



**Introduction to Health Economics:**  
*for 4<sup>th</sup> year environmental health students*

Course code – Comh4202

Credit Hour – 1chr(2 ECTS )

**By :** Muluye Molla(BSc,MPH)  
**Wodaje Gietaneh (BSc,MPH)**

*May ,2020*

*Debre Markos ,Ethiopia*

# General learning objectives

***At the end of this course students will be able to:***

- Understand elementary concepts of economics and its significance.
- Apply economic techniques to the planning and managing of health programmes and health services.
- Analyze determinants of demand and cost of production
- Apply the concepts of marginal analyses and opportunity cost.
- Appraise the roles and limitations of markets and government in the finance and organization of health care.
- Compare different systems of funding and organizing health care in terms of cost containment, equity, efficiency and incentives.

# Course contents

## **UNIT 1. Introduction to economics and health economics**

- Definition of economics and health economics
- Concepts and principles
- Classification of economics
- Role of economics in health care

## **Unit 2: Health care production , and Health care markets**

- ◆ Demand
- ◆ Supply
- ◆ Factors affecting demand
- ◆ Elasticity of demand

## Unit 2: Health care production , and Health care markets...

- ◆ Factors affecting Supply
- ◆ Supply demand equilibrium
- ◆ Market failure and dealing with market failure
- ◆ Perfect competitions
- ◆ Medical care market
- ◆ Need versus demand
- Theoretical model for the analysis of the demand of health care, the role of professionals in the demand of health care, issue of equity in the provision of health care

## Unit 3: Justification for Government stewardship over health care.

- ◆ Uncertainty
- ◆ Externalities
- ◆ Information asymmetry
- ◆ Demand criteria (supplier induced demand)
- Investment elements

## Unit 4 : Health care financing

- ◆ Forms of financing health care
- ◆ Crisis in financing health care
- ◆ Efficient use of available resources
- ◆ Enhancing the role of private sectors
- ◆ User fee system
- ◆ Health insurance model
- Consider equity in provision of health care (goes to health economics course)
- Appreciate different schemes of financial health care.

# Unit 5 : Allocating resources for health care

- ◆ Cost concepts
- ◆ Allocating costs between programmes
- ◆ Assessing costs
- Shadow pricing

# Units 6: Measuring and improving efficiency in health care

- ◆ Measuring efficiency
- ◆ Common causes of inefficiency
- Strategies to increase efficiency

# UNIT 7. Health and Development

- Meaning of health and development
  - Economic indicators
  - Economic growth and economic development
  - Attacking poverty and inequality



# Teaching Methods

- Lecture
- Discussion
- Reading assignments
- Group work

# Tentative Evaluation criteria

✚ Continuous assessment (50%)	
● Quiz(1) .....	5%
● Group Assignment.....	20%
● Mid exam.....	25%
✚ Final exam.....	50%
Total .....	100%

# References

1. Introduction to health economics for health science students. The Carter center. Gashaw Andargie, 2000.
2. Economics: grade 11 student textbook , C. K Bansal et al,2003.
3. Wonderling D.,et al Introduction to Health Economics. Understanding public health. Open University press, 2005.
4. Health economics: an introduction for health professionals.Ceri J.Phillips, Black well publishing, 2005.
5. Muennig P. Cost effectiveness Analyses in Health A practical approach. Second edition. Jossey-Bass USA, 2008
6. Barbara McPake and Charles Normand. Health Economics; An international perspective. Second edition, London and New York, 2008
7. Peter Z. et al. Health Economics; Second Edition, Oxford University Press, 1997

# **Unit one**

## **Introduction to economics and health economics**

# Unit 1: Learning Objectives

- ❖ At the end of this unit students will be able to:-
  - Define economics and health economics
  - Explain the concepts of economics
  - Identify the classification of economics
  - Explain role of economics in health care

# Introduction

- Economic considerations play a **key role in all aspects of life.**

The discipline of economics is built upon two immutable facts:

1. Human want is unlimited.
  2. Resources are scarce.
- To balance the two, economics is very important.

It doesn't matter how many resources you have.



If you don't know how to use them,  
it will never be enough.

# What is Economics?





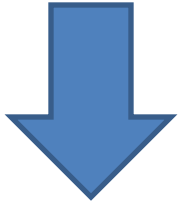
# What is Economics?

The discipline of economics is built upon two immutable facts:

1. Limited resources
2. Unlimited “wants”



**Scarcity**



**Choice**



# What is Economics?

## Economics

- The science that explains the choices that individuals, businesses, governments, and entire societies make and how those choices change as they cope with scarcity.
- Economics is the study of how we choose to use scarce & productive resources that have alternative uses to produce commodities of various kinds (Samuelson) .
- Economics is a science of choice
- Economics is often described as the 'science of scarcity' (Witter & Ensor, 1997)
- It explains why nations export some goods & import others & analyze the effect of putting economic barriers at national frontiers

# What is Economics?...

- The definition implies:
  1. The productive resources are scarce
  2. Human wants are infinite, go so far beyond the ability of our productive resources to satisfy them all
  3. It is a challenge in **economizing** those productive resources so as to satisfy the largest possible number of our wants

# Why economic questions?

- All economic questions arise because
  - we want more than we can get.
  - we want a peaceful and secure world.
  - we want clean air, blue water.
  - we want long and healthy lives.
  - we want spacious and comfortable homes...
- However, what each of us can get is limited by time, by the incomes we earn, by the prices we must pay.
- Everyone ends up with some unsatisfied wants.

# Why Economics in Health care?

- ✓ Health resources are finite
- ✓ Choice must be made about which resources to use to inform health care decision-making
- ✓ Most beneficial activities are chosen within the resources available.
- ✓ Equity, Efficiency...
- ✓ Decisions about how health care is funded, provided, and distributed are strongly influenced by the economic environment and economic constraints

# How Economics could be applied in Health care?

- The analysis of the economic costs of diseases
- Benefits of programs
- Aspects of health problems - type, quality, quantity & prices of the resources used
- Population problem, the quantity & quality of resources allocated to the health area
- The medical industry's efficiency & losses due to illness, disability & premature death
- Distribution of health care resources

# What is Health Economics?

## Health:

- As defined by WHO, a state of complete physical, mental and social wellbeing, and not merely the absence of disease.
- Different approaches to the definition of health are common. Perceptions of health vary and beliefs about what may improve or damage health change.
- Different health systems define health in different ways according to the legal, social and economic implications of official recognition of health and or disease states, for example, whether ill-health is sufficient to justify sickness benefit;

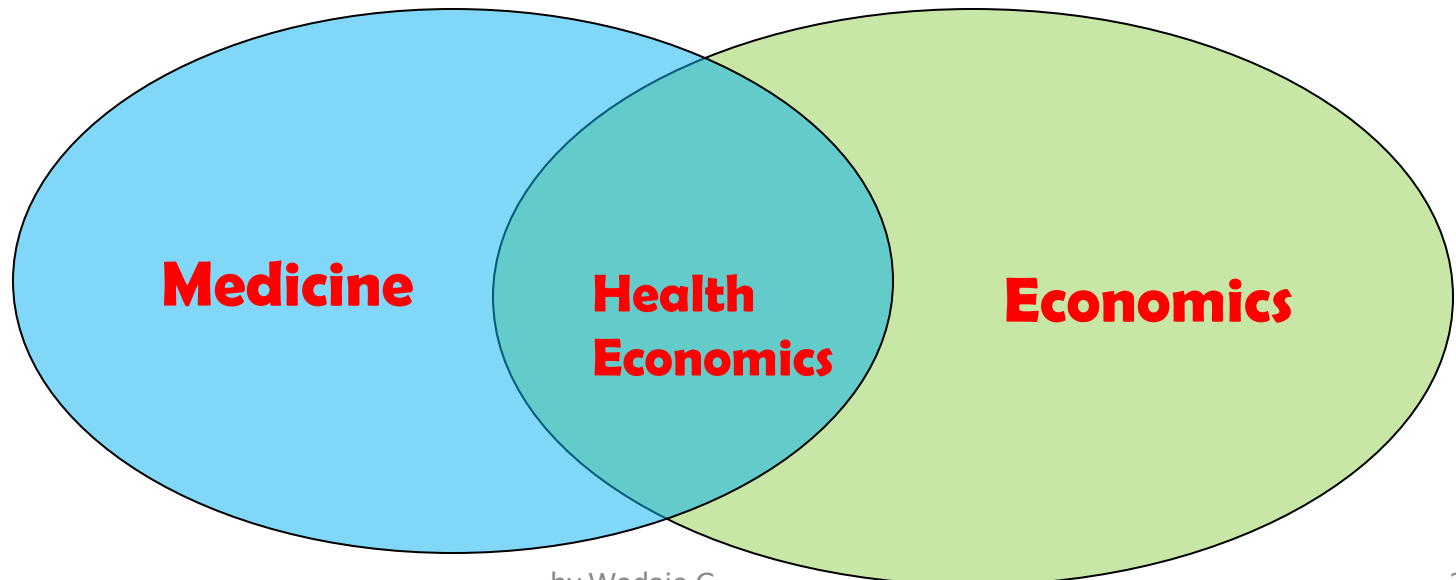
# WHAT IS HEALTH ECONOMICS.....

- The discipline of economics applied to the topic of health.
- Branch of economics concerned with issues related to scarcity in the allocation of health and health care
- The science that examines the ways in which services and resources are provided to the entire population and the efficiency and equity of providing these services.



# WHAT IS HEALTH ECONOMICS ...

- Looks at the economic aspects of health and healthcare.
- It encompasses the casual relations between the health status of individuals and groups and their economic activities



# Health Economics...

It is concerned with:-

1. The allocation of resources to various health promoting activities
2. The quantity of resources used in health care delivery
3. The efficiency with which resources are allocated and used for health purposes
4. The effect of preventive, curative and rehabilitative health services on individuals and society
5. Funding organizations for health institutions

# Some Key (Basic) Concepts in Economics

1. Scarcity (What is scarcity)?
2. What are Resources?
3. Opportunity Costs
4. Production Possibilities Curve (Frontier)-PPC (PPF)
5. Efficiency and Inefficiency
6. Economic Growth

# 1. Scarcity (What is scarcity)?

- *Scarcity* is the lack of enough resources to satisfy all desired uses of those resources.
- That is, we cannot have everything we want because relative to our wants, **Economic Resources** are limited in supply (availability).
- Thus it is the foundation of economics

## 2. What are Resources?

- Are factors of production that are used to produce goods and services with which we satisfy our needs.
- *Inputs* that are needed to produce *outputs*

### Four Basic Factors of Production

**Land** : refers to all natural resources such as crude oil, water, air, and minerals.

**Labor** : refers to the skills and abilities to produce goods and services.

**Capital** : refers to goods produced for use in the production of other goods, e.g., equipment, structures.

**Entrepreneurship**: is the assembling of resources to produce new or improved products and technologies. (know how, managerial capacity)

