that doesn’t make sense physiologically or clinically



## **EBVM STEP 2: Locate the best evidence to answer the question**

You will work with the librarians to search for evidence for one of your clinical questions that has been graded. In the search strategies you turn in, you will include the keywords and how they were combined to develop your preliminary list of published literature related to your clinical question.

### **SEARCH ASSIGNMENTS:**

Upload a Microsoft Word file or pdf that includes the following:

1. Write the PICO question you are attempting to answer
2. Describe the search strategy you used to get a list of potentially relevant articles. You may use screen shots of your searches or you can copy and paste, depending on the interface you used. You may include searches that didn't work or that had to be refined or broadened, as long as the final "working search" is included at the end. Do not change your PICO question just because you can't find the perfect set of articles to review.
3. Include the list of potentially relevant articles at the end (no specific format for citations - whether you use PubMed or CAB Abstracts, you should be able to copy or export a list of articles). You will be selecting articles from this list to appraise in the next phase.
4. Rate your confidence that you have found most of the relevant published articles in your search.

### **RUBRIC FOR SEARCHING:**

Zero points will be subtracted for a search strategy that includes (1) the PICO question being addressed and (2) a variety of keywords, phrases and truncated words to create a highly sophisticated Boolean search strategy.

Strategies with no search terms or that do not attempt to create an appropriate Boolean strategy or to use phrases or truncated words if appropriate will not be acceptable and will result in loss of points.

### **EBVM STEP 3: Critically appraise literature found during search for validity, impact, and applicability**

Identifying sources of evidence is not sufficient to make a clinical decision; you must also appraise the quality and validity of the evidence presented. There are many different checklists published to help you with critical appraisal of literature, but you will be given a short form to help with reading published papers (an electronic version of the form will be made available on Moodle). The first step is to identify what type of article you have, and then the appropriate section(s) of the form is used to assess characteristics that make evidence convincing and useful. The type of article will also help you weight the information in any given article: for example, evidence from a randomized controlled trial is more convincing and gives more confidence to your decision than an in vitro study.

#### **APPRAISE ASSIGNMENTS:**

##### **For Appraise 1**

You will appraise ONE article using the literature evaluation form demonstrated in class (electronic version available on Moodle). The form for Appraise 1 is “LEF.2018.partB.1source.”

Upload two files: the completed literature evaluation form and a pdf of the paper you evaluated.

##### **For Appraise 2 and 3**

You will appraise at least THREE articles using the literature evaluation form (electronic version available on Moodle). The form for Appraise 2 and 3 is “LEF.2018.partB.3sources.”

#### **RUBRIC FOR CRITICAL APPRAISAL:**

<b>10 points (Excellent)</b>	<b>5-9 points (Acceptable)</b>	<b>0-4 points (Needs work)</b>
Article type accurately categorized, all quality assessment questions answered appropriately, and final quality assessment thoughtfully and appropriately assigned	Article type accurately categorized, most assessment questions answered appropriately, and final quality assessment appropriately assigned	Article type not accurately categorized, most or all assessment questions answered inappropriately, or final quality assessment not assigned appropriately

Points may be subtracted for any of the following common mistakes:

Not identifying the correct study type

Make sure you can differentiate case series from in vitro, narrative review from systematic review

Inappropriate quality rating for the type of study

Study design is correlated with quality rating: study designs with a higher likelihood (or unknowable likelihood) of bias should be rated lower

Confusing a p value with treatment effect

Describing a treatment effect for inappropriate study types (treatment effect cannot be determined in case series, most pharmacokinetic studies, in vitro studies, or some systematic reviews)

Leaving out or not providing a complete Fact Box (or incorrectly stating that one cannot be completed)

Not understanding that a lack of statistically significant differences between treatment groups is the same thing as no treatment effect (or no relative treatment effect)

#### **EBVM STEP 4: Integrate appraisal to make decision about using a drug**

The point of this step is to make a decision about a patient or group of patients. We would like the data to provide clear evidence that the desirable consequences of an intervention clearly outweigh the undesirable consequences, with the result that a “strong recommendation” can be made. The alternative is a “weak recommendation,” which requires more equivocation on the part of the clinician.

Your answer can be simple, but you must explain WHY you are convinced of the answer. You should also provide a prediction or expectation of how much you expect the drug to do, or the “treatment effect,” in the Fact Box.

#### **APPLY ASSIGNMENTS:**

Upload a Microsoft Word file or pdf that includes the following:

1. The PICO question you are addressing
2. Citation for the evidence you appraised (citation should include the first author, title of article, title of journal, year of publication, and issue/page numbers; format is not important)
3. FINAL quality assessment of the article you appraised (options are high, moderate, low, very low) - do not include the entire literature evaluation form
4. A completed Fact Box with one line for each article you used to make your recommendation
5. The answer to your clinical question based on your appraisal of the evidence, and the recommendation you would make to a client based on that answer. Include at least one sentence that explains or provides your rationale for the answer and the recommendation.
6. The strength of the recommendation (options are either strong recommendation or weak recommendation)

#### **RUBRIC FOR APPLYING EVIDENCE:**

<b>10 points (Excellent)</b>	<b>5-9 points (Acceptable)</b>	<b>0-4 points (Needs work)</b>
Completely describes how the article(s) and your critical appraisal helped answer your clinical question; includes at least one estimate of treatment effect; includes the clinical question and the citation	Is incomplete in describing how or why the article(s) and your critical appraisal helped answer your clinical question; or leaves out the clinical question, the citation, or the treatment effect	Provides no explanation of how or why you answered the clinical question; leaves out the clinical question and the citation

Points may be subtracted for any of the following common mistakes:

- Confusing a p value for significance of comparisons with treatment effect
  - Describing a treatment effect for inappropriate study types (treatment effect cannot be determined in case series, in vitro studies, or many systematic reviews)
- Inappropriate strength of recommendation compared to the quality of the papers cited
- Not making a specific recommendation (“either would be fine” is not a recommendation)
- Leaving out or not providing a complete Fact Box (or incorrectly stating that one cannot be completed)