

**Summer Training at
Jhpiego, Delhi, India**

**To determine the Status of Availability, Production and Distribution of
Nursing Personnel to Address the Public Health Needs in Punjab**

**By
Soumya Arora**

**Under the guidance of
Dr. Alok Kumar Mathur**

**MBA Hospital & Health Management
2017-2019**

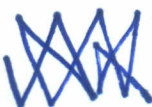

Institute of Health Management Research
The IIHMR University, Jaipur
2018

CERTIFICATE

This is to certify that **Ms Soumya Arora** has undergone summer training at **Jhpiego, Country Office, Delhi, India** from 2nd April 2018 to 1st June 2018.

The candidate himself completed the project assigned to her during summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in Health Management.

I wish her success in all her future endeavors.


Dr Alok Mathur *July 2, 2018*

Associate Professor

IIHMR University, Jaipur

for 
Col.(Dr.) Ashok Kaushik *(Col.(Dr.) Ashok Kaushik), 02.7.18*

Dean (Academic & Student Affairs)

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June 18, 2018

CERTIFICATE OF INTERNSHIP

This is to certify that Dr. Soumya Arora Pursuing MBA in Hospital and Health Management from IIHMR, Jaipur has completed her Internship with Jhpiego from April 2, 2018 to June 1, 2018

She interned at Jhpiego's India Country Office, New Delhi. She supported the Human Resources for Health program team in program implementation, monitoring and evaluation activities. She demonstrated good technical and analytical skills.

Dr. Arora's performance was good and she was able to accomplish the assigned tasks successfully. She worked diligently during this period and displayed positive attitude and effective interpersonal skills.

I wish her every success in life.

A handwritten signature in blue ink, appearing to read "Neeraj Agrawal", written over a faint circular stamp.

Dr. Neeraj Agrawal
Deputy Country Director

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ACKNOWLEDGMENTS

I wish to express my sincere gratitude to Bulbul Sood, Country Director, Jhpiego and Dr. Neeraj Aggarwal, Deputy Country Director for providing me this golden opportunity to pursue my internship and project work at Jhpiego- an affiliate of John Hopkins University, Country Office, Delhi, India.

I would like to thank from the core of my heart, My mentor, Dr.Aakansha Gautam, Senior Program Officer, HRH (Human Resource for Health) for showing faith in me and providing me this learning platform to gain exposure in field of public health.

My Sincere thanks to Dr. Saurabh Bhargava, Monitoring and Evaluation, Jhpiego for his undue guidance and encouragement in carrying out the project work.

My deepest regards and appreciation to the entire team of HRH(Human Resource for Health)
– Jhpiego, Country Office, Delhi for not just treating me an Intern but as a part of their Organization.

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Acronyms/Abbreviations:

This will include full forms of all abbreviations used in the text in alphabetical order.

1. ANM- Auxillary Nurse Midwives
2. ASHA- Accredited Social Health Activist
3. GoI- Government Of India
4. HRH – Human Resource for Health
5. MoHFW- Ministry Of Health and Family Welfare
6. SDG- Sustainable Development Goals

JHPEIGO, INDIA

Jhpiego is a Non profit Global Health Leader and John Hopkins Affiliate, that is saving lives, improving health and transforming futures. Jhpiego has been working to prevent deaths of women and their families since past 42 years

Jhpiego began its work in 1980s, in collaboration with the MoHFW and GoI to improve the Reproductive Health Services. In India, in the year 1992, Jhpiego was named as the main partner in a five-year project funded by the USAID to strengthen the reproductive health services in Uttar Pradesh.

Since 2006, Jhpiego has been closely working with the MoHFW, GoI to improve access to high-quality Reproductive Health, Family Planning (FP) and maternal and newborn health (MNH) services in the country.

Jhpiego came to India in 2009 and since then has been closely collaborating with MoHFW, GoI, at the national and state levels, providing Technical Assistance(TA) in the areas of:

- 1) Strengthening Family Planning(FP) Services;
- 2) Strengthening the Human Resources for Health (HRH);
- 3) Improving the quality of maternal and newborn health (MNH) care.