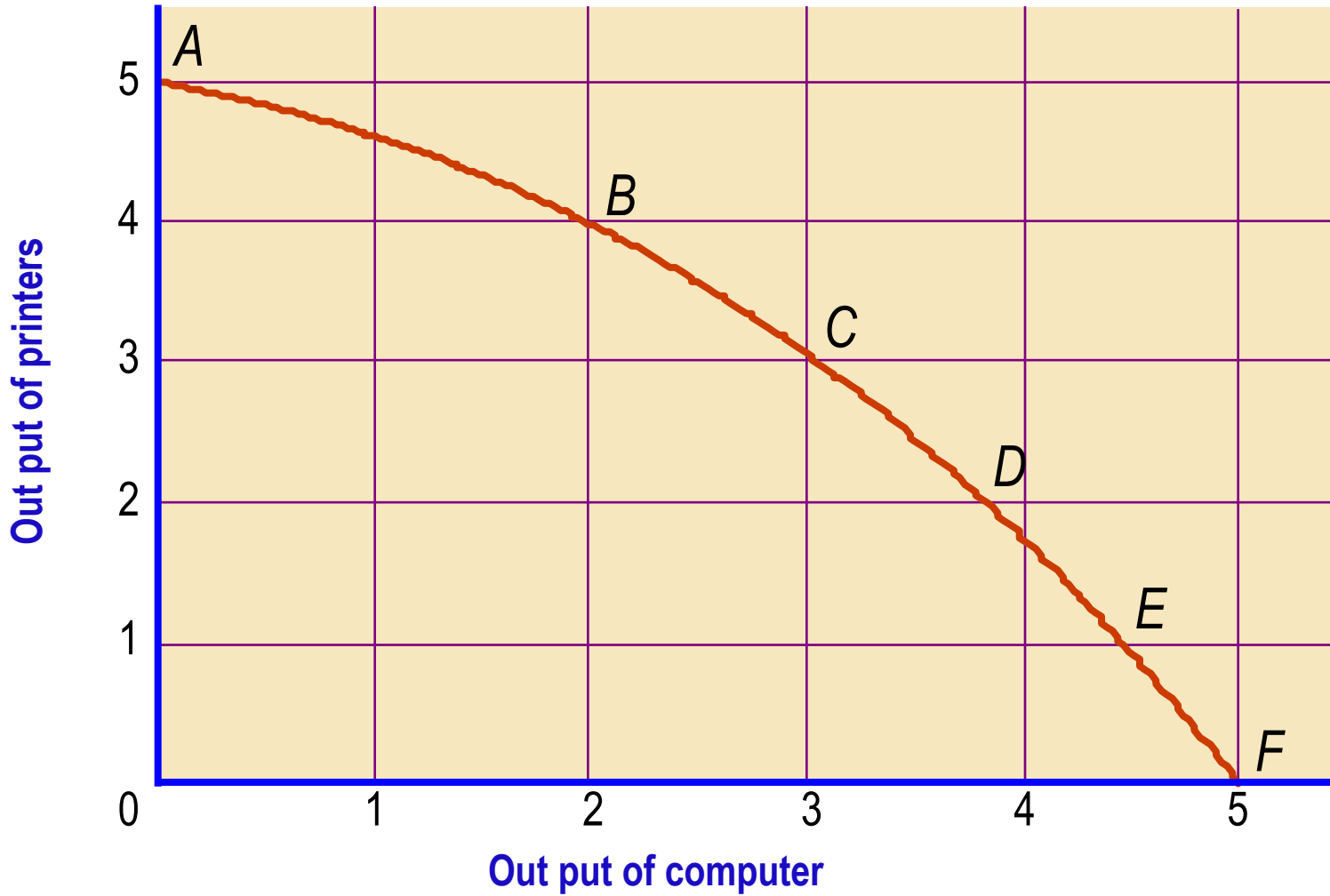
### 3. Opportunity Costs

- It is what is given up in order to get something else. (The best alternative forgone)
- Opportunity cost is the most desired goods or services that are forgone in order to obtain something else.
- The cost of allocating scarce resources for one use rather than the other use

## 4. Production Possibilities Curve (Frontier) - PPC (PPF)

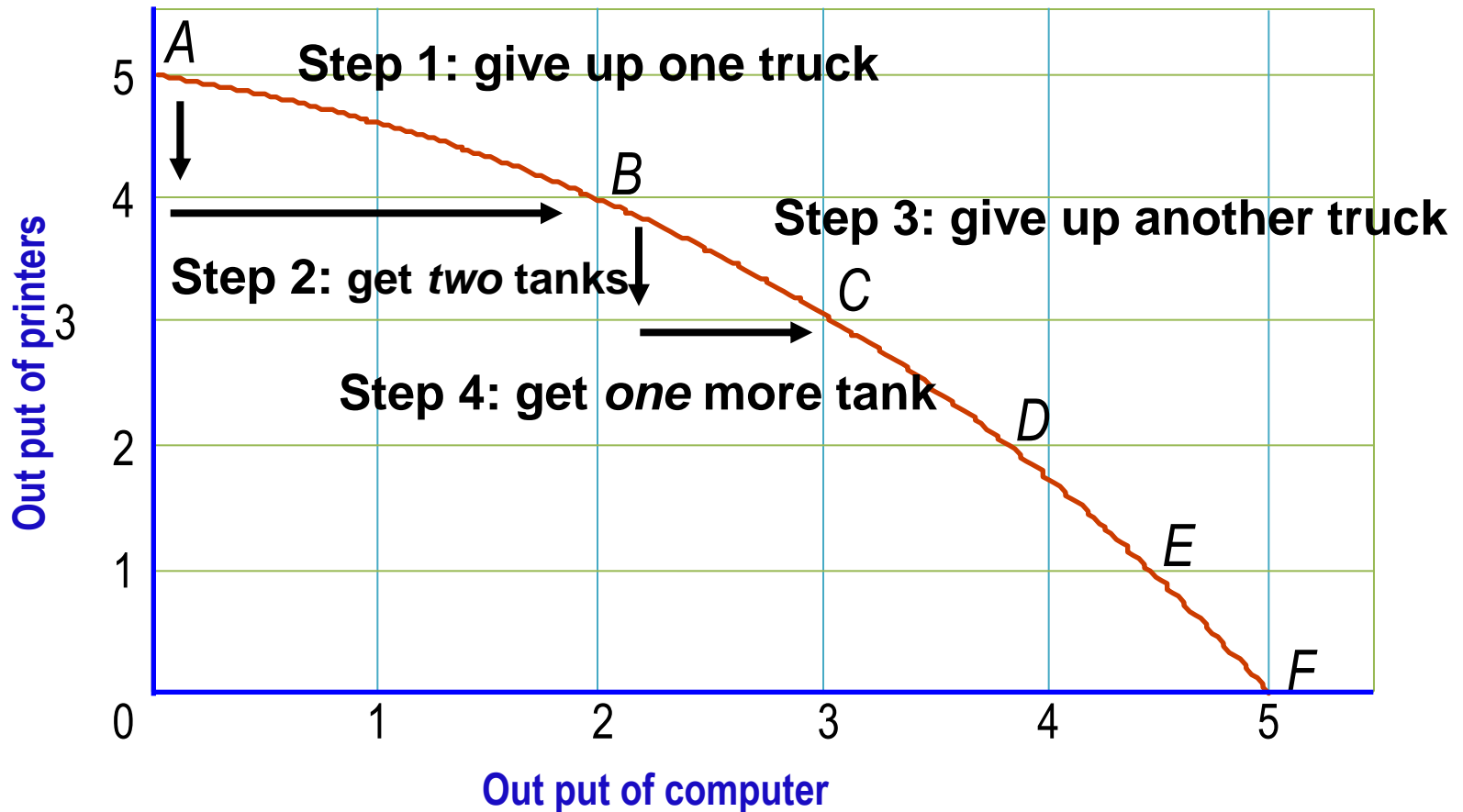
- A graphic representation of production possibilities
- ***Production possibilities*** are the maximum alternative combination of goods and services that could be produced in a given period of time with all the available resources and technology.

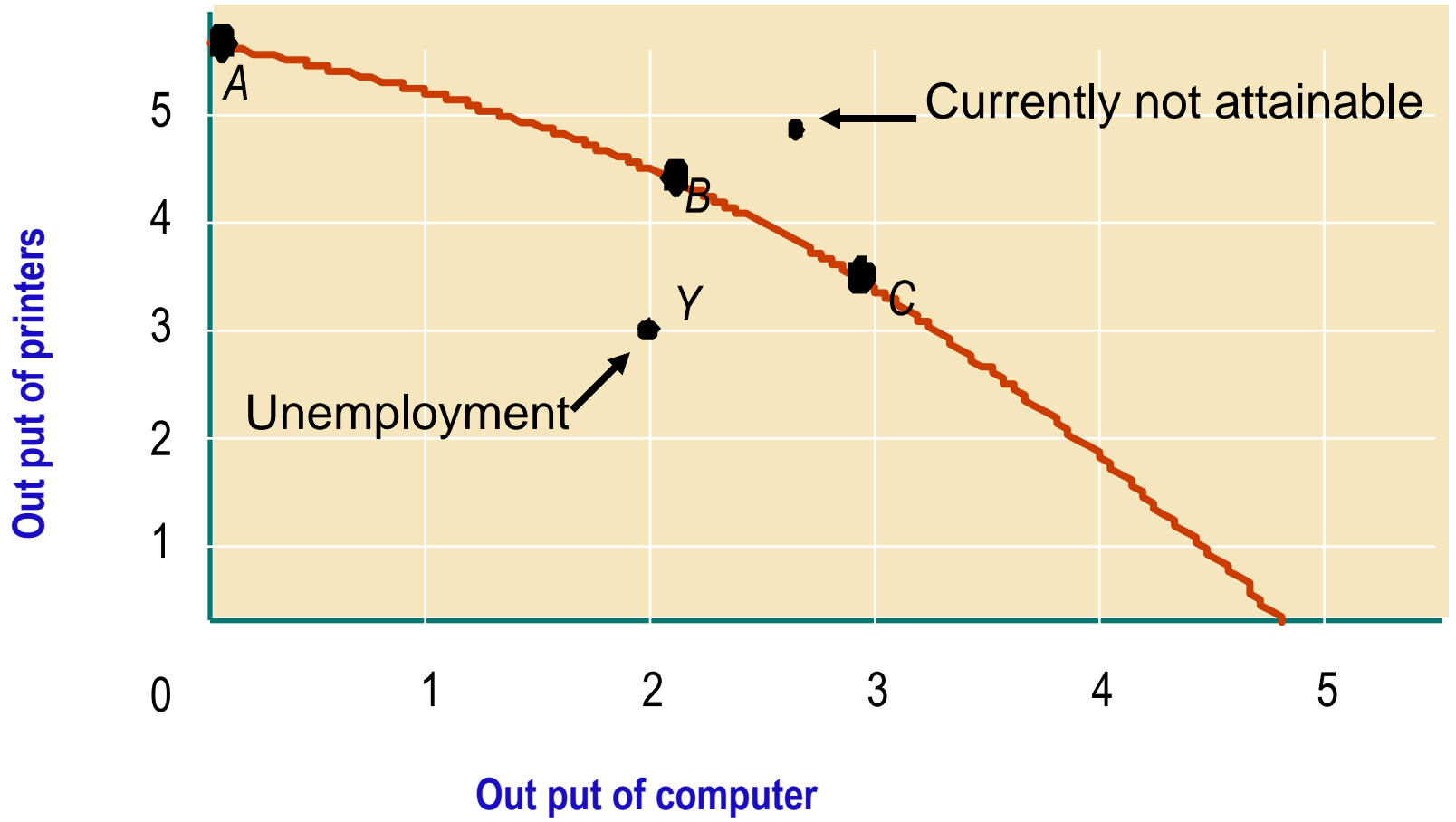
# The Production Possibilities Curve





# Opportunity Costs





# PPC

- PPC curve also shows the law of opportunity cost, which is stated as;-
- ***Increasing quantities of any good can be obtained only by sacrificing ever-increasing quantities of other goods***

