

## HEALTH MANPOWER AND MANAGEMENT

# Health Manpower Planning

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## ABSTRACT

Manpower is the most crucial resource toward delivery of health planning. Health manpower refers to people who are trained to promote health, to prevent and to cure diseases, and to rehabilitate the sick. The aim of manpower planning is to make available the right kind of personnel in the right number with appropriate skills at the right place at the right time doing the right job. Various types of health resources are doctors, nurses, pharmacists, lab technicians, radiographer health assistants, health workers, auxiliary nurse midwife (ANM), accredited social health activists (ASHAs), anganwadi workers, trained dais, and so on. Currently, developing countries including India lag behind suggested norms of required health manpower. Presently, India produces 30,000 doctors, 18,000 specialists, 30,000 Ayurveda, Yoga and naturopathy, Unani, Siddha, and Homeopathy (AYUSH) graduates, 54,000 nurses, 15,000 ANMs, and 36,000 pharmacists annually. This production is not equal across the states, leading to unequal distribution of doctors. Such a skewed distribution results in large gaps in demand and availability. Various reasons for this are skewed production of health manpower, uneven human resource deployment and distribution, disconnected education and training, lack of job satisfaction, professional isolation, and lack of rural experience. The 12th Plan should aim to expand facilities for medical, nursing, and paramedical education; create new skilled health worker categories; enable AYUSH graduates to provide essential health care by upgrading their skills in modern medicine through bridge courses; establish a management system for human resource in health to actualize improved methods for recruitment, retention, and performance; put in place incentive-based structures; create career tracks for professional advancement based on competence; and, finally, build an independent and professional regulatory environment.

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## INTRODUCTION

A developing economy needs high-level technical manpower as urgently as it needs capital. A crucial factor in improving the coverage and quality of health services is the availability of adequate number of health personnel with task-oriented training.

According to Dev Ray, "A health manpower plan is meant to ensure that the right number and quality of manpower are available to staff the health facilities as the needs expand, so as to keep up with current and future demands of services from the people."<sup>1</sup>

## HEALTH MANPOWER PLANNING

Manpower is the most crucial resource toward delivery of health planning. Manpower planning is a technique of correcting imbalances between manpower demand and manpower supply in the economy. Manpower planning is concerned not only with balancing of demand and supply of different categories of manpower, but also with the overall development and utilization of manpower resources in the country. The utilization of manpower is the process of matching men and work in accordance with their level of development. So it is an integrated approach that should not be considered isolated.

## Health Manpower

Health manpower refers to people who are trained to promote health, to prevent and to cure disease, and to rehabilitate the sick.

The aim of manpower planning is to make available the right kind of personnel in the right number with appropriate skills at the right place at the right time doing the right job.

## IMPORTANCE OF HEALTH MANPOWER PLANNING

Health manpower planning comprises of

- Health manpower planning
- Health manpower management.

## HUMAN RESOURCES FOR HEALTH

Trained and competent human resource is the foundation of an effective health system. Various types of health resources are doctors [allopathic and Ayurveda, Yoga and naturopathy, Unani, Siddha, and Homeopathy

**Table 1:** Suggested norms for health manpower

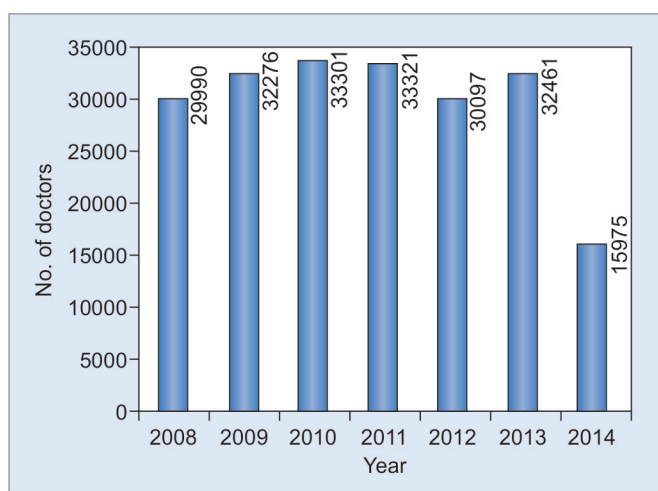
Category of health personnel	Norms suggested
Doctor	1 per 1,000 population
Nurse	1 per 500 population
Health worker(male and female)	1 per 5,000 population in plain area and 3,000 population in tribal/hilly/hard to reach area
Health assistant (male and female)	1 per 30,000 population in plain area and 20,000 population in tribal/hilly/hard to reach area
Pharmacist	1 per 10,000 population
Lab technician	1 per 10,000 population
Anganwadi worker	1 per 400–800 population
ASHA	1 per 1,000 population
Trained dai	1 per village

