

PHA5267: Principles of Pharmacoeconomics

Fall, 2020
[A-E Grading]

The purpose of this course is to introduce students to the fundamental methods of pharmacoeconomic analysis. Topics include the terminology used in pharmacoeconomics, research methods frequently used in pharmacoeconomics, and the role of pharmacoeconomics in the drug development process and health care decision making relevant to the practice of pharmacy. These principles will prepare the student for future coursework where the student will develop and implement individualized treatment plans, taking into consideration pharmacoeconomic factors.

Teaching Partnership Leaders

Hui Shao, M.D., Ph.D.

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Office: HPNP 3339

Phone: (352) 294-8323

Office Hours: 3PM – 4PM on the following days; 9-25 (Wed), 9-27 (Fri), 9-30 (Mon), and Oct 2 (Wed) [Attendance is optional via Zoom].

See Appendix A. for Course Directory of Faculty and Staff Contact Information.

Haesuk Park, Ph.D.

Email: hpark@cop.ufl.edu

Office: HPNP 3325

Phone: 352-273-6261

Entrustable Professional Activities

This course will prepare you to perform the following activities which the public entrusts a Pharmacist to perform:

12. Use evidence-based information to advance patient care.

ST12.1 Retrieve and analyze scientific literature to make a patient-specific recommendation.

Course-Level Objectives

Upon completion of this course, the student will be able to:

1. Describe fundamental concepts behind rationing and economic evaluation of health care.
2. Explain the role of pharmacoeconomics in the drug development process and health care decision making.

3. Identify the role of perspective in the selection of study parameters and their impact on study design, costs, and the interpretation of results.
4. Define and describe cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis.
5. Outline strengths and weaknesses of standard pharmacoeconomic approaches to assess the economic impact of pharmaceutical interventions, including cost-minimization analysis, cost-effectiveness analysis, cost-utility analysis, and cost-benefit analysis.
6. Explain decision making tools such as cost-effectiveness and cost-benefit analysis and discuss their application to resource allocation, how these tools are used in practice, and what factors limit their use or interpretation.
7. Summarize applications of economic, clinical, and humanistic outcomes to improve allocation of limited health care resources and interpret pharmacoeconomic studies.
8. Apply knowledge of pharmacoeconomic approaches for performing a decision analysis
9. Describe the importance of measuring health-related quality of life.
10. Define the methods for assessing the psychometric properties of health-related quality of life instruments, such as reliability, validity and responsiveness.
11. Critique the results of articles that use the following analyses that measure and estimate costs:
 - a. Cost-minimization analysis
 - b. Cost-effectiveness analysis
 - c. Cost-utility analysis
 - d. Cost-benefit analysis
 - e. Decision analysis

Course Pre-requisites

1. Completion of all Year 1 Pharm.D. program coursework including milestones.

Course Co-requisites

1. There are no co-requisites for this course.

Course Outline

See Appendix. Please routinely check your campus calendar and the Canvas course site for any messages about changes in the schedule including meeting dates/times, deadlines, and room changes.

Date and Time	Mod	Activity	Unit Topic	Cont act Time [hr.]	Faculty
	1	Module	Module 1: Course Overview		Hui Shao
9/24/20	1	Video Lecture	Watch: Introduction to the Course	0.5	Hui Shao
9/24/20	1	Optional/Suppl emental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second		

			Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 1		
9/24/20	1	Optional/Supplemental	Watch: Pharmacoeconomics in Drug Formulary Decisions (30:04)		
	2	Module	Module 2: Measuring and Estimating Cost and Critiquing Research Article		Hui Shao
9/24/20	2.1	Video Lecture	Watch: Measuring Costs	1	Hui Shao
9/24/20	2.2	Video Lecture	Watch: Critiquing Research Article	0.25	Hui Shao
9/24/20	2	Optional/Supplemental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 2 and 3		
	3	Module	Module 3: Cost-Minimization Analysis and Cost-Effectiveness Analysis		Hui Shao
9/24/20	3	Reading	Read: Estimated Cost-Effectiveness, Cost Benefit, and Risk Reduction Associated with an Endocrinologist-Pharmacist Diabetes Intense Medical Management "T... - PubMed - NCBI	0.5	Hui Shao
9/24/20	3.1	Video Lecture	Watch: Cost-Minimization Analysis	0.25	Hui Shao
9/24/20	3.2	Video Lecture	Watch: Cost-Effectiveness Analysis	1	Hui Shao
9/24/20	3	Optional/Supplemental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 4 and 5		
9/24/20	3	Optional/Supplemental	Read: Luce et al. "Methods of Cost-effectiveness analysis: Areas of consensus and debate." Clinical Therapeutics 1995. (UF Libraries)		

