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RESEARCH ARTICLE

PARAMEDICAL SKILLED WORKFORCE GAP ANALYSIS AND SUGGESTIONS

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ABSTRACT

According to report of the National Initiative for Allied Health Sciences (NIAHS), there is a total national shortage of approximately 64 lakh AHPs (Allied Health Professionals) with highest gaps in the states of Uttar Pradesh, West Bengal, Maharashtra, Bihar and Andhra Pradesh. Effective delivery of healthcare services depends largely on the nature of education, training and appropriate orientation towards community health of all categories of medical and health personnel and their capacity to function as an integrated team. There are several shortfalls that need to be addressed in the development of human resources for public health services. There is a dire need to establish training facilities for public health specialists along with identifying the scope for their contribution in the field. The Public Health Foundation of India is a positive step to redress the limited institutional capacity in India by strengthening training, research and policy development in public health. Developing a health workforce which can offer primary to tertiary services requires a well-functioning governance infrastructure. Health workforce assessment, policy development, planning and monitoring require dialogue between stakeholders from government and non-government partners.

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INTRODUCTION

"The health of people is the foundation upon which all their happiness and all their powers as a state depend"– Benjamin Disraeli, Ex. British Prime Minister. Over a billion people worldwide lack access to quality health services — in large part because of a huge shortage, imbalanced skill mix, and uneven geographical distribution of health workers. WHO estimates that an additional 4.3 million health workers are needed worldwide. The health workforce crisis has disastrous implications for the health and well-being of millions of people, yet not enough health workers are being produced to close this shortfall (WHO report). In the year 1981 (Late) Smt. Indra Gandhi said that population growth is a problem and to tackle it we will need trained Doctors/technicians to check this problem also to overcome the diseases to achieve this target we need trained personal in various medical field. India lacks approximately 64 lakh paramedic staff, mostly in states like Uttar Pradesh, West Bengal, Maharashtra, Bihar and Andhra Pradesh, a central government report revealed Friday. "There is a total national shortage of approximately 64 lakh AHPs (Allied Health Professionals) with highest gaps in the states of Uttar Pradesh, West Bengal, Maharashtra, Bihar and Andhra Pradesh," the report of the National Initiative for Allied Health Sciences (NIAHS) observed. Effective delivery of healthcare services depends largely on the nature of education, training and appropriate orientation towards community health of all categories of medical and health personnel and their capacity to function as an integrated team. For instance in the UK, more than 84,000 AHPs, with a range of skills and expertise, play key roles within the National Health Service. Though some of them may have a PhD and use the title 'Dr' they are not medically qualified. All of them are first-contact practitioners and work across a wide range of locations and sectors within acute, primary and community care. Australia's health system is managed not just by their doctors and nurses, but also by 90,000 university-trained, autonomous AHPs. The key areas of concern in healthcare are: Shortage of Medical and Para-medical Staff: India has over 6,00,000 physicians with a density of 0.60 physicians per 1000 population. However, there is a shortage of qualified specialist paramedical professionals as well as qualified hospital administrators. Off the educational infrastructure for technicians only 4.7% for Health Workers (male), 1.9% for Lab Technician or Assistant and about 1.6% for health inspectors. Whereas there is no structured educational facility for the grade IV staff of the hospital staff. In India, private sector in Healthcare contributes

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80% spend. There have been many announcements by private players entering the healthcare infrastructure space in tier II, III cities -this has created a huge skill gap in the Human Resources space. There is a need for over 6.25 Lac doctors and 8.4 Lac nurses in the country by 2012. The complete range of blue collar workers including the ward boys or GDAs are also a huge requirement– given the mapping of approximately 8 role holders to a bed, there is an estimated 9.2 lac beds to be added by 2012 in the country. According to latest data available, India is short by 8.5 lakh anesthetists and technicians trained to run an operation theatre. Also, 20.4 lakh dental staff (dental technicians and hygienists), ophthalmologists and optometrists (1.27 lakh), rehabilitation specialists (clinical psychologists) (18 lakh), medical laboratory technicians (61,000), radiographers (19,000), audiology and speech language specialists (7,500) and medical staff-like dieticians (2.3 lakh) are lacking. The Lancet published a paper calling for a radical transformation of the architecture of India's healthcare delivery system if it is to achieve the government's vision of assuring health for all. The paper documented India's progress on major health indicators in the past decade, but also its many deficiencies. The most disturbing indicator of these deficiencies is the observation that the cost of healthcare is driving millions of Indians into poverty. Let us pause to consider the implication of this statement. In a country where the primary goal of economic development is to help raise people out of poverty, healthcare is driving millions into poverty. Whereas, in other countries, investment in healthcare is recognised as a route to promote growth by enhancing their citizens' capabilities to be productive, healthcare in India is now one of the leading causes of poverty. We are, in simple terms, out of step with the rest of the world, not only the developed countries whose ranks we aspire to join, but also with other countries like ours.

