

## REVIEW ARTICLE

# REVISITING THE MBBS CURRICULUM: STRENGTHENING PUBLIC HEALTH EDUCATION IN PAKISTAN

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## ABSTRACT

Pakistan faces significant public health challenges, including high rates of stillbirths, infant and under 5 child mortality, women dying during childbirth, low contraceptive prevalence rate, the upsurge of infectious diseases, and a significant burden of non-communicable diseases. Are we preparing skilled enough public health workforce? The healthcare system is fragmented and unregulated, lacking uniform care and a severe shortage of skilled human resources. Health system strengthening has one of six building blocks on the health workforce which is crucial for any public health intervention. The existing undergraduate MBBS curriculum in Pakistan uses “community medicine” interchangeably with “public health,” despite the broader scope of the latter. Community medicine constitutes 8% of the teaching time, covering topics such as basic health concepts, health promotion, entomology, and reproductive health. To address emerging global health challenges, the MBBS curriculum should be updated. It should include scientific domains like epidemiology, health economics, medical statistics, sociology, psychology, and health management sciences. Research skills, evidence generation, and the use of information for decision-making should be emphasized. New methods of student assessment, program evaluation, and practical experiences are vital. Collaboration among public health practitioners, academicians, and medical educationists is needed to develop a holistic and technically sound curriculum. Pakistan requires an updated MBBS curriculum to meet the public health challenges of this century. It should incorporate interdisciplinary subjects, and innovative assessment methods, and prepare medical graduates for dealing with the public health emergencies of our times.

**KEY WORDS:** MBBS curriculum; public health; community medicine; Pakistan.

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## INTRODUCTION

Pakistan is the fifth most populous country in the world, with sub-optimal health indicators and many public health challenges. The country has a triple burden of disease comprising communicable diseases, non-communicable diseases compounded by under-nutrition off shooting from poverty, illiteracy and ignorance. A mixed health system, by and large, is weak and unregulated, providing no uniform level of care to the people, and most individuals and families are left to fend for themselves, in the absence of

state controlled social and financial risk protection. Keeping in mind this massive array of public health issues; a strong public health workforce is imperative.

Pakistan has a strong medical education system with 48 public sector medical colleges and 75 private medical colleges. Around 16,625 new doctors graduate from Pakistani medical institutions each year. The undergraduate curriculum for MBBS programs in Pakistan includes first two years of teaching basic medical sciences of anatomy, physiology and biochemistry. The clinical subjects are taught from the third year alongside para-clinical sciences of pharmacology, pathology, forensic medicine and community medicine.

The nomenclature of community medicine is often used interchangeably with public health in Pakistan, as most postgraduate qualifications that are required by faculty members are in Public health, yet they are utilized by faculty members to teach community medicine to MBBS students. According to the Dictionary of Public Health, Community medicine is defined as “*The study of health and disease in a community*

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*that is considered as an entity, and the provision and evaluation of the health services of that community". Whereas public health is defined as "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private, communities and individuals".*

Both of these definitions are old, and many changes have been suggested over the years, however the domain of public health is more holistic than community medicine, as it encompasses not only communities but the health system.

### **Current situation analysis**

The MBBS curriculum for all subjects has been defined by Pakistan Medical Commission and its predecessor Pakistan Medical and Dental Council. Community medicine is included in the preclinical subjects and has been allotted 200 hours of teaching and learning, which accounts for 8% of the total time. The summative examination for community medicine is held at the end of fourth year in the third professional examination. Some institutions, that have integrated modular teaching, distribute the curriculum over the first four years of their respective MBBS programs, while others deliver the complete curriculum during fourth year MBBS.

The following key areas have been designated for teaching this subject; Concept of Health and Disease, Introduction to Public Health, Health Systems in Pakistan, General Epidemiology and Research Methodology, Biostatistics, Demography and Population Dynamics, Nutrition and Health, Reproductive and Child Health, Environmental Health Sciences, Occupational Health, Prevention and control of Infectious diseases, Control and Prevention of Non-Infectious Diseases of Public Health Importance, Arthropods and their Public Health Importance, Mental Health and Behavioral Sciences, Disaster and accidents and Health Planning and Management. The assessment strategies for this content include Multiple Choice Questions, Short Answer Questions, OSPE stations and Viva Voce exams.

