

PUBLIC HEALTH WORKFORCE IN INDIA: CAREER PATHWAYS FOR PUBLIC HEALTH PERSONNEL



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2009

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ACKNOWLEDGEMENTS

This document was prepared as a background paper for the National Consultation on Public Health Workforce in India, organized by the Ministry of Health & Family Welfare, Govt. of India in collaboration with the WHO Country Office for India on 24-25, June 2009 at New Delhi. This document has been prepared by Dr. K.K. Datta, Advisor, Health Policy and Reform, Technical Assistance Support Team (TAST), Government of West Bengal as a part of an Agreement for Performance of Work (APW) with the WHO Country Office for India. The preparation of this document would not have been possible without the support of Mr Vineet Chawdhry (Joint Secretary) and Dr R.S Shukla (Joint Secretary), Ministry of Health & Family Welfare, Government of India, and Dr. S J Habayeb, WHO Representative to India.

The kind support and assistance offered by the following is gratefully acknowledged:

- The Department of Health and Family Welfare, West Bengal particularly Dr. Aniruddha Kar, DHS; Dr. Samir Sengupta, Joint Secretary Dr. Samudra Sengupta and Dr. Subhra Basu, Technical Officers , SPSRC, Dr. M. K. Ghosh, Programme Manager, MPWS, Mrs. Madhabi Das and her colleagues, Dr. Prabas Chaudhuri,CMOH, North Parganas and his other colleagues.
- The Directorate of Public Health and Preventive Medicine, Tamil Nadu particularly Dr. S. Elango, DPH, Dr. P. Kanan and Dr.Selva Kumari, Joint Director, and Ms Y.V. Vimala, Administrative Officer and their other colleagues.
- The Department of Health and Family Welfare, Maharashtra particularly Dr. D.S. Dakure, Director of Health Services, Dr.G.S. Chindhe, Joint Director and Mr. NItin Patil, Joint Director and their other colleagues.

The assistance and support provided by Mr .S.K. Gupta, Director, NRHM and Special Secretary to GOWB is gratefully acknowledged.

The assistance and support from WHO Country office India particularly from Mr. S. Nandraj and Ms. Anagha Khot for their insights, critical appraisal and comments in improving the document are gratefully acknowledged.

Assistance received from Ms. Diti Mookherjee in preparing the document as well as the administrative support received from TAST is also duly acknowledged.

INTRODUCTION

BACKGROUND

Human resources are central to all public health systems and a considerable share of resources allocated to public health goes towards them (1).

Health workers in adequate numbers, in the proper places, and properly trained, motivated and supported are the backbone of an effective, equitable, and efficient public health care system (2). Establishing and sustaining an effective public health workforce in India to achieve national health goals under MDGs will require sound policy to be translated through an effective strategy and committed implementation with an inbuilt mechanism of monitoring and periodic evaluation.

Several national level policy, plan and review documents outlined insufficient numbers of doctors in government health care service provision throughout the country, both general medical officers and specialists, and the issue has been a matter of government concern for some time (3, 4, 5, 6). It has again become the subject matter of discussion with significant government efforts to scale-up health care delivery through the National Rural Health Mission. The Government of India has increased its financial allocation to health through the NRHM and the new Indian Public Health Standard (IPHS) – norms for health facilities that, to be achieved, will require many more doctors to enter public health service (7).

In its popular understanding public health continues to remain unclear. Health and public health gets mixed up and become inseparable. There is considerable confusion about public health as a discipline, which is considered distinct from but complementary to clinical medicine (8). The public health workforce is characterized by its diversity and its complexity and includes people from a wide range of occupational backgrounds. Among them are public health physicians, nurses, nutritionists, sanitarians, environmental health specialists, policy analysts, epidemiologists, demographers, social and behavioral scientists, health promoters, social workers and community health workers, biostatisticians etc. To be very specific Public health is a composite discipline. Public health draws its strength from a number of academic disciplines, including anthropology, history, economics, sociology and political science, as well as epidemiology and statistics (9). The public health workforce is trained in a variety of institutional settings. It adds to the complexity of understanding of public health workforce in the country. Before we define public health workforce more precisely let us make an attempt to define public health. Public health has often been defined as a science, which deals with the determinants of health at the population level, while clinical medicine deals with diseases and their remedies at the level of the individual patient (8).

If we look at public health legislations, though there are several legislative tools in the country it does not have any composite public health act covering the entire country and defining public health. Tamil Nadu has a public health act (10), which has defined public health as:

“Public Health is the science and the art of preventing disease, prolonging life and promoting physical health and efficiency through organized state effort, by the sanitation of the environment, the control of infections, the education of the individual in principles of personal hygiene, the organization of medical and nursing service and the early diagnosis and preventive treatment of disease and the development of the social machinery which will ensure to every individual a standard of living adequate for the maintenance of health : It is the organizing of these benefits in such a fashion as to enable every citizen to realize his birthright of health and longevity”.

The accepted definition in the United States, by the Institute of Medicine, is that "the mission of public health is to fulfill society's interests in assuring conditions in which people can be healthy"

while the accepted definition in the United Kingdom is: "the art and science of preventing disease, promoting health, and prolonging life through the organized efforts of society" (11).

In the paper by WHO, Regional Office for South East Asia (12) entitled "Profiling Public Health Workforce in Countries of the South-East Asia Region" the following definition of Public Health has been provided. "**Public health** can be defined as "the collective action for sustained population wide improvement in health". Its mission is to improve the health of populations and reduce health inequalities. This encompasses systematic efforts to promote physical and mental health and to prevent disease, injury and disability. This task has been made increasingly complex by developments such as globalization, scientific and technological advances, and changing demographics. Both globally and regionally, this has led to a serious examination of the public health workforce and on ways to ensure that it is prepared to address the many challenges it faces".

According to the Public Health Foundation of India, "Public health has often been defined as a science dealing with the determinants and defence of health at the population level, while clinical medicine deals with multiple maladies and their remedies at the level of an individual patient. Public health aims to understand and influence the social, cultural and economic determinants of health as well as to study and structure health systems as efficient channels for health services delivery. Public health is thus a discipline built on the academic tradition of inquiry involving research, teaching and professional practice to prevent disease and promote health in populations" (13).

Suggested definition:

Conceptual part:

Public health seeks to reduce community's exposure to disease / risk factors to disease / adverse health event primarily through a range of cost-effective health promotive and preventive personal health services and primary health care services aimed at prevention of disease transmission and reduction of burden of disease/ adverse health event.

Operative part:

The above shall involve the community and be applied to the community as a whole at an affordable cost through organized community efforts for sanitation (accessibility to safe water and maintaining safe water supply, use of sanitary toilets, safe disposal of solid and liquid waste, avoidance of public nuisance), appropriate food hygiene, reduction in vector population, education for personal hygiene including health promotive and preventive measures, maintenance of hygiene and cleanliness of market places, slaughter houses and its regulations; crematoria and burial ground, avoidance of environmental degradation and participating in broader public health security measures in the context of the state duly covered through proper public health legislation.

The Honorable Supreme Court of India has, in several judgments, exhorted the Government of India to accord legal recognition to the health rights as vital component of the fundamental right to life; and the National Human Rights Commission has also directed the Government of India to enact a health law. Constitution of India in its Directive Principles of State Policy clearly stated that "It would be the duty of the state to raise the level of nutrition and the standard of living and to improve public health". International covenant on economic, social and cultural rights adopted by the United Nations General Assembly on December 1966 and in force from January 1976 has clearly stated (in Article 12) the specific rights of the people to health specifically "highest attainable standard of physical and mental health". The proposed draft National Health Bill 2009 (14) of GOI (under discussion) shall provide for protection and fulfillment of rights in relation to health and well being, health equity and justice, including those related to all the underlying determinants of health as well as health care; and for achieving the goal of health for all; and for matters connected therewith or incidental thereto.

To deliver public health a large work force is necessary to cover diverse areas of public health activities like

- Disease outbreaks;
- Public health emergencies;
- Health establishments and all the facilities providing health services;
- Health nuisances and bio-medical waste;
- Availability and accessibility of safe drinking water;
- Sanitation and environmental hygiene, including waste management for every kind of waste;
- Hygiene and safety in places and situations of public health importance including fairs, festivals, cinema, theatres, circuses, markets, shopping places, malls, lodging houses, burial and burning grounds, slaughter houses;
- Environmental disasters, environmental safety,
- Occupational safety and industrial hygiene;
- Health Impact Assessment (HIA) of all new development projects;
- Protection from and abatement of hazardous and injurious substances and activities or any other health hazards;
- Lifestyle related diseases; mental illnesses, widely prevalent diseases; public health related factors like use of tobacco, alcoholism and other substance abuse, and consumption of unhealthy foods; and promotion of healthy lifestyles like breast feeding, health seeking behavior, balanced diet, regular exercising, food and water safety, including with regard to their packaging, labeling, advertising and sale and consumer protection, including regulating advertising and taxation and excise polices that have impact on these;
- Road and transport safety, accident injuries/ trauma care;
- Special public health measures for vulnerable or marginalized individuals and groups of population; and
- Any other public health measures towards ensuring health and well being of all, including physical, emotional and mental health.

Public health in its present form is thus a combination of several disciplines viz. epidemiology, bio-statistics, laboratory sciences, social sciences, demography etc and requires diverse skills like epidemiological investigations, surveillance and response, evaluation etc and several categories of professionals are involved in the delivery of public health.

Therefore it is very pertinent that we have a proper framework of the public health workforce, their classifications and standards, their career pathways and progression to maintain a good quality of public health workforce. This is central to effective delivery of public health services. However, it is a very complex exercise to bring the entire public health workforce under a singular responsibility and under one banner.

PUBLIC HEALTH WORKFORCE

Human resources for health are classified into those providing care for individuals and those providing non-personal health services. Public health workforce is perhaps best understood when it means to cover human resources providing non-personal health services. However there is considerable overlap in the activities of the two main human resource categories. In many countries including India some clinical (personal health) services of public health significance are the responsibility of the public health workforce. A clear-cut distinction between public health and clinical services is not entirely realistic or practical (1).

Work force for health encompasses the stock of all individuals engaged primarily in the improvement of the health of populations. The public health workforce includes those primarily involved in protecting and promoting the health of whole or specific populations (as distinct from activities directed to the care of individuals) (15).

GLOBAL TRENDS VIS-À-VIS PUBLIC HEALTH WORKFORCE

Different setting in functioning of the public health workforce

All countries have a public health workforce, albeit of differing degrees of effectiveness and they follow different organizational patterns (16). In most of the countries which includes India, the public sector – usually ministries and departments of health, education and local self governments are primarily responsible for the public health workforce, including its training, performance and quality assurance. In some countries, significant public health activities are provided by the private sector and nongovernmental agencies, often under contract to ministries of health or donor agencies; this increases the need for coordination among all providers of public health services.

Magnitude of the workforce

Global health workforce is conservatively estimated to be just over 59 million workers. Health service providers account for 67% of all health workers globally, though only 57% in the Region of the Americas. It is interesting to note that health management and support workers slightly outnumber health service providers in high income countries, but in low and middle income settings health service providers typically constitute over 70% of the total health workforce. Ratio of nurses to doctors is very often referred to among health care providers. The number of nurses per doctor for a typical country is highest in the WHO African Region, partly because of the very low number of doctors per 1000 population in that region. The ratio is lowest in the Western Pacific Region. There is also considerable heterogeneity among countries in the world (17). However it is to be noted that the exact numbers and mix necessary for a health system to run efficiently and effectively remains unclear (18-22).

People who help the health system to function but do not provide health services directly to the population are often forgotten in discussions about the health workforce. These individuals perform a variety of jobs, such as distributing medicines, maintaining essential buildings and equipment, and planning and setting directions for the system as a whole. Health management and support workers provide an invisible backbone for health systems; if they are not present in sufficient numbers and with appropriate skills, the system cannot function.

Uneven distribution between countries

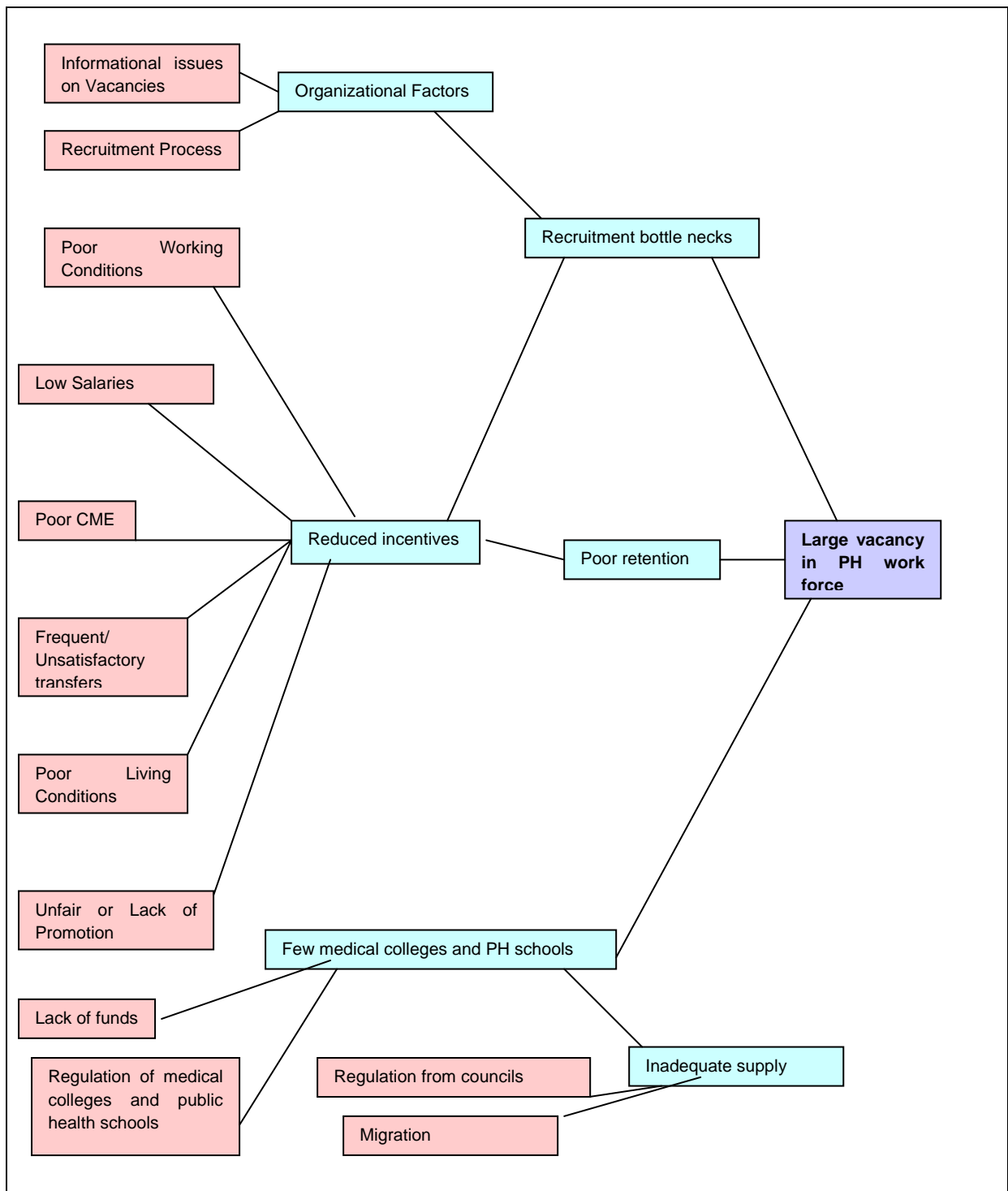
Health workers are distributed unevenly across the globe (23). Countries with the lowest relative need have the highest numbers of health workers, while those with the greatest burden of disease do with a much smaller health workforce. Their numbers remain woefully insufficient to meet health needs, particularly in the developing countries.

Information on age profiles, skill mix, sources of income, geographical distribution, and other relevant information necessary for policy development is grossly inadequate and often inaccurate resulting in difficulty to develop evidence based strategies to resolve the health workforce crisis.

Poor retention of Public Health Workforce

Poor retention of public health workforce is a problem in most of the developing countries. As a result large vacancies exist. Possible reasons for the poor retention of the workforce are elucidated in the figure below.

Figure-1 Processes in understanding retention of public health workforce



Uneven spread within countries

Within regions and countries, access to health workers is also unequal. Viet Nam averages just over one health service provider per 1000 people, but the range is wide. 37 of Viet Nam’s 61 provinces fall below this national average, while some province have around four health service providers per 1000 (24). Similar variations exist in other countries (25).

Health worker density is higher in urban areas globally (17).

Health workforce crisis

WHO estimates a shortage of 4.3 million doctors, nurses, midwives and others. Doctors, nurses and midwives alone are estimated at 2.35 million globally as given in the table below.

Table-1: Estimated critical shortages of doctors, nurses, midwives by WHO region

WHO Region	No of countries		In countries with shortage		
	Total	With shortages	Total	Estimated shortage	Percentage increase required
Africa	46	36	590198	317992	139
Americas	35	5	93603	37886	40
SE Asia	11	6	2332054	1164001	50
Europe	52	0	NA	NA	NA
Eastern Mediterranean	21	7	312613	306031	98
Western pacific	27	3	27260	32560	119
World	192	57	3355728	2358470	70

Data source: World Health Organization. *Global Atlas of the Health Workforce* (<http://www.who.int/globalatlas/default.asp>, accessed 19 January 2006)

PUBLIC HEALTH WORKFORCE IN INDIA

EVOLUTION OF THE PUBLIC HEALTH WORKFORCE IN INDIA

Pre 1920

- The first real development of modern public health in India took place in 1859 when the administration of India was taken over from the East India Company by the Crown and when Royal Commission was appointed by the then British Government to look into the causes of high morbidity and mortality among both army and civil populations. The Royal commission reported in 1863 and it recommended appointment of a Sanitary Commission of five persons in Bengal, Bombay and Madras. The sanitary commissions in Bengal and Madras advised for the immediate formation of public health services. However their proposals were laid aside for many years. In 1869 the commissions were virtually abolished only the medical official remaining who was styled 'the Sanitary Commissioner'.
- In 1885 the local self government act was passed and local bodies came into existence. In 1888 Govt. of India directed that public health shall be looked after by the local bodies but no local public health staff was created for the same.
- There was perhaps not much progress in sanitary/public health administration until the advent of plague in 1896 in Bombay. As a result of the plague commission a separate public health commissioner was appointed to GOI. In 1904 it was agreed that the Sanitary Commissioner should be directly under the Government and not under the Surgeon General and should communicate his views directly to the Government and not through the Medical Department. At that time GOI had full control over provincial Government for public health matter.
- In 1912 a new Department was created in GOI to deal with Health and Education. 1912 GOI decided to help local bodies with grants and also sanctioned appointment of deputy sanitary commissioners and health officers. Extra staff was provided to each of the province both for extension of general and provincial general and sanitary staff and large grants were provided

to the local governments. GOI stated that while the general direction of a policy of public health must remain with GOI detailed control and execution should be left to local governments. This was the position till 1919. During 1920-21 Municipality and Local bodies Acts containing legal provision for advancement of public Health was passed in several provinces (26) and public health workforce were mainly midwives, nurses, vaccinators, sanitary inspectors and public health physician and some engineers.

- The task was ascertaining local sanitary conditions and improving them; vital registration; monitoring disease trends; providing technical advice on disease control; and carrying out vaccination programs. They were expected to detect outbreaks early, trace them to their source and extinguish them quickly. Municipal governments hired their own public health staff, consisting of medical doctors, and “a small army” of supervisors and sanitary inspectors to enforce sanitary regulations.
- In 1919 the Reform Act entirely changed the relationship. Public Health became transferred provincial subject. GOI gave up all right of interference or direction in provincial public health matter except quarantine, pilgrim traffic, international health etc. Each province was left to develop its own public health infrastructure. There has been little interaction and consultation between the provinces and GOI since 1919 and their loss of co-ordination affected public health in India.
- Public health was the responsibility of District board under Local Self Government Department and sanitary inspectors employed by district boards were responsible to deliver public health. In the absence of a duly qualified District health officer, civil surgeon was responsible for vaccination, control of vaccination staff, taking charge of the operations during epidemics, deputing epidemic doctors and he was also the advisor to the Chairman of the district Board in matters of public health apart from being the head of the medical administration with the support of Assistant Surgeons, and Sub Assistant Surgeons in hospitals and rural health units. Though he used to perform many of the functions of District Health officers he was not so *de jure* and had no legal status as such. Though district board was responsible for public health civil surgeon was not under the control of board.
- For the municipalities the Government of India in 1912 sanctioned the scheme for reorganization of the sanitary services in India through 50% grant towards the salary of Municipal Health Officers who were fully qualified .GOI expressed hope that the local government would be able to provide assistance to such sub-ordinate staff.

Pre independence Public health work force in India

- MCH : ANM, Midwives, nurses, LHV, trained *dai*
- Sanitation: Sanitary assistant, sanitary inspector
- Disease prevention and control: Vaccinators, Sanitary inspectors, sanitary assistant, Health assistant, leprosy workers, Malaria inspectors, TB home visitors, Laboratory technicians, vaccination inspectors and sub-inspectors, BCG technician, malaria surveyor, malaria supervisor
- Disease prevention and control: Public health physicians: Health officer, Assistant Health officer
- Physicians : both public health and clinical responsibilities
- Sanitary engineers: Sanitation and water supply
- Public health physicians in medical colleges teaching Hygiene

1920- 1947

The first step towards creation of a rural public health organization was taken in 1918 by requiring the district boards to appoint qualified District Health officer and subordinate staff under section 91, Local Self Government Act (27). It established the nucleus public health organization in rural areas to be placed in charge of respective district health officers. Areas to be served by such public health unit will be a thana (also called public health circles). Staff proposed was an Assistant Health Officer or sanitary inspector, one sanitary assistant –also called health assistant and one medicine carrier and contingencies. When sanitary inspectors are in charge of this rural public health units they should not be designated as Assistant Health Officer as that would require a medical qualification (28).

In the pre-independence era, India's health services had two distinct components:

- ❖ Interventions aimed at preventing health hazards, water supply and waste disposal, sanitation including environmental measures, monitoring water quality and preventing of adulteration in food and drugs etc were mostly done by non-physician health professionals like sanitary inspectors, sanitary engineers, food inspectors etc
- ❖ Medical care services including disease prevention and control were done by physicians and few public health physicians and para-medicals like Nurses, midwives, vaccinators, malaria inspectors etc

1947-1973/77

Following independence reorganization of the health services structure took place in the light of the Bhole Committee recommendations. Ministries of health and Departments of health were established at the center and states respectively. The posts of Director General of Indian Medical Services and of Public Health Commissioner were integrated into in the post of Director General of Health services and who acted as principal adviser to the Union Government for both medical and public health matters. This example was followed in many provinces where the posts of Surgeon General, the Director of Public Health and Inspector General of Hospitals were integrated into the post of Director of Public health services.

In the post independence period following the merger of the two posts as indicated above the responsibility went to a medical person integrating both the services. However this changeover was not matched immediately by immediate change in medical curriculum, which was heavily biased in favour of clinical medicine and a small component of hygiene in medical curriculum was unable to provide appropriate leadership and expertise in handling sanitation related affairs. Though environmental sanitation was one of the eight core primary health care functions it did not receive the needed attention because the medical curriculum was heavily biased in favour of clinical medicine. The same will be evident from the fact that only following the recommendations of Medical Education Conference in 1955, departments of Preventive and Social Medicine started getting established in Medical colleges all over the country. Hygiene was being taught even in top medical colleges till mid sixties. Medical colleges have the primary function of imparting undergraduate medical education (28 a).

The Medical and Public health Department was created in most states as the Secretariat Department of the Government in charge of medical and public health administration of the state as per detailed functions allotted to the Department under article 66(3) of the constitution of India.

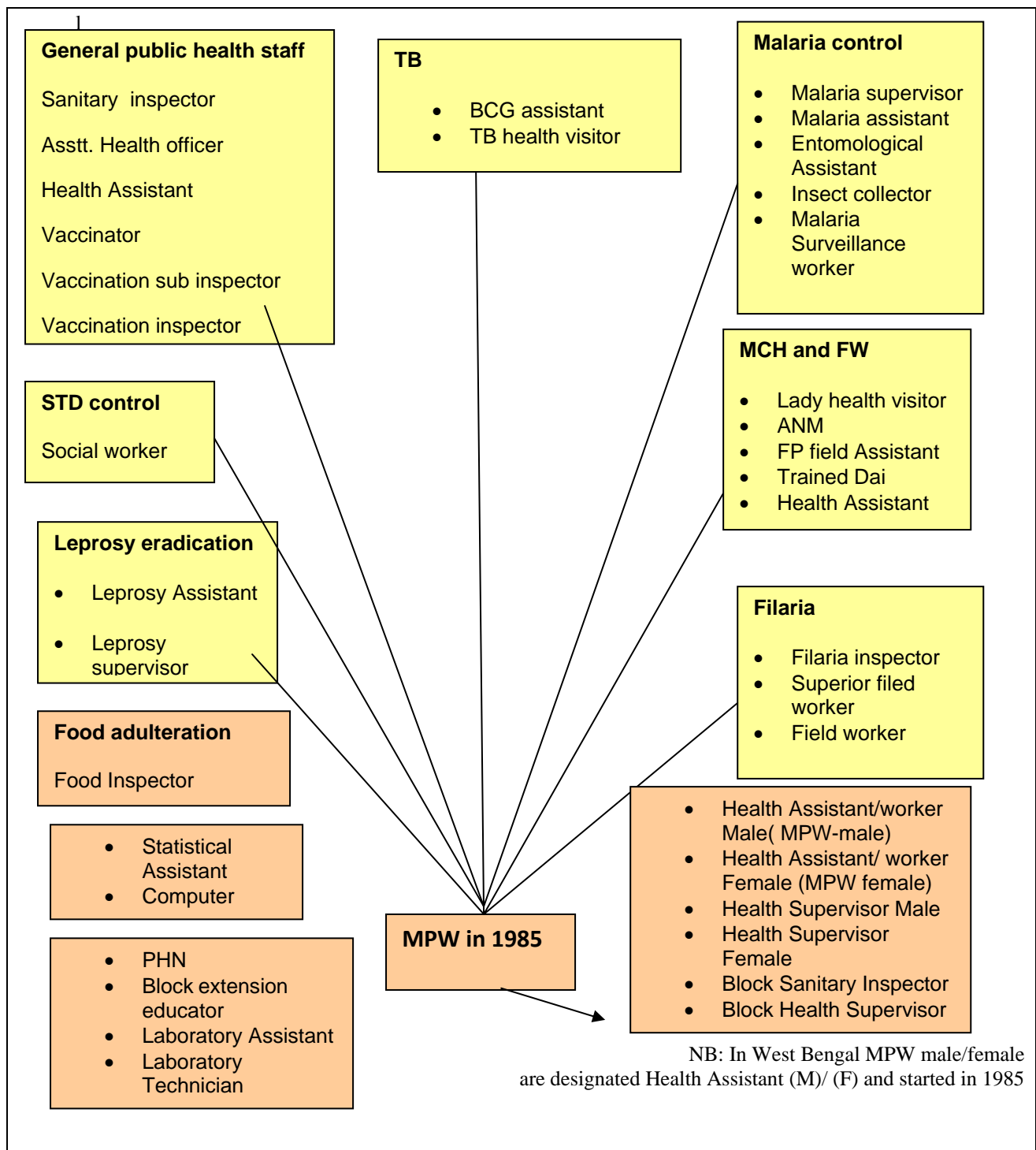
The Directorate of Health Services, were created immediately after independence combining in itself the former three directorates of Medicine, public health and public health engineering through amalgamation of the functions of the previous posts of the Surgeon general, Bengal and Director of Public Health. The Director of Health Services was the principal adviser to the Government in all health matters (26).

