

Module 1: Introduction to Health Economics and Economic Evaluation in Healthcare Participant Workbook



Module Induction

Module One provides an introduction to health economics and the economic evaluation of healthcare.

Module Overview and Objectives

Unit 1 - Introduction to health economics

Unit 2 - Introduction to health economic evaluation

Unit 3 - Applying health economic evaluation in your origination

On successful completion of this module, you will be able to:

Unit 1

- describe the purpose, distinctive features, and scope of health economics
- identify some of the desired knowledge and skills of health economists
- identify some of the linkages between health economics and other disciplines

Unit 2

- describe the purpose, rationale, and scope of health economic evaluation
- identify sources of nation-specific guidance about health economic evaluation

Unit 3

- apply the PICOT framework to identify work-related decision problems that are appropriate for analysis with health economic evaluation tools and techniques

UNITS

- ≡ Introduction to Health Economics
- ≡ Introduction to Health Economic Evaluation
- ≡ Applying Health Economics in your Organization

Introduction to Health Economics

Welcome to the first unit: Introduction to Health Economics.

Unit Objectives

The goals in this unit are:

- Describe the purpose, distinctive features, and scope of health economics
- List the skills a good health economist should have
- Identify linkages between health economics and other disciplines

Unit Topics

There are five topics covered in this unit.

1. Health economics explained
2. Distinctive features of health and healthcare economics
3. Topical focus of health economics
4. Desired knowledge and skills of health economists
5. Linkages between health economics and other disciplines or work functions

Video Presentation

Here's the video presentation for this unit:

Video presentation notes:

Health Economics Explained

What does the term **health economics** mean?

There are a few things that help to create a working definition. Firstly, health economics is a branch of economics. It emerged as a subdiscipline of economics between the 1940s and 1960s. As a branch of economics, it is therefore concerned with human behavior, decision-making, and welfare in the context of scarce resources.

Health economics is the branch of economics that applies economic theory and methods to the study of the production, consumption, and distribution of health and healthcare.

Distinctive Features of Health Economics

Why was it necessary to create a separate subdiscipline of economics just to look at health and healthcare? There are a number of distinctive features of health and healthcare that made it necessary to create and develop the subdiscipline of health economics. Click each item below to explore some of the most widely referred to distinctive features.

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Health outcomes are highly uncertain. Just because we are in good health today does not mean we're going to be in good health tomorrow. Similarly, just because patient A responds to a treatment does not mean that (an apparently identical) patient B will respond in the same way.



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Healthcare interactions are frequently conducted between parties with different levels of knowledge about the transaction they are engaging in. For example, a doctor will generally know more about diseases, and their treatments, than their patients. Patients will know more about their own behaviors and environment than either their doctor or their health insurer.



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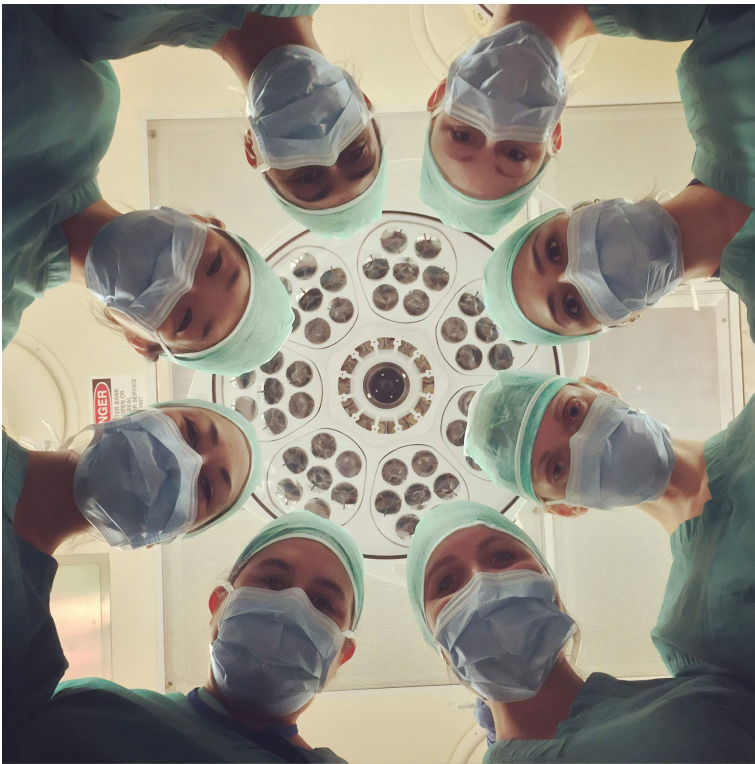
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Partly because of asymmetric information, many healthcare resource consumption decisions are made on behalf of the ultimate intended recipient (the patient) by others (for example, the patient's treating clinicians). As a result, demand for healthcare resources may be misaligned with the actual preferences of the population in a way that goods and services bought directly by the end consumer are not. There is also scope for conflict between the interests of the agent (clinicians/insurers) ordering healthcare resources and the principal (patient) who is the intended beneficiary of those resources.



