Chapter

1

# Introduction to Social Pharmacy

Providing quality medicines at affordable prices is the most important social obligation of pharmacists, the pharmaceutical industry as well as governments in every democratic country. Medicines have an enormous impact on the health of users. Overuse and misuse of medicines can be dangerous for the health of the population. So a clear understanding of the impact of medicines on the health of users is very much required. This establishes the role of pharmaceuticals and the pharmaceutical industry in modern life.

Social pharmacy has contributed much to the knowledge of the needs of patients and society and helps in getting the most effective, safest, and cheapest drugs.

## DEFINITION OF SOCIAL PHARMACY

Social pharmacy is a multidisciplinary field, which deals with social aspects of the pharmacy practice. It focuses on the provision, regulation, and utilization of medicines by both consumers and healthcare professionals. Within social pharmacy, the drug sector is studied from the social, scientific and humanistic perspectives. It consists of all the social factors that influence medicine use, such as medicine and health-related beliefs, attitudes, rules, relationships, and processes. Social pharmacy is founded on the principles of social science and organizational theory. Key components in social pharmacy are marketing, distribution, communication, compliance (the extent to which patients follow instructions as agreed), economics, monitoring (control and supervision), and the

individualization of drug use. The knowledge gained in social pharmacy is essential to bridge the clinical and fundamental knowledge taught to the pharmacists, as illustrated in Fig. 1.1. The aim is to make a competent pharmacist who is capable of integrating his knowledge and social/communication skills to improve patient behavior, treatment outcomes, and disease management. There is a correlation between whether the patients take their medicines and their beliefs about their health, medications, socio-demographic factors, and health literacy. An understanding of social sciences can help us to understand these relationships and to develop more appropriate responses to enhancing medicines-related outcomes. Furthermore, an understanding of social sciences is also helping us to understand how healthcare is delivered and the impact that this has on other health outcomes.

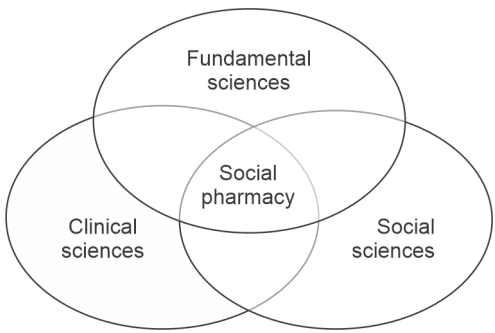


**Fig. 1.1:** Interface of social pharmacy within fundamental, clinical, and social sciences

### Scope of Social Pharmacy

From Fig. 1.1 it can be said that the scope of social pharmacy is broad. It is linked to the health system. It focuses on the application of pharmacy practice to the society. The main scope of social pharmacy includes the following:

1. It focuses on the proper use of medicine in patients and community to improve the overall health of a community.
2. It enables the pharmacy profession to take responsibility for drug matters at a societal level.

3. It covers all the social, psycho-social, economic, and organizational factors that affect medicine use.
4. It plays an important role in improving the health of a community.
5. It plays an important role in training programs for community-based pharmacists.
6. It analyzes policy decisions made on the local, national, international, and global levels concerning medicines.
7. It spans a variety of themes, including medicine distribution and use; economics and financing; decision-making; health behavior; health knowledge, health beliefs, health literacy; health and pharmaceutical policy; *pharmaco*informatics; ethics; *pharmaco*epidemiology, and *pharmaco*vigilance.

### Role of Pharmacists in Public Health

Public health is defined as the science of preventing disease, prolonging life, and improving the health of the community through organized efforts, education, and research for disease and injury prevention.

**Pharmaceutical public health** is the application of pharmaceutical knowledge, skills, and resources to the science and art of preventing disease, prolonging life, and promoting, protecting, and improving health for all through the organized efforts of society.

#### *Core Elements of Public Health Practice*

1. Surveillance and assessment of the health of the population.
2. Promoting and protecting the health and well-being of a population.
3. Developing quality and risk management within evaluative frameworks (clinical effectiveness, quality assurance, risk management, identifying deficits of structure and process).
4. Collaboratively working for health, building alliances, and partnerships.

5. Developing capacity to reduce health inequalities (design and delivery of services).
6. Policy and strategy development and implementation, and assessment of the impact of those policies on health improvement.
7. Advocating for the public and adapting services to better meet the needs of communities.
8. Strategic leadership, e.g. reduction in inappropriate antibiotic use; mental health.
9. Research and development to improve health and well-being at a population level.
10. Commitment to lifelong learning to ensure better models of equitable use, distribution, and access to resources.

### ASHP Statement on Pharmacists Role in Public Health

According to **ASHP** (American Society of Health-system Pharmacists), pharmacists play a vital role in maintaining and promoting public health. All pharmacists have the responsibility to participate in global, national, state, regional, and institutional efforts to promote public health. Pharmacists should integrate public health practices. Furthermore, pharmacists have a responsibility to work with public health planners to be involved in public health policy decision-making and the planning, development, and implementation of public health efforts.

All pharmacists, working alone or in collaboration with healthcare colleagues and administrators, can contribute to the promotion of public health.

ASHP has described roles pharmacists have in specific public-health-related activities, including:

1. Antimicrobial stewardship and infection control.
2. Substance abuse prevention, education, and treatment.
3. Prevention of controlled substances diversion.
4. Managing drug product shortages.
5. Immunization.
6. Tobacco cessation.
7. Emergency preparedness and response.

The following are examples of other activities that pharmacists can engage into promote public health:

1. Promoting population health.
2. Developing and implementing disease prevention and control programs (including chronic disease or disease treatment programs).
3. Promoting medication safety practices. Engaging in opioid stewardship efforts, including prevention, intervention, and treatment.
4. Developing health-education policies and programs and participating as members of public health organizations and chapters in pharmacy organizations.
5. Advocating for sound legislation, regulations, and public policy regarding disease prevention and management
6. Engaging in public health-related research and education programs, initiating campaigns to disseminate new knowledge, and providing training programs that include basic population health tools such as statistical analysis, epidemiology, disease surveillance techniques, risk reduction strategies, and insights into methodology.

To discharge their decisive role in the public healthcare system, pharmacists need to be competent, skilled, and well-trained. Any healthcare system demands the proper use of the medicines. The misuse or overuse of the medicines may hurt the health of the user. Pharmacists being in direct contact with the patients can tactfully advise the patients about the proper use of medicines apart from dispensing and distributing medicines. They can also guide people on the use of surgical devices and equipment. Pharmacists can create awareness in the community about the use of drugs through newsletters, seminars, exhibitions, pamphlets, teleconferencing, and short-term courses in colleges. Creating awareness about drugs society is the greatest responsibility of pharmacists in the context of social pharmacy. They can counsel people on the safe and effective use of medication, the prevention and control of disease, and other public health-related topics, such as exercise, healthy lifestyle, balanced nutrition, and tobacco

cessation. The government operates various national health programs (NHP) for both urban as well as rural populations to strengthen the health systems for the benefit of mankind. Pharmacists being an important part of public healthcare must play a pivotal role in the proper implementation of NHP.

### *Future Roles*

Some of the future roles of pharmacists in public health will look very similar to what they are doing currently. Safe dispensing of drugs will remain a core responsibility of the profession but changes in laws regarding dispensing will allow pharmacists to proactively dispense knowledge about medications and increase their primary care responsibilities. Pharmacists will continue to provide easy access to vaccinations and partner with other care providers in grassroots public health campaigns, particularly for underserved populations. Pharmacists will remain key healthcare providers in tobacco cessation. As advances in technology make disease screening more accessible, pharmacists will play an increasingly important role in education and screening for conditions such as obesity, hypertension, heart disease, substance abuse, sexually transmitted diseases, and others. With appropriate changes in law and regulation to confer provider status for pharmacists, interpretation of screening test results and referral to other healthcare providers will fall within the pharmacist's responsibilities. Recognition of pharmacists as healthcare providers and reimbursement for their services would also empower pharmacists to screen for food insecurity, physical or sexual abuse, human trafficking, substance use disorders, and mental health issues. Advances in informatics will permit the aggregation and application of population and patient-specific data in ways that will encourage the development of population-specific, evidence-based screening and disease management programs. Pharmacists should gain awareness of how artificial intelligence (AI) can illuminate the relationships between risk factors, prevention, treatment, and patient outcomes to better predict successful interventions. The burgeoning field of *pharmacogenomics* has already demons-

trated its value in patient-focused pharmacotherapy, as genotyping has enabled prescribers and pharmacists to reduce treatment.

