A Report af Expert Group of Public Health Specialists on Academic & Training Activities of Public Health

Submitted to

Directorate General of Health Services

Ministry of Health & Family Welfare

Government of India

ACKNOWLEDGEMENT

The Public Health plays a crucial role in improving the health status of communities. The National Health Policy 2017 recommends the promotion of public health &a public health cadre in the country. Moreover, the current COVID-19 Pandemic has also highlighted the role of public health.

Public health is multi-disciplinary in its precept and multi-sectoral in practice. In India, the curriculum for public health education was designed several decades ago and very few changes have been made since then. There is a need to review the curriculum of public health courses in India, in light of the broader changes in the society as highlighted in the Calcutta declaration.

We have also seen entry of many players, other than medical colleges, in the field of Public Health teaching & training such as Public Health Foundation of India (PHFI), Institute of Health Management & Research (IHMR) and Tata Institute of Social Sciences (TISS), etc. While they all have their own strength, limited efforts have been made towards the collaboration/ integration of these institutions with existing public health, teaching/ training institutions.

The Directorate General of Health Services, MoHFW, Government of India, constituted the Expert Group of Public Health Specialists, to review the requirement for expansion in academic and training activities pertaining to public health in the country and to identify the various specializations/sub-specializations necessary for effective delivery of public health services and research. We hope that the report would be useful for taking appropriate & timely actions to improve the Public Health education, health care delivery & public health research in the country.

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CHAPTER 1

List of expert group members

The Directorate General of Health Services, MoHFW, constituted the following Expert Group of Public Health Specialists, (Vide OM No. A-11033/1/2018-Trg, Dated: the 17th June 2021).

1.	**Dr. B S Garg,** Director-Professor, Department of Community Medicine, MGIMS, Wardha and Secretary, Kasturba Health Society, Sewagram, Wardha, Maharashtra	**Chairman**
2.	**Maj Gen. (Dr.) Atul Kotwal**, SM, VSM, Executive Director, National Health Systems Resource Centre, NIHFW campus, New Delhi	**Member**
3.	**Dr. Suneela Garg,** Professor of Eminence, Departmentof Community Medicine, MAMC, New Delhi &President, Indian Association of Preventive & Social Medicine (IAPSM)	**Member**
4.	**Dr. K. Kolanda Swamy,** Former Director of Public Health & Preventive Medicine, Govt. of Tamil Nadu.	**Member**
5.	**Dr. Manish Chaturvedi,** Professor of Planning & Evaluation, Acting Head, Department of Medical Care & Hospital Administration, NIHFW, New Delhi.	**Member- Secretary**

CHAPTER 2

List of abbreviations

AICTE	All India Council of Technical Education
AIIH&PH	All India Institute of Hygiene and Public Health
AIIMS	All India Institute of Medical Sciences
ANM	Auxiliary Nurse Midwife
ASHA	Accredited Social Health Activist
AYUSH	Ayurvedic, Yoga, Unani, Siddha & Homeopathy
BAMS	Bachelor of Ayurvedic Medicine & Surgery
CHC	Community Health Centre
CHO	Community Health Officer
DNB	Diplomat National Board of Examination
DPH	Diploma in Public Health
ESIC	Employee State Insurance Corporation
FSSAI	Food Safety & Standard Authority of India
GOI	Government of India
HMP	Health Management Professionals
HiAP	Health in All Policies (HiAP)
IAPSM	Indian Association of Preventive and Social Medicine
IPHA	Indian Public Health Association
IGNOU	Indira Gandhi National Open University
IIHMR	Indian Institute of Health Management Research
JIPMER	Jawaharlal Institute of Postgraduate Medical Education & Research, Pondicherry
MBBS	Bachelor of medicine and bachelor of surgery
MBA	Masters in Business Administration
MOHFW	Ministry of Health & Family Welfare
MPH	Master's in Public Health

MPW	Multipurpose Worker Male
NBE	National Board of Examinations
NCERT	National Council of Educational Research & Training
NGOs	Non-Government Organizations
NCDC	National Centre for Disease Control
NIE	National Institute of Epidemiology
NIHFW	National Institute of Health and Family Welfare
NIN	National Institute of Nutrition
NITI	National Institution for Transforming India
NIOH	National Institute of Occupational Health
NMC	National Medical Commission
PGI	Post Graduate Institute of Medical Education & Research, Chandigarh
PHC	Primary Health Centre
PHMC	Public Health Management Cadre
PHFI	Public Health Foundation of India
PSM	Preventive & Social Medicine
SIHFW	State Institute of Health & Family Welfare
SPM	Social & Preventive Medicine
TOR	Terms of Reference
UGC	University Grants Commission
ULBs	Urban Local Bodies
UNDP	United Nations Development Programme
UT	Union Territory
WHO	World Health Organization

CHAPTER 3

Executive Summary

The Public Health plays a crucial role in improving the health status & wellbeing of communities. It is multi-disciplinary in approach with the involvement of several sectors. The quality and preparedness of the public health workforce is dependent upon the relevance and quality of its education and training.

Currently the public health professionals trained in India can be classified in two different categories: (i) Possessing MD (Community Medicine/ Preventive & Social Medicine) degree, Diploma in Public Health/ Community Health, from medical colleges regulated by the National Medical Commission (ii) possessing MPH (Master Public Health) degree, with both medical or nonmedical background.

The Directorate General of Health Services, MoHFW, Government of India, constituted the Expert Group of Public Health Specialists, with the Terms of Reference to review the requirement for expansion in academic and training activities pertaining to public health for the entire nation, so as to ensure effective delivery of services and research in pandemic and non-pandemic situations and the other TOR was to identify the various specializations/sub-specializations necessary to be created/augmented for effective delivery of public health services and research.

Several expert group meetings were held to discuss the various issues &challenges related to the Public Health training. The group members also reviewed the various documents on Public Health Courses collected from the concerned organizations. A discussion was also held to seek the views of the key officers in the Niti Aayog, National Medical Commission, National Board of Examinations, Indian Public Health Association, and Indian Association of Preventive & Social Medicine, etc. In addition, questionnaires were sent to the members of both the Indian Association of Preventive & Social Medicine & the Indian Public Health Association to seek their views on the current status of public health training & suggestions for future action.

Status of Public Health Manpower in the country: Considering the available Public Health Manpower in position as per previous estimate of 0.72 HMP per 100,000 population (Tiwari R et al 2018) & considering the population of India to be 1.39 billion in 2021, the available Public Health Manpower would be 10,000 (2021). As per our estimate (2021), the requirement by the

conservative "service target approach" would be 44895. Thus, there is a shortage of 34395 (44895 – 10,000) public health professionals. The available number of seats for MD & DNB (Community Medicine, Preventive & Social Medicine), Diploma courses in Public Health and MPH, are only 4018 per year, which is grossly inadequate.