Following the Bhore Committee (30) recommendations Government established health centers for delivering integrated health care services. Medical officer in charge of the health center became the overall leader of the delivery of integrated health services. Typically at the block level PHC will have sanitary inspector, Malaria surveyor, vaccinator, BCG technician, leprosy assistant, malaria supervisor, malaria field assistant, Malaria assistant, medical assistant, Malaria inspector many of whom were inducted into the primary health care services from district board. All these staff were either from erstwhile district board and those created under various programs at different point of time. More categories of staff were subsequently added during the successive plan period like malaria surveillance worker, Basic health worker, Family planning field assistant, Block extension educators, non-medical assistants (leprosy), field workers, superior field workers and others like medical social worker under various disease control programs. Absolutely at the grass root level AWWs came into existence under ICDS and Village health guide the department of health.

1977-till date

With the introduction of Multipurpose health worker's scheme following Kartar Singh's committee report in 1973 (different states implemented at different point of time from 1973 to 1985) most of the categories of staff under various uni-purpose programs were re-designated for multipurpose work as shown below in figure below.

Figure-2 showing Transition to MPW Scheme in 1973



Report of the Study Group on Medical Education and Support Manpower (Shrivastava Committee), 1975 recommended the use of trained part-time health auxiliaries having cultural kinship with the community as the first link in the health service chain. It also recommended to establish Medical and Health Education Commission for coordination and maintenance of standards in medical and health education.

Thereafter In 1977, village based health auxiliaries called community health volunteers (CHVs) to further decentralize delivery of health care came into existence. The CHVs were part time workers selected from the villages and trained for 3 months in simple preventive and curative skills –both

allopathic and indigenous. They were supervised by MPWs. The Community Health worker (CHW) was renamed the Community Health Volunteer in July 1979 and re-designated as the Health Guide in June 1981.

The National Health policy 1983 indicated the need to formulate, separately, a National Medical and Health Education Policy.

Medical Education Review Committee, 1983 recommended strict adherence to regulations of MCI and establishment of Health and Manpower Development and Research Cells in all States and UTs. It also recommended establishment of an autonomous Medical and Health Education Commission at the Centre and to establish Universities of Health Sciences. It also suggested to evolve a National Health and Manpower Policy within the parameters of the National Medical and Health Education Policy.

Report of the Expert Committee on Health Manpower Planning, Production and Management (Bajaj Committee) 1987 (5) recommended formulation of a National Policy on Education in Health Sciences (Medical and Health Education Policy). It recommended that district Institutes of Education and Training develop integrated training modules for various categories of allied health professionals.

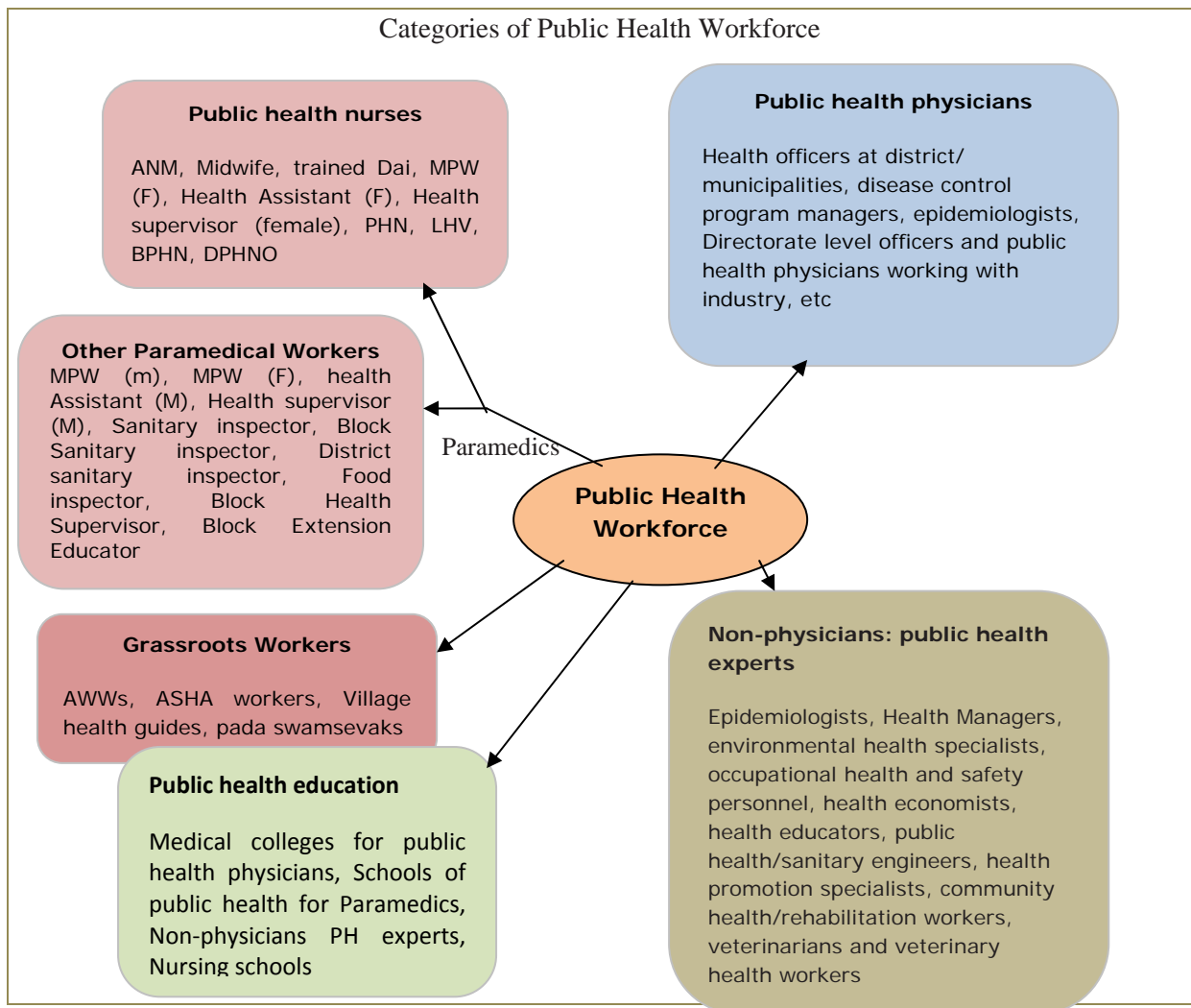
The High Power Committee on Nursing & Nursing Profession 1989 provided recommendations for a holistic approach to the development of nursing and nursing profession.

The National Commission on Macroeconomics & Health (NCMH), 2005 (6) identifies human resources as one of the key drives of the health system. The Commission has noted the shortage of human resources for health of all categories, lack of teaching faculty, low quality of instruction and skill acquisition, neglect of community medicine.

CATEGORIES OF PUBLIC HEALTH WORKFORCE IN INDIA

The delivery of Public Health is labour intensive. The Public Health Workforce is multi-skilled and is characterized by its diversity and includes people from many occupations like medicine, nursing, veterinary sciences, environmental studies, etc. They work that they may do is given in the figure below.

Figure:3



In India the activities covered under Public Health can be broadly classified under the following heads:

1. Environmental Health
 - i. Sanitation (solid and liquid waste disposal, hazardous waste disposal)
 - ii. Safe water supply
 - iii. Food safety
 - iv. Public Health Security – environment related issues
2. Disease Prevention and Control for Communicable and Non-Communicable Diseases
 - i. Vaccination
 - ii. Immunization
 - iii. Early diagnosis and management
 - iv. Prevention of epidemics
 - v. Health Promotion
 - vi. Food hygiene
3. Public Health Security including global issues

4. Public Health Education

Increasing the numbers of physicians in government service and particularly for the staffing of rural and lower level health facilities is a multidimensional problem. One useful way to look at it is in terms of three related processes – production of physicians and public health workforce, recruitment to government service, and retention (31). Reasons for poor retention are several. Some important factors contributing to poor retention has been explained in Figure-1.

INDIA'S HEALTH WORKFORCE: NUMBERS, COMPOSITION, DISTRIBUTION

Current status

Current status of Health personnel in the country as available with CBHI GOI is given in Appendix 1.1 to 1.5. and 1.9

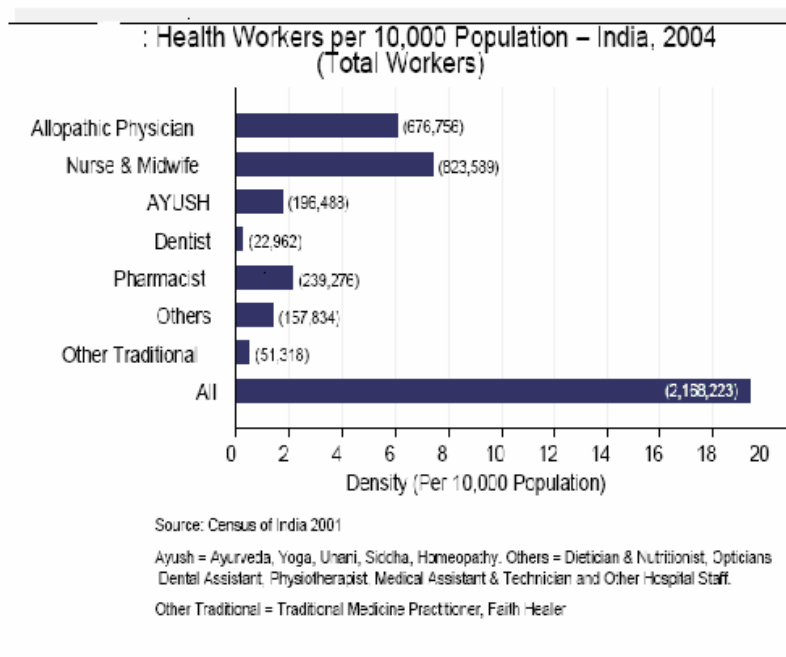
Information on India's diverse health work force is surprisingly fragmented and unreliable, despite recent efforts at quantification (32).

Available information on health workforce in India has severe limitations because it lacks comprehensiveness and reliability. State professional councils like medical councils, nursing councils, dental councils etc report on the numbers registered with them with regard to their professional groups are severely handicapped in its inaccuracy as a result of non-adjustment of those professionals leaving due to death, migration and/or retirement or double counting of workers due to their being registered in more than one state. Further, all state councils do not follow the same registering procedure, which reduces comparability. Certain categories of health workers, such as physiotherapists, medical technicians and faith healers, are not recorded in government statistics, making it difficult to estimate the overall size and composition of the health workforce (29).

Census is perhaps the preferred source for overall health workforce estimates.

The Census estimates show that there are 2,168,223 health workers in India in 2005, which translates into a density of approximately 20 health workers per 10,000 population. Among the different categories of health workers (33) shown in Figure 4, nurses and midwives have the largest share in the health workforce, followed by allopathic physicians, AYUSH physicians and pharmacists

Figure-4 Health workers per 10.000 population-India,2004



There are approximately 1.2 nurses and midwives per allopathic physician. If only nurses are considered, then there are approximately 0.81 nurses per allopathic physician. Having fewer nurses than physicians is widely seen internationally as a significant imbalance in human resource skill mix. In comparison, advanced countries such as USA and UK have nurse-physician ratios of 3 and 5 respectively (34) indicating existence of large shortages of manpower.

For breakdowns by public and private sector, only the NSSO data is available for national and state level estimation at this time.

The obvious inconsistencies such as those regarding physician training and qualification are unacceptable. India should be able to count its medical doctors as well as other major categories of health workers in a timely, accurate, and reliable way (29).

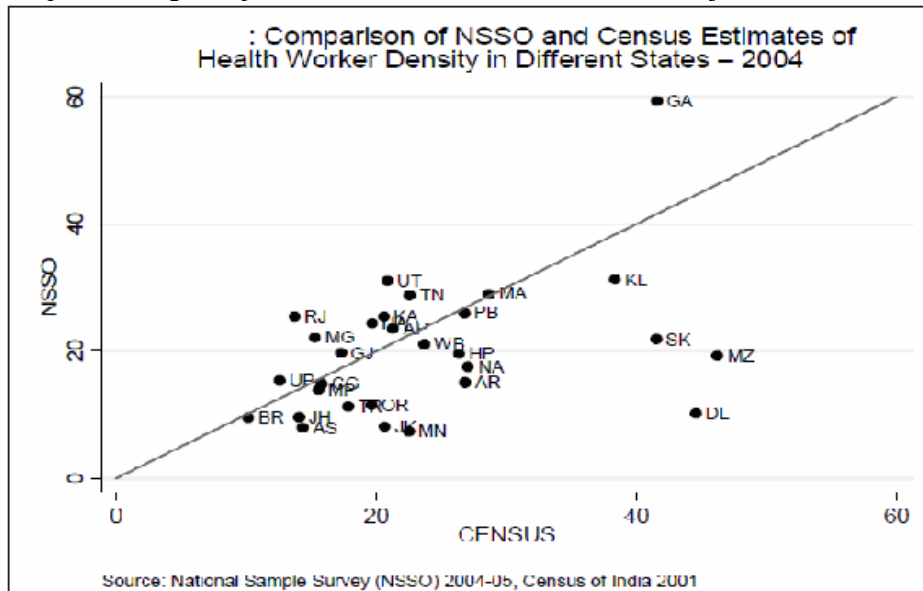
Magnitude of the shortage

The estimated shortage of health workers is considered around 20% (considering WHO standard of 25 per/10,000) (32 a) in India which could be around 0.4-0.6 million. The shortage has been compounded by wide difference amongst states with regard to manpower production, density of health work force, rural urban divided among health workforce

Mal-distribution of health workforce

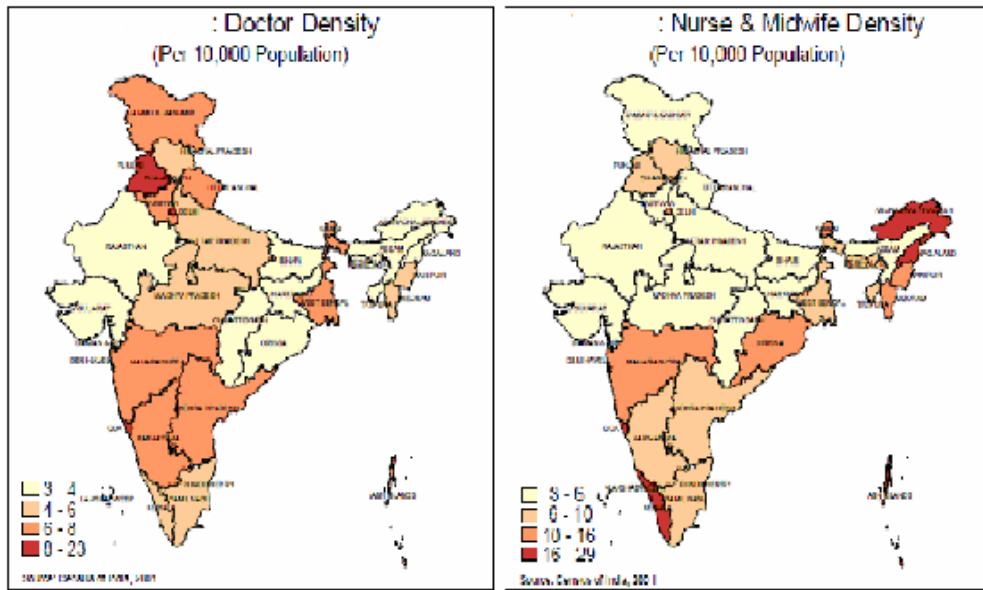
Density of the health workforce (per 10,000 population) across the states in India, ranges from 23.17 in Chandigarh to 2.51 in Meghalaya (33). Comparison of health workforce from census data (census 2001) and NSSO data 2004 for some of the states is given in the graph below

Graph showing comparative data of health work force in major states (Census 2001 and NSSO-2004).



States like Goa and Kerala have higher doctor densities up to three times as high as states like Orissa and Chhattisgarh. For nurse and midwives, these states have densities up to six times as much as the low density states like Bihar and Uttar Pradesh. In general, the north-central states have low densities, which also include some of the poorest states in India. (33). See also the Map below.

Map showing the density of doctors and nurses and midwife in states



Medical Manpower production

No of medical colleges per 5 million population varies between 0.5 in Bihar to as high as 3.4 in Karnataka if we leave aside smaller states/UTs like Goa, Pondicherry, Tripura, Sikkim etc. Please refer to Table -3 for details.

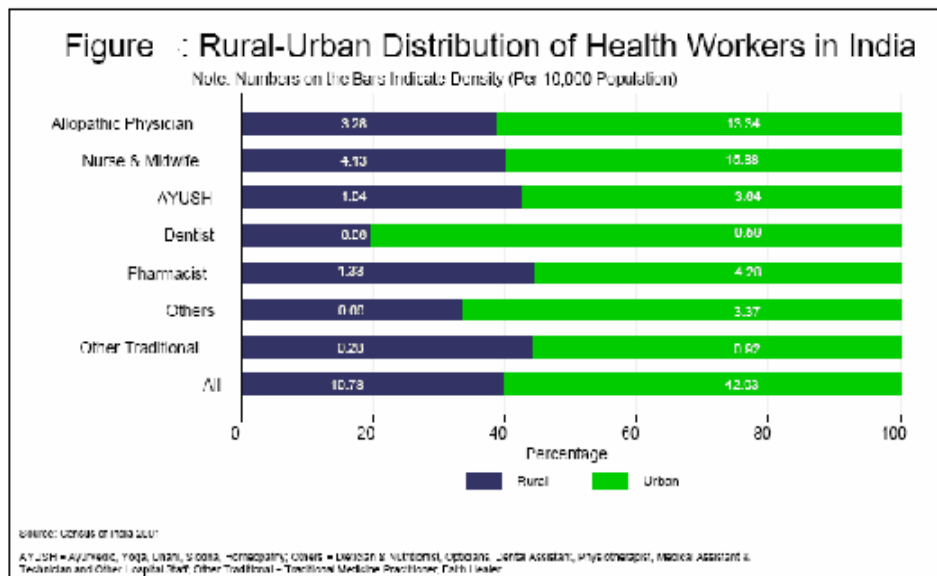
TABLE –3: STATE WISE NO OF MEDICAL COLLEGES IN INDIASource: Medical Council of India website : www.mciindia.org

State	Population	No. of Medical colleges	Medical college/ 5 million population
Kerala	32	20	3.1
Karnataka	53	39	3.7
Uttaranchal	8.5	4	2.4
Jharkhand	27	3	0.6
UP	166	19	0.6
HP	6	2	1.7
Tripura	3	2	3.4
J&K	10	4	2.0
Tamilnadu	62	30	2.4
Haryana	21	3	0.7
Sikkim	0.5	1	10.0
Gujarat	50	13	1.3
Rajasthan	56	10	0.9
Goa	1	1	5.0
Punjab	24	8	1.7
Delhi	14	6	2.1
Pondicherry	1	8	40.0
Chhatishgarh	21	3	0.7
Orissa	37	6	0.8
Chandigarh	0.9	1	5.6
Mizoram	0.9	0	0.0
Bihar	83	9	0.5
Meghalaya	2	0	0.0
AP	76	33	2.2
Manipur	2	1	2.5
Assam	26	3	0.6
Maharashtra	97	41	2.1
MP	60	9	0.8
TOTAL		289	

Rural urban divide

The distribution of health workers is heavily skewed towards urban areas with typically 60 percent of the health workers, including most categories, having urban residence. Because more people live in rural than in urban areas, health worker to population ratios are even more skewed. The density of allopathic physicians in urban areas is four times that of rural and for nurses and midwives it is three times that of rural areas. The density of allopathic physicians in urban areas is four times that of rural and for nurses and midwives it is three times that of rural areas (33).

Figure –5 Rural urban distribution of health workers in India



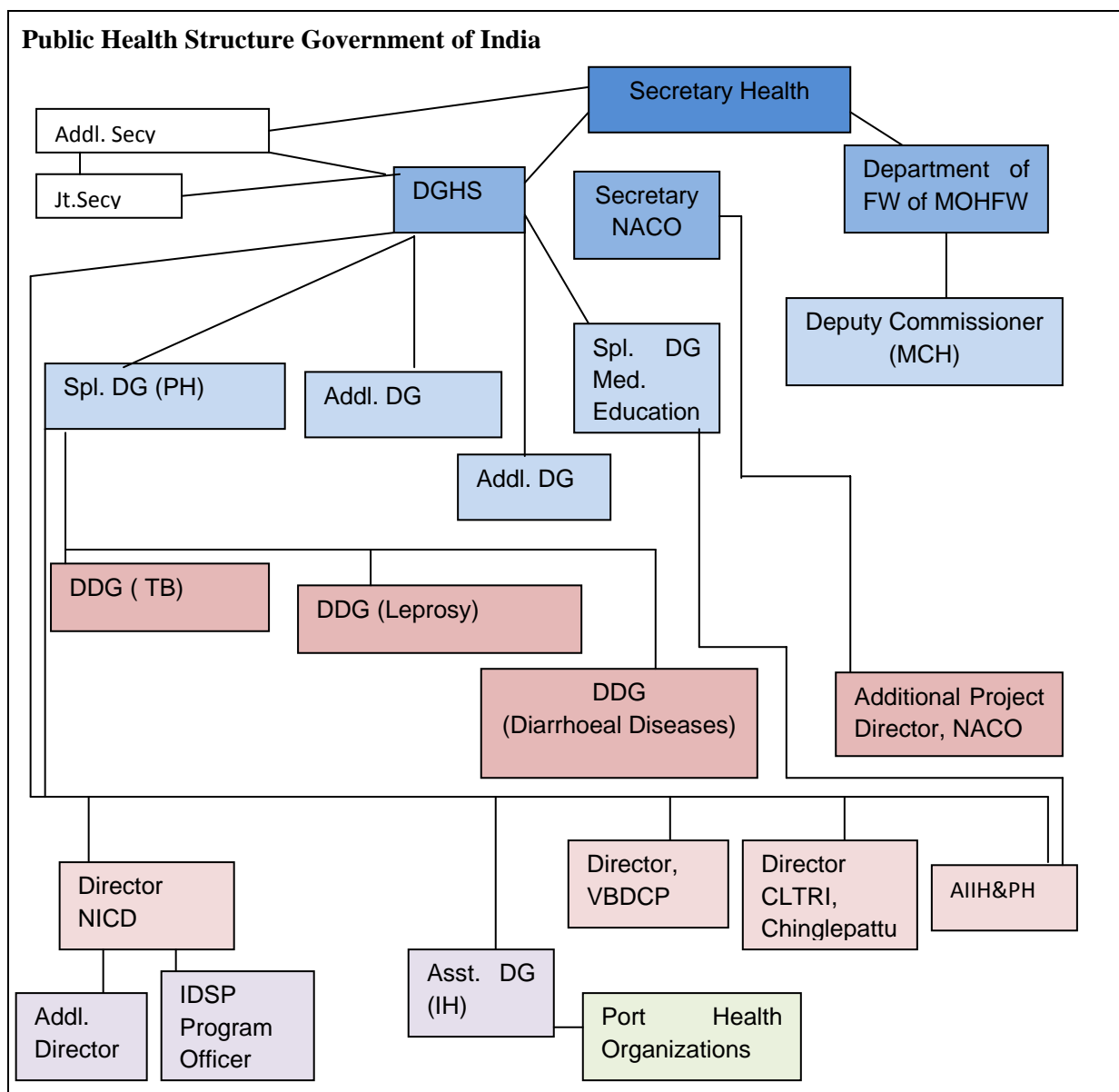
PRESENT STATUS AND CAREER PROGRESSIONS OF PUBLIC HEALTH WORKFORCE IN INDIA

This chapter describes the Central Government Public health organizational set-up, Public Health sub cadre and presents three case studies of states which have a Public Health Cadres. These are Tamil Nadu, Maharashtra and West Bengal.

CENTRAL HEALTH SERVICE (CHS)

The organograms of the Department of Health and Family Welfare is given in Appendix 1.6 and the organogram of the Directorate General of Health Services is given in Appendix 1.7 and Appendix 1.8. The structure below describes the Public Health Structure specifically at the Central Government level.

Figure-6: Public Health Component, MOHFW, GOI



NB: Presently both the Special DGs belong to the respective sub cadre. However these posts are not earmarked for the sub cadre. If any one from the concerned respective cadre is there among 12 additional DGHS (who may belong to any of the 4 sub-cadres of CHS) he is usually considered. Otherwise it is stated that Special DG public health may be from any of the 4 sub-cadres (General duty, teaching sub-cadre, non-teaching sub-cadre and public health sub-cadre) irrespective of his/ her speciality.

The Directorate General of Health Services is primarily manned by officers of Central Health Services. There was no public health sub-cadre before 1982. Following restructuring in 1982 public health sub-cadre was created and thereafter 8 posts in Public health sub-cadre at the senior administrative grade was created in the ministry: Director CLTRI Chinglepattu, Director NICD, Director NMEP (Physically outside Nirman Bhavan); Deputy Commissioner (MCH) in the Department of Family Welfare, DDG (Leprosy), DDG (TB), DDG (Diarrhoeal diseases), DDG

(AIDS). These posts were through up gradation of earlier ADG level posts. ADG (PFA) has been a non-medical person outside CHS. In early 90s one more post DDG level post was created and designated Additional Director (PH) at NICD under USAID project which subsequently became a regular post under CHS. There was ADG (Assistant Director General) public health who was to cover environmental health, industrial and occupational health, epidemic diseases (for epidemic diseases and NICD/NMEP provided investigative support, etc.

Now there is no designated identified separate focal point for general public health covering environmental sanitation, industrial and occupational health at the DGHS after restructuring at the DDG level. Before restructuring DDG (P) is to look after public health and ADG (PH) is required to report to him. After restructuring DDG (P) post was given to General duty cadre and at ADG level the designated officer for general public health was converted to ADG (AIDS) in 1986 and subsequently upgraded to DDG (AIDS) which is now Additional Project Director (NACO).

Following restructuring, there was no separate identified post for public health at the Additional DGHS level though one of the officer at the Additional DG level was required to shoulder the Public health responsibility and he need tot be of public health discipline. Subsequently with creation of more number of posts at the Additional DG level all posts at that level could come from any discipline from among the joint seniority of all officers of CHS involving four sub-cadres. Recently one post of Additional DG has been upgraded to the rank of Special DGHS (Public Health).

In the Central Health Service there are 4 sub cadres and overall strength of the cadre is 4725 of which only 78 (1.65%) only belong to public health sub-cadre. Teaching cadre has 756, Non-teaching cadre has 772 and general duty cadre has 3100.

Senior Administrative Post/ Super time scale : Out of the total of 340 ,only 9 are from public health sub-cadre (2.65%) where as 77 are from teaching and 91 are from non-teaching and 163 are from general duty cadre.

Recruitment

Department of Health requests UPSC to select candidates for recruitment and UPSC advertises in news papers about the vacancy, and qualifications and experiences needed. In the general duty cadre the selection process is through written examination and those who qualify are required to appear for the interview before the final selection takes place and communicated to the Department. In case of specialists it is done through oral interview process. After the selection is communicated to the Department, following police verification with regard to the antecedents of the selected candidates and thereafter following medical fitness appointment letters are issued. The entire process takes about 18 months. In UP the recruitment is through UP State Service Commission. They only conduct oral interview. However the entire process both in CHS and UP takes about 18 months indicating that it is lengthy process (31).

