

Chapter 1 : Introduction to Social Pharmacy

1-1 to 1-23

Definition and Scope. Social Pharmacy as a discipline and its scope in improving the public health. Role of Pharmacists in Public Health. Concept of Health -WHO Definition, various dimensions, determinants, and health indicators. National Health Policy – Indian perspective, Public and Private Health System in India, National Health Mission. Introduction to Millennium Development Goals, Sustainable Development Goals, FIP Development Goals

1.1	Introduction.....	1-1
1.1.1	Definition and Scope.....	1-1
1.2	Social Pharmacy as Discipline.....	1-2
1.2.1	Scope of Social Pharmacy in Improving Public Health.....	1-2
1.2.2	Role and Relevance and Scope of the Pharmacist in Society.....	1-2
1.2.3	Role of Pharmacists in Public Health.....	1-3
1.3	Concept of Health.....	1-4
1.3.1	Definition.....	1-4
1.3.2	Health in Social Context.....	1-4
1.3.3	Dimensions of Health.....	1-4
1.3.4	Determinants of Health.....	1-5
1.3.5	Health Indicators.....	1-8
1.3.6	Role of Pharmacist in New Millennia.....	1-11
1.3.7	Concept of Disease.....	1-12
1.3.7(A)	Disease Agents.....	1-12
1.4	National Health Plan : Indian Perspective.....	1-12
1.4.1	Goal, Principles and Objectives of National Health Plans.....	1-13
1.4.2	The Thrust Area of the Policy.....	1-14
1.4.3	National Health Programmes.....	1-14
1.4.4	Burden of Disease.....	1-15
1.4.5	Indian Healthcare Industry.....	1-15
1.4.6	Regulatory Role of Government.....	1-16
1.4.7	Different Priority Areas of Social Health.....	1-17
1.5	Public and Private Health System in India.....	1-17
1.5.1	Private Sector in Healthcare Industry.....	1-18
1.5.2	National Health Mission (NHM).....	1-18
1.5.2(A)	Goals of Rural Health Mission.....	1-19
1.5.2(B)	Goals of Urban Health Mission.....	1-19
1.5.2(C)	Objectives of the Health Mission.....	1-19
1.6	Millennium Development Goals.....	1-20
1.6.1	Introduction.....	1-20
1.6.2	Achievements of the Goals in Millennium Development.....	1-21
1.6.3	Sustainable Development Goals.....	1-21
1.6.4	FIP Developmental Goals.....	1-21

Chapter 2 : Role of Pharmacists in Preventive Health Care

2-1 to 2-45

Preventive healthcare – Role of Pharmacists in the following	
<ul style="list-style-type: none"> • Demography and Family Planning • Mother and child health, importance of breastfeeding, ill effects of infant milk substitutes and bottle feeding. • Overview of Vaccines, types of immunity and immunization • Effect of Environment on Health - Water pollution, importance of safe drinking water, waterborne diseases, air pollution, noise pollution, sewage and solid waste disposal, occupational illnesses, Environmental pollution due to pharmaceuticals. • Psychosocial Pharmacy : Drugs of misuse and abuse -psychotropics, narcotics, alcohol, tobacco products. Social Impact of these habits on social health and productivity and suicidal behaviours. 	
2.1	Introduction2-1
2.2	Introduction to Demography.....2-2
2.2.1	Global Scene2-2
2.2.2	Importance of Demographic Data2-4
2.2.3	Demographic Cycle2-4
2.2.4	Demographic Profile of India.....2-5
2.2.5	Factors that Affects Demography2-5
2.3	Family Planning2-6
2.3.1	Objectives of Family Planning2-7
2.3.2	Fertility2-7
2.3.3	Methods of Family Planning.....2-8
2.3.3(A)	Spacing Method2-8
2.3.3(B)	Permanent Methods.....2-12
2.3.3(C)	Emergency Contraceptive Pill2-12
2.3.3(D)	Pregnancy Testing Kits2-12
2.3.4	Role of Pharmacist in Family Planning.....2-12
2.4	Mother and Child Health.....2-13
2.4.1	Introduction2-13
2.4.2	Common Causes of Maternal Injury and Death2-13
2.4.3	Breast Feeding2-14
2.4.3(A)	Exclusive Breastfeeding2-14
2.4.3(B)	Importance of Breastfeeding2-16
2.4.4	Infant Milk Substitutes.....2-17
2.4.4(A)	Types of Infant Milk Substitutes.....2-17
2.4.4(B)	Side Effects of Infant Milk Substitutes or Bottle Feeding.....2-18
2.5	Overview of Vaccines2-19
2.5.1	Classification of Vaccines.....2-19
2.6	Immunization2-20
2.6.1	Types of Immunity.....2-21
2.6.2	Role of Pharmacist in Immunization.....2-23
2.7	Effect of Environment on Health2-24
2.7.1	Introduction2-24