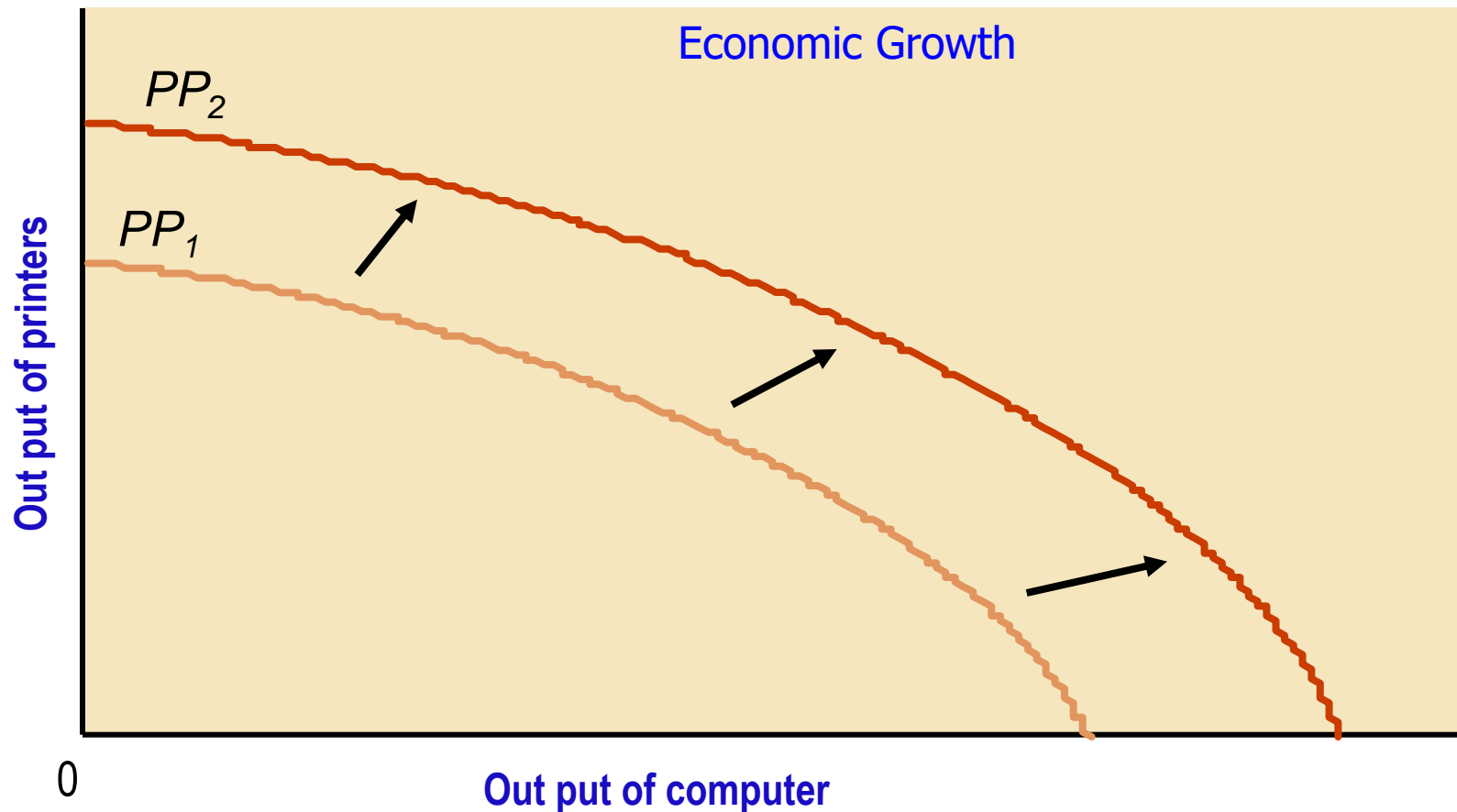
# PPC

- PPC also shows whether outcomes (of allocation decision) are Efficient or Inefficient
- **Efficiency** means getting the maximum output of a good from the resources used in production
- Every point on a production possibilities curves is **efficient**.

# PPC...

- Any point inside the PPC represent **inefficient** outcomes...leads to **unemployment**
- A point **outside** the production possibilities curve suggests that we could get **more** goods than we are capable of producing->**Economic Growth**

with more resources or better technology, production possibilities curve may shift outward.



## Class Activity 1; 10 minutes

Combination	Disease prevention (No. of preventions)	Disease control (No. of patients cured)
1	30	0
2	26	6
3	20	10
4	12	13
5	0	15

1. Draw the PPF
2. Label an **efficient** combination, an **inefficient** but attainable combination and an **unattainable** combination
3. What is the opportunity cost of increasing the number of patients cured from 0 to 6? And increasing the number of patients cured from 13 to 15?

# PPC

- ✓ Thus movement along PPC represent opportunity cost
- ✓ How much we give up in the production of one output to get more of the other output)- tradeoffs

**Prioritization** - Choice on how to use scarce resources requires prioritization of health interventions on some agreed criteria.

- The costs and benefits of alternative interventions have to be compared.

## **Ceteris Paribus**

- ✓ Is a fundamental assumption in economics to facilitate understanding the concepts and principles of economics by holding other variables/parameters/things constant.



## 5. *Efficiency and Inefficiency*

- PPC also shows whether outcomes (of allocation decision) are Efficient or Inefficient.
- *Efficiency* means getting the maximum output of a good from the resources used in production.
- Every point on a production possibilities curves is efficient.
- *Inefficiency*
  - Recall that a production possibilities curves shows potential output, not necessarily actual output.

## 6. Economic Growth

- *Economic growth* is an increase in output (real GDP) - an expansion of production possibilities.
- PPC also shows Economic Growth or Decline
- A point *outside* the production possibilities curve suggests that we could get *more* goods than we are capable of producing!
- With more resources or better technology, production possibilities curve may shift outward.
- Such a shift represents Economic Growth

# Ten Principles of Economics

- How people make decisions.
  - ✓ People face tradeoffs.
  - ✓ The cost of something is what you give up to get it.
  - ✓ Rational people think at the margin.
  - ✓ People respond to incentives.
- How people interact with each other.
  - ✓ Trade can make everyone better off.
  - ✓ Markets are usually a good way to organize economic activity.
  - ✓ Governments can sometimes improve economic outcomes.

# Ten Principles of Economics ...

- how the economy as a whole works.
  - ✓ The standard of living depends on a country's production.
  - ✓ Prices rise when the government prints too much money.
  - ✓ Society faces a short-run tradeoff between inflation and unemployment.

# Classification of Economics

# Macroeconomics

- It studies the activities and behavior of the economy as a whole.
- It is the study of rate of flow in the economy (income, unemployment, output spending, investment, etc) and what factors influence this rate of flow.

E.g. Total national output, general price level, the unemployment rate etc.

# Micro economics

- Deals with the theory of individual choice, that is decisions made by a particular consuming unit such as an individual, industries ,firms , household etc.

E.g. How purchasing decisions of consumers are influenced by changing prices and income.

# Classification of Economics.....

**Macro economics:** concerned with the behavior of the economy as a whole or with the broad aggregate of economic life.

***Macroeconomics*** is the study of aggregate economic behavior, of the economy as a whole.

**Micro economics:** deals with the behavior of individual prices and quantities (Issues at individual level)

***Microeconomics*** is the study of individual behavior in the economy, of the components of the larger economy.



# Macroeconomics vs Microeconomics

## ■ Macroeconomics

- The study of the aggregate (or total) effects on the national economy and the global economy of the choices that individuals, businesses, and governments make. *Macro = 'big'*

## ■ Microeconomics

- The study of the choices that individuals and businesses make, the way these choices interact, and the influence that governments exert on these choices. *Micro = 'small'*

# Normative Vs positive economics

- Classification based on whether it is **prescriptive and descriptive**

## ❖ Positive economics ( Fact )

- Describes the facts and behavior in the economy.
- Describes what the world actually is

E.g. what is the percentage of un employment?

How many people earn less than 3 dollar/day.

# Positive Economics

- **Positive statements** are about *what is and* describes facts and behavior in the economy.
  - Can be proven right or wrong.
  - Can be tested by comparing it to facts.
- **Example:**
  - “Universal health care will cut the amount of work time lost to illness”.
  - What percentage of teenagers are unemployed?
  - How many people earn less than \$6,000 a year?
  - What will be the effect of higher cigarette taxes on the number of smokers?
  - These are questions that can be resolved only by reference to facts; they are all the domain of positive economics.

# Normative Vs positive economics...

## ❖ Normative economics ( value judgments)

- It is prescriptive by nature and involves ethical and value judgments.
- It cannot be proved true or false: our view of it depends on our value system.
- Tells what the world should be.

E.g.- Should government give money to poor people?

- “Health care is a basic right and should be provided free”

# Normative Economics

- Normative statements are about *what ought to be* and involves ethics and value judgments.
  - Depend upon personal values and cannot be tested.
- Example:
  - “Every Ethiopian should have equal access to health care”.
  - Should the government give money to poor people?
  - Should the public sectors (government) or the private sector (business) provide extra jobs for unemployed teenagers?
  - Should higher taxes or lower spending reduce the budget deficit?

# *Macroeconomic Questions*

- Three big issues that macroeconomics tries to understand are:
  - The standard of living
  - The cost of living
  - Economic fluctuations-recessions and expansions

# The Standard of Living

## Standard of living

- The level of consumption of goods and services that people enjoy, on the average; it is measured [not perfectly] by average income per person.

## Goods and services

- What people value and produce to satisfy human wants.
- Goods are physical objects, and
- Services are things done for people.

# The Standard of Living

- For most people achieving a high standard of living means finding a good job or reducing unemployment.

## Unemployment

- The state of being available and willing to work but unable to find acceptable work.



# The Cost of Living

## Cost of living

- The number of birrs /dollars it takes to buy the goods and services that provide a given standard of living.

## Inflation

- A situation in which the cost of living is rising and the value of money is shrinking.

# Economic Fluctuations: Recessions and Expansions

## Business cycle

- The periodic but irregular up-and-down movement in production and jobs is called the business cycle.
- The worst recession ever was the Great Depression.

## Great Depression

- A period during the 1930s in which the economy experienced its worst-ever recession.

# Objectives and instruments of macroeconomic policy

Four objectives are central to evaluating macroeconomic performance:

- output,
- employment,
- foreign sector, and
- prices.

# Output. High employment, Foreign sector

## ***Output***

- The ultimate yardstick of a country's economic success is its ability to generate a high level of production of economic goods and services for its population.

## ***High employment***

- Providing good jobs with reasonable payment for those who want to work is another objective of macroeconomic policy.

## ***Foreign Sector***

- Involvement of foreign sector and good trade balance with foreign trade exchanges.

# Stable price

- The fourth macroeconomic objective is to ensure stable prices with free markets.
- This objective contains two parts:
  1. Price stability denotes that the overall price level does not rise or fall rapidly.

## ***Why do societies prefer stable prices?***

- The reason is that price is a common yardstick whereby economic values are measured.
- When the economic yardstick changes quickly during periods of rapidly changing prices, contracts and other economic agreements become distorted and the price system tends to become less valuable.

# Stable price...

## 2. The second half of the objective of stable prices

- maintenance of free markets:
  - means that market forces should determine prices and quantities by supply and demand to the maximum possible extent.
- Free markets allow the economy to allocate resources efficiently and in a way that is responsive to individual tastes.

# Microeconomics

- Microeconomics focuses on the behavior of individual agents (such as consumers, firms), and how they come together in markets.

Studies:

- Prices and Quantities
- Effects of government regulation and taxes

# Three Basic Questions of micro Economics

1. What to produce?

2. How to produce?

**Question of Allocation**

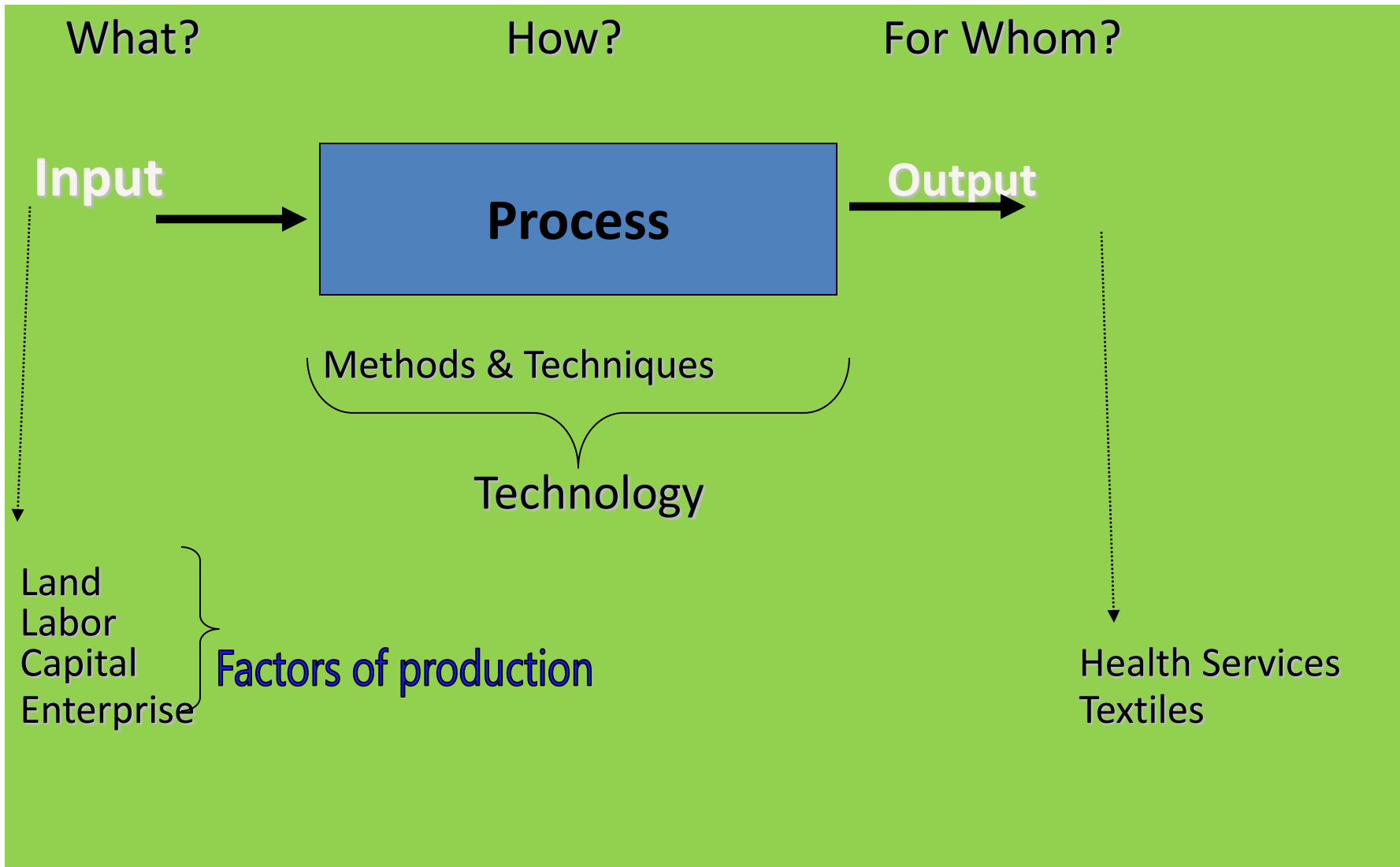
**Deals with the economic goal of EFFICIENCY**

