

PHARMACY 6250: DRUG LITERATURE EVALUATION

FALL 2010

NOTE: Schedule is Tentative and Reading Assignments may be Incomplete

CLASS TOPICS

August 24:	Review of Syllabus Discussion of Projects Knowledge Broker
August 31:	Introduction; Drug Information and Information Explosion Reading assignment: Chapter 1 (pages 1-23 in hardcopy); Chapter 2 (pages 29-37) Professional Writing: Chapter 11 (pages 375-410)
September 7	Systematic Searching and Hierarchy of Information [tertiary discussion—bring chart]: Chapters 3-4 (pages 39-59; 61-101)
September 14:	Quiz 1—Systematic searching, information explosion and professional writing Informatics and the Internet: Chapter 5 (pages 103-138)
September 21:	Literature Evaluation: Chapter 6 (pages 133-150; 183-4, 195-211 Reading Assignment: Tsourounis ¹
September 28:	Quiz 2 – Informatics Literature Evaluation Continued
October 5 October 12:	Evaluation of Research Design: Chapter 7 (pages 213-260) Investigational Drugs--FDA Approval Process; Labeled versus Unlabeled Uses: Chapter 18 (pages 635-663)
October 19: October 26:	Quiz 3—Literature evaluation and research design Clinical Application of Statistical Analysis: Chapter 6 (pages 150 [Methods]-182, 185-194), Chapter 10 (pages 339-374) Reading assignment: Elenbaas ² , Chu ³
November 2: November 9	Quiz 4 – Statistics Law/Medication Misadventures: Chapter 12 and 17 (pages 411-458, 599-634)
November 16 November 23:	Law/Medication Misadventures Continued Pharmacy & Therapeutics Committees, Clinical Practice Guidelines, Quality Assurance, Future Trends: Chapters 9,14,16 (pages 289-338, 483-532, 557-98)
November 30:	Student Team Project Presentations
December 7 or 9	Comprehensive Final Examination (TENTATIVE—University assigns) 10:15-12:15

DISCUSSION TOPICS

August 26 September 2	Tertiary Resources
September 9	Copyright and misuse of sources
September 16 September 23	University Library and Secondary Resources to be held at the computerized classroom (216) in Coe Library
September 30	Primary Literature
October 7 October 14: October 21: October 28: November 4:	Literature evaluation
November 11:	Cochrane and Guidelines (to be held at the computerized classroom (216) in Coe Library)
November 18	Journal Club presentation
November 25	No Discussion – Thanksgiving Break
December 2:	Review for final

ASSIGNMENTS

ASSIGNMENT: Knowledge Broker essay – due in class August 24; Smithsonian essay—due August 27 (Friday by 4pm).

ASSIGNMENT: (Due by 10:00am on September 9): University TIP Tutorial at <http://www-lib.uwyo.edu/> or <http://tip.uwyo.edu> [Quiz will be graded]

ASSIGNMENT: (Primary team due September 9 at 2pm, Review teams by Sept 10 at 5pm): Wikis for specialty books.

ASSIGNMENT: (Due September 14 at 10am): Tertiary Literature Evaluation letter (2 pages)

ASSIGNMENT: (Due September 21 at 10am): Patient Information evaluation (6 pages)

ASSIGNMENT: (Due September 24 at 5pm): Team project topic (1 page)

ASSIGNMENT (Due September 30 at 10am) [electronic, but-bring a copy to discussion]: Compare and Contrast paper; 8 pages

ASSIGNMENT (Due November 19 at 11:59pm): Evaluation of research design paper; preliminary version I due October 12 at 10am; peer review of preliminary version I to be returned by October 19 at 10am; preliminary version II due October 29 at 11:59pm, bring copy to discussion on November 4); no more than 25 pages

ASSIGNMENT (Due November 30 at 10am): Abstract of project (1 page) and Team Project

ASSIGNMENT (Due at beginning of final examination on December 8 or 10): Take home final (1 page)

ARTICLES

1. Tsourounis C. How to evaluate a randomized controlled trial: What every pharmacist should know. *Hosp Pharm.* 2000;35:1071-8.
2. Elenbaas RM, Elenbaas JK, Cuddy PG. Evaluating the medical literature Part II: Statistical Analysis. *Ann Emerg Med.* 1983;12:35-45.
3. Chu K. An Introduction to statistics, significance testing and the P value. *Emerg Med.* 1999;11:28-34.

PHCY 6250: DRUG LITERATURE EVALUATION

Fall 2010

The instructor may make changes to the syllabus and course schedule as the course proceeds. If changes are necessary, they will be announced in class.

