

Social Pharmacy and Public Health (Theory)

BP404T

A Textbook for B. Pharm Semester IV

As per the new Pharmacy Council of India (PCI) Syllabus 2026 (NEP 2020)

Alok Rai

Associate Professor

Department of Pharmacy, AISECT
University, Jharkhand, India

Shivam Kumar

Assistant Professor

Department of Pharmacy, AISECT
University, Jharkhand, India

Vikash Kumar

Assistant Professor

School of Pharmaceutical Sciences, LNCT
University, Bhopal, Madhya Pradesh, India



Copyright © 2026 Wiseleaf Scientific Ventures Pvt. Ltd.

All rights reserved.

No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of the publisher, except for brief quotations in reviews or scholarly works permitted by copyright law.

ISBN: 978-81-687952-5-9



June, 2026

Published by: Wiseleaf Scientific Ventures Pvt. Ltd.

Address: Wework - Berger Delhi One Floor 19, C-001/A2, Sector 16b, Noida, Uttar Pradesh, 201301, India

Preface

Pharmacy education has long given its students a deep command of the medicine: its chemistry, its formulation, and its action in the body. That knowledge remains the foundation of the profession. Yet whether a medicine ever reaches the people who need it, whether they can afford it, whether they take it correctly, and whether it improves the health of a whole community are questions the chemistry of a tablet cannot answer. They belong to people, prices, beliefs, supply systems, and public policy. Social pharmacy is the part of the discipline that takes these questions seriously, and this book is devoted to it.

The subject *Social Pharmacy and Public Health* sits early in the B.Pharm programme by deliberate design. Thinking about populations, prevention, and health systems is not an optional final-year refinement but part of the foundation on which a pharmacist's professional identity is built. The book therefore assumes only the basic anatomy, physiology, and introductory pharmaceutics that a Semester IV student will have met. It builds epidemiology, biostatistics, and pharmacoeconomics carefully from first principles, on the assumption that this is the student's first encounter with them.

The book follows the five units of the prescribed syllabus. Unit I establishes what social pharmacy and public health are and how health is defined, determined, and measured. Unit II examines health systems, policy, and the methods of pharmacoepidemiology and biostatistics. Unit III turns to prevention, health promotion, and the communicable diseases. Unit IV addresses the non-communicable diseases, nutrition, mental health, and India's national health programmes. Unit V completes the picture with pharmacoeconomics, the rational use of medicines, professional ethics, disaster management, and the emerging trends reshaping the field.

Two commitments run through every chapter. The first is accuracy: every statistic carries its source and year, every formula is given exactly and worked through with a numerical example, and the names of India's national health programmes are stated in their current official form. The second is clarity: the aim throughout is to make public-health and health-systems thinking feel obvious to a pharmacy student without ever diluting it, by leading with the reason a concept exists, building its logic in steps, and connecting it back to what the pharmacist actually does for the patient and the community.

Each chapter opens with measurable learning outcomes and closes with a prose summary and a numbered reference list. Assessment is placed at the end of each unit as five short-answer questions with model answers, in the style of the university examination. The figures and tables are original throughout and are designed to make the structures and relationships of public health visible at a glance.

It is hoped that the student who works through this book will finish it able both to understand the subject and to answer examination questions on it, and, more importantly, able to see the patient at the counter as one member of a community whose health a pharmacist can do a great deal to protect.

Authors

Dr. Alok Rai

Shivam Kumar

Vikash Kumar

Course Objectives

The objectives of this course are to enable the student to:

1. Understand the principles of social pharmacy and public health and the evolving role of the pharmacist in them.
2. Understand the concepts of health and disease, and the determinants and indicators of health.
3. Understand the structure of the healthcare delivery system, health policy, and the basics of pharmacoepidemiology and biostatistics.
4. Understand the prevention and control of communicable and non-communicable diseases and the promotion of health, nutrition, and mental well-being.
5. Understand pharmacoeconomics, the rational use of medicines, professional ethics, disaster management, and emerging trends in pharmacy practice.