The bottom line is Healthcare in India is a leading cause of poverty. The medical profession must own its share of the blame. There are several shortfalls that need to be addressed in the development of human resources for public health services. There is a dire need to establish training facilities for public health specialists along with identifying the scope for their contribution in the field. The Public Health Foundation of India is a positive step to redress the limited institutional capacity in India by strengthening training, research and policy development in public health. Pre-service training is essential to train the medical workforce in public health leadership and to impart skills required for the practice of public health. Changes in the undergraduate curriculum are vital for capacity building in emerging issues like geriatric care, adolescent health and mental health. In-service training for medical officers is essential for imparting management skills and leadership qualities. Equally important is the need to increase the number of paramedical workers and training institutes in India.

Table 1. Number of institutions and admission capacity in pharmacy course

Description of the courses	No. of Institutions	Admissions capacity / no. Admitted
Pharmacy (diploma)	561	33635

There is no correct data we have as far as total number of paramedical colleges / institutes / universities is there in country; however the information could be retrieved shows serious lack of numbers. Paramedical staff includes Nurses, physiotherapists, occupational therapists, prosthetic and orthotic technicians, medical technologists, radiographers and radiotherapists. Just to take a scenario in the Mental health, India is short of health professionals to address mental issues, particularly at the district and sub-district level. There are 3,800 psychiatrists, 898 clinical psychologists, 850 psychiatric social workers and 1,500 psychiatric nurses nationwide, according to a reply by the Ministry of Health and Family Welfare in the Lok Sabha in December 2015. This means there were three psychiatrists per million people, according to data from WHO, 18 times fewer than the commonwealth norm of 5.6 psychiatrists per 100,000 people. By this estimate, India is short of 66,200 psychiatrists. Similarly, based on the global average of 21.7 psychiatric nurses per 100,000 people, India needs 269,750 nurses.

Nature of work

Nursing personnel : Includes nursing professionals and nursing associate professionals.

Midwifery personnel: Includes, midwifery professionals and midwifery associate professionals.

(Note that for some countries, nurses with midwifery training are counted under nursing personnel.)

Dental technicians/assistants: Includes dental technicians, dental assistants and related occupations.

Pharmacists: Includes pharmacists.

Pharmaceutical technicians/ assistants: Includes pharmaceutical technicians, pharmaceutical assistants and related occupations.

Laboratory scientists: Includes laboratory scientists.

Laboratory technicians/assistants: Includes laboratory assistants, laboratory technicians and related occupations.

Radiographers: Includes radiographers and related occupations.

Environmental and public health workers*:

Includes environmental and public health officers, environmental and public health technicians, sanitarians, hygienists, district health officers, public health inspectors, food sanitation and safety inspectors and related occupations.

Community health workers: Includes community health officers, community health-education workers, family health workers, traditional and complementary medicine practitioners and related occupations. Does not include traditional midwives.

Traditional medicine practitioners: Includes traditional and complementary medicine practitioners and associates.

Traditional birth attendants: Includes traditional midwives.

Medical assistants: Includes medical assistants, clinical officers and related occupations.

Personal care workers: Includes institution-based personal care workers, home-based personal care workers, health care assistants and other categories of care attendants in health services.

Other health workers : Includes a large range of other cadres of health service providers such as dieticians, nutritionists, occupational therapists, medical imaging and therapeutic equipment technicians, optometrists, ophthalmic opticians, physiotherapists, speech pathologists and medical trainees.

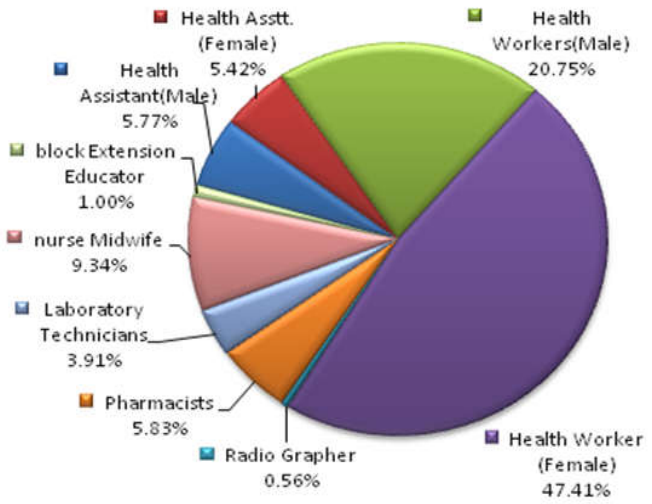
Health management and support workers*: Includes other categories of health systems personnel, such as managers of health and personal-care services, health economists, health statisticians, health policy lawyers, medical records technicians, health information technicians, ambulance drivers, building maintenance staff, and other general management and support staff.