As pharmacogenomics and the rapidly expanding field of population genetics become even more important; pharmacists, as medication-use experts, will apply these new tools not simply to improve patient-specific pharmacotherapy but to advance public health through population health management.

## Concept of Health

Health is a fundamental right of every person irrespective of race, religion, political belief, economic or social condition. The health of the people of any nation can be improved by providing easily accessible, low-cost, high-quality healthcare services. Health has been defined in various ways and hence there exist several definitions.

Health has evolved as a concept over centuries from an individual concern to a global social goal. The concept of health is dynamic and keeps on changing. Pharmacists as well as other members of the healthcare team are very much concerned with the concept of health. Important concepts of health are discussed below.

### *A. Biomedical Concept*

This concept is based on the *Germ theory of disease*. According to this concept, the human body is considered a machine, and disease is a result of the breakdown of the machine. Any alterations or changes in the biological functioning of a person are referred to as a disease. The main task of the doctor is to repair the machine. However, this concept is unable to solve major health problems like accidents, chronic diseases, malnutrition, mental illness, population explosion, drug abuse, environmental pollution, etc.

### *B. Ecological Concept*

Ecological health is a term that has been used concerning both human health and the condition of the environment. Ecologists consider health as a dynamic equilibrium between man and

the environment. Disease is the maladjustment of the human organism to the environment. It is believed that good human acclimatization to the environment results in a healthy life even in the absence of modern healthcare services.

### *C. Psychological Concept*

According to this concept, health is both a biological as well as social phenomenon because it is influenced by psychological, social, cultural, and political factors of the concerned people. Psychological and social considerations are very important aspects of the concept of health. Psychological factors involve lifestyle, personality characteristics, and stress levels. Social factors include such things as social support systems, family relationships, and cultural beliefs.

### *D. Holistic Concept*

A holistic approach is a system of comprehensive or total patient care that considers the physical, emotional, social, economic, and spiritual needs of the person. The holistic concept of health represents the combination of all the above concepts. It takes into account all the factors like social, economic, political, and environmental. The holistic concept is mainly concerned with the protection and promotion of public health. The holistic concept is characterized by the treatment of the whole person, taking into account mental and social factors, rather than just the symptoms of an illness. A holistic approach means to provide support that looks at the whole person, not just their mental health needs.

## Definition of Health

Health has been defined in various ways and hence there exist many definitions.

Health is defined as *the condition of being sound in body, mind, or spirit, especially freedom from physical disease and pain.*

According to WHO, ''*Health is a state of complete physical, mental and social well-being and not merely an absence of disease or infirmity*''. According to this definition, all of us are sick and nobody is healthy! During the last few decades, the WHO

definition of health has been gradually revised and supplemented by the fourth dimension—the spiritual health.

According to the Oxford English Dictionary, *"health is soundness of body or mind, that condition in which its functions are duly and effectively discharged''*. Webster's dictionary definition *is "health is the condition of being sound in body, mind or spirit, especially freedom from physical disease and pain".*

According to modern philosophy, "*health is a fundamental right without any distinction of race, religion, political belief, economic or social condition. It is the essence of productive life and an integral part of development. It is a worldwide goal and involves individual, national, and international responsibility".*

The **disease** is considered as a deviation from normal health.

### Dimensions of Health

Health is *multidimensional* and important dimensions are physical, mental, social and spiritual, emotional, vocational, and political, etc. All dimensions function and interact with each other. These dimensions of health are explained below.

#### *A. Physical Dimension*

It represents health as a state of fitness characterized by the normal functioning of the body organs. Thus, physical health implies an absence of an obvious disease. A *nomogram* correlating the average height with average weight could be used as an indicator of physical health. It should be remembered that physical health is assessed in terms of the age and sex of an individual by comparing, e.g. the vital capacity of his/her lung with the reported normal value for that age and sex.

#### *B. Mental Dimension*

Mental health is defined as a state of balance between the individual and the surrounding world, a state of harmony between oneself and others, a coexistence between the realities of self and that of other people, and that of the environment. Mental health is difficult to assess. It is certainly not mere

absence of mental disease but is the ability of the person to respond to the experiences of life with flexibility. It is influenced by psychological factors. Schizophrenia and depression are examples of mental illnesses. Mental illness can also lead to physical illness; for example, mental tension may lead to peptic ulcers. Similarly, physical illness can also lead to mental illness, for example, a leprotic person may suffer from depression. Positive mental health is one of the keys to good health and indicates that the person is free from undue conflicts and has a harmonious relationship with family and community.

### *C. Social Dimension*

Social health is defined as the quantity and quality of an individual's interpersonal ties. It considers the fact that every individual is part of the society and takes into consideration the socio-economic status and health of the 'whole person' in the context of his social network.

### *D. Spiritual Dimension*

The spiritual dimension of health includes integrity, principles and ethics, purpose in life, commitment to some higher being, and belief in concepts that are not subject to the 'state-of-art' explanation. It is linked to that part of the person, which reaches out and strives for meaning and purpose in life. It is related to the 'spirit', the sole. All religions and religious leaders consider the attainment of spiritual health as the ultimate goal of life.

### *E. Emotional Dimension*

Emotional health refers to "feeling''. A person is said to be emotionally healthy if he/she maintains self-control and does not lose temper. Emotional wellness encompasses the knowledge and skills to identify personal feelings and the ability to handle those emotions.

The World Health Organization (WHO) conceptualizes mental health as a "state of well-being in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and can contribute to his or her community".

### *F. Vocational Dimension*

A person is said to be healthy vocationally when he/she can earn sufficiently to lead a successful life. In addition to the above, health could also be defined in terms of many other dimensions such as nutritional, socio-economic, educational, curative, preventive environmental, etc. The WHO definition of health as "a state of complete physical, mental, and social well-being and not merely an absence of disease" is certainly very broad and covers most of the dimensions of health, directly or indirectly.

## Determinants of Health

The health of an individual is not static, it fluctuates with time. It is a state, which is to be attained and then maintained. The disease may manifest at any time of life.

Determinants of health refer to the etiological or risk factors for a disease. In simple terms, these refer to factors, which determine why disease afflicts some individuals and why some individuals remain disease-free. One of the prime functions of epidemiology is to search for determinants of disease.

Factors, either alone or in combination, are responsible for diseases including genetics, infective organisms, nutritional deficiencies, metabolic disturbances, allergic disorders, aging and degenerative processes, cancer and other neoplasm, iatrogenesis, accidental injuries, and social pathology. The health of individuals and communities may be considered as the result of interactions due to genetic and environmental factors.

Important determinants of health are described below.

### *A. Heredity*

The genetic makeup of an individual plays an important role in determining his health and lifespan because the nature of genes at the time of conception governs the characteristics of an individual. Most of the genetic diseases are difficult to cure. Common diseases of genetic origin are mental retardation, errors of metabolism, and chromosomal anomalies.

### *B. Environment*

A pharmacist knows very well that the physical, biological, and social components of the environment are interrelated and collectively affect the physical, mental, and social health of the person. A clean environment is essential for good health. Environmental sanitation, soil condition, forests, atmospheric pollution, rainfall, etc. are important physical components of the environment. Socioeconomic status, traditions, relationships, customs, and superstitions of people are important social aspects of the environment. The biological component of the environment includes disease-causing plants and animals including bacteria, viruses, parasites, arthropods, and pathogens. Different types of environments *viz*. internal, external, and domestic environments can influence the health status of the people.