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In economics, externalities is a term used to describe uncompensated impacts on third parties as a result of a transaction. For example, through passive smoking there is a welfare loss imposed on individuals who neither bought nor consumed the cigarette. Externalities are very common in healthcare, particularly in areas such as infectious diseases where the benefits of treatment extend beyond the treated to those individuals who might otherwise become infected.



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Healthcare is a sector in which there is an unusually high level of government involvement. In most developed economies at least fifty percent of healthcare expenditure comes from public funds. The dominant market position of governments in healthcare means that alternatives are needed to traditional market-based pricing techniques to better align prices with the underlying preferences of the population.



Topical Focus

In terms of the topical areas that health economics is concerned with, two prominent health economists, Adam Wagstaff and Anthony Culyer, looked at and identified twelve themes into which health economic literature generally fall:

- 1 Demand for health and healthcare
- 2 Determinants of health and ill health
- 3 Economic evaluation (the focus of this course)
- 4 Efficiency and equity

- 5 Health and its value
- 6 Health and the economy
- 7 Health statistics and econometrics
- 8 Human resources
- 9 Markets and healthcare
- 10 Medical insurance
- 11 Public health
- 12 Supply of health services

Health Economists

For you, this course may be your introduction to health economics and you may find you like it well enough to start thinking about what sort of collaborations with health economists might be beneficial to your future work. You may even consider doing further study in order to become a professional health economist. With this in mind, it might be helpful to identify some of the desired skills and knowledge of health economists.

Knowledge

Ideally health economists have some knowledge of each of the following:

- ☐ Economic theory
- ☐ Good research practice
- ☐ Health and healthcare



Mathematics and statistics



Psychology (economics is a social science that is concerned with human behavior)

Skills

The type of skills that a health economist will have is likely to depend on their topical specialism. However health economists should, ideally, have strengths in a number of the following:

- Communication (a key task is communicating a technical discipline to diverse stakeholders)
- Computer coding (many required economic analysis computations can be performed only on a computer)
- Data management and analysis
- Experimental design
- Modeling and simulation
- Multi-disciplinary work

Linkages with Other Disciplines

Health economists provide one perspective of a problem. A perspective that, ideally, should be incorporated with other views from people with a wide range of backgrounds. For this reason, health economists frequently build strong linkages to other professional disciplines.

For example, health economics is often seen as a branch of health services research or health outcomes research. Within academic institutions, health economics research teams can be part of the business, economics, health sciences, medicine, public health, or public policy

schools. In commercial companies, health economists frequently work in support of pricing, marketing, and sales functions. Aspects of health economics also overlap with fields such as biostatistics, clinical informatics, clinical research, epidemiology, health policy, management, marketing, public health, operations research, and psychology.

Click each heading below to reveal examples.

Research

Health economics is often seen as a branch of health services research or health outcomes research.



Academia

Within academic institutions, health economics research teams could be part of the business, economics, health sciences, medicine, public health, or public policy schools.



Commercial

In commercial companies, health economists frequently work in support of pricing, marketing, and sales functions.



Other

Aspects of health economics also overlap with fields such as biostatistics, clinical informatics, clinical research, epidemiology, health policy, management, marketing, public health, operations research, and psychology.