Personal Attributes needed (which is often overlooked): Patience and perseverance, ability to deal with people, ability to maintain records, understanding and caring attitude, ability to plan and coordinate and scientific bent of mind are required.

Minimum Qualification

Minimum 10+2 or intermediate

Paramedical courses are one of the largest sources of vocational educated persons in the field of medical industry. Status of the total paramedical manpower in rural India is given in following graph.



Source: MHRD, Annual Report 2002-03, India Year Book 2008, Manpower profile

Figure showing the percentage of trained paramedical practitioners available in rural India

From the Figure above, it is clear that out of total 315,746 paramedical workers in rural India, 47% are female health workers. But extension workers are very few; almost 1%. We also need to focus on the availability of Radio Graphers, Pharmacists and Laboratory Technicians for rural India. To disseminate knowledge of basic health facilities we need to train more paramedical workers for rural India. But unfortunately at present they are few compared to the large size of the rural population. The shortcoming can be understood by just an example of radiographers.

Table 2. Number of radiographers in different nations

Nation	India	Australia	UK	USA
No. of persons served by one radiographer	1,14,000	5200	4480	2270

Problem Statement

Current Scenario: Para-medical professions are not regulated

- Entry-level qualifications are different at different levels
- Level of knowledge and skills is not uniform, since the period of training differs from place to place and has no uniformity
- Course curricula are not uniform
- Fee structure and facilities in these institutions are not regulated
- Ethical standards are not uniform and are not being enforced

Issues

- The growing issue & challenge is to create and meet the numbers required, make it up to mark, improvise the work force and then improve the quality for health service delivery.
- All countries specially developing and under developed are facing health work force shortages
- The overall shortages are aggravated by skewed distribution
  - Rural / urban
  - Public / Private : within private: Profit/non profit
  - Migration to non health sectors
- Inability to attract and hold them
- Competition from the private sector (super speciality & speciality hospitals)which has raised expectations for governments to respond
- To day there is no clear system of projecting the future supply of human resources in the absence of established norms in the country
- Planning tended to be a fire fighting exercise than a problem solving one
- The planning processes is system centric not problem solving. Also implementing the stuffs and not visualising the future. Many things are put under rug and the whole approach is towards solving the issue somehow. Show the changes at that point of time and main issue remains same.
- Proper analysis and visioning the future is not happening
- Poor resources for health
- No set expectation.
- Lack of standardised protocols to promote quality care
- Lack of awareness among the recipients of service
- Lack of Accountability
- Medical and paramedical education not commensurate with our societal requirements
- Lack of quality teachers with social orientation and lack of commitment and zeal to fight for a cause
- State governments are unable to invest in the infrastructure required for a good medical college
- Poor quality of work force due to organisational and personal constraints

Reasons for poor quality in work force

- Insufficient money
- Inadequate pre and in-service training
- Work overload
- Lack of growth opportunities
- Social indifferences within
- No proper recognition
- Poor work environment
- Lack of safety
- Self motivating environment and culture
- Non adherence to student teacher norms
- Poor Quality of education
- Inadequate infrastructure
- Insufficient budget
- Lack of commitment and accountability of educators
- Lack of adequate exposure to practical training

Developing a health workforce which can offer primary to tertiary services requires a well-functioning governance infrastructure. Health workforce assessment, policy development, planning and monitoring require dialogue between stakeholders from government and non-government partners. There are several factors contributing to the shortage. Most important factors are low compensation/remuneration to such paramedics, non recognition of their services, ignorance in the society regarding their contribution. The cause and effect theory is real in this shortage scenario... It will only worsen in the years to come... As an example can you imagine a physiotherapist who goes through rigorous training for four years plus six months internship is equated to an Upper divisional clerk in Govt offices and the position is still worst private sector. They are paid around Rs 5000/ pm, that is, a quarter of the salary peon draws in govt offices. Dentists, lab technicians and all the Para medics without any exception are worst the treated category in our country.