2.7.2	Water Pollution	2-24
2.7.2(A)	Causes of Water Pollution	2-25
2.7.2(B)	Types of Water Pollutants.....	2-26
2.7.2(C)	Importance of Safe Drinking Water.....	2-27
2.7.2(D)	Water Borne Diseases	2-27
2.7.3	Air Pollution	2-29
2.7.3(A)	Types of Air Pollutants.....	2-30
2.7.3(B)	Effect of Air Pollution on Human Health.....	2-30
2.7.3(C)	Control Measures for Air Pollution.....	2-31
2.7.4	Noise Pollution.....	2-31
2.7.4(A)	Effects of Noise Pollution on Human Health	2-32
2.7.4(B)	Control Measures for Noise Pollution	2-32
2.7.5	Sewage and Solid Waste Disposal	2-32
2.7.6	Occupational Illness	2-33
2.7.6(A)	Common Types of Occupational Illness.....	2-34
2.7.6(B)	Prevention of Occupational Illness	2-35
2.7.7	Environmental Pollution due to Pharmaceuticals.....	2-35
2.7.7(A)	Sources of Pharmaceutical Pollutants.....	2-36
2.7.7(B)	Prevention of Pharmaceutical Pollution	2-36
2.8	Psychosocial Pharmacy.....	2-36
2.8.1	Introduction	2-36
2.8.2	Drugs of Misuse and Abuse.....	2-37
2.8.2(A)	Psychotropic Drugs	2-37
2.8.2(B)	Addiction of Narcotics.....	2-38
2.8.2(C)	Addiction of Alcohol.....	2-38
2.8.2(D)	Addiction of Tobacco.....	2-40
2.8.3	Social Impact of Addiction Habits on Social Health and Productivity	2-41
2.8.3(A)	Suicidal Behaviour	2-41
2.9	Role of Pharmacist in Preventive Care	2-43

Chapter 3 : Nutrition and Health

3-1 to 3-48

Basics of nutrition – Macronutrients and Micronutrients, Importance of water and fibres in diet , Balanced diet, Malnutrition, nutrition deficiency diseases, ill effects of junk foods, calorific and nutritive values of various foods, fortification of food
 Introduction to food safety, adulteration of foods, effects of artificial ripening, use of pesticides, genetically modified foods, Dietary supplements, nutraceuticals, food supplements – indications, benefits, Drug-Food Interactions

3.1	Introduction.....	3-1
3.2	Basics of Nutrition	3-2
3.2.1	Classification of Food.....	3-2
3.2.2	Macronutrients	3-2
3.2.2(A)	Carbohydrates.....	3-3
3.2.2(B)	Proteins.....	3-4
3.2.2(C)	Fats	3-5
3.2.3	Micronutrients.....	3-6