As large proportion of Indian healthcare sector relies on private institutions, Jhpiego's work also includes working with and strengthening India's private sector health institutions. Similarly, with more than 90% of India's nursing students coming from the private sector nursing institutions, Jhpiego's work has expanded to strengthening private sector pre-service education.

Jhpiego India is also working in the field of Non Communicable Diseases, especially Gestational Diabetes Mellitus. Lately it is involved in setting up of Health and Wellness Centres under Ayushman Bharat in collaboration with GoI.

PROGRAM OVERVIEW

PROGRAM: Strengthening Human Resources for Health (HRH)

DONORS: Norway India Partnership Initiative (NIPI), World Bank and USAID

1. **Strengthening pre-service nursing midwifery education:** It strives to improve the pre-service education quality for nurses and midwives in public sector nursing institutions of Madhya Pradesh, Odisha, Rajasthan and Bihar.
2. **Strengthening Nursing Midwifery Skills for Universal Health Coverage:** Improve the performance and effectiveness of frontline health workers including nurses, by creating an enabling policy environment and offering evidence based implementation solutions, thereby, resulting in strengthened delivery of high-quality health care services in the states of Punjab and Madhya Pradesh.
3. **Strengthening nursing education in private sector institutions:** Strengthening Pre-Service Education for nurse-midwives in private nursing institutions across six states (Bihar, Madhya Pradesh, Odisha, Delhi/NCR, Haryana and Jharkhand) for accelerating RMNCH+A outcomes. Operationalization of Health and Wellness Centres (HWCs): Providing technical assistance to the Govt. of Jharkhand in operationalization of HWCs as well as developing the institutional capacity of the state for training appropriate service providers.
4. **Providing technical assistance to the three high focus states of India** (Jharkhand, Assam & Madhya Pradesh) for establishment and operationalization of “Certified Birthing Centres” (CBCs) for provision of round the clock, assured quality birthing services.
5. **Strengthening Nursing Midwifery Cadre in the state of Uttar Pradesh:** Implementing activities and strategies for strengthening nursing-midwifery cadre in the state of UP, in alignment with the UP Technical Support Unit (TSU) resulting in improved service provision and better health outcomes.
6. **Accelerating the Reduction in MMR and NMR: Project Alliance for Saving Mothers and Newborns (ĀSMĀN)**, a major healthcare technology driven initiative in Madhya Pradesh and Rajasthan, implementing innovative facility-based interventions that enable provision of quality care during and immediately after childbirth.

OBSERVATIONAL LEARNING:

Jhpiego Program for Nursing which focuses on Strengthening nursing midwifery education by improving the quality of pre-service education for nurses and midwives in public sector nursing institutions • Strengthening management and leadership for nursing midwifery cadre and advocating a greater role for nurse midwives in India's public health system.

Use of virtual technology has enhanced knowledge and clinical skills of nursing students on various components related to Maternal and Newborn Health (MNH) in government ANM/GNM schools of Bihar, strengthening Non-Communicable Disease (NCD) Management Competencies of Service Providers in two districts of Bihar using virtual training platform.

Nurses are the backbone of strong Indian Healthcare System.

There is an estimated deficit of 2 million nurses in India. There are just 1.5 nurses in India per doctor against WHO norms of 3. 18% posts of staff nurses and auxiliary nurse midwives at PHCs and CHCs are vacant.

Over the years Jhpiego's partners have come to rely on the difference created by Jhpiego by means of standard based systems approach.

In India, where 70% of people of the total 1.2 billion population, inhabit villages and remote areas ; we need to focus on improving the training and skillset to overcome the existing manpower crunch and achieve our objective of provision of best quality of RMNCH services.

Also with time and research it has been proved that the manpower and nursing cadre, once invested can improve upto 87% reproductive, maternal and newborn health services across the developing world.

As stated in to 'State of the World's Midwifery Report, 2014', well-trained midwives could help avert roughly two thirds of all maternal and newborn deaths.