Exercises and Further Reading

Self-assessment and critical review exercises

There are no self-assessment or critical review exercises for this module.

References and Further Optional Reading

If you would like to do further optional reading about the topic, you may wish to consider the following resources:

- O Service, M Hallsworth, D Halpern, et al. "EAST: Four simple ways to apply behavioural insights." Cabinet Office, UK 2014.

- A Wagstaff, A J Culyer, [“Four decades of health economics through a bibliometric lens.”](#), Journal of Health Economics, 2012, 31: 406–39

Note on links: If you find that a hyperlink used in this module is out of date, please notify us at cdneduationlead@leadingedgegroup.com. You may also be able to find an out of date web resource by searching for the expired URL at <http://archive.org/web/web.php>.

Introduction to Health Economic Evaluation

Welcome to the Unit Two: Introduction to Economic Evaluation in Healthcare. This is an important Unit because economic evaluation is the strand of health economics that we are focusing on in this program.

Unit Objectives

The objectives of this unit are:

- Describe the subdiscipline of health economic evaluation
- Provide an overview of the purpose, rationale, and scope of health economic evaluation

Unit Topics

The topics covered in this unit are:

1. What is health economic evaluation?
 2. Rationale for economic evaluation in healthcare
- Evidence based decision-making
 - Cost control
 - Pricing

3. Guidelines and recommendations for health economic evaluation

Video Presentation

Here's the video presentation for this unit:

Video presentation notes:

What is Health Economic Evaluation?

First, a definition of what is meant by health economic evaluation.

Health economic evaluation:

- is an analysis of benefits and costs of healthcare decisions
- compares at least two options
- aims to help identify potentially effective strategies that can improve the quality and value of healthcare

Furthermore, it should be noted that a "full" economic evaluation:

- Takes an integrated view of costs and benefits (elaborated on a little later in the course)

Rationale for Economic Evaluation in Healthcare

A number of items support the rationale for economic evaluation. Flip each card below to explore some of these items:

Evidence

The need for high quality **evidence** to inform healthcare decisions.

Pricing

The requirement to address specific challenges relating to **pricing** in healthcare.

Expectations

The almost impossible challenge of **reconciling societal expectations of healthcare with available resources.**

Resources contrasted with Expectations

It is not hard to identify a number of reasons as to why there is frequently a significant mismatch between resources and expectations in healthcare. Click each item below to see some of the most commonly cited reasons found in in health economics books:

Progress

An ever increasing number of technologies and procedures. Many have the potential to significantly improve lives, and in turn feed expectations they should be made available to people who can benefit from these advances.



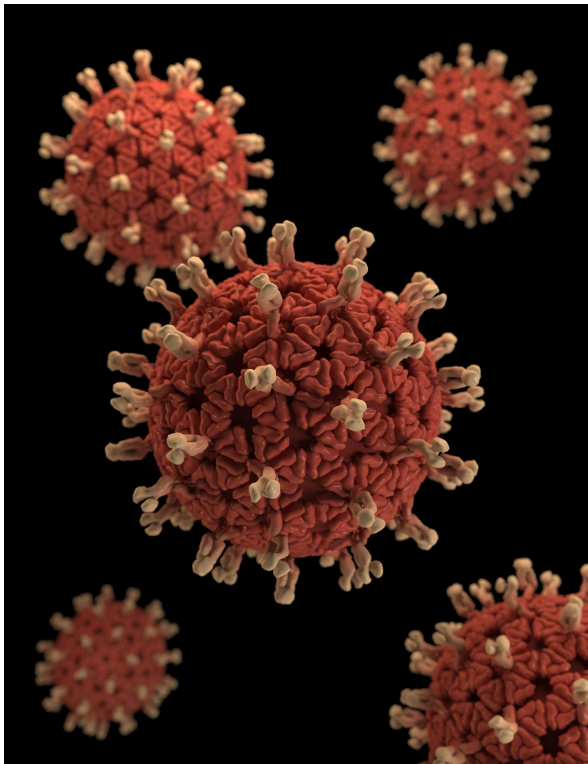
Demographics

Changing demographic structure. In developed economies this predominantly means the ageing of the population.