The *internal environment* is concerned with every tissue, organ, and organ system and their harmonious functioning within the system. The *external environment* or *macroenvironment* pertains to everything external to the person. The m*icroenvironment* or *domestic environment* is the personal environment of the person's way of living and lifestyle, e.g. personal habits, smoking or drinking, exercise, etc.

### *C. Lifestyle*

Lifestyle reflects the social values, activities, and personal habits of people. The quality of lifestyle affects the health status of the people. Healthy lifestyles would include adequate nutrition, sufficient sleep, enough physical activity, etc. Negative lifestyle including smoking, alcoholism, and certain 'drugs' are not conducive to health.

### *D. Socio-economic Conditions*

Socio-economic conditions like education, economic status, political system, employment, housing, etc., have a great impact on human health. Thus health status improves with level of education and economic status. Good economic status can be responsible for increased life expectancy, reduced mortality rate, and improved quality of life. It is equally important to

realize that factors like housing, sanitation, nutrition, employment, etc. also contribute to the overall socio-economic conditions.

### *E. Health and Family Welfare Services*

Effective health services improve the life expectancy of individuals. Health services should be available at a reasonable cost and equally to all individuals.

### *F. Other Factors*

Other factors such as rural development, social welfare, food and agriculture, industry, and economic and social policies, assist in improving the standard of living and ultimately the health status of individuals.

## Health Indicators for Evaluation of Public Health

Health indicators are used to assess the health status of a specific population. They are helpful in monitoring and evaluation of healthcare services, and health programs. They can also assess the success or failure of any health program. Ideally, health indicators should be *valid, reliable, sensitive,* and *specific*. The main groups of health indicators are discussed below.

### *(a) Mortality Indicators*

Mortality represents the expectancy of life at various ages, etc. It takes into consideration the number of deaths out of a definite population. The mortality rate is the number of people who die in a given year and area, divided by the population of that area. The formula is simple: D divided by P where D is the number of deaths, and P is the population of that area. Common mortality indicators are calculated as follows:

i. **Crude death rate:** It represents the number of beds per thousand populations.

$$\text{Crude death rate} = \frac{\text{No. of deaths during the year}}{\text{Midyear population}} \times 100$$

ii. $$\text{Age and sex-specific death rate} = \frac{\text{No. of deaths registered or estimated in an age and sex group during a year in an area}}{\text{Estimated population of that age and sex group for the year in that area}} \times 1000$$

iii. **Infant mortality rate:** It represents the probability of dying between birth and exactly one year of age expressed per 1000 live births.

$$\text{Infant mortality rate} = \frac{\text{No. of deaths registered or estimated of children below one year of age during a year in the area}}{\text{No of live births registered or estimated during the year in the area}} \times 1000$$

iv. **Child mortality rate:** It represents the probability of dying between age one and five years of age expressed per 1000 live births.

$$\text{Child mortality rate} = \frac{\text{No. of deaths registered or estimated of children between one to four years of age during a year in the area}}{\text{Midyear population of one to four years of age group}} \times 1000$$

v. **Maternal mortality rate:** It accounts for deaths during antenatal, natal, and postnatal.

### *(b) Morbidity Indicators*

Morbidity indicators measure the occurrence of diseases, injuries, and disabilities in populations. Commonly used morbidity indicators are explained below.

i. **Incidence rate:**

$$\text{Incident rate} = \frac{\text{No. of cases of sickness starting during the period in an area}}{\text{Average no. of persons exposed to risk during that period in that area}} \times 1000$$

ii. **Prevalence rate:** It measures the extent of total prevalence of a disease during a period in an area.

$$\text{Period prevalence rate} = \frac{\text{No. of cases of a disease prevalent at any time (or period) in an area}}{\text{Average no. of persons exposed to risk during that point (or period) of time}} \times 1000$$

iii. Case fatality rate: It measures the extent of fatality of any disease.

$$\text{Case fertility rate} = \frac{\text{No. of peoples who die of a disease}}{\text{No. of peoples who have the disease}} \times 1000$$

### *(c) Disability Rates*

These represent the %age of the population unable to perform the expected daily routine activities like walking, eating, and dressing due to injury or illness (e.g. cerebral palsy, paralysis, poliomyelitis, blindness, Down syndrome, and depression)

i. **Sullivan's index:** It is calculated as:
*Sullivan's index* = Life expectancy (years) – duration of bed disability and inability (years) to perform major activities
Thus if the life expectancy is 60 years and bed disability and inability to perform major activities is 5 years then Sullivan's index would be 60 – 5 = 55 years.
ii. **Health adjusted life expectancy (HALE):** HALE, previously known as DALE (disability adjusted life expectancy) can be defined as the number of years a newborn is expected to live in full health based on current rates of ill health and mortality.
iii. **Disability adjusted life years (DALYs):** It is defined as the number of years of healthy life of a person lost due to premature mortality, mortality, or disability.
DALY = Years of lost life (YLL) + Years lost to disability (YLD)
iv. **Quality adjusted life year (QALY):** QALY measures the number of years of life added by an effective treatment or adjustment for better quality of life. Each year in perfect health measures is assigned a value of 1.0 and a value of 0.0 for death.

### *(d) Nutritional Status Indicators*

It is a positive health indicator. The following indicators are considered important as indicators of health status:

1. Weight, length, and head circumference at the time of birth.
2. Anthropometric measurements (e.g. weight, height, mid-arm circumference) of pre-school children of pre-school children.
3. Weight and height of children at the time of school entry.

### *(e) Utilization Rate*

It is the proportion of the people receiving healthcare services in a given population in a given period usually a year, e.g. the

proportion of pregnant women getting antenatal care or having deliveries by trained doctors, etc.

### *(f) Indicators of Social and Mental Health*

These include the rates of theft, crime, assault, murder, suicides, juvenile delinquency, accidents, alcohol and substance abuse, and domestic violence.

### *(g) Environmental Indicators*

These indicators reflect the quality of the physical and biological environment and measure the percentage of the population having access to good sanitation facilities and safe drinking water.

### *(h) Socioeconomic indicators*

These do not directly measure the health status of people but are important in interpreting healthcare indicators. These include the rate of increase of population, literacy rates, dependency ratio, and housing ratio (number of persons per room, family size, per capita "calorie" availability). Very less health problems have been reported in countries with favorable socio-economic indicators.

### *(i) Health Policy Indicators*

One most important indicators of political commitment is the allocation of suitable resources. The relevant indicators are:-

i. Proportion of budget spent on health services, health activities like nutrition, water supply, community development, sanitation, and housing.
ii. Proportion of total health resources dedicated to primary healthcare.

## National Health Policy—Indian Perspective

National Health Policy (NHP) was launched by the Ministry of Health and Family Welfare to improve the overall health status through promotive, palliative, and rehabilitative services. The National Health Policy 2017 replaces the NHP 2002. There are significant changes brought to the policy framework and

its objectives. NHP 2017 recognizes the importance of sustainable development and time-bound quantitative goals.

### Goals of NHP 2017

1. To deal with the increasing communicable and non-communicable diseases
2. To strengthen the health system.
3. To increase the growth of the healthcare industry by introducing advanced technologies and strengthening human resources.
4. To reduce medical expenses and to provide the best health services to the community at a reasonable cost.
5. To develop better financial protection strategies.
6. To strengthen the organization of healthcare services.
7. To increase the public health investments.
8. To reduce premature mortality by 25% by 2025.

### Key Principles of the National Health Policy

The following are the fundamental principles of the National Health Policy, 2017:

1. Commitment to integrity, professionalism, and ethics.
2. Equity and financial protection to poor patients.
3. Affordability.
4. Accountability.
5. Quality of care.
6. Pluralism.
7. Multi-stakeholder approach (collaborations with health ministries and communities).
8. Quality care of patients.

### Public and Private Health System in India

India's healthcare delivery system is categorized into two major components:

1. The private healthcare system, and
2. Public healthcare system.

### *1. Private Healthcare System*

The private healthcare system includes hospitals and clinics that are not directly controlled by the government and are run by non-government organizations for profit. The cost of these services is rather high. Private healthcare services are mainly available in urban areas.