Drug Literature Evaluation is a three semester-hour course designed to provide the student with the techniques (toolkit) to obtain and evaluate drug literature for the purpose of applying the knowledge to provision of medication information in general and to the provision of specific pharmacist-provided patient care. The primary goal of the course is to develop the student's ability to critically think and evaluate. **Prerequisites:** Statistics 2050 or equivalent, WB designated writing course

COURSE PURPOSE

The purpose of the course is to develop the ability to effectively and efficiently utilize the information sources to provide quality patient-centered pharmacist care with emphasis on written documents.

This course is an officially designated Writing C (WC) and a Literacy (L) course.

PHCY 6250 shall provide knowledge and skills relevant to the graduate achieving the following School of Pharmacy Abilities-Based Outcomes:

- **Effective Communication:** The student shall read, write, speak, listen and use communication technology to communicate effectively. The student shall effectively counsel and educate patients as well as communicate with peers and other health care professionals. Also WC outcome.
- **Critical Thinking, Problem Solving:** The student shall collect information and be able to synthesize, analyze, perform clinical decision making and apply these decisions to resolve or prevent clinical problems. The student should understand research methods and the evidence-based decision making process.
- **Information Technology Systems Utilization:** The student will be able to utilize information technology systems and apply them to the practice of pharmacy. Also L outcome.
- **Drug Information:** The student will be able to provide appropriate responses to drug information requests using the systematic method and appropriate analysis and synthesis of the evidence.

LEARNING GOALS: Students will be able to--	
Demonstrate appropriate provision of information in a written format	
	FOUNDATION: Apply the 3 levels of professional writing utilizing proper format and referencing
	APPLICATION: Demonstrate ability to produce a quality document.
	HUMAN: Criticize peer documents constructively and accept peer criticism of documents
	INTEGRATION: Prepare effective written reports from basic instructions
	CARING: Prepare documents based on the audience's background
	LEARNING: Employ appropriate citation in correct format for all documents
Discriminate between the various types of professional and popular medication-related literature to determine the appropriate use of each.	
	FOUNDATION: Classify content of medication-related literature
	APPLICATION: Compare and contrast journal issues with a representative from each of 4 categories
	HUMAN: Reflect on assignments for eValue portfolio
	INTEGRATION: Select appropriate source given a patient case
	CARING: Recognize differences in abilities affecting use of medication-related information
	LEARNING: Appraise the similarities and differences between the journals in 4 groups
Employ the concepts underlying information technology to appropriately and quickly access medication-related information.	
	FOUNDATION: Identify concepts of the Internet and databases
	APPLICATION: Practice locating primary and tertiary literature via electronic sources
	HUMAN: Reflection on value of assignments related to information technology
	INTEGRATION: Apply concepts of information technology to locate information
	CARING: Recognize differences in abilities affecting use of medication-related information
	LEARNING: Demonstrate location of primary and tertiary sources using Boolean logic and field searching
Evaluate the components of primary literature and judge the value of a study for application to patient care.	
	FOUNDATION: Demonstrate knowledge gain regarding primary studies
	APPLICATION:
	HUMAN: Criticize peer documents constructively and accept peer criticism of documents
	INTEGRATION: Appraise the value of a primary study to clinical practice
	CARING: Describe the relationship of effective and efficient use of the literature to quality provision of healthcare
	LEARNING: Demonstrate the ability to apply evaluation and analysis concepts to additional primary studies

WEBSITE:

The course website is on WyoSakai (accessed through WyoWeb). Copies of class slides will be posted on this site. You may find it helpful to print a copy before coming to class. Copies of the slides will not be provided in class. If you wish to use them for taking notes, they will be available by Friday evening proceeding the Tuesday session.

REQUIRED TEXT:

The required textbook is Malone PM et al., Drug Information: A guide for pharmacists, 3rd edition, 2006 (available on AccessPharm through the University Library website). Additional readings have been, and others may be, assigned throughout the semester as they become relevant. Readings and articles for class/discussion/projects will be placed on WyoSakai. All reference books for the chart should be available at Coe Library (often on reserve or in the reference section).

AUDIENCE:

This course is required for students in the second year of the Doctor of Pharmacy program (PH2); students must have a basic understanding of biostatistics.

The policy of the School of Pharmacy is to accommodate students with disabilities, pursuant to federal and state law. Any student who needs accommodation because of a disability should inform the instructor at the beginning of the course. Students with disabilities who seek accommodations must contact Student Educational Opportunity Services, Knight Hall room 330, at 766-6189.