3.2.3(A)	Macrominerals.....	3-6
3.2.3(B)	Microminerals.....	3-7
3.2.3(C)	Vitamins.....	3-8
3.3	Importance of Water and Fibres in Diet.....	3-14
3.3.1	Importance of Water in Diet.....	3-14
3.3.2	Importance of Fibres in Diet.....	3-14
3.3.2(A)	Importance of Sources of Fibres.....	3-14
3.3.2(B)	Soluble and Insoluble Fibres.....	3-15
3.3.4	Mechanism of Action of Dietary Fibres.....	3-15
3.3.5	Guidelines on Fibre Intake.....	3-15
3.4	Balanced Diet.....	3-16
3.4.1	Introduction.....	3-16
3.4.2	Definition of Balanced Diet.....	3-17
3.4.3	Diet for Adult Male and Female.....	3-17
3.4.3(A)	Healthy Diet for Adults as per WHO.....	3-18
3.4.4	Effect of Different kinds of Food Material on Health.....	3-18
3.5	Nutrition Deficiency Diseases.....	3-19
3.5.1	Malnutrition.....	3-20
3.5.2	Iron Deficiency.....	3-21
3.5.3	Iodine Deficiency.....	3-22
3.5.4	Vitamin A Deficiency.....	3-22
3.5.5	Vitamin D Deficiency.....	3-22
3.5.6	Vitamin E Deficiency.....	3-22
3.5.7	Vitamin K Deficiency.....	3-22
3.5.8	Vitamin C Deficiency.....	3-22
3.5.9	Mineral Deficiency.....	3-23
3.6	Ill effects of Junk Foods.....	3-23
3.6.1	Appealing Nature of Junk Food.....	3-23
3.6.2	Recognising Junk Food.....	3-24
3.6.3	Health Impact of Junk Food.....	3-24
3.6.4	Junk Food Effects on Children's Health.....	3-25
3.6.5	Avoiding Junk Food.....	3-26
3.6.6	Measures to be Taken, Especially for Children.....	3-26
3.7	Calorific and Nutritive Value of Various Foods.....	3-26
3.8	Fortification of Food.....	3-29
3.8.1	Definition of Food Fortification.....	3-30
3.8.2	Advantages of Food Fortification.....	3-30
3.8.3	Disadvantages of Fortification of Food.....	3-31
3.9	Food Safety.....	3-31
3.9.1	Introduction.....	3-31
3.9.2	Key Principles of Food Hygiene According to WHO.....	3-32
3.9.3	Key Measures for Ensuring Food Safety.....	3-32

3.9.4	Food Safety and Standards Authority of India	3-32
3.10	Food Adulteration.....	3-33
3.10.1	Types of Adulteration in Food.....	3-34
3.10.2	Prevention of Food Adulteration	3-34
3.11	Artificial Ripening.....	3-35
3.12	Use of Pesticides	3-36
3.13	Genetically Modified Food	3-38
3.13.1	Major Concerns of Genetically Modified Foods	3-38
3.13.2	Advantages of Genetically Modified Foods	3-39
3.13.3	Disadvantages of Genetically Modified Foods.....	3-39
3.14	Dietary Supplements or Food Supplements.....	3-40
3.14.1	Introduction	3-40
3.14.2	Definition of Dietary Supplements.....	3-40
3.14.3	Types of Dietary Supplements	3-40
3.14.4	Nutraceuticals.....	3-42
3.14.4(A)	Classification of Nutraceuticals	3-42
3.14.5	Food Supplement- Indication and Benefits	3-44
3.14.6	Drug Food Interactions.....	3-45

Chapter 4 : Microorganisms and Communicable Diseases

4-1 to 4-89

- Introduction to microbiology and common microorganisms
- Epidemiology: Introduction to epidemiology, and its applications. Understanding of terms such as epidemic, pandemic, endemic, mode of transmission, outbreak, quarantine, isolation, incubation period, contact tracing, morbidity, mortality, surface infections
- Causative agents, epidemiology and clinical presentations and role of pharmacists in educating the public in prevention of the following communicable diseases:
 - o Respiratory infections – chickenpox, measles, rubella, mumps, influenza (including Avian-Flu, H1N1, SARS, MERS, COVID-19), diphtheria, whooping cough, meningococcal meningitis, acute respiratory infections, tuberculosis, ebola
 - o Intestinal infections – poliomyelitis, viral hepatitis, cholera, acute diarrheal diseases, typhoid, amebiasis, worm infestations, food poisoning
 - o Arthropod-borne infections - dengue, malaria, filariasis and chikungunya
 - o Surface infections – trachoma, tetanus, leprosy
 - o STDs, HIV/AIDS

