كلية العلوم
قــــــــــــــــم الانظمة الطبية الذكية

Lecture: (1)

Healthcare Systems Administration

Subject: Healthcare Systems – Global Perspective
Level: Fourth
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Introduction: Definition and Goals of Healthcare Systems

A healthcare system is an organized network of people, institutions, and resources designed to deliver healthcare services to meet the needs of populations.

According to the World Health Organization (WHO), the main goals are:

1. promoting health.
2. meeting population expectations.
3. ensuring fair financing.

Core Functions of Healthcare Systems

Healthcare systems perform four main functions:

1. **Service delivery** : preventive, curative, rehabilitative, and palliative care.
2. **Resource generation** : training healthcare professionals and producing medical resources.
3. **Financing** : mobilizing and managing funds to cover healthcare costs.
4. **Stewardship** : governance, regulation, and ensuring system accountability.

Key Components of Healthcare Systems

WHO identifies six essential building blocks:

- Service Delivery (primary, secondary, tertiary care)
- Healthcare Workforce (doctors, nurses, administrators, staff)
- Health Information Systems (data collection and analysis)

- Medical Products and Technologies (medicines, equipment, innovations)

- Financing (government, insurance, out-of-pocket) - Leadership

- Governance (policy, oversight, accountability)

Evolution of Modern Healthcare Systems

After World War II, many countries created national health services such as the National Health Service (NHS) UK, 1948 .

Insurance based systems expanded in the US and Europe. Technological innovations improved care but increased costs. Policy reforms emphasized prevention and patient rights.

Major Healthcare Models

1. **Beveridge Model** : government financed & provided (UK, Spain).

2. **Bismarck Model** : insurance funded by employers/employees, private providers (Germany, France, Japan).

3. **National Health Insurance Model** : government run insurance, private providers (Canada, South Korea, Taiwan).

4. **Out of Pocket Model** : patients pay directly, common in low-income countries.

The U.S. Healthcare System

The US represents a hybrid model:

- Veterans: Beveridge (VA hospitals).

- Elderly: National Health Insurance (Medicare).

- Employees: Bismarck (employer-based insurance).

- Uninsured: Out-of-pocket.

This mix results in high costs and disparities in access.

Current Global Health Challenges

1. Infectious diseases: HIV/AIDS, malaria, tuberculosis, COVID-19.
2. Non-communicable diseases: cardiovascular disease, cancer, diabetes.
3. Healthcare disparities: inequities across and within nations.
4. Antimicrobial resistance: reducing effectiveness of antibiotics.
5. Climate change: increasing health risks globally.

Technology and AI in Healthcare

Technology and AI in Healthcare Digital health and AI improve diagnosis, predictive analytics, and patient care.

- Benefits: efficiency, personalized medicine, error reduction.

- Risks: ethical issues, data privacy, safety of AI-based systems.

- Future: AI will augment healthcare but requires regulation.

Global Health Organizations

- WHO: leadership, norms, emergency response.

- UNICEF: child health and nutrition.

- Global Fund: combating AIDS, TB, malaria.

- Doctors Without Borders (MSF): emergency care in crisis zones

Impact of Globalization

- Medical Tourism: traveling abroad for affordable/specialized care.

- Workforce Migration: brain drain from poor to rich countries.

- Global Cooperation: joint strategies for pandemics, medicines, and research