The nurse midwives which constitute 30% of healthcare workforce of India are an integral part of India's public health system.

India is ranked 52 of 57 countries facing HRH crises. There are just 1.5 nurses midwives per doctor against WHO norms of 3, less no. of nursing institutions, of suboptimal quality and limited autonomy to nurses.

Recognizing the indispensable role nurses and mid wives play in the health care institution. Hence, the keyrole of Jhpiego has been to act as a channel, a roadmap to fulfill these gaps and dearths and encompass towards SDG3 –Ensure healthy lives and promote wellbeing at all stages.

And has successfully demonstrated the same in models in states of Bihar, Madhya Pradesh and Odisha by virtual trainings, skilled computer labs and use of technology to achieve astounding improvements.

So besides focusing on the reduction of infant mortality and maternal mortality rate to achieve targets of 40 and 100 respectively by year 2020 and striving for universal health coverage, Jhpiego realized that the position held by the nursing cadre cannot be undermined and is in fact of utmost importance and value.

Nurse-midwives comprise around 30% of the total health care workforce of India and are an integral part of India's public health system.

Jhpiego works closely with Indian Nursing Council (INC) and MoHFW, GoI by providing TA for strengthening the nursing cadre in India.

This support includes work on improving the quality of Pre-Service Education (PSE) by strengthening the public and private sector nursing institutions in high focus states, creating an enabling policy environment for nursing, improving the leadership and management capacity of the nursing cadre by formation of nursing directorates at national and state levels, and ensuring a greater role for nurse-midwives in clinical and programmatic decision making.

Jhpiego, through its HRH programs, is not only building the competencies of faculty and students of nursing midwifery institutions, but also strengthening the capabilities of existing service providers through onsite trainings and continuous mentoring support.

With Jhpiego's advocacy, NHM funds allocated towards strengthening of nursing cadre have increased manifold from about 550 million rupees in year 2013-14 to almost 2,300 million rupees in year 2015-16, a whopping four-fold increase in just three years.

Jhpiego is providing TA and support for establishing nodal excellence centres for education of nurses and midwives at both national and state levels.

The nodal centers serve as pedagogic resource centers for ANM/GNM schools in their region and as model teaching institutions providing support for concurrent strengthening of these schools as well.

Jhpiego provides institution level TA to more than 250 public/ private sector nursing institutions across program states for improving the quality of pre-service education through a standards-based approach. The interventions aim at strengthening the educational processes, clinical-site practices, training infrastructure, overall school management and enhancing the knowledge and clinical skills of faculty, thereby leading to the production of more competent and confident nurse-midwives.

Jhpiego provides ongoing TA to the MoHFW and states for development and appraisal of Program Implementation Plans (PIPs) for leveraging resources under NHM, guidelines and training manuals, conducting competency-based recruitment and competency-based assessments of in-

service staff nurses and ANMs, standardization of 6 days skill lab (Daksh) trainings, facilitating online admission of nursing students and strengthening PSE at scale.

Jhpiego advocacy efforts have enhanced clinical autonomy for nurses through scale up of the Nurse Practitioner in Midwifery program and introduction of Nurse Practitioners in Critical Care and Primary Health Care, increased engagement of nurse-midwives in management of public health programs, TA for developing vision documents envisaging the career progression pathways for nursing personnel in the fields of education, clinical practice and public health.

Jhpiego is providing TA for strengthening the leadership and management capacity for nursing by establishment and operationalization of independent nursing cells/directorates in targeted states.

To address issues of suboptimal quality of nursing education and shortage of nursing faculty, Jhpiego established virtual classrooms at all government run ANM/GNM schools in Bihar. The intervention aimed at enhancing clinical skills and knowledge of nursing students on key components of Maternal and Newborn Health (MNH) through a specially designed 72 hour virtual training package.

With the private sector contributing to 93% of India's nursing graduates, Jhpiego is working towards strengthening 52 private sector nursing institutions across 7 states (Bihar, Madhya Pradesh, Odisha, Jharkhand, Haryana, Uttar Pradesh and Delhi-NCR).