Course Outcomes

Upon successful completion of this course, the student will be able to:

1. Explain the scope of social pharmacy and public health, the concept of health and disease, and the determinants and indicators of health.
2. Describe the healthcare delivery system and health policy in India and apply basic measures of pharmacoepidemiology and biostatistics.
3. Apply the levels of prevention and health education and describe the prevention and control of major communicable diseases.
4. Describe the prevention and management of non-communicable diseases, the principles of nutrition and mental health, and India's national health programmes.
5. Apply the principles of pharmacoeconomics, the rational use of medicines, professional ethics, and disaster management, and discuss emerging trends in pharmacy.

Syllabus

Unit	Topics	No. of lectures
I	Foundations of Social Pharmacy and Public Health a) Social pharmacy: definition, scope, historical development, importance; social pharmacy as a multidisciplinary field; interplay with public health; the evolving role of the pharmacist b) Public health: definition, concepts, history, core functions, ethical considerations c) Concept of health and disease: WHO definition of health; dimensions of health; determinants of health; health indicators	06 Hours
II	Health Systems, Policy, and Pharmacoepidemiology a) Healthcare delivery systems: global overview; the Indian healthcare system (structure, public and private sectors, primary/secondary/tertiary levels of care) b) Health policy and the National Health Mission: policy formulation and analysis; National Health Policy; NHM (rural and urban sub-missions), goals, strategies, impact c) Pharmacoepidemiology and basics of biostatistics: measures of disease frequency (incidence, prevalence; endemic, epidemic, pandemic; morbidity and mortality rates; odds ratio and relative risk); introduction to biostatistics	06 Hours
III	Prevention, Health Promotion, and Communicable Diseases a) Levels of prevention (primordial, primary, secondary, tertiary) and the pharmacist's role in disease prevention and health promotion b) Health education (definition, principles, methods, materials) and Mother and Child Health (antenatal care, postnatal care, breastfeeding, immunisation schedules) c) Communicable diseases: transmission, prevention, and control of tuberculosis, HIV/AIDS, malaria, dengue, typhoid, and influenza; the pharmacist's role	06 Hours
IV	Non-Communicable Diseases, Nutrition, Mental Health, and National Programmes a) Non-communicable diseases: diabetes, hypertension, cardiovascular diseases, chronic respiratory diseases, cancer:	06 Hours

	prevention and management; the pharmacist's role b) Nutrition and health: balanced diet; macro- and micronutrients; malnutrition and nutritional deficiency disorders; food safety and adulteration c) Mental health: common mental disorders, stigma, promotion of mental well-being, the pharmacist's role; national health programmes in India	
V	Pharmacoeconomics, Rational Use of Medicines, Professional Roles, and Future Trends a) Pharmacoeconomics (cost-benefit, cost-effectiveness, cost-utility analysis); rational use of medicines; medication adherence b) Drug misuse and abuse (alcohol, tobacco, opioids, prescription-drug abuse); professionalism and ethics in social pharmacy; disaster management and the role of pharmacists c) Emerging trends: telepharmacy, digital health, personalised medicine, and the expanding public-health responsibilities of pharmacists	06 Hours

How to use this book

Read the **learning outcomes** at the start of each chapter first; they state exactly what the chapter will enable you to do and make useful revision checkpoints. Work through the **main text** in order, since later concepts build on earlier ones, especially in Units I and II, where the foundations of health, health systems, and epidemiology are laid.

Pay particular attention to the **worked numerical examples** in the chapters on pharmacoepidemiology and pharmacoeconomics. Do not merely read them; reproduce the calculations yourself, because examination questions frequently ask for exactly these. The **quick-recall boxes** distil the points most often examined and are intended for last-minute revision, but they are summaries, not substitutes for the main text.

Study the **figures and tables** alongside the text that refers to them; many concepts, such as the levels of prevention, the chain of infection, and the cost-effectiveness plane, are far easier to remember as a picture than as a paragraph. At the end of each unit, attempt the **short-answer questions** before reading the model answers, then compare your response with the model to see what a complete, exam-ready answer contains.