New Arrivals

The emergence of new diseases or epidemics.



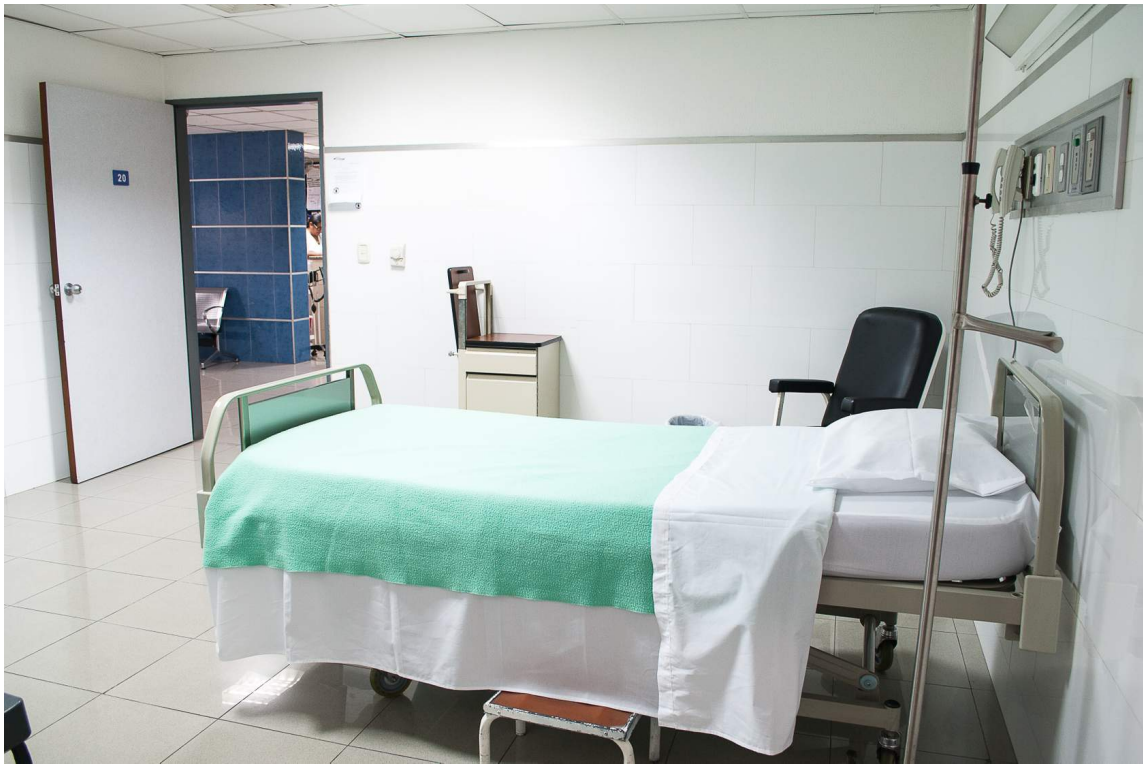
Costs

The increase in the unit cost to providing care.



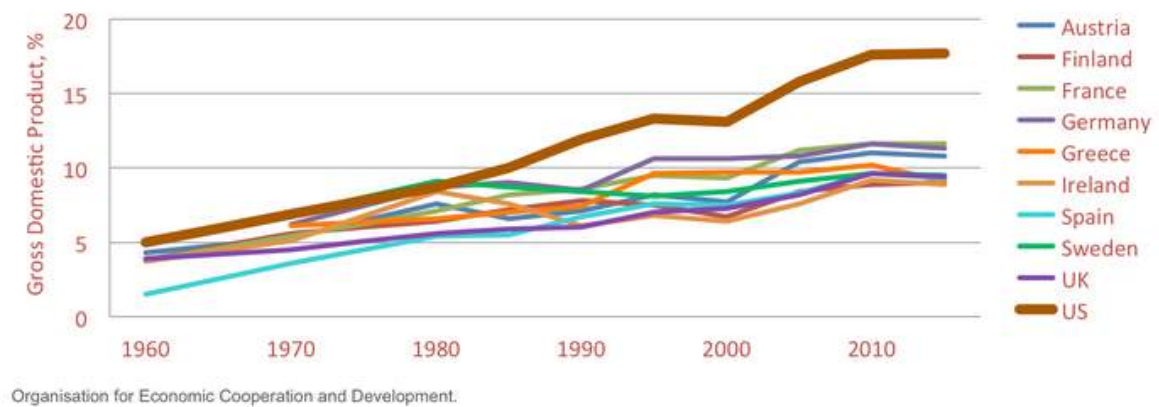
Resources

Suboptimal allocation of healthcare resources.