### *2. Public Healthcare System*

Public healthcare is usually provided by the government through national healthcare systems (NHS) either free or at a low cost. The poor people can easily seek treatment in Govt. hospitals. Public health services are concentrated in rural as well as urban areas. Unfortunately, patients usually have to wait in long queues in public hospitals.

### National Health Mission (NHM)

In 2013, the government of India launched the National Health Mission (NHM). It encompasses two sub-missions,

a. National Rural Health Mission (NRHM), and
b. National Urban Health Mission (NUHM).

The main components of the NHM include strengthening the health system in rural and urban areas for Reproductive, Maternal Newborn Child and Adolescent Health (RMNCH+A), and communicable and non-communicable diseases.

### Aims of NHM

1. To reduce the maternal mortality rate (MMR) to 1/1000 live births.
2. To reduce infant mortality rate (IMR) to 25/1000 live births.
3. To reduce the total fertility rate (TFR) to 2.1.
4. To prevent and reduce anemia in women aged 15–49 years.
5. To prevent and reduce mortality and morbidity from communicable and non-communicable diseases, injuries and emerging diseases.

6. To reduce household out-of-pocket expenditure on total healthcare expenditure.
7. To reduce annual incidence and mortality from tuberculosis by half.
8. To reduce the prevalence of leprosy to <1/10000 population and incidence to zero in all districts.
9. To reduce annual malaria incidence to be <1/1000.
10. To reduce microfilaria prevalence to less than 1% in all districts.

### National Urban Health Mission (NUHM)

NUHM covers all State capitals, district headquarters, and other cities/towns with a population of 50,000 and above (as per the 2011 census) while cities and towns with a population below 50,000 are covered under NRHM.

### Focus of NUHM

The NUHM has a high focus on:

1. Urban poor population living in slums.
2. All other vulnerable populations such as the homeless, rag-pickers, street vendors, rickshaw pullers, homeless people, construction site workers, railway and bus station coolies, street children, sex workers, and other temporary migrants.

### Goals of NUHM

1. To provide a healthcare system to meet the needs of the urban poor and other vulnerable populations.
2. To make available resources for providing essential primary healthcare to urban poor.
3. To develop partnerships with NGOs, for-profit and non-profit health service providers, and other stakeholders.

### Strategies of NUHM

1. Strengthening urban primary health structures by:
   a. Creating new urban healthcare centers.
   b. Provision of evening OPD.

   c. Provision of comprehensive healthcare (preventive, promotive, and curative care).
   d. Provision of need-based equipment, drugs, and human resources.
   e. Formation and promotion of *Rogi Kalyan Samiti* to provide better facilities to the patients in the hospital.
   f. Using geographic information systems (GIS) map for easy access of patients.
2. Strengthening community participation through partnership with non-government providers.
3. Prioritizing the most vulnerable amongst the poor like the destitute, beggars, street children, construction workers, coolies, rickshaw pullers, sex workers, street vendors, and others.

### Service Delivery Infrastructure

NUHM provides:

1. **Urban–primary health centre (U-PHC):** As per the norm, one U-PHC is required for approximately 50,000–60,000 urban populations. U-PHCs preferably provide services like OPD, basic lab diagnosis, drug/contraceptive dispensing, and counseling for all communicable and non-communicable diseases. U-PHCs do not provide in-patient care. The working hours of U-PHC may be 12 noon to 8 pm.
2. **Community health centre (U-CHC) and referral hospitals:** U-CHCs are set up in cities with a population of above 2.5 lakhs. The U-CHCs provide medical care and facilities for minor surgeries, and institutional delivery.
3. **Outreach services:** NUHM supports the engagement of auxiliary nurse midwifery (ANM) to provide preventive and promotive healthcare services at the household and community level.
4. **Referral linkages:** State government hospitals, medical colleges, and private hospitals including maternity homes are approved to act as referral points for different types of healthcare services like maternal and child health,

diabetes, critical illness and trauma care, orthopedic complications, mental health, deafness control, cancer management, tobacco counseling/cessation, critical illness, diabetes, surgical cases, dental surgeries, etc.

5. **Community process:** The NUHM encourages the effective participation of community-based institutions like *Mahila Arogya Samiti* (MAS) (50–100 households) and *Rogi Kalyan Samitis* in the planning and management of healthcare services. It promotes the engagement of community health volunteers—accredited social health activist (ASHA) or link workers (LW) in urban poor settlements.

### National Rural Health Mission

The National Rural Health Mission (NRHM) was introduced to provide equitable, affordable, and quality healthcare to the rural population, especially vulnerable groups. NRHM was launched by the Hon'ble Prime Minister on 12th April 2005. It is operational in the whole country with a special focus on Empowered action group states (Bihar, Jharkhand, Madhya Pradesh, Chhattisgarh, Uttar Pradesh, Uttaranchal, Orissa, and Rajasthan), 8 North East states (Assam, Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim and Tripura), Himachal Pradesh and Jammu and Kashmir.

### Goals of NRHM

1. To bring population stabilization, and gender and demographic balance.
2. To mainstream the Indian systems of medicine (AYUSH: *Ayurveda, Yoga, Unani, Siddha*, and *Homeopathy)*.
3. To provide healthcare facilities to those residing in rural areas, especially the disadvantaged groups including, women and children.
4. To prevent and control communicable and non-communicable diseases.
5. To promote healthy lifestyles.
6. To provide accessible, effective, and affordable primary healthcare facilities, especially to the poor and vulnerable section of the population.

7. To reduce maternal mortality ratio (MMR) and infant mortality rate (IMR).

### Strategies

The strategies to achieve the above goals include:

1. Creation of a cadre of accredited social health activists (ASHA) to bridge the gaps in rural health.
2. Training of Panchayati Raj Institutions (PRIs) to manage public health services.
3. Preparation and implementation of health plans for each village through the Village Health Committee of the Panchayat.
4. Strengthening of sub-centers by:
   a. Continuous supply of essential drugs (both allopathic and AYUSH).
   b. Provision of multipurpose worker (male)/additional ANMs wherever needed.
   c. Sanction of new sub-centers and upgrading existing sub-centers.
5. Strengthening primary health centres (PHC) for quality, preventive, promotive, curative, supervisory and outreach services.
6. Provision of mobile medical units and national ambulance services to provide services at the doorsteps of population living in the most remote and hard-to-reach areas.

### Introduction to Millennium Development Goals

The Millennium Development Goals (MDGs) are a set of eight realistic goals with measurable targets for improving the lives of the world's poorest people. In September 2000, leaders of 189 countries gathered at the United Nations headquarters and signed the historic Millennium Declaration, in which they committed to achieve these goals by the target date of 2015 (Table 1.1).

The Millennium Development Goals are a collective responsibility. The United Nations Environment Programme (UNEP) was instrumental in making the goals a reality. It also monitors their implementation, collects and analyses

**Table 1.1:** Millennium development goals (MDGs)

| *No.* | *Goal* | *Target* |
|---|---|---|
| 1. | Eradicate extreme poverty and hunger | • Reduce by half the proportion of people whose income is less than $1 a day<br>• Achieve full and productive employment and decent work for all, including women and young people<br>• Reduce by half the proportion of people who suffer from hunger |
| 2. | Achieve universal primary education | Ensure that all boys and girls complete a full course of primary schooling |
| 3. | Promote gender equality and empower women | Eliminate gender disparity in primary and secondary education preferably by 2005, and in all levels of education no later than 2015 |
| 4. | Reduce child mortality | Reduce by two-thirds the mortality of children under five |
| 5. | Improve maternal health | • Reduce maternal mortality by three-quarters<br>• Achieve universal access to reproductive health |
| 6. | Combat HIV/AIDS, malaria, and other diseases | • Halt and reverse the spread of HIV/AIDS<br>• Achieve, by 2010, universal access to treatment for HIV/AIDS for all those who need it<br>• Halt and reverse the incidence of malaria and other major diseases |
| 7. | Ensure environmental sustainability | • Integrate principles of sustainable development into country policies and programs; reverse the loss of environmental resources<br>• Reduce biodiversity loss; achieving, by 2010, a significant reduction in the rate of loss<br>• Halve the proportion of people without access to safe drinking water and basic sanitation<br>• Improve the lives of at least 100 million slum dwellers by 2020 |

*(Contd.)*

| *No.* | *Goal* | *Target* |
|---|---|---|
| 8. | Develop a global partnership for development | • Develop further an open, rule-based, predictable, non-discriminatory trading and financial system<br>• Address special needs of the least developed countries, landlocked countries, and small island developing states<br>• Deal comprehensively with developing countries' debt<br>• In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries<br>• In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies |

information on progress made, provides technical assistance to developing countries for the achievement of the Millennium Development Goal, and advocates for the reduction of poverty. WHO works with partners to support national efforts to achieve the health-related MDGs. WHO's activities include:

1. Setting prevention and treatment guidelines and other global norms and standards;
2. Providing technical support to countries to implement guidelines;
3. Analyzing social and economic factors and highlighting the broader risks and opportunities for health.

