Introduction to Health Economics: What Every Health Professional Should Know

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Dedication

To the future health leaders, educators, and practitioners—
may you find in health economics not just numbers,
but a compass to guide fairness, compassion,
and equity in healthcare for all.

Acknowledgements

This book is dedicated to the learners, educators, and healthcare professionals who continue to inspire my work. Writing it has been both a journey of reflection and a reminder of why teaching and learning in health economics matter so deeply.

I am grateful to my students, whose curiosity and determination push me to explain difficult concepts in ways that are practical and meaningful. You remind me that knowledge is most powerful when it empowers others.

To my colleagues and mentors, thank you for your guidance and for creating spaces where ideas could grow and be challenged. Your encouragement has been invaluable.

Finally, to my family and loved ones; your patience, love, and constant support made this work possible. This book carries a piece of each of you in its pages.

Preface

The journey of writing this book began in the classroom, where students often asked: "*Why should we study economics in health*?" The answer became clear because every decision in healthcare, from building hospitals to introducing new medicines, involves choices about how to use limited resources.

This book, *Intro to Health Economics: What Every Health Professional Should Know*, was written to make health economics approachable, practical, and relevant to our local context. While global textbooks provide excellent foundations, there is a need for learning materials that connect theory with the realities of healthcare systems in Malaysia and the surrounding region.

The chapters are intentionally structured to start with the basics, then guide readers through methods of analysis, and finally show how these principles inform real-world policies. To keep learning active and engaging, interactive elements such as case discussions, reflective tasks, and H5P activities are included.

This book is not only for students but also for health professionals, managers, and policymakers who want to make better decisions in a resource-constrained world. It is my hope that readers will find it both a learning tool and a source of inspiration to apply economics in ways that improve equity, efficiency, and health outcomes for all.

I am grateful to my students, colleagues, and institution for their encouragement and feedback, which shaped this work. Most importantly, I dedicate this book to the learners who continue to challenge us to think critically and to find innovative solutions for today's health challenges.

Health economics is often seen as a complicated subject filled with numbers, graphs, and formulas. Yet at its heart, it is about something simple and essential: making the best use of limited resources to improve people's health. Every health professional whether working in clinics, hospitals, research, or policy, makes decisions that are influenced by economics, even if they don't always realize it.

This open book, *Intro to Health Economics: What Every Health Professional Should Know*, was created to make health economics clear, practical, and relevant. Instead of heavy theory, it focuses on real-world applications that health professionals face daily, from deciding which treatments to prioritize, to understanding how governments fund health programs, to exploring why equity matters just as much as efficiency.

Designed with students and practitioners in mind, the chapters include simple explanations, local and global examples, and interactive activities to bring concepts to life. The aim is not to train readers to become economists, but to give them a toolkit: a way of thinking critically about costs, benefits, and choices in healthcare.

Ultimately, health economics is not just about numbers but it is about people. It helps us ask tough questions: *How do we provide the best care for the most people? How do we balance fairness with limited budgets? How do we design policies that truly make a difference?*

This book invites you to explore those questions. It is written to guide, inspire, and empower you as a future health leader to make decisions that matter especially for patients, communities, and society.

Learning Objectives

By the end of this book, you will be able to:

- Understand what **health economics** is and why it matters in healthcare.
- Learn how to make better choices when resources are limited.
- Discover the main ways we compare healthcare costs and benefits

Chapter 1: Introduction to Health Economics

This chapter introduces the field of health economics and explains why it matters for healthcare professionals. It explores how limited resources, growing costs, and competing priorities shape the way healthcare decisions are made. By understanding these foundations, readers will appreciate how economics provides tools to balance quality, cost, and fairness in healthcare.

1.1 What is Health Economics?

Health economics is a branch of social science that studies how limited resources are used to produce, distribute, and consume healthcare services. Its main concern is how to maximize health gains given the reality of scarce resources. It focuses on **efficiency, effectiveness, value, and behavior** in health and healthcare.

In simpler terms, health economics tries to answer three big questions:

- **What healthcare services should be provided?**
- **Who should receive them?**
- **How should they be paid for?**

These questions are critical because every healthcare system faces limited resources. Choosing to spend money on one service always means less money is available for another. This is known as **opportunity cost**.