In states doctors are recruited when there is a declared 'vacancy' advertised and not based on existing real shortfalls in numbers of doctors required. Due to budgetary reasons, vacancies declared are based on the filled numbers of sanctioned posts and do not necessarily match population-norm requirements.

Recruitment process

It can not be generalized with the states because of certain inherent differences. In the states posting of physicians are in their 'home state'. On the other hand, the CHS postings are mostly urban. In states

doctors or public health physicians are mostly recruited through their respective service commission. In case of urgency the Department is authorized to appoint on ad-hoc basis however that will require regularization from the service commission.

Career progression:

There is a Dynamic Assured Career Progression Scheme for CHS officers up to Senior administrative grade. This is as follows:

For GDMO: MO (Entry), after 4 years SMO, after next 5 years CMO, after next 4 years CMO (NFSG), after next 7 years Super time scale.

Specialist (Non-teaching) & PH Specialist: Specialist Grade-II Junior (Entry), after next 2 years Specialist Grade-II Senior, after next 4 years Specialist Grade I, after next 7 years Super time scale.

Specialist (Teaching): Assistant Professor (Entry), after next 2 years Associate Professor, after next 4 years Professor, after next 7 years Director Professor.

Public Health legislation and support work force.

There are a number of public health legislations. However, there is no single identified focal point who are responsible for operationalizing public health legislations. Concerned program manager is responsible but he does not have adequate personnel and other infrastructural support for its effective implementation. In fact implementation mechanism is not much effective. Punitive action through legal framework appears to be less frequent.

PUBLIC HEALTH AND MEDICAL EDUCATION

India's rich tradition of Ayurveda is 5,000 years old. But over the years, it has lost continuity of its research, quality up-gradation and did not keep pace with development of modern science. Modern medicine was introduced in India by the British; the first medical college was established in 1835 in Kolkata. Even though the modern medicine education was started in India early its controlling organ the Medical Council of India was established in 1934. It regulates colleges and its standards through the Universities in the state. Around independence from a few medical colleges, there was gradual expansion of this system but during last 20 years it has mushroomed haphazardly. Even though all medical colleges are governed by the same Council, the quality of doctors produced has variable spectrum of standards.

Traditionally, most of the Indian States and Municipalities used to appoint physicians with formal education in public health such as diploma in public health. as Medical Officer of Health (MOH) for planning and administering public health services.

Sir Joseph Bhore Committee (30) put forward for the first time, comprehensive proposals for the development of National Program of health services for the country. There was no policy consideration on health sciences education by this committee. All medical students were required to receive formal education in disease prevention and health promotion. Thus the study of

Preventive and Social Medicine, later re-christened as Community Medicine, was started in all medical colleges in India during mid 1950s. However some state governments and municipal corporations did not completely merge the public health and medical care functions, few doctors continued to study for diploma in public health, the qualification required for the post of MOH. Largely however physicians, who have acquired public health knowledge and skills while studying community medicine in their undergraduate courses, are entrusted to carry out the integrated public

health and medical care functions in India, although in practice most pay attention to the medical care function at the expense of the public health service. A few positions of public health specialist in the central and some state health services are specifically available to those who have postgraduate training in community medicine.

Observing declining standard in medical education following independence separate commission for health sciences education was recommended in 1975 by Shrivastav Committee (35) in pattern of University Grants Commission. In 1983, Ministry of Public Health & Family Welfare appointed Medical Education Review Committee. The said Committee strongly recommended establishment of Health Sciences Universities at State level. In 1987 "Health Manpower Planning, Production and Management Committee" (4) also recommended establishment of Universities for Health Sciences and reiterated that a separate Commission need to be appointed for Medical & Health Education on the lines of University Grants Commission. Later on, Professor Rais Ahmed Committee stressed the need of such Universities and opined that such Universities should have faculties of Medicine, Dentistry, Ayurveda and Unani, Homoeopathy and Allied Health Science including Pharmacy. GOI accepted the idea of having separate Commission on Health Science Education and creation of independent Health Science Universities in July 1993. By this time two such universities were established one in AP and one in Tamil Nadu. Government of India appointed Prof. Mukherjee committee in 1995 (36) to review the outcome of health sciences universities of Andhra Pradesh and Tamil Nadu. Dr. Mukherjee clearly opined that health sciences universities have contributed to upgrade quality of education and also suggested the need to enhance education in Allied Health Sciences. The committee further opined that the Health Sciences University should be able to devise, syllabi, curricula and bridge courses to fulfill their needs. All public Health Training Institutions should be affiliated to the Health Sciences Universities. Health Sciences University should also be responsible to direct, supervise and guide training for Health Services Personnel and to ensure quality and effectiveness of training.

All India Institute of Hygiene and Public Health (AIHH&PH)

The All India Institute of Hygiene and Public Health (AIHH&PH), Calcutta, was established in 1932 with the assistance of Rockefeller Foundation. AIHH&PH continues to be a leader in pursuit of its mandate for Human Resource Development in the field of Public Health.

The objectives of the Institute are to develop health manpower by providing post-graduate training facilities; to conduct research relating to various health problems and disease in the community; to provide the support services in urban (slum) and rural areas and to support and guide various programs at National level. The regular courses conducted by the Institute, and the number of students in each course is given in the table below.

Table- 2 Number of Students in 14 regular courses in AIHH&PH

Sl.No.	Name of Department	Name of Course	Duration	Previous Roll Strength	Roll Strength 09-10 onward
01	Bio-chemistry & Nutrition	Dip. Diet	1 year	20	31
02	Behavioural Sciences	Nil	Nil		
03	Epidemiology	DPHM	1 year	50	25
04	Health Education	DHE	1 year	30	46
05	Microbiology	MVSc	2 years	10	15
06	Maternity & Child Health	DMCW	2 years	30	46
07	Occupational Health	DIH	2 years	10	15
08	Preventive & Social Medicine	MD	3 years	07	11
09	Public Health Administration	DPH	2 years	60	92
10	Public Health Nursing	DPHN&A	10 months	40	62
11	Sanitary Engineering	ME	2 years	15	23
12	Statistics	DHS	1 year	05	08
	Sub Total			277	374
13	<i>Upcoming</i>	MPH	1 year		20
14	<i>Upcoming</i>	M Sc (Nutri)	2 years		20
	Total				414

Medical Council and Medical Education:

Medical Education in India is also given an important consideration from an international point of view. The Medical Council of India (MCI) controls medical Education in India. All States and all Universities or Colleges that give medical education is monitored and timely inspected by the Medical Council of India every year. They allow colleges or universities to grant MBBS, MS, MD, BDS, MDS or any Graduate or PG degree or diploma provided those colleges are strictly adhering to the standards set by the Medical Council of India.

The MBBS course is of four and a half years duration and is followed by one year of Compulsory Rotating Residential Internship. The course is taken in three stages, following a short foundation course which provides basic principles of Communication, Ethics and Problem Based Learning. The first stage is for 12 months and covers the basic sciences of Anatomy, Physiology and Biochemistry. The next stage is for 18 months and includes Pharmacology, Pathology, Microbiology and Forensic Medicine.

The last stage is for 24 months and covers Ophthalmology, Otorhinolaryngology, Community Medicine, General Medicine, Pediatrics, Surgery, Orthopedic Surgery and Obstetrics and Gynecology

Admission

To obtain a medical seat, candidates should appear for various entrance tests in All India level. An eligible candidate in the State has to be pass 12th class or equivalent with 50% marks in aggregate and pass the All India Entrance

Test such as AIIMS Delhi, AIPGE (All India Pre PG entrance), AIPMT (All India Premedical test) Delhi, AFMC, CEE (Common Entrance examination-Kerala. In the state level, one student has to get through Common Entrance Test of concerned states.

Most of the Government Medical Colleges offer admissions only to Indian students on the basis of their performance in a competitive entrance test, However, few Government Medical Colleges have some quota for NRI/Foreign students (37).

Medical Courses in India

M. B. B. S. (Bachelor of Medicine and Bachelor of Surgery):

The course duration is 5½ years (4½ years of classroom study followed by a year of rotating internship). The 4½ years of class room study is broken into 3 phases of 18 months each. Each phase of 18 months is known as Professional and is further divided into 3 semesters of 6 months each. There is a semester exam at the end of each semester and a Professional exam at the end of each professional. The third professional is devoted to monthly clinical work in the wards and departments of the hospital. In all there are 3 professional examinations, followed by practical and clinical examinations. Pass percentage required is 50 per cent.

B. H. M. S. (Bachelor of Homoeopathic Medicine & Surgery):

The course duration is 5½ years including one year of compulsory internship. The Homoeopathic Education in India is presently regulated by the National Institute of Homoeopathy.

B. A. M. S. (Bachelor of Ayurvedic Medicine and Surgery):

The course duration is 5½ years including one year of compulsory internship. The Ayurvedic Education in India is presently regulated by the Central Council of Indian Medicine (CCIM).

M.D. (Doctor of Medicine):

This is a 3year postgraduate degree program in medicine. Doctors possessing M.B.B.S. degree are eligible to for this course.

M.S. (Master of Surgery):

This is a 3year postgraduate degree program in Surgery. Doctors possessing M.B.B.S. degree are eligible to for this course.

D.M.:

D.M. is a super specialty program in medicine. The program duration varies from 2 to 3 years. Doctors possessing M.D. degree are eligible to for this course.

M.Ch.:

M.Ch is a 2 year super specialty program in surgery. The entry requirement for M.Ch course is a M.S. degree.

Reference: www.highereducationinindia.com/medical/index.html

Community Medicine or preventive medicine is taught in all the medical colleges in the undergraduate course. In some of the medical colleges Diploma in public Health and MD in preventive medicine is taught.

At present there are 289 medical colleges in the country (**Source: Medical council of India website : www.mciindia.org**)

The admission capacity in the above colleges is 31298 students per year. Though many may opine that the existing medical colleges could be considered to be sufficient to meet the medical manpower needs of the country on a per capita basis, there is perpetual shortage of doctors especially in the rural areas because of skewed distribution of Medical Colleges which are not evenly spread across various parts of the country. There is also large outflow of doctors to more developed countries. This shortfall is disproportionately impacted on the less developed and rural areas. No incentive system attempted so far, has induced medical personnel to go to such areas; and, even in the public health sector, the effort to deploy medical personnel in such under-served areas, has usually been a losing battle (5). Gap between the required manpower and available manpower in health sector in India is considered critical (38).

There has been an increasing awareness that the training of doctors is inadequate to meet the health needs and priorities of the Indian community. There is a need for an integrated, comprehensive

approach to medical education and the promotion of a holistic approach to patients. Medical education in India has to focus on public health and the preventive, health promotion and rehabilitative aspects of health care with less emphasis on a cure-oriented approach. There has to be a restructuring of the delivery of health care services.

Distribution of Medical colleges widely varies in the country as it is clear from the following table. Map showing distribution of medical colleges is appended as Appendix 1.9.

There are no super specialty courses in public health in the medical colleges among 649 DM/MCH seats. Of the 9303 Post graduate degree seats in Medical colleges/ institutes 368 (3.95%) are for PSM and community health administration. For various diploma courses numbering 3466 in the country 161 (4.65%) are for public health.

In India, now every year about 560 physicians (degree /diploma together) complete postgraduate training in community medicine. Most of them work as community medicine teachers in medical colleges and a few of them get absorbed in medical research institutions and a large part particularly the diploma ones join health services and a few join international organizations . It is interesting to note that international organizations such as WHO, UNICEF, World Bank, UNFPA, and USAID etc. prefer to employ Community Medicine Specialists but our own central and state health services have not created sufficient job opportunities for them.

Other Academic Programs in Public Health:

In addition several other courses are also conducted in different institutes and medical colleges. Beside medical colleges, there are others like The Indian Council of Medical Research (NIN, NIOH & NIE), The National Institute of Communicable Diseases (NICD), The National Institute of Health and Family Welfare (NIHFW), The Achutha Menon Centre for Health Sciences, Thiruvananthapuram, The Indian Institute of Health Management and Research (IIHMR) Jaipur, Tata Institute of Social Sciences, Mumbai, The Institute of Health Systems (IHS), Hyderabad, The Gandhi gram Institute of Rural Health and Family Welfare Trust, Manipal Academy of Health Education, National Environmental Engineering Research Institute, Nagpur and Lions Aravind Institute of Community Ophthalmology, Madurai are some of the institutes across the country providing education and training in public health-related areas.

Public Health Foundation of India:

PHFI is working towards building public health capacity by establishing 6-8 new institutes of public health delivering teaching, training and research programs, assisting the growth of existing institutions, fostering the growth of a strong national research and advocacy platform and facilitating the accreditation of public health education in India. Two of PHFI institutes at Gandhinagar and Hyderabad have already begun teaching sessions in public health management. PHFI launched the **Future Faculty Programme (FFP)** in 2006, for candidates eager to develop an academic career in public health. In the last three years, over 40 selected candidates were given fellowships for Masters level courses in Public Health at 30 eminent schools of public health in the USA, the UK, Europe, Canada and Australia.

Future Faculty Programme, 2009 are planning to start:

Masters level courses in Public Health (1 – 2 years)

Doctor of Philosophy (3 – 4 years)

Post Doctoral Research fellowships (1 – 2 years)

Public health experts and non-physicians and para-medicals

Apart from public health physicians, human resources from the allied non-medical disciplines are also needed i.e., statisticians, demographers, environmentalist, engineers, biologist, nutritionists, sociologists, economists, nurses, laboratory technicians, mass media and extension educators, vector biologist, public health nurses, food inspectors, drug inspectors and industry inspectors to provide preventive health care, enforce public health laws and monitor public health services.

Currently, health personnel working at the primary health care level get trained in public health during their formal pre-service courses for doctors, health supervisors, nurses, and health workers. However, public health content in allied non-medical disciplines rather remains quite low.

Major issues are: No uniform cadre and career structure exists, no council for maintaining some uniformity in standard for public health delivery and to facilitate developing evidence based strategic interventions

The Indian Nursing Council is an Autonomous Body under the Government of India, Ministry of Health & Family Welfare was constituted by the Central Government under section 3(1) of the Indian Nursing Council Act, 1947 of parliament in order to establish a uniform standard of training for nurses, Midwives, auxiliary nurse midwives and health visitors. As on April 2009 in the country there are 491 ANM training institutions, for GNM , B.Sc (N), M.Sc. (N), and PBBSsc. (N) the numbers are 1817, 1071, 170, and 141 respectively.

Nursing man-power:

- Total number trained nursing man power in India: 8.6 lakhs
- No. trained annually : 30,000
- Number in active service at any point of time is only 45%.

(source:www.unctadindia.org/MeetingOnIdentifyingIndiasCoreConcerns-28-29_Nov2005_SheilaSeda.pps)(39)

Major issues are:

- Inadequate manpower resulting in disproportionate nurse/patient ratio
- Mal-distribution of nursing institutions with reference to geographical and rural –urban divide
- Inadequate infrastructure at work place
- Poor living conditions
- Limited scope for career development. At least 3 minimum promotions need to be assured
- No opportunity for specialization. There are also no specialized nursing disciplines in India like nurse anaesthetists or nurse practitioners and no formal system exists for the training of nurses and midwives to keep them abreast with the latest developments in the field. (32 a)
- Absence of uniform employment procedures across the country

- Poor quality of education The nursing education has also witnessed shortfalls in the quality of education due to inadequate infrastructure, insufficient budgets, non-adherence to student-teacher norms, lack of commitment and accountability in educators for clinical supervision and guidance and insufficient hands-on training for students. In 2004, 61.2% of the 635 nursing schools and 165 nursing colleges were found unsuitable for teaching. De-recognition by the Indian Nursing Council has no impact as they continue to function with the concurrence of state nursing councils (6)

BROAD CONCERNS:

- Health Science Universities have been established only in few states.
- Neither health man power policy nor Health Manpower Cells are available at the center and state. Currently there is no clear system of projecting the future supply of human resources vis-à-vis the population's need and demand.
- Indian public Health standard for implementation will require large resources
- Some cadre structure for public health physicians, nurses, paramedical staff are available in few states. There is a need for improving the same . Bias in favour of medical manpower needs to be reduced.
- Current promotional structures provide no mechanism for placing the most skilled and able staff in the most responsible positions. Promotional opportunities for ANMs and paramedical staff are particularly limited. There are no rewards for good work or clear expectations on work roles and feedback and proper performance appraisals. There are no clear policies for transfers and staff deployment. Professional development and in-service training opportunities are limited and staff, particularly doctors, feel isolated and cut off in rural postings. Hence retention in rural postings is particularly poor.
- Promotion of public health as a discipline at the national level and greater emphasis in public health development activities and opening up more MPH, M. Phil & Ph. D., Dr.PH in Public Health to both medical and non-medical Graduates
- Public Health Education also must respond to the emerging health needs in the changing scenario of globalization & market economy. At the same time it must address the societal values such as human rights, democracy, equity, social justice, gender & ethics. The main challenge for public health institutions have been to reflect social responsiveness / social accountability, developing quality assurance systems, keeping pace with advancing technology and developing an interface with the community and health care delivery system. (32 a)
- In India, there exists councils with respect to licensing of medical professionals such as doctors, nurses, dentists and pharmacists with a view to control their entry into the market. However such regulatory frame work does not exist for non-physicians public health experts, vast majority of rural medical practitioners and several categories of para-medical staff. All categories should be brought under respective regulatory councils.
- Much of the public sector is managed through a command and control structure. Initiative and decision-making have been largely exercised only at the highest levels. Decentralization of decision making and programme implementation is therefore recognized as a first step in greater organizational efficiency. (32 a)

STATE WISE CASE STUDIES

TAMIL NADU

Tamil Nadu (the southern-most state on the east coast of India, with a population of *62.41 million (2001 census)*) has been acknowledged as being a State with health indicators, which are among the best in the country. There are 31 districts, 208 taluqs, 385 blocks, 561 panchayats, 16317 villages, 150 municipalities, and 8 corporations. The State has a population density of 479 per sq. km. (as against the national average of 312). In terms of population it holds the sixth position among the States and Union territories in the country. Except for Kerala, Tamil Nadu recorded the lowest population growth rate in 1991-2001 among all the states and Union territories in India. A large part of the State's success in achieving high public health standards and indicators is attributed by many to the fact that public health has for long been recognized as an area of distinct priority and has been managed by a distinctly designated public health workforce both, at the field level, as well as at top management level.

Tamil Nadu is one of the educationally more advanced states in the country. Literacy rate stands at 73.5 percent (male literacy 82.4% and female literacy 64.4 %), higher than the national literacy rate of 64.8%. Tamil Nadu ranks third in the country, closely behind Maharashtra, but far behind Kerala, in literacy.

Public health indicators of Tamil Nadu and India

Infant Mortality

Tamil Nadu has achieved a significant decline in IMR over the last two decades, as can be seen from the table below:

Table-4: Infant Mortality rate in Tamil Nadu and India: 1980-2006

IMR	1980	1990	2000	2001	2002	2003	2004	2005	2006	2007
Tamil Nadu	93	59	51	49	44	43	41	37	37	35
Rural	103	70	57	55	50	48	45	39	39	38
Urban	64	37	38	35	32	31	35	34	33	31
India	114	80	68	66	64	60	58	58	57	55
Rural	124	86	74	72	69	66	64	64	62	61
Urban	65	50	43	42	40	38	40	40	39	37

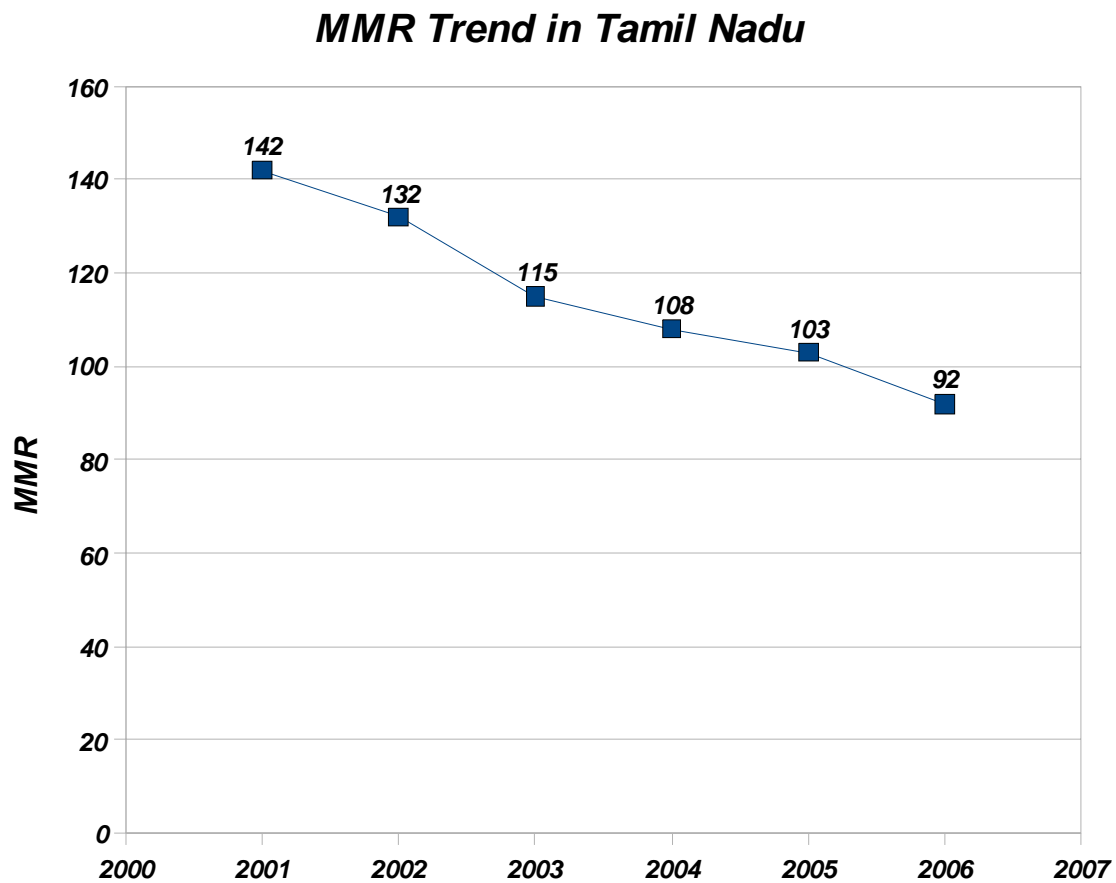
Source: Sample Registration System (SRS) Bulletins

NFHS – 3 results, place Tamil Nadu IMR at 31, which is second lowest in the country next only to Kerala.

Maternal Mortality

The maternal mortality ratio is a good proxy indicator of the quality of public health care because with modern comprehensive emergency obstetric care, almost no woman should die of maternal causes.

Graph-1 showing Maternal Mortality ration in Tamil Nadu 2000-06



Source: Department of Health and Family Welfare, Tamil Nadu official website

Table –5 showing some important public health indicators

Indicator	Tamil Nadu	India
Birth Rate (1980)	27.3	33.3
(1990)	21.6	30.2
(2005)	16.5	23.8
LEB (M)	67	63.9
(F)	70	66.9
Death Rate (SRS 2007)	7.2	7.4

Source SRS . NB: LEB= Life expectancy at birth

Historically Tamil Nadu has a long tradition of modern public health practice. The legislation which governs public health administration in the state is the Tamil Nadu Public Health Act of 1939, which was the first such legislation in the country. The Act, originally enacted as the Madras Public Health Act, has undergone several amendments but continues to be the defining standard for public health administration in the State and it is presently undergoing revision. The Act has a comprehensive definition of the term ‘Public Health’: It also provided for the statutory recognition of the Director of Public Health and the compulsory employment of Health Officers in ‘local authorities’.

Opening of education opportunities in Government funded institutions and employment avenues in the public sector were critical in supporting the availability of a large pool of skilled human resources for various sectors including that for the development of the public health machinery in the State. When many other States struggled to find even lone medical officers to man Primary Health Centers, Tamil Nadu implemented a manpower norm of 2 Medical Officers per PHC, including one lady MO.

Another important critical to the development of the health workforce and the positive health outcomes of the State was the early investment in infrastructure; building schools, health facilities and roads. The role of infrastructure in supporting the role of any workforce or in boosting access to services is not only important for any sector but perhaps more so for health sector where delivery of health services is required to reach every household. However, generally this fact is not acknowledged enough. In Tamil Nadu, the availability of an excellent network of roads and widely available public transport facilities have played an important role in facilitating the work of the workforce, especially in rural areas and has also enabled communities to easily access facilities and services (40).

Health and Family Welfare Department, Tamil Nadu

The following Directorates and Corporations are functioning under its control:

- Directorate of Public Health and Preventive medicine
- Directorate of Medical Education
- Directorate of Medical and Rural Health Services

- Directorate of Indian Medicine and Homeopathy
- Directorate of Family Welfare
- Directorate of Drugs Control
- Tamil Nadu Medical Services Corporation
- Tamil Nadu State Health Transport Department
- Tamil Nadu State AIDS Control Society
- Tamil Nadu State Blindness Control Society
- Reproductive and Child Health Project
- Danida Health Care Project.

Directorate of Public Health and Preventive Medicine

The Directorate of Public Health and Preventive Medicine was established as a separate directorate, responsible for public health functions, as far back as 1923 (40).

The Directorate of Public Health and Preventive Medicine in Tamil Nadu comprises an almost 36000 strong workforce which is a little over 42 percent of the total health workforce in the State (around 84,000). This workforce consists of all categories of personnel, including medical, paramedical, administrative and other personnel who man the 8706 Sub Centers and 1421 Primary Health Centers in the State and hold various other administrative and managerial positions. The Directorate of Public Health and Preventive Medicine is distinct from other Directorates in the health services which manage medical education and the secondary hospital sector (40).

There is a distinct cadre of public health professionals under the Tamil Nadu Public Health Service. The Service encompasses a number of distinct categories, including Health Officers, Entomologists, Water Analysts, etc.

The Directorate of Public Health and Preventive Medicine is responsible for the implementation of various National and State Health Programs. This Department also plans and implements measures to prevent the occurrence of communicable diseases thereby reducing the burden of morbidity mortality and disability in the state.

The activities undertaken by the department of public Health and Preventive Medicine are provisions of primary health care, which includes Maternity and Child Health Services, immunization of children against vaccine preventable diseases, control of diseases like malaria, filaria, dengue, Japanese encephalitis etc, elimination of leprosy, diarrheal diseases, enteric diseases, epidemic diseases, TB, STDs, blindness, iodine deficiency disorders, prevention of food adulteration, health checkup of school children, health education of the community and collection of vital statistics under birth and death registration system and environmental sanitation.

The structure of the Health and Family Welfare Department of Tamil Nadu is given in Appendix 2.

The Department of Public Health and Preventive Medicine looks after primary health care while the Department of Medical and Rural Health Services (DMRHS) looks after secondary level health care and the Department of Medical Education (DME) looks after medical education as well as provides secondary care through the hospitals attached to the colleges.

The DPH is headed by the Director who has 2 Additional Directors under him. One Additional Director is in-charge of PHCs while the other is in-charge of Malaria, Filariasis and Vector-borne diseases. Under the category of Joint Directors there are 10 Joint Directors at the Headquarters. These are:

- i. Joint Director in-charge of PHCs
- ii. Joint Director in-charge of PHC inspection

- iii. Joint Director in-charge of Epidemic Control
- iv. Joint Director in-charge of PFA
- v. Joint Director in-charge of Vector-borne Disease Control
- vi. Joint Director in-charge of Training
- vii. Joint Director in-charge of Health Education Bureau
- viii. Joint Director in-charge of Immunisation
- ix. Joint Director in-charge of birth and death (SBHI)
- x. Joint Director in-charge of administration

Below the Joint Directors are the Deputy Director of Health Services after which are the Health Officers.