3. For whom to produce?

**Question of Distribution**

**Deals with the economic goal of EQUITY**





# What?

- **What** goods and services are produced ?
  - (Do we produce houses or camping vehicles?)
- In U.S., the five largest services sectors: real estate, retail trades, wholesale trades, health and education. They are a **service economy**.
- Five largest categories of goods: construction, electronic equipment, food, industrial equipment and chemicals.

# How?

- *How* are goods and services produced?
  - Do we use humans or machines to produce the goods we want?
- There are four categories of factors of production:
  - land, “gift of nature”
  - labor, work time and work effort
    - human resources- quality of labor: education, training, experiences
  - Capital, tools, instruments, machines, buildings and other constructions
  - Entrepreneurship, who organizes land, labor and capital

# *For Whom?*

- For whom are goods and services produced? It depends on the incomes that people earn.
  - Land earns rent.
  - Labor earns wages.
  - Capital earns interest.
  - Entrepreneurship earns profit.

# Microeconomic Agents

- Firms
  - Produce and sell goods and services
  - Buy inputs (labor, capital & raw materials)
- Consumers
  - Buy goods and services
  - Sell inputs (labor services, loanable funds)

# Uses of Microeconomics

- Microeconomics is the study of the choices made by households, firms, and government, and of how these choices affect the markets for goods or services.
- We can use microeconomic analysis to:
  1. Understand how markets work and predict changes.
  2. Make personal and managerial decisions.
  3. Evaluate public policies.

# Uses of Macroeconomics

- **Macroeconomics** is the study of the nation's economy as a whole.
- We can use macroeconomic analysis to:
  1. Understand why economies grow.
  2. Understand economic fluctuations.
  3. Make informed business decisions.

# UNIT Two

Health care production , and Health care markets



# Unit Objectives

At the end of this unit you/students will be able to:

- Define demand and supply
- Discuss factors for demand and supply
- Explain concept of market equilibrium
- Describe the concept of market in economics
- Discuss the necessity of Government intervention\*\*\*more detail in unit 4.
- Identify models of demand and supply

# Demand

- **Demand** is the amount of a good (service) buyers want & able to purchase at different prices.
- It does not mean the desire to obtain.
- It refers to the willingness/desire and ability to buy a good.
- Demand = Need + ability and willingness to pay for a commodity.

# Factors influencing consumer demand

- The price of the good
- The price of substitutes
- The price of the compliments of the good
- Change in income of consumer
- Change in taste of consumer. Likes and dislikes in consumption.

# Factors influencing...

- Consumer expectation about future;
  - Change in future price of goods
  - Change in future income
- Population Change
  - As the number of consumers in a market changes the demand will change.

# Shifts in Demand

## •Substitutes

–Other goods which satisfy the same wants, or provide same characteristics.

–Goods that can be consumed in place of one another.

E.g: Private and public hospitals, coffee and tea, Pepsi and Coca .

–Two goods are substitutes when a change in the price of one causes a shift in demand for the other in the same direction as the price change.

# Shifts in Demand...

- **Complements**

- Goods that are related in such a way that an increase in the price of one leads to a decrease in the demand for the other.
- Two or more goods which are consumed together. E.g. sugar and milk, Car and Engine, etc.

# Normal and Inferior Goods

- Normal Goods

- Goods for which demand rises as income rises, most goods are normal goods

- Inferior Goods

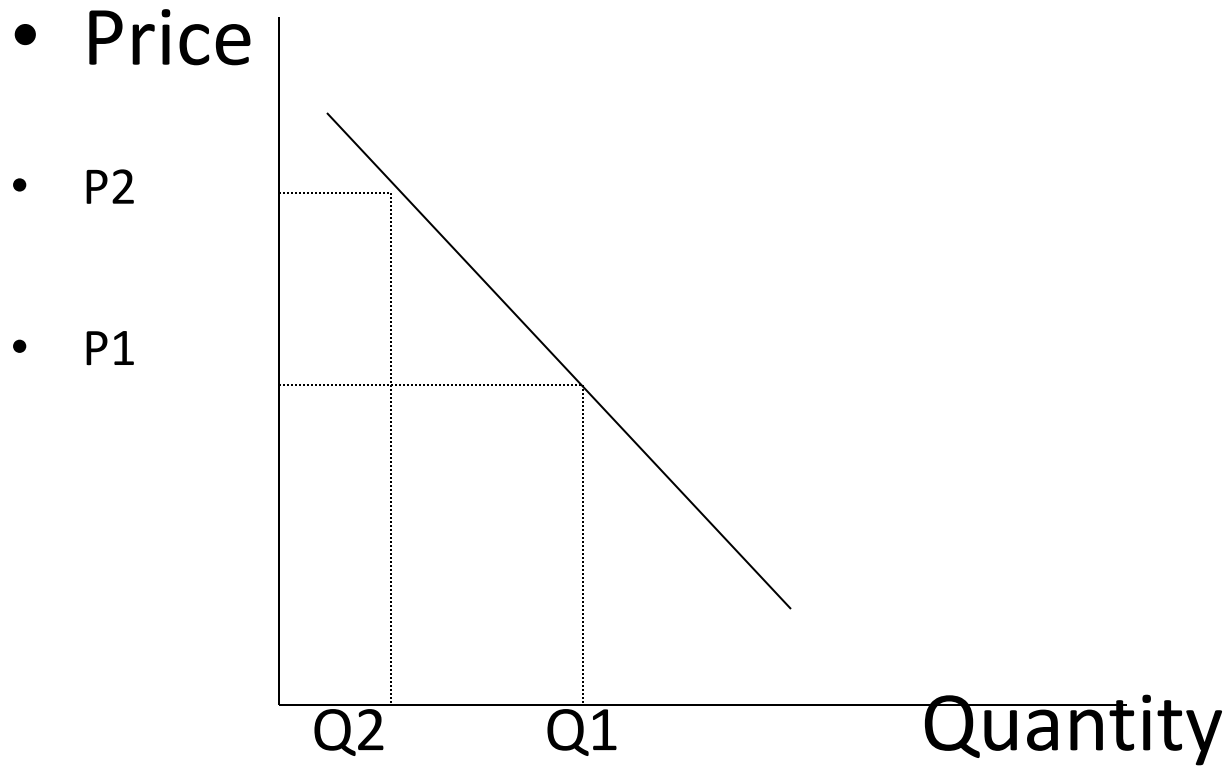
- Goods for which demand falls as income rises

# Law of Demand

- “The Lower the **price**, the greater the quantity demanded, keeping the other factors constant”.
- This **inversely** relationship between price and quantity demanded is known as **law of demand**.
- At lower prices people are able and willing to purchase more of a commodity than at higher prices.



# Demand Curve



# Supply

**Supply** is the amount of a good producers/sellers are willing to produce and sell at different prices.

❖ Factors influencing the supply of a good or service:

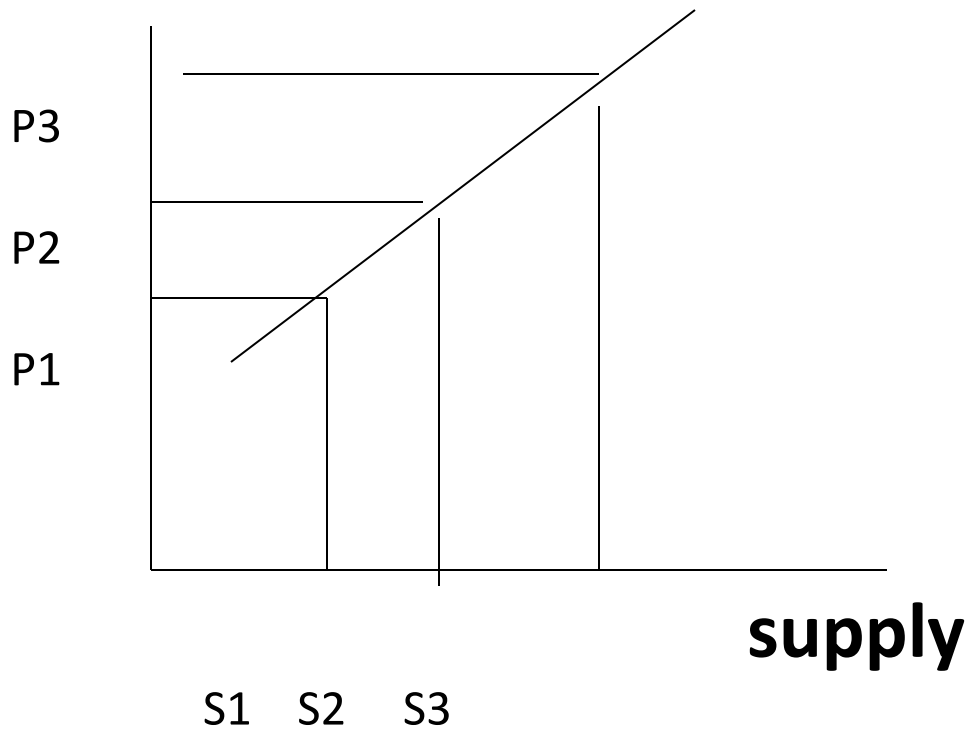
- own price-positively b/c sellers need more profit.
- production cost of a good itself-negatively
- production cost of substitutes-positively
- Market structure/organization-if monopoly  
(positively)
- Other factors

# Law of Supply

- ❖ It states that the quantity supplied of a good is positively related to its own price.
- ❖ **Supply Schedule:** is the tabular presentation of quantity of a good supplied by the producer/seller at different prices.
- ❖ **Supply Curve:** is graphic presentation of the supply schedule.

# Supply curve

Price



# Elasticity of Demand

# Elasticity

- **Elasticity** is a measure of responsiveness or sensitivity of the dependent variable(demand/supply) to the change in the independent variable (factors affecting demand/supply).
- It provides a way of measuring how demand or supply is sensitive to factors such as a change in price.