1.2 Why Health Economics Matters in Healthcare

Healthcare professionals often prioritize clinical effectiveness—ensuring patients receive the best treatment. However, economic considerations shape decisions at all levels:

- **Clinical level** – Doctors must decide between treatments, weighing benefits against costs. For example, is a new drug worth the higher price compared to an older alternative?
- **Organizational level** – Hospitals and clinics must deliver safe, equitable care while staying within budget.
- **Policy level** – Governments face tough choices: how much funding to direct toward healthcare compared to other priorities like education or infrastructure?

By understanding health economics, healthcare professionals can:

- Advocate for fair and efficient use of resources.
- Contribute to management and policy decisions.
- Appreciate why health reforms and system changes are necessary.

Some key reasons health economics is central to modern healthcare:

- **Resource Scarcity & Opportunity Cost** – Funding one service means another is left unfunded.
- **Rising Health Expenditure** – Healthcare consumes a growing share of GDP worldwide (e.g., around USD 8,000 per person annually in Canada).
- **Maximizing Health Gains** – The goal is to achieve the greatest possible health improvement from available resources.
- **Alignment with the Quadruple Aim** – Improving population health, enhancing patient experience, supporting workforce well-being, and reducing costs.

- **Role for Health Professionals** – Economic literacy helps clinicians, managers, and policy-makers make evidence-based, cost-effective choices.

1.3 How Health Economics Differs from General Economics

Healthcare differs from other markets in several important ways:

- **Uncertainty** – Patients and providers cannot always predict when illness will occur or how effective treatment will be.
- **Information Asymmetry** – Patients rely heavily on healthcare professionals for advice, unlike consumers in typical markets who make informed choices themselves.
- **Ethical Considerations** – Many societies view healthcare as a basic right, where fairness and equity are just as important as efficiency.
- **Market Imperfections** – The healthcare system is shaped by regulation, subsidies, and insurance, meaning it does not function like a free competitive market.
- **Insurance & Price Distortion** – Health insurance shields patients from full costs, which can change demand patterns.
- **Altruism & Non-Market Institutions** – Not-for-profits, charities, and professional ethics influence healthcare decisions in ways not common in other industries.
- These factors make health economics unique, requiring tailored methods and frameworks beyond those of general economics.

1.4 The Role of Health Professionals in Understanding Economics

Healthcare professionals are not only caregivers, they are also **resource managers, decision-makers, and advocates**. By applying economic thinking, they can:

- Evaluate treatment options beyond clinical outcomes.
- Communicate effectively with managers, policymakers, and funders.
- Ensure care is cost-effective and patient-centred.
- Support equitable access to essential services.

As healthcare systems confront limited budgets, rapid technological advancements, and ageing populations, economic literacy has become essential. It is no longer optional, but a core competency for effective healthcare leadership.

1.5 Summary

Health economics offers a systematic framework for making informed and rational choices about the allocation of scarce resources in healthcare. For professionals, it serves as an essential tool to balance quality of care, financial sustainability, and equity. By integrating economic principles into health decision-making, we can ensure that healthcare remains effective, sustainable, and equitable for all.

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Chapter 2: Demand and Supply in Healthcare

Healthcare does not operate like ordinary markets. When people seek healthcare, it is often out of necessity rather than choice, and when providers deliver services, their ability depends on resources, workforce, and regulations. This chapter introduces the concepts of **demand and supply in healthcare**, exploring the unique factors that shape them, such as income, insurance, accessibility, technology, and government policies. It also explains why healthcare markets behave differently from typical markets and highlights common **market failures**—like information gaps and externalities—that make healthcare economics more complex. By understanding these dynamics, readers will gain insight into how health systems can balance patient needs with available resources to ensure fair and sustainable care.

2.1 Understanding Demand in Healthcare

Demand in healthcare refers to the quantity of healthcare services that individuals are both willing and able to use at a given price, within a specific period. Unlike other goods and services, healthcare demand is unique because it is often **need-driven** rather than purely desire-driven. People usually do not "want" to consume healthcare unless they are ill, injured, or aiming to prevent illness through check-ups or vaccination.