Tamil Nadu model of public health practice is often referred to. It has the similar three tier structure of health care delivery but what stands out distinctly is a cadre of public health professionals clubbed under the Tamil Nadu Public Health Service. At the grassroots level Village Health Nurse who is equivalent to female health worker is selected by DPH from amongst the list of AWWs under ICDS to provide a channel of career progression.

Table- 6 KEY PUBLIC HEALTH PERSONNEL (As on 1 July 2008)

Name of Post	Sanctioned	Filled Up	Vacant
Public Health Nurse (DMCHO)	116	65	51
PA to DDHS	40	15	25
Block Health Supervisor	383	308	75
Community Health Nurse	383	351	32
Sector Health Nurse	1700	1419	281
Health Inspector Grade I	1957	1529	428
Health Inspector Grade II	1070	572	498
Village Health Nurse	8721	8635	86

Source: Directorate of Preventive Medicine and Public Health, Government of Tamil Nadu

The Organogram at the District Level for Public Health is given in Appendix 2.

Public Health Cadre:

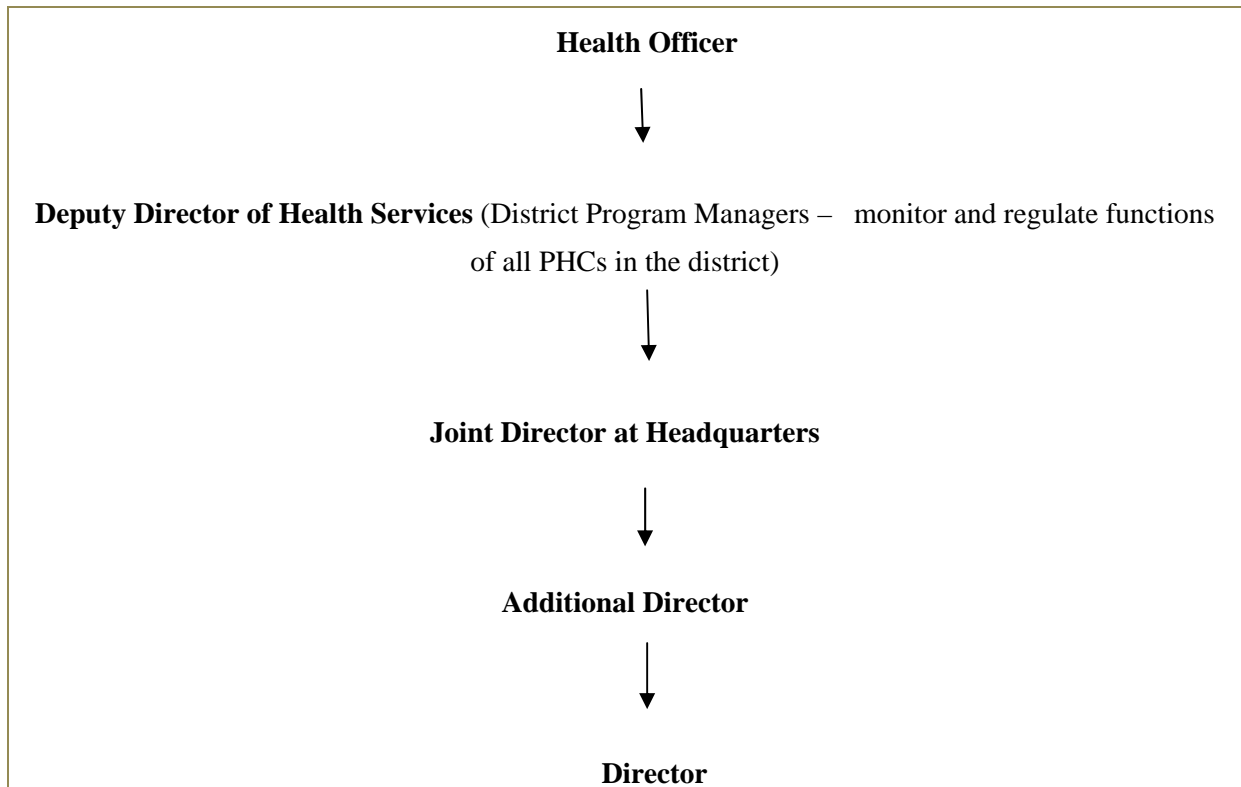
It consists of Health officers (80 in Number) which includes 12 posts of Asstt. Professors of Community Medicine. (Asstt professors and Health officers are inter-transferable) , 68 posts of Dy DHS of which 26 are readers/associate professors/professors (they are inter-transferable); 10 posts of joint Directors, 3 posts of additional Directors and 1 Director

Recruitment and Promotion

Health Officers are appointed through the Tamil Nadu Public Service Commission (TNPSC). They need to have an MBBS degree and a Diploma in Public Health. They are appointed on merit and community rotation (reservation quota) after a written examination and interview. They are appointed at Municipalities, and as Filaria Officers at the district level. The promotional structure is given the

figure below. When young medicos with only MBBS are selected against these posts they are required to obtain Diploma in public health within 4 yrs of their appointment for regularization as Health officers and get all the benefits like increments etc. They continue to get the salary during their training in public health.

Figure-7: Career Progression of Public Health Physicians in Tamil Nadu



Promotions are based on seniority and vacancies. There are no lateral entries. Health officers can be transferred/ posted to medical colleges as assistant professor and vice versa. Dy. DHS/Jt. DHS similarly could be posted as reader and associate professor/ professor in the Medical colleges and vice versa

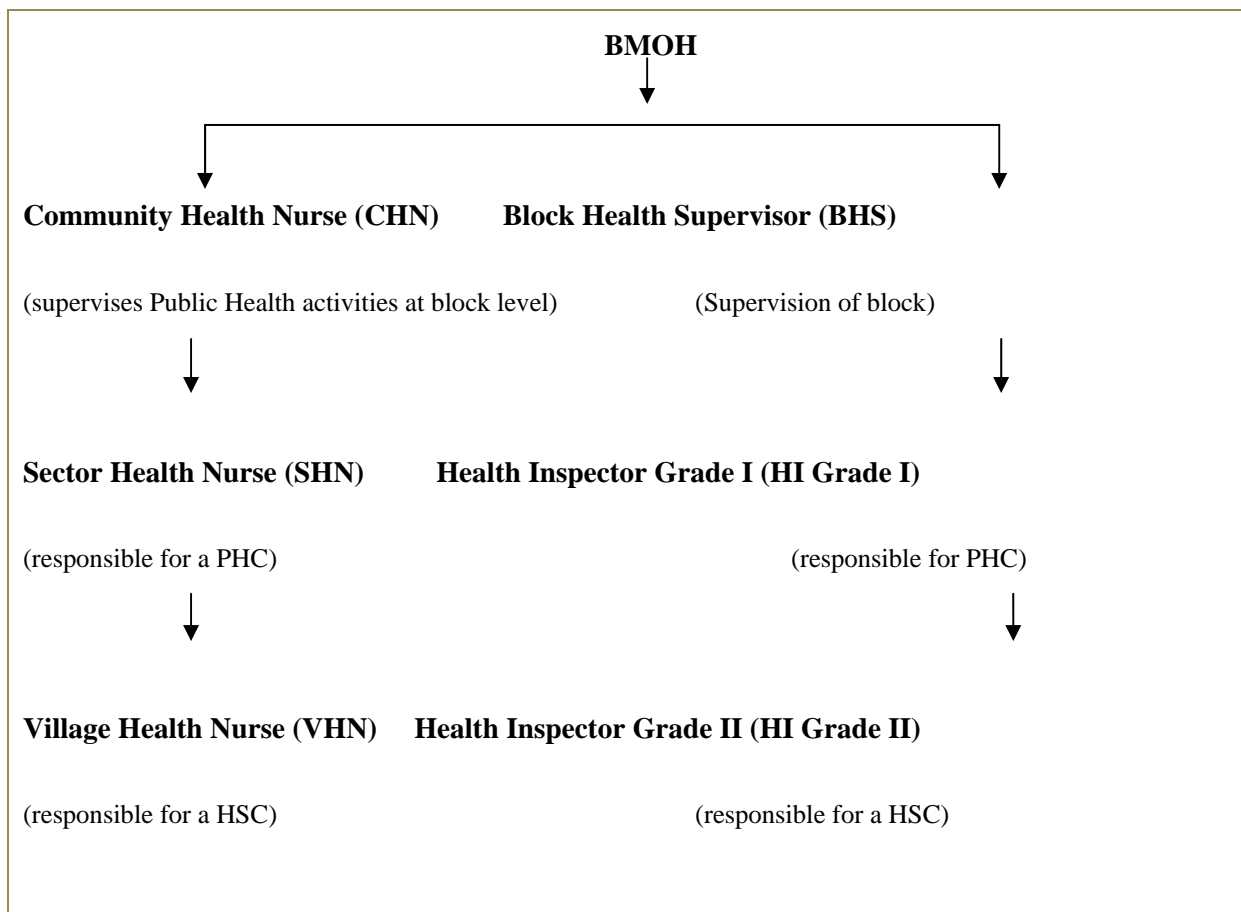
Promotions are based on seniority and vacancies and take place between 5 to 10 years. There are no lateral entries. There are 80 Health Officers, out of which 12 are Assistant Professors.

Out of 68 DDHS level posts, 42 are DDHS and the remaining are Readers, Associate Professors and Professor. There are 3 Additional Directors and I Director.

There are 1421 PHCs in the state. Of these 388 are block PHCs (BPHCs) and 257 are upgraded PHCs, both of which have 5 medical officers. The remaining are additional PHCs, which have 2 medical officers. The additional PHCs have out-patient, in-patient, immunization and delivery services while the BPHCs and upgraded PHCs also have 6 beds for delivery and operation theatre facility. All PHCs provide 24x7 services. Below the PHCs are the Health Sub Centers (HSCs).

Block PHC's technical wing consists of the Block Medical Officer and 4 other Medical Officers supported by a Female Wing and a Male Wing.

Figure – 8: Public Health Structure in Tamil Nadu at the Block level



Also under the BMOH are the **Block Extension Educator** and the **Non Medical Supervisor (NMS)**.

Village Health Nurse (VHN) : The VHN needs to be Standard 10 pass. They are chosen from the Anganwadi workers of the ICDS which is under the Department of Social Welfare. The Employment Exchange sends the list of Anganwadi workers to the Department of Social Welfare and this is forwarded to the DPH. The Anganwadi workers are chosen on merit and are sponsored for an 18 month course. After completion of the course, an examination is conducted and a certificate is issued. The candidates who have received the certificate need to register with the nursing council. Seniority is assigned based on merit and communal rotation (reserved quota). Based on seniority, appointment as VHN is given as per vacancy. There are about 300 vacancies per year.

Sector Health Nurse (SHN): As per seniority and willingness the VHNs undergo a six month training after which they are appointed as SHN. There are 250 to 300 vacancies per year.

Community Health Nurse (CHN): SHNs are promoted to CHNs based on seniority. There are 50 to 60 vacancies per year.

District Maternal and Child Health Officer (DMCHO) : CHNs may be promoted on the basis of seniority to DMCHO who is based at the DDHS office. These are district posts so promotions are few.

Health Inspector Grade II (HI Grade II): Candidates are called for through the Employment Exchange. They are chosen on merit and undergo a 12 month MPHWS training course. After the course they sit for an examination, after passing which they are issued a certificate. Seniority is

assigned based on merit general and reserved quota. Based on seniority, appointment as HI Grade II is given as per vacancy. There are about 300 vacancies per year.

Health Inspector Grade I (HI Grade I): HI Grade II who have completed 5 years of service and based on seniority and communal rotation are promoted to HI Grade I and are usually appointed at PHCs. Due to shortage of posts at PHC, some HI Grade I are working at the HSC.

Block Health Supervisor (BHS) : After completing 5 years of service as HI Grade I and having passed the 6 month Sanitary Inspector Course/ MPHWS course and based on seniority and vacancy promotion may be given as BHS.

Technical Personal Assistant to DDHS (TPA): Promotions from BHS are based on seniority and vacancies. This is a district level post.

Non Medical Supervisor (NMS): These are the officers who were part of the Leprosy Program and in 1997 when the Program was withdrawn, were absorbed into the grade of Health Inspector Grade I.

Job definitions:

There is a manual which provides job description for all categories of public health staff. Training manuals are also available

Transfer policy

There is no documented transfer policy as such but there are guidelines within the overall framework of administration.

Training

- One appointed as a Health Officer, a pre-service training is given for 3 months after which the first posting is given. This is like induction training. After this program based training is given.
- For the post of Deputy Director of Health Services upwards there is program based training only.
- For the Paramedical staff there is program based training but no induction or in-service training.
- The MPHWS was implemented in Tamil Nadu in 1988. Since then the Sanitary Inspector training for rural areas has been done away with. Only the MPHWS training (Male) is being conducted for those who wish to become HI Grade II.
- Sanitary Inspector course is presently being conducted only for the Municipalities on request. They do not have Sanitary Inspector, except in the urban areas under local bodies where they have Health Inspectors. Earlier they used to conduct course for Health Inspector. Now they have stopped because there is a large waiting list of Health Inspector to be recruited and no funds are available for running the training centers. Gandhigram Rural Institute conducts training of Sanitary Inspectors.
- MPHWS training is also given by Gandhigram Rural Institute.
- There are 6 Government run Regional Training institutes in the state.

Medical and Public Health Education

There are 30 Medical Colleges in Tamil Nadu including 14 Government Medical Colleges. They produce specialists including public health specialists. There are no super-specialty courses in public health. Of the 649 approved seats in DM/MCh in the country in different specialty 83 seats (12.8%) are in Tamil Nadu Medical colleges. For MD/MS courses there are 9311 approved seats of which only 368 are for Preventive and Social Medicine and Community Health Administration (4%). In all there are 30 seats for MD (Community Medicine) among all the Medical Colleges in Tamil Nadu. For the various diploma courses there are 3466 seats for various specialties of which the share of Tamil Nadu is 552 in their various medical colleges (16%). For the Diploma in Public Health including health education and industrial health the total seats available are 193, of which Tamil Nadu's share is 11 (6%).

If medical officers complete 2 years of rural service then they are eligible to avail of the 50% seats reserved at the Medical Colleges for in-service candidates. If a doctor is applying for a Post Graduate or Diploma course, then he/she will get 1 mark for every year worked at a PHC.

The teaching faculty of the Medical Colleges, is appointed jointly by the Director of DPH and Director of Medical Services. The Deputy Director of Health Services and Health Officers may be appointed as a faculty.

Observations:

- Tamil Nadu has a distinct Public Health Cadre with distinct qualification requirements, service conditions and pay scales. This is a non-practicing dedicated cadre. Tamil Nadu has this cadre since 1927.
- Tamil Nadu has a Public Health Act, the Tamil Nadu Public Health Act of 1939, which was the first such legislation in the country. The Act, originally enacted as the Madras Public Health Act, has undergone several amendments but continues to be the defining standard for public health administration in the State.
- The Health Unit Districts (HUD) are distinct from the districts. There are 42 HUDs while there are 30 revenue districts. This has been done to facilitate greater health delivery coverage of the population.
- Village Water and Sanitation Committees are functioning in the villages in state. There is one Mazdoor who is paid Rs.500/- per month for cleaning the village, chlorination of wells and spraying of insecticide for malaria.
- A VHN Day is observed every Friday in one village per week of a Health Unit Division (HUD) when awareness about MCH and Public Health is done.
- Attention is paid to improving the working conditions of the VHNs They have been given mopeds with a loan and free mobile phone handsets. For the mobile phone they are given Rs. 100 recharge coupons every month from RKS. The VHNs have a well-structured weekly plan. There is a pilot project being conducted to give laptops to the VHNs.
- The State Government conducts a Program at the grassroots level called "VKT" ("We Save the People") which emphasizes promotive health and early detection of diseases. Health camps are held at the HSCs on a rotational basis. Every month 385 camps are conducted i.e. one camp in each block. Referral cases are sent to Medical Colleges and Government Hospitals.
- The significant strength of the public health service has been seen to lie in its core cadre of health administrators who are medical professionals by training – generally referred to as the Health Officer cadre. Entry into this workforce is through a competitive process and at the level of a municipal health officer. Currently, this is a process separate from that for the employment of Medical Officers, who are first placed in Primary Health Centers, where they are expected to perform a mix of clinical and public health functions and who later go on to occupy clinical jobs

in hospitals or join teaching hospitals. Young doctors who join the Health Officer cadre are given four years within which they must acquire public health qualifications – either by way of a degree or a diploma in public health through one of the several institutions offering such programs (mainly medical schools). The first job that these professionals hold is as Municipal Health Officers, dealing with public health concerns in the State’s urban areas or at Medical Colleges or as Filaria Officers. They go on to become District public health managers called Deputy Directors of Health Services responsible for the entire gamut of public health functions and functionaries within a District. In comparison with their clinician counterparts, the public health managers in Tamil Nadu have higher pay and faster promotions – measures which were deliberately introduced in order to attract young doctors to join the public health service. A health officer can become Deputy Director of Health Services by the age of 45, whereas his clinician counterpart may need to wait until the age of 55 to reach an equivalent salary and status in the system.

- A long tradition of having a separate service has resulted in the building of substantial institutional strength and skills in planning and implementing public health programs, establishing relatively superior disease surveillance systems, etc.
- The advantage of having a separate public health managerial cadre is obvious when compared to the situation obtaining in most of the other States in the country, where public health functions at the District and State level are undifferentiated from the clinical services and positions like that of the District Medical and Health Officer /CMOH are mostly on the basis of seniority among general duty doctors and clinical specialists. Mismatches between functional requirements and workforce availability at senior levels are therefore common – surgeons could head malaria programs and orthopedics find themselves steering national public health programs without any additional training.

Assessment of the Tamil Nadu model and should we replicate it?: Some discussions

One of the strongest features of the Tamil Nadu public health managerial cadre has been that the personnel have basic medical skills with an additional public health specialization. They have also the benefit of enriching the academic side because they can rotate with the teaching faculty.

Role for non medical public health specialists are not very clear and their visibility is not well perceived. Epidemiologists, data management specialists, behavioral scientists, health communication experts, environmental specialist are lacking in the service.

A significant lacuna in the Tamil Nadu system has been that the public health administrators in the system at district level do not have enough experience in rural areas at the block level. They have good experience the urban areas only.

The distinct advantages of the Tamil Nadu system are generally well acknowledged. The need for enhanced public health capacity at the block and district levels is sorely felt and the need to structure an organized public health service is being discussed in many States. In some States, NRHM funding is being used to recruit graduates with degrees in health administration for contractual jobs as district public health managers. In some States, senior medical officers in PHCs are being designated as Block Health Officers to manage public health related jobs in rural areas. The experiments are at nascent stages.

Admittedly, the task is a difficult one. The NRHM has projected a requirement of 10,000 public health managers to be identified, trained and placed at Block, district and State level in all States of the country within the next few years. It requires significant up-scaling of institutional capacity for training personnel in the required skills and competencies.

Even in other, equally developed States of the country where large numbers of medical graduates are trained, the growth of the private/corporate presence in the medical sector is attracting medical manpower away from the public sector. Government salaries cannot keep pace with the returns offered by large corporates or even compare with the returns from private practice. Faced with a shortage of clinicians for manning primary health centers, some States are resorting to placing qualified traditional medicine practitioners in these centers after some amount of orientation training. In such a situation, there may be problems in actually attracting doctors to join a public health management service. The problem of course also lies partly in the fact that India's health services have traditionally been and continue to be led by doctors – the deployment of nurse practitioners is only now being talked of as a necessary alternative to deploying doctors in the primary sector, but there aren't as yet many takers. This constraint can be overcome by opening up public health management positions for senior personnel in the other supporting workforce streams in the sector – Health Supervisors and Community Health Nurses at Block level, for instance. This is an option that is being discussed in some circles now and many feel that the option might work, if factors like entry level qualifying criteria and skills training are taken care of.

The hierarchical structure of the public health care services in Tamil Nadu does not delegate effective power down the line to the public health care delivery organizations. For example in immunization, epidemic control, disease specific control programs, food sanitation etc., and the officials are given various responsibilities to take care of their segmental issues. Each individual pursues his own task without caring about the total segment of tasks as a whole. Consequently, each official feels that someone at the top is responsible for seeing the entire task. The subordinates are reluctant to take any decisions regarding plans and programs. They always look towards their bosses for some clear cut orders, directions and planning. This mechanical and vertical in nature of such delivery often leads to important problems. In case of poor performance of the total, segmental task officials responsible of individual sub segments point to other sub-segments. It is as though the organizational structure of sub centers and PHCs is not only mechanistic but rigid too. The technical guidelines, duties, and powers attached to each level are precisely written down and are accordingly to be implemented.

There are both merits and demerits of the mechanistic model. For example, in case of the projects related to immunization, family planning etc, this type of rigidity is desirable in work-allocation. Therefore, for such programs this system is a boon. But where interventions vary from location to location, person-to-person one requires certain kind of flexibility so that personal attention and personalized care can be given. This cannot be tackled with rigid directions. Therefore, one requires a balance between rigidity and flexibility of decisions. There is lack of this kind of balance in the peripheral health organization.

Increase in the domination of generalist administrators and failure to introduce a proper cadre of Indian Medical and Health services have led to the lack of appropriate managerial orientation in the contemporary health-administration of India. The virtual absence of managerial physicians who can properly shoulder the new types of responsibility have become the major obstacles that have affected the proper functioning of delivery system of health care.

MAHARASHTRA

The Department of Health and Family Welfare looks after Public Health in the state of **Maharashtra**. The Department of Public Health has been renamed as the Department of Health and Family Welfare as per GOI requirement in 2006. However, the Department correspondence continues to use the term Department of Public Health. The Department is making constant and concerted effort to formulate and execute schemes to ensure adequate health care services to the people in line with the National Health Policy. While implementing these schemes, steps are being taken to make improvements in the health care system in the State to cater to the health needs of the people in the rural areas, particularly in the tribal and backward regions of the State.

- To provide adequate and qualitative preventive and curative health care to the people of the State.
- To ensure greater access to primary health care by bringing medical institutions as close to the people as possible or through mobile health units, particularly in the under-served and backward districts.
- To improve maternal and child health with a view to reducing maternal and infant mortality.
- To give training to doctors, nurses and other paramedical staff to meet the needs of health care in the State by upgrading their skills and knowledge.
- To improve the maintenance of buildings

In the 2001 Census, population wise Maharashtra was the second largest state in India after Uttar Pradesh having 9.42% population of the nation, i.e. 9.6752 crores. The state has the highest percentage of urban population i.e. 43.3%, but that has very meager public health infrastructure.

It has 35 districts -33 rural and 2 fully urban districts (of Mumbai) and is divided into 6 revenue divisions. There are 41095 villages and 27247 gram panchayats spread over 353 blocks. There are 22 municipal corporations and 222 municipal councils along with 7 Cantonment boards, which have no organized health infrastructure as per need.

Public health indicators in the state are considered amongst the top few states of the country.

Public health indicators

Table- 7 Indicator-wise status and Goals

Goal Indicators	Maharashtra	
	Current status	Goal
		2010
MMR	149(MMR in India 1997 -2003 by RG)	100
IMR	35(SRS - 2006)	27
NMR	24(SRS - 2004)	27
TFR	2.1(NFHS III)	=<2.0

Source:: Indian Institute of Health and Family Welfare (IIHFW), Hyderabad

MMR - Maternal Mortality Rate
 IMR - Infant Mortality Rate
 NMR - Neonatal Mortality Rate
 TFR - Total Fertility Rate.
 SRS - Sample Registration System.

There is a large difference between the SRS and IIHFW figure for MMR. This may lead to change in Goals

The Organizational structure at various levels of the Department of Health and Family Welfare (Department of Public Health) is given in Appendix 3.

An Overview of the Health Infrastructure and Manpower in the State

The state has well developed health infrastructure in the public sector.

The number of service delivery units in the state is given below:

Medical College hospitals	8	District hospitals	23
Rural Hospitals(CHC)/ Cottage Hospital	365	Primary Health centers	1816
Sub centers	10579	Primary Health Units	172
Mobile Health Units	61	Urban Health Posts	285
Urban Family Welfare Centers	81		

Source: Department of Health and Family Welfare, Government of Maharashtra

There are 35 districts in the state. The Program Officers at the district level are the District Health Officer (Promotive and Preventive Health) and Civil Surgeon (clinical).

The District Health Officer looks after Public Health and works exclusively in the rural areas. He/ she is in-charge of the PHCs and Sub-Centers in the district. Each sub-center has one MPW (M) and one MPW (F). Each PHC has 14 staff (2 medical officers, 3/4 Has (M&F), 1 MPW (F), 1 MPW (F) and support staff). The DHO reports technically to the Deputy Director of Health Services of the division and administratively to the Chief Executive Officer of the Zilla Parishad who is an IAS officer.

The Civil Surgeon looks after the urban area, the district hospital and the rural Hospitals/ CHCs, which are the first referral centers.

At the block level there is a Taluka Health Officer who supervises the Public Health activities of the block consisting of 6 or 7 PHCs. He is assisted by a HS (M) and HA (M) and support staff including mobility support. He reports technically to the DHO and administratively to the BDO.

KEY HEALTH PERSONNEL IN THE DEPARTMENT OF HEALTH SERVICES

As on January 2009

Figure-9

Category	Sanctioned	Filled	Vacant
Maharashtra Medical Health Services	1437	615	822
Grade A – Senior Maharashtra Medical Health Services	7281	6566	715
Grade A – Junior General State Services Grade A & B	513	237	276
Health Assistants (Male)			
Local Sector (Maharashtra Govt.)	2878	2036	842
State Sector (Govt. of India)	1722	1498	224
Total	4600	3534	1066
Multipurpose Health Workers (Male)			
Local Sector	6850	5941	909
State Sector	5360	3899	1461
Total	12210	9840	2370
Health Assistants (Female)/ Lady Health Visitor	2266	2023	243
Multipurpose Health Workers (Female)/ Auxiliary Nurse Midwife Pada Swayamsevak	12395	11904	491
	11482	Male – 10853 Female – 9946	629
NRHM (contractual)			
Additional 2 nd ANM	8771	4285	4486
Staff Nurse at PHC	1196	692	504
LHV at PHC	1790	1056	734
Posts under RCH II			
ANM	1015	855	160

Source: Department of Health and Family Welfare, Government of Maharashtra

Manpower position

Table- 8: Manpower available at district level

Category	Number
Maharashtra Medical Health Services (MMHS) Class I	1177
MMHS Class II	5075
General Staff Services (GSS) Class I	57
GSS Class II	384
Health Assistant (M)	4642
Health Assistant (F)	3586
Health Assistant (M)	12646
Health Assistant (F)	11915
Village Health Guide	44050
Trained Traditional Birth Attendant	45681

Source: Department of Health and Family Welfare, Government of Maharashtra

Recruitment, Promotions

At the field level, at the first rung of staff are the Multipurpose Workers Female and Male

The MPW (F) is the ANM and she needs to have passed Standard 12. She is selected on basis of 75% marks and 25% oral (if there are too many candidates and few posts, then there is a written exam, marking is done 50% on standard 12 marks, 25% on written exam marks and 25% on oral marks) after advertisement in at least one local and one English newspaper by the Civil Surgeon based on requests received from the districts. Selected candidates are given training for 18 months in the State Government Health and Family Welfare Training Center during which time they are given a stipend. After completion of the training the trainees are appointed as MPW (F) in the districts which have asked for MPW (F)s.