### Sustainable Development Goals (SDGs)

The Sustainable Development Goals (SDGs), also known as the Global Goals or Agenda 2030 are 17 ambitious objectives that were adopted by the United Nations in 2015 as a universal call to action to end poverty, protect the planet, and ensure that by 2030 all people enjoy peace and prosperity. They recognize that ending poverty and other deprivations must go hand-in-hand with strategies that improve health and education, reduce inequality, and spur economic growth—all while tackling climate change and working to preserve our oceans and forests.

The 17 SDGs are as follows:

**Goal 1:** *No poverty*: "End poverty in all its forms everywhere by 2030".

*Indicators*: Proportion of population living below the poverty line.

*Targets*:

1. Eradication of extreme poverty; reduction of all poverty by half; implementation of social protection systems
2. Ensuring equal rights to ownership, basic services, technology, and economic resources
3. The building of resilience to environmental, economic, and social disasters.

**Goal 2:** *Zero hunger*: "End hunger, achieve food security and improved nutrition, and promote sustainable agriculture.''

*Indicators*:

1. The prevalence of undernourishment.
2. Prevalence of severe food insecurity.
3. Prevalence of stunting among children under 5 years of age.

*Targets*:

1. Ending hunger and improving access to food.
2. Ending all forms of malnutrition.
3. Agricultural productivity.
4. Sustainable food production systems and resilient agricultural practices.
5. Genetic diversity of seeds, cultivated plants, and farmed and domesticated animals.
6. Investments, research, and technology.
7. Addressing trade restrictions and distortions in world agricultural markets.
8. Food commodity markets and their derivatives.

**Goal 3:** *Good health and well-being*: "Ensure healthy lives and promote well-being for all at all ages".

*Indicators*:

1. Life expectancy.
2. Child and maternal mortality.

3. Deaths from road traffic injuries,
4. Prevalence of current tobacco use,
5. Suicide mortality rate.

*Targets*:

1. Reduction of maternal mortality. Ending all preventable deaths under five years of age.
2. Fight communicable diseases.
3. Reduction of mortality from non-communicable diseases and promote mental health.
4. Prevent and treat substance abuse. Reduce road injuries and deaths.
5. Grant universal access to sexual and reproductive care.
6. Universal health coverage of family planning and education.
7. Reduce illnesses and deaths from hazardous chemicals and pollution.
8. Implement the WHO Framework Convention on Tobacco Control.
9. Support research, development, and universal access to affordable vaccines and medicines.
10. Increase health financing and support the health workforce in developing countries; and improve early warning systems for global health risks.

**Goal 4:** *Quality education*: "Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all".

*Indicators*:

1. Attendance rates at primary schools, completion rates of primary school education, participation in tertiary education, and so forth.
2. Access to electricity, the internet, computers, drinking water, and toilets in schools.

*Targets*:

1. Free primary and secondary education.
2. Equal access to quality pre-primary education.
3. Affordable technical, vocational, and higher education.

4. Increased number of people with relevant skills for financial success.
5. Elimination of all discrimination in education.
6. Universal literacy and numeracy.
7. Education for sustainable development and global citizenship.
8. Construction of safe schools.
9. Expand higher education scholarships for developing countries.
10. Increase the supply of qualified teachers in developing countries.

**Goal 5:** *Gender equality*: "Achieve gender equality and empower all women and girls".

*Indicators*:

1. Suitable legal frameworks and representation by women in national parliament or local deliberative bodies.
2. Numbers on forced marriage and female genital mutilation/cutting (FGM/C).

*Targets*:

1. To grant women and girls equal rights.
2. Opportunities to live free without discrimination including workplace discrimination or any violence. This is to achieve gender equality and empower all women and girls.

**Goal 6:** *Clean water and sanitation*: "Ensure availability and sustainable management of water and sanitation for all."

*Indicators*:

1. The percentages of the population that uses safely managed drinking water, and has access to safely managed sanitation.
2. The proportion of domestic and industrial wastewater that is safely treated.

*Targets*:

1. Safe and affordable drinking water
2. End open defecation

3. Provide access to sanitation and hygiene
4. Improve water quality
5. Wastewater treatment
6. Safe reuse
7. Increase water-use efficiency
8. Ensure freshwater supplies
9. Implement IWRM
10. Protect and restore water-related ecosystems.
11. Expand water and sanitation support to developing countries
12. Support local engagement in water and sanitation management.

**Goal 7:** *Affordable and clean energy solar panels on house roof*: "Ensure access to affordable, reliable, sustainable and modern energy for all".

*Indicators*:

1. The percentage of the population with access to electricity.
2. Renewable energy share and energy efficiency.

*Targets*:

1. Universal access to modern energy.
2. Increase the global percentage of renewable energy.
3. Double the improvement in energy efficiency.
4. Promote access to research, technology, and investments in clean energy.
5. Expand and upgrade energy services for developing countries.

**Goal 8:** *Decent work and economic growth*: "Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all".

*Indicators*:

1. Economic growth in the least developed countries and the rate of real GDP per capita.
2. Rates of youth unemployment and occupational injuries or the number of women engaged in the labor force compared to men.

*Targets*:

1. Sustainable economic growth.
2. Diversify, innovate, and upgrade for economic productivity.
3. Promote policies to support job creation and growing enterprises.
4. Improve resource efficiency in consumption and production.
5. Full employment and decent work with equal pay.
6. Promote youth employment, education, and training.
7. End modern slavery, trafficking, and child labor.
8. Protect labor rights and promote safe working environments.
9. Promote beneficial and sustainable tourism.
10. Universal access to banking, insurance, and financial services.
11. Increase aid for trade support.
12. Develop a global youth employment strategy.

**Goal 9:** *Industry, innovation, and infrastructure*: "Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation."

*Indicators*:

1. The proportion of people who are employed in manufacturing activities or who are living in areas covered by a mobile network or who have access to the internet.
2. $CO_2$ emissions per unit of value added.

*Targets*:

1. Develop sustainable, resilient, and inclusive infrastructures.
2. Promote inclusive and sustainable industrialization.
3. Increase access to financial services and markets.
4. Upgrade all industries and infrastructures for sustainability.
5. Enhance research and upgrade industrial technologies.
6. Facilitate sustainable infrastructure development for developing countries.

7. Support domestic technology development and industrial diversification.
8. Universal access to information and communications technology.

**Goal 10:** *Reduced inequality*: "Reduce income inequality within and among countries".

*Indicators*:

1. Income disparities
2. Aspects of gender and disability
3. Policies for migration and mobility of people

*Targets*:

1. Reduce income inequalities.
2. Promote universal social economic and political inclusion.
3. Ensure equal opportunities and end discrimination.
4. Adopt fiscal and social policies that promote equality.
5. Improved regulation of global financial markets and institutions.
6. Enhanced representation for developing countries in financial institutions.
7. Well-managed migration policies.
8. Special and differential treatment for developing countries.
9. Encourage development assistance and investment in least developed countries.
10. Reduce transaction costs for migrant remittances.

