

GUJARAT TECHNOLOGICAL UNIVERSITY
PHARM.D (PB)
 2nd Year

Subject Name: PHARMACOEPIDEMOLOGY AND PHARMACOECONOMICS
Subject Code: 828902

Scope: This course is designed to impart knowledge regarding various methods and applications of pharmacoepidemiology and pharmaco-economics in drug safety monitoring, drug approval and regulations

Objectives: Upon completion of this course, it is expected that students will be able to -

- a. Understand drugs use pattern and their outcome measures
- b. Conduct pharmaco-epidemiological studies
- c. Adopt the tools effectively in evaluating risk and benefit of therapy
- d. Conduct pharmaco-economic studies and evaluate the cost-benefit ratio

Teaching scheme and examination scheme:

Teaching Scheme				Evaluation Scheme				Total Marks
Theory	Tutorial	Practical	Total	Theory		Practical		
				External	Internal	External	Internal	
3	1	0	4	70	30	0	0	100

Sr.	Topic	Hr
1.	Pharmacoepidemiology : Definition and scope: Origin and evaluation of pharmacoepidemiology need for pharmacoepidemiology, aims and applications.	06
	Measurement of outcomes in pharmacoepidemiology Outcome measure and drug use measures Prevalence, incidence and incidence rate. Monetary units, number of prescriptions, units of drugs dispensed, defined daily doses and prescribed daily doses, medication adherence measurement	06
	Concept of risk in pharmacoepidemiology Measurement of risk, attributable risk and relative risk, time-risk relationship and odds ratio	06
	Pharmacoepidemiological methods Includes theoretical aspects of various methods and practical study of various methods with the help of case studies for individual methods Drug utilization review, case reports, case series, surveys of drug use, cross – sectional studies, cohort studies, case control studies, case – cohort studies, meta – analysis studies, spontaneous reporting, prescription event monitoring and record linkage system.	22
	Sources of data for pharmacoepidemiological studies Ad Hoc data sources and automated data systems.	04
	Selected special applications of pharmacoepidemiology Studies of vaccine safety, hospital pharmacoepidemiology, pharmacoepidemiology and risk management, drug induced birth defects.	08
2.	Phrmacoconomics:	
	Definition, history, needs of pharmaco-economic evaluations	02

	Role in formulary management decisions	02
	Pharmacoeconomic evaluation Outcome assessment and types of evaluation Includes theoretical aspects of various methods and practical study of various methods with the help of case studies for individual methods: Cost – minimization, cost- benefit, cost – effectiveness, cost utility	16
3.	Applications of Pharmacoeconomics	03
	Software and case studies (assignment discussion)	02

Text books:

1. Pharmacoepidemiology and Pharmacoeconomics: Concepts and Practice. K G Revikumar. Publisher- Pharma Med Press. Latest edition.
2. Textbook of Pharmacoepidemiology. Brian L. Strom, Stephen E. Kimmel, Sean Hennessy. Publisher- John Wiley & Sons. Latest edition.
3. A textbook of Clinical Pharmacy Practice: Essential concepts and skills. G Parthasarathi, Karin Nyfort-Hansen, Milap C. Nahata. Publisher- Orient Longman Pvt. Ltd. Latest edition.

Reference Books:

1. Pharmacoeconomics and outcomes: Applications for patient care, case studies. Graer D W, Lee J, OdomT D, et al. Publisher- Lippincott Williams and Wilkins. Latest edition.
2. Introduction to Applied Pharmacoeconomics. F. Randy Vogenberg. Publisher- McGraw-Hill. Latest edition.
3. Pharmacoepidemiology. Brian L Storm. Publisher- John Wiley and Sons, Ltd. Latest edition.
4. Clinical epidemiology- How to do clinical Practice Research. Brian Haynes, David L Sachett. Publisher- Lippincott Williams and Wilkins. Latest edition.
5. Park's textbook of Preventive and social medicine. K Park. Bhanot Publishers. Latest edition.

Other references:

- WHO website (for epidemiology data)