The MPW (M) needs to have passed Standard 12. They are appointed on basis of 75% marks and 25% oral (if there are too many candidates and few posts, then there is a written exam, marking is done 50% on standard 12 marks, 25% on written exam marks and 25% on oral marks) by the District Health Officer who advertises in at least one local and one English newspaper based on vacancies. The appointed MPW (M)s are sent for one year training with full salary at the State Government Health and Family Welfare Training Centers and Public Health Institute at Nagpur.

Promotion structure

Figure- 10: Career Progression of Male Health Workers

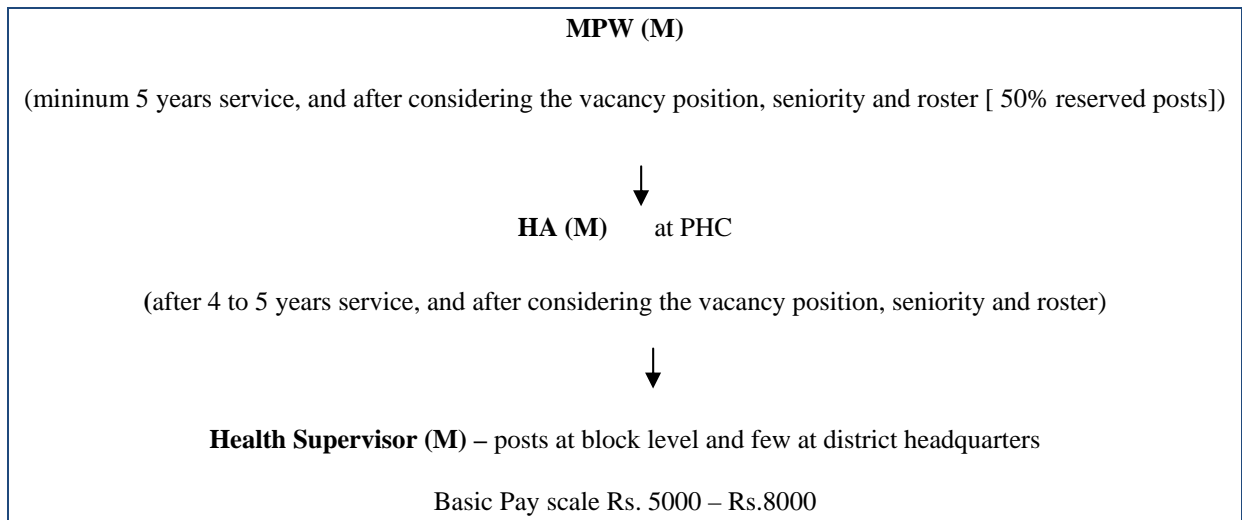
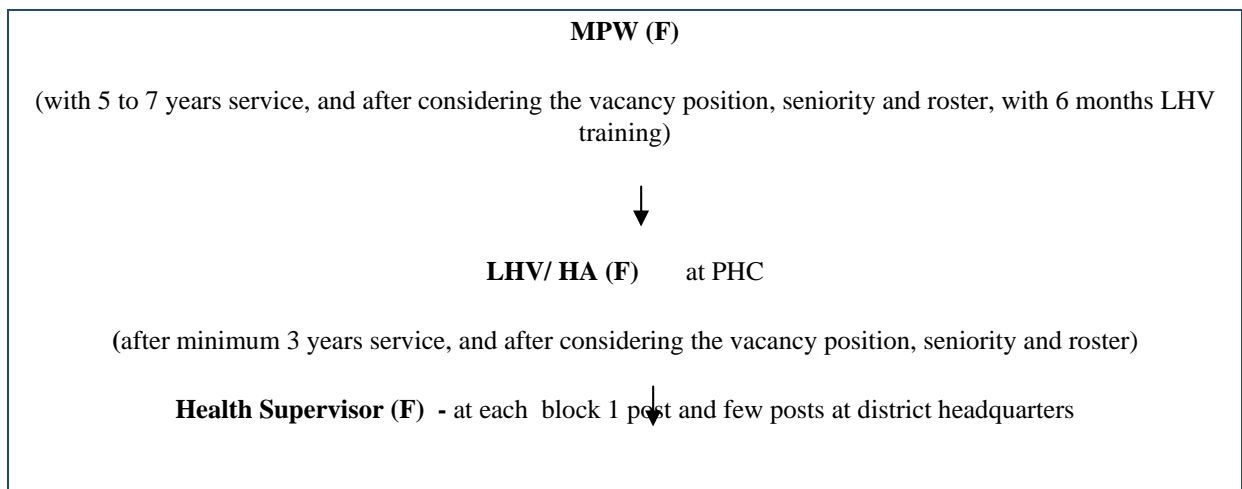


Figure- 11: Career Progression of Female Health Workers



Staff Nurse

Staff nurses are appointed at CHCs, few district hospitals and few medical colleges. They need to pass the GNM course which is a three and a half year course.

District Public Health Nurse

If the staff nurses appointed at the district hospitals do an additional one year course in B.Sc. Nursing they may be appointed at District Public Health Nurse and are posted at the District Headquarters. The duty of the DPHN is to supervise the work of the PHCs, SDHs and CHCs.

After 12 years of service if no promotions have been granted to the paramedical staff, they are granted promotion under Assured Career Progression.

Medical Officers

There are 7284 posts for Medical Officers. There are 2 MOs for each PHC and 3/5/14 MOs at the CHCs depending on whether the CHC is 30 bedded/ 50 bedded/ 100 bedded respectively.

Recruitment and promotion

Of the total posts for MO, 75% need to be from MBBS stream and 25% need to be from BAMS stream. All entry occurs at this stage when Group Class II officers are appointed from the MBBS, and BAMS streams. After appointment, they are posted as medical officer in PHC/CHC/ Hospitals. For admissions to post graduate courses they are required to clear CET (Common Entrance Test). They are sponsored by the Department with full salary. From Class II officers they move to Class I officer, 50% by direct recruitment and 50% by promotion. They need to have a post graduate qualification and a minimum of 5 yrs service subject to availability of vacancy.

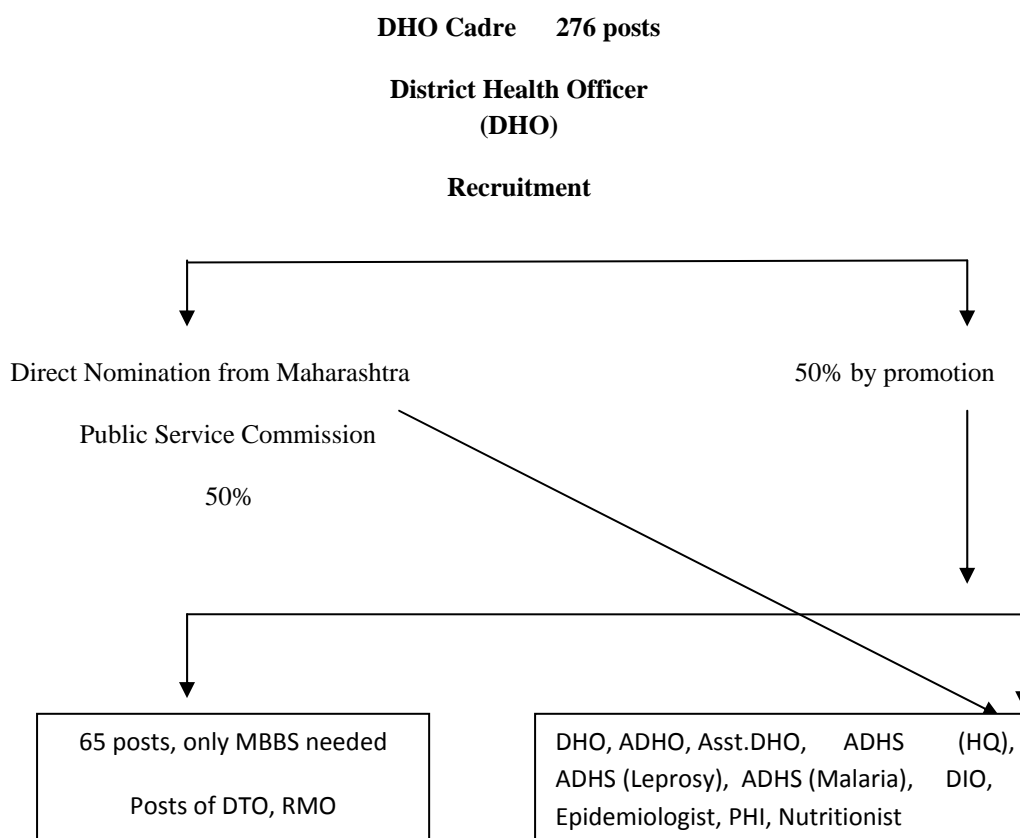
From Class II level they top class in three distinct cadre namely civil surgeon, specialists and public health (DHO). For public health if they have worked for a minimum of 5 years and have a Diploma in Public Health or MD (PSM) they are eligible to be recruited to the District Health Officer cadre, which has 276 sanctioned posts. Out of 276 posts, 65 posts in DHO cadre are for MBBS class II doctors who cannot qualify through CET for post graduate study in public health.

Class II MOs cannot move to specialists' cadre without additional post graduate qualification through CET. Here 50% are direct recruits and 50 percent by promotion.

Class II MOs can also be posted as Civil Surgeons on acquiring post graduate qualification in Medicine or surgery through CET and here also 50% are direct recruits and 50 percent by promotion. For other specialties they can be also in civil surgeon cadre but they need to given undertaking that they will be posted as superintendents. 12.5% of the posts of civil surgeon are reserved for Class II MOs 2who have no post graduate qualification.

No of sanctioned posts for Civil Surgeons is 611 and number of sanctioned posts for Specialists is 512. This is the clinical cadre and the doctors are allowed to do private practice. For public health posts private practice is not allowed instead they get not-practicing allowance. However Assured career progression scheme enables class all medical officer to go into the next scale after a lapse of 12 years.

Figure -12: Career Progression of District Health Cadre Officers



All the three cadres, DHO, Civil Surgeon and Specialist Cadres each have their own seniority list. These are combined in order to give promotions. A combined seniority list is made from which the Deputy Director is selected on the basis of seniority. 50% appointments are done through the MPSC and 50% is by promotion.

The senior most Deputy Director is promoted to the Joint Director, of whom the senior most becomes the Additional Director and then the senior most becomes the Director. For the post of the Director, there is a provision to appoint a person from other the Department but this has not yet happened.

Training

- Medical Officers are given induction training at the Public Health Institute at Nagpur
- There is orientation and re-orientation training on national programs for medical officers and paramedics.

Medical and Public Health Education

There are 41 Medical Colleges in Maharashtra including 13 Government Medical Colleges. They produce specialists including public health specialists. There are no super-specialty courses in public health. Of the 649 approved seats in DM/McH in the country in different specialties 69 seats (11%) are in Maharashtra Medical colleges. For MD/MS courses there are 9311 approved seats of which only 368 (4%) are for Preventive and Social Medicine and Community Health Administration. In all there are 72 seats for MD (Community Medicine) among all the Medical Colleges in Maharashtra. For the various diploma courses there are 3466 seats for various specialties of which the share of

Maharashtra is 400 (16%) in their various medical colleges. For the Diploma in Public Health including health education, industrial health total seats available are 193 of which Maharashtra's share is 21 (11%).

The candidates have to pass the Combined Entrance Test (CET). Earlier 25% seats used to be reserved for in-service candidates. Now due to the CET the in-service candidates are sometimes unable to compete and thus there is a shortage of trained MOs in Public Health. At present there are vacancies for 39 seats for Class II candidates for in-service candidates but only 10 are eligible as they have training in Public Health.

Taking into consideration the private medical colleges, there will be approximately 50 seats for Public Health education.

The Public Health Institute in Nagpur provides basic MPW training, Induction training for Medical Officers, training on laparoscopy, etc.

Observations/ Comments

- The MPSC Board was not functional for the last 2 or 3 years so recruitment for the Deputy Directors through direct recruitment has been stopped. The MPSC is presently functioning again.
- At the 24x 7 sub-center visited in Maharashtra (Asangaon) it was found that the ANM serves a population of 12, 744. She has been working for 22 years and has got 3 transfers. The MPW (M), who is appointed by the Malaria Department serves a population of 15,000. He has been working for 16 years and has got 2 transfers. The ANM and MPW (M) both have fixed work schedules. The MPW (M)'s work schedule is fixed for one year by the Malaria Department.
- Each village has appointed Pada Swayamsevaks who are appointed by the Taluka Medical Officer and BDO based on a list provided by the PHC, who in turn gets the list from the village Panchayat. The Pada Swayamsevak's job is to do primary treatment and reporting, water purification, provide information about outbreaks and assist in providing supplementary food to those who need it. They are paid Rs. 300/- per month per head.
- Maharashtra has an Epidemic Control Act. However the statutory powers with regard to this Act are vested with the District Magistrate on the recommendation of the DHO. There is a Prevention of Food Adulteration Act, the statutory powers of which are vested with the Commissioner who belongs to the Food and Drugs Department and is an IAS officer.
- The post of District Sanitary Inspector is filled in by a senior Health Supervisor (M)
- The Department of Health and Family Welfare has the following officers from administrative services:
 - i. Additional Chief Secretary (IAS)
 - ii. Commissioner and Secretary, Family Welfare (IAS)
 - iii. Mission Director, NRHM (IAS)
 - iv. Project Director, MSACS (IAS)
 - v. Joint Secretary, Family Welfare (Indian Forest Service)
 - vi. Joint Director, Establishment and Budget (from Revenue Department)

It was felt by the Department that there is a need for more technocrats instead of bureaucrats at the higher administrative posts.

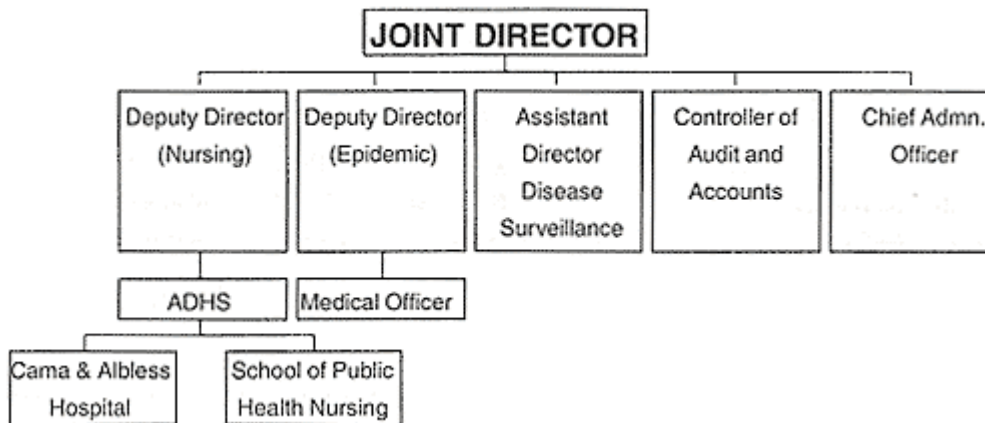
A good management information system is in place in Maharashtra. The same is used to obtain primary health care performance data for review at monthly meetings of peers, including District

Health Officers, Auxiliary Nurse Midwives and Multipurpose Workers. The meetings were conducted in a problem solving, educational atmosphere. The effect of this process was marked improvement in health worker motivation and performance (41).

Epidemic Control Program

Joint Director Health Services (Health) Pune is monitoring the Epidemic Control Program. Control Cell has been established in the year 1985. The Bureau is also supervising the State Health Transport Organization SHTO), State Public Health Laboratory (SPHL), and Health intelligence & Vital Statistics (HIVS).

Organizational Structure



Function and responsibilities

- Monitoring and control of epidemics
- Action in case of natural calamities.
- Monitoring of Meningitis, Encephalitis, Sun stroke and food poisoning events.
- Management of fairs and festivals.
- Yaws Eradication Program. Government Policy about appointment of Contractual/ Temporary appointment of Medical Officers (a).
- Government Policy about appointment of contractual/ temporary appointment of Medical Officers.(b)
- Government Policy about appointment of contractual/temporary appointment of Medical Officers (c).
- Posting of BAMS Medical Officer at Ayurvedic dispensary by transfer.
- About filling the post of Medical Offucer at Primary Health Center.
- Procedure & Reservation of appointment of Temporary Medical Officer on the Vacant post at Ayurvedic dispensary and other places under Zilla Parishad.
- Posting of MPSC Nominee's on the Maharashtra Medical & Health Services Cadre A-- Absorption of Temporary Medical Officer Cadre - A (A)
- Posting of MPSC Nominee's on the Maharashtra Medical & Health Services cadre A-- Absorption of Temporary Medical Officer cadre - A (B)
- Selection of all MOs (Class -I) in the State of Maharashtra during the enforcement period of Code of conduct.

- Delegation of Power to CEO's regarding the selection and transfer of MO'S working under Zilla Parishad.

There are 30 Public Health Laboratories working in the State, covering all most all the districts.

WEST BENGAL

The state of **West Bengal**, located in the eastern side of India, has a population of 80.18 million and is the 4th most populous state in India with the highest population density in the country (903 persons per sq. km where as in India it is 336). (Health on the March 2006-07 : page 3) It is divided into 3 divisions, 19 districts, 66 sub-divisions, 341 community development blocks, 6 Municipal corporations, 120 Municipalities (126 ULBs), 375 towns, 3354 Gram Panchayats and 40782 villages (Health on the March 2006-07 : page 77) . The state has one of the highest proportions of citizens belonging to Scheduled Castes, Scheduled Tribes and contextually disadvantaged groups that together comprise half of the state's population. In 1999-2000, an estimated 32.9 percent of the population lived below poverty line. Infant Mortality Rates (IMR) is amongst the lowest in India, Child Mortality Rates are also relatively low and life expectancy is higher than the national average. Nutrition indicators are rather poor with higher incidence of anemia and other micro nutrient deficiencies especially among women and young children, than for India as a whole.

The organogram of the DOHFW (State, District and Block Level) is enclosed as Appendix 4.

Public health infrastructure

The backbone of public health care delivery services in the state is the network of sub-centers, Primary Health Centers, Block Primary Health centers, and rural hospitals for primary health care and the network of hospitals at subdivision, district and in medical colleges for secondary and tertiary care. In addition a number of specific vertically administered national and state public health programs are also being implemented. Higher level post graduate training in public health is provided in 2 medical colleges, (MD Community Medicine), School of Tropical Medicine (DTM&H, and MD in Tropical Medicine). All India Institute of Hygiene and Public Health, Kolkata a premier public health institute under central Govt. also provides post graduate training in public health catering to all the states including West Bengal.

As on 31-12-2006 West Bengal's health infrastructure consists of 10,356 Sub centers, 921 PHC, 252 BPHC and 96 Rural Hospitals with 13921 beds and 2081 hospitals with 82160 beds totaling to 96081 beds (both Government and private together). Of the 2081 hospitals only 203 with 45074 beds are with the DoHFW contributing a total of 58995 beds and the rest are with other departments, local bodies or voluntary organizations or private sector. No effective referral mechanism is in place. Among all discharged patients in the District Hospitals, only 4.8% were referred out (2006 – Hospital activity and efficiency indicator- WB) Two important public health issues are very evident from the above: (i) Though hospitals wherever located cater for both rural and urban population, the health care infrastructure is biased in favour of urban population. 25% of public hospitals and 22% of public hospital beds (Rural hospital downwards) and 14% of total beds are in rural areas only. Secondary and tertiary care are primarily if not fully urban based and in absence of a very good referral care network our rural population will not have easy access to higher level clinical care services when needed. (ii) Significant presence of other agencies in delivery of health care exists in urban areas and this calls for strengthening stewardship role of DoHFW in better implementation of health care.

In addition to the above there are also 103 State Ayurvedic Dispensaries. 73 BPHCs, 80 PHCs, 31 rural hospitals, 6 Sub-Divisional Hospitals and 3 District Hospitals have Ayurvedic units. 305, 105, 135 homeopathic dispensaries are attached to Sub-Divisional Hospitals, BPHCs and PHCs respectively. In West Bengal population served per bed is 902 taking into consideration all hospitals under the state government, central government, local bodies, public undertakings and private sector

(Health on March 2006-07) (42). In urban areas it is 285 and in rural area it is 4544. In 2006 population served per doctor was 1961 (4340 in rural areas and 790 in urban areas).

State level:

The Department of Health and Family Welfare is responsible for public health care delivery services through the network of health institutions it has established all over the state and which are under its direct control.

For urban areas ULBs are responsible for public health care delivery, which are highly inadequate except in corporations which have some public health care support infrastructure. Kolkata Municipal Corporation has a fairly large public health infrastructure.

In Kolkata and around, the Department has an urban public health delivery focus through Kolkata Metropolitan Urban Health care organization. There is one officer of the Directorate at the rank of Joint Director who is in charge of this component.

At the state level Director of Health services is in charge of both medical and public health services apart from general administration of large number of health personnel who work for health care delivery services. His/ her prime responsibility is general administration and management of network of hospitals and delivery of various national and state vertically managed public health programs through various state program managers. The work load span is considered very large. In addition to DHS at the State Directorate four more Directors are there namely Director Medical Education, Director Homeopathy, Director Ayurveda and Director Drug Control. Though part of the Directorate, two other important programs namely RCH and State AIDS control Program are directly handled by Commissioner, Family Welfare (at the rank of Special Secretary) and Project Director (at the rank of Special Secretary) respectively. The Organogram of the Directorate is annexed. For epidemic control one cell with support staff is available with Jt. DHS. Three Zonal Malaria offices are there one for each division.

Two important institutions namely School of Tropical Medicine and Infectious Disease Hospital, Beliaghata provide significant support to public health care delivery services. School of Tropical Medicine is premier institute of repute in tropical diseases and apart from its role in curative medicine and teaching, it provides higher level diagnostic support facilities. Infectious Disease hospital is one of the largest hospitals of its kind in the country. All serious and dangerous highly infectious diseases like cholera, rabies, chicken pox, SARS etc are treated here.

District level:

All the districts which do not have a medical college have district hospitals. CMOH has the overall responsibility of both curative and public health services. The CMOH is supported by one Dy CMOH (II) for overall public health functions. Dy CMOH (I) looks after administration and Dy CMOH (III) takes care of Family welfare and related public health functions. DMCHO is linked to Dy.CMOH (III) and takes care of immunization program. For epidemic control one epidemiology cell with some support structure is available with Dy CMOH (II) and at the subdivision under the ACMOH. Apart from three Dy CMOH, other public health program managers like DTO, ZLO are also available. For HMIS one District Inspector of Health Statistics has been placed under Dy. CMOH (II).

One program management unit is also now available with CMOH. In districts where medical college have been established the CMOH does not have much control over the medical college hospital.

Darjeeling district has both a medical college hospital and a district hospital. Kolkata district does not have a CMOH as it has no rural area and one officer at the level of Jt. Director of Health services has been functioning as CHO of Kolkata Metropolitan Urban Health Organization as the department's urban health component. It covers through public health activities Kolkata Corporation and 30 ULBs around Kolkata. District wise hospital bed distribution presents a non-equitable distribution the range varying from 0.37 per thousand population in Uttar Dinajpur to as high as 5.3 at Kolkata (39)(Organogram of the office of CMOH is annexed is Appendix 4).

Block level:

Block Primary health Center (BPHCs) and Rural Hospitals (RHs) play the pivotal role in public health care delivery. Presently up-gradation of BPHCs is being actively pursued. There are 251 BPHCs with 3532 beds & 95 RHs (equivalent to CHCs) with 3418 beds. As per GOI standards CHCs are supposed to cater to a population of 1lakh to 1.2 lakh population as the first referral unit for 4 PHCs. Currently BPHCs and RHs are catering to around 2 lakh population. Critical gaps exist pertaining to infrastructure in terms of GoI or IPHS norm. Ferguson and Co – May 2006 has observed that running a 30 bedded hospital is a full-time job with large scope of work and the BMOH/ Superintendent as head of RH does not find adequate time and it has weakened health administration in the block. Some important highlights:

- ❖ Presently all BPHC are in government buildings with 10 to 60 beds
- ❖ Some require major repairs
- ❖ Some BPHCs are not electrified /or do not have continuous power supply
- ❖ Inadequate logistic support including mobility
- ❖ Some BPHCs upgraded to Rural hospitals
- ❖ Scope for improvement in public health activity in Rural hospital/Sub divisional/General hospital
- ❖ PH focus for these institutions is inadequate
- ❖ PH support inadequate
- ❖ In general hospital PH support is missing
- ❖ Not adequately linked to disease surveillance
- ❖ Laboratory support in BPHCs and Rural hospitals is weak.
- ❖ Referral service is weak with only 16.6 % of patients are referred out to total discharged patients in BPHCs and the same is 17.4 % in rural hospitals

(Source: Hospital activity and efficiency indicators – January to December 2006- SBHI, Government of West Bengal)

Major Public health indicators

There has been a decline in IMR at the national as well as state level, with decline in rural IMR being more rapid than urban IMR at the state level. There is decline also in MMR.

While there has been some reduction of MMR, the last available figure of 194 remains unacceptably high. IMR has fallen sharply by more than 25% since 2001 but it has not improved since the last year. Even though IMR has improved, Neonatal Mortality Rate (NMR) has continued to stagnate at the level of about 30. Early NMR (mortality within the first week of birth) remains at the level of 22/23.

Table – 9 : Important Public Health Indicators in West Bengal

Country	IMR	Life Expectancy M/F	MMR	TFR	Public expenditure on Health as % of GDP
India	57	64.1 / 65.4	301	2.90	1.2
West Bengal	38	66.1 / 69.3	194	2.10	

Source : RGI, GOI (latest figures); others – State of World Population,2007

A comparison of some of the health outcome indicators in the national goals and MDGs is shown below:

Table – 10: National Goals and MDG

	X FY Plan 2007	NPP 2010	MDG 2015	RCH II 2004-09	India	West Bengal
Infant MR	45	30	27	35	57 (SRS 2006)	38 (SRS 2006)
Maternal MR	200	100	100	150	301 (SRS 01-03)	194 (SRS 01-03)
Total fertility Rate	2.3	2.1	2.1	2.2	2.9 (SRS 2005)	2.1 (SRS 2005)
Institutional deliveries	80%	80%			43.2 (NSSO,2004)	56.3 (NSSO, 2004)
Neonatal Mortality	26			20	37 (SRS 2005)	30 (SRS 2005)
Deliveries by skilled attendant (not TBA)		100%			59.7 (UNICEF coverage evaluation survey 2006)	62.5 (UNICEF coverage evaluation survey 2006)
Couple Protection Rate	65%	100%		65%	64% (NFHS-3)	75.5% (NFHS-3)
% Children fully immunized				100%	62.4 (UNICEF coverage evaluation survey 2006)	71.2 (UNICEF coverage evaluation survey 2006)

According to Sample Registration Survey (SRS) data, the Death Rate for children aged 0-4 years was reduced by nearly 50% in between 1994 and 2005 in West Bengal while for the country as a whole such reduction was nearly 28%. For IMR, as per SRS data, the reduction between 1994 and 2006 was about 38% against all India figure of 22%. For MMR, the reduction between 1997-98 and 2001-03 was 36% against country's figure of about 24%. The increase in proportion of infants immunized against Measles in West Bengal between 1992-93 (NFHS 1) and 2006 (UNICEF Coverage Evaluation Survey) was nearly 141%. The increase in proportion of births attended by skilled health personnel, as per NFHS data, was about 44% between 1992-93 (NFHS 1) and 2005-06 (NFHS III).