**Goal 11:** *Sustainable cities and communities*: "Make cities and human settlements inclusive, safe, resilient, and sustainable".

*Indicators*:

1. Number of people living in urban slums.
2. The proportion of the urban population who has convenient access to public transport, and the extent of built-up area per person.

*Targets*:

1. Safe and affordable housing.
2. Affordable and sustainable transport systems.
3. Sustainable urbanization.

4. Protection of the world's cultural and natural heritage.
5. Reduction of the adverse effects of natural disasters
6. Safe and green public spaces.
7. Strong national and regional development planning.
8. Implementing policies for inclusion resource efficiency.
9. Disaster risk reduction in supporting the least developed countries in sustainable and resilient building.

**Goal 12:** *Responsible consumption and production*: "Ensure sustainable consumption and production patterns".

*Indicators*:

1. The number of national policy instruments to promote sustainable consumption and production patterns.
2. Global fossil fuel subsidies.

*Targets*:

1. Achieve the sustainable management and efficient use of natural resources.
2. Reducing by half the per capita global food waste at the retail and consumer levels.
3. The reduction of food losses along production and supply chains.
4. Achieving the environmentally sound management of chemicals and all wastes throughout their life cycle.
5. Reducing waste generation through prevention, reduction, recycling, and reuse.
6. Encourage companies to adopt sustainable practices.
7. Promote public procurement practices that are sustainable.
8. Awareness for sustainable development.
9. Support developing countries to strengthen their scientific and technological capacity.
10. Develop and implement tools to monitor sustainable development impacts.
11. Remove market distortions, like fossil fuel subsidies, that encourage wasteful consumption.

**Goal 13:** *Climate action*: "Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy".

*Targets*:

1. Strengthen capacity to handle climate-related disasters.
2. Integrate climate change measures into policies and planning.
3. Build knowledge and capacity to meet climate change.
4. Implement the UN Framework Convention on Climate Change (UNFCCC). Promote mechanisms to raise capacity for planning and management.

**Goal 14:** *Life below water*: "Conserve and sustainably use the oceans, seas, and marine resources for sustainable development".

*Indicators*: Reducing impacts from marine plastic pollution.

*Targets*:

1. Reduce marine pollution protect and restore ecosystems.
2. Reduce ocean acidification.
3. Sustainable fishing.
4. Conserve coastal and marine areas.
5. End subsidies contribute to overfishing.
6. Increase the economic benefits from sustainable use of marine resources.
7. To increase scientific knowledge, research, and technology for ocean health.
8. Support small-scale fishers. Implement and enforce international sea law.

**Goal 15:** *Life on land*: "Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss".

*Indicators*:

1. The proportion of remaining forest area.
2. Desertification and species extinction risk.

*Targets*:

1. Conserve and restore terrestrial and freshwater ecosystems.
2. End deforestation and restore degraded forests.

3. End desertification and restore degraded land.
4. Ensure the conservation of mountain ecosystems.
5. Protect biodiversity and natural habitats.
6. Protect access to genetic resources and fair sharing of the benefits.
7. Eliminate poaching and trafficking of protected species.
8. Prevent invasive alien species on land and in water ecosystems.
9. Integrate ecosystem and biodiversity in governmental planning.
10. Increase financial resources to conserve and sustainably use ecosystems and biodiversity.
11. Combat global poaching and trafficking.

**Goal 16:** *Peace, justice, and strong institutions*: "Promote peaceful and inclusive societies for sustainable development, provide access to justice for all, and build effective, accountable, and inclusive institutions at all levels".

*Indicators*:

1. Rates of birth registration.
2. Prevalence of bribery

*Targets*:

1. Reduce violence.
2. Protect children from abuse, exploitation, trafficking and violence.
3. Promote the rule of law and ensure equal access to justice.
4. Combat crime and illicit financial and arms flows.
5. Reduce corruption and bribery.
6. Develop effective, accountable, and transparent institutions.
7. Ensure responsive decision-making.
8. Strengthen the participation in global governance.
9. Provide universal legal identity.
10. Ensure public access to information and protect fundamental freedoms.

11. Strengthen national institutions to prevent violence and combat crime and terrorism.
12. Promote and enforce non-discriminatory laws and policies.

**Goal 17:** *Partnership for the goals*: "Strengthen the means of implementation and revitalize the global partnership for sustainable development".

*Indicators*:

1. Increasing international cooperation.
2. Developing multi-stakeholder partnerships to share knowledge, expertise, technology, and financial support.

*Targets*:

1. Improving North-South and South-South cooperation, and public-private partnerships.
2. Improved and more equitable trade.
3. Coordinated investment initiatives to promote sustainable development across borders.
4. Strengthening and streamlining cooperation between nation-states, both developed and developing.
5. Promote international trade and an equitable trading system.

To achieve sustainable development the economic, socio-political, and environmental dimensions need to come together. The economic, socio-political, and environmental dimensions are all critically important and interdependent.

### International Pharmaceutical Federation (FIP) Goals

FIP is recognized as the leader of pharmacy at a global level. FIP is a non-governmental organization/(NGO) in official relations with the World Health Organization. It is the global body representing over four million pharmacists, pharmaceutical scientists, and pharmaceutical educators through 153 National organizations, academic institutional members, and individual members. The International Pharmaceutical Federation (FIP) in September 2020 launched FIP development Goals, which are a key resource for transforming the pharmacy profession over the next decade globally, regionally, and nationally.

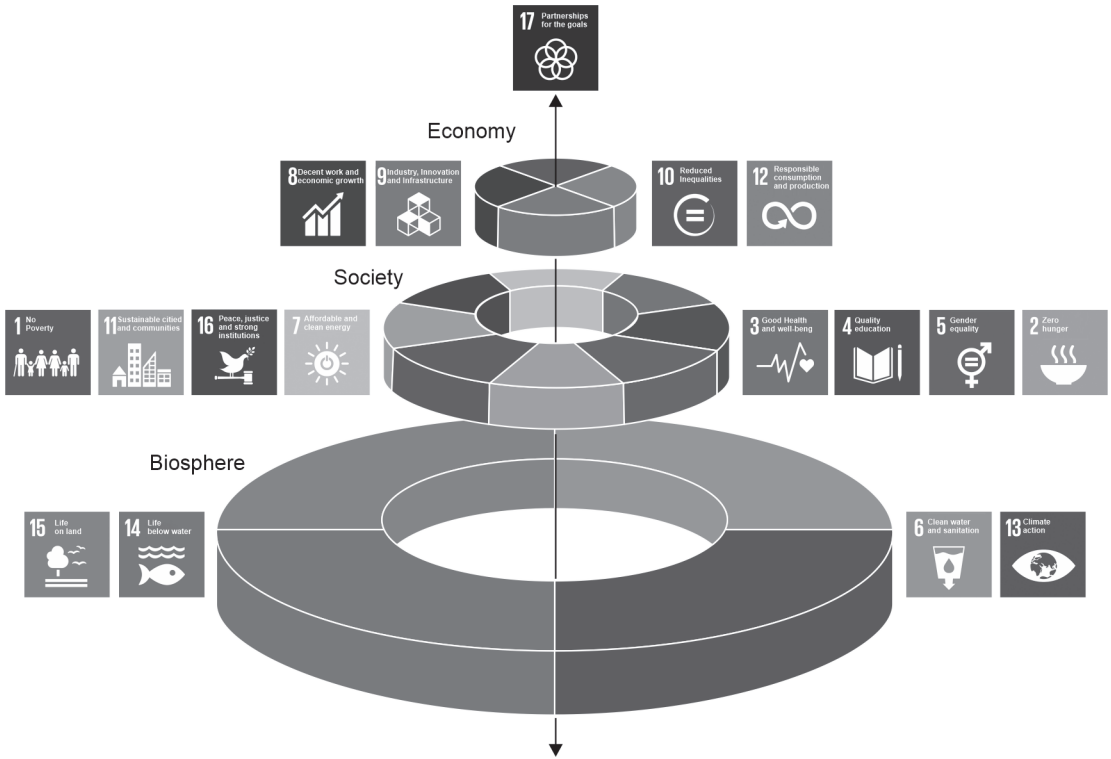


**Fig. 1.2:** Wedding cake model of economic, social, and ecological aspects of sustainable development goals

**Table 1.2:** Sustainable development goals (SDGs)

| *SDGs No.* | *Goal* |
|---|---|
| 1 | No poverty |
| 2 | Zero hunger |
| 3 | Good health |
| 4 | Quality education |
| 5 | Gender equality and well-being |
| 6 | Clean water and sanitation |
| 7 | Affordable and clean energy |
| 8 | Decent work and economic growth |
| 9 | Industry, innovation and infrastructure |
| 10 | Reducing inequality |
| 11 | Sustainable cities and communities |
| 12 | Responsible consumption and production |
| 13 | Climate action |
| 14 | Life below water |
| 15 | Life on land |
| 16 | Peace, justice, and strong institutions |
| 17 | Partnerships for the goals |

The FIP development goals are to transform global pharmacy.