Several key factors shape demand in healthcare:

- **Price of services** – Higher costs may discourage people from seeking care, especially if they lack insurance coverage.
- **Income level** – Wealthier individuals often have more choices,

including access to private healthcare.

- **Perceived need** – Knowledge, cultural beliefs, and personal health perceptions affect how often people seek care.
- **Accessibility** – The availability of nearby clinics, hospitals, and transportation strongly influences demand.
- **Health insurance coverage** – Insurance reduces out-of-pocket payments, encouraging greater use of services.
- **Public health campaigns** – Awareness efforts often increase preventive healthcare use, such as screenings or vaccinations.

Examples

During a flu outbreak, demand for vaccination rises sharply, not necessarily because people "want" it, but because they perceive an increased need.

2.2 Understanding Supply in Healthcare

Supply in healthcare refers to the quantity of services that providers are willing and able to offer at different prices within a certain timeframe. The supply side depends on resources, workforce, and regulations, which determine how much care can realistically be delivered.

Key factors influencing supply include:

- **Healthcare workforce** – The number of doctors, nurses, and allied health professionals determines service capacity.
- **Facilities and equipment** – Hospitals, laboratories, and

diagnostic tools expand available care.

- **Technology** – Innovations such as telemedicine and electronic health records increase efficiency and availability.
- **Government regulation** – Policies on licensing, standards, and subsidies directly shape service provision.
- **Costs of production** – Expenses such as staff salaries, medicines, and utilities affect how much care providers can offer.

Examples

A shortage of nurses may reduce hospital capacity even if demand for services remains high.

2.3 The Uniqueness of Healthcare Markets

Unlike traditional markets, healthcare does not follow simple supply-and-demand laws because of several unique characteristics:

- **Information asymmetry** – Patients rarely have full knowledge of their health needs and rely heavily on providers.
- **Provider influence** – Doctors and hospitals can create demand by recommending additional tests or treatments.
- **Price opacity** – Patients often do not know the true cost of services, particularly with insurance involvement.
- **Government intervention** – Subsidies, regulations, and public health programs significantly shape market forces.

2.4 Market Failures in Healthcare

Market failure occurs when free-market forces do not result in efficient or equitable healthcare allocation. Common examples include:

- **Externalities** – For instance, vaccination benefits not only the individual but also the wider community (positive externality).
- **Monopolies** – A pharmaceutical company with exclusive rights to a life-saving drug can set excessively high prices.
- **Information asymmetry** – Patients may overuse or underuse services due to lack of full information, relying heavily on provider recommendations.

2.5 Summary

Understanding demand and supply in healthcare is essential for policymakers, providers, and patients. Demand highlights what services people need and are willing to use, while supply reflects what healthcare systems are able to provide. A balance between these forces is critical to ensure efficiency, equity, and sustainability in health systems.

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Chapter 3: Economic Evaluation – A Core Tool

This chapter explains how economic evaluation helps decision-makers compare healthcare interventions. It introduces the main approaches which are cost-effectiveness, cost-utility, cost-benefit, and cost-minimization analysis and shows how each method guides choices about which interventions provide the greatest value for money. The focus is on practical understanding rather than complex math.

3.1 What is Economic Evaluation?

Economic evaluation is the formal **comparative analysis of alternative interventions in terms of both costs (resources used) and consequences (outcomes achieved).** It enables decision-makers to judge the "value for money" of healthcare options and to allocate limited resources more efficiently.

There are four main approaches to economic evaluation, each differing in how outcomes are measured:

- **Cost-Minimization Analysis (CMA):** Applied only when outcomes are proven to be equivalent across interventions. The analysis focuses solely on identifying the least costly option.
- **Cost-Benefit Analysis (CBA):** Measures both costs and outcomes in monetary units. While theoretically useful, it is less common in healthcare due to difficulties in assigning monetary values to health outcomes such as life-years gained. Results may be expressed as a **net present value** or a **benefit-to-cost ratio**.
- **Cost-Effectiveness Analysis (CEA):** Evaluates outcomes in

natural health units, such as symptom-free days, cases averted, or life-years gained. Results are often presented as an **Incremental Cost-Effectiveness Ratio (ICER)**.