Branches under the Department of Health and Family Welfare

1. General Administration Branch
2. General Administration (Medical Reimbursement) Branch
3. General Administration (Nursing) Branch
4. General Administration (Vigilance) Branch
5. Indian System of Medicine and Homoeopathy Branch
6. Law Branch
7. Medical Administration Branch
8. Medical Administration (Medical Educational Service) Branch
9. Medical Service Branch
10. Medical Education Research and Training Branch
11. Planning and Budget Branch
12. Public Health Project Branch
13. Transport Drug and Equipment Branch
14. Unani Branch
15. Family Welfare Branch
16. Taken Over Institution Cell

The Public Health Project Branch is headed by a Joint DHS belonging to the WBPHAS cadre. The departments under the Public Health branch are:

- Vector Borne Disease Control
- Communicable Disease
- Non-Communicable Disease
- Oncology
- Disaster Management
- PFA and Goitre
- NMTP (Group B)

The Public Health Workforce in West Bengal comes from the following cadres:

1. WBPHAS: West Bengal Public Health and Administrative Service
2. West Bengal Nursing Service
3. Non-Medical Technical Personnel (NMTP)
4. Medical Education

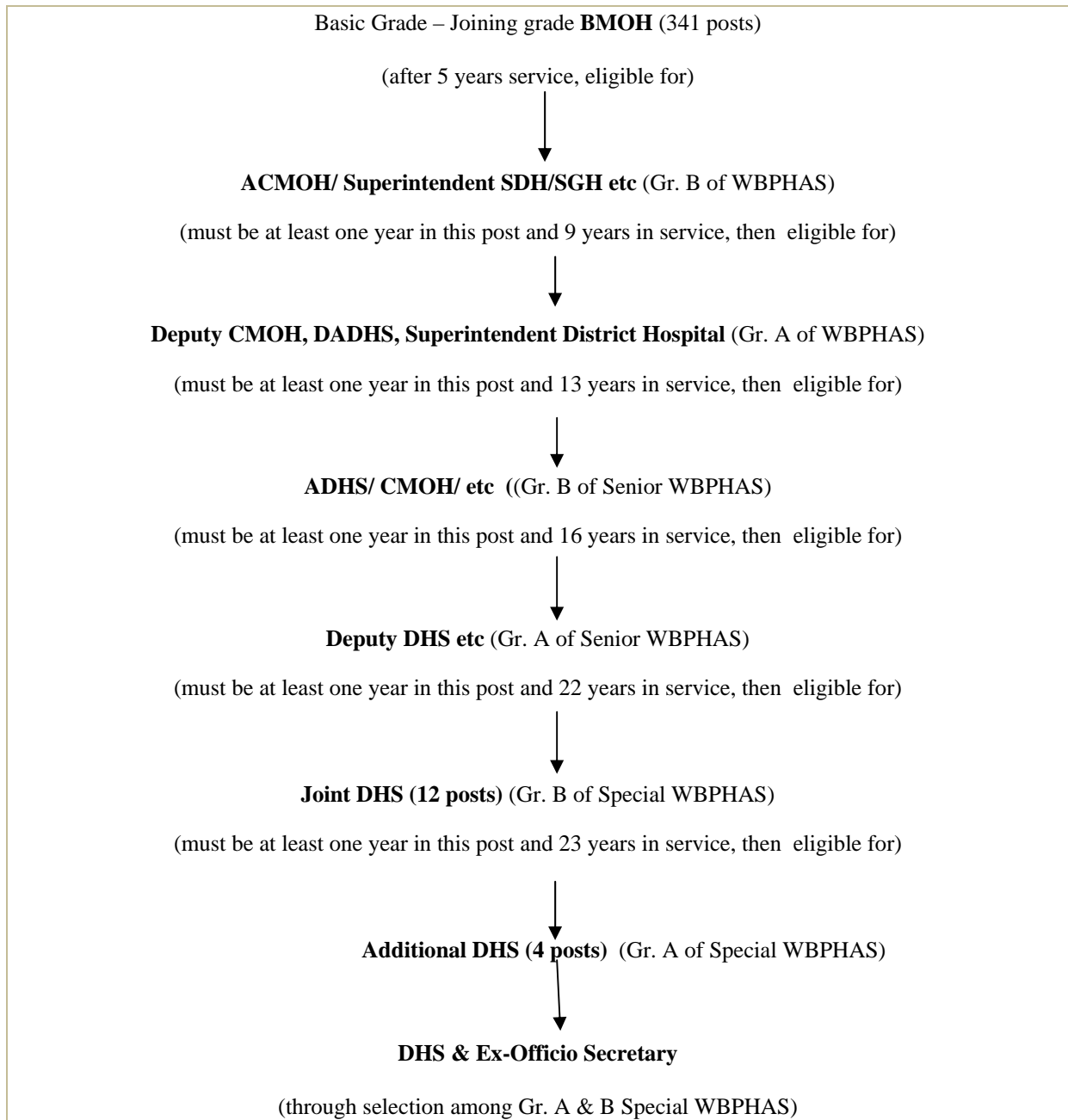
West Bengal Public Health and Administrative service

The WBPHAS cadre was constituted with effect from the 23rd of June, 2004. There are 845 Public Health posts in the WBPHAS. As per government directives, the officials who at the point of issuance of the GO were posted in certain specified administrative or public health service posts would be automatically absorbed into the newly formed WBPHAS cadre. Also, persons holding posts, which carry a Public Health Pay or additional remuneration equivalent to Public Health Pay or Administrative Pay, would also be absorbed into the cadre. The Department had provided an option to officers who would prefer to opt out of the WBPHAS cadre, though it was not assured that they would be entitled to a post in the WBHS cadre and actual reversion would take place in a phased manner. For those officers who opted for service in the WBPHAS cadre, certain monetary incentives were provided. These included increment on absorption (3 flat increments on absorption plus one additional increment for every three years of completed service in posts included in the Public Health-cum-Administration unit of the erstwhile WBHS) and Non-Practicing Allowance (monthly non-practicing allowance, which is based upon the basic pay that they draw).

Cadre structure

There are 845 posts in the WBPHAS cadre. The basic public Health cum administrative officer is BMOH (341 posts). After 5 years of service and as per seniority and vacancy, they are eligible for next grade i.e. Group B posts of WBPHAS for ACMOH/ Superintendent of SDH/SGH/ACMOH/ Assistant Directors of Pasteur Institute etc. After a minimum of one year service in Group B and with a total of 9 years in service, they become eligible for the post of Deputy CMOH/ DADHS/ Superintendent of District Hospital etc which is a Group A post of WBPHAS are promoted subject to the availability of posts. From this post, after a minimum of 13 years of service and a minimum of one year service in Group A based on seniority and the number of vacancies they are promoted to the post of ADHS/ CMOH and in the cadre they are Gr.B Senior WBPHAS. From here based on seniority and vacancies they are promoted to the posts of Deputy DHS, which in the cadre are called Gr. A of senior WBPHAS if the incumbent has a minimum of 16 years of service and a minimum of one year service in Group Gr. B of Senior WBPHAS . Thereafter they are promoted to Joint DHS subject to the availability of vacant posts, which in the cadre is called Gr. B of special WBPHAS if the incumbent has a minimum of 22 years of service and a minimum of one year service in Group Gr.A of Senior WBPHAS. From Jt. DHS they are promoted to Additional DHS subject to the availability of vacant posts which in the cadre are called Gr. A of Spl WBPHAS if the incumbent has a minimum of 23 years of service and a minimum of one year service in Group Gr. A of Senior WBPHAS and finally DHS who is also an ex-officio Secretary.

Figure 13: Career Progression of WBPHAS officers



Recruitment, Promotion and Induction training

Recruitment to the basic grade is done by the Department and not by service commission. This has been through a notification from the governor giving them a special permission till 2010. Similar is the practice in Medical Education. However for the WBHS cadre (clinical) it is done through West Bengal public service commission.

Those who have been inducted into the WBPHAS (earlier recruited through WB public service Commission) after it came into existence in 2004 through exercising options can revert back to WBHS up to the level ACMOH/Superintendent SDH etc ; for the rest it option once exercised is final..

Those who have been recruited by the Department for WBPHAS cannot revert back to WBHS. However many Basic WBPHAS officers leave on fresh selection by WBPS for WBHS (clinical)

As there are very limited number of higher level posts, most of the officers are required to wait long for getting the promotions. To solve the problem Career advancement scheme benefit is provided. Though the scheme is up to the level of Jt. DHS (Gr. B of Special of WBPHAS), officers move into the next scale without change in designation after 8 and 16 yrs of service.

Induction training is offered on joining the service for the WBPHAS and most of the new recruits join this training.

For higher level post graduate training (DPH/Md-PSM) the candidate is required to pass the requisite examination of the university and a minimum of 2-3 yrs service in the rural area is required if the Department sponsors the candidate.

There is a transfer policy, which indicates that one is required to stay in a place for a period of 4 years before he/she is considered for transfer.

West Bengal Nursing Service

Table 11: Key Public Health Staff in Nursing Department

Sl. No	Category of staff	Sanctioned Posts	Number available (as on 16 March 2009)	Vacancy (as on 16 March 2009)
1.	Health Assistant (F)	10356	10137	219
2.	Health Supervisor (F)	2346	2326	20
3.	Staff Nurse Grade II (including PHN Grade II)	18745	604 PHN Grade II PHC 16413 other Staff Nurse Grade II	1712
4.	Senior PHN (including BPHN)	1275	340 BPHN 857 other Senior PHN	78
5.	PHNO	3	2	1
6.	District Public Health Nursing Officer (DPHNO)	19	19	0

Source: Department of Health and Family Welfare, Government of West Bengal

Recruitment and Promotion:

Health Assistant (Female): Needs to be School Final (Madhyamik level) passed and have passed 18 month ANM (Revised Course).

Health Supervisor (Female): HA (F) with minimum 5 years experience, and based on seniority, having received six months promotional training, may be appointed as HS (F) depending on vacancies.

Staff Nurse Grade II (including PHN Grade II): 3½ year General Nurse-cum-Midwifery (Revised Course) training required. When a Staff Nurse Grade II obtains a Diploma in Community Health Education and Administration (10 months training) then she can become a PHN Grade II.

Senior PHN (including BPHN): Needs to have B. Sc. Honors in Nursing. This can be a 2 year in-service B.Sc. Nursing Course which can be availed of by Staff Nurse Grade II through an entrance examination or could be a 4 year generic B.Sc. course which can be availed of by general candidates through the Joint Entrance Examination taken after passing Higher Secondary examination.

DPHNO and PHNO: Are appointed through the West Bengal Public Service Commission.

Here also Career advancement scheme is in operation and there is movement to the next scale after 8 and 16 yrs of service. For the BCD group of officials they move to the next higher scale after 25 yrs of service.

Non-Medical Technical Personnel Cadre

Table 12 : Key Public Health Staff from Non-Medical Technical Personnel Cadre

Sl. No	Category of staff	Number Sanctioned	Number available 31/01/2008	Number of posts vacant 31/01/2008
1.	HA (M)	8957	4552	4305
2.	Health Supervisor (M)	1008	862	146
3.	Block Sanitary Inspector	338	0	338
4.	District Sanitary Inspector	18	0	18

Source: Department of Health and Family Welfare, Government of West Bengal

As is evident from the above table, the posts of the Block Sanitary Inspector and District Sanitary Inspector are vacant. However, from before Independence, in West Bengal, Health Assistant (M) were given Sanitary Inspector training. These Sanitary Inspectors were the pillars of Public Health. Medical Officers supervised the Sanitary Inspectors, who had the power to act under the Food Adulteration Act. From 1986 the training for Sanitary Inspectors was stopped as UNICEF support was withdrawn and the Government of West Bengal was not in a position to support the training. Thus, at present, there are no Sanitary Inspectors.

HA (M) are not being recruited since 1993 till the present date. The total number of NMTP personnel is approximately 6000 in the state.

Recruitment and Promotions:

Health Assistant (Male): The HA (M) needs to be Matriculation/ School Final/ Higher Secondary passed and does not need any previous work experience. They were appointed by the Health Directorate till now.

Health Supervisor (Male): On the basis of a minimum of 5 years experience and seniority, the HA (M) is given a six weeks training at the Government Health and Family Welfare Training Centers (180 hours training consisting of 130 hours theory and 50 hours practical). After this, based on the vacancies the HA (M) is promoted to HS (M).

Block Sanitary Inspector: HS (M) with a minimum of 10 years work experience and as per vacancy is promoted to Block Sanitary Inspector (BSI)

District Sanitary Inspector: The BSI with a minimum of 5 years experience and as per vacancy is appointed as District Sanitary Inspector (DSI).

All the non-medical technical personnel has been en-cadred as NMTP cadre and they have three categories Gr. III, Group II and Group I. From group three they move to Gr. II after 10 years subject to availability of vacancy and from Group II they move to Gr. I after 10 years, subject to availability of vacancy.

Here also Career Advancement scheme is in operation with movement to the next scale after 8 and 16 yrs of service. For the BCD group of officials they move to the next higher scale after 25 yrs of service.

TRAINING

For the WBP HAS cadre, there is Induction Training and thereafter Program based training for all as and when required

For the WBNS cadre there is Program based training for all. There is in-service promotional training for HA (F) and Staff Nurse Grade II.

For the NMTP cadre, there is In-service promotional training for HA (M) and Program based training for all.

There are 5 training centers in West Bengal which include Health and Family Welfare Training Centers and Rural Training Centers. However these institutes are not functioning to their full capacity.

Medical Education

Even though we have large number of doctors from different faculties of medicine, there is serious mal-distribution of these doctors. There is clear urban and rural division. There is concentration of doctors in urban areas, whereas there is serious paucity of doctors in rural areas. West Bengal was earlier known to produce good number of doctors around independence. In fact the modern medical education started first in Kolkata. Out of 289 medical colleges now only 10 are in West Bengal which falls far below the standard norm which is one medical college for 5 million population. They produce specialists including public health specialists. Of the 649 approved seats in DM/McH in the country in different specialty 21 seats only (3.2%) are in West Bengal Medical colleges. For MD/MS courses there are 9311 approved seats of which only 368 are for Preventive and social medicine and community Health Administration. (3.95%). In all there are 14 seats for MD (Community Medicine) among all the Medical Colleges in West Bengal (3.8%). For the various diploma courses there are 3466 seats for various specialties of which share for West Bengal is 60 in their various medical colleges (1.73 %) excluding Diploma in public health. DPH is being taught at AIIHPH, Kolkata. For the Diploma in public health including health education, industrial health total seats available is 193. This has included only 60 seats at AIIHPH. Now additional 32 seats have been created in AIIHP. The details have been given separately.

The candidates have to pass the Combined Entrance Test (CET). Earlier seats used to be reserved for the in-service candidates. Now due to the CET the in-service candidates are sometimes unable to compete and thus there are a shortage of trained MOs in Public Health

Emerging Issues:

Problems with the present Public Health System (as learnt from officers of the Department)

- There is a lack of interest among the workforce to join the Public Health cadre and lack of motivation among those who are presently working in Public Health. Some of the reasons for this are:
- The concept of Public Health is not clear to the workforce. It is not taught as a subject in the medical curriculum. Doctors know about community medicine. However this is given least priority as a subject. It is considered an unglamorous section of medicine.

- The domain of Public Health is very large. The right persons are not put in the right job. When an officer joins in a leadership position and does not know about Public Health, then there is a lack of motivation among the workforce that the officer is supervising.
- Grassroots level implementation is very weak as the workforce comprising the Health Assistants, Health Supervisors and acting BSIs is very limited. The HA (M) has been declared a dying cadre.
- Over-bureaucratization of health services is a major deterrent. There is a need to have qualified technocrats in decision making positions. There is very little sense of belonging among the technocrats to the service.
- The Public Health authorities have no power to implement the laws related to Public Health.

The following steps could improve the present state of service delivery in Public Health (as learnt from officers of the Department)

- Integrated planning with medical practitioners, social scientists, environmental sanitation experts, etc.
- Dedicated cadre for Public Health like an Indian Public Health Service..
- Public Health cadre should be qualified in Public Health
- Create a tool to evaluate who among the qualified doctors is fit for Public Health.
- Health is and should be treated as a combined subject of the State and Center.
- There should be multipurpose work at the periphery and uni-purpose direction at the higher levels.

General Observations:

- In the late 1980s as per the Government of India's Multipurpose Scheme, financial support for the Male Health Workers was withdrawn. The State could not continue provide the requisite financial support and decay set in. The training schools for Male Health Workers gradually disintegrated. This affected the recruitment of Sanitary Inspectors, who were taken from among the trained Male Health Workers. The State also stopped recruiting new Social Welfare Officers and Computers. To keep the Public Health work going, Gram Panchayat level Health Supervisors (Male) were given the work of the Block Sanitary Inspectors, Computers, etc at the block level on an ad hoc basis and with no training given to them. Thus at the block level the Block Public Health Nurse was a trained person while the Block Sanitary Inspector was not trained. In this situation the BMOH had to provide assistance to the BSI and accordingly Public Health received a lower priority as the BMOH also had a curative and administrative role to fulfill. This was also reflected at the district level. The Public Health workforce became de-motivated. There was also no career progression scheme for them.
- In 2004 a new West Bengal Public Health and Administrative Service (WBPHAS) was established to create a workforce dedicated to Public Health. The WBPHAS cadre comprises of those officers who would be posting in various administrative and public health related posts in the states. However, at the block level, the thrust on Public Health has not increased as the Block Medical Officer of Health (BMOH), who belongs to the WBPHAS cadre has a large role to play in curative health delivery as well as administration. This is not allowing the BMOH to devote the amount of time required to effectively conduct Public Health activities.
- In the area of sanitation, the Total Sanitation Campaign is being led by the Panchayats without any technical support from the Health and Family Welfare Department. Even with regard to the CHCMI, the HA (F), HA (M) and all other Public Health staff up to BSI are part of the CHCMI and their work

schedules are to be signed by the Panchayat Pradhan or Sabhapati. The health staff has reacted negatively to this.

- At present, large vacancies exist in the department for public health work . The workers have become clinic based due to the pressures of various health programs. Thus their acceptance by the community is very low. Active surveillance has been reduced to a minimum.
- Public Health has been reduced to outbreak response measures for diseases and natural calamities.

CRITICAL OBSERVATIONS AND DISCUSSIONS

General

Ambiguity in definition

- Public Health encompasses a large number of disciplines. However there is lack of clarity with regard to the specific and concrete views on who are our public health workers. This is due to an ambiguity in the definition of public health and what constitutes public health, unlike other disciplines of medicine. An operational and uniform definition of public health is required to make public health clearly understood by those who are working for public health.
- India does not have a Public Health Act giving a uniform definition of public health applicable for the entire country. Tamil Nadu Public Health Act has a definition but it is too conceptual. Public health being a state subject is likely to have different connotations in different states. To make it uniformly understood there is a need to provide both conceptual and operative part of the definition to all states which will facilitate to frame an uniform package of job descriptions. Career progression etc. The proposed national bill may perhaps look into the same.

Classification of Public health Workforce

- Public Health workforce may be classified into the following broad categories (details given earlier).

1. Public Health Physicians
2. Non Physicians Public Health Experts
3. Public Health Paramedics
<ul style="list-style-type: none">• nursing• other paramedical health staff (Health worker)
4. Public Health teachers (belonging to community medicine stream)
5. Village level grassroots workers

The above categorization is needed to stream line public health workforce production and their retention. This will help developing a proper cadre structure for each of the categories. It is also seen that public health personnel are given non-public health work like medical stores, procurements, administration etc. This is also not desirable.

National Public health policy

- There is a national policy on health. It has some descriptions and prescriptions for Public Health. However within the overall health policy public health has lost its specific focus. Perhaps it will be prudent to carve out a public health policy for the Central Government and also for the states in accordance with proposed national Health bill.

Public Health Human Resource Policy

- At present there are no clear policies for human resources development in the public health system. GOI may develop a generic public health human resource policy based on IPHS requirements, cadre strength taking into consideration population, geographical distribution, Urban rural divide etc, a well-defined recruitment policy, rational promotion policy and career progression, incentives like higher pay scales, pay to the post, quicker promotions, fringe benefits, through appropriate institutional mechanisms, its monitoring including induction training, CME, transparent and effective transfer policies. Creation of a separate cell/divisions for HR for public health at central, state and district level.

Administrative areas:

Public health decisions by Non-public health professionals

- In clinical practice an individual physician has tremendous authority and command in the management of the patient and this is a very satisfying experience. He also shoulders the responsibilities for medical mal-practice. The same is missing in public health discipline. Here in public health matters, public health decisions are often taken by non-public health professionals (say for example surgeons, orthopaedic surgeons, radiologist and what not) without remaining accountable. I am not aware of anything like public health mal-practice being talked about. The same needs to be looked into

Increasing bureaucratization

- Increasing bureaucratization of the departments of health is an important recent development in India. In the national /international policy level meeting (For example Central council of health and family Welfare meeting) technical officers are more often listeners compared to bureaucrats. (In West Bengal one IAS officer took over as head of the Department of Health and Family welfare only in 1962 and through the subsequent decades the numbers of IAS officers in the department have reached half a dozen where as the DHS level posts continued to remain at one. In some state the DHS post has been replaced by a commissioner who is an IAS as in Gujarat.
- Many bureaucrats often opine that the present public health physicians handling national programs do not have requisite skill and expertise expected of them. It is quite clear that within the government, there are very few who can be expected to analyze the health scenario, frame plans and offer policy advice on Community /Public Health issues in order to restore the balance between the public and private sectors, and to play a meaningful role in policy-making relating to community healthcare issues,(43). It appears to be true. Reasons could be several.
- Talented medicos do not prefer to join public health. To draw talented public health personnel the career structure should be formulated in such a way that people are attracted to join the

public health profession. If some one says he is a cardiologist or a gynaecologist people immediately understands his background and nature of work but if some one says he is a public health physician many will not understand his background and nature of work. There is a need to identify the posts which require public health personnel both physicians and non-physicians.

- The career promotion pathways in the health services are hardly tied to the professional courses. Public health medicine is a fast growing discipline. If one is not regularly updated promoting him or her is not cost beneficial. We need to tie promotion/progression to the professional courses so as to create incentives for acquiring advance public health education to ensure availability of high quality technical human resources at various levels of public health services in the country. One way could be to establish all India cadre of public health officers.

Involvement of Private sector

- It is often said that public health does not draw talented physicians who prefer to go with clinical practice. The main reason is that in the modern age people are job oriented and clinical specialty offers a wide range of jobs in the private and public sector. However, once a person joins public health he/she has a restricted career prospect as he has little opening in private sector. Perhaps private sector requires to be roped in for greater participation in delivery of public health. Public health delivery should have an appropriate mix of public sector and the private sector. The private sector needs to be motivated and given incentives for the delivery of public health.

Need for Public Health Manpower Assessment

- Currently there is no clear system of projecting the future supply of human resources vis-à-vis the population's need and demand. Prior to planning for human resources, a systematic appraisal of human resources needs to be undertaken. Such an appraisal of human resources should include an assessment of the current workforce and future requirements with respect to the needs and demands of the population and the health system. There is shortage of public health manpower due to inadequate production, migration, low retention and poor career structure. To address the issue of higher production of manpower, more institutions are needed. However, more institutions will require more number of faculties which may not be available immediately which may dilute the quality. So in order to enhance manpower, a proper manpower assessment needs to be undertaken.
- Commissioning studies to explain the geographic mal-distribution of qualified health workers through focused research on the supply side (e.g. production capacity of health workers) and demand side (e.g. internal and external migration, incentives to, institutional factors and policy environment) factors will be helpful.

Involvement of Indian System of Medicine

- India has a vast reservoir of practitioners in the Indian Systems of medicine and Homoeopathy, who have undergone formal training in their own disciplines. They are not yet fully integrated with public health services. The possibility of using such practitioners in the implementation of State/Central Government public health programs, in order to increase the reach of basic health care in the country.

Training

- Presently induction training for all categories of health work force is not in place everywhere. For some it is there. However for most of the nursing and paramedical staff they are selected, later trained and put in place. This is particularly true for ANM/ male multipurpose health worker. For Block PHC MO in West Bengal induction training is available though it is not mandatory. CME is available and is being conducted under various programs as and when needed. Need for induction training and continuing medical education for skill up-gradation is essential. In the absence of skill up-gradation health services pay more and more for less and less expertise. This is required to be looked into. An appropriate HR policy with components of induction training, CME is perhaps the right choice.

Inaccurate information on public health workforce

- Information on the health workforce is inaccurate. This becomes difficult for evidence-based perspective planning. There is a need to generate accurate information regarding the health workforce, including the public health workforce. However there is no denial there is acute dearth of public health personnel.
- Greater action/initiatives in areas like GIS mapping of health personnel upto block and village levels to enable policy making and programme designing
- Create a task force comprising of the MOHFW, agencies collecting human resource information (e.g. Census, NSSO) and experts to recommend ways to make human resources information more reliable, valid and timely.

Inadequate production of public Health Manpower

- Though the number of Medical colleges appear to be reasonable Public health manpower production in medical colleges are low. Schools of public health also were not established in required numbers. Similarly are the inadequate numbers of schools of nursing and paramedical staff like Sanitary inspectors etc
- NHP 2002 envisaged increasing the public health expenditure from 0.9% of GDP to about 2-3% of GDP. This is essential to improve public health. To be able to spend this kind of budgets to deliver health services, we would require large and various types of public health manpower in both rural and urban areas (38) creating shortage of public health personnel more critical.

Role of Professional Bodies

- Role of professional bodies are less felt in India compared to more developed countries. Greater role of professional bodies and associations to adhere to standards and ethics and in the policy matter is required.

Medical Council

- Medical council does not have or does not exercise appropriate control over medical institutions. While exercising its authority in implementation of standards and norms for all medical institutions it should also consider relaxation of norms to set up and run medical

educational institutions as per local need. GOI/State Governments should provide additional incentives in opening medical colleges in less served areas.

Major issues and concerns

Diversity of health personnel

- A large number of professionals and diverse number of professionals practice public health. Therefore addressing all their needs is a major area of concern

Shortage of Manpower

- Shortages of health personnel especially in critical areas like Public health physicians, Non-physician specialist in public health, and other areas like nurses, sanitary inspectors, public health nurses etc, is a growing problem due to paucity of schools of public health, schools of nursing, schools for sanitary inspectors training etc. Establishing more schools of public health will require large national and international resources.

Mal-distribution of health workforce

- Density of the health workforce (per 10,000 population) across the states in India, ranges from 23.17 in Chandigarh to 2.51 in Meghalaya. Disparity in medical colleges in the country, rural-urban divide, are areas of concern
- Migration of health personnel, and medical tourism, are important concerns. (38)
- Many medical professionals are not willing to stay and work in developing countries when pay and employment conditions are so much better elsewhere. Migration of health personnel and demand from across the globe especially south west Asian countries will persist and perhaps increase in the years to come and it may be difficult for the country to offer similar financial packages by the public sector to provide incentives to their financial packages to prevent migration. What is perhaps could be undertaken is to produce more health personnel.(44) That will require time. As a short term measure better packages should be worked out in the background of increasing globalisation.

Small public health cadre or absence of public health cadre

- Central govt. established public health sub-cadre after 36 years of independence and that too with a very small number (only 78 in the country for a population of more than a billion). Most of the states do not have a public health cadre and only few have (some of which have been described in the paper). Even in spite of repeated recommendations of constituting Indian Medical and Public Health services by several expert groups, the same never materialised.