**Fig. 1.3:** FIP development goals to transform global pharmacy

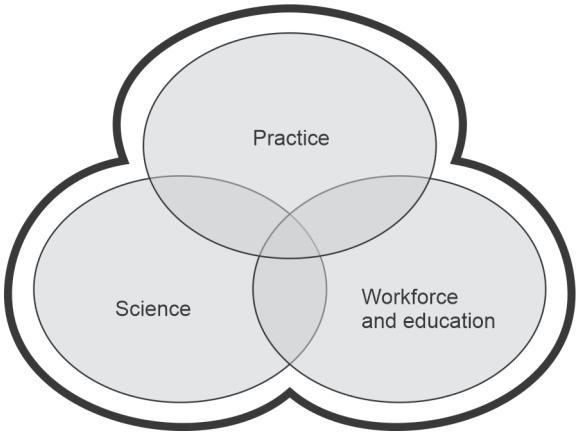


**Fig. 1.4:** FIP development goals

Each of the FIP development goals is composed of 3 elements: Practice, science, and workforce. Each of the 21 FIP DGs provides a focus for transforming global pharmacy. The FIP DGs serve as a systematic framework that guides the basis for needs assessment and form a foundation for transformation mapping.

**Table 1.3:** FIP development goals

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| 1. | **Academic capacity** | Engagement with pharmaceutical higher education development policies and ready access to leaders in all sectors of pharmacy practice and pharmaceutical science to support supply-side workforce development agendas | Capacity for in-practice training and development linked with education providers; pathways for professional advancement from foundation training through to advanced prac tice and/or specialization | Institutional academic capacity to deliver quality pharmaceutical sciences education and training for pharmacists and pharmaceutical scientists who contribute to patient care, discoveries and development, clinical utilization, marketing regulations, and the economic assessment of health products |
| 2. | **Early career training strategy** | Engagement with pharmaceutical higher foundation training infrastructures in place for the early post-registration (post-licensing) years of the pharmaceutical workforce as a basis for consolidating initial education and training and progressing the novice workforce towards advanced practice | Training strategy and infrastructures providing structured journeys for early career pharmacy practitioners including pharmacy support workers linked towards advanced practice and specialization frameworks and professional recognition and certification | Education and training of graduate/postgraduate students and early career pharmaceutical scientists to advance their skills in basic, translational, clinical and regulatory sciences |

*(Contd.)*

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| 3. | **Quality assurance** | Transparent, contemporary, and innovative processes for the quality assurance of needs-based education and training systems | Transparent, contemporary, and innovative processes for the quality assessment, monitoring, and improvement of services in practice | Quality and integrity in pharmaceutical research, development, manufacturing, and regulations to assure access to safe and effective medical products globally. |
| 4. | **Advanced and specialist development** | Education and training infrastructures are in place for the recognized advancement of the pharmaceutical workforce as a basis for enhancing patient care and health system deliverables | Sector-specific competency and development frameworks and infrastructures for advanced and/or specialized pharmacy practice and people-centered services. | Education, training, and mentoring to foster innovation and expertise in pharmaceutical sciences |
| 5. | **Competency development** | Clear and accessible developmental frameworks describing competencies and scope of practice for all stages of professional careers. This should include leadership development frameworks for the pharmaceutical workforce | Clearly defined developmental frameworks for practitioners describing competencies linked to professional services delivered in practice | A framework describing competencies for all stages of professional careers in pharmaceutical sciences |
| 6. | **Leadership development** | Strategies and programs in place that develop professional leader- | Strategies and programs for professional leadership | Strategies and programs for scientific leadership are |

*(Contd.)*

**Table 1.3:** FIP development goals (*contd.*)

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| | | ship skills (including clinical and executive leadership) for all stages of career development, including pharmaceutical sciences and initial education and training | incorporate team- and collaborative performance, service development in line with local needs, and clinical leadership which demonstrates responsibility, accountability, decision-making ownership, and professional autonomy | in place to sustain excellence in pharmaceutical sciences research, development, manufacturing, and regulations |
| 7. | **Advancing Integrated Services** | A patient-centered and integrated health services foundation for workforce development, relevant to social determinants of health and needs-based approaches to workforce development | A people-centred and integrated healthcare provision that is based on an interprofessional and cross-setting seamless continuum including pharmacist-delivered professional services | Scientific strategies to evaluate expanded professional pharmacy services and programs, including translational and reverse-translational research |
| 8. | **Working with others** | Identifiable elements of collaborative working and interprofessional education and training which should be a feature of all workforce development programmes and policies | Identifiable elements of inter- and intra-professional collaboration and multidisciplinary healthcare, delivered through cohesive and interdependent teams working across interfaces and transitions of care | Transdisciplinary collaboration to advance education, research, development, manufacturing, and regulations that collectively improve access to medical products |

*(Contd.)*

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| 9. | **Continuing professional development strategies** | All professional development activity is linked with needs-based health policy initiatives and pharmaceutical career development pathways | In-practice and needs-based continuing professional development (CPD) and continuing education (CE) are linked to career development pathways and practice frameworks | Integrate professional development as an essential component of advanced pharmaceutical sciences |
| 10. | **Equity and equality** | Clear strategies for addressing equity and diversity inequalities in pharmaceutical workforce development, continued education and training, and career progression opportunities | Clear strategies for equity and diversity in pharmaceutical services delivery, service access, and service impact so that all people have access to quality pharmaceutical care | Equity in the global capacity of pharmaceutical sciences training, research infrastructure, development and manufacturing capabilities, and evidence-based regulatory oversight |
| 11. | **Impact and outcomes** | Evidence of the impact of the pharmaceutical workforce within health systems and health improvement | Evidence of the impact of pharmaceutical services in terms of health outcomes and quality of life, improved efficiency of health systems, and sustainability | Strategies and programs are in place to enable timely access to safe, effective, and affordable medical products |
| 12. | **Pharmacy intelligence** | A national strategy and corresponding actions to collate and share workforce data and workforce planning activities (skill | A comprehensive national strategy to collate, share, and utilize intelligence on service provision, develop- | Data-driven decision strategies to accelerate pharmaceutical research, development, manufac- |

*(Contd.)*

**Table 1.3:** FIP development goals (*contd.*)

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| | | mixes, advanced and specialist practice, capacity). Without workforce intelligence data there can be no strategic workforce development | ment, delivery, and needs to inform evidence-based pharmaceutical services development, policy-making, and funding decisions | turing, and market approval of medical products to maximize clinical benefits for individual patients |
| 13. | **Policy development** | Clear and manageable strategies to implement comprehensive needs-based development of the pharmaceutical workforce throughout the entire professional career life cycle | Clear pharmacy-led strategies to develop and implement needs and evidence-based practice-related policies on service implementation, integration, and remuneration, aligned with broader national health policies and priorities | Defined strategies to implement needs-based pharmaceutical policies that drive national research priorities, intellectual property protection, licensing, and pricing decisions for medical products |
| 14. | **Medicines expertise** | Strategies and systems are in place to prepare and train a workforce that can deliver quality medicines expertise | Strategies and systems in place for pharmaceutical expert information and advice provision to patients, formal and informal caregivers, healthcare professionals, and relevant agencies and stakeholders | Encourage the provision of science-based information on medicines |
| 15. | **People-centred care** | Strategies in place to develop pharmaceutical education and | Collaborative inter-professional strategies and people- | Capacity to monitor and understand health-related |