Apart from this there is an urgent need to follow a proper strategy envisioning future with deadlines and implement it is timely manner. Few points are as follow:

Urgent Need

- To produce more work force of all descriptions
- To improve quality of current and future training
- To rationally deploy the staff
- To reorient the existing massive establishment to bring them on par with new workforce charged and ingrained in social responsibilities by the time the new cohort takes over
- To further redeploy after every one comes on board
- To simultaneously build up awareness levels in the community and strengthen the empowerment processes
- Develop man power through appropriate policies with a futuristic perspective
- Simultaneously increasing resource allocations
- Plan for resource mobilisation
- Health care on an area concept not on occupational concept
- No need for the Major referral hospital to manage minor ailments which constitute about 94% of morbidity – to avoid wastage of time of man power and resources
- Building up of a referral system
- We need innovations that address the issue of cost and appropriateness
- Integration of medical colleges with the health system will require a reorientation of medical training to suit the requirements of our communities
- Curriculum planning process and faculty development need to emphasise the principle of building this social accountability matrix into medical education
- Methods of incorporating and up scaling the innovations already made into the public system will have to be an immediate priority
- Establish national advertising and branding campaigns (including websites).
- Implement career pathways and co-ordinated professional development programmes.
- Develop strategies to train and recruit under-represented groups within the health workforce
- Deliver health career promotion in schools.
- Support new staff through the transition from training to practice.
- Support the development of career pathways for the development the unregulated workforce
- Improve national co-ordination of actions.
- Develop collaborative and cross-sectoral relationships.
- Develop funding mechanisms which facilitate new models of care and training.
- Monitor progress on workforce development plans.
- Increase the range of health workforce groups involved in governance.
- Develop innovative models of care and support (eg, continuum of care approach, primary health teams).
- Improve healthy workplace environments and practices (eg, magnet hospitals).
- Align workforce with service needs
- Ensure the collection of workforce information is robust, uniform and nationally co-ordinated.
- Improve information-sharing mechanisms.
- workforce gap analysis
- Develop a workplace assessment tool
- Develop a method to assess the future workforce capacity required to meet population and community need
- Investing in Health at least 7-8% of GDP

The most important need is to change the complete social image of a paramedical expert. There is an urgent need to do two things. Policy must be made to change the overall image of paramedical staff by:

- Change the definition of paramedical staff (They must be defined as “An especially trained and qualified expert who assists doctors and other health care professionals in providing the health services at each level and hence integrates to health care delivery in making it result oriented, pro-people, timely & effective health care delivery”)
- Increasing earning
- Job Stability
- Enhancing their living conditions
- An advertisement campaign to make people aware about their importance
- Identify, Create & recognise leaders in the field

Changes required at college levels:

- Aggressive advertisements from higher school levels it self to attract young talent to this field.
- An effective course curriculum which focuses on overall personal & professional development.
- Effective examination and valuation.

Introduction of few additional subject areas to the course curriculum such as:

- Computers & IT
- Management of people & Business
- Communication
- Writing skills
- English with option of one foreign language
- Leadership skills development

The ultimate goal of great nation would be one where the rural and urban divide has reduced to a thin line, with adequate access to clean energy and safe water, where the best of health care is available to all, where the governance is responsive, transparent and corruption free, where poverty and illiteracy have been eradicated and crimes against women and children are removed – a healthy nation that is one of the best places to live in.

My Thoughts which could be considered :

1. Upskilling - More technology is coming in to the hospital. The Allied Healthcare workers need to be technology friendly and have exposure to latest tools that they can use to support diagnosis and treatment. This means a need to upgrade the current curriculum and up-skill the existing work force. Specially for Dental Assistants, X_Ray Technicians, Radiologists

2. Home Healthcare - A combination of disease happening at a younger age and ageing population has triggered a need for delivering Healthcare at Home. New delivery models are being experimented with keeping costs, care and culture in mind. Triggering a need for Phlebotomists, physiotherapist, Home Care Assistants

3. Prioritising critical Areas - New health problems are looming and we know it - India 2nd largest Diabetic Population - Indians prone to Cardiac Disease .. triggering need for Diabetic Educators, Dialysis Technicians, Cardiac Care Technicians, etc

4. Tele - Medicine .. is now being experimented with to provide solutions in remote/rural areas. This needs a re-look at entire model and creation of new programs which can be delivered through technology. One AHP can handle - 10-12 patients from a remote location.

5. Road Accidents - India has the 2nd largest deaths due to road accidents after China. 30% of the patients die before they reach the hospital. There is a huge need for Emergency Medical Technicians EMTS who can not only work in Hospitals but as Lifesavers in Schools, Factories, Highway Patrol etc. Advanced EMT's are need for patient transfer and in Air Ambulances.

Is this need localised only to India? Like nurses can these students not be channelised Internationally to boost Foreign Exchange Income to India.

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