



Healthcare Economic Terms: Cost



Dr. Omnia Elmahdy

I. Cost:

In economic terms, cost is what a health services activity will **impose** on patients, their families and other agencies as well as the **costs** to the health sector itself.

The **cost** of using a resource in a particular service or treatment is, not (necessarily) the price that is paid for that resource but the benefit foregone (the opportunity lost) by not choosing the alternative

Efforts to determine the cost of services and programmes from the perspective of a health economist are likely to differ from those employed by an accountant.





Seriously ill requires:

- More devoted time (cost)**
- Higher qualifications and expertise (cost)**
- Sophisticated equipment (cost)**
- Potent medication (cost)**



Less Seriously ill requires:

- Less devoted time (cost)**
- Lower qualifications and expertise (cost)**
- Regular equipment (cost)**
- Regular medication (cost)**

There are basically three stages involved in the process of costing health care services and interventions:

(1) Identification of costs

(2) Measurement of identified costs; and

(3) Translation into a monetary amount مبلغ نقدي (*bearing in mind that money may not always be the most representative indicator of opportunity cost*)

Direct vs indirect cost

1. Direct costs

These relate to the use of resources directly as a result of the treatment and health care process.

They include:

- **Drug** costs,
- Cost of **nursing**,
- Medical and other staff **time** involved in **delivering care** and **administering** the procedures,
- Costs of **materials and equipment** used in service provision,

• **PLUS** costs to **other organizations** involved in the process

AND to patients, in terms of **time** costs, **transport** costs and out-of-pocket **expenses**.



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2. Indirect costs/productivity costs



These relate to 'losses' to society incurred as a result of the impact of disease, illness and treatments in preventing people from engaging in normal daily activities, such as work, domestic responsibilities and social and leisure engagements.

In terms of work losses, this is called 'productivity costs' – which refer to 'the costs associated with lost or impaired ability to work or to engage in leisure activities due to morbidity and lost economic productivity due to death.

3. Intangibles غير ملموسة

These relate to the **distress, suffering, anxiety** and impact on **quality of life** (QOL) resulting from illness and poor health and their treatments

An intangible good is a good that **does not have a physical nature**, as opposed to a physical good (an object). Digital goods such as downloadable music, mobile apps or virtual goods used in virtual economies are all examples of intangible goods.

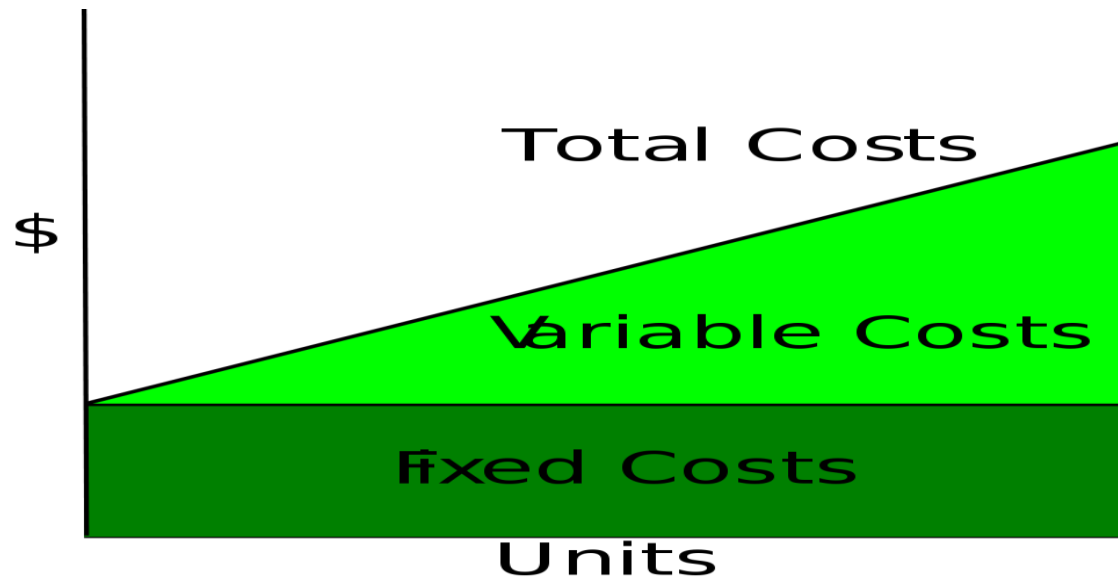
(These are the things that **have to be experienced** to be measured and valued)