Table of contents

Preface	iii
How to use this book	vii
Unit I -Foundations of Social Pharmacy and Public Health	1
Chapter 1: Social Pharmacy -Definition, Scope, and the Pharmacist's Place in Public Health.....	1
Learning outcomes	1
Introduction	1
1.1 What social pharmacy means	2
1.2 The scope of social pharmacy	3
1.3 Historical development	3
1.4 Social pharmacy as a multidisciplinary field	5
1.5 Why social pharmacy matters, especially in India	6
1.6 The interplay between social pharmacy and public health	8
1.7 The evolving role of the pharmacist in public health.....	8
Chapter summary	11
References	12
Chapter 2: Public Health -Definition, Concepts, History, Functions, and Ethics	13
Learning outcomes	13
Introduction	13
2.1 Defining public health.....	14
2.2 Core concepts of public health	14
2.3 A short history of public health.....	15
2.4 The core functions of public health.....	17
2.5 Ethics in public health	19
Chapter summary	21
References	21
Chapter 3: The Concept of Health and Disease	23
Learning outcomes	23
Introduction	23
3.1 The WHO definition of health	23
3.2 The dimensions of health	24
3.3 The determinants of health.....	26
3.4 Health indicators	27
Chapter summary	29
References	30
Unit I -Short-Answer Questions (with model answers)	31
Unit II -Health Systems, Policy, and Pharmacoepidemiology	33
Chapter 4: Healthcare Delivery Systems	33
Learning outcomes	33

Introduction	33
4.1 What a health system must do	33
4.2 A global overview of health-system models	34
4.3 The Indian healthcare system	35
4.4 The pharmacist across the levels of care	38
Chapter summary	38
References	39
Chapter 5: Health Policy and the National Health Mission	40
Learning outcomes	40
Introduction	40
5.1 What health policy is and how it is made.....	40
5.2 India's National Health Policy, 2017	42
5.3 The National Health Mission	43
5.4 The pharmacist and national health programmes.....	46
Chapter summary	46
References	47
Chapter 6: Pharmacoepidemiology and the Basics of Biostatistics	48
Learning outcomes	48
Introduction	48
6.1 Pharmacoepidemiology	48
6.2 Measures of disease frequency.....	49
6.3 Patterns of disease occurrence.....	51
6.4 Morbidity and mortality rates.....	52
6.5 Measures of association: relative risk and odds ratio.....	53
6.6 The basics of biostatistics.....	55
Chapter summary	57
References	57
Unit II -Short-Answer Questions (with model answers).....	59
Unit III -Prevention, Health Promotion, and Communicable Diseases	61
Chapter 7: Levels of Prevention and the Pharmacist's Preventive Role.....	61
Learning outcomes	61
Introduction	61
7.1 The natural history of disease.....	61
7.2 The levels of prevention.....	62
7.3 The pharmacist's role in prevention and health promotion.....	65
Chapter summary	66
References	67
Chapter 8: Health Education and Mother and Child Health	68
Learning outcomes	68

Introduction	68
8.1 Health education.....	68
8.2 Mother and child health.....	70
8.3 The pharmacist in health education and mother-and-child health	73
Chapter summary	74
References	74
Chapter 9: Communicable Diseases.....	75
Learning outcomes	75
Introduction	75
9.1 The chain of infection	75
9.2 Modes of transmission	76
9.3 Six communicable diseases of importance in India	77
9.4 The pharmacist's role in communicable-disease control	81
Chapter summary	81
References	82
Unit III -Short-Answer Questions (with model answers)	83
Unit IV -Non-Communicable Diseases, Nutrition, Mental Health, and National Programmes	85
Chapter 10: Non-Communicable Diseases	85
Learning outcomes	85
Introduction	85
10.1 The shared risk factors of NCDs.....	85
10.2 The major non-communicable diseases	86
10.3 The national response and the pharmacist's role	89
Chapter summary	90
References	91
Chapter 11: Nutrition and Health.....	92
Learning outcomes	92
Introduction	92
11.1 The balanced diet and the food groups.....	92
11.2 Macronutrients and micronutrients	93
11.3 Malnutrition and deficiency disorders.....	95
11.4 Food safety and adulteration	96
11.5 The pharmacist and nutrition.....	97
Chapter summary	97
References	98
Chapter 12: Mental Health and National Health Programmes.....	99
Learning outcomes	99
Introduction	99
12.1 Mental health and common disorders	99