These types of pressures are some of the reasons why many developed economies spend increasing portions of their GDP on healthcare.

Total expenditure on healthcare over time



Expenditure shown as a % of GDP

Unsustainable trend

The *Total expenditure on healthcare over time* chart shows an ever increasing healthcare expenditure. It can be argued that it is unsustainable for the trajectory described in the chart to be maintained. Therefore, there is a clear imperative to learn how to get more value from healthcare expenditure—a core task of economic evaluation.

Pricing

As outlined in lesson one that some of the unique features of the healthcare sector mean that we are often not able to apply the approach to pricing that commonly applies to other products and services. The approach is based on the actual consumption behaviors of consumers (what they buy, how much they buy, and the prices they pay) within a dynamic marketplace.

One of the distinctive features of the healthcare market is that frequently it is a Government agency or insurer that deals directly with marketers of medicines and devices. They negotiate a price on behalf of the people (normally patients) who are going to benefit from that particular product or service.

In the absence of prices being set through the consumption behavior of consumers, both of the purchasing sides of such a deal (Government/Insurer on one side and commercial vendors on the other) often depend on economic evaluation work to inform their approach to negotiations.

- Governments and insurers use economic evaluation to help avoid overpaying for healthcare products and services and to try and contain their cost base.
- Commercial companies use economic evaluation to help communicate value and thereby gain market access for their product or service.

Additionally, policy or advocacy organizations may use economic evaluation as part of arguments supporting the public reimbursement

of specific treatments and services.

Evidenced Based Decision Making

Economic evaluation aims to contribute to more evidence-based decision making in healthcare by generating evidence that addresses gaps in data relating to specific issues:

- costs of providing care
- patient preferences
- real world evidence (There is an important distinction between efficacy—the capacity of an intervention to deliver benefit under ideal conditions as established by clinical trials—and effectiveness—the benefit of the intervention under typical real world conditions.)
- long term time frames (data from clinical trials often relates to shorter time frames than may be desirable)
- local context

Exercises and Further Reading

Self-assessment and critical review exercises

There are no self-assessment or critical review exercises for this module.

References and Further Optional Reading

If you would like to do further optional reading about the topic, you may wish to consider the following resources:

- D Chisolm and DB Evans. "[Economic evaluation in health: saving money or improving care?](#)" Journal of Medical Economics 2007.

- JL Severens ["Value for money of changing healthcare services? Economic evaluation of quality improvement."](#) BMJ Quality and Safety 2003.

Applying Health Economics in your Organization

Welcome to the Unit Three: Applying Health Economics in your Organization. This unit is about applying Health Economic Analysis to enhance decision making when addressing problems in your organization.

Unit Objectives

By the end of this unit, you should be able to meet the following objective:

- Identify decision problems that are appropriate for analysis with the health economic evaluation tools and techniques you will learn in this program

Unit Topics

The topics that will be covered in this unit are:

1. PICOT checklist
2. Rationale for, and feasibility of, conducting an economic evaluation

Video Presentation

Here's the video presentation for this unit:

Video presentation notes:

PICOT Questions

PICOT is a useful acronym for some of the elements that make up a decision problem that can be answered by a health research project (in our case a health economic evaluation analysis).

PICOT stands for Population, Intervention, Comparator, Outcome measure and Timeframe.

Exploration of PICOT

The PICOT process helps to overview the approach to research of health care related questions. Click each character below to learn about PICOT framework.

P	I	C	O	
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Population

The P in PICOT stands for **population** – i.e. the people that we are concerned with. Usually (though not always) the population of interest are patients. When defining a patient population, we normally think about describing relevant features:

- Demographic attributes (age, gender, socioeconomic status, ethnicity)
- Health status (illness type and severity)
- Location and service setting (country/region, whether primary care/hospital patients, etc.)