# Types of elasticity

- ❖ Different types of elasticity:
  - Price elasticity of demand ( $\epsilon_d$ )
  - Income elasticity of demand ( $\epsilon_y$ )
  - Cross elasticity of demand ( $\epsilon_{xy}$ )

# 1. Price elasticity of Demand

- ❖ Price elasticity of demand ( $E_d$ ) is sensitivity of the quantity demanded of a good to the change in the price of the good.

$$E_d = \frac{\% \text{ change in quantity demanded (Q)}}{\% \text{ change in price (P)}}$$

Price of Surgery	Quantity Demanded
Br. 1000	400
1500	300
2000	200
2500	100

**Q: What is the price elasticity of demand for price increase from Br.1500 to Br.2000?**

**How do you classify the elasticity coefficient?**



# Price elasticity ...

## Elasticity cut-off points:

$\epsilon_d$  is  $< 1$  demand is inelastic

$\epsilon_d$  is  $> 1$  demand is elastic

$\epsilon_d$  is  $= 1$  demand is unit elastic

$\epsilon_d$  is  $\infty$  demand is perfectly elastic

$\epsilon_d$  is  $0$  demand is perfectly inelastic

**N.B.**- The sign of elasticity coefficients indicate the relationship between demand and other variables

# Price elasticity...

- If price elasticity of demand is elastic, total expenditures will change in the opposite direction from a change in price.
  - i.e . if PED is elastic, a rise in price will lead to people spending less, while a fall in price will lead to people spending more.

## Price elasticity...

- If price elasticity of demand is **inelastic**, total expenditures on a commodity will change in the **same direction** as a change in price.
  - i.e if PED is inelastic; a **rise** in price will lead to people **spending more**, while a **fall** in price will lead to people **spending less**

## 2. Income elasticity of demand (YED)

- **YED** measures how demand reacts to changes in income.

- The formula for income elasticity of demand is:

% change in quantity demanded

% change in income

- If the result is **positive**, then the goods are **normal**, if it is **negative** then they are **inferior**.

### 3. Cross price elasticity of demand (XED)

- It measures how demand reacts to changes in the price of other goods.
- Cross price elasticity of Demand =  
$$\frac{\text{\% change in quantity demanded of main good}}{\text{\% change in price of other good}}$$
- If cross price elasticity of demand is **positive** then this indicates that the goods are **substitutes**.
- If it is **negative**, then the goods are **complements**.

# The purpose of analysis of demand in health care

- Is to determine those factors which, on the average , **most affect a persons utilization of medical services.**
- The better our understanding of those factors, the better we will be able to **explain variation in utilization** among population groups and among areas.

# Elasticity of Supply

- If the amount put on the market is highly responsive to price changes, the supply is elastic.
- If the amount offered is little affected by price variations, the supply is inelastic.

# Market Equilibrium

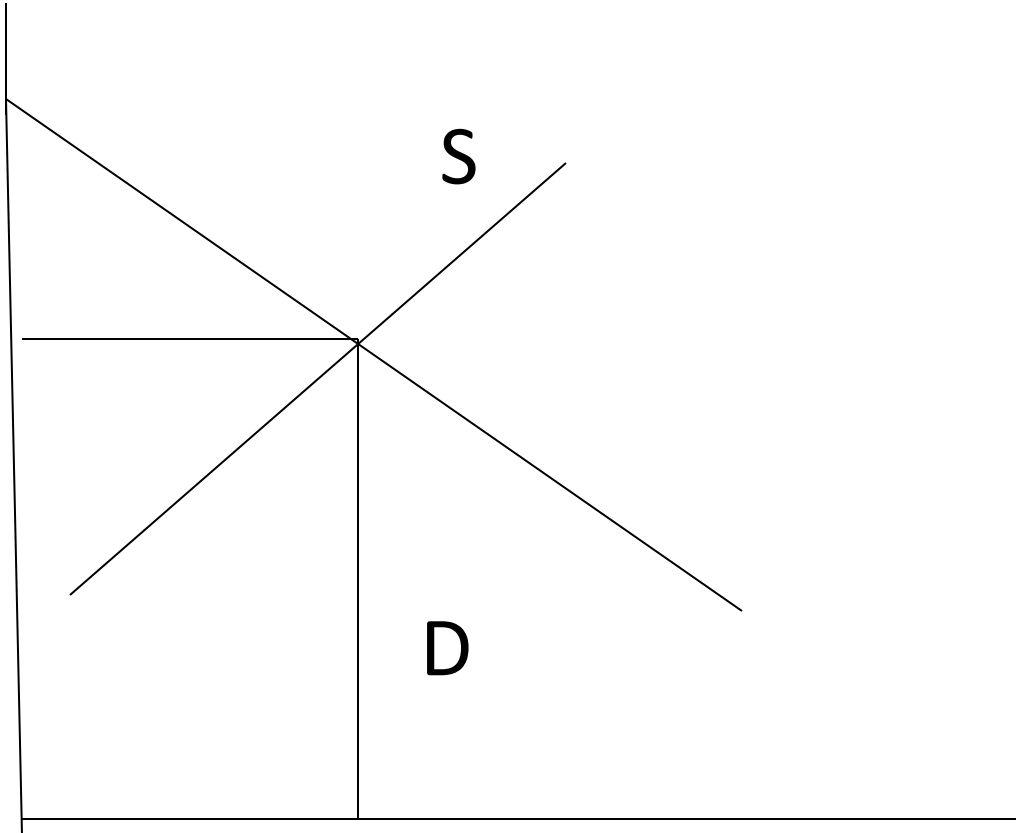
- Is the situation when quantity supplied equals quantity demanded at a particular price.
- The supply and demand forces in the market place will produce an equilibrium price and equilibrium quantity, or market equilibrium.
- The market-equilibrium comes at that price and quantity where the supply and demand forces are balanced.



# Market Equi...

- At such a price and quantity, the amount that buyers wish to buy is just equal to the amount that sellers wish to sell.
- At the equilibrium, price and quantity tend to stay the same, as long as other things remain equal, until something operates to change supply and demand.

# Equilibrium of supply and demand



# Need Vs. Want

- A **Need** is something that is necessary for humans to live a healthy life.
- Needs are distinguished from **wants** because a deficiency would cause a clear negative outcome, such as dysfunction or death.
- In **economics**, a **want** is something that is desired.
- It is said that people have unlimited wants, but limited resources.
- Thus, people cannot have everything they want and must look for the best alternatives which they can afford.

# Need Vs Demand

Need	Demand
<ul style="list-style-type: none"><li>•Someone's subjective idea</li><li>•Money is not a factor</li></ul>	<ul style="list-style-type: none"><li>•Objectively observable as behavior in the market.</li><li>• Money is a key factor.</li></ul> <p>"Demand" is also called "effective demand," because it's expressed only by spending money</p>

# A model of demand for medical care

- Consumers purchase **goods** and **services** for their utility.
- If the commodity demanded by consumers is good health, then health can be produced by goods and services purchased in the market as well as by the time devoted to preventive measures

# A model of demand for medical care ...

- According to **Michel Grossman**” consumers have a demand for health for **two reasons**
  - 1) Health is a **consumption commodity** -it makes the consumer feel better
  - 2) Health is an **investment commodity** -a state of health will determine the amount of time available to the consumer for productivity.

# **A model of demand for medical care ...**

- Health is a consumption good means that health related activity will improve the quality of life, prevent discomfort or illness

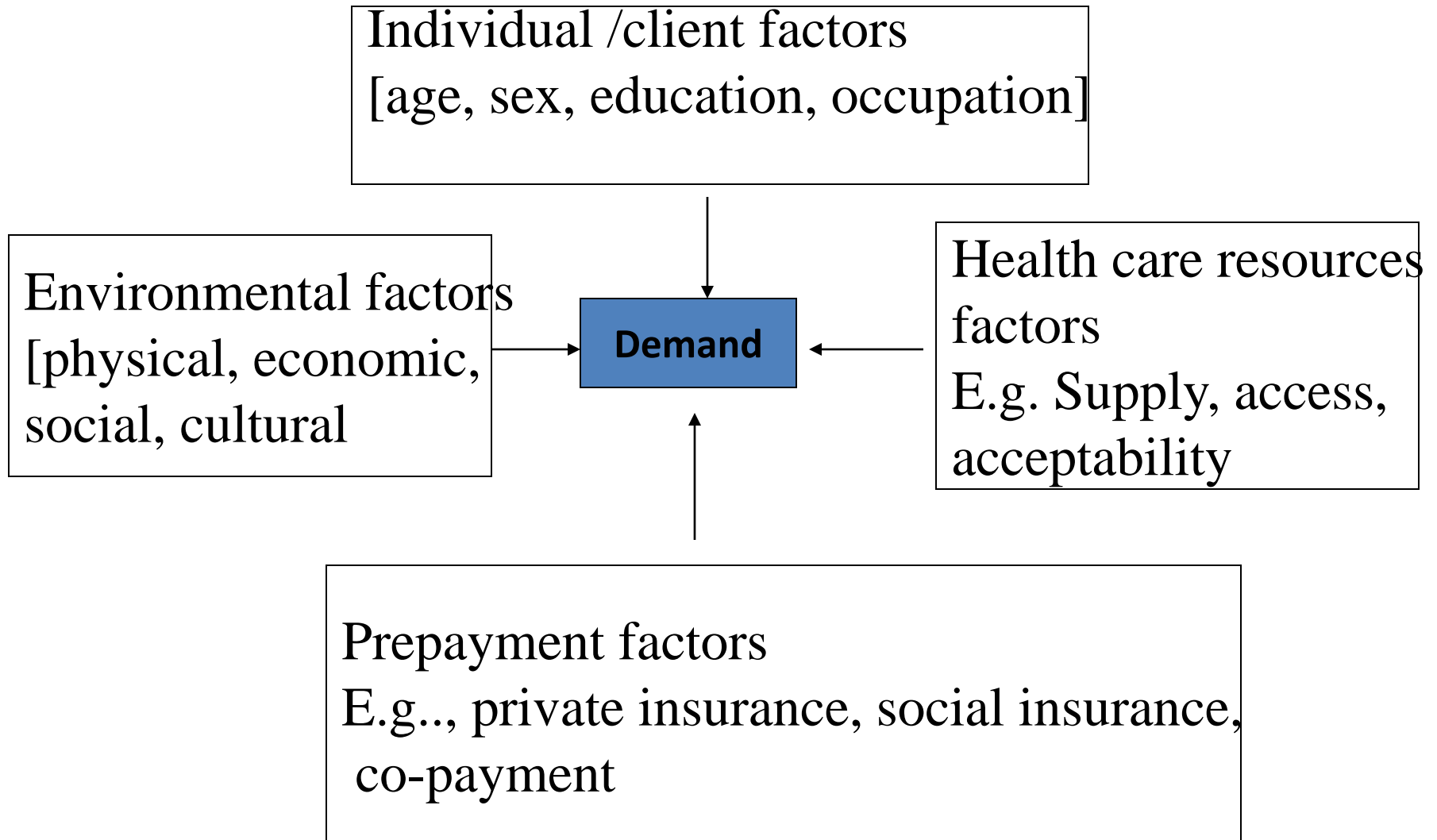
E.g. cosmetic surgery, speech therapy, physiotherapy etc

# A model of demand for medical care ...

- Health is an investment means, being unhealthy brings discomfort, increase the number of sick days, loss of income from reduced work hours, absence from schools etc → decreased productivity( low economy)



# GROSSMAN'S DEMAND MODEL



# MICHEL GROSSMAN'S DEMAND MODEL...

- According to this model every one inherits a stock of health when born.
  - Health depreciated overtime, however an investment is required to sustain health.
- As peoples' age advances there is an increase in rate of illness and in the utilization of health services.
- The stock of health can be sustained by investment to maintain health, such as in use of health services and health promoting activities.

# Medical care demand...

## ❖ According to the view of Gross man;

- **First**, Increase in age result in an increase in the rate at which the persons stock of health depreciates.
- Over the life cycle people will attempt to offset part of the increased rate of depreciation in their stock of health by increasing their expenditure on health services.

- **Second**, the demand for medical care will increase with increases in persons wages.
  - There is a positive relationship between wages and demand for health care.
- **Third**, education has a negative effect on the demand for health, because more highly educated people are presumed to be more efficient in producing health.

# Market

- Is an arrangement by which buyers and sellers of a commodity interact to determine its price and quantity.
- We all want good health ...
- This suggests that everybody is potentially a buyer (or consumer) of health care.

## Market...

- More precisely, at any moment, a buyer would be any body who was ill or who wanted preventative medical treatment such as vaccination or who wanted guidance/ counseling about their health.
- The sellers would be those people who could provide medical and health care services, such as doctors, nurses, physiotherapists, dentists etc

# Market Structures

- Market structure refers to how an industry (broadly called market) that a firm is operating in is structured or organized.
- **The key ingredients of any market structure are:**
  - Number of firms in the market/industry
  - Extent of barriers to entry
  - Nature of product
  - Degree of control over price.

