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BA Economics Honours | Semester V | Calicut University

Health Economics

Course Code: ECO5EJ305 • Module 1

Module I: Introduction to Health Economics

Health Economics applies economic theory and econometric tools to the analysis of health status, healthcare delivery, health insurance markets, and healthcare resource allocation. Kenneth Arrow's seminal 1963 paper, *"Uncertainty and the Welfare Economics of Medical Care,"* established health economics as a distinct discipline by demonstrating pervasive market failures inherent in healthcare markets.

Unit 1, 2 & 3: Scope and Essential Features of Health Economics

Healthcare markets violate standard neoclassical market assumptions:

- **Pervasive Uncertainty:** Onset of illness is unpredictable, and therapeutic treatment outcomes are stochastic.
- **Asymmetric Information:** Physicians possess vastly superior medical diagnostic and therapeutic knowledge compared to patients.
- **Extensive Externalities:** Communicable diseases generate negative externalities; vaccination and sanitation create positive herd-immunity externalities.
- **Absence of Price Transparency:** Medical services are rarely priced transparently before treatment delivery.

Unit 4, 5, 6 & 7: Health Status Indicators and Value of Life

Health metrics used in global epidemiology and health economics:

- **Vital Mortality Metrics:** Infant Mortality Rate (IMR - deaths under 1 year per 1,000 live births), Under-Five / Child Mortality Rate (CMR), and Maternal Mortality Ratio (MMR - maternal deaths per 100,000 live births).
- **Summary Composite Measures of Population Health:**
  - **DALY (Disability-Adjusted Life Year):** One DALY represents the loss of the equivalent of one year of full health:

    Disability-Adjusted Life Years (DALY)

    $$DALY = YLL + YLD$$

    Where: $DALY$ = Total burden of disease, computed as Years of Life Lost due to premature mortality (YLL) plus Years Lived with Disability (YLD).

    where YLL is Years of Life Lost due to premature mortality and YLD is Years Lived with Disability.
  - **QALY (Quality-Adjusted Life Year):** Combines quantity and quality of life generated by a medical intervention:

Quality-Adjusted Life Years (QALY)

$$QALY = \sum_{t=1}^{T} q_t \times (1 + r)^{-t}$$

Where: $QALY$ measures total health gains weighted by utility quality $q_t \in [0, 1]$ discounted over expected lifespan T at discount rate r.

where $q_t \in [0, 1]$ represents the health-related quality of life weight (0 = death, 1 = perfect health).

- **Value of a Statistical Life (VSL):** Quantifies the monetary trade-off that individuals are willing to make between money and small changes in mortality risk, derived from hedonic wage-risk studies.

Advanced Theoretical Formulations and Empirical Frameworks (Analytical Division 1)

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Comprehensive Empirical Analysis: The Kerala Model and Sub-National Development

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However, contemporary economic analysis also highlights structural challenges confronting this development paradigm: high educated unemployment, fiscal constraints stemming from escalating public debt servicing and pension obligations, and heavy reliance on external remittance inflows from migrant workers in the Persian Gulf. Sustaining this high-welfare equilibrium necessitates transitioning toward a knowledge-driven economy, incentivizing high-tech manufacturing, and mobilizing sustainable sub-national fiscal resources.

Policy Synthesis and Analytical Evaluation

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