- **Cost-Utility Analysis (CUA):** The most widely accepted approach, particularly by health technology assessment (HTA) agencies. It measures outcomes in **Quality-Adjusted Life Years (QALYs)**, which combine survival length with quality of life (scored 0 = death, 1 = perfect health). QALYs allow comparisons across different interventions.
- **Cost-Consequence Analysis (CCA):** CCA presents costs and a range of outcomes in a disaggregated format without combining them into a single ratio like ICER. This allows decision-makers to weigh trade-offs explicitly.

3.2 Understanding Costs in Healthcare

In healthcare economics, "cost" refers to the value of resources consumed in delivering services or interventions. Costs are generally grouped into three categories:

- **Direct Medical Costs** – Expenses directly associated with patient care.

- **Direct Non-Medical Costs** – Expenses incurred by patients and families that are directly related to receiving healthcare

but are not medical in nature.

Examples

transportation to health facilities, accommodation for long-distance treatments, meals during hospital stays, and caregiving expenses.

- **Indirect Costs** – Productivity losses due to illness, disability, or premature death.

Examples

missed workdays, reduced earning capacity.

- **Intangible Costs** – Hard-to-measure impacts such as pain, distress, or reduced quality of life.

Examples

anxiety from chronic illness, emotional burden on families.

3.3 What is Effectiveness?

Effectiveness describes the extent to which an intervention achieves its intended outcome **in real-world conditions**.

Examples

A flu vaccine that prevents 80% of cases in the community is considered highly effective.

This differs from **efficacy**, which is measured in controlled clinical trials under ideal conditions. Policymakers prioritize effectiveness since it reflects practical results in population-level health systems.

3.4 Applying Cost and Effectiveness in Decision-Making

Because healthcare resources are finite, decision-makers must evaluate trade-offs between cost and effectiveness:

- A treatment that costs less while providing equal or better health outcomes is **more cost-effective**.
- Economic evaluation ensures that **the greatest possible health benefits are achieved within budget constraints**.

This process supports transparent and rational policy choices, guiding governments and institutions toward investments that improve population health at sustainable costs.

3.5 Understanding the Incremental Cost-Effectiveness Ratio (ICER)

The ICER is a central concept in economic evaluation. It is calculated as:

$$ICER = \frac{(Cost_{new} - Cost_{comparator})}{(Effectiveness_{new} - Effectiveness_{comparator})}$$

It expresses the additional cost required to gain one extra unit of health outcome (e.g., one QALY gained).

Interpretation:

- If the ICER is **below the willingness-to-pay (WTP) threshold**, the intervention is considered **cost-effective**.
- If the ICER is **above the threshold**, it is not considered a good investment.
- Importantly, cost-effective ≠ cost-saving. Some interventions may cost more but still provide value worth paying for.

3.6 Interpreting ICER: The Role of Cost-Effectiveness Thresholds

Once the ICER (Incremental Cost-Effectiveness Ratio) is calculated, it must be compared to a **cost-effectiveness threshold** to determine whether an intervention offers good value for money.
The threshold represents the **maximum amount a society is willing to pay (WTP)** for one additional unit of health gain, such as a **Quality-Adjusted Life Year (QALY)**.

WHO-Recommended Threshold Approach

According to the **World Health Organization (WHO)**:

- **ICER < 1× GDP per capita** → The intervention is considered **very cost-effective**.
- **ICER between 1–3× GDP per capita** → The intervention is **cost-effective**.
- **ICER > 3× GDP per capita** → The intervention is **not cost-effective**.

For Malaysia, with a GDP per capita of approximately **RM 120,000**, this means:

- Interventions with an ICER **below RM 120,000 per QALY** are considered **very cost-effective**.
- Those **between RM 120,000 and RM 360,000 per QALY** are **cost-effective**.
- Above **RM 360,000 per QALY**, interventions are generally **not cost-effective**.

Examples

Malaysia may adopt a **WTP threshold of RM 120,000 per QALY** — roughly equivalent to its GDP per capita — as a **benchmark for affordability**.

