



# School of Pharmaceutical Sciences & Technology

Curriculum for  
Fellowship Program in

# Health Economics & Outcome Research



## Malla Reddy Vishwavidyapeeth

(Deemed to be University)

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**Course Title:** HEALTH ECONOMICS & OUTCOME RESEARCH

**Course Type:** FELLOWSHIP

**Duration:** 360 Hours (can be structured as 24 Credits)

**Mode:** Lectures, Practicals/Hands-on, Project

### Overview

The Fellowship in Health Economics and Outcomes Research (HEOR) is an intensive postgraduate program aims to provide advanced analytical, economic, and real-world evidence and practical evidence production abilities necessary for evaluating the value of healthcare interventions. The program supports regulatory, reimbursement, pricing, and policy decision-making by integrating health economics, pharmacoeconomics, outcomes research, real-world evidence (RWE), and health technology assessment (HTA). The fellowship gives participants the skills they need to assess the clinical, economic, and humanistic results of pharmaceuticals, medical devices, diagnostics, and public health initiatives.

### Objectives:

Upon completion of the course, the fellow shall be able to:

- ❖ Understand the structure and functioning of healthcare systems and markets
- ❖ Apply economic principles to healthcare decision-making
- ❖ Conduct economic evaluations of drugs, devices, and health programs
- ❖ Analyze healthcare costs, outcomes, and resource utilization
- ❖ Interpret and apply Health Technology Assessment (HTA) methodologies
- ❖ Conduct pharmacoeconomic and outcomes-based evaluations of healthcare technologies

### Course Outcome:

CO No.	Course Outcome
CO1	Explain healthcare systems, financing mechanisms, and the role of health economics in policy and decision-making
CO2	Apply core economic concepts such as demand, supply, opportunity cost, and market failure in healthcare.
CO3	Conduct and interpret pharmacoeconomic evaluations
CO4	Analyze Outcome Research in relation to clinical, economical and patient related reports

### Teaching & Learning Methods:

The program follows an application-oriented approach using interactive lectures, real-world case studies, practical data analysis sessions, group discussions, assignments, policy reviews, and a capstone project. Exposure to national and international HTA frameworks and payer perspectives is emphasized.



## **Syllabus**

**Theory - 10 Credits (150 Lecture Hours)**

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### **Module 1: Introduction to Health Economics & Healthcare Systems (45 hours)**

- ❖ Basic concepts of economics: scarcity, choice, opportunity cost
- ❖ Demand and supply in healthcare markets
- ❖ Healthcare as an economic good; market failure and externalities
- ❖ Overview of global healthcare systems (Beveridge, Bismarck, mixed models)
- ❖ Indian healthcare system: public vs private sector
- ❖ Health financing mechanisms and insurance models
- ❖ Role of health economics in policy and decision-making

### **Module 2: Costs, Outcomes & Economic Evaluation Methods (45 hours)**

- Identification, measurement, and valuation of healthcare costs
- Direct, indirect, intangible, and opportunity costs
- Health outcomes: clinical outcomes, quality of life, utility measures
- Cost-minimization analysis (CMA)
- Cost-effectiveness analysis (CEA)
- Cost-utility analysis (CUA) and QALYs, Cost-benefit analysis (CBA)
- Incremental cost-effectiveness ratio (ICER) and decision rules

### **Module 3: Pharmacoeconomics & Health Technology Assessment (30 hours):**

- ❖ Principles of pharmacoeconomics
- ❖ Economic evaluation of pharmaceuticals and biologics
- ❖ Health Technology Assessment (HTA): scope and methodology
- ❖ HTA agencies and frameworks (NICE, ICER, CADTH, HTAIn)
- ❖ Evidence requirements for HTA submissions
- ❖ Ethical and equity considerations in HTA

### **Module 4: Outcomes Research & Real-World Evidence (30 hours):**

- ❖ Introduction to Outcomes Research and HEOR
- ❖ Types of outcomes: clinical, economic, and humanistic (ECHO model)
- ❖ Patient-Reported Outcomes (PROs) and Health-Related Quality of Life (HRQoL)
- ❖ Outcomes measurement tools and instruments
- ❖ Real-World Evidence (RWE): data sources (claims, registries, EHRs)
- ❖ Observational study designs in outcomes research, Comparative effectiveness research (CER)

**Practical/Hands-on Component: 8 Credits (120 Lab Hours)**

#### **1. Healthcare Data & Cost Analysis**



- ❖ Identification and classification of healthcare costs
- ❖ Use of healthcare utilization and cost datasets
- ❖ Cost calculations using spreadsheet-based models

### 2. Economic Evaluation Modeling

- ❖ Building simple decision-tree models
- ❖ Cost-effectiveness and cost-utility modelling
- ❖ Calculation and interpretation of ICER.
- ❖ Sensitivity analysis (one-way and scenario analysis)

### 3. HTA & Policy Evaluation Exercises

- ❖ Critical appraisal of published pharmaco-economic studies
- ❖ HTA dossier structure and evidence review
- ❖ Budget impact analysis for selected healthcare technologies
- ❖ Policy-based case studies (Indian and global context)

### Project: 6 Credits (90 Self Study/Research Hours)

A mandatory project involves conducting an independent health economic evaluation or HTA-oriented analysis. Projects may include cost-effectiveness analysis of a pharmaceutical product, budget impact analysis for a public health intervention, or economic assessment supporting reimbursement decisions. Submission includes a written report and presentation.

#### References:

1. Drummond MF, Sculpher MJ, Claxton K, Stoddart GL, Torrance GW. *Methods for the Economic Evaluation of Health Care Programmes*. Oxford University Press
2. Gold MR, Siegel JE, Russell LB, Weinstein MC. *Cost-Effectiveness in Health and Medicine*. Oxford University Press
3. Berger ML, et al. *Health Care Cost, Quality, and Outcomes*. ISPOR
4. Morris S, Devlin N, Parkin D. *Economic Analysis in Health Care*. Wiley
5. McGuire A, Henderson J, Mooney G. *The Economics of Health Care*. Routledge
6. ISPOR Task Force Reports
7. NICE Guide to the Methods of Technology Appraisal
8. HTAIn (India) Methodological Guidelines