Adoption of Public health service delivery model

- Historically public health delivery was with local bodies. Accordingly rules and regulations were framed. But over a period of time because of domination of medical discipline it was slowly taken over by the Department of Health and that too by clinical fraternity. Following Bhore committee recommendations public health service was primarily delivered through primary health care services. Following 73rd and 74th constitutional amendments public health

service delivery again has been given to local bodies. However public health service delivery staff are still with the Department of Health and the Planning commission in its study has observed that the Local bodies in the rural areas do not have adequate capability in taking over the responsibility of public health. In urban areas however the Department of health does not have much public health infrastructure.

- Only few states like Tamil Nadu, Maharashtra, West Bengal etc have public health cadre but their models are different and each have their advantages and disadvantages. Therefore the major issue is whether every state will be asked to develop their own models which are widely different from each other or they will implement a common model with local flexible adjustments wherever needed.

Comparative highlights of advantages and disadvantages of three models

Public health service delivery model	Advantages	Disadvantages
Tamil Nadu	<ul style="list-style-type: none"> • It has a public health Act • It has a public health cadre for public health physicians, public health inspector, community health nurse. • Promotion and career progression is fairly good. • For Village nurse AWWs are considered for selection • Inter-transferability with teaching assignments in medical colleges and vice versa 	<ul style="list-style-type: none"> • Public health physician cadre starts at health officer level in urban areas and then promoted to head district public health organization; may not have adequate hands on experience for rural areas • Lateral entries are not there • Block Medical officer in charge has both clinical and public health responsibility
Maharashtra	<ul style="list-style-type: none"> • It has a public health cadre for public health physicians, • Promotion and career progression is fairly good. • Block Medical officer separately for public health is present • Good public health laboratory set-up 	<ul style="list-style-type: none"> • Inter-transferability with teaching assignments in medical colleges and vice versa not there • Food sanitation and adulteration are not with the department of Health
West Bengal	<ul style="list-style-type: none"> • Public health and administration have been clubbed as a single cadre for easier administration. • Promotion and career progression is fair but needs improvement • Emphasis on de-centralization and delivery through Panchayat is active • It is an effort to meet the challenges of shortage of public health physicians 	<ul style="list-style-type: none"> • Often posts requiring public health skill is held by people without formal public health background

Nursing Personnel

Major issue is acute shortage resulting in disproportionate nurse/patient ratio which is affecting quality of public health care. Maldistribution of nursing institutions with reference to geographical and rural –urban divide is similar to that of physicians. Almost similar strategic direction is needed as for physicians. In addition other issues like Inadequate infrastructure at work place, poor living conditions, limited scope for career development and no opportunity for specialization are required to be addressed

Approaches

Public Private Partnership (private for profit and not for profit sector)

Though the Government is primarily responsible for public health it alone can not deliver public health. Engaging the private sector through public-private partnerships can potentially strengthen human resources required for improving service delivery in underserved areas and thus reducing gaps in the supply, needs and demands for human resources, and achieving national public health goals.

International collaboration

A long-term effort is now required to rebuild the public health workforce; this will require major support from national and a wide variety of international agencies. A strengthened public health workforce will be in a better position to ensure that evidence on the effectiveness of health interventions and the new resources coming into the health sector lead to improvement of the health of all populations, not just the most advantaged. However it will require large resources both financial and technical. Though NHP –2002 has indicated enhancement of resources for public health but the same may not be available. Therefore international support should be sought to revamp the public health system.

Empowering and strengthening and establishing professional councils

The existing councils are required to be strengthened and adequately empowered and new councils in areas of some public health disciplines are required to be established. Professional associations should as well come forward to monitor and become partner in accreditation of professionals they represent

Compulsory pre-permanent registration rural service

To meet the health manpower requirements for rural areas, there should be a compulsory three years rural posting or rural practice before permanent registration with the council or granting a post graduate seat. This is in place in various states in some forms. Higher quota could be given for opting for public health

Enhancing scope of public health activities for the nurses and para-medics

Possibility needs to be examined of entrusting some limited public health functions to nurses, paramedics and other personnel from the extended health sector after imparting adequate training to them. Many quote Medical council regulations will come on the way. We can however establish a separate Public health council like nursing council Need for more innovative ideas for setting up medical institutions in underserved areas, and to retain the trained highly skilled workforce as well as to attract those who have migrated. Involvement of Private sector will help in this.

Three Year Basic Doctor Degree

To cope up with the medical and health care needs of the rural and slum population, a three-year basic doctor course in integrated medicine and public health is often recommended. Many also opine that this course could be taught in local languages so that they may not have opportunities to move out. This will result in less brain-drain. But looking into the nature of contemporary medical practice this appears to be less prudent.

Strategic options

Constitution of Public Health Cadre

- With regard to the public health workforce, states like Tamil Nadu and Maharashtra have public health cadres and West Bengal has a mix of public health and administrative. However, many of the other states do not have a separate public health cadre. Even the Central Government did not have a separate public health cadre until 1983 when under the CHS cadre a public health sub-cadre was constituted.
- At present all the sub-cadres at the Central Government level converge at the DDG level. This indicates that the higher level posts may not have the requisite public health expertise and the public health responsibilities are being shouldered by non-public health officials. It may be noted that since the last six decades of Independence, not a single public health officer has occupied the position of the DGHS. Therefore, there is a need to constitute a separate Public Health Service Cadre, which may stimulate establishing a separate public health cadre in the states.

Establish All India Cadre for public health physician officers:

- If current structure is looked into we observe that public health officers handling national program at the GOI does not have much ground level experience in the said programs because they have never worked as program managers at the state level, and similarly public health officers working at the state level do not have an opportunity to occupy higher level posts in public health with GOI. If Indian public health services is introduced it will improve public health functioning at the state as well as in the centre.

Establish cadres for public health staff (Non Physicians Public Health Experts other paramedical health staff [Health worker])

- Non Physicians Public Health Experts and health staff (Health worker) should have their cadre established

Public Health Education

- It is high time that the positions for MD Community Medicine at the central, state, and district level are increased.
- Strengthening of the Departments of Community Medicine in medical colleges in terms of sanctioning of new teaching positions and the related infrastructure is required for increasing the supply of Community Medicine Specialists to central and state health services.

- Investments in Community Medicine education may not yield benefits in the short term but capacity built now will serve for many years to come.
- Establish new schools of public health in the pattern of All India Institute of Hygiene and public health, Kolkata like AIIMS in other states.
- Strengthen identified medical colleges to function as schools of public health
- Establishing Schools of public with international collaboration like that of PHFI with wide network with the medical colleges and addressing geographical regional imbalances

Curriculum and Reform in Education and New Educational Tools

- There is a need also to re-visit the undergraduate and postgraduate curriculum in community medicine to incorporate its various sub-speciality courses in equal proportions, i.e., epidemiology, health promotion, health management, and primary care or family medicine etc. The need for introducing DM course or Dr. PH course in epidemiology, MCH could be considered.
- Strategies at this level range from review of structure and content of curriculum, the adoption of new pedagogical methods and changes in admission criteria with a view to producing graduates better prepared and more willing to work in underserved areas. It is often said than done. But some country experiences could be tried (45).
- The globalization and advances in informational technology have significantly enhanced the scope of educational possibilities. Virtual universities, networks of institutions and professional associations, standards of certification and distance learning are now possible avenues for improving a country's capacity to educate and train its health workforce even when they practice in isolated areas (46).
- Tele-health and telemedicine have the potential to increase the supply of health professionals to rural and deprived areas by facilitating professional collaboration and development, by supporting, for example, continuing education and access to some services. The use of videoconference technology has opened many prospects for those working in rural and remote areas, as a means to gain access to education and training over long distances.

Public Health Experts, Non-Physicians and Paramedicals

- There is a need for having formal public health courses for non-medical persons at the graduate and postgraduate level such as bachelor of public health and master of public health. Since setting up of these courses will take time, in the interim period, certificate courses in public health should be offered to existing workforce with non-medical backgrounds, who are primarily working for public health service delivery. Possibility of delivering this course in the distance learning mode should also be explored.

- A public health education system needs to be built for medical and non-medical streams starting with the short-term certificate courses, undergraduate and postgraduate courses, and proceeding to the doctoral level. The demand for public health education will depend on the career options available for public health professionals with medical and non-medical backgrounds in a balanced way in the central, state, district and local government health organizations, academic and research institutions.

Measures to address geographical imbalances

- Many strategies have been tried to prevent or to reduce the maldistribution health man power. But none has paid dividend to the extent desired. It has been admitted in NHP2002. Establishing more Medical colleges in rural areas through relaxation of MCI regulations and additional incentives and providing additional non-financial incentives to attract health professionals to otherwise unattractive locations. Training more individuals may not be the right answer for improving the distribution of health professionals. Trained individuals may migrate, leave their original profession to work in another area, or withdraw from the labor market, which is especially true for women.
- To address the issues of geographical and specialty mal-distribution of physicians in the United States, Jefferson Medical College implemented the Physician Shortage Area Program (PSAP) which combines a selective medical school admissions policy and a special educational programme (46)

Constituting a National public health commission

- A National public health commission having representation of the health services, academic, professional associations, and civil society needs to identify the public health functions at various levels, the background qualifications (medical or non-medical) and the level of public health training (certificate, undergraduate, postgraduate or doctoral / super-specialty level/) required to carry out these functions.
- Reciprocal recognition of foreign degrees as well as greater regulation to achieve high standards of education and training guided by strong respective councils.

Suggested model for adoption.

This area needs discussion. However I would like to suggest that primary public health services at Gram panchayat and below should be handed over to Panchayat and Rural Development. All the public health staff should be transferred to PRD who should provide some additional input in the form of a public health executive/ manager at the GP level (GP HQ sub-centre should be strengthened as a public health care institution for the GP). IPHS revises the standard of PHC. PHC should be aligned with GP. Department of Health shall provide standards, guidelines, monitoring and periodic evaluation through strong convergence mechanism and inputs for training. Secondary and tertiary level public health services could rest with Department of health through appropriate cadre structure as indicated above.

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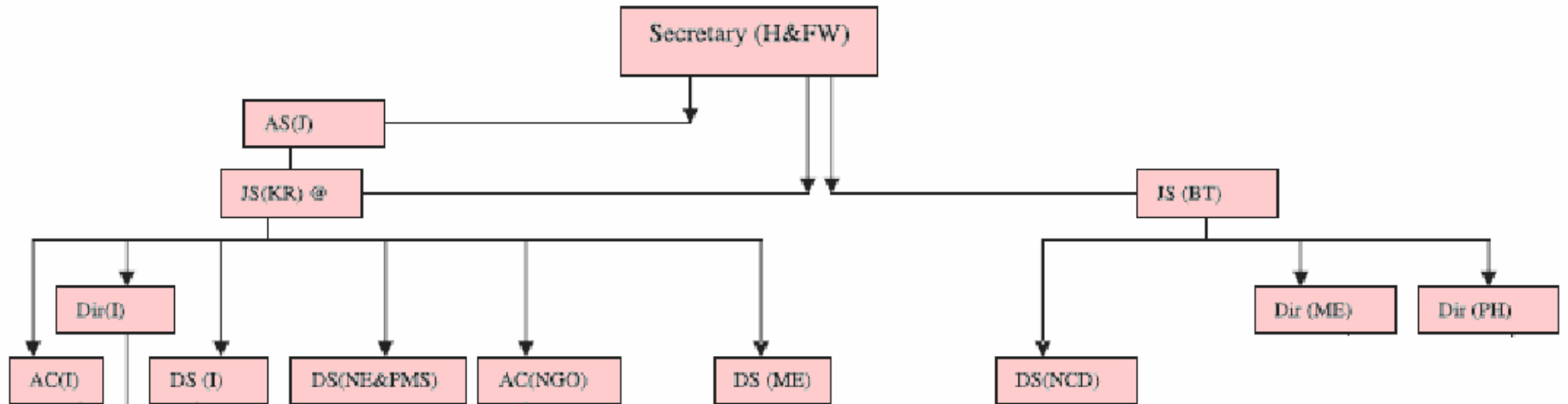
Appendices

Appendix 1.1 Organization chart – Department of Health and Family Welfare, 2007

ORGANISATION CHART

DEPARTMENT OF HEALTH AND FAMILY WELFARE

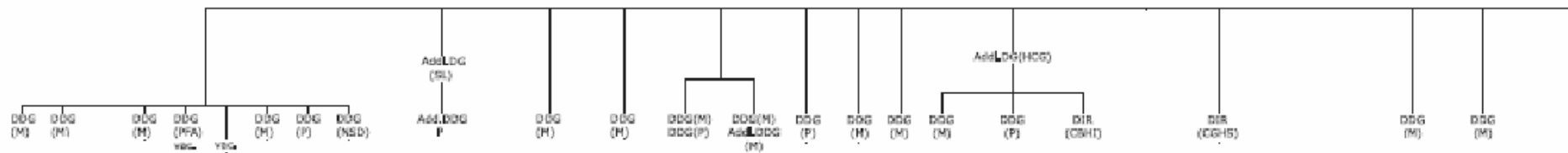
@JS(KR) reports directly to Secretary



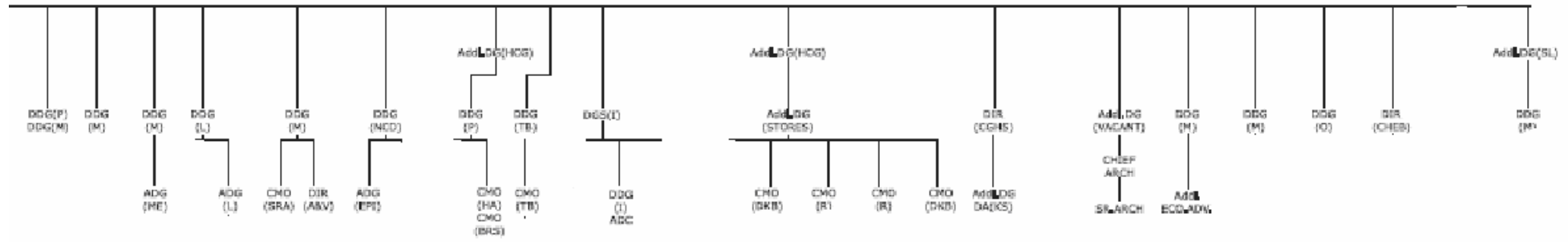
Appendix 1.2 : DGHS Organogram, 2006

ORGANISATION CHART

DIRECTOR GENERAL OF HEALTH SERVICES (AS on 15.12.2006)



Appendix 1.3 : DGHS Organogram



Appendix 1.4: Health Assistant Male at PHC

HEALTH ASSISTANT [MALE] at PHCs (As on March, 2007)						
S. No.	State/UT	Health Assistant [Male]				
		Required ¹ [R]	Sanctioned [S]	In Position [P]	Vacant [S-P]	Shortfall [R-P]
1	Andhra Pradesh	1570	2162	1920	242	*
2	Arunachal Pradesh	85	26	26	0	59
3	Assam	610	NA	NA	NA	NA
4	Bihar	1648	649	634	15	1014
5	Chhattisgarh	518	3551	2940	611	*
6	Goa	19	22	15	7	4
7	Gujarat	1073	3218	2421	797	*
8	Haryana	411	237	106	131	305
9	Himachal Pradesh	443	413	361	52	82
10	Jammu & Kashmir	374	334	334	0	40
11	Jharkhand	330	272	118	154	212
12	Karnataka	1679	1302	837	465	842
13	Kerala	909	802	794	8	115
14	Madhya Pradesh	1149	1192	1168	24	*
15	Maharashtra	1800	1800	1800	0	0
16	Manipur	72	62	52	10	20
17	Meghalaya	103	102	87	15	16
18	Mizoram	57	57	57	0	0
19	Nagaland	84	15	15	0	69
20	Orissa	1279	176	168	8	1111
21	Punjab	484	289	208	81	276
22	Rajasthan	1499	938	714	224	785
23	Sikkim	24	30	8	22	16
24	Tamil Nadu	1181	384	303	81	878
25	Tripura	75	153	93	60	*
26	Uttarakhand	232	552	417	135	*
27	Uttar Pradesh	3660	5712	4061	1651	*
28	West Bengal	922	1496	550	946	372
29	A & N Islands	20	0	0	0	20
30	Chandigarh	0	0	0	0	0
31	D & N Haveli	6	6	3	3	3
32	Daman & Diu	3	3	3	0	0
33	Delhi	8	NA	NA	NA	NA
34	Lakshadweep	4	4	4	0	0
35	Puducherry	39	22	17	5	22
	All India²	22370	25981	20234	5747	6261

Notes:

NA: Not Available.

*: Surplus.

¹ One per each Primary Health Centre

² For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded

Appendix 1.5 : Health Assistant Male at Sub-Centre

HEALTH WORKER [MALE] AT SUB CENTRES (As on March, 2007)						
Health Worker [Male]						
S. No.	State/UT	Required ¹	Sanctioned	In Position	Vacant	Shortfall
		[R]	[S]	[P]	[S-P]	[R-P]
1	Andhra Pradesh	12522	7340	6127	1213	6395
2	Arunachal Pradesh	379	23	23	0	356
3	Assam	5109	NA	NA	NA	NA
4	Bihar	8909	2135	1240	895	7669
5	Chhattisgarh	4692	3818	2852	966	1840
6	Goa	172	150	134	16	38
7	Gujarat	7274	5306	3347	1959	3927
8	Haryana	2433	809	425	384	2008
9	Himachal Pradesh	2071	2008	1270	738	801
10	Jammu & Kashmir	1888	381	377	4	1511
11	Jharkhand	3958	5444	4291	1153	*
12	Karnataka	8143	5009	3762	1247	4381
13	Kerala	5094	4346	4266	80	828
14	Madhya Pradesh	8834	7170	6560	610	2274
15	Maharashtra	10453	10453	6097	4356	4356
16	Manipur	420	420	420	0	0
17	Meghalaya	398	273	273	0	125
18	Mizoram	366	366	303	63	63
19	Nagaland	397	276	300	*	97
20	Orissa	5927	4911	3392	1519	2535
21	Punjab	2858	2858	1375	1483	1483
22	Rajasthan	10612	3968	2528	1440	8084
23	Sikkim	147	147	147	0	0
24	Tamil Nadu	8683	5062	1503	3278	7180
25	Tripura	579	449	268	181	311
26	Uttarakhand	1765	855	656	199	1109
27	Uttar Pradesh	20521	9080	5732	3348	14789
28	West Bengal	10356	9660	5178	4482	5178
29	A & N Islands	108	26	0	26	108
30	Chandigarh	13	8	8	0	5
31	D & N Haveli	38	9	9	0	29
32	Daman & Diu	21	17	17	0	4
33	Delhi	41	0	0	0	41
34	Lakshadweep	14	14	1	13	13
35	Puducherry	77	0	0	0	77
	All India²	145272	92791	62881	29653	77615

Notes:

NA: Not Available.

*: Surplus.

¹ One per each Sub Centre

² For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded

Appendix 1.6: Health Assistant Female at Sub-Centre

HEALTH WORKER [FEMALE] / ANM AT SUB CENTRE (As on March 2007)					
Health Worker [Female]/ANM					
State/UT	Required ¹	Sanctioned	In Position	Vacant	Shortfall
	[R]	[S]	[P]	[S-P]	[R-P]
Andhra Pradesh	12522	11133	10322	811	2200
Bihar	8909	8909	7672	1237	1237
Chhattisgarh	4692	3818	3263	555	1429
Goa	172	171	171	0	1
Gujarat	7274	7274	7071	203	203
Haryana	2433	1618	1675	*	758
Himachal Pradesh	2071	2213	1836	377	235
Jharkhand	3958	5444	4291	1153	*
Karnataka	8143	8487	7028	1459	1115
Kerala	5094	5078	5042	36	52
Madhya Pradesh	8834	8834	8590	244	244
Maharashtra	10453	10453	8100	2353	2353
Manipur	420	420	420	0	0
Meghalaya	398	460	401	59	*
Mizoram	366	366	421	*	*
Nagaland	397	276	300	*	97
Orissa	5927	5927	5927	0	0
Punjab	2858	2858	2290	568	568
Sikkim	147	147	147	0	0
Tripura	579	530	520	10	59
Uttarakhand	1765	1765	1604	161	161
Uttar Pradesh	20521	19698	17323	2375	3198
West Bengal	10356	10356	9900	456	456
A& N Islands	108	107	107	0	1
Chandigarh	13	22	22	0	*
D & N Haveli	38	38	38	0	0
Daman & Diu	21	21	21	0	0
Delhi	41	40	37	3	4
Lakshadweep	14	14	14	0	0
Puducherry	77	77	77	0	0

Notes:

NA: Not Available.

*: Surplus.

¹ One per each Sub Centre .

Information is not available from the remaining States / UTs

Appendix 1.7: Health Assistant Female at Sub-Centre and PHC

HEALTH WORKER [FEMALE] / ANM AT SUB CENTRES & PHCs (As on March., 2007)						
Health Worker [Female]/ANM						
S. No.	State/UT	Required ¹ [R]	Sanctioned [S]	In Position [P]	Vacant [S-P]	Shortfall [R-P]
1	Andhra Pradesh	14092	12623	12000	623	2092
2	Arunachal Pradesh	464	454	454	0	10
3	Assam	5719	5719	5719	0	0
4	Bihar	10557	10557	8904	1653	1653
5	Chhattisgarh	5210	4335	3667	668	1543
6	Goa	191	196	196	0	*
7	Gujarat	8347	7274	7071	203	1276
8	Haryana	2844	1735	1909	*	935
9	Himachal Pradesh	2514	2213	1836	377	678
10	Jammu & Kashmir	2262	1964	1588	376	674
11	Jharkhand	4288	5549	4372	1177	*
12	Karnataka	9822	8756	7244	1512	2578
13	Kerala	6003	5670	5634	36	369
14	Madhya Pradesh	9983	9983	8590	1393	1393
15	Maharashtra	12253	12253	9598	2655	2655
16	Manipur	492	492	487	5	5
17	Meghalaya	501	667	608	59	*
18	Mizoram	423	442	421	21	2
19	Nagaland	481	342	342	0	139
20	Orissa	7206	7121	6768	353	438
21	Punjab	3342	3182	2515	667	827
22	Rajasthan	12111	12271	12271	0	*
23	Sikkim	171	267	267	0	*
24	Tamil Nadu	9864	10367	10351	16	*
25	Tripura	654	642	642	0	12
26	Uttarakhand	1997	1950	1785	165	212
27	Uttar Pradesh	24181	23656	21900	1756	2281
28	West Bengal	11278	10356	9900	456	1378
29	A & N Islands	128	127	127	0	1
30	Chandigarh	13	22	22	0	*
31	D & N Haveli	44	38	38	0	6
32	Daman & Diu	24	24	24	0	0
33	Delhi	49	60	51	9	*
34	Lakshadweep	18	22	22	0	*
35	Puducherry	116	116	116	0	0
	All India²	167642	161445	147439	14180	21157

Notes:

NA: Not Available.

*: Surplus.

¹ One per each existing Sub Centre and Primary Health Centre.

² For calculating the overall percentages of vacancy and shortfall, the States/UTs for which manpower position is not available, should be excluded

Appendix 1.8: Sub-centre without health
worker

NUMBER OF SUBCENTERS WITHOUT ANMs OR/AND HEALTH WORKERS [M] (As on March, 2007)					
S. No.	State/UT	SubCenters Functioning	Without HW[F]/ ANMs	Without HW [M]	Without Both
1	Andhra Pradesh	12522	910	1013	0
2	Arunachal Pradesh	379	100	275	100
3	Assam	5109	80	4997	80
4	Bihar	8909	982	4058	1584
5	Chhattisgarh	4692	555	966	NA
6	Goa	172	8	16	0
7	Gujarat	7274	421	1863	NA
8	Haryana	2433	90	634	90
9	Himachal Pradesh	2071	377	738	46
10	Jammu & Kashmir	1888	29	16	NA
11	Jharkhand	3958	NA	NA	NA
12	Karnataka	8143	NA	4955	NA
13	Kerala	5094	52	828	8
14	Madhya Pradesh	8834	603	2274	NA
15	Maharashtra	10453	833	2024	740
16	Manipur	420	0	99	0
17	Meghalaya	398	0	123	0
18	Mizoram	366	20	50	5
19	Nagaland	397	59	59	59
20	Orissa	5927	0	0	447
21	Punjab	2858	264	762	167
22	Rajasthan	10612	352	2701	178
23	Sikkim	147	0	0	0
24	Tamil Nadu	8683	16	5405	16
25	Tripura	579	137	237	102
26	Uttarakhand	1765	161	656	656
27	Uttar Pradesh	20521	431	12845	431
28	West Bengal	10356	456	4804	NA
29	A& N Islands	108	1	108	1
30	Chandigarh	13	0	5	0
31	D & N Haveli	38	0	29	0
32	Daman & Diu	21	0	4	0
33	Delhi	41	0	0	0
34	Lakshadweep	14	0	13	1
35	Puducherry	77	0	77	0
	All India²	145272	6937	52634	4711

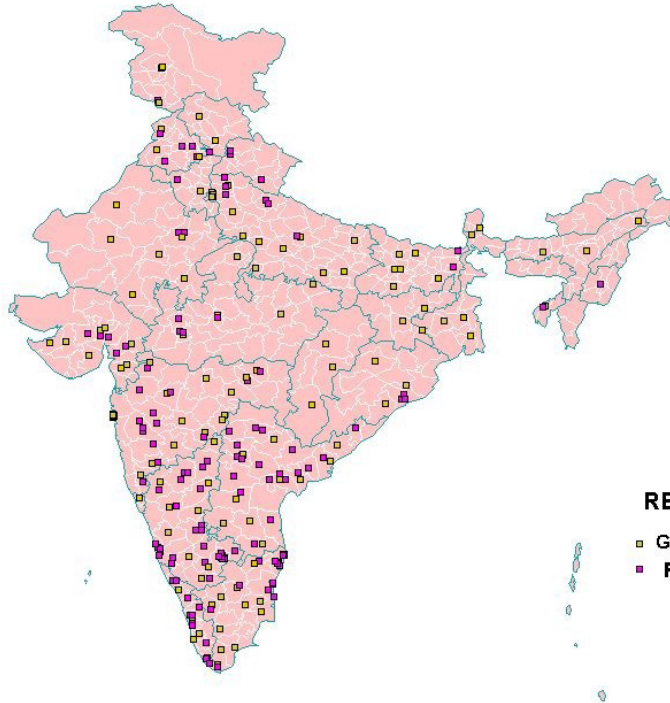
Notes:

NA: Not Available.