The population of interest might not be patients; it may be carers or clinicians for example. However, the same principles apply. We should be as specific as we can in defining who our population of interest is.



P

I

C

O

The I in PICOT stands for **intervention**.

The intervention is the new treatment, service, initiative, or approach you are interested in evaluating. Examples of interventions that you may wish to evaluate using health economic techniques include:

- A new medication or medical device
- A new service model
- Alternative process configurations
- A clinician training or patient education project
- New role designs or incentive structures
- Public health campaigns



P

I

C

O

The C in PICOT is the **comparator**. As was emphasized in the previous unit, health economic evaluation compares at least two alternatives in order to measure differences in cost and in effect. So having specified the intervention we also need to specify what are we comparing the intervention against.

A comparison can be active (e.g. an alternative treatment that is known to be effective) or placebo/no treatment. Placebos are frequently used as comparators in clinical trials that seek to establish the efficacy of new interventions. However, to inform real world resource allocation questions, the comparator chosen should ideally fairly represent the likely alternative choice in the decision problem being addressed. For this reason, treatment as usual or standard care is frequently used as a comparator.



P

I

C

O

The O in PICOT is **outcome measure**. What do you plan to measure to determine the differences in effect between the options you are analyzing? Or to put it another way, what is the overall summary measure of benefit that you want to track?

Outcome measures will be discussed in more detail later in the course but some examples include:

- Life years gained
- Clinical severity (measured on clinical scales)
- Health related quality of life
- Clinician/patient knowledge and skills

Although more appropriately called process measures, some of the following might also be options for definition as the measure of benefit:

- Number of hospital readmissions
- The number of adverse events
- Rates of adoption/implementation of clinical guidelines or certain clinical practices



P

I

C

O

The T in PICOT stands for **timeframe**.

- Specify over what time period you plan to measure the differences in cost and effect between the options you are examining as part of your economic evaluation
- As will be discussed later in the course, there is a trade-off to be made in selecting time frames that allow for comprehensive collection of the key data of interest and feasibility/cost



Rationale for Undertaking an Economic Evaluation to Inform your Decision Problem

Most health economic evaluation papers begin by building a case as to why the topic being addressed is important. Similarly, when you are planning a health economic evaluation in your own organization, it is important that you are able to articulate a rationale as to why your decision problem merits the investment of time, effort, and money required to do the analysis. When outlining what it is about the decision problem that merits such an investment, consider:

- the economic significance of the problem (e.g. the costs imposed by the illness)
- the sufficiency of current evidence (what we know and what we don't know – and the potential costs of not knowing)

Another important consideration is feasibility. More simply, is it reasonable to believe that you have the capacity to adequately answer the question you are posing? There's no point in identifying a really great decision problem that's important to you in your organization, and then finding it's simply going to be too expensive or too difficult to get the results.

Flip the cards below to see some of the key things to bear in mind when considering feasibility:

Cost

Can your organization afford to invest in the resources necessary to undertake the evaluation you propose?

Complexity

Is the type of research question you propose within the scope of you/your team to answer?

Data

Will you be able to access / generate the data you need to answer the question?

Time frame

Will the analysis be complete before a decision needs to be made?

Exercises and Further Reading

Self-assessment and critical review exercises

You are recommended to undertake the following critical review tasks:

1. Read the abstracts of each of the sample economic evaluation papers assigned to you. In each case can you identify the Population, Intervention, Comparator, Outcome measure and Timeframe?
2. Read the introductions of each of the sample economic evaluation papers assigned to you. In each case, do the authors provide a rationale as to why their study question might merit investigation with an economic evaluation? Components of a rationale may include:
 - a. economic significance of the problem
 - b. deficiencies in current evidence base
 - c. opportunity/feasibility of addressing the question



Health Economics Sample Economic Evaluation Paper 1.pdf

320.2 KB





Health Economics Sample Economic Evaluation Paper 2.pdf

346.6 KB



You've completed this module

Click the button to exit the module.

EXIT MODULE