9/24/20	3	Optional/Supplemental	Read: Law et al. "Cost-effectiveness analyses of the conversion of patients with non-insulin-dependent diabetes mellitus from glipizide to glyburide and of the accompanying pharmacy follow-up clinic." Clinical Therapeutics 1995. (UF Libraries)		
9/24/20	3	Optional/Supplemental	Read: Attanasio et al. "Cost-minimization analysis of simvastatin vs. atorvastatin for maintenance therapy in patients with coronary or peripheral vascular disease." Clinical therapeutics 2001. (UF Libraries)		
	4	Module	Module 4: Cost-Utility Analysis		Hui Shao
9/25/20	4	Reading	Read: The Costs and Cost-effectiveness of Collaborative Care for Adolescents With Depression in Primary Care Settings: A Randomized Clinical Trial. - PubMed - NCBI https://www.ncbi.nlm.nih.gov/pubmed/27654449	0.5	Hui Shao
9/25/20	4.1	Video Lecture	Watch: Lecture 4.1: Cost Utility Analysis Part 1	1	Hui Shao
9/25/20	4.2	Video Lecture	Watch: Lecture 4.2: Cost Utility Analysis Part 2	0.5	
9/25/20	4	Optional/Supplemental	Read: Athan et al. "Cost-effectiveness of routine and low-cost CD4 T-cell count compared with WHO clinical staging of HIV to guide initiation of antiretroviral therapy in resource-limited settings." AIDS 2010. (UF Libraries)		
9/25/20	4	Optional/Supplemental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second		

			Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 6		
9/25/20	1-4	Quiz Online Graded	Assignment: Online Quiz 1 - Covering Article 1: "Within-Trial Cost-Effectiveness of Lifestyle Intervention or Metformin for the Primary Prevention of Type 2 Diabetes" Diabetes Care 2003 Sep; 26(9): 2518-2523.		Hui Shao
	5	Module	Module 5: Cost-Benefit Analysis		Hui Shao
9/25/20	5	Reading	Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 7	1.75	Hui Shao
9/25/20	5	Reading	"A Pharmacy-Based Health Promotion Programme in Hypertension" Cote et al. Pharmacoeconomics 2003; 21 (6): 415-428.	0.75	Hui Shao
9/25/20	5.1	Video Lecture	Watch: Lecture 5.1: Cost Benefit Analysis Part 1	1	Hui Shao
	6	Module	Module 6: Health-Related Quality of Life		Hui Shao
9/25/20	6	Video Lecture	Watch: Lecture 6.1: Health-Related Quality of Life	1.25	Hui Shao
9/25/20	6	Optional/Supplemental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 8		Hui Shao
	7	Module	Module 7: Decision Analysis		Hui Shao
9/25/20	7.1	Video Lecture	Watch: Lecture 7.1: Decision Analysis	1	Hui Shao
9/25/20	7	Optional/Supplemental	Read: Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013; ISBN -10 number: 1451175930: Chapter 9		Hui Shao
9/25/20	7	Optional/Supplemental	Read: Jackson et al. "An employer-based cost-benefit analysis of a novel		Hui Shao

			pharmacotherapy agent for smoking cessation." Journal of Occupational and Environmental Medicine 2007		
9/28/20 @ 10:40-12:35	1-7	Active Learning Session--VC	Active Learning Session 1 (2 hours)		Hui Shao
	1-7	Quiz In-class Graded	RAT 1: No reading materials required.		Hui Shao
	1-7	In-class Activity	ALS 1: Application Activity	1	Hui Shao
9/30/20 @10:40-12:35	1-7	Active Learning Session--VC	Active Learning Session 2 (2 hours)	2	Hui Shao
	1-7	Quiz In-class Graded	RAT 2 - Covering Article 2: "Comprehensive health management pharmacist-delivered model: impact on healthcare utilization and costs." The American Journal of Managed Care, 31 Oct 2019, 25(11):554-560.		Hui Shao
	1-7	In-class Activity	ALS 2: Application Activity		Hui Shao
10/01/20 @2:00-4:00	1-7	Exam	Final Exam (2 hours)		Hui Shao
				14.25	

Required Textbooks/Readings

- Rascati Karen L. Essentials of Pharmacoeconomics, Second Edition, Lippincott Williams & Wilkins, 2013;ISBN- 13: 978-1451175936; ISBN -10 number: 1451175930
 - Available via HSC Library
- Article 1: Within-Trial Cost-Effectiveness of Lifestyle Intervention or Metformin for the Primary Prevention of Type 2 Diabetes" Diabetes Care 2003 Sep; 26(9): 2518-2523.
 - Available on PubMed
- Article 2: Comprehensive health management pharmacist-delivered model: impact on healthcare utilization and costs." The American Journal of Managed Care, 31 Oct 2019, 25(11):554-560.
 - Available on PubMed

Use [UF VPN to access UF Libraries Resources](#) when off-campus.