Source: Govt. of India (2008), Annual report 2007–2008, Ministry of Health and Family Welfare, New Delhi<sup>2</sup>

**Table 2:** Current status of health manpower in various countries

Country	Doctors	Nurses/	Health workers
	per 10,000 population	midwives per 10,000 population	(doctors, nurses/ midwives) per 10,000 population
India	7	17.1	24.1
Germany	38.9	114.9	153.8
UK	28.1	88	116.1
Qatar	77.4	118.7	196.1
Pakistan	8.3	5.7	14
Niger	0.2	1.4	1.6
Bangladesh	3.2	2.2	5.4
China	14.9	16.6	31.5
Sri Lanka	6.8	16.4	23.2

Source: World Health Organization (WHO). World Health Statistics 2015. Geneva: WHO; 2011<sup>3</sup>



**Graph 1:** Total number of registered allopathic doctors<sup>4</sup>

(AYUSH)], nurses, pharmacists, lab technicians, radiographer health assistants (male and female), health workers (male), auxiliary nurse midwife (ANM), accredited social health activists (ASHAs), anganwadi workers, trained dais, and others (health inspectors, health educators, occupational therapy assistant, dieticians, etc.).

While Table 1 shows the suggested norms of health manpower required for provision of adequate health facilities, currently, various developing countries lag behind these suggested norms, including India. The current status of health manpower in various countries is shown in Table 2.

Presently, India produces 30,000 doctors, 18,000 specialists, 30,000 AYUSH graduates, 54,000 nurses, 15,000 ANMs, and 36,000 pharmacists annually. There has been a steady rise of allopathic doctors since 2008 (Graph 1).

Along with doctors, presently, admission capacity for nursing staff and pharmacists is also less than required (Table 3).

This production is not equal across the states, leading to unequal distribution of doctors. Medical colleges are

**Table 3:** Number of institutions and admission capacity of paramedical staff

Courses	No. of institutions	Admission capacity
General nurse midwives	2,865	115,844
ANMs	1,853	52,479
Pharmacists	723	43,300

Source: CBHI: Ministry of Health and Family Welfare (MOHFW). Rural Health Statistics Report 2014–2015. New Delhi: MOHFW, Government of India; 2011<sup>5</sup>

unevenly spread across the states and also present wide disparities in the quality of education. Only 193 of the 640 districts have a medical college, while the remaining 447 districts do not have any medical teaching facilities. As on March 31, 2015, there were 153,655 subcenters, 25,308 primary health centers (PHCs), and 5,396 community health centers (CHCs) functioning in the country. While the subcenters, PHCs, and CHCs have increased in number in 2014–2015, the current numbers are not sufficient to meet their population norm. Of 25,308 PHCs, 799 have 4+ doctors, 770 have 3 doctors, 2,041 are without any doctors, 9,649 are without lab technicians, and 5,553 are without pharmacists; 6,436 PHCs have lady doctors. A total of 10,237 PHCs have AYUSH facility. Bihar has the maximum number of AYUSH facilities of 1,384. The number of ANMs at subcenters and PHCs has increased from 133,194 in 2005 to 212,185 in 2015, which amounts to an increase of about 59.3%. As on March 31, 2015, the overall shortfall in the posts of health worker (female)/ANM at subcenters and PHCs was 5.21% of the total requirement. Because of the above-mentioned facts, there are only 19 health workers (6 doctors and 13 nurses and midwives) per 10,000 people in India, against a World Health Organization recommended norm of 25 health workers (doctors, nurses, and midwives). Such a skewed distribution results in large gaps