# Types of Market Structure

- **Four broad market structures have been identified by economists:**
  - Perfect competition
  - Monopoly
  - Monopolistic competition
  - Oligopoly



# Types of Market Structures...

Type of market	Number of firms	Freedom of entry	Nature of product	Examples	Implication for demand curve of firm
Perfect competition	Very many	Unrestricted	Homogenous (undifferentiated)	Grains (wheat) or vegetables	Horizontal; firm is a price taker
Monopolistic competition	Many / Several	Unrestricted	Differentiated	Plumbers, restaurants	Downward sloping but relatively elastic; firm has some control over prices.
Oligopoly or Cartel	Few	Restricted	1. Undifferentiated or 2. Differentiated	Cement, cars, electrical appliance, oil.	Downward sloping relatively inelastic but depends on reactions of rivals to a price change
Monopoly	One	Restricted or completely blocked	Unique	WAPDA, or KESC	Downward sloping more inelastic than oligopoly; firm has considerable control over price

# 1. Perfect Competition

- **The main assumptions of perfect competition are:**
  - Large number of buyers and sellers, therefore firms price-takers.
  - No barriers to entry (also implies free mobility of factors of production).
  - Identical/homogeneous products (extent to which products can be regarded as substitutes for each other)
  - Perfect information/knowledge.
- Perfect competition can be thought of as an **extreme form of capitalism, i.e. all the firms are** fully subject to the market forces of demand and supply.

## 2. Monopoly



- Is the other pole or extreme of the market structure spectrum.
- A situation where there is a single producer in the market.
- Economists are often interested in how much monopoly power any firm (not necessarily a monopoly) has.
- Here monopoly stands for the extent to which the firm can raise prices without driving away all its customers.
- In other words, monopoly power and price elasticity of demand are inversely related.

# Types of monopolies

- More efficient for only one business to produce the goods = *Natural Monopoly*
- No other business chooses to compete in that area = *Geographic Monopoly*
- Results from new discoveries and inventions.
- The government grants these monopolies through the issue of patents and copyrights = *Technological Monopoly*
- Involves products people need that private industry might not adequately provide = *Government Monopoly*

# Disadvantages of Monopolies

- Monopolists produce lower quantities at higher prices compared to perfectly competitive firms.
- Monopolists earn supernormal profits compared to perfectly competitive firms
- Most of the “surplus” increase to monopolists.
- Monopolists do not pay sufficient attention to increasing efficiency in their production processes.
- **Efficiency = Maximizing social net benefits**

### 3. Monopolistic Competition

- Monopolistic competition is also characterized by a large number of buyers and sellers and
- Absence of entry barriers. In these two respects it is like perfect competition.
- Firms are price-takers but not in the extreme sense of perfect competition.
- Products are differentiated and in this respect, it is different from perfect competition.

## 4. Oligopoly

- Similar to monopoly in the sense that there are a small number of firms (about 2-20) in the market and, as such, barriers to entry exist.
- It is similar to perfect competition in the sense that firms compete with each other which may result in prices very similar to those that would obtain under perfect competition.
- It is similar to monopolistic competition since there is a possibility of having differentiated products.

# Taxes

- Governments levy taxes to raise revenue for public projects.
- Taxes discourage market activity.
- When a good is taxed (commodity tax), the quantity sold is smaller.
- Buyers and sellers share the tax burden.
- **Sale Tax:** a tax on buyer  
Example: USA \$0.50 tax per ice-cream cone bought.
- **Excise Tax:** A Tax on Seller  
Example: Taiwan \$0.50 tax per ice-cream cone sold



**Thank You!!!**

# Unit Three : Justification for Government stewardship over health care.

Unit objective:

- ❖ at the end of this unit students will be able explain the rationale for government interference in the health care.
- ❖ Students also be able to define and discuss unique features of health care:
  - Uncertainty
  - Externalities
  - Public goods
  - Merit good, equity, efficiency
  - Information asymmetry
  - Demand criteria (supplier induced demand)

## **Distinctive Feature of Health Care Market**

- Presence of uncertainty
- Prominence of insurance
- Problem of information : Asymmetric information  
Situation in which the service provider and the patient have differing amounts of information about the patient's health, treatment options available, and the expected consequences of treatment.
- Large role of nonprofit firms
- Restriction on competition
- Role of equity and need
- Government subsidy and public provision

# The need for government intervention...

## Four basic assumptions in the perfect competition Market Structure

1. All buyers and sellers are small relative to the overall size of the market.
2. All buyers and sellers are perfectly informed.
3. The product is homogeneous.
4. There is freedom of entry and exit.

**Are healthcare markets perfectly competitive?**

# The need for government intervention...

## Health Care Market Deviation from the Perfectly Competitive market assumption

1. There are barriers to entry/Licensing laws and regulation
2. There are often a few firms in the market with some market power to influence or even dictate the market price.
3. Healthcare services are not uniform in quality **e.g health professionals are different in competency**
4. Motivations other than pure profit are common in healthcare. **E.g referral hospitals looks for prestige than profit maximization**

# The need for government intervention...

## Health Care Market Deviation...

5. Health events entail a considerable degree of uncertainty
  - This is why insurance markets are important
  - The uncertainty distorts prices/no longer efficient.
  - Often prices are negotiated between supplier and consumer/ not determine by the market
6. Information problems exist/ You don't know the price of all doctors and the quality of each doctor, and what product you need.
7. Externalities are prevalent in healthcare e.g. **vaccinations, viruses**

# **The need for government intervention...**

## **Economic rationale for government intervention**

1. Imperfect competition market
2. Market failure
  - Externalities
  - Public goods
  - Monopoly power

# Market and government failure

- **Market Failure:** a *market failure* is an imperfection in the market mechanism that prevents optimal outcomes.
- If the market signals do not give the best possible answers, we say that the market mechanism has failed.
- Example: Environmental Pollution (Over Production of goods with harmful effects (negative externalities), Underproduction of goods with positive effects (positive externalities))
- **Adam Smith's “invisible hand” theorem/** The invisible hand that guides buyers and sellers is the market price.



## 2. *Government Failure*

- ***Government Failure***: government intervention (Regulation) may move us closer to our economic goals. The government may also fail.
- A ***government failure*** is government intervention that fails to improve economic outcomes.
- Example:
  - The cost of regulation may outweigh the benefits

## **Economic Justifications for Market Failure**

- Nature of goods (public goods)
- Externalities (Positive and negative)
- Natural monopolies
- Imperfect competition
- Uncertainty and imperfect information
- Asymmetry of information
- Large component of personal services
- Health care as free market
- Suppliers induced demand
- Power to impose unwanted RX

## **Imperfect Information and Uncertainty**

- Do not know how long you will live,
- Do not know how healthy you will be in the future.
- Do not know when you might be unhealthy.
- Do not know how much health care you might need.
- Do not know how much change in health will affect future income

# Externalities

- Unintended side effects
- A benefit or cost to third parties who are not directly involved in a transaction.
- Are neighborhood effects and can be either beneficial(positive) or harmful(negative)
- **Negative**
  - Harm, cost, or inconveniences suffered by a third party
- **Positive**
  - Benefits received by someone who had nothing to do with the activity that created the benefit

## Externalities....

- Factors that are not included in the primary economic transaction.
- Examples include:
  - The health risks to others of alcohol use, which are not included in the purchase price of the alcohol;
  - The adverse health effects from industrial pollution not included in the price of the industrial products produced nor in charges imposed on the producer;
  - And the impact on the economy of depleting natural resources not included in the calculation of national income or national product.

# Externalities -----

There are four types of externalities:

- – **External Costs of Production**
- – **External Benefits of Production**
- – **External Costs of Consumption**
- – **External Benefits of Consumption**

## Solutions to the externality problems

- Economists generally favor taxes and subsidies linked to the value of the externality
- Direct regulation
- Subsidize pollution control equipment
- Sell or grant tradable pollution rights.
- Coase's Theorem - Assign property rights
- Internalize the externality through mergers

# Public goods

- A pure public good is a good or service that is consumed in its entirety by everyone.
- When one person consumes another unit of a public good we all consume more.
- Examples may include the national defense, street lights, bridges, green areas
- Public goods have two special properties compared to private consumption goods: *non-rivalry and non-excludability*.



## Non-rivalry and Non-excludability

- ***Non-rivalry:*** When one person consumes a unit of a public good the amount available to be consumed by everyone else is not diminished.
- ***Non-excludability:*** Once a public good is produced it is difficult or impossible to exclude people from consuming it.
- Because public goods are non-rival and/or non-excludable, these goods will tend to be under produced, or maybe not produced at all if left to the private market.

## Merit goods, equity, and efficiency

- Most of us consider health services as **unique or at least special** what is called **merit goods**.
- A *merit good* is one for which it is generally considered socially desirable for consumption to be by all regardless of preferences or **ability to pay**.
- Nonetheless, the distribution of goods and services resulting from the free play of market forces rightly makes no claim to be just or equitable; though it may in certain circumstances be efficient.
- In the UN Universal Declaration of Human Rights, health is considered as one of the basic human rights.

## Merit goods, equity, and efficiency...

- And it is stated that those in need have a basic right to medical care and that rights imply that no one should face financial or other barriers to the use of health services.
- This argument seems an absolutist one - not amenable to consideration of degrees of *efficiency and equity* implicit in different market arrangements but leading directly to the policy prescription that health services must be offered free at the point of use.
- Inevitably, this will mean **government intervention**.

## Form of government intervention

- Public provision
- Regulation
- Transfer program
- Inform
- Finance
- Commodity tax and subsidies

## Form of government intervention ...

- **Public provision:** this is provision of goods and services like education, road, water and health care
  - Control of disease vectors (malaria)
  - Food and water safety
- **Regulation:** here the government influence the allocation of resource by establishing rules and regulations.
  - Regulation in the health care market can take many forms like licensure law, mandates, regulation of price, quality and quantity of services etc

### Example

- Environmental protection agency
- Occupational safety and health administration

## Form of government intervention ...

### ➤ **Transfer program**

- **Cash transfer:** to meet society's equity by redistribute income.
- **In kind transfer:** to increase a recipient's consumption of specific goods and services.
- E.g housing, food stamp,

### ➤ **Inform:** or persuade consumers / providers to act in a certain way.

- Publicize health risks (smoking)
- Disseminate information on disease patterns (swine flu), or risks of medical procedures.

### ➤ **Finance:** health care service with public funds.

**THANK YOU!**

# Unit Four

## Health care financing



## Session objectives

- ❖ At the end of the session you will be able to:
  - Define Health Care Financing and health care insurance
  - Identify Sources of Health Services Financing
  - Describe Elements of Health care financing
  - Discuss The Types of Health Insurance

## Health Care Financing

- Deals with mobilization, allocation, and utilization of funds for health care to cover the health needs of the people and for specific types of health care services.
- It is concerned with where the money comes from, how it is collected, how it is pooled and how it is used to pay health service providers .

## HCF Cont...

### ➤ **Health care differs in a number of ways from other market systems**

1. The need for health care is sporadic and unpredictable.

➤ So that it is hard to ensure to pay for it when it needs.

2. Health care is very expensive particularly in the case of hospital treatments, accidents and long term illnesses.

## HCF Cont...

3. Poor people are unable to afford health care costs, however they are more likely to require more health care due to poor *housing, nutrition, and employment conditions.*

## **Major questions to be addressed on health care financing:**

- What services should be produced to achieve health goals?
- How much do they cost?
- Who gets what?
- Who pays?

## **Elements of Health care financing**

- Raising sufficient revenue in a sustainable manner
- Pooling risk equitably and efficiently
- Purchasing health services to cover the health needs of the community

## Elements of HCF...

- ❖ **Revenue collection** is the way health system raise money from households, businesses and external sources.
- It is concerned with the sources, structures and means by which funds are collected.

## Elements of HCF...

- ❖ **Risk pooling** is the collection and management of financial resources so that large unpredictable individual financial risks become predictable and are distributed among members of the pool.
- Prepayment allows pooling of risks.