PROJECT REPORT

OBJECTIVE OF THE STUDY:

This report is derived based on findings of desk review conducted to determine the availability, production and distribution of nursing personnel in Punjab and India.

Phase I- To determine the status of availability, production and distribution of Nursing Personnel to address the public health needs in Punjab.

Phase II- To assess various factors that affect the work performance, job satisfaction, motivation level, recruitment and retention of nursing professionals among public health facilities in Punjab.

Phase III- To determine policy and regulatory issues that affect the recruitment, retention and motivation of staff nurses in Punjab.

STUDY METHODOLOGY

Search Engines Used: Research gate, PubMed, Cochrane, Medline, Google Scholar

Keywords for search strategies: ‘status of nurses in India’, ‘ distribution of health workers in India’, ‘existing availability and distribution of workforce for health and nurses in Punjab’, ‘Rural Health Survey’ ‘National Health Policy’, ‘Shortage of Nurses in Punjab’

Inclusion Criteria

- Peer reviewed journals and Grey Literature
- WHO and World Bank Publications
- Government of India and state health reports published by CBHI, MoHFW, GoI in form of NHP2017, Niti Ayog Report 2017-Healthy States , Progressive India Rural Health Statistics of India, NRHM portal (HMIS)
- Data sources utilized to understand status of availability and distribution of nursing personnel in India include Population Census, National Sample Survey, INC

Exclusion Criteria

- Blog posts
- Studies on estimating global burden with no specific focus on India

Variables being used include percentage of health centers functioning without nurses and midwives, percentage shortfalls of midwives and nurses, percentage of required posts remaining non-sanctioned and percentage of sanctioned posts remaining vacant, have been used as means to gauge extent of shortage of nurses and midwives.

Difference between required number of nurses and midwives (as prescribed by population norms) and actual staff positions is used to compute overall shortage.

Vacancy is defined as difference between sanctioned and actual staff positions.

METHODOLOGY:

The paper is a form of descriptive study and involves desk review of published literature published at international, national and state levels.

As the objective of the paper involves review existing availability and shortage of nursing personnel in the workforce, we have focused on period from 2005 which is the launch year of NRHM to 2017(NHM), which is the latest year for which data is readily available

Various approaches have been devised to benchmark whether the workforce for health care is adequate or not.

Most commonly used approach is the ratio of net workforce to population, which is interpreted by the population being served by a health care worker or by health care worker density

To analyze the numerical adequacy of nurses and midwives in public health sector of rural India, the study estimated the following variables:

1. Net density of nurses and midwives (number of nurses and midwives per 10,000 people)
2. Ratio of nurses and midwives to total population (the number of people served by one nurse or midwife), and
3. ratio of nurses to doctors (number of nurses and midwives for each doctor)

The study also performs a correlation analysis to assess the relationship between the density of nurses and health outcomes like Infant Mortality (IMR), Maternal Mortality (MMR) and Under 5 Mortality (U5MR) as these indicators are most commonly used ones

BACKGROUND AND RATIONALE:

SITUATION OVERVIEW

The manpower of Health Services is the Core Substance and Heart of Health System of a country.

In literature over the years significance of sufficient nursing staff and adverse effects of nursing shortages have been well documented

Nursing shortages is found to impact various factors like health care delivery processes, capacity of health facilities, quantity and quality of health care services, nurses themselves (as the role becomes more stressful and taxing during such shortages), and finally the health outcomes of patients. (Buerhaus et al.,2007)

The document, *Working Together for Health*, indicates that **maximizing the capacity of the existing health care workforce** is a **key mechanism in decreasing the global health care burden**.

While India faces a huge HRH crisis, it has been documented that investing on education and training of Human Resources can help avert maternal and child deaths upto 70-80%.