**Table 4:** Shortfall against requirement for existing centers

Cadre	Currently serving in rural public sector*	Current shortage* (rounded off)	Estimates of total required for 2020
ANM	1,90,000	15,000	7,42,000
Health worker male	52,000	94,000	4,04,000
Nurses	58,450	13,700	14,09,000
Doctors	25,800	6,148	3,67,000
Specialists	6,781	11,361	2,00,000
Managerial, nonclinical	15,000	NA	1,06,000

Source: \*RHS (2010), High Level Expert Group estimates<sup>6</sup>, Working Group on National Rural Health Mission<sup>7</sup>; NA: Not applicable

in demand and availability, particularly for government health care facilities, which are represented in Tables 4 and 5 and Graphs 2 and 3.

Various reasons for shortfall in health manpower are skewed production of health manpower, uneven human resource deployment and distribution, disconnected

education and training, lack of job satisfaction, professional isolation, and lack of rural experience. The 12th Plan should aim to expand facilities for medical, nursing, and paramedical education; create new skilled health worker categories; enable AYUSH graduates to provide essential health care by upgrading their skills in modern medicine through bridge courses; establish a management system for human resource in health to actualize improved methods for recruitment, retention, and performance; put in place incentive-based structures; create career tracks for professional advancement based on competence; and, finally, build an independent and professional regulatory environment.<sup>8</sup>

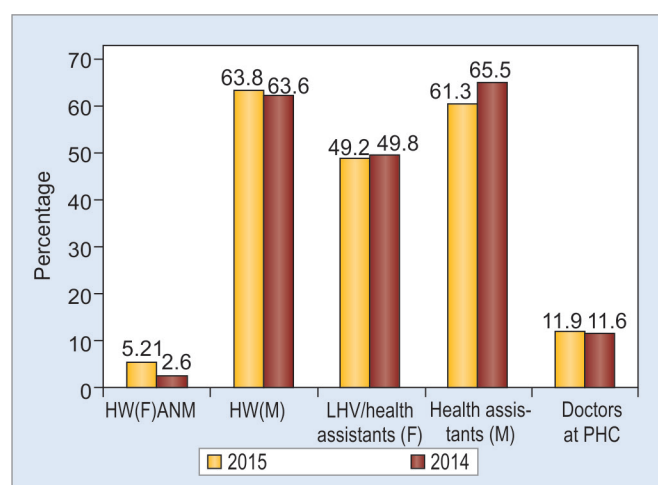
### SKILLED HEALTH WORKERS

Our health system needs three basic categories of human resource in sufficient numbers and quality. Under each of these four categories, there is scope for expanding the existing nature and functions of designated professionals for that category and also for increasing the depth of

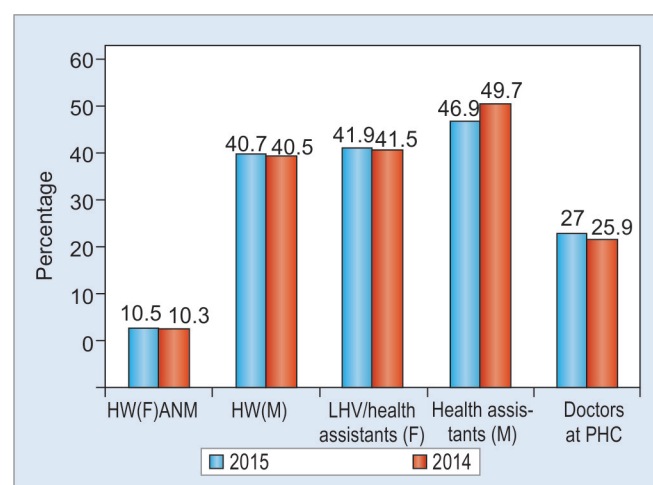
**Table 5:** Status of medical and paramedical staff in 2005 and 2015