## Elements of HCF...

- ❖ **Purchasing/resources allocation** refers to the many arrangements for buyers of health care services to pay health care providers and suppliers.
  - It is a mechanism to secure services from public and private providers.
- ❖ Resources can be allocated using formula taking into account population size, demographic composition, disease burden (mortality rate, ..), socioeconomic status and so on.

# Sources of Health Services Financing

## ❖ Public sources;

- Federal, state, and local government general revenues; mainly from taxes
- Compulsory health insurance.
- Lotteries.
- Dedicated taxes, alcohol, cigarette, etc.

## **Sources of Health Services Financing ...**

### **❖ Private sources;**

- Private health insurance
- Private donations
- Private foundations
- Voluntary community services
- User fees

## Sources of Health Services Financing ...

### ❖ Private financing for health care can be:

- Direct
- Indirect

### ❖ **Direct Payment**

- Personal payment made directly to a wide range of providers
- Direct out of pocket made by patients to private providers at the time a service is rendered

## Sources of Health Services Financing . . .

### ❖ **Indirect Payment**

- By large & privately owned industrial complexes in developing countries.
- By employers in industrialized countries.
- By non-government bodies such as local charity fund-raising for health causes.

## Sources of Health Services Financing ...

### ❖ **International co- operation;**

- United nations affiliation
- Foundations
- Religious organizations
- World bank
- Non governmental organizations

# **Health Sector Reform And Financing Health Care**

## **Objectives of health sector reform:**

1. To generate resources for the health sector
2. To equity in health care delivery
3. To improve efficiency of health services

# Health Care Financing Reform Components

1. Revenue retention and utilization
2. Systematizing fee waiver system
3. Standardizing exemption services
4. Outsourcing of nonclinical services in public hospitals
5. User fee setting and revision
6. Initiation of health insurance
7. Establishment of a private wing in public hospitals
8. Health facility autonomy through establishment of governing bodies



## Why private wing?

- To mobilize additional resources
- To improve quality of service in the non-private wing sections
- To increase motivation and reduce attrition of health workers
- To provide an alternative choices of care

# Health care insurance

- Is a means of pooling risks across different population groups as a means of avoiding the financial burden of unanticipated and catastrophic illnesses.
- Is a way of paying for some or all of the costs of health care.

# Health Insurance

- Health insurance is a means of pooling risk across different population groups as a means of avoiding the financial burden of unanticipated and catastrophic.
- A means by which money is raised to pay for health services by financial contributions to a fund
- The fund then purchase health services from providers for the benefit of those for whom contributions are made or who are otherwise covered by the system/design

## Health care insurance...

- It can protect insured persons from paying high treatment costs in the event of sickness.
- is based on *risk aversion* and *uncertainty of illness* and *medical outcomes*.

## **Rationale for health insurance**

1. Elimination of catastrophic health expenditure
2. Improves utilization of health services
3. Creates risk pooling b/n different income groups
4. Improves the quality of healthcare services

## **Rationale for health insurance...**

5. Ensures equity in health care provision
6. Strengthen community participation in the management of health services
7. It provides additional source of funds to the health sector
8. Cost sharing

# Determinants of Health Insurance Demand

## 1 Price of insurance

- The consumer will forego health insurance if the premium is greater than expected.

## 2 Degree of Risk Aversion

- Greater risk aversion increases the demand for health insurance

## 3 Income

- Larger income losses due to illness will increase the demand for health insurance

# Determinants of Health Insurance Demand

## 4. Probability of **ILLNESS**

- Consumers demand more insurance for events most likely to occur
- Consumers demand less insurance for events least likely to occur
- Consumers more likely to insure against random events



# Types of Health Insurance

➤ The main features to classify are:-

- whether risk is shared or not
- whether funding is managed by profit-making or non-profit making organizations.
- how the premium paid by individuals is calculated based on income
- whether membership is voluntary or compulsory.

## **Three Principal Types of Insurance**

### **I) Social Health Insurance:**

- ❖ SHI aims at protecting all population groups against financial risks due to illness to achieve full universal protection against healthcare costs.
- ❖ There are substantial difficulties in implementation.

## Social Health Insurance...

- provide compulsory or ,to a lesser extent, voluntary coverage for people employed in the formal sector .
- Premiums or contributions are generally based on the individual's income regardless of actuarial risk.

## Social Health Insurance...

- ❖ Key features that are common to all SHI everywhere are:
  - ⊕ It is legislated by government and requires regular, compulsory contributions by members.
  - ⊕ Eligible members cannot out of a scheme or be excluded by the scheme.
  - ⊕ Premiums are calculated according to ability to pay (i.e. according to income).
  - ⊕ Benefit packages are standardized.

## Social Health Insurance...

### ❖ **Strengths:**

- ⊕ More resources for health care system
- ⊕ Less dependence on budget negotiation than state-funded systems
- ⊕ High redistribution system
- ⊕ Strong support by the population

# Social Health Insurance...

## ❖ Weaknesses:

- ⊕ Possible exclusion of the poor
- ⊕ Negative economic impact of payroll contributions.
- ⊕ Complex and expensive to manage
- ⊕ Poor coverage for chronic diseases and preventive care

## 2) Private insurance

- ◆ Provides coverage for groups or individuals through third party payer institutions operating in the private sector.
- ◆ Premiums tend to be based on an actual calculation of incidence of disease and the use of services

## Private insurance...

- ◆ They are generally not income-related and vary with age and sex.
- ◆ Excludes pre-existing and self-inflicted illnesses +HIV/AIDS & STD



### 3. Community-based health insurance

- ❖ Applying the principles of insurance to the social context of communities, guided by their references and based on their structures and arrangements.
- ❖ The collective effort of the community for the organization and management of health services.

## **Community based health insurance...**

- ❖ Here the community may contribute to the health facilities money in kind, or in the form of labour services.
- ❖ Community members can be free of charge or a certain discount at the point of deliver of medical services.

## Community based health insurance...

- Its targets are households in informal sector (in contrary to social insurance)
- focus on voluntary enrollment
- uses some level of involvement of local leadership/influential groups

## Key features

- ◆ Usually voluntary
- ◆ Tend to be set up in small scale
- ◆ Usually targets a different set of people  
complementary to social insurance (for people  
left out from SHI)

# Strength and weakness

- **Strengths:**
  - ⊕ Better access to health care for low-income people
  - ⊕ Useful as a component of a health financing system involving other instruments

# Strength and weakness...

- **Weaknesses:**

- ⊕ Limited protection of members
- ⊕ Sustainability is questionable
- ⊕ Limited benefit to the poorer part of the population
- ⊕ Limited effect on delivery of care

	<b>SHI</b>	<b>CBHI</b>	<b>PHI</b>
Solidarity	Present	Present	Not Present
Pooling risks	Present	Present	Present
Participation/ empowerment	Present	Present	Not Present
Equity	Present	Present	Not Present
Membership	Mandatory	Usually Voluntary	Voluntary
Management	Government Institution	Members & Key Stakeholders	Private Insurers
Profit Motive	Not-for- Profit	Not-for- Profit	For- Profit
Premium	According to income	Community rating According to income	Individual risk
5/19/2020			183

# Health insurance problems

- Different problems can be raised in relation to health insurance schemes.

## **1. Adverse Selection:**

- Sicker individuals will choose to enroll more than healthier individuals which will drive up the cost of the premium and broke the scheme.



## Health insurance problems...

- As a result insurers want to exclude those
  - Who are most *likely to get sick*
  - Who have *chronic illnesses*
  - Who most *in need of health care*

## 2. Moral Hazard

- People are less fearful of catastrophe once they are protected by insurance and this affects their behavior (Unnecessary use of health services).
- Different corrective measures can be taken:
  - Co-payments by patients
  - Limitation on benefits
  - Patient education

### 3. Cheating:

- It is the abuse of membership through different mechanisms.
- Various types of corrective measures can be taken like
  - Clear guidelines on who is a member
  - Good patient tracking system
  - Patient and provider education

**THANK YOU!!!**

# Unit 5: Allocating resources for health care

- Definition of cost
- Reasons of costing in health
- Types of costs

# cost

## Definition

- Cost means the amount of expenditure incurred in obtaining the services.
- **Cost** is” the price paid for something.” [oxford dictionary]

# Shadow pricing

- For most practical purposes, however, it is usual to use market prices unless there is strong evidence to suggest that they diverge appreciably from opportunity costs.
- Indirect costs, for which there are no market prices, pose a more difficult problem of evaluation. Some method has to be used to impute values to them.
- This is known as “shadow pricing”, and time costs provide a good example.
- When time is spent in hospital by a patient, or on caring by a relative, and this displaces work time, it is usual practice to use the relevant wage to value the lost time.

# Why do Costing in Health?

❖ To set prices

–calculating the unit cost of services helps to set accurate prices that are in line with the true costs of production.



## Why do Costing in Health?.....

### ❖ To estimate efficiency

–costing can allow us to see how an organization is spending its resources, and to compare the cost of producing the services to the price charged and the revenues received.

## Why do Costing in Health?.....

❖ To plan for the expansion or replication of services

–it is important to be able to predict costs when scaling up interventions or replicating an existing intervention in a different setting.

# Costing Health interventions

- Uses of Cost Data
  - Assessing efficiency
    - Assessing equity
    - Assessing priority
    - Considering cost recovery

# Type of costs

➤ Direct cost; these are those costs which are directly associated with a cost unit or job or process.

e.g. cost of medicines , lab. reagents, OPD visits etc.

➤ Indirect cost; the cost can not be directly associated with a particular cost unit, process or department.

e.g. rent, managerial salaries, wages lost because of travel/absent from work etc.

# Type of costs.....

➤ Opportunity costs; refers to the value of resources used that could have been applied to other uses.

E.g. Hospital land and building costs could be allocated for other purposes such as primary health care facilities, school health programs etc

# Type of costs.....

## ➤ Intangible costs

- psychic costs associated with treatment

- **Thanks!!!!!!!**

unit 6: Measuring and improving efficiency in health  
care

- ◆ Measuring efficiency
- ◆ Common causes of inefficiency
- Strategies to increase efficiency



# Overview of efficiency

## What is efficiency?

- In economics, efficiency is a concept concerned with the relationship between inputs and outputs in the production of goods and services.
- This relationship can be measured in physical terms (technical efficiency) or cost terms (economic efficiency).
- The concept of allocative efficiency adds the further consideration of consumer demand and consumer welfare and considers the allocation of resources.

# Efficiency.....

- In financial cost terms, efficiency refers financial costs incurred by an activity divided by the units of output obtained;
- This gives the financial cost per unit output.
- It relies on a common quality or standard of output.
- In financial terms greater efficiency can be said to have been achieved where:
  - a. The same amount and standard of services are produced for less cost;

# Efficiency.....

- b) improved amounts and/or standards of service are produced for the same cost;
  - c. a more useful activity is substituted for a less useful one at the same cost;
  - d. needless activities are eliminated.
- An economist would add to this financial definition of efficiency by requiring that;
- e. all costs be taken into account including those incurred.

## Efficiency.....

- f. Focus on marginal costs and output and not merely the average costs and overall output;
  - G. Costs be measured as opportunity costs and not just as financial expenditures;
  - H. Costs over a period of time be discounted to the present; and
  - I. The demand for services be considered.
- The economist's concept of efficiency vs. financial manager.

# Types Efficiency

## **Technical efficiency:**

- Occurs when the firm produces the maximum possible sustained output from a given set of inputs.
- Technical Efficiency = production of goods and services using the minimum amount of resources

## **Allocative efficiency:**

- Situations in which either inputs or outputs are put to their best possible uses in the economy so that no further gains in output or welfare are possible.
- Allocative efficiency occurs when the value that consumers place on a good or service (reflected in the price they are willing and able to pay) equals the cost of the resources used up in production.

# Types Efficiency.....

- The technical condition required for allocative efficiency is that price = marginal cost.
- When this happens, total economic welfare is maximized.

**Pareto efficiency:** a situation in which it is impossible to improve the level of welfare of one party without hurting the welfare level of another party.

- Situation in which the level of welfare of one or more parties can be improved without hurting any other party are *pareto improvements*.

# Types Efficiency...

- A Pareto efficient allocation of resources occurs when resources cannot be readjusted to make one consumer better off without making another worse off.
- Both allocative and technical efficiency are prerequisites for pareto efficiency

# Why is efficiency important?

- Gaps in quality, safety, equity, and access characterize our health care system.
- rising health care costs affect consumers and providers.
- Policymakers, private payers, and system leaders are looking for ways:
  - to reduce waste, increase the efficiency of health care delivery, and allocate resources to improve value in health care.