Public health is a constantly changing field, where new challenges are met every day; especially in developing countries with weak health systems, such as Pakistan. The present curriculum of community medicine unfortunately does not even address the community's health needs. In this ever-changing environment of emerging infectious diseases, growing non-communicable diseases and socio-political and environmental challenges, our public health workforce needs to be trained accordingly. It is not possible that all trainee physicians become experts in public health, but a robust curricular delivery has the potential to develop a workforce of future clinicians who can play their respective role in the domains of public health and preventive medicine. We have a reactive approach to most problems, instead of a pro-

active approach. This needs to change as reacting to complicated problems only increases the burden on the already fragile health system.

### **Way forward**

According to Gillam S and Maudsley G; Public health curriculum is underpinned by the following scientific domains; Epidemiology & Demography, Health Economics, Medical Statistics, Sociology, Psychology and Management Sciences. Another research shows that competencies perceived as important included understanding health inequalities, empowering people about health issues. The undergraduate curriculum of community medicine in Pakistan, needs a change in both nomenclature and content. The world has changed and scientific domains have become clearer and more focused. Delivering good quality public health education, can open multiple career paths for the new graduates. We need to involve more robust methods of teaching world class research skills to the new graduates, so that more dependable evidence can be generated. South Asian genetics, disease burdens, mental health challenges, communal and family culture, population dynamics, diet, exercise and exposure to a variety of infectious agents make us an important population group when it comes to impact on the global health systems. The anthropological issues related to health are extremely important and under studied, in Pakistan. Mother and child health need immediate attention, because nothing that we have already tried has worked on a national level. Instead of preventing diseases, we focus all our attention towards building new health facilities for treating complicated diseases.

The list of ignored areas in public health is inexhaustible, however we propose the curricular content in Table 1 for teaching public health to undergraduate medical students in Pakistan, as a substitute to the ancient community medicine curriculum being taught for the past decades. In addition to the up gradation of curriculum, newer methods of student assessment (Summative and Formative), program evaluation and practical experience are imperative parts of the complete process of change. Extended matching questions, scenario based short answer questions, creative writing exercises, graded presentations, discussion panels, research evaluation and defense, field demonstration site scores, miniCex for topics of family medicine.

This is by no means a final version of the curriculum content; this is just a perspective. Further collaboration, brainstorming and research is needed to reorient the community medicine and public health curriculum with a broader national consensus. The authors intend to disseminate the urgent need for an updated curriculum, assessment strategies and curriculum mapping in this regard.

Sweeping changes in terms of epidemiological and demographic transitions around the turn of the

**Table 1: Proposed new curriculum content for Public Health in MBBS program.**

S.No.	Teaching Domain	Subject Areas
1	Foundations of Public Health	Historical Perspective Public Health as a Science Inductive and Deductive reasoning Public Health and Related fields Disease transmission and Prevention Association and Causation UN and other development sector organizations Health and Human Rights Primary Healthcare & UHC Ethics Public health and Clinical Sciences (Especially Family Medicine)
2	Population based research and Medical statistics	Epidemiology (history, theory, study designs) Biostatistics Qualitative research Research Ethics Report writing Operational and Action research Big data Article writing and publication Screening for diseases Disease outbreaks and Field epidemiology
3	Social Sciences and Research	Sociology Anthropology Behavioral psychology Religion and Health Medical Journalism Content writing and digital marketing
4	Diseases, Health related events and their Control	Infectious diseases and Control Non-communicable diseases Sexual and Reproductive Health Maternal Neonatal and Child Health Adolescents' health Occupational Health Environmental Health and Climate change Mental Health Entomology Disaster Management
5	Health Policy, Systems and Economics	Health Systems Health Policy and implementation Health Planning Health Economics Healthcare Management Human Resource Management

millennium have constituted a revolution in medical education around the world. Pakistan faces significant public health challenges, including high rates of stillbirths, infant and under 5 child mortality, women dying during the childbirth, low contraceptive prevalence rate, upsurge of infectious diseases, and a significant burden of non-communicable diseases. A strong public health workforce is essential for addressing these issues, and the MBBS curriculum for medical students in Pakistan must be updated to reflect this need. While the terms “public health” and “community medicine” are often used interchangeably in Pakistan, it is important to recognize that public health is a broader and more holistic field that encompasses not only communities but also the healthcare system. The proposed curriculum for public health education for undergraduate medical students in Pakistan must include updated content, such as epidemiology, health economics, medical statistics, psychology, sociology and management sciences. Additionally, new methods of student assessment, program evaluation, and practical experience must be incorporated to ensure that medical graduates are equipped with the necessary knowledge and skills to play their role in promoting public health and preventive medicine in Pakistan.

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CONFLICT OF INTEREST  
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## AUTHORS' CONTRIBUTION

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Conception or Design: MAA, BTS  
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All the authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.



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