	2005			2015		
	Required	In position	Shortfall	Required	In position	Shortfall
ANM/HW (F)	169262	133194	19311	178963	212185(59.3)	9326
HW(M)	146026	60756	85270	153655	55657	98027
Health Assistant (F)/ LHV at PHCs	23236	19773	3463	25308	13372	12448
Health Assistant (M) at PHCs	23236	20086	3150	25308	12646	15513
Doctors(Allopathic ) at PHCs	23236	20308	1004	25308	27421(35)	3002
Specialists* at CHC	13384	3550	6110	21584	4078	17525
Radiographers at CHC	3346	1337	1176	5396	2150	3406
Pharmacists at PHCs & CHCs	26582	17708	2858	30704	23131	8321
Lab technicians at PHCs & CHCs	26582	12284	7226	30704	17154	13691
Nursing staff at PHCs & CHCs	46658	28930	13352	63080	65039	12953

Source: Ministry of Health and Family Welfare (MOHFW). Rural Health Statistics Report 2014–2015. New Delhi: MOHFW, Government of India; 2011<sup>5</sup>



**Graph 2:** Shortfall against requirement for existing centers. Source: Ministry of Health and Family Welfare (MOHFW). Rural Health Statistics Report 2014–2015. New Delhi: MOHFW, Government of India; 2011.<sup>5</sup> HW, health worker; LHV, lady health worker



**Graph 3:** The shortage figure for doctors relates to doctors at PHCs. Source: Ministry of Health and Family Welfare (MOHFW). Rural Health Statistics Report 2014–2015. New Delhi: MOHFW, Government of India; 2011.<sup>5</sup> HW, health worker; LHV, lady health worker

training/retraining to make it relevant to national health goals. The three categories and the required nature of expansion in their scope are listed below.

### Medical Graduates

Undergraduate teaching should aim to produce clinicians who can independently manage the case load in a primary care facility. Ayurveda, Yoga and naturopathy, Unani, Siddha, and Homeopathy doctors can be trained through short bridge courses to manage essential health care in primary care settings. Doctors deployed in primary and secondary health facilities need to be multiskilled, so that they can manage day-to-day conditions relating to obstetrics, anesthesia, psychiatry, pediatrics including neonatology, and trauma care.

### Medical and Surgical Specialists

The discipline of family medicine should be introduced in all medical colleges so that qualified specialists in this discipline can effectively manage most of the medical problems encountered at the primary level, and referral to specialists occurs only when necessary. Such recommendations have been made earlier too by the Mehta Committee in 1983.<sup>9</sup>

### Paramedical Workers for Health Facilities

Studies suggest that in primary care, appropriately trained nurses can produce as high a quality of care and achieve as good a health outcome for patients as doctors. Paramedical and allied health care professionals constitute the base of the pyramid and are required in adequate numbers for optimal performance of teams. The issues in question are shortages, absence of many required cadres, and underutilization of their potential. For example, in the context of hospitals, a survey by the Federation of Indian Chambers of Commerce and Industry in June 2011 identified five skillsets that need immediate attention, namely, dialysis technicians, operation theater/anesthesia technicians, paramedics, lab technicians, and patient care coordinator cum medical transcriptionists. The existing paramedical human resource need to be suitably trained, clinically empowered, and deployed to enable optimal utilization of their services.<sup>10</sup>

### EXPANSION OF MEDICAL, PUBLIC HEALTH, NURSING, AND PARAMEDICAL EDUCATION

- The strengthening of existing institutions, and also the creation of new ones, in terms of infrastructure and faculty is required for training of new health workers and reskilling of existing human resources. For this, a feasible and cost-effective option is to upgrade existing district hospitals and CHCs into

knowledge centers, where medical and paramedical teaching and refresher courses can occur side-by-side with patient care.