COURSE PROCEDURES:

The course meets on Tuesday from 10:00-11:50 a.m. In addition, discussion sessions meet on Thursday from 10:00-10:50 or 11:00-11:50a.m; both in HS463.

INSTRUCTOR AVAILABILITY:

The instructor is Linda Gore Martin, Pharm.D.

Office hours (Room HS465A, 766-6128, druginfo@uwyo.edu) will be Tuesday and Wednesday from 3:00-5:00pm (beginning September 7) and by appointment. Alternative times will be announced if needed. Electronic mail will be answered within 24 hours school days (that is, if received at 10am on Friday, it will be answered by 10am on Monday).

CLASSROOM PROCEDURES:

Instructional procedures consist of lecture, discussion, and participation exercises plus assigned readings and projects (See Course Outline).

Different people have different learning styles. Lectures where the instructor talks and students listen are passive on the part of the student. Discussion requires active participation on the part of the learner. In this class, much of the material is appropriate for lectures; some topics are appropriate for discussion and active participation. In order for a discussion or dialogue to be successful, students must have read the assigned readings or have completed the assignment before coming to class. Whether a lecture or discussion, students should feel free to ask questions in class. If you have a question, it is likely that other students have the same question.

ACADEMIC DISHONESTY, DISCRIMINATION AND HARASSMENT WILL NOT BE TOLERATED!

The University of Wyoming is built upon a strong foundation of integrity, respect and trust. All members of the university community have a responsibility to be honest and respectful and have the right to expect such from others. Suspected violations of these standards should be reported to the instructor, Associate Dean of Student Affairs, or Dean. Such conduct is described within, and will result in sanctions pursuant to, the following School of Pharmacy and University policy and regulations:

University of Wyoming Code of Conduct

<http://uwadmnweb.uwyo.edu/dos/info.asp?p=2481> or go to the Dean of Students page

University (UW) Regulations

<http://www.uwyo.edu/generalcounsel/>

School of Pharmacy Honor Code

WYOWEB/Groups/Pharmacy Students/Files/ SAC Policy & Forms

THE PROFESSIONAL IN CLASS

The professional in class respects others. For this reason, the following policies are in effect:

1. Cell phones shall not be used in class (either to receive or send calls, text messages, electronic mail, or other uses). Please have it on silent or vibrate. If you decide you must use your phone, please leave the room and not return until the next session (if you leave between 10 and 10:50, then you may return at 11).
2. Computers may be used for taking notes, but other uses are not acceptable. If you should decide to use your computer for other uses, please leave the room until the next session.
3. Leaving the room during the class session can be done, but you may not return during that session. Leaving during discussion without permission will be counted as absent (see below).
4. Talking in class is permitted if you are willing to share with the entire class.
5. Class will start on time. You may enter the class session late (up to 10 minutes) twice during the semester (except on a quiz day where no leniency will be allowed). If it is a mandatory session (see below), you will be considered absent after arriving late twice. If it is a regular session, you not be allowed to attend that session.

ATTENDANCE:

Attendance is required for discussion sections, examinations and quizzes, and project presentations. Examinations and quizzes may not be made up without a prior excused absence (*i.e.* notification before 9:00am on the day of exam or quiz plus a note from either a physician or the Dean of Students); emergencies that do not allow this notification will be considered.

A deduction of 2% of the final grade will be taken for each unexcused discussion absence and for preliminary versions that are not turned in on time. Unexcused absence from the team project presentations will result in a 5% deduction.

RESOURCES:

Oral Communication Center, Ross Hall 442. <http://uwadmnweb.uwyo.edu/cojo/info.asp?p=9339>

The Writing Center, Coe Library 302 or online <http://uwacadweb.uwyo.edu/WRITINGCENTER/>

GRADES:

Course grades will be assigned and students evaluated in accordance with standard University policies:

A = Exceptional [900pts and above] B = Very Good [800pts] C = Fair [700pts] D = Poor [600pts] F = Failure [less than 600pts]. Accepted mathematical rounding will be used.

The elements that will count toward the final grade are as follows:

Four quizzes (not including Smithsonian) 25 points each

Knowledge Broker essay -----20 points

Smithsonian Essay -----20 points

TIP Quiz-----30 points

Tertiary Sources Project -----50 points

Compare/contrast paper -----100 points

Patient Information Evaluation-----60 points

Research Design paper -----200 points

Poster Projects -----50 points

Abstract of Poster Project -----30 points

Journal Club-----50 points

Final examination -----150 points

Team Assessments-----20 points (total of all assessments)

Portfolio reflections-----20 points (total of all reflections)

Writing Ability-----100 points (total of all papers)

(Includes proper organization, format, referencing, grammar and punctuation)

TOTAL = 1000 POINTS

Quizzes and the final examination may include objective (multiple choice and true-false), short essay, and problem-solving questions.