Recommendations

The committee recommends the following actions for expansion in academic, training and research activities pertaining to Public Health in India:

1. Training Courses in Public Health/Community Medicine:

We suggest that six broad specialties namely Epidemiology, Public health Management, Reproductive, maternal, new born, child & adolescent health including Nutrition (RMNCHA) & Family Health, Environment Health, Occupational Health, and Disaster Management should be developed in Public Health over a period of time. Each of these broad specialties may further divided into sub-specialties.

Departments of Community Medicine/Preventive & Social Medicine of Medical colleges or other National Institutes at present have only MD programme. However, the fellowship programmes of 2 years' duration may also be permitted by Government, in the suggested sub-specialties, in consultation with NMC. The period of training for Fellowship Programs maybe two years for those who possess MD and 3 years for MPH & with MSc. (Medical subjects) qualifications.

2. Strengthening of Public Health Institutions

a. Strengthening of community medicine department in Medical Colleges:

- The department of community medicine should develop a close partnership with health system & community in order to discharge their social accountability.
- Orientation in clinical specialties should be provided to all the post graduates
- **In each State at least one department of community medicine should be developed as centre of excellence** by creating/strengthening additional manpower & facilities.

b. Strengthening of MPH Training Institutions:

- Every institution must have minimum 8 to 10 teaching Faculty and out of them 50% should have with MD Community Medicine qualification or equivalent.
- There should be Teacher: Student ratio should be 10 students for one faculty (1:10).
- The guidelines about infrastructure and field practice area should also be developed.
- District Hospital Residency programme like that of MD community medicine should also be considered for practical exposure in the field.

c. Strengthening of National & State level Public Health Institutions:

- It is recommended that Government should constitute a committee to strengthen these institutions **as National Public Health institutions of Excellence**.
- These institutions may be monitoring by the proposed public health council of India.
- **The state level institutes may also be considered for upgradation in terms of manpower & infrastructure**.

d. Strengthening allied public health training centres & career progression:

- The existing SIHFW & District training centres/teams should be strengthened by ensuring minimum 5 PH professionals at SIHFW & 2 PH professionals at district training centres.
- **Career development for basic health functionaries, who are serving for a longer time, may be considered at sub centre, PHC, CHC, block& district level as a reward to their loyalty.**

3. Public Health Cadre & Health Management Cadre:

- There should be separate Public Health Cadre and the people with MD/MPH qualification may be considered at all levels – National, State and District level.
- We feel that there should be two strata as Cat one with MD, category as well as MBBS with MPH and second health management cadre may be divided into sub category, a- MPH with AYUSH, Dental & Nursing background while b-MPH with Life Sciences, Social Sciences, engineering, pharmacy, law & Humanities etc.
- The core competencies for these two groups are elaborated in the report.

- Government should setup a committee to give recommendations for the appointment/placement& career progression for the public health cadre & health management cadres of Public Health professionals.
- **MD (Community Medicine/ MD (Community Health Administration) qualification should not be equated with the MPH**.

4. Improving Quality of Teaching & Accreditation of Public Health teaching:

i) Public Health Council of India:

- It is high time that Government of India should start Public Health Council of India
- The council should develop the competency-based curriculum as. well as ethical standards for public health teaching & training.
- The Council should lay down standards for staffing and infrastructure along with curriculum for various public health training & teaching courses/programmes.

ii) Quality & Accreditation of Public Health training courses

- The public health teaching/training should be student-centered, problem-solving, community-oriented with modern teaching/learning technologies.
- It is recommended that few Health and Wellness centers, in addition to UHTC and RHTC, maybe attached with department of community medicine colleges for strengthening monitoring, evaluation, research and support health system .
- NBE is offering 2-year fellowship/diploma programme after MBBS degree. It is suggested that NBE may also offer MPH programme considering established norms for the admission and following the model curriculum of MPH developed by MoHFW.
- In India, in view of emerging challenges in public health in recent years, there is an urgent need of a formal and effective accreditation system for public health training/teaching institutions.
- The accreditation should focus on the productivity with sustainable partnerships of stakeholders of public health for improving the delivery of health services as well as people's health status.

5. Strengthening of Public Health at Village, PHC, CHC, Block & District

- It is proposed that we should have **Panchayat Swasthya Sahayak** with six months public health training. These are village level volunteer with Intermediate in science or Graduate in social work with 3-5 years' experience.
- These may be considered for the position of community health officer after obtaining B. Sc. Public Health course.
- These community health officers maybe further considered for MPH program after gaining the requisite experience as a part of the career progression scheme and may be posted at CHC at public health specialists.
- Such public health specialists with 3-5 years' experience at CHC may be considered for Taluka/Block Health Officer or as District level programme officers.
- The department of Community Medicines of Medical Colleges as well the SIHFW should start B.Sc. in public health & MPH courses depending upon feasibility.

6. Public health training of existing health manpower

- Training policy and plan to be developed by every state with a view to provide in service training to the public health professionals from health workers to medical officer with a regular interval of every two to three years.
- Exploring the options for conducting 3-6 months certificate course/ public health training for existing workforce. The institutional mechanism at the state level can be explored for developing and imparting such trainings.
- Induction trainings in public health should be arranged for newly recruited health manpower at district training centres/at SIHFWs.
- It is suggested that continuing professional development (CPD) should be imparted to various categories of public health workforce at regular intervals.
- We suggest that induction training programme of 1-2 months duration should be organized for key public health administrators at state & national level.

7. **Promotion of Public Health Research:**

   There is need to promote public health research including action research, implantation & operational research. The team have also identified the research areas for future action including public health genomics, artificial intelligence, pollution and climate change.

8. **Public Health teaching & health care during Pandemic:**

   Considering the emerging diseases and pandemics, it is suggested that public health professionals should be available at various positions in the public health care delivery system all the time so that they may be able to take appropriate action based on the local epidemiology and other parameters for the holistic prevention of the disasters at an appropriate manner.

CHAPTER 4

Introduction

Public Health, Community Medicine & Public Health Professionals

Public health:

Winslow (1923) defined public health as the "science and art of preventing disease, prolonging life, and promoting health and efficiency, through organized community effort for the sanitation of the environment, control of communicable infections, education of the individual in personal hygiene, organization of medical and nursing services for the early diagnosis and preventive treatment". [1]

It has subsequently been modified and expanded by many others. A committee appointed by the US Institute of Medicine to look into public health in the 21st century defined the mission of public health as "fulfilling society's interest in assuring conditions in which people can be healthier".

The American Society of Public Health defines public health as "involving a population-focused, organized effort to help individuals, groups and communities reduce health risks, and maintain or improve health status". [2]

Preventive Medicine:

Preventive medicine has been defined as "the art and science of health promotion, disease prevention, disability limitation and rehabilitation" [3]. Though the efforts to prevent diseases via improvement in sanitation were going on the following three important events change the course of disease and health promotion:

- Study by James Lind in the year 1753 to prevent occurrence of scurvy.
- Inoculation of fluid from cow pox lesion to prevent small pox. This developed the concept of vaccination by British physician Edward Jenner in 1796.
- Discovery of germ theory by French bacteriologist Louis Pasteur in the year 1860.

Social Medicine:

Social medicine has varying meaning attached to its label, by derivation social medicine is the study of man as a social being in his environment [4].