The UF HSC library staff can assist you with questions or issues related to accessing online library materials. For assistance contact your College of Pharmacy librarian or visit the [HSC Library Website](#) at this URL:<http://www.library.health.ufl.edu/>

Suggested Textbooks/Readings

1. Attanasio et al. "Cost-minimization analysis of simvastatin vs. atorvastatin for maintenance therapy in patients with coronary or peripheral vascular disease." Clinical therapeutics 2001.
2. Luce et al. "Methods of Cost-effectiveness analysis: Areas of consensus and debate." Clinical Therapeutics 1995.
3. Law et al. "Cost-effectiveness analyses of the conversion of patients with non-insulin-dependent diabetes mellitus from glipizide to glyburide and of the accompanying pharmacy follow-up clinic." Clinical Therapeutics 1995.
4. Athan et al. "Cost-effectiveness of routine and low-cost CD4 T-cell count compared with WHO clinical staging of HIV to guide initiation of antiretroviral therapy in resource-limited settings." AIDS 2010.
5. Jackson et al. "An employer-based cost-benefit analysis of a novel pharmacotherapy agent for smoking cessation." Journal of Occupational and Environmental Medicine 2007

Other Required Learning Resources

None

Materials & Supplies Fees

None

Student Evaluation & Grading

Evaluation Methods and How Grades are calculated.

[The Canvas© gradebook will be set-up using the percentages below to compute the grade.]

Assessment Item	Grade Percentage
Online Quiz [1]	5%
iRAT [2]	10%
tRAT [2]	15%
Problem-Solving Activity	10%
Final Exam	60%
Total	100%

Table 1.1 Evaluation and Grading Above

Table 1.2 grading scale

Percentage	Letter Grade
92.50-100%	A
89.50-92.49%	A-
86.50-89.49%	B+
82.50-86.49%	B
79.50-82.49%	B-
76.50-79.49%	C+
72.50-76.49%	C
69.50-72.49%	C-

66.50-69.49%	D+
62.50-66.49%	D
59.50-62.49%	D-
< 59.50%	E

Rounding of grades:

Final grades in Canvas will be rounded to the 2nd decimal place. If the decimal is X.495 or higher, Canvas will round the grade to X.50. The above scale depicts this policy and grades are determined accordingly. Grade assignment is made using this policy and NO EXCEPTIONS will be made in situations where a student's grade is "close."

Makeup Assignments

Makeup assignments may be required for excused absences from all Active Learning Sessions. Students will be required to complete the makeup assignment within one week of the missed session.

Educational Technology Use

The following technology below will be used during the course and the student must have the appropriate technology and software.

1. ExamSoft™ Testing Platform
2. Canvas™ Learning Management System

For technical support, navigate to [Educational Technology and IT Support Contact Information](#) at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/technical-help/>

Pharm.D. Course Policies

The Policies in the following link apply to this course. Review the General [Pharm.D. Course Policies](#) carefully, at this URL: <http://curriculum.pharmacy.ufl.edu/current-students/course-policies/>

Course Evaluation Process

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at <https://gatorevals.aa.ufl.edu/students/>. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via <https://ufl.bluera.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

Appendix A. Course Directory

Teaching Partnership Leader/Course Director(s):

Hui Shao, M.D., Ph.D.

Email: hui.shao@cop.ufl.edu

Office: HPNP 3339

Phone: (352) 294-8323

Haesuk Park, Ph.D.

Email: hpark@cop.ufl.edu

Office: HPNP 3325

Phone: 352-273-6261

Questions to Ask:

- Concerns about performance
- Guidance when there are performance problems (failing grades)
- General questions about content

Instructional Designer:

Name: Julie Thomas, MEd

- Email: julie.thomas@ufl.edu
- Office: HPNP 4309
- Phone: 352-273-6284

Academic Coordinator Gainesville Campus:

Name: Misti Merrill

- Email: mmerrill@cop.ufl.edu
- Office: HPNP 4312
- Phone: 352-294-5617

Absence/Tardy Email: absent2pd@cop.ufl.edu (Visit the [course policy site](#) for instructions)

Educational Coordinators

Name: McKenzie Wallen

- Email: mwallen@cop.ufl.edu
- Office: Jacksonville Campus

Name: Iverta Allen

- Email: iallen1@cop.ufl.edu
- Office: Orlando Campus

Questions to Ask:

- Issues related to course policies (absences, make up exams, missed attendance)
- Absence/tardy requests (Only the Academic Coordinator handles absence requests)
- Questions about dates, deadlines, meeting place
- Availability of handouts and other course materials
- Assignment directions
- Questions about grade entries in gradebook (missing grades, incorrect grade)
- Assistance with ExamSoft® (Distance campus students may contact the Educational
- Coordinator for use of Examplify and assistance during exams. The Academic Coordinator is the contact person for issues related to grading and posting of ExamSoft grades.