Graded assignments will be accepted on the due date. Assignments not turned in on the due date may be turned by the beginning of the next class period (except in-class assignments), but 15% will be deducted from the grade. No assignments will be accepted after the beginning of the class on the meeting following the due date.

PROJECTS

Be conscious of your writing style. Use proper grammar including sentence and paragraph structure. Be sure you spell properly. Remember that you are trying to create a positive image. Do not let carelessness or mistakes ruin that image. Also, ten percent of your grade is based on this.

This course will use middle technical style. Assume that the reader is educated, but does not know the content (that is, you will need to explain the concept, present the data and then discuss how well the data supports the concept).

All projects require an outline in addition to the narrative. All papers will be double-spaced using 12-point font and one inch margins. References will be presented as endnotes.

At the end of each assignment, please add a paragraph addressing the value of the assignment (this is a personal statement of reflection on the assignment which is not graded).

TERTIARY LITERATURE EVALUATION

Use the attached chart to rate the reference books for each of the categories (use the attached classification system to understand the categories). Only examine the hard copies, even though many of these have electronic versions. This will give you a visual for the contents of the resource. You will have a quiz on these (and the specialty references) so make sure you do your own chart. An easy way to compare references is to use the same drug or disease state for each. You may use furosemide and congestive heart failure as an example.

For the rest of the assignment, consider one of your rotation sites from this summer. For the site, select three references that you would have used to provide appropriate care at that site. These references should complement each other (that is, cover as many categories at the highest ranking as possible or fill a unique niche); you may only select one book from the specialty books used in discussion [the chart list is primary; so if on both lists, it is not a specialty book]. Your preceptor has asked you to write a letter to J.P. Doe, Vice President of Finance for your organization requesting funding for these books. Using correct style, give reasons for the selections. You will need to include a price (you may decide to ask for the electronic version so use the appropriate price). Discuss how your choices complement each other. All books will be available at Coe Library [Do Not Use editions older than 2005]. The chart will be on WyoSakai as a docx file); bring a completed copy to class on September 7. The letter is limited to two pages --double spaced, 12 font, 1 inch margins.

SPECIALTY TEXTBOOK ASSIGNMENT

The objective of the specialty textbook assignment is to familiarize the student with additional pharmacy tertiary literature. This assignment will be used for two purposes: for items on the quiz and for the tertiary literature letter. You will need to bring your syllabus to discussion on August 26 and September 2.

Each team will evaluate each set of books. However, a more detailed assessment of each set has been assigned to an individual team.

A member of each team will take notes on each set of books. The members of the team will create a Wiki in WyoSakai [on the page for their team] for the set (or sets) assigned to them. After the Wiki has been posted, the other two teams [assigned as noted below] may add their assessment of that set's Wiki from their notes. The additional teams need to post to each assigned Wiki – may state “Agree with all of the above” or “No additional comments.” These Wikis will create a study guide for the quiz and may provide additional information for the letters.

All Wikis need to be posted by 2pm on September 9. Comments by other teams must be done by 5pm on September 10, 2009

The specialty textbooks will be available to you outside of class M-F 1:30-4:30pm in the Drug Information Center (DIC; HS495). You will need to sign up for times since only one team may be in the DIC at a time. Please use the large table and respect that Dr. Hunter and Chloe Jones are trying to work in the room. Please do not take the books out of the DIC. Some books may be available at Coe, but not all.

Use the form provided in class and the classification list from your syllabus.

Specialty Textbooks 2010

- Set 1: Team 2 [teams to review –1, 5]
Drugs in Pregnancy and Lactation
The Harriet Lane Handbook
- Set 2: Team 5 [teams to review – 6, 9]
Clinical Toxicology of Commercial Products
Ford, Clinical Toxicology
- Set 3: Team 6 [teams to review –2, 4]
The Merck Manual
The Merck Index
- Set 4: Team 1 [teams to review –7, 9]
Natural Medicines Comprehensive Database
PDR for Herbal Medicines
Review of Natural Products
- Set 5: Team 4 [teams to review -- 3, 8]
Medication Teaching Manual
Advice for the Patient