Despite crucial role of nurses in health care, most countries have been facing acute shortages in the nursing workforce (Buchan & Calman, 2004)

The World Health Statistics report of 2016 shows that a deficit of over 9 million nurses and midwives in 2013 globally. (WHO, 2016)

The shortage is more acute in developing countries especially Africa, Southeast Asia and Eastern Mediterranean regions, where the densities of nurses is much lower compared to the European Union and American regions (WHO, 2016)

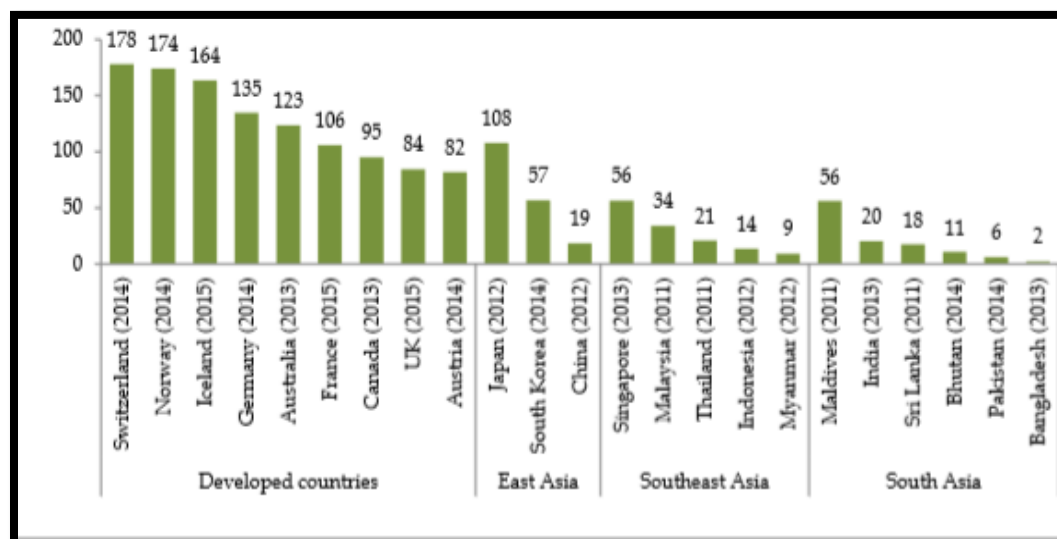
While the market in middle and high income countries is likely to create 40 million new health workforce jobs over the next fifteen years, it is likely to fall well short of generating the 18 million health workers required to achieve and sustain Universal Health Coverage in low- and low-middle income countries.

So besides focusing on the reduction of infant mortality rate and maternal mortality rate to achieve targets of 40 and 100 respectively by year 2020 and striving for universal health coverage, the position held by the nursing cadre cannot be undermined and is in fact of utmost importance and value.

When we compare the density of nurses and midwives to that of other countries, India is seen to have a substantially low figure than most developed nations including Canada, Iceland, Switzerland, Norway, Australia, UK, Germany, France, and Austria, where the proportion is around 80–180 nurses for every 10,000 people in each community.

The East Asian and Southeast Asian countries including Japan, South Korea, Singapore, Malaysia and Thailand also have higher density of nurses and midwives than India

However, when compared to other South Asian countries, figure for India is higher than all with an exception of Maldives. Density of nurses and midwives is associated with level of economic development in a given country.



NOTE: Figure in brackets indicates Reference Year

SOURCE: World Bank (2018)

The total number of nurses and midwives registered with State Nursing Councils of India have increased from 1.23 million in 2000 to 1.48 million in 2005 and lately to 2.78 million in 2016

It indicates rise in density of nurses and midwives per 10,000 people of 12.1 in 2000, 13.5 in 2005, and 21.9 in 2016

The ratio of nurses to population is considerably low in India (1:819 in 2000 and 1:457 in 2016) as compared to developed countries (1:100–200)

India also has a low nurses to doctors ratio (2.2:1 in 2001 and 2.8:1 in 2016).

Specifically, the ratio was found to be 5:1 in Japan, 4.5:1 in Canada and Iceland, 4.4:1 in Switzerland, 3.6:1 in Norway, 3.3:1 in Australia, and 3.2:1 in the United Kingdom in 2011 (WHO, 2014).