*(Contd.)*

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| | | the workforce to support the delivery of people-centered care in practice | centered professional services to support the prevention, screening, clinical management, and therapeutic optimization of non-communicable diseases (NCDs) and long-term conditions (LTCs) including cardiovascular diseases, chronic respiratory conditions (such as asthma and chronic obstructive pulmonary disease COPD), diabetes, cancer, mental health conditions, dermatological conditions, and others | characteristics leading to innovative personalized approaches for improved people-centered care |
| 16. | **Communicable diseases** | Education and training infrastructures are in place to develop a workforce prepared to deliver quality services around communicable and vector-borne diseases | Strategies and people-centered professional services for the prevention, surveillance, management, and therapeutic optimization of communicable and vector-borne diseases | Capacity to monitor and respond to communicable with innovative approaches for prevention and treatment |

*(Contd.)*

**Table 1.3:** FIP development goals (*contd.*)

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| 17. | **Antimicrobial stewardship** | Strategies and systems in place to develop a pharmaceutical workforce prepared to deliver quality services for antimicrobial stewardship | Infrastructures and frameworks in place to deliver services for antimicrobial stewardship | Promote research and development of new antimicrobials, new antimicrobial combinations, and new techniques and evaluate the impact of antibiotic stewardship programs |
| 18. | **Access to medicines, devices and services** | Strategies in place to widen access to medicines and services through a responsive, capable, available, and well-distributed pharmaceutical workforce | Systems in place to optimize access to effective medicines and pharmaceutical care services through appropriate supply chains, quality quality standards, self-care and prevention services, and affordability and fair pricing policies | Access to innovative science and information, new/innovative therapies, and new delivery/ manufacturing processes |
| 19. | **Patient safety** | Workforce and education strategies linked to patient safety mechanisms and reducing medication-related harm in practice | Patient safety mechanisms linked to reducing medication-related harm, quality assurance processes, and legislation and regulations | Safety in the development and use of medicines is promoted through the advancement of drug safety science |
| 20. | **Digital health** | Enablers of digital transformation within the pharmacy workforce and effective processes | Systems and structures are in place to develop and deliver quality digital health | Application of digital technology in healthcare delivery and development |

*(Contd.)*

| S. No. | FIP development goals | Elements | | |
|---|---|---|---|---|
| | | *Workforce* | *Practice* | *Science* |
| | | to facilitate the development of a digitally literate pharmaceutical workforce | and pharmaceutical care services through the digital literacy and utilization of technology and digital enablers, and the configuration of responsive digital services to widen access and equity | of innovative medical products |
| 21. | **Sustainability in pharmacy** | Strategies and systems in place that utilize the workforce to enhance sustainable pharmacy and services | Policies, regulations, and strategies to ensure the sustainability of the environment and minimize the impact of pharmaceuticals and pharmacy practice, but also the appropriate mechanisms to ensure the sustainability of pharmacy practice itself, through appropriate remuneration models for pharmaceutical services | Scientific strategies and policies are in place to maintain a consistent supply of medicinal products throughout the lifecycle while limiting negative consequences for the environment |

The FIP DGs also allow for research and evaluation by universities working with member organizations and pharmacy and health leadership bodies, allowing a framework for national funding for development, and maps to national policy initiatives.

## REVISION QUESTIONS

### Long Answer Questions (10 Marks)

1. Define social pharmacy. Explain the scope of social pharmacy.
2. Discuss the role of pharmacists in public health.
3. What do you mean by 'health'? Explain different concepts of health.
4. Discuss the important dimensions of health.
5. Give a brief account of different determinants of health.
6. What are indicators of health? Explain different indicators of health and their uses.
7. Discuss National Health Policy.
8. Discuss the millennium development goals.
9. Discuss the sustainable development goals.
10. Explain the goals of the International Pharmaceutical Federation (FIP).
11. How do the following differ?
    a. DALYS and QALY
    b. Virulence and pathogenicity
    c. Prevalence rate and incidence rate

### Short Answer Questions (5 Marks)

1. Define and explain social pharmacy.
2. Critically examine the different definitions of health.
3. Describe the role of heredity and environment as determinants of health.
4. Explain the terms "Crude death rate", "Age and sex-specific death rate" and "Infant mortality rate".
5. Write the goals of NHP (2017).
6. Discuss the principles of the National Health Policy.
7. What is the difference between public and private health systems in India?
8. Write the goals of NUHM.
9. How do the following differ:
    a. Mental health *and* spiritual health.
    b. Determinants of health *and* indicators of health.

### Very Short Answers Questions (2 Marks)

1. Define Mental Health.
2. Define Infant Mortality Rate.
3. What is spiritual health?
4. What are morbidity indicators?
5. What is DALY?
6. What is HALE?
7. What is the prevalence rate?
8. What is the incidence rate?
9. What is the relationship between prevalence and incidence?
10. Write the aims of NHM.

### Multiple Choice Questions (answers are in bold)

1. Which of the following dimensions is included in the WHO definition of health?
   a. Physical
   b. Mental
   c. Social
   d. **All of the above**
2. Which of the following indices are used for measuring disability?
   a. Sullivan's index
   b. HALE (health-adjusted life expectancy)
   c. DALYs (disability-adjusted life years)
   d. **All of the above**
3. Sullivan index is:
   a. **Expectation of life free of disability**
   b. Expectation of total life
   c. Expectation of life at 25 years of age
   d. Average life expectancy
4. Prevalence is related to incidence by equation:
   a. **Prevalence = incidence × duration**
   b. Incidence = prevalence × duration
   c. Prevalence = incidence – duration
   d. Incidence = prevalence – duration

7. The number of years of healthy life of a person lost due to premature mortality, mortality, or disability is known as:
   a. HALE
   b. **DALYs**
   c. Sullivan's index
   d. QALY
8. The ability of an infectious agent to invade, multiply, and produce infection in a host is known as:
   a. **Infectivity**
   b. Pathogenicity
   c. Virulence
   d. Prevalence
9. According to the ASHP statement, what is one of the roles pharmacists can play in public health-related activities?
   a. Performing surgeries
   b. Designing healthcare policies
   c. Developing and implementing disease prevention programs
   d. Conducting medical research
10. How many Millennium Development Goals (MDGs) were established?
    a. 5
    b. **8**
    c. 10
    d. 12
11. Which organization works with partners to support national efforts to achieve the health-related MDGs?
    a. United Nations Environment Programme (UNEP)
    b. World Trade Organization (WTO)
    c. International Monetary Fund (IMF)
    d. **World Health Organization (WHO)**
12. When were the Sustainable Development Goals (SDGs) adopted by the United Nations?
    a. 2000
    b. 2010
    c. **2015**
    d. 2020

13. How many Sustainable Development Goals (SDGs) are there?
    a. 10
    b. 15
    c. **17**
    d. 20
14. In what year did FIP launch the FIP development goals?
    a. 2019
    b. **2020**
    c. 2021
    d. 2022
15. Which organization is FIP in official relations with?
    a. United Nations (UN)
    b. **World Trade Organization (WTO)**
    c. World Health Organization (WHO)
    d. International Monetary Fund (IMF)
16. What is the primary focus of social pharmacy?
    a. Clinical diagnosis
    b. Medicinal chemistry
    c. **Social aspects of pharmacy practice**
    d. Pharmaceutical manufacturing
17. According to the ASHP statement, what is the pharmacist's role in public health?
    a. Dispensing medications only
    b. **Participating in public health efforts**
    c. Conducting clinical trials
    d. Managing drug product shortages
18. What does the ecological concept of health emphasize?
    a. Absence of disease
    b. **Dynamic equilibrium between man and the environment**
    c. Genetic makeup
    d. Social support systems