Community Medicine:

It came into existence when the Royal College of Physicians, London, decided to change its faculty of Public Health to faculty of Community Medicine in 1969-70. Immediately in many countries, the name PSM / SPM was changed to Community Medicine. In India too, Medical Council of India accepted the revised nomenclature and across most of the Universities, the departments of PSM / SPM were re- named as department of Community Medicine, without making any change in the teaching, training and practice.

In late 1980's, the same Royal College of Physicians, London decided that the faculty of Community Medicine will be renamed as faculty of Public Health Medicine. However, this time, most of the countries including India did not follow suit.

We accepted the glamour of the word Community Medicine without bringing any change on the teaching/ training and in practice. However, the fact is that as Public Health Physician we have a specialized approach and intent towards the public health, something unique to our specialty.

Indian association of Preventive and Social Medicine (IAPSM) has defined Community Medicine as "*a science and art of promoting health, preventing diseases and prolonging life by range of interventions (promotive, preventive, curative, rehabilitative and palliative) in close partnership or association with health care delivery system and with active community participation& inter-sectoral coordination.*" [5]

The Community Medicine role is critical in achieving the goals of Primary Health Care. It is important not only in the current health situation but also for future in the wake of emerging and re-emerging health problems, especially life-style diseases and environmental problems. It is multi-disciplinary in its precept and inter-sectoral in practice. Several sub-specialties, such as epidemiology, environment & occupational health, health management, health economics, public health nutrition and communicable and non-communicable diseases form an integral part of the Community Medicine discipline.

Community Medicine is directly involved in promotive, preventive and curative care for common health problems and works in close partnership with health system. The interventions are applied, in community or workplace or in hospitals. For successful/ effective practice of Community Medicine, the discipline is required to work in partnership or close partnership with health care delivery systems & with Community.

HiAP (Health in All Policies):

World Health Organization's (WHO**)** has advocated the HiAP approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to improve population health and health equity.[6]

HiAP is founded on health-related rights and obligations, and contributes to strengthening the accountability of policymakers for health impacts at all levels of policy-making. It emphasizes the consequences of public policies on health systems, determinants of health, and wellbeing. It also contributes to sustainable development. Nonetheless, health considerations do need to be taken into account in policy-making. Efforts must be made to capitalize on opportunities for co-benefits across sectors and for society at large.

As a concept, HiAP is in line with the Universal Declaration of Human Rights, the United Nations Millennium Declaration, and accepted principles of good governance (UNDP 1997). In particular, HiAP reflects the principles of:

i. *Legitimacy* grounded in the rights and obligations conferred by national and international law
ii. *Accountability* of governments towards their people
iii. *Transparency* of policy-making and access to information
iv. *Participation* of wider society in the development and implementation of government policies and programmes
v. *Sustainability* in order that policies aimed at meeting the needs of present generations do not compromise with the needs of future generations.
vi. *Collaboration* across sectors and levels of government in support of policies that promote health, equity, and sustainability

Earlier, there was no mention about the climate & environmental health in the Millennium Development Goals (MDGs). Considering HiAP by WHO, concept of climate & environmental health is given importance in Sustainable Development Goals (SDGs)

Public Health Professionals:

While public health has been defined in various ways, it has come to signify preventive and promotive work on a population basis. Majority of health workers, in addition to their curative or

clinical work, also perform some public health functions. However, there should be distinction between those who perform some public health functions and those who are primarily public health workers.

As the IOM (Institute of Medicine) study (2003) states *"a public health professional is a person educated in public health or a related discipline who is employed to improve health through a population focus."*[7]

Only a small proportion of the total public health workforce receives any formal public health education and those who do, do so primarily through certificate programmes, short courses, conferences, workshops offered by a variety of institutions and organizations. We feel that a public health professional will be who has received– masters or doctoral levels of education in public health to fill many professional positions within public health and positions of senior responsibility and leadership in public health practice, research and teaching. This will also include those already in senior positions but who may need short courses for acquiring new skills or as a part of continuing education.

However, public health training in many countries follows the biomedical model of health care and is seen as an extension of clinical practice. Instead of incorporating many disciplines in the training in public health, many countries train only medical professionals or auxiliary health workers in this discipline. It may be high time to discuss the opening up public health training to a wide cross-section of professionals as well as reorient training to incorporate many of the new skills and capabilities as outlined in the Calcutta declaration.[8]

Currently the **public health professionals** trained in India can be **classified** in two different categories:

i. Possessing MD (Community Medicine/ Preventive & social Medicine), MD (Community Health Administration) degree, Diploma in Public Health/ Community Medicine, from medical colleges regulated by the National Medical Commission or equivalent qualification

ii. Possessing MPH (Master Public Health) degree, students from both medical or nonmedical background, undergoing public health training in UGC regulated institutions.

MANDATE TO THE EXPERT GROUP

The Directorate General of Health Services, MoHFW, constituted the Expert Group of Public Health Specialists (Annexure-1), with following Terms of References(TORs):

i. To review the requirement for expansion in academic and training activities pertaining to public health for the entire nation, so as to ensure effective delivery of services and research in pandemic and non-pandemic situations.

ii. To identify the various specializations/ sub-specializations necessary to be created/ augmented for effective delivery of public health services and research.

CHAPTER 5

Methodology

Several meetings of the expert group were held to discuss the various issues & challenges related to the Public Health training. The group members also referred to various documents related to Public Health Courses & institutions collected from the concerned organizations like National Medical Commission, National Board of Examinations, University Grant Commission, Ministry of Health & Family Welfare, NITI Aayog, MPH institutions etc. related to the TORs (List given in references section). Discussion was also held to seek the views of the key officers in the National Medical Commission.

An interview schedule was sent to the members of Indian Public Health Association, Indian Association of Preventive & Social Medicine, National Medical Commission (NMC), and National Board of Examination (NBE) to seek their views on the current status of public health training & suggestions for future courses. In addition, virtual interviews were conducted with the key experts from Niti Aayog, NMC & NBE (List of experts given in Annexure - 2) and their suggestions have been incorporated in the report.

CHAPTER 6

Status of Public Health Institutions in India

Public Health Education in India - An Overview:

The Public Health plays a crucial role in improving the health status of communities. It has multi-disciplinary approach with involvement of several sectors. The sub-specialties, such as epidemiology, environment & occupational health, health management, health economics, public health nutrition and communicable and non-communicable diseases, Infection control form an integral part of the Public Health discipline.