Fixed cost VS Variable cost

	Fixed cost مصاريف ثابتة	Variable cost مصاريف متغيرة
Definition	Cost of production, which does not vary with time , or with size of production (output) over time	Cost of production, which varies with time and size of production (output).
Examples	<ul style="list-style-type: none"> - Cost of building - Fixed cadre; - Worker salaries & benefits. 	<ul style="list-style-type: none"> - Worker supplies (e.g. gloves) - Patient care supplies - Paper - Food - Lab supplies - Medications



Fixed Costs	Variable Costs
<ol style="list-style-type: none"> 1. These costs are independent of output. 2. These are the costs of fixed factors. 3. These costs exist or arise, even at zero level of output. 4. These costs are found only in the short period. 	<ol style="list-style-type: none"> 1. These costs vary with the level of output. 2. These are the costs of variable factors. 3. These costs become zero at zero level of output. 4. These costs are seen in short and long periods.



Medical Care Cost

Average cost:

Is the total cost divided by the number of units provided or produced.

Average Cost

Numerator

$$\text{Average Cost Formula} = \frac{\text{Total Cost of Production}}{\text{Number of Units Produced}}$$



denominator



When average costs are **falling**, there exist **economies of scale** **اقتصادية جدوى**; when average costs are **rising**, there exist **diseconomies of scale** **مساويء اقتصادية**

One of the reasons **diseconomies** arise is because beyond **a certain occupancy level** it becomes **increasingly difficult**, if not impossible, for staff to **deal with a larger number of beds** in a ward setting.



Medical Care Cost

Opportunity cost:

Implications of Opportunity Cost:

1. Optimal service planning
2. Deciding to do A implies deciding not to do B,
i.e. **value of benefits from A > B.**

**OPPORTUNITY COST
IS WHAT A PERSON
SACRIFICES WHEN THEY
CHOOSE ONE OPTION
OVER ANOTHER**

$$\text{Opportunity Cost} = \frac{\text{What One Sacrifice}}{\text{What One Gain}}$$



- Health economists **stress** **the importance of** value unlike accountants who are just interested in money.
- When budgets are limited, resources invested into one area will be **at the expense of** a loss of opportunity in another and resources should be valued in terms of this lost opportunity—the opportunity cost.



Opportunity Cost

[ä-pär-'tü-nə-tē 'kōst]

The potential benefits that an individual, investor, or business misses out on when choosing one alternative over another.

Investopedia



Medical Care Cost

Fiction cost:

Value of **production lost** due to time needed to find a replacement worker and restore production to a previous level.

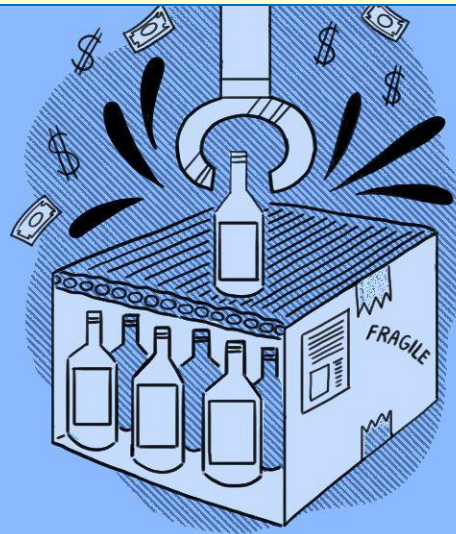
- What does it cost to the economy if a worker **misses a day of work** to go to the doctor?
- What if a **sick person can go back** to work – what is the gain to economy?
- Use the friction cost to value lost time from paid work.



Medical Care Cost

Marginal cost:

This is the **cost of producing one extra unit**, or in health care terms, the **cost of delivering one extra item of services** (treating one extra case, vaccinating one extra child and so on).



Marginal Cost

[ˈmɑːrj-nəl ˈkɒst]

The change in total production cost that comes from making or producing one additional unit.

Marginal cost or average cost?

For example, in a comparison of two anaesthetic programmes that require different types of infrastructure, average costs are recommended because the fixed cost element would be ignored by the use of marginal cost.

However, when the choice is between two or more analgesics, the use of marginal cost rather than average would be more appropriate.