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- Set 6: Team 7 [teams to review 2, 3]
Pharmacotherapy: A Pathophysiologic Approach
Applied Therapeutics
- Set 7: Team 3 [teams to review 7, 8]
Handbook of Nonprescription Drugs
Physician's Desk Reference for Nonprescription Drugs/Dietary Supplements
Nonprescription Drug Facts
- Set 8: Team 9 [teams to review 3, 5]
Textbook of Adverse Drug Reactions
Meyler's Side Effects of Drugs
Drug-Induced Diseases
- Set 9: Team 5 [teams to review 6, 9]
King Guide to Parenteral Admixtures
Handbook on Injectable Drugs
- Set 10: Team 8 [teams to review 1, 4]
Drug Interaction Analysis and Management
Drug Interaction Facts
Stockley's Drug Interactions
- Set 11: Team 6 [teams to review 2, 5]
USP
USP Pharmacists' Pharmacopeia
- Set 12: Team 4 [teams to review 7, 8]
Basic Skills in Interpreting Laboratory Data
Interpretation of Diagnostic Tests

PATIENT INFORMATION EVALUATION

Identify two free-to-the public Internet sites that provide drug information to the lay public. Find these using search techniques that the public would use (describe your search). Evaluate the information provided for furosemide as used for congestive heart failure; then critically evaluate each site, the appropriateness of the information and the level of writing. Do not forget the “what is it, is it present, why is it important.” Choose one of the sites to recommend to patients based on your evaluation and write the recommendation as a one paragraph article for a newspaper. Attach your outline. 6 pages.

CHECK LIST--CONTENT:

Internet site	Confidentiality
HonCode or other	Authority
Current Date	Attribution
Amount of information on homepage	Complementarity
Easy to Use	Justifiability
Level of writing	Advertising
Appropriateness of the information_	Financial Disclosure
Transparency	Your critical evaluation summary
Newsletter paragraph; appropriate public style	

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TEAM PROJECTS

The class will be divided into teams of 4-5 students to work on a team project. The topic for this project will be in the category of "Media versus Scientific Literature." The team will identify a medicinal drug-related story in the WRITTEN popular media during the last six months (the Internet is not appropriate source for the article, but may be used to locate an appropriate article and the related scientific study; an electronic version can be used, but it must be available in written format somewhere) that is based on a study from the primary biomedical literature. The team will evaluate the media story based on the information given in the scientific report and present the comparison to the class via a poster during class on November 30.

The team leader (one paper per team) will turn in a one-page paper providing the topic title (in the form of the proper bibliographic citation for the media story and the journal report) and an explanation of how the articles were found and why the topic was chosen on September 24. **Attach** copies of the two articles (send electronically if available, otherwise bring to class).

A journal club presentation of the scientific study will be presented in discussion on November 18th. This will be done as a team and you will be using your article during discussion starting on October 7. Format will be provided on WyoSakai and will be based on the format for the large research design project.

The final project will be presented as a "poster session" where the information is presented on a poster board of no more than 4X8 feet. Each team will have 10 minutes to present their project. Items that must be displayed on the floor or a tabletop (that is, not attached to the poster board) are not appropriate. Information on format for the posters will be available on WyoSakai. All of the students in the class will examine the projects and evaluate them; questions will be asked by the other students. The team will submit questions from their project for the final examination. Teams for the presentation will be assigned during the first class.

Each team member will also submit an individually written abstract of the project due at the time their project is presented—these are individual abstracts and should not be identical (even though the material the abstract is based upon is the same).

COMPARE and CONTRAST PHARMACY JOURNALS

The purpose of this assignment is to familiarize the student with the location of literature pertaining to pharmacy; to acquaint the student with some of the periodicals used in the pharmacy field; and to have students demonstrate critical thinking through a comparison of journals. The physical journal will need to be examined; in addition, the publisher website and the electronic version should be discussed. Only journals listed below will be used for this project. Copies of the journals will be available in Coe Library or the Library Annex; some may be on reserve. The journals' websites will also need to be evaluated. Do not use volumes dated before 2005. The student will be assigned one journal from each group (a total of 4 journals) at least 2 weeks before the preliminary version due date. Eight pages plus the outline.

Journals should be compared on many factors including

- Intended audience
- Subscription information – organization, circulation
- Size
- Advertising
- Types of articles
- Refereed/non-refereed (peer review) status
- Primary versus Tertiary status
- Cost
- Internet site and electronic availability
- Impact Factor

You, the student, conclude with an opinion/overview of journals

When referring to a journal, use the full title and proper citation. If you later in the paper abbreviate the title, abbreviate it correctly (National Library of Medicine format). Give proper citations including volume numbers and pages.