National Medical Commission (NMC) recognized Public Health Courses:

i. MD Community Medicine/Preventive & Social Medicine regulated by the National Medical Commission (NMC) which is conducted in 296 departments of Community Medicine of medical colleges, with 1304 seats. (State wise list of institutions is given in Annexure -3& 4)

ii. Post-Doctoral Fellowship regulated by the National Medical Commission (NMC): The Post-Doctoral Fellowship (Community Mental Health), with 3 Seats are offered by the National Institute of Mental Health & Neuro Sciences, Bangalore.

iii. National Medical Commission (NMC) has a policy to discontinue the diploma courses however at present the recognized diploma courses are:
   - Diploma in Public Health
   - Diploma in Health Administration
   - Diploma in Community Medicine
   - Diploma in Health Education
   - Diploma in Industrial Hygiene/ Industrial Health
   - Diploma in Maternity & Child Welfare

iv. The National Board of Examinations conducts DNB programs in Community Medicine / Preventive and Social Medicine, Field Epidemiology) with 10 seats

Key issues with public health training in the above programme are:

- Lack of good community-oriented, field-based programmes for demonstration and participatory education for undergraduates in many colleges
- There is need of partnership with Public Health Care Delivery System& to utilize it. For teaching & training.
- There is need of partnership of Community Medicine with clinical discipline in general & with specialties of Paeditrics, Gynaecology & Obstetrics, Microbiology, infectious disease/General Medicine.

Public Health Courses by National Board of Examinations (NBE) recognized by NMC:

The National Board of Examinations (NBE) offers DNB courses (Full time three years) in Health & Hospital Administration; Community Medicine/Preventive & Social Medicine through the accredited hospitals/ Medical colleges (list of the institutions as provided by UGC is given in Annexure-5).

Total number DNB Social and Preventive medicine / Community Medicine seats are 10 offered in 2 institutions.

Key issues in the current system of DNB training in Public Health courses:

- Almost all the DNB courses in Public Health are offered by hospitals largely in the private sector.
- These hospitals get attachment to Field Practice Areas of other medical colleges/ institutions for training of DNB students, but it is on paper only
- In practice there is little focus on structured scheduled with desired competencies for a public health professional.
- Lack of faculty and dedicated community medicine department in these hospitals to train the post graduates
- Lack of availability of other resources including adequate stipend to DNB student.

Public Health Courses regulated by the Universities & other institutes:

The MPH (2 years), Masters in Hospital Administration/ MBA hospital Administration (2 years), PhD programs (3-5 Years) are regulated as per the guidelines of the concerned Universities. The Master in Public Health (MPH) which is offered by several colleges / institutions in India has an estimated 1675 to 2600 seats. There are nearly 67 MPH colleges/institutions in India which offer MPH, two third are in private sector (state wise list of the institutions is given in Annexure -6).

- The number of seats for MPH course ranges from 5 to 90 (Indian Institute of Public Health Gandhinagar, Gujarat). The course is of 2years'duration which includes 6 months of internship.
- TISS- Tata Institute of Social Sciences, Deonar Mumbai, Maharashtra offers Masters of Public Health (Heath policies, economics & finance); Masters of Public Health (Social epidemiology);
- Manipal academy of Higher Education Manipal, Karnataka offers Masters of Public Health (MPH)Global Health; Masters of Public Health (MPH)Environmental & Occupational Health; Masters of Public Health (MPH)Health Policy; Masters of Public Health (MPH)Epidemiology.
- National Institute of Mental Health & Neurosciences (NIMHANS), Hasur Road, Bangalore offers Masters of Public Health (MPH)Epidemiology.
- The Indian Council of Medical Research has several satellites institutes (NIN, NIOH & NIE) providing postgraduate degree programmes in focused areas, such as Nutrition, Field Epidemiology, Occupational Health and Toxicology.
- The National Centre for Disease Control (NCDC) conducts training in field epidemiology and surveillance and epidemic intelligence The National Institute of Health and Family Welfare (NIHFW) conduct diplomas and MD programmes in community health administration.
- The Jawaharlal Nehru University has M Phil & Ph D programmes in Community Health & Social Medicine as well as MPH programme.
- Sri Ramachandra Institute of Higher Education & Research Porur Chennai offers Masters of Public Health (MPH) Occupational & environmental Health.
- The Achutha Menon Centre for Health Sciences, Thiruvananthapuram, provides an MPH programme open to health and related professionals. The Indian Institute of Health

Management and Research (IIHMR) Jaipur covers management sciences, and provides postgraduate programme at different levels.

- The Institute of Health Systems (IHS), Hyderabad covers broader aspects of health systems including health policy, health systems management, health economics, medical sociology, etc.
- The Gandhi gram Institute of Rural Health and Family Welfare Trust, National Environmental Engineering Research Institute, Nagpur and Lions Aravind Institute of Community Ophthalmology, Madurai are some of the other institutes across the country providing education and training in public health-related areas. Almost all these institutes conduct short training programmes in various areas of public health.

Key issues in the current system of MPH training:

- Although the model MPH curriculum was suggested by MOHFW (Annexure-7) and adopted by the various universities. However, most of the institutions/ Schools of Public Health, have developed their own curriculum & system of assessment although few of them are affiliated with universities.
- Thus, the monitoring is required for these programs especially in private institutions offering MPH to ensure quality and preferably these programmes need to be accredited
- The practical field-based training requires establishment of field practice areas, which needs to be strengthened.
- Lack of structured entrance & exit examination for admission for the MPH programme.

Distance education programs in public health recognized by the Central Council of Distance Education:

A new trend has been the establishment of distance education programmes in public health with Certificate and Diploma-level courses at Indira Gandhi National Open University (IGNOU), New Delhi and Annamalai University in Chennai. The National Institute of Health and Family Welfare also offer distance education programme like Diploma in Health & Hospital Management.

Distance education programs are not under the purview of the committee as supervision of field training is not possible in these courses. Hence, the group decided not to go ahead in detail about the distance mode programme.

Various Distance Learning Courses are being provided by reputed International Universities like John Hopkins, Harvard, and London school of Hygiene &Tropical Medicine, etc. and the public health aspirants are enthusiastic about these courses as they are being offered by renowned universities.

However, we feel that the Distance Learning Courses in public health should be made available for knowledge enhancement only, and neither for recruitment to specialist position nor for the career advancement.

Inservice Public Health Teaching: The Post Graduate Diploma in Public Health Management (PGDPHM) course is conducted at selected public health institutions supported by Ministry of Health and Family Welfare under the National Health Mission (NHM). The diploma course is a one-year, full residential course aimed at capacity building of Mid-level health functionaries; so as to address the gap in the Public Health Managerial capacity amongst health professionals in the country with reputed eleven partner institutions including AIIPH Kolkata, PGIMER Chandigarh, NIHFW, JIPMER, MGIMS, SIHMC Gwalior and ay IIPH institutions at Delhi, Hyderabad, Bangalore, Ahmedabad, Bhubaneswar & Shillong.

Status of Public Health Cadre in India

The Public Health Cadre proposes public health or related disciplines as entry criteria. It advocates an appropriate career structure and recruitment policy to attract young and talented multi-disciplinary professionals. Medical & health professionals would form a major part of this, but professionals coming in from diverse backgrounds such as sociology, economics, anthropology, nursing, hospital management, communications, etc. who have since undergone public health management training would also be considered.