Capital costs

These costs are incurred when major assets رأس المال are acquired – the buildings, the equipment, etc.

- Capital costs are not merely the sum actually paid for their acquisition and the interest payments on any loans used to fund such purchases.

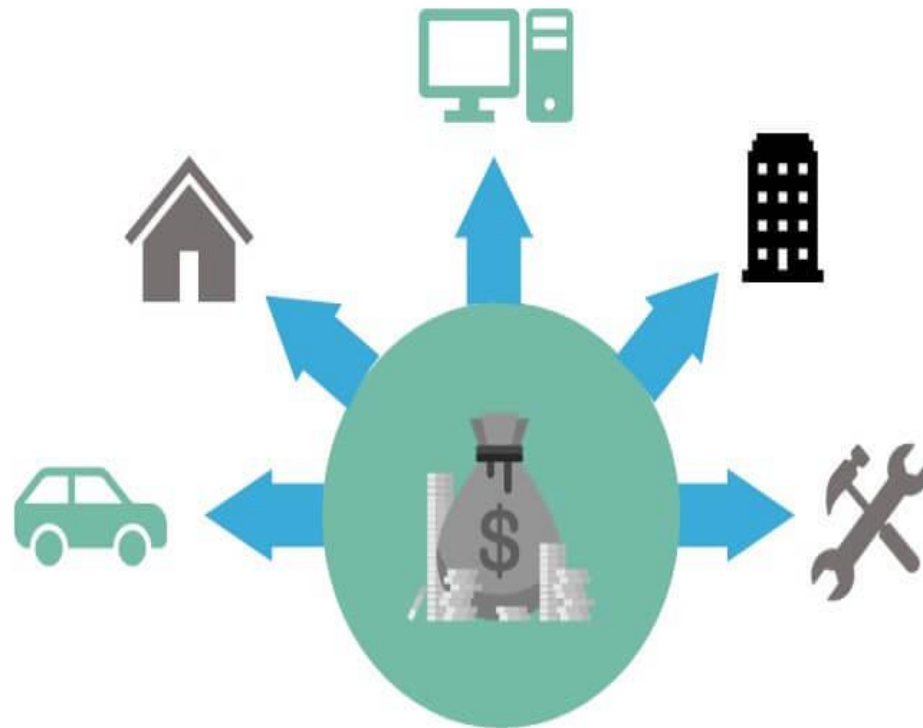
تكاليف رأس المال ليست مجرد المبلغ المدفوع فعلياً لاقتنائها ومدفوعات الفائدة على أي قروض تستخدم لتمويل مثل هذه المشتريات

- Account also has to be taken of the opportunity cost of using such assets in one particular way, thereby depriving them of being used elsewhere.

ويجب أيضاً أن تؤخذ في الاعتبار تكلفة الفرصة البديلة لاستخدام هذه الأصول بطريقة معينة، وبالتالي حرمانها من استخدامها في مكان آخر

Capital Expenditure

The money that government spends on developing buildings, machinery, equipment, schools, and other infrastructure is known as capital expenditure.



Example

Long after the land, buildings and equipment have been paid for, there is a **capital cost of continuing to use a hospital** to provide health care, that is, as long as it could be used in an alternative way. For example, if the hospital could be sold, the opportunity cost would be its market value.

There are many examples of **ex-hospital sites** now occupied by **houses**, with the street names the only visible indicator that a hospital was located there.

It is important to remember that the cost of treatment is not only the cost of drugs or medical and nursing time but includes recovery times, incidence of side-effects, rate of delayed discharge, use of other care resources and the cost of system deficiencies and problems.



It has been argued that the cost of system deficiencies and problems are much more expensive than drug costs and ‘it is important to remember that the cost to a facility of a 30-minute delay in the arrival of a surgeon is greater than the cost of a 2-hour infusion of propofol.

Other factors that inflate costs of health care provision

- Many people **fail to comply with their treatment requirements** عدم الامتثال لمتطلبات العلاج الخاصة بهم, leading to **disposal of old pharmaceuticals** and **repetition of prescriptions** and eventually the increase in cost of medications.
- The **unnecessary consultations** that result from inappropriate and ineffective treatments being utilised.
- The **costs resulting from litigation and claims for damages following treatment and care**, التقاضي والمطالبات بالتعويض عن الأضرار بعد العلاج والرعاية, which have gone wrong.