Willingness-to-Pay (WTP) Threshold

Some countries use a **Willingness-to-Pay threshold** instead of a GDP-based one. This approach reflects what the public or decision-makers are realistically willing to invest for a health gain, based on **local budget constraints, equity priorities, and societal preferences**.

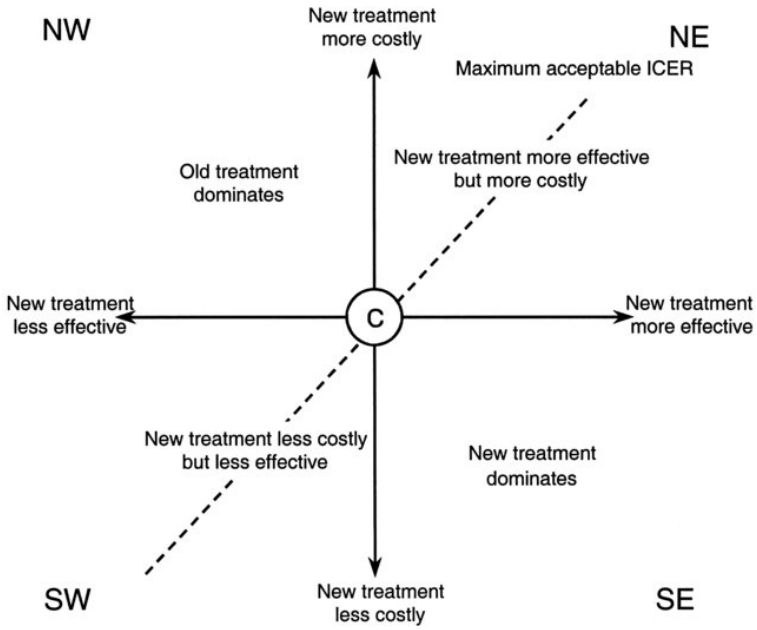
Examples

If an intervention's ICER = **RM 85,000 per QALY**, and Malaysia's threshold = **RM 120,000 per QALY**, then the intervention is considered **cost-effective**, as it provides health gains at a cost society is willing to pay.

3.7 Cost-Effectiveness Plane

A graphical representation of costs (y-axis) against effects (x-axis):

- **Southeast quadrant:** Less costly, more effective → *Dominant (best choice)*
- **Northeast quadrant:** More costly, more effective → *Cost-effective if below WTP threshold*
- **Northwest quadrant:** More costly, less effective → *Dominated (not recommended)*
- **Southwest quadrant:** Less costly, less effective → *Context-dependent*



adopted from Briggs, A., & Tambour, M. (2001). The design and analysis of stochastic cost-effectiveness studies for the evaluation of health care interventions.

Examples

In Canada, the informal WTP threshold ranges between **CAD $50,000–$100,000 per QALY gained.**

3.8 Summary

Economic evaluation is an indispensable tool for health system

decision-making. By balancing costs with outcomes, it ensures the **best use of limited resources** to maximize health gains. For health professionals, understanding these principles allows for evidence-based clinical and policy decisions that improve population well-being.

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Chapter 4: Conducting an Economic Evaluation – Methods and Data

This chapter provides practical guidance on the key steps involved in conducting an economic evaluation, from defining the problem to analyzing and appraising data. By following a structured approach, researchers and decision-makers can ensure that evaluations are robust, transparent, and relevant to healthcare policy and practice.

4.1 Steps in Conducting an Economic Evaluation

Conducting an economic evaluation generally follows a sequence of structured steps:

1. Define the Decision Problem

- Specify the intervention(s) being compared.
- Identify the setting (e.g., hospital, community).
- Determine the perspective (societal, payer, or institutional).
- Define the time horizon and target population.
  This step is similar to developing a research question in an academic study.

2. Select Appropriate Health Outcomes

- Choice of outcome measure distinguishes one type of economic evaluation from another (e.g., cost-effectiveness analysis vs cost-utility analysis).

3. Determine the Perspective

The perspective defines which costs and benefits are included:

- **Societal Perspective**: Includes all costs, regardless of who pays (e.g., lost productivity, patient travel).
- **Payer Perspective**: Includes costs borne by the health system or insurance provider.
- **Institutional/ Provider Perspective**: Narrower, focused on costs relevant to a specific hospital or clinic.