The National Health Policy 2017 suggested for an empowered public health cadre to address social determinants of health effectively, by enforcing regulatory provisions.[9]

High Level Expert Group Report on Universal Health Coverage for India suggested *"Introduction of All India and state level Public Health Service Cadres and a specialized state level Health Systems Management Cadre in order to give greater attention to public health and also strengthen the management of the UHC system"*[10]

The recent draft report, available on social media, of the Expert Committee on Public Health Management Cadre 2020-2021, MOHFW, New Delhi, (Annexure-8) has proposed guidelines, & models for development of the Public Health Management Cadre in the states. The implementation of the Public Health Cadre in the country would require additional public health manpower [11].

At present the public health cadres which exist in few states namely, Tamil Nadu, Maharashtra, Odisha, West Bengal, Haryana, Chhattisgarh etc. are with medical background. Other cadre providing public health service like male & female health assistants & health workers may also be included in allied health cadre. The public health cadre is not inclusive of all the health personnel providing public health functions.

CHAPTER 7

Requirement & Availability of Public Health Professionals in India

Requirement of Public Health Professionals:

The various estimates for the availability of Public Health Manpower are as follows:

- Sharma K et al (2010) estimated that 19,664 qualified professionals are required to function in this capacity across the health sector (2010) [12].
- Tiwari R et al (2018) estimated the supply data for Health Management Professionals (HMP) based on the output from various academic programs related to health management/administration and other public health programs [13].

Our estimate on requirement of the Public Health Manpower in country is as follows:

- **Requirement in Medical Colleges in India** - At present we have 560 medical colleges which is likely to touch figure of 700 within next few years. Considering rough requirement of 10 teachers in the department of Community Medicine in each Medical College, we will require estimated (700 x 10) 7000 teachers in Community Medicine.
- **Public Health Professionals at National Level** - Public Health Professionals are required to manage various National Health Programmes as well as at various National level institutes. Around 1000 Public Health consultants would be required in various National level public health institutions.
- **Public Health Professionals at State Level** - Whereas Public Health experts are required in 29 States (250X29 = 7250) & in 7, union territories (100X7 = 700), this includes PH professional for programme management, including for NHM, at regional/divisional level, SIHFW & other state level public health training centres. Total requirement of public health experts at National and State Level = 8950.
- **Requirement at District Level** - At present in India, we have 742 districts and 5335 Community Health Centres. We feel that 5 Public Health Professionals are required at District level and one Health Professional should be there at CHC, as per National Health Policy, so the requirement will be (742 x 5) 3710 for district level and 5335 for Community Health Centres. Thus estimated 9045 Public Health Professionals are required for district level.

- **Public Health Professionals at Block Level:** we will require nearly 13000 public health professionals as Block Health Office.
- **Public Health Professionals at Municipalities & Municipal Corporation:** We require one (1) public health professional in each large municipality and on an average 5 public health professionals in municipal corporations. Thus, we will require nearly 2500 public health professionals.
- **Public Health Professionals for NGOs, Corporate Sector, development agencies etc**.-we estimated that nearly 5000 Public Health Professionals will be required for International NGOs, Developmental Agencies and other National/ state NGOs, corporate sector.
- **Other sectors***:* We estimated that nearly5000 public health professionals will be required for Armed Force Medical Services (AFMS), Railways, Ordinance factories, ESIC, FSSAI, Coal India limited & other industrial establishments.

S. No	Requirement for	Manpower needed
i.	Faculty in Medical Colleges	7000
ii.	Public Health Professionals at National Level	1000
iii.	Public Health Professionals State Level	8950
iv.	Requirement at District Level	9045
v.	Requirements at Block Level	13,000
vi.	Requirement at Municipalities & Municipal Corporations	2500
vii.	Public Health Professionals for NGOs, Corporate Sector, development agencies	5000
viii.	AFMS, Railways, Ordinance factories, Coal India & in other industrial establishments	5,000
	TOTAL	**44,895**

- We also require **Allied Public Health Professionals** such as Para-Medicals with Public Health backgrounds like Public Health Nurses, Public health entomologists, public health statisticians, Sanitary Inspectors, Health Educators, Medical Social Workers, Health Assistants (both Male

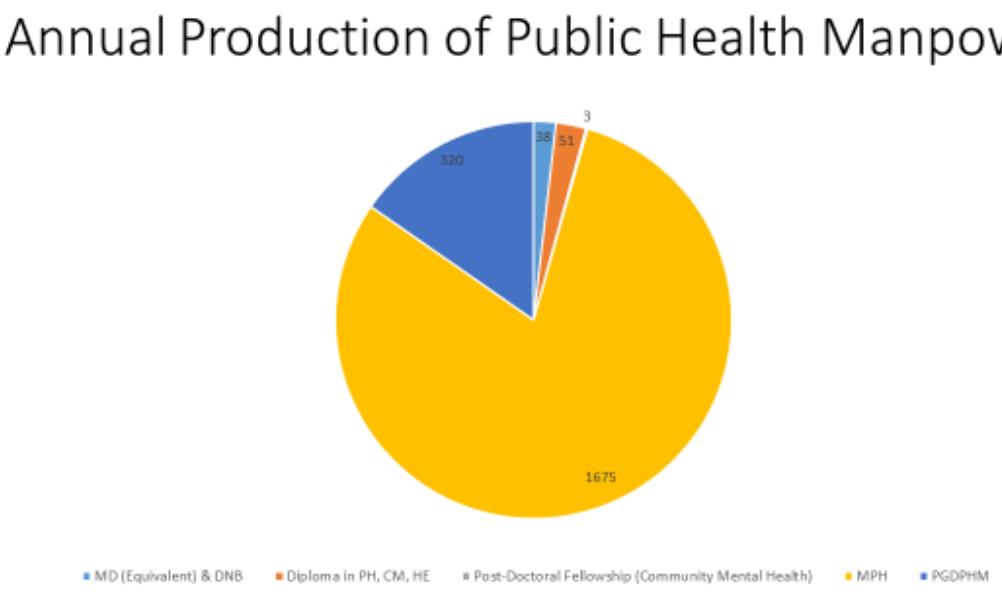
and Female), and Health Workers (Male and Female). Considering 30045 Primary Health Centres and 1,45,894 Sub-Centres the requirement of these Para-Professionals will also be significantly high. The committee has not looked into this aspect. But, the National Commission for Allied and Healthcare Professions Act was passed in the Parliament in 2021 which may give insights after going through the data of the available workforce thoroughly.