² For calculating the overall percentages, the States/UTs for which manpower position is not available, should be excluded

Appendix 1.9: Maps of Medical Colleges in India

MEDICAL COLLEGE

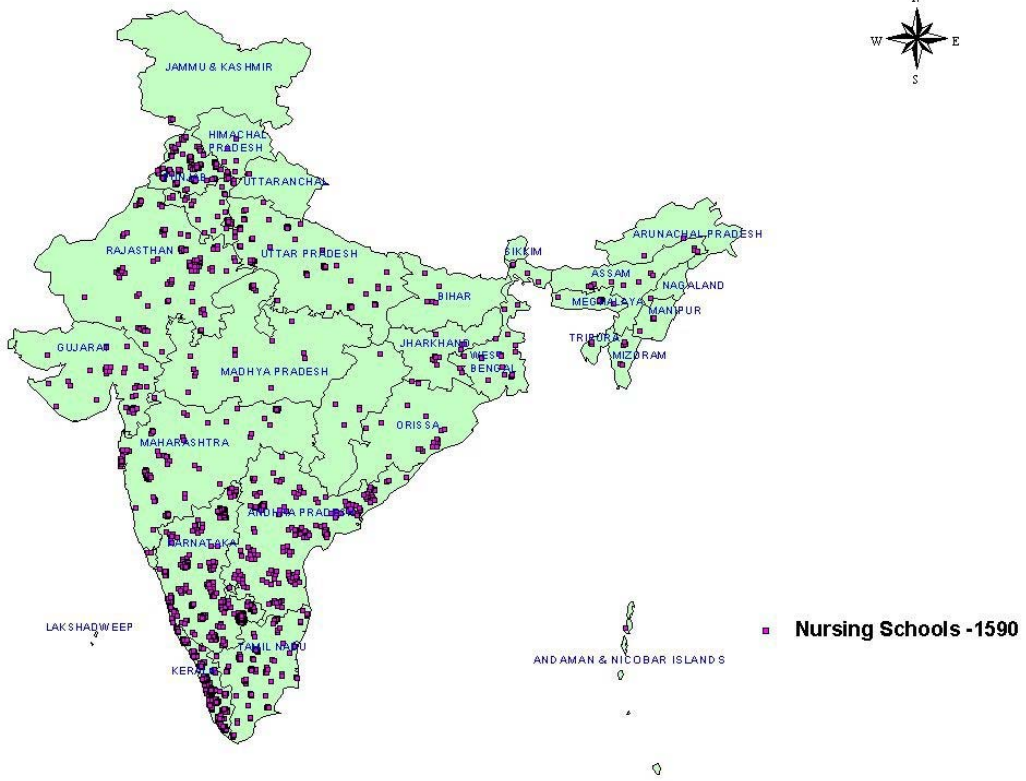


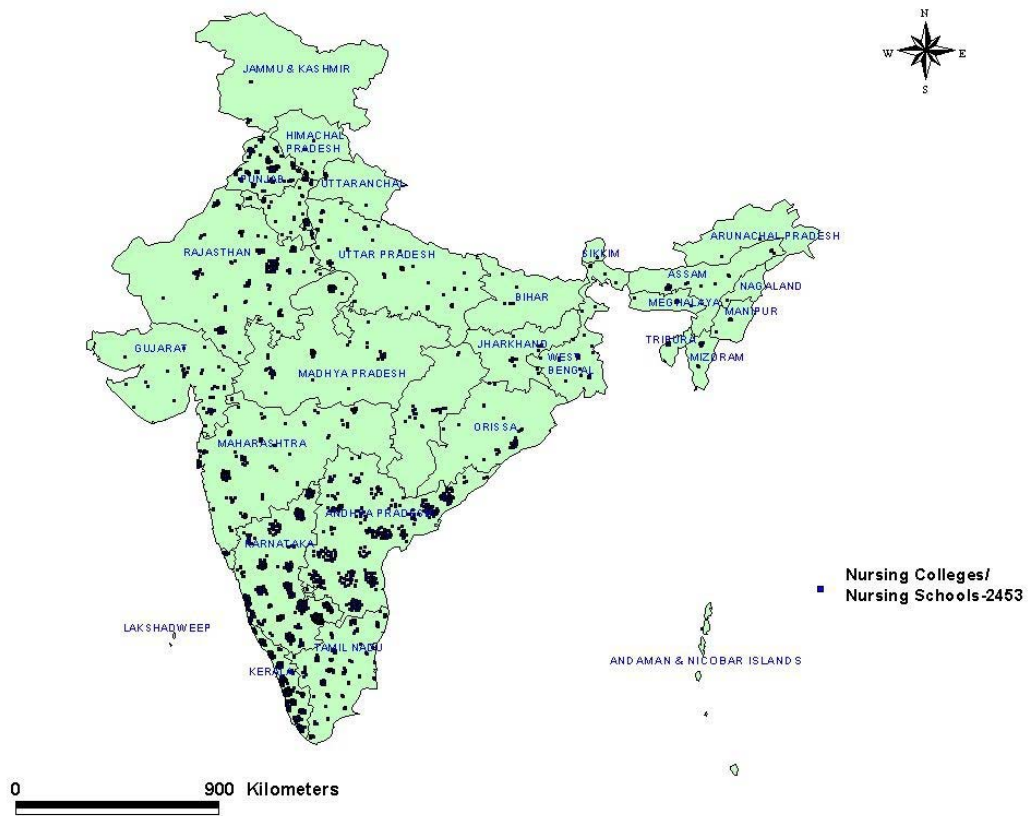
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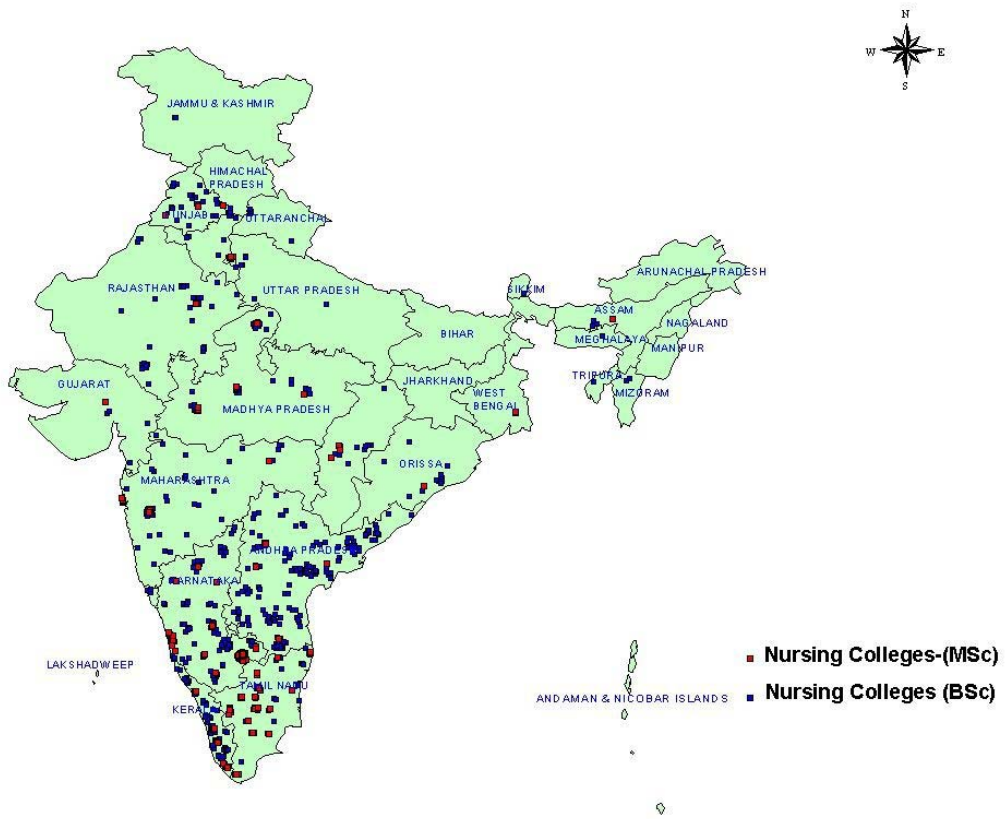
- Govt / MC / Univ / KHS/BMM
- Private/Trust/Society

400 0 400 Kilometers

Notes: MC-Municipal Corporation, Univ- University,
KHS-Kasturba Health Society, BMM-Brihan Mumbai Mahanagar

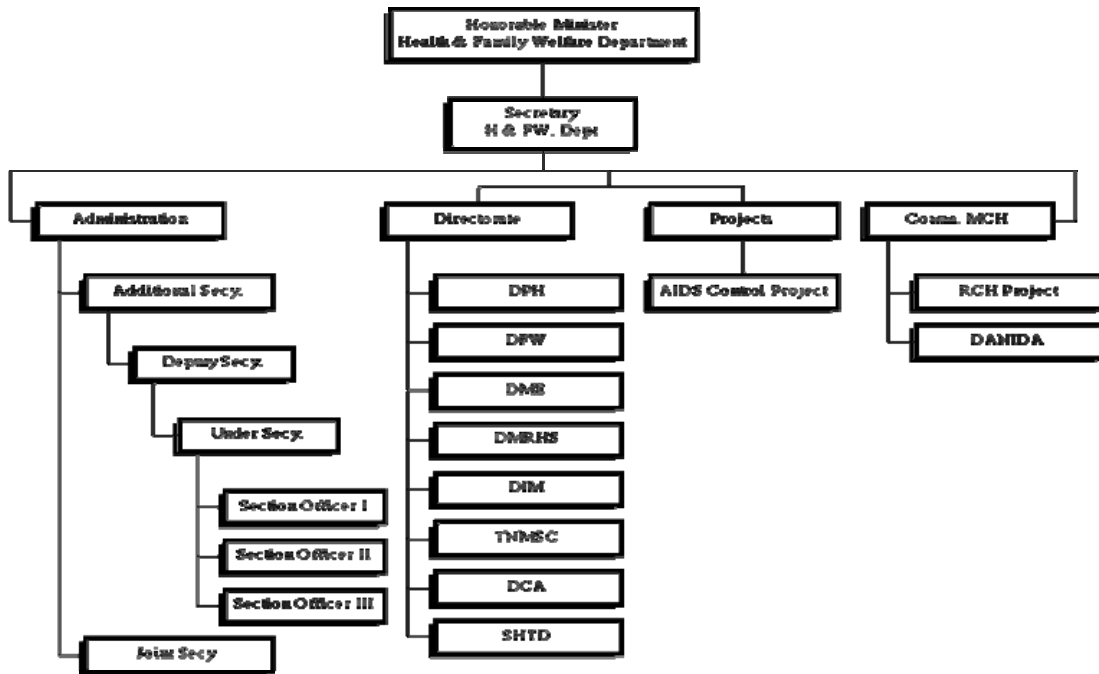




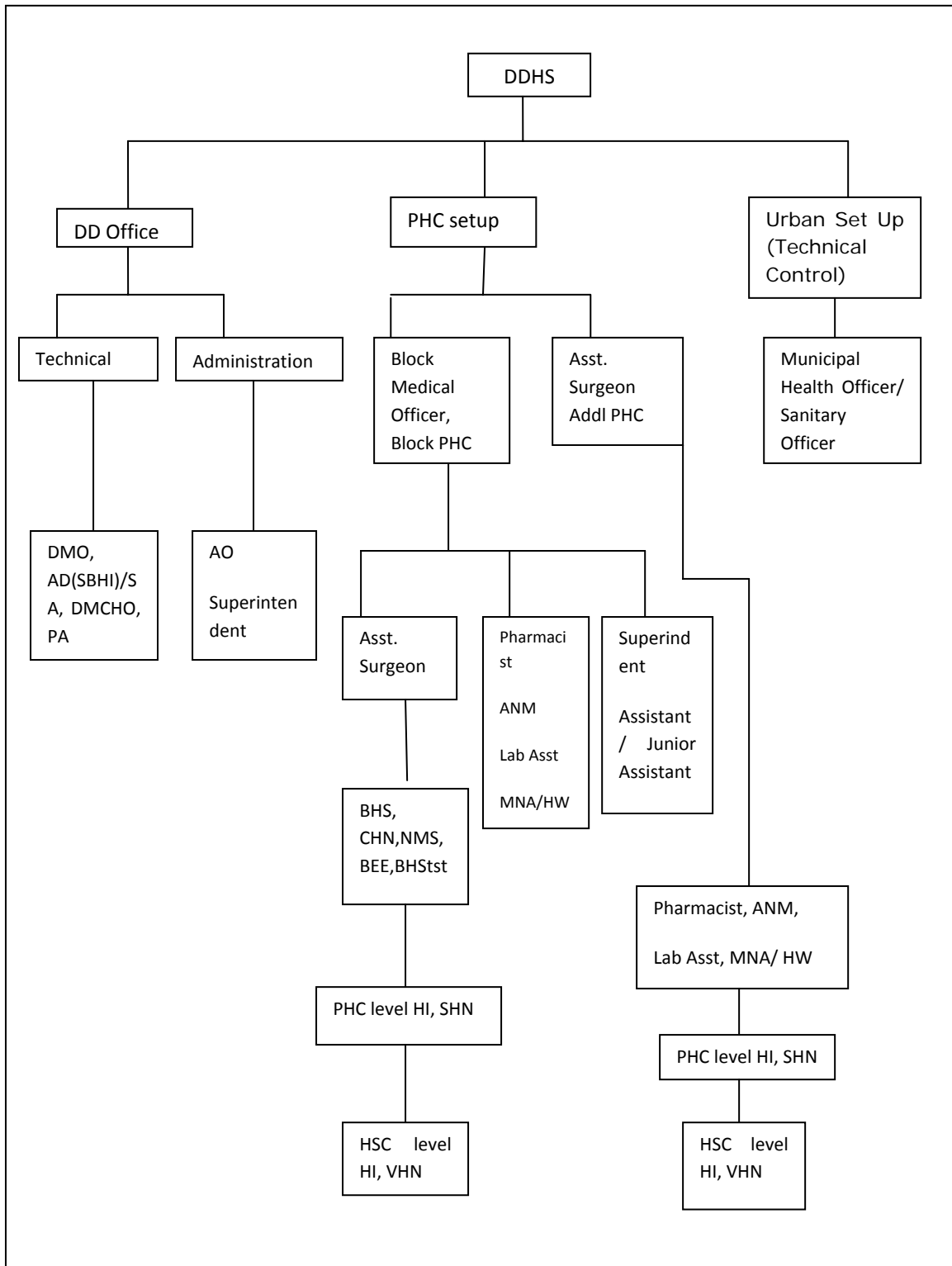


Appendix 2: TAMIL NADU

State Level Organogram of the Health and Family Welfare Department



Organogram at the District Level for Public Health

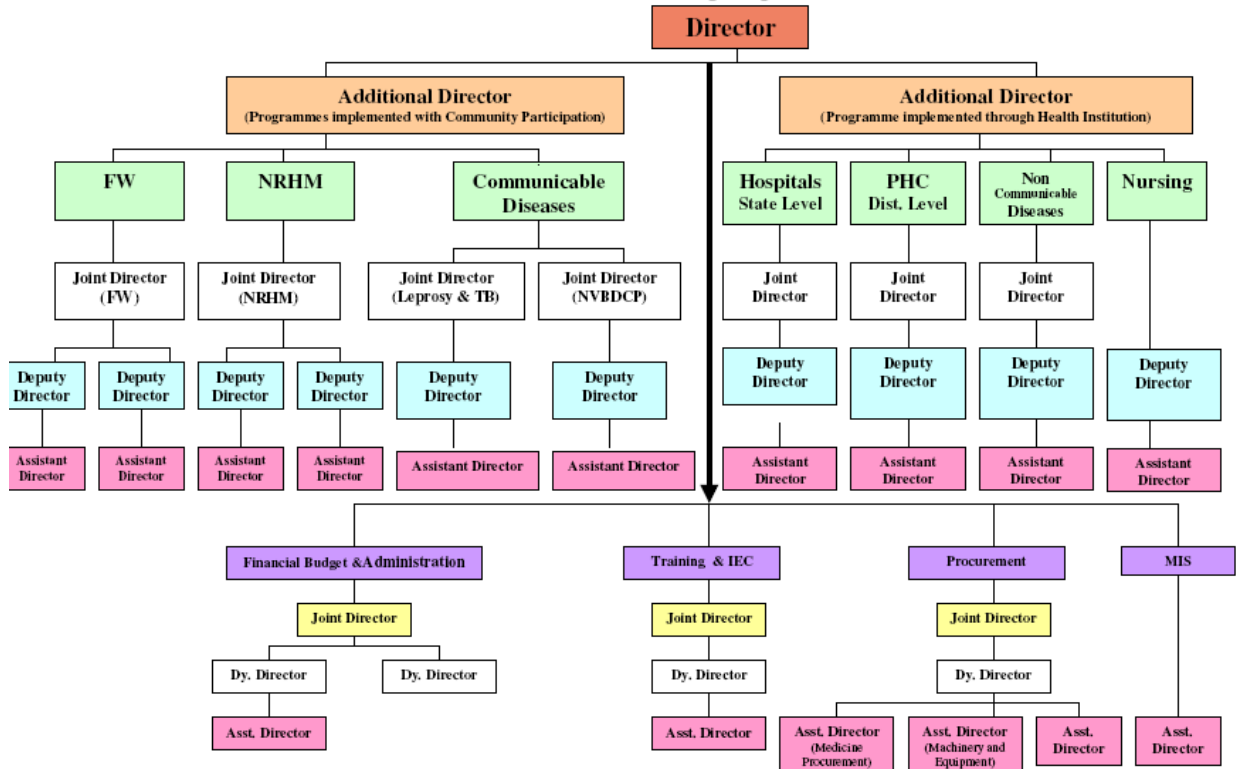


Appendix 3: MAHARASHTRA

State Level Organogram of the Department of Health and Family Welfare



Directorate of Health Services Organogram (*)



(*) As per Public Health Department Govt. Resolution no.: Padstha 2007/Pra. kra.172(1)/Services 2, dated 23rd May 2007

Director of Health Services



3 Additional Directors

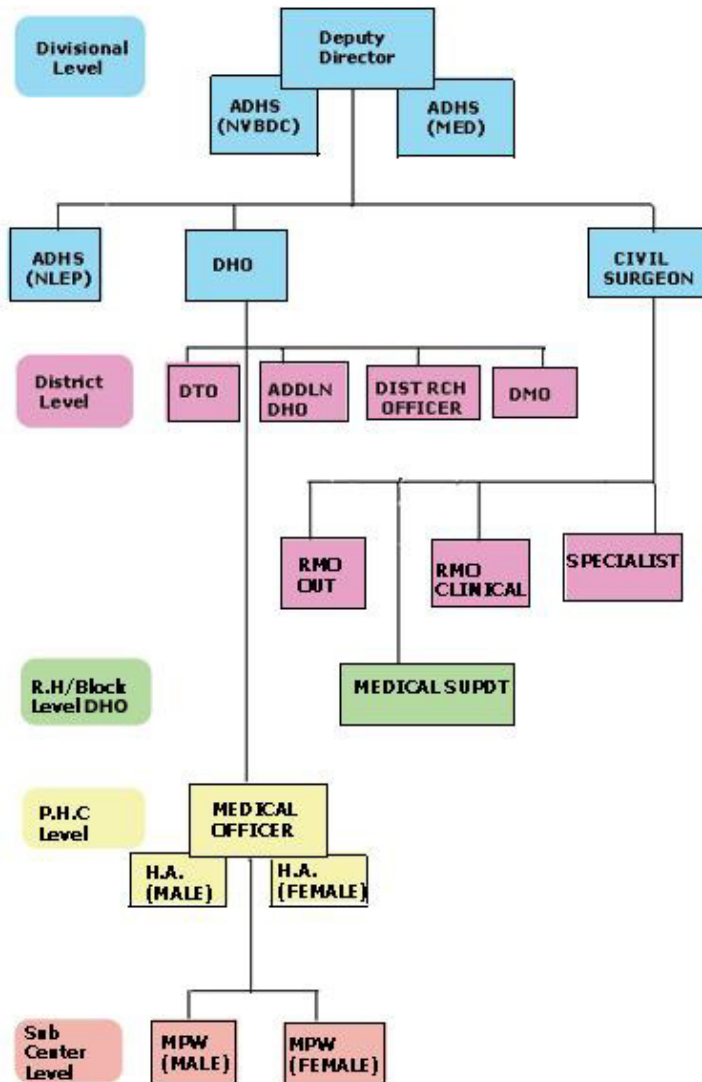


Joint Directors as Bureau Chiefs



Deputy Director– 8 divisions

PART III
GOVERNMENT OF MAHARASHTRA
DIRECTORATE OF HEALTH SERVICES



Organogram of Divisions and District Level

ADHS - Assistant Director Health Services

DHO - District Health Officer

ADDL-DHO - Additional District Health Officer

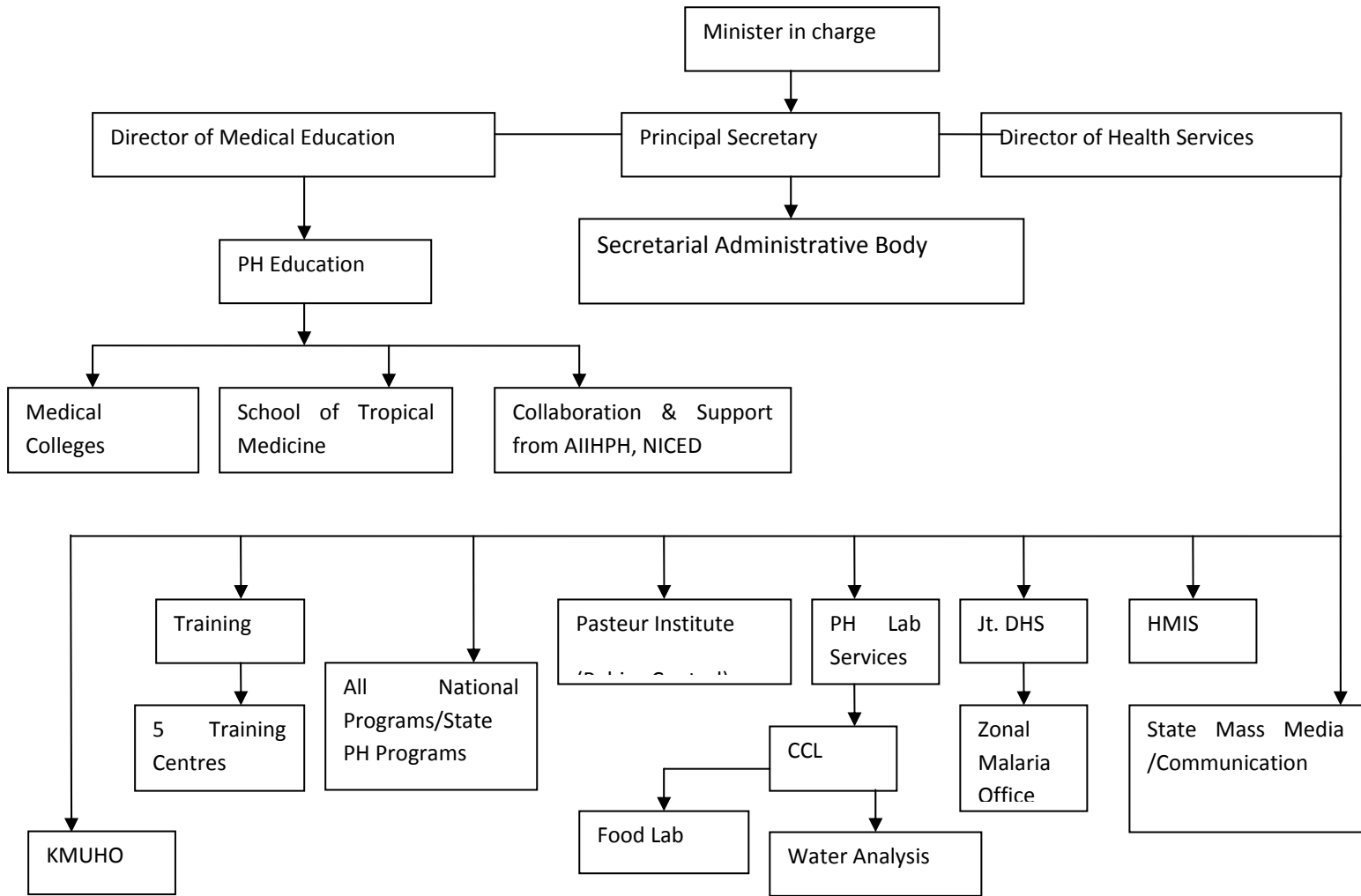
DTO - District Tuberculosis Officer

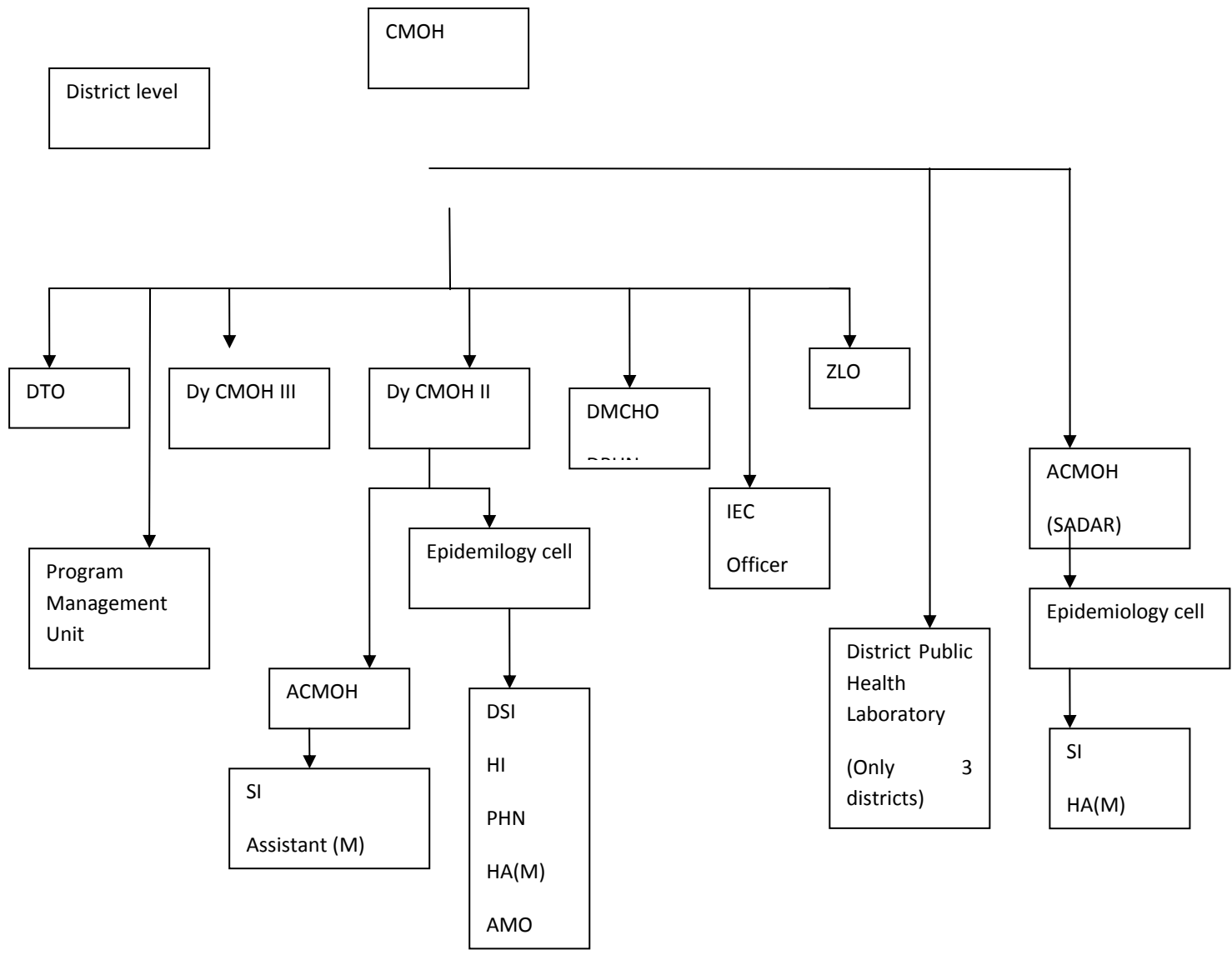
DMO - District Malaria Officer

H.A. - Health Assistant

Appendix 4: Organogram of DoHFW State / District/ Block- West Bengal

State





Block level