Group 1:

America's Pharmacist
Formulary
Pharmacy Times
US Pharmacist

Group 2:

Morbidity and Mortality Weekly Report (may use electronic pdf version)
The Medical Letter on Drugs and Therapeutics (may use electronic pdf version)
Pharmacist's Letter

Group 3:

American Journal of Health-System Pharmacy
The Annals of Pharmacotherapy
The Consultant Pharmacist
Journal of the American Pharmacists Association
Journal of Managed Care Pharmacy
Hospital Pharmacy
Pharmacotherapy

Group 4:

American Journal of Respiratory and Critical
Care Medicine.
Annals of Internal Medicine
Archives of General Psychiatry
Archives of Internal Medicine
BMJ (British Medical Journal)
Chest
Drug Information Journal

JAMA. The Journal of the American Medical
Association
Lancet
The New England Journal of Medicine
Neurology
Pediatrics
Therapeutic Drug Monitoring

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RESEARCH DESIGN and STATISTICAL ANALYSIS

The purpose of this assignment is to assess your ability to evaluate research papers based on the knowledge that you have gained from this class.

A published research article by Zinman et al.¹ will be available through WyoSakai (under resources—research design folder). Evaluate every aspect of this paper (SEE NEXT PAGE) based on the lecture material, textbook, readings and discussion sections. Include in the conclusion whether the article should be used for patient care.

This assignment will be turned in as two preliminary papers and a final paper (include your outline with each submission; this should change as you progress). The first version will cover all the aspects that have been covered in class to that point, while the second version will cover all parts of the paper. The first draft will also be peer reviewed. Versions are to be sent to the instructor via WyoSakai and comments will be given electronically. You can work on the paper as we progress in the class. This paper is to be 20-25 pages (any pages over 25 will result in a decrease in grade) plus the outline and references.

Your scientific study for your poster project will be used in the discussion sections because evaluation of research reports requires practice; bring copies to discussion beginning on October 7.

¹ Zinman B, Harris SB, Neuman J, Gerstein HC, Retnakaran RR, Raboud J, et al. Low-dose combination therapy with rosiglitazone and metformin to prevent type 2 diabetes mellitus (CANOE trial): a double-blind randomized controlled study. *Lancet* 2010; 376:103-11.
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RESEARCH DESIGN/STATISTICAL ANALYSIS

Name _____

SOURCE

Referenced
 Organization
 Peer-reviewed
 Primary
 Appropriate
 Impact

Sample size and delta
 Sample size
 Delta
 Alpha/beta error and power

TITLE

Length
 Bias
 Subtitle
 Attention catching

Alpha
 P-value definition
 Beta
 Power

AUTHORS

Expertise
 Affiliation
 Track record
 Funding

Variables
 Independent
 Dependent
 Data Scale
 Statistical tests
 Tests that are
 stated as being used
 in the article

ABSTRACT

Length
 Structured
 Bias
 Additional information

One- versus two-sided tests
 Two-sided tests
 One- sided

INTRODUCTION

Conclusion same
 Purpose-problem statement
 Research question
 Objectives
 Null hypothesis
 Alternative hypothesis
 Presence of any of the
 study's results
 Abbreviations and terms

Transparency
 Ethics

RESULTS

Discussion
 Actual sample size
 P values presented
 Actual data
 Actual statistics tests

METHODS:

Type of study
 Prospective
 Parallel
 Analytical/intervention
 Inclusion/Exclusion
 Inclusion
 Exclusion
 Validity
 Internal
 External
 Control/Blinding
 Control
 Blinding
 Randomization
 How and What

CI

GRAPHS AND TABLES

AUTHOR'S DISCUSSION/CONCLUSION

Limitations
 Supported by results
 Related to objective,
 hypothesis

REFERENCES

Current
 Primary
 Authors referenced self

STUDENT'S CONCLUSION

Overall Evaluation of Paper
 Supported by evidence in
 paper

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TAKE-HOME FOR FINAL EXAMINATION [EXAMPLE]

During the last week of classes, each student will be given the names of two drugs and a disease state. The assignment (1 page) is to identify and use at least one tertiary, secondary and primary reference that provides information on the drugs and their use for the disease state. At least one primary reference must be a study comparing the two drugs for the treatment of the disease. Proper citation is required. This paper (IN PARAGRAPH STYLE) will be due at the beginning of the final examination (the closed book examination will then follow).

EXAMPLE OF TAKE-HOME FINAL (each is different, but the format is the same)

NAME:

DUE: Thursday, December 10 at 10:15am
PHCY 6250: DRUG LITERATURE EVALUATION
FINAL EXAMINATION
FALL 2008
PART I -- TAKE HOME
50 pts of final examination

Use the following case to answer the questions. Use the Malone's Appendix 11-3 to reference your work (except add page numbers for the tertiary references).