According to World Health Statistics report of 2016, India has about 17 nurses and midwives for every 10,000 people (WHO, 2016)

only 40% of registered nurses of this are actively employed because of low recruitment, migration, attrition, and resignations due to poor working conditions ([GOI], 2005), leading to shortage of nurses at every level of the health care system of the country

The problem of shortage of nurses is compounded by the fact that even nurses who are active in their roles are unevenly distributed across the country, with urban areas and developed regions have higher nursing workforce compared to rural and less developed areas.

Also, as most nurses tend to take up jobs in private rather than the public sector (Rao et al., 2009), the public health system in rural areas bears the brunt of nurse shortages

KEY FINDINGS

HEALTH WORKFORCE STATISTICS IN INDIA AND STATES

As over two-thirds of India's population inhabit rural areas and about one-fourth of them are below the poverty line; being unable to afford private health care facilities, they are dependent solely on public medical facilities.

The World Development Report of 1993 recommends the ratio of nurses to doctors must exceed 2:1 as a minimum while a ratio of 4:1 or higher is desirable for cost-effective health care (World Bank, 1993)

Overall, the data shows that density of nurses and midwives in rural areas (4.1 per 10,000 people) was just around one fourth the amount in urban. (15.9 per 10,000 people)

"Also, more than 50% of nurses and midwives, both in rural and urban areas, were employed in the private sector.

In 2009, India had 761 806 doctors, 104 603 dentists and 1 650 180 nurses and midwives.

At the national level, the aggregate density of doctors, nurses and midwives was 2.08 per 1000 population, which was lower than WHO's critical shortage threshold of 2.28.[7]

There were gross inequalities in the availability of these health workers at the subnational level. For example, states such as Bihar, Uttar Pradesh, Uttarakhand, Jharkhand and Chhattisgarh had especially severe shortages of health workers [less than 1 per 1000 population; Table 1].

States	Population (million)*	Health-worker numbers*				Health-worker density per 1000 population				Ratio of nurses and midwives per doctor
		Doctors	Dentists	GNMs	ANMs	Doctors	Dentists	Nurses and midwives	Combinede	
Andhra Pradesh	83.11	62 349	6510	136 477	112 269	0.75	0.078	2.99	3.74	3.99
North-east states ^b	49.84	19 324	944	20 285	23 375	0.39	0.019	0.88	1.26	2.26
Madhya Pradesh	70.28	25 662	2002	96 574	27 566	0.37	0.028	1.77	2.13	4.84
Bihar	100.94	36 559	2807	8883	7501	0.36	0.028	0.16	0.52	0.45
Chhattisgarh	24.85	2746	407	3945	1900	0.11	0.016	0.24	0.35	2.13
Goa	1.37	2716	687	N/A	N/A	1.99	0.503	N/A	N/A	N/A
Gujarat	58.76	45 058	2684	88 258	36 427	0.77	0.046	2.12	2.89	2.77
Haryana ^c	24.51	4132	2059	17 821	13 727	0.17	0.084	1.29	1.46	7.64
Himachal Pradesh	6.72	705	772	8550	10 152	0.10	0.115	2.78	2.89	26.53
Jammu and Kashmir	12.22	10 906	1090	N/A	N/A	0.89	0.089	N/A	N/A	N/A
Jharkhand	32.06	2933	NA	1998	3405	0.09	NA	0.17	0.26	1.84
Karnataka	59.86	83 177	25 612	136 421	48 509	1.39	0.428	3.09	4.48	2.22
Kerala	32.90	37 835	6655	85 624	28 378	1.15	0.202	3.46	4.61	3.01
Maharashtra	109.27	134 859	18 159	93 032	33 158	1.23	0.166	1.15	2.39	0.94
Orissa	41.20	16 734	537	63 167	49 170	0.41	0.013	2.73	3.13	6.71
Punjab ^c	27.07	38 434	7348	45 801	18 152	1.42	0.271	2.36	3.78	1.66
Rajasthan	66.42	27 654	364	37 667	22 239	0.42	0.005	0.90	1.32	2.17
Tamil Nadu ^d	71.20	84 525	11 609	186 972	54 124	1.19	0.163	3.39	4.57	2.85
Uttar Pradesh	192.62	55 355	5572	21 042	27 328	0.29	0.029	0.25	0.54	0.87
West Bengal	89.65	58 059	2054	48 470	56 302	0.65	0.023	1.17	1.82	1.80
Uttaranchal	9.82	3085	451	92	700	0.31	0.046	0.08	0.39	0.26
Delhi	15.83	8999	6280	26 547	2160	0.57	0.397	1.81	2.38	3.19
India	1183.56	761 806	104 603	1 127 626	576 542	0.64	0.088	1.44	2.08	2.24