4.1	Introduction to Microbiology.....	4-1
4.1.1	Characteristics of Microorganisms	4-1
4.1.2	Major Historical Events in the Development of Microbiology.....	4-2
4.2	Common Microorganisms.....	4-4
4.2.1	Bacteria	4-4
4.2.1(A)	Ultrastructure of Bacteria	4-6
4.2.1(B)	Bacterial Staining Techniques.....	4-8
4.2.2	Archaea.....	4-10

4.2.3	Fungi.....	4-10
4.2.4	Protozoa.....	4-11
4.2.5	Algae.....	4-12
4.2.6	Viruses.....	4-13
4.3	Epidemiology.....	4-14
4.3.1	Introduction to Epidemiology.....	4-14
4.3.2	Definition.....	4-14
4.3.3	Focused Areas in Epidemiology Studies.....	4-14
4.3.4	Application of Epidemiological Studies.....	4-15
4.3.5	Types of Epidemiological Methods.....	4-15
4.3.5(A)	Descriptive Epidemiology (Descriptive Study : Population Centric).....	4-16
4.3.5(B)	Analytical Epidemiology (Analytical Study : Individual Centric).....	4-16
4.3.5(C)	Experimental Studies.....	4-17
4.3.6	Risk Factors and Modes of Transmission of Communicable Diseases.....	4-17
4.3.7	Important Terms.....	4-18
4.4	Communicable Diseases.....	4-19
4.4.1	Respiratory Infections.....	4-20
4.4.1(A)	Chickenpox.....	4-20
4.4.1(B)	Measles.....	4-22
4.4.1(C)	Rubella.....	4-24
4.4.1(D)	Mumps.....	4-25
4.4.1(E)	Influenza (Including Avian-Flu, H1N1, SARS, MERS, COVID-19).....	4-26
4.4.1(F)	Diphtheria.....	4-37
4.4.1(G)	Whooping Cough.....	4-39
4.4.1(H)	Meningococcal Meningitis.....	4-40
4.4.1(I)	Acute Respiratory Infections.....	4-42
4.4.1(J)	Tuberculosis.....	4-43
4.4.1(K)	Ebola.....	4-46
4.4.2	Intestinal Infections.....	4-48
4.4.2(A)	Poliomyelitis.....	4-48
4.4.2(B)	Viral Hepatitis.....	4-50
4.4.2(C)	Cholera.....	4-52
4.4.2(D)	Acute Diarrheal Diseases.....	4-54
4.4.2(E)	Typhoid.....	4-56
4.4.2(F)	Amebiasis.....	4-58
4.4.2(G)	Worm Infestations.....	4-59
4.4.2(H)	Food Poisoning.....	4-61
4.4.3	Arthropod-Borne Infections.....	4-63
4.4.3(A)	Dengue.....	4-64
4.4.3(B)	Malaria.....	4-66

4.4.3(C)	Filariasis.....	4-68
4.4.3(D)	Chikungunya.....	4-71
4.4.4	Surface Infections.....	4-73
4.4.4(A)	Trachoma.....	4-73
4.4.4(B)	Tetanus.....	4-75
4.4.4(C)	Leprosy.....	4-77
4.4.5	Sexually Transmitted Diseases (STDs)	4-79
4.4.5(A)	HIV/AIDS.....	4-79
4.4.6	Role of Pharmacists in Educating the Public in the Prevention of Communicable Diseases.....	4-84

Chapter 5 : Health System and National Health Programs in India

5-1 to 5-22

Introduction to health systems and all ongoing National Health programs in India, their objectives, functioning, outcome, and the role of pharmacists