4. Design the Model

Models simplify real-world healthcare scenarios:

- **Decision Trees**: Represent short-term or one-time events, calculating costs and outcomes at terminal nodes.
- **Markov Models**: Better suited for chronic diseases, representing transitions between health states over time.

5. Populate the Model with Data

When populating a model, data inputs typically include **costs**,

outcomes, and **probabilities** of different events (e.g., disease progression, treatment success, or adverse effects). Data inputs include:

- **Clinical Data**: Treatment effectiveness and outcomes, often from guidelines or trial evidence.
- **Economic Data (Costs)**: From hospital databases, national administrative datasets, fee schedules, formularies, wage data, costing studies, or published literature.
- **Probability Data**: These probabilities are essential for simulating realistic health outcomes in decision-analytic models.

6. Test Robustness and Uncertainty (Sensitivity Analysis)

- Models must be tested against uncertainty by varying key inputs and assumptions.
- Sensitivity analyses ensure reliability and highlight the impact of uncertainty on results.

4.2 Measuring Quality-Adjusted Life Years (QALYs)

Before introducing QALYs, it is important to understand that health outcomes can be measured not only by life years gained but also by the quality of those years. Economic evaluations often require a common unit that combines both quantity and quality of life — leading to the concept of the **Quality-Adjusted Life Year (QALY).** QALYs are a standard outcome measure in cost-utility analysis, combining **quality** and **length of life** into a single index.

- **Health Utility Measurement Tools**:
    - *EQ-5D* (European Quality of Life 5-Dimension)
    - *SF-36* (36-Item Short Form Survey)
    - *HUI3* (Health Utilities Index Mark III)

  These tools are often embedded into clinical trials for economic evaluations.
- **Disability-Adjusted Life Year (DALY)**:
    - Widely used in global health, especially in low- and middle-income countries.
    - Combines years of life lost due to premature mortality and years lived with disability.

4.3 Appraising Evidence and Considering the Audience

1. Quality Assurance

High-quality economic evaluations adhere to best practices:

- The **CHEERS Checklist** (Consolidated Health Economic Evaluation Reporting Standards) provides 17 items to guide evaluation and reporting.
- Essential reporting elements include objective, population, time horizon, perspective, comparators, outcomes, discount rate, costs, assumptions, analytic methods, and uncertainty analysis.

2. Audience Considerations

Economic evaluations must be tailored to their audience:

- **Health Technology Assessment (HTA) agencies** for national policy.
- **Local decision-makers** (e.g., hospital administrators) for budgeting.
- **Pharmacy and Therapeutics Committees** for formulary inclusion decisions.
- **Academic audiences** for methodological contributions.

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Chapter 5: Health Economics and Public Policy

This chapter explores how economic principles influence health policies and system-level decisions. It discusses how governments, hospitals, and organizations allocate resources, balance efficiency with equity, and make difficult trade-offs. By connecting theory to real-world examples, the chapter helps readers see how economics shapes policies that affect daily clinical practice.

5.1 The Link Between Health Economics and Public Policy

Public policy in health refers to the decisions, laws, and actions implemented by governments to achieve specific health objectives. Health economics provides the evidence to guide these decisions — ensuring that limited resources are used in ways that **maximize health benefits** for the population.

5.2 How Economic Analysis Influences Policy

- **Evidence-Based Decision-Making**
  - Economic evaluations (CEA, CUA, CBA) guide policymakers in selecting interventions that provide the **most benefit at the least cost**.
- **Prioritisation of Interventions**
  - Resources are scarce, so policies must determine which services to fund first (e.g., vaccination programs before

cosmetic surgeries).

- **Equity Considerations**
  - Policies must balance **efficiency with fairness**, ensuring vulnerable groups are not excluded.
- **Budget Impact Assessment**
  - Predicts the **financial implications** of adopting a new program or technology, aiding in sustainable policy planning.