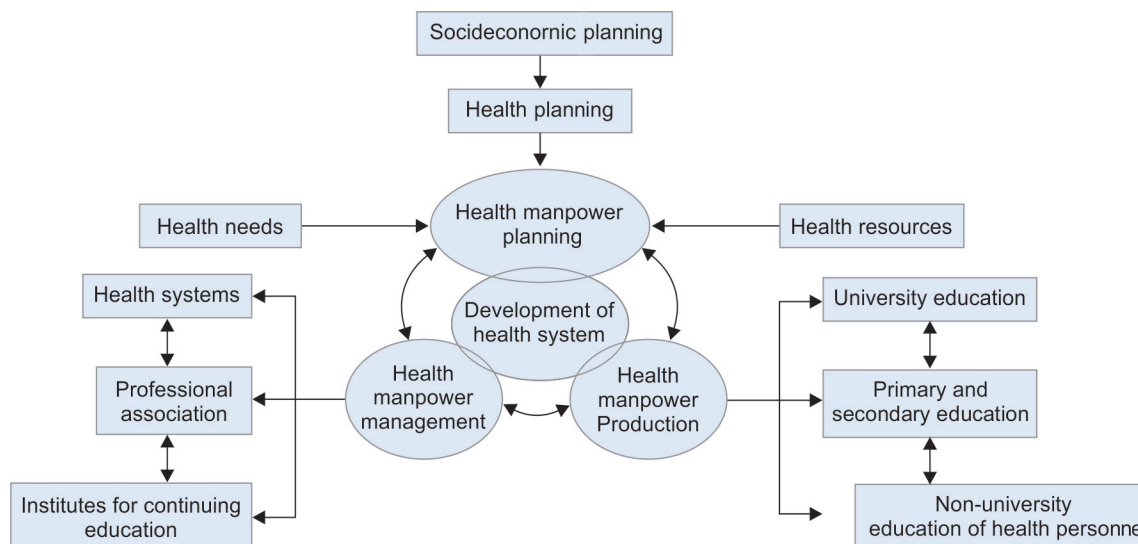
- Setting up 30 new medical colleges with public financing, preferentially in states with larger gaps. This step alone would increase undergraduate medical seats from 41,569 to 63,000 and postgraduate seats from 20,868 to 31,000.
- Strengthen state government medical colleges and central government health institutions with the triple objective of increasing the intake of undergraduate and postgraduate candidates by 20,000 and 10,000 respectively; providing superspecialty and other specialized services for patient care at these tertiary care centers; and setting up degree programs for nursing and paramedical courses within these institutions, in case none exists.
- Setting up paramedical education courses in 149 government medical colleges, in addition to initiating paramedical institutions in 26 states. Strengthening and upgradation of government pharmacy institutions.

### MANAGEMENT SYSTEM FOR HUMAN RESOURCE IN INDIA

The shortage of health personnel against the requirement across the country as per the Bulletin of Rural Health Statistics, 2010 is 63% for specialists, 19% for doctors, and 7% for ANMs. Reasons for the same are attributed to delays in recruitment and to postings not based on workload or sanctions. Though most of the public health workers and medical officers are recruited, deployed, and managed by the states, the central government can suggest model human resource policies and minimum standards of workforce management for better retention and performance. These guidelines should include the following strategies:

- The Indian Public Health Standards should be taken as the guiding principle for sanctioning posts, though the actual posting may depend on caseloads.
- Recruitment should be decentralized with a quicker turnaround time and preference must be given to residents of the region of proposed deployment.
- Fair and transparent system of postings and timely promotions.
- Financial and nonfinancial incentives (like preferential eligibility for postgraduate courses, promotions, subsequent choice of postings) for performance and service in remote areas.
- Measures to reduce professional isolation by preferential access to continuing medical education and skill upgradation programs, as well as back-up support on telemedicine (Internet or mobile based) and by networking of professionals working in similar circumstances (Flow Chart 1).<sup>11</sup>



**Flow Chart 1:** Interrelationships in health services and manpower development

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