5.1	Introduction.....	5-1
5.1.1	Health System - Definition as per WHO.....	5-1
5.2	National Health Programs in India.....	5-1
5.2.1	Introduction.....	5-1
5.2.2	List of all ongoing National Health Programmes in India.....	5-2
5.2.3	National AIDS Control Programme.....	5-4
5.2.3(A)	NACP I.....	5-4
5.2.3(B)	NACP II.....	5-4
5.2.3(C)	NACP III.....	5-4
5.2.3(D)	NACP IV.....	5-5
5.2.4	National Leprosy Eradication Programme (NLEP).....	5-6
5.2.5	Revised National TB Control Programme.....	5-7
5.2.6	National Iodine Deficiency Disorders Control Programme.....	5-8
5.2.7	National Mental Health Programme.....	5-9
5.2.8	National Programme for Palliative Care (NPPC).....	5-10
5.2.9	National Oral Health Programme (NOHP).....	5-11
5.2.10	National Organ Transplant Programme (NOTP).....	5-11
5.2.11	National Programme for Control of Blindness and Visual Impairment (NPCB and VI).....	5-12
5.2.12	National Programme for Prevention and Control of Fluorosis (NPPCF).....	5-13
5.2.13	National Tobacco Control Programme.....	5-14
5.2.14	National Programme on Health Care for Elderly.....	5-15
5.2.15	National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS).....	5-16
5.2.16	National Programme for Prevention and Control of Deafness (NPPCD).....	5-17
5.2.17	National Vector Borne Disease Control Programme.....	5-18
5.2.18	National Programme for Prevention and Management of Trauma and Burn Injuries.....	5-19
5.3	Role of Pharmacist in National Health Programmes.....	5-20

Chapter 6 : Pharmacoeconomics 6-1 to 6-7

Introduction, basic terminologies, importance of pharmacoeconomics	
6.1	Introduction.....6-1
6.1.1	Definition of Pharmacoeconomics6-1
6.2	Methods of Pharmacoeconomic Studies6-1
6.2.1	Types of Pharmacoeconomics Analysis.....6-1
6.3	Applications of Pharmacoeconomics.....6-2
6.4	Basic Terminologies.....6-2
6.4.1	Health Insurance.....6-2
6.4.1(A)	Components of Health Insurance6-2
6.4.1(B)	Health Insurance Policy.....6-3
6.4.2	Health Maintenance Organization (HMO).....6-3
6.4.3	Health Spending.....6-4
6.4.3(A)	Methods for Calculating Health Spending6-4
6.4.4	Out of Pocket Expenses.....6-5
6.4.4(A)	Types of Out-of pocket Expenses.....6-5
6.5	Importance of Pharmacoeconomics6-5
6.5.1	Importance of Pharmacoeconomics to Pharmaceutical Manufacturers6-6
6.5.2	Importance of Pharmacoeconomics to Healthcare Practitioners6-6
6.5.3	Importance of Pharmacoeconomics to Pharmacist6-6
6.5.4	Importance of Pharmacoeconomics to Patients.....6-6

Chapter 7 : Role of Pharmacists in Disaster Management 7-1 to 7-8

Role of Pharmacists in Disaster management	
7.1	Introduction.....7-1
7.2	Disaster : A Catastrophic Situation7-1
7.3	How Disaster Can Impact Society? (Pharmacy Perspective).....7-1
7.4	Requirements of Disaster Management.....7-2
7.5	The Role and Relevance of the Pharmacist in Disaster Management.....7-3
7.6	The Skills to be Incorporated by a Pharmacist to Justify Trust Instilled by Society?.....7-4
7.7	Pharmacist and Covid-19 Pandemic7-4
7.7.1	Engaging Communities to Prepare and Respond to Covid-19 Incidences.....7-5
7.7.2	Role of Hospital Pharmacist.....7-5
7.7.3	Drug Regulatory Activity given Covid-197-6
7.7.4	Industrial and Institution Contribution by the Pharmacist.....7-6