5.3 Examples of Economic Analysis in Policy Decisions

- **Pharmaceutical Policy**
  - Promoting generic medicines to reduce drug costs while maintaining treatment outcomes.
- **Vaccination Programs**
  - Internationally, cost-effectiveness studies often prioritize vaccines that provide herd immunity.
  - In Malaysia, a PhD study on the cost-effectiveness of **HPV vaccination** against cervical cancer led to its incorporation into the **National Immunization Program in 2011**.
  - Cost-effectiveness research has also supported **pneumococcal and influenza vaccination programs**, influencing prioritisation in public health spending.
- **Screening Initiatives**
  - Economic evaluations assess cost-effectiveness before implementing national screening programs.

- In Malaysia, **colorectal cancer genetic testing** was found to be cost-effective compared to current methods, leading to the recommendation for **genetic clinics in each health zone**. This has already resulted in the establishment of a genetic clinic at **Hospital Pulau Pinang**.

- **Non-Communicable Disease (NCD) Prevention**
  - CEA studies have influenced **salt reduction interventions** to lower hypertension and cardiovascular disease burden.
  - Economic evidence also supports **early screening programs for NCDs**, helping policymakers prioritise preventive measures.

- **Other Applications in Malaysia**
  - Cost-effectiveness research has extended to areas such as **psoriasis treatment, tuberculosis (TB) management, and chronic kidney disease (CKD) interventions**, directly informing public health and clinical practice.

- **Role of MaHTAS (Malaysian Health Technology Assessment Section)**
  - MaHTAS, under the Ministry of Health, plays a pivotal role in applying economic evaluations such as **CEA and Budget Impact Analysis (BIA)**.
  - Its outputs, including **Clinical Practice Guidelines (CPGs)**, shape both policy formulation and clinical decision-making, ensuring that health resources are used effectively and equitably.

5.4 Summary

Health economics equips policymakers with tools to make **rational, evidence-based decisions** that balance cost, effectiveness, and equity. The Malaysian experience from the adoption of **HPV vaccination** to the establishment of **genetic clinics for colorectal cancer testing** demonstrates how **economic evaluation can act as a catalyst for real policy change**. With institutions like **MaHTAS** supporting evidence generation, economic analysis ensures that public health resources are allocated where they achieve the **greatest population impact**.

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- **Cost-Effectiveness Analysis (CEA):** A method of comparing the relative costs and outcomes of different interventions.
- **Demand:** The quantity of healthcare services that people are willing and able to use at a given price.
- **Supply:** The quantity of healthcare services that providers are willing and able to deliver.
- **Health Technology Assessment (HTA):** The evaluation of health technologies based on clinical, economic, and social criteria.
- **Cost-Benefit Analysis (CBA)**– An evaluation method where both costs and benefits of a healthcare intervention are measured in monetary terms.
- **Cost-Effectiveness Analysis (CEA)**– A method of comparing the costs of different interventions relative to their health outcomes, often expressed as cost per life-year gained.
- **Cost-Utility Analysis (CUA)**– A type of cost-effectiveness analysis that incorporates quality of life, often using Quality-Adjusted Life Years (QALYs) as the outcome.
- **Equity**– Fairness in healthcare, ensuring that vulnerable or disadvantaged groups are not left behind when resources are allocated.
- **Externalities**– Side effects (positive or negative) of a health intervention that affect people who are not directly involved (e.g., herd immunity from vaccination).
- **Gross Domestic Product (GDP)**– The total economic output of a country, often used to measure health spending as a percentage of national wealth.
- **Health Economics**– The study of how scarce resources are allocated in healthcare to maximise health outcomes and efficiency.
- **Incremental Cost-Effectiveness Ratio (ICER)**– A calculation that compares the extra cost of one intervention to the extra health benefits it provides compared to an alternative.
- **Opportunity Cost**– The value of the best alternative forgone when a choice is made, e.g., funding one program means

another cannot be funded.

- **Public Policy**– Government actions, laws, and decisions aimed at addressing health system priorities and improving population health.
- **Quality-Adjusted Life Year (QALY)**– A measure that combines quantity and quality of life into a single unit, used to compare health outcomes across different interventions.
- **Scarcity**– The fundamental economic problem of having limited resources to meet unlimited healthcare needs.

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