This is Dr Mary Jones. Please call me back at the Alpine Medical Clinic in Smithville at 709/555-4999. The patient is female, 72 years old, and weighs 150 pounds. What is the effectiveness of Catapres as compared to Roxanol for patient-controlled analgesia?

What are the demographics in this case?

What is the background?

Classify the question.

Develop a strategy and conduct the search for the response to this question. You are to find one primary **study** that should answer the question (you do not have to answer the question).

Use a tertiary reference from the tertiary reference list [the chart] to identify the key words.
List the reference here (do not forget the page numbers).

Use Medline (via PubMed) as your secondary reference.
List your search strategy here (key words and Boolean logic):

What is the unique identifier (PMID) of the Medline article? [This is required; if not present the maximum for this (take home exam) part of the final exam will be 25 points]

Reference the study here (in Malone's Appendix 11-3 format; do not reference as a PubMed abstract):

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TEAM	Last Name	First Name
	1 Anderson	Opal
	1 Byra	Emily
	1 Hill	Lacey
	1 Mondrala	Matthew
	1 Wei	Jiyong
	2 Cohn	Stephanie
	2 Darrow	Pamela
	2 O'Day	Jennifer
	2 Proctor	Jordan
	2 Taulo-Millar	Vanessa
	3 Eboumbou	Monique
	3 Hurley	Stephanie
	3 Reilly	Jesse
	3 Steiner	Jennifer
	3 Thomas	Shannon
	4 Bunt	Bernadine
	4 Grooms	Maggie
	4 Kron	Michelle
	4 Scott	Benjamin
	4 Witmer	Brian
	5 Bonner	Juanita
	5 Hendricks	Jennifer
	5 Smith	Brandon
	5 Springer	Kara
	5 Wessman	Bryan
	6 Crump	Evan
	6 Gelatic	Randee
	6 Izzo	Christopher
	6 Williamson	Shannon
	7 Barnes	John
	7 Dana	Craig
	7 Lancaster	Kyle
	7 Lindgren	Adrianna
	7 Swann	Melinda
	8 Hansen	Ryan
	8 McCann	Sage
	8 Nemec	Erin
	8 Rearden	Cole
	8 Shepperson	Roberta
	9 Gjellum	Kimberly
	9 Gonzales-Graha	Sarah
	9 Henderson	Ryan
	9 McComb	Bailey
	9 Veltman	Stacey

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**PHCY 6250: Drug Literature Evaluation
CLASSIFICATION SYSTEM
(use this for this class, not Malone's version)**

1. ADVERSE EFFECTS
Can ____ cause ____?
Does ____ have ____ effects?
Is ____ a side effect of ____?
What are the side effects of ____?
2. AVAILABILITY
Is ____ available?
Is ____ still investigational?
Has ____ been approved?
Is ____ form of ____ available?
What strengths does ____ come in?
When will ____ be on the market?
Who makes ____?
Where can ____ be obtained?
3. BIOPHARMACEUTICS
Is ____ absorbed ____?
Where is ____ excreted?
Where is ____ metabolized?
What is the metabolism of ____?
What is the half-life of ____?
Is ____ bioequivalent to ____?
4. CONTRAINDICATIONS
Is ____ contraindicated in ____?
Can ____ be used in renal disease?
Can ____ be used in hepatic disease?
Can ____ be used in ____ disease?
5. DOSAGE
How often is ____ given?
What is the dose of ____?
What is the sodium or potassium content of ____?
What is the duration of treatment of ____?
When should ____ be given?
How often should ____ be given?
What is the pediatric (geriatric) dose of ____?
Mathematical conversions and compounding formulations.
6. DRUG LITERATURE EVALUATION
What is the best text for ____?
Where can ____ information be found?
What software for _____ is available?
References in sections
7. DRUG UTILIZATION
Is ____ effective?
Is ____ better than ____?
What is the best drug for ____?

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8. IDENTIFICATION
 What is ____?
 What is the formulation of ____?
 What is this capsule or tablet?
 What is the structure of ____?

9. LABORATORY VALUES
 What is the normal laboratory value for ____?
 How does ____ change the laboratory results of ____?
 How can ____ be analyzed?

10. LAW and ECONOMICS
 What does ____ cost?
 Is ____ scheduled (controlled)?
 What is the law concerning ____?
 Who can dispense ____?
 Are special conditions required to dispense ____?
 Need information on generic drugs.

11. PATIENT INSTRUCTIONS
 Any specific information that a patient should be told
 (e.g. what to do if a dose is missed).

12. PHARMACEUTICAL COMPATIBILITY (Intravenous Admixtures or compounded products)
 Can ____ be mixed with ____?
 Is ____ compatible with ____?
 Is ____ stable in ____?
 What is the stability of a compounded formulation.
 Why did ____ precipitate in ____?
 How long is ____ stable?