Estimated Production of public health professionals in the country:

As per the current infrastructure for Public Health training the estimated seats are as follows:

Estimated Production of Public Health Manpower as per the seats recognized by the National Medical Commission, is 4338 per year. The details are as follows:

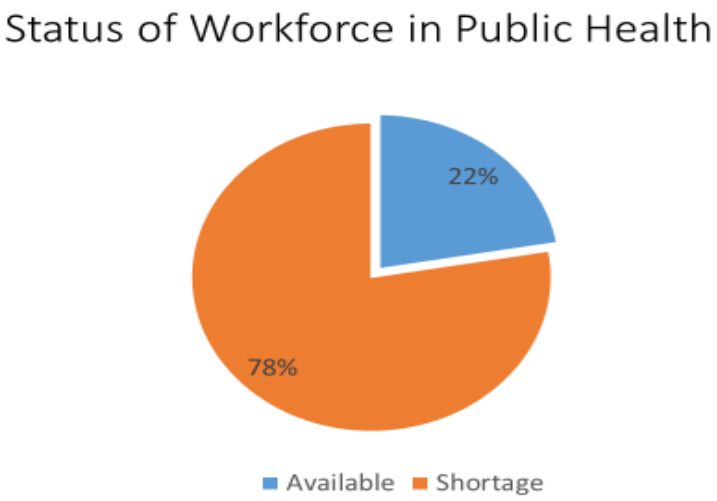
S. No	Name of the course	No. of seats
1.	MD (Community Medicine/Preventive & Social Medicine)	1304
2.	MD (Community & Family Medicine)	18
3.	MD (Community Health Administration)	10
4.	DNB (Preventive & Social Medicine)	10
5.	Diploma in Public Health (PH)	24
6.	Diploma in Community Medicine (CM)	07
7.	Diploma in Health Education (HE)	20
8.	Post-Doctoral Fellowship (Community Mental Health)	03
9.	MPH	1675
10.	Post-Graduate Diploma in Public Health Management (PGDPHM)	320
	TOTAL	**4338**



Shortage of Public Health manpower:

Considering the available Public Health Manpower in position as per previous estimate of 0.72 HMP per 100,000 population (Tiwari R et al 2018), &taking the population of India to be 1.39 billion in 2021, the available Public Health Manpower would be 10,000 (2021).

As per our estimate (2021), the requirement by the conservative "service target approach" would be 34395. Thus, there is a shortage of 34895 (44895 – 10,000).



CHAPTER 8

Recommendations

1. Training Courses in Public Health/Community Medicine:

Departments of Community Medicine/Preventive & Social Medicine of Medical colleges or other National Institutes at present should have only MD (Community Medicine/ Preventive & Social Medicine/Public Health) postgraduate degree programme. However, the fellowship programmes of 2 years' duration may also be permitted by Government, in the following specialties/sub-specialties, in consultation with NMC

Specialization/Sub-specializations in public health:

We suggest that six broad specialties of public health namely Epidemiology, Public health Management, Reproductive, maternal, newborn, child & adolescent health including Nutrition &Family Health, Environment health, Occupational Health and Disaster Management, and, should be developed in Public Health over a period of time. Each of these broad specialties of public health should have sub specialties depending on the specific requirement & choice of the students.

Speciality	**Sub-specialty**
Epidemiology	Advanced Epidemiology
	Applied Epidemiology
	Field Epidemiology
	Epidemic Intelligence Services
	Pharmaco-epidemiology
	Molecular Epidemiology
	Environmental Epidemiology
	Clinical Epidemiology
	Advanced Biostatistics

	Social Epidemiology
	Vaccinology
Public Health Management	Public health management
	Health Economics
	Public Health Policy & Leadership
	Health System Development/strengthening
	Urban Health
	Global Heath
	Health Diplomacy
	Health Informatics
	Digital & mobile Health
	Tele-health
	Community health administration
	International Health
Reproductive, Maternal Newborn, Child & Adolescent & Family Health	Maternal & Child Health Adolescent Health
	Preventive/Social/Community Obstetrics
	Preventive/Social Paediatrics
	Preventive Geriatrics
	Community Mental Health
	Preventive Cardiology
	Preventive Oncology
	Public Health Nutrition

	Applied Nutrition
	Health Promotion
	Tribal Health
	Environmental Health
	Occupational/Industrial Health
Occupational & Environmental Health	One Health Advanced Entomology
Disaster Management	Public health emergencies management
	Chemical, Biological, Radiological Nuclear & Explosions (CBRNE) Public Health/disaster ethics

Fellowship Programs (in various specialties/sub-specialties of Public Health): The period of training for Fellowship Programs may be two years for candidates who possess MD and 3 years for MPH degree or with MSc. (Medical subjects). For starting Fellowship Programs, the institution concerned should have the adequate facilities& manpower. The Government can take help of professional bodies like IAPSM & IPHA for running such fellowship programmes.

The DNB/Diploma/Fellowships courses may be started in the specialties of environmental health, Industrial/occupational Health, public health emergencies management and Maternal and Child health.

Internship in Health Programs: Public Health students may be given a chance for internship in Central/State-run health programs at District or State level. It would benefit the students and programs mutually. Program strategy can be improved by analyzing data and students would get hands on experience of government programs, policies, and their implementation.

Post-graduation courses for non-medical workforce: Post Graduation courses may be initiated for the non-medical workforce for capacity building and utilizing the workforce when needed like in the case of COVID-19 Pandemic.

2. Strengthening of Public Health Institutions:

a. Strengthening of community medicine department:

- The department should have well developed urban & rural health training centres for field-based training & research.
- The department of community medicine should develop a close partnership with health system & community in order to discharge their social accountability as well as to utilize this interface for the teaching/learning and research opportunities.
- Orientation in clinical specialties should be provided to all the post graduates of community medicine. There should be more interaction between clinical & community medicine departments in medical colleges.
- In each State/UT, at least one department of community medicine should be developed as **centre of excellence** by creating/strengthening facilities and providing additional manpower.

b. Strengthening the MPH training institutions:

Every institution must have minimum 8 to 10 teaching Faculty and out of them 50% should have with MD Community Medicine or equivalent qualification.

- There should be Teacher: Student ratio in MPH institutions should be 10 students for one faculty (1:10).
- All the institutions should have infrastructure as well as equipment, as may be prescribed by the appropriate authority
- All institutions should have well developed field practice area to offer practical training to the students.
- At least 50% training period should be used for practical / field-based training.
- Field placement, at leading public health institutions like District Hospital Residency programme that of MD community medicine by NMC, should also be started.

c. Strengthening of National & State level Public Health Institutions:

The institutions like NIHFW, National Center for Disease Control, National Institute of Epidemiology, National Institute of Nutrition, National Environmental Engineering Research Institute (NEERI), Vector Control Research Centre, Pondicherry & National Institute of Research in Tribal Health, Jabalpur etc. are involved in training & research at the national level. Many of these intuitions have failed to develop partnerships with health care delivery systems & communities to achieve their mandate. It is recommended that Government should constitute a committee to strengthen these institutions **as National Public Health institutions of Excellence**. These institutions may be brought under affiliated public with health council of India or any other such authority for public health training/teaching, public health care delivery & research.