# Why is efficiency important?

- consumers want to maximize the value of their own health care dollar.
- Inefficiency leads to a number of undesirable consequences.
- If finite health system resources are not used efficiently
- It will also mean that some individuals are denied access to care.
- Health system inefficiencies may divert resources from other sectors of the economy.

# Why is efficiency important?

- Increased efficiency allow money to be spent more effectively,
- It also eliminate waste this demonstrates good stewardship of the health system,
- It persuade governments and citizens to finance universal health coverage.
- Therefore efficiency is one of the central preoccupations of health policy-makers and managers.

## Health production processes and efficiency

- Productivity is the ratio between an output and the factors of productions( vincent 1968).
- Efficiency indicators are useful to compare and evaluate production processes.
- Efficiency is represented by the ratio of the inputs an organization consumes in relation to the valued outputs it produces.

# health production processes.....

- An organization consumes a set of physical resources, referred to as inputs,
  - ✓ Often measured in terms of total expenditures or
  - ✓ Physical inputs like health care personnel or beds;
  - ✓ It then transforms those inputs into a series of valued outputs, such as an episode of care, through a set of discrete health care activities.

# health production processes.....

- considerable variation amongst patients in how inputs are consumed and outputs or outcomes are produced.
- For example, contributions to the care process may be made by multiple providers
  - ✓ an ‘episode’ of care may occur over an extended period of time,
  - ✓ and in different settings, and the responsibilities for delivery may vary from place to place and over time.

# health production processes.....



- Fig: schematic representation of health production process

# How to measure Efficiency?

- Efficiency measures can be a useful tool for health planning and policy evaluation.
- Cost-effective health care is an important objective for all governments.
- Measuring efficiency in the provision of health services is complicated by:
  - ✓ The complex nature of health processes and the production of health services,
  - ✓ As well as the characteristics of the health care market.
- A health care efficiency analysis should account for the impact on health of other factors such as education or living standards.

# How to measure Efficiency?.....

Two types of measurement techniques:

- ❖ **Economic Evaluation** which compares health programs;
- ❖ **Benchmarking Analysis** which compares service providers.
- ❖ **Economic evaluation** focuses on measuring health outcomes for a range of health conditions
- ❖ **Data envelopment analysis** is the most useful **benchmarking** technique.
  - It is adaptability to the joint-production nature of health services and to the influence of external factors on productive efficiency.
  - It used simple ratio analysis and more informative efficiency measures than partial productivity indicators.



# framework to measure efficiency

- Five aspects of any efficiency indicator to be considered are:
  - 1) **The entity to be assessed;**
  - 2) The outputs (or outcomes) under consideration;
  - 3) The inputs under consideration;
  - 4) The external influences on attainment;
  - 5) The links with the rest of the health system.

## The entity to be assessed

### Identifying the accountable entity: who is being evaluated?

- An assessment of efficiency first depends on understanding the boundaries of the entity under scrutiny.
- At the finest level, an entity could be a single treatment, where the goal is to assess its cost relative to its expected benefit.
- At the other extreme, the entity could be the entire health system.
- Mostly it takes place at an intermediate level, where the actions of individuals or groups of practitioners, teams, hospitals or other organizations within the health system are assessed.

## The outputs (or outcomes) under consideration

What are the outputs under consideration?

- Two fundamental issues need to be considered with regards to outputs:
- How should the outputs of the health care sector be defined and what value should be attached to them?
- In principle health care outputs should usually be defined in terms of the health gains produced.
- Recent progress in the use of patient reported outcome measures (proms) offers some prospect of making more secure comparisons.

## The outputs (or outcomes) under consideration

- In practice, however, analysts are often limited to examining efficiency by measuring the volume of activities,:
- For example in the form of patients treated, operations undertaken, or outpatients seen.
- But it is inadequate, as they fail to capture variations in the effectiveness (or quality) of the health care delivered.
- It is incomplete measures of activity in referring of health care outcomes.

# The outputs/outcomes under consideration

What are the inputs under consideration?

- The input side is less problematic than the output side.
- Physical inputs can often be measured more accurately than outputs, or can be summarized in the form of a measure of costs.
- However, when considering costs as the input the implication is that the organizations under scrutiny are free to deploy inputs efficiently, taking account of relative prices.
- In practice, some aspects of the input mix are often beyond the control of the organization, such as capital stock, at least in the short term.

# The external influences

What are the external influences?

- A separate class of factors affects production – the external or ‘environmental’ determinants of performance.
- These are influences on the entity, beyond its control.
- The choice of whether to adjust for such external influences is likely to be heavily dependent on the degree of autonomy enjoyed by management, and
- whether the purpose of the analysis is short run and tactical, or longer run and strategic.

# The external influences

- In the short run, almost all input factors and external constraints may be fixed.
- In the long run, depending on the level of autonomy, many may be changeable.
- Consider efficiency metrics both with and without adjustment for external factors.
- Using statistical methods such as regression analysis;
- undertaking risk adjustment to adjust the outcomes achieved to reflect the external constraints.

# Links with the rest of the health system

- No outputs from a health service practitioner or organization can be considered in isolation.
- For example, if a primary care practice is held to account only by metrics of costs per patient, it might secure apparently good levels of efficiency
  - by inappropriately shifting certain costs (such as emergency cover) onto other agencies, such as hospitals or ambulance services.
- The chosen metric may create perverse incentives for the practice, and may fail to capture its serious negative impact on other parts of the health system.
- That consequence should in principle be accounted for in any assessment of that practice's efficiency.



# Ingeneral

- Measuring the efficiency of health systems is therefore a challenging but worthwhile undertaking.
- Decision makers who rely on inadequate analysis or interpretation of efficiency metrics to implement reforms may inappropriately target apparently inefficient practices.
- For example, an initiative to reduce the length of hospital inpatient stay may in some circumstances yield gains in terms of more intensive use of hospital resources.

# Inefficiency in Health Care

Inefficiencies in the health care system—in other words, waste—account for a big share of the cost problem.

Six categories of waste/inefficiency:

1. overtreatment,
2. failure to coordinate care,
3. failures in processes that execute care,
4. administrative complexity,
5. pricing failures (such as wide variations in charges for procedures and lack of transparency)
6. fraud and abuse.

## **Common reasons for inefficiency in health care**

- Inadequate pharmaceutical regulatory structures /mechanisms;
- Weak procurement systems
- Inappropriate prescriber incentives and unethical promotion practices;
- Inadequate regulatory frameworks.
- Supplier-induced demand;

# Reasons....

- Fee-for-service payment mechanisms; fear of litigation (defensive medicine).
- Conformity with pre-determined human resource policies and procedures;
- Resistance by medical profession; fixed/inflexible contracts; inadequate salaries;
- Recruitment based on favoritism.

# Reasons....

- Unclear resource allocation guidance;
- lack of transparency;
- poor accountability and governance mechanisms;
- low salaries.
- Funding high-cost, low-effect interventions when low-cost, high-impact options are unfunded.
- Inappropriate balance between levels of care, and/or between prevention, promotion and treatment.

# Strategies to improve inefficiency in health care

- Reform payment and incentive structures.
- Improve prescribing guidance, information, training and practice.
- Ensure transparency in purchasing and tenders.
- Improve regulation/governance.
- Provide alternative care .eg: day care
- Strengthen enforcement of standards
- Regular evaluation of technologies and policy options.

# **Unit seven**

## **Economic Growth And Development**

# Objective of the unit

- ❖ At the end of this unit students will be able to:-
  - Define health and development
  - Identify the difference between growth and development
  - Explain the impact of health on development and the impact of development on health
  - Explain how to measure development\*\*\***group assignment**
  - Discuss the causes of poverty and ways of attacking poverty\*\*\***reading assignment**



# Small Group Discussion

- What is development?
- How does development differ from economic growth?
- How can development be measured?
- What role does health play in development?
- What role should the health workers play in facilitating development?

# Health and development

## Health

- The term health refers to a state either of an individual or of a community.
- This state of health may be influenced by a number of factors including 'health care'.
- factors that affect health are:
  - poverty,
  - level of education,
  - food intake,
  - access to clean water,
  - sanitary and housing conditions.

# Different perspectives on health

## 1. Health as a right

- Health is viewed by some as a right analogous to justice or political freedom.
- Indeed the WHO constitution states that ‘...the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition’ .

# Health as a right...

- In part, this involves ensuring access to health care.
- The government is seen as having a responsibility to ensure this, comparable with its role in ensuring equal justice.
- According to such a view a government will be particularly concerned with issues of equity in health and health care.

## 2. Health as consumption good

- For others health is seen as an important individual objective that is not comparable with justice, but rather with material aspects of life.
- Such a view often refers to health as consumption good.

# Health as consumption good...

- The government here has no special responsibilities in the promotion of health, but leaves decisions as to its comparative importance to individual consumers.
- The role of the state under such a view might be limited to ensuring that the health care provided is of an adequate quality (such as ensuring professional standards in the same way that it would monitor the quality of any good or service, such as food).

# 3. Health as an investment

- Health largely affects the productive ability of the workforce.
- Illness may affect overall production, either through absenteeism or by lowering productivity through its debilitating effects.

# Growth versus Development

- Economic growth may be one aspect of economic development but is not the same
- **Economic growth:**
  - A measure of the value of output of goods and services within a time period
- **Economic Development:**
  - A measure of the welfare of humans in a society



# Difference between growth and development

- ❖ **Development** encompasses the total well-being of the individual, a community or a nation.
- ❖ **Economic growth** is concerned with the increase in per capita earning of the people making up the nation.

# Growth and development...

❖ Economic growth is one characteristic of development, yet development must not be measured merely by the rate of economic growth.

E.g. Country may acquire great wealth from its mineral deposits, but have a low level of health services.

# Growth and development...

- ❖ Development is concerned with the total personal requirements, his economic, social, political, physiological, psychological and environmental wellbeing.
- If one of these is not fully catered for, development has not been achieved.

# Objectives of Development

- Development in all societies, however, must consist of at least the following three objectives:
  - I. To increase the availability, distribution and accessibility of life-sustaining goods such as food, shelter, health, security and protection to all members of society;
  - II. To expand the range of economic and social opportunities and services to individuals and communities by freeing them from servitude and dependence on other people and communities and from ignorance and human misery.

# Objectives of Development...

III. To raise standards of living, including:

- higher incomes,
- the provision of more jobs,
- better education
- better health,
- more attention to cultural and humanistic values so as to enhance not only material well-being but also to generate greater individual, community and national esteem.

# GNP and GDP

- **GNP**: is the sum of the value of finished goods and services produced by a society during a given year and excludes intermediate goods and counts only income earned by citizens.
- **GDP**: is similar to GNP except that it count all income produced within the borders of a country, including income earned by foreigner residents, but excludes income earned by citizens of the country who are residents of abroad.

# Impact of Economy on Health

- Poverty at household level:
  - Poor diet
  - Poor housing and sanitation
  - Poor individual and group attitude

# Impact of Economy...

- Poverty at country level:
  - Low allocation of resources to public health programs
- There is correlation between economic development and high life expectancy.



# Impact of Economy ...

- Growth on its own does not guarantee improved health status development.
- It depends on:
  - How growth takes place
  - How benefits are distributed
  - How benefits are reinvested
  - How public spending is used
  - Who controls resources in the family and their priority

## Impact of Economy ...

- Economic growth had also unfortunate consequences.
  - Disease of affluence (**cancer, heart diseases, depression...**)
- Developing countries are also facing “**double burden**” of diseases
  - Malaria, TB, etc
  - New**: cancer, heart diseases, etc

# Impact of Health on the Economy

- Health is fundamental to wellbeing of the individual.
- Healthier population is more productive
  - Attendance
  - Skill level
  - Increased life expectancy leading to increased investment

# Impact of Health on ....

- Effect on population structure is hard to say
  - Good health can lead to prolonged life.
  - But prolonged life can either lead to productive working life or a high ratio of dependent and financial burden.

# Impact of Health on ....

- Generally there is correlation between economic development and health status:
  - L.E & GNP/GDP
  - IMR & GNP/GDP