13. THERAPEUTIC ACTION
 What are the pharmacological effects of ____?
 What is the mechanism of action of ____?
 How does ____ act in treating ____?

14. THERAPEUTIC COMPATIBILITY (Drug Interactions)
 Does ____ interact with ____?
 Patient is taking _____, does a problem exist if _____ is prescribed?

15. THERAPEUTIC USE
 Can ____ be used for or in ____?
 Is ____ used in ____?
 Is ____ the same as ____ when used in ____?
 What is used to treat ____?

16. TOXICITY
 What is the treatment for ____ poisoning?
 What are the symptoms of ____ poisoning?
 Is ____ toxic?
 What is the toxic dose of ____?
 Can ____ be used in pregnancy?
 Can ____ be used in breastfeeding?

TERTIARY LITERATURE EVALUATION

(RATE THE REFERENCE BOOKS FROM 0-5 (5 IS BEST) FOR EACH OF THE CLASSIFICATIONS)

REFERENCES	ADVERSE EFFECTS	AVAILABILITY	BIOPHARMACEUTICS	CONTRAINDICATIONS	DOSAGE	DRUG LITERATURE EVALUATION	DRUG UTILIZATION	IDENTIFICATION	LABORATORY VALUES	LAW AND ECONOMICS	PATIENT INSTRUCTIONS	PHARMACEUTICAL COMPATIBILITY *	THERAPEUTIC ACTION	THERAPEUTIC COMPATIBILITY**	THERAPEUTIC USE	TOXICITY	OTHER
AMERICAN DRUG INDEX																	
AHFS DRUG INFORMATION																	
DRUG FACTS AND COMPARISONS																	
MARTINDALE: THE COMPLETE DRUG REFERENCE																	
PHYSICIANS' DESK REFERENCE: PDR																	
PHARMACOLOGICAL BASIS OF THERAPEUTICS																	
CURRENT MEDICAL DIAGNOSIS AND TREATMENT																	
CECIL MEDICINE																	
HARRISON'S PRINCIPLES OF INTERNAL MEDICINE																	
DRUG INTERACTIONS ANALYSIS AND MANAGEMENT																	
PHARMACOTHERAPY: A PATHOPHYSIOLOGIC APPROACH																	
REMINGTON: THE SCIENCE AND PRACTICE OF PHARMACY																	
STEDMAN 'S MEDICAL DICTIONARY																	

* Intravenous admixtures and compounded drugs ** Drug Interactions

August 24, 2010

Name _____

PHCY 6250: Drug Literature Evaluation
Fall 2010

Knowledge Broker Essay

Use this page to legibly comment on the video you just watched.

1. Tell me what you felt about his predictions in general.
2. Tell me which of the predictions is the most exciting to you.
3. Tell me which of the predictions is the most disturbing.

Turn the paper in before you leave the room. You may (if you need to) use the back of this page.

Then, considering this video, reflect on one of the four articles from Smithsonian Magazine (linked under the quiz function in WyoSakai. This one page reflection should be completed on-line as a short-answer quiz by Friday, August 27 at 4pm.

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PHCY 6250: Drug Literature Evaluation
Fall 2010

I, _____ (please print), understand that Linda Gore Martin, class instructor, may wish to use materials produced by me in this class. I understand that choosing not to allow my materials to be used will not affect my grade in this class. I further understand that any work (with the exception of names appearing in pictures) will have all names removed before use. No other person will have authority to use any of my materials.

I also understand that some of my work will be critiqued by other class members. I understand that I do not have the option to “opt out” of this evaluation, but also understand that the other students will not see any grades related to the work.

Please initial next to the appropriate options.

WRITTEN MATERIALS

___ Dr. Martin may put my written materials into a portfolio for assessment of her teaching by tenured faculty members or use my materials for appropriate workshops and meetings concerning teaching techniques including the reports to the ACPE (the accreditation organization).

___ Dr. Martin may NOT put my written materials into a portfolio for assessment of her teaching by tenured faculty members or use my materials for appropriate workshops and meetings concerning teaching techniques including reports to the ACPE (the accreditation organization).

PICTURES

___ Dr. Martin may use any pictures taken during class time featuring myself and/or my work for her portfolio, appropriate workshops and meetings concerning teaching techniques or posting on websites.

___ Dr. Martin may NOT use any pictures taken during class time featuring myself and/or my work for her portfolio, appropriate workshops and meetings concerning teaching techniques or posting on websites.

Signature _____

Date _____