The State Institutes of Health and Family Welfare Training Centers, Regional Health and Family Welfare Training Centers, Public Health Training Institutes, are conducting in service training programs, orientation training programs, RCH and NHM training programs and program-based trainings like immunization training. These institutes are already acting as RCH Collaborative Centers in collaboration with NHSRC/SHSRC & NIHFW. Similarly, these institutions are also involved in Management Development Programmes in collaboration with NIHFW. In order to discharge their responsibility in better manner, **it is recommended that these state level public health institutions may be also considered for upgradation in terms of manpower & infrastructure.**

d. Strengthening Allied Public Health Manpower training centres & Career progression:

- The existing SIHFW & District training centres/teams should be strengthened by ensuring minimum 5 Public health professionals at SIHFW & 2 PH professionals at district training centres along with adequate infrastructure, as District Institute of Education and Training (DIET) of education departments. DIET is mandated by NCERT.
- ANMs and Male Health Workers although scarce are serving in Health Sub Centers. LHVs (Sector Health Nurses) and Multi-Purpose Health Supervisor (Male) are serving at PHC level. Public/Community Health Nurse and Block Health Supervisors are posted at block level. In addition, Para Medical Ophthalmic Assistant, Non-Medical Supervisor (Leprosy),

Block Health Statistician, Block Extension Educators are functioning at block level. **Career progression for these people who are serving for a longer time, to be considered at block, district and state level as a reward to their loyalty.**

3. Public Health & Health Management Cadre:

There should be four cadres, namely Specialist cadre, teaching cadre, Public health cadre and Health management cadre. The first two i.e., Specialist and teaching cadres are beyond the purview of this groups and thus our recommendations are specifically for the latter two cadres.

The Public Health Cadre, comprising of MBBS doctors with MD/MPH qualification may be considered at all levels – National, State and District level and also at leadership position at Block level. The other cadre important from public health point of view is the health management cadre, which will support and supplement the work of the Public health cadre. The criteria of selection and career progression of both will follow a specified path with unified leadership by the Public Health cadre at all levels (Block, Distt, State, National). The qualifications are as follows:

Public Health Cadre (basic Qualification MBBS):

Category One: Post graduates in Community medicine (MD/DNB) or equivalent

Qualification

Category Two: MPH with medical background

Health Management Cadre:

- **Category Three:** MPH with AYUSH, Dental & Nursing background.
- **Category Four:** MPH with background qualification in other fields like – in Life Sciences, Social Sciences, engineering, pharmacy, law & Humanities etc. Plus a few of these streams with MBA (HR), etc.

MD (Community Medicine/ MD (Community Health Administration) qualification should not be equated with the MPH qualification.

Government should setup a committee to give recommendations for the appointment/placement for the 2 and3 categories of Public Health Personnel with MPH qualification.

Core Competencies for various categories of Public Health Professionals:

i. Core competencies suggested for a Public Health Specialists Category one (1):

- Basic principles of public health
- Epidemiology
- Communicable & non-Communicable disease epidemiology
- Environmental health
- Health Management & leadership
- Health system, health planning, monitoring & evaluation
- Documentation & Communication
- Guidance/Counselling/communication and Health Promotion
- Computer, information technology & digital/mobile health
- Research methodology including data management & presentation
- Clinical competence
- Pedagogy

ii. Core competencies suggested for a Public Health Specialists Category Two (2):

- Basic principles of public health
- Basic Epidemiology
- Communicable & non-Communicable disease epidemiology
- Environmental health
- Health Management, Health system, health planning, monitoring & evaluation
- Documentation & Communication, Guidance/Counselling/communication
- Health Promotion

- Computer, information technology & digital/mobile health
- Clinical competence

iii. **Core competencies suggested for a Health management Category Three (a & b):**

- Basic principles of public health
- Basic Epidemiology
- Principles for control of Communicable & non-Communicable disease epidemiology
- Environmental health
- Health Management &supportive supervision
- Health system strengthening
- Documentation & Communication
- Effective communication and Health Promotion
- Application of computers in health system

4. Improving Quality of Teaching & Accreditation of Public Health teaching:

a. Public Health Council of India:

It is high time that Government of India should start Public Health Council of India on the line of National Medical Commission/ All India Council of Technical Education which should lay down standards for staffing and infrastructure along with curriculum for various public health training & teaching courses/programmes both for medical as well as for non-medical & paramedical public health personnel.

We opine that the following should be domain of Public Health Council of India:

a. Develop competency based dynamic curriculum in various public health specialties & sub-specialties with a view to develop appropriate skill, knowledge, attitude,&practices to provide healthcare and conduct public health research.
b. The council should be responsible to determine minimum requirements and setting up of standards like infrastructure, faculty requirements, field training requirements for the public health training institutions
c. The council should be responsible for recommending qualification & experience for

teaching & other staff in the public health training institutes including career progression guidelines for the Public Health professionals

d. Developing ethical standards & guidelines for public health institutions.
e. The council should cover all public health training institutions including the institutions for the training of allied public health work force.
f. The PHCI should have powers to recognize public health courses conducted globally based on fulfilling the minimum standards as done by NMC for medical graduates qualified from other countries.
g. THE PHCI should also ensure legal provisions where it is necessary to protect Public Health in India including related to international travel

b. Quality & Accreditation of Public Health training courses:

Quality Assurance:

The followings suggestions are given for improving the quality of Public Health Training:

a. The training should be student-centered, problem-solving, community-oriented & need based with electives. Modern learning technologies should be utilized. The strengthening of local level infrastructure & mechanisms for curriculum implementation should also be ensured.
b. Simultaneously, it is suggested for partnering of PH institutions with NHM for supporting the *Health & Wellness Centres* in which it is suggested that in addition to UHTC & RHTC, ten (10) Health & Wellness Centres maybe attached with a medical college for mentoring, support, evaluation & research, which will strengthen both post graduate training at medical colleges as well as strengthen the District Health System.
c. NBE is offering 2-year diploma/fellowship programme after MBBS degree. It is suggested that NBE may also offer MPH programme considering established norms about entry and following the model MPH curriculum developed by MoHFW.

Accreditation system in Public Health Education:

In India in view of emerging challenges in public health in recent years, there is an urgent need of a formal and effective accreditation system specially directed towards public health teaching in India based on the concerns, mentioned in the preceding section of the report. Advocating the relevance of standards for social responsiveness does not mean that features of public health at

medical institutions and medical education should be made uniform but the main concern is to respond as efficiently as possible to local health needs in order to optimize the utilization of local health resources. The health care, medical practice and medical education should work in partnership to serve the community, based on values of quality, equity, relevance and cost effectiveness.

A framework for accreditation should therefore encompass elements related to the impact of public health colleges& medical education on career choices of graduates, on the work of public health professionals and the on performance of the health system. It should also consider the capacity of public health institutions to demonstrate the productive and sustainable partnerships with other important stakeholders of public health for improving the delivery of health services as well as people's health status.

5. Strengthening of Public Health at Village, PHC, CHC, Block and District level:

While we are celebrating Amrut Mahotsav of our Independence, we make the following suggestions for strengthening Public Health services within the District Health System involving the PRIs& to promote Gandhian Dream of 'Swaraj':

(i) It is proposed that we should have **Panchayat Swasthya Sahayak** with public health training at village level. He/she may be trained for 6 months at District Training Centre with the support of department of community medicine of nearby medical college. He/she may be selected from existing ASHA, Panchayat Secretary, equivalent care provider or a village level volunteer with Intermediate in science or Graduate in social work with experience (3-5 years) of working at village level. He/she should be preferable from the same block or district. The course curriculum may include basic epidemiology, environmental health including. entomology, health. promotion, basic health. management, communicable & non communicable diseases including various national health programmes, but it can be finalized by an expert committee. This has gained more relevance in view of substantial health grants by Finance Commission-XV direct to the Panchayati Raj Institutions and Urban Local Bodies.

(ii) Community Health Officer (CHO)*:* B.Sc. in Public Health Course for 3 years which should be started at Medical Colleges for existing Public Health Nurses/ Lady Health visitor or Health Assistant or equivalent& health worker both male & female with minimum 5 years' experience of working with health system or Panchayat Swasthya Sahayak with 5 years' experience. It may have direct entry for persons with B.Sc. (Nursing) qualification/AYUSH graduates. The programme may be undertaken at the level of Medical Colleges by the department of Community Medicine/ at SIHFW. The curriculum may be adopted from already approved BSC (Community Health) curriculum by MCI & GOI. This may in supplement to existing CHO training already going on in the country.

(iii) Master in Public Health (MPH): It will be two years programme for those who have worked for 5 years as CHO after acquiring B.Sc. in Public Health. We may also consider direct entry for MOs with MBBS, AYUSH or MSc Nursing qualification& for thosewho have put 5 years' service in the district health system at PHC / CHC Level. Again, the Master in Public Health Programme should be started in all Medical Colleges by department of Community medicine/ at selected SIHFWs, with the curriculum that has already been developed by GOI.

(iv) Public Health Specialist at CHC: An MPH with medical/paramedical background with 5 years' experience of working with district health system, as described above, may be considered for such appointment.

(v) Block/Taluka Health Officer & District level Programme Officers: The Public Health Specialist who have worked at CHC for 3-5 years may be considered for the appointment as Block/ Taluka level Health Officer or District level disease control programme officers or District Programme Manager.

(vi) Career Progression*:* We should ensure that the personnel who have worked in villages, after 5 years of getting certificate, may be considered for the entry to the Bachelor in Public Health Course and similarly those who have put in 5 years' service, after getting

Bachelor in Public Health, should be considered for entry to Master in Public Health. It will ensure availability of experienced manpower for the District Health System as well as participation &strengthening of District training centres & SIHFW. The Public health specialists with 3-5 years' experience at CHC may be considered for Taluka/Block Health Officer or District level programme officers.

(vii) The department of Community Medicine of Medical Colleges / SIHFW, who opts for B.Sc. Public Health or MPH programme should be provided additional manpower &infrastructure.

(viii) The Government of India may recommend to NMC for recognition of above programmes or may consider to have them within the proposed Public Health Council of India.

6. Inservice training of existing public health manpower:

The large number of health manpower currently in the health system also needs orientation on newer concepts of public health so that they are able to meet the challenges more effectively. We suggest that following actions should be considered:

a. Training policy and plan to be developed by every state with a view to provide in service training to all the public health cadre from health workers to medical officer with a regular interval of every two to three years.
b. Exploring the options for conducting 3-6 months certificate course/ public health training for existing workforce. The institutional mechanism for the states can be explored for developing and imparting such trainings.
c. Induction trainings in public health, for the various categories of PH workers should be arranged for newly recruited public health workforce.
d. Rotational posting of faculties on deputation basis may be encouraged to look after the state health programs, Disaster Management and other specialties to gain functional knowledge about Public Health. That will help the overall gamete of academic training programs at various levels.
e. State training institutes should develop more training modules of short duration for all categories of public health professional. The focus of these trainings should be primarily

contextualized with public health challenges faced and services to be delivered in each specific state.

f. The existing in-service training programmes should be strengthened.

g. **Continuing Professional Development (CPD***):* It is suggested that Continuous professional development for different categories of public health professionals should be mandatory at regular intervals (Suggested interval- once in every 3-5 years).

h. **Induction Training to Key Public health Administrators/Managers.** The group suggests that the both national & state level key public health administrators/managers should receive 1-2 months Public Health Orientation training at a National/State level public health training institute.

7. Promotion of Public Health Research

Public Health Research has not been given priority as desired, as the workforce is involved in the programme management. It can help in generating important information about disease trends and risk factors, outcomes of treatment or public health interventions, functional abilities, patterns of care, and health care costs and use.

As population health becomes a more significant public health goal, opportunities will increase for public health experts to collaborate with clinicians and health care administrators and to derive meaningful research questions from those interactions. There is need to promote action research, implementation& operational research in public health.

Considering the development in the field, it is recommended that the following areas may be given priority in Public Health Research in India –

1. Public Health Genomics.
2. Molecular epidemiology.
3. Application of Artificial intelligence in public health practice
4. The promotion of universal health coverage.
5. Alternative health finances at various levels of health care delivery system.
6. Climate change and environmental degradation

7. Community based Primary Health Care
8. e-health / mobile health
9. Urban Health Service
10. Issues related to equity
11. Accident Prevention
12. Violence against women
14. Policy analysis and research
15. Health System Research
16. Indoor Air Pollution
17. Development of Rapid field-based diagnostics

8. Public Health services during Pandemic

For pandemics & disasters, the lesson learned from the Covid-19 pandemic is twofold. On one side the epistemic authority of experts in biomedical disciplines is fundamental and should be given priority by political authorities while on the other hand some thoughts need to be valued with participatory angle and their reasonableness but it's a time-consuming process. Therefore, worldwide a stream of experts nurtured in public health for a balanced decision-making process who think in the rationalized way considering their experience in implementing mass public health strategies. Public health is concerned with protecting the health of entire populations ranging from local neighborhoods to whole countries or regions of the world. As a part of their training, these professionals learn coordination and networking which is valuable in planning emergency response, identifying areas of greatest needs, developing culturally appropriate messaging, and disseminating information throughout the community.

Therefore, it is realized by the time that the professionals of the proposed Health Management Cadre should be trained for the disaster epidemiology and various phases of the disaster management cycle. In this way, they may be available with opinions based on

competence and rationality to develop guidelines for the national as well as state level. Public health professionals work in various capacities that promote healthy lifestyles, research and injury prevention, detecting, preventing, and responding to infectious diseases. This pandemic has reminded us how powerful public health is in dealing with large scale and global public health issues.

It is suggested to develop workforce at every level starting from block to national level for public health emergencies. The various level of disaster management committees should have one or more public health specialist for developing local real time guidelines which will help in developing district, state and national guidelines.

The consortium of universities and professional associations at national level may be created to do research on disaster related issues as well as for capacity building of the public health workforce. The consortium may utilize the social media platform for creating awareness, risk communication and disseminating guidelines. Leverage technology to enhance the efficiency of disaster reduction efforts by setting up the Information Network at urban, rural and outreach areas, may be with public private partnership, will facilitate cooperation among all those in the areas of disaster management. The infrastructure for E-learning through virtual platforms need to be strengthened simultaneously involving local professional associations like IPHA and IAPSM and the development sector for continuous learning and development of the public health workforce. This has more relevance, as already emphasized in the prime minister's ten-point agenda for disaster risk reduction.

CHAPTER 9

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