GNM= General Nursing and Midwifery; ANM=Auxiliary Nurse Midwifery; N/A= data not available aPopulation data and health-professional statistics for 2009 from references 9-14; binclude Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim; cinclude data from Chandigarh proportionate to state populations, dincludes the Union Territories, i.e., Chandigarh, Puducherry, Daman and Diu, Lakshwadeep, Andaman and Nicobar and Dadar Nagar Haveli; eincludes doctors, nurses and midwives

Health-workforce production Review of the available data on training of health workers highlights three important developments. First is the recent rapid expansion in the training capacity of health workers.

Between 1991 and 2013, the number of admissions to medical colleges increased from 22 438 to 49 508, i.e. by 121%, while within the same period admissions to dental institutions expanded from 3100 to 23 800, i.e. by 668%.[9,10] Similar increases occurred in nursing. In 1997, there were 659 General Nursing and Midwifery and 485 Auxiliary Nurse Midwifery institutes, which increased more than threefold to 2487 and 1307 institutes, respectively, in 2012.

Likewise, the number of recognized nursing institutes offering the Bachelor of Science in Nursing (BSc) degree has increased from 165 in 2004[20] to 1507 in 2012 [Table 2].

There were clear inequalities in the distribution of these training institutions among states. Although the Empowered Action Group states account for almost half of the country's population, they house only approximately one-fifth of the medical colleges and a quarter of the dental and nursing institutes.

Table 2: State-wise production capacity of nurses and midwives – 2012

States	Number of institutions or schools			Annual production capacity		
	GNM	ANM	BSc	GNM	ANM	BSc
Andhra Pradesh	249	46	221	10 924	1315	11 481
North-east states ^a	53	29	18	1543	829	883
Madhya Pradesh	201	115	106	7950	3765	5245
Bihar	10	40	1	426	1198	40
Chhattisgarh	29	66	48	1046	2205	2260
Goa	2	1	3	70	20	130
Gujarat	79	60	37	3155	2040	1695
Haryana	53	53	23	2140	1830	1065
Himachal Pradesh	31	6	12	1170	185	540
Jammu and Kashmir	11	8	4	470	285	180
Jharkhand	21	23	5	735	685	230
Karnataka	543	44	336	25 214	1325	18 133
Kerala	225	16	121	7015	390	6630
Maharashtra	119	347	85	3624	7493	3820
Orissa	51	80	14	1860	2230	690
Punjab	181	129	86	8893	4440	4170
Rajasthan	185	39	144	8760	1170	6296
Tamil Nadu	196	17	157	5540	435	8790
Uttar Pradesh	160	112	38	7520	3800	1760
West Bengal	54	58	16	2021	2555	705
Uttaranchal	12	12	7	380	315	320
Delhi	17	4	12	705	150	605
Union Territories ^b	5	2	13	160	40	935
India	2487	1289	1507	101 321	38 700	76 603

GNM=General Nursing and Midwifery, ANM=Auxiliary Nurse Midwifery include Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura, Arunachal Pradesh and Sikkim; ^binclude Chandigarh, Puducherry, Daman and Diu, Lakshwadeep, Andaman and Nicobar and Dadar Nagar Haveli. Data source: Indian Nursing Council, 2012

As of March 2017, nurse to population ratios were found to be:

1:2,354 (total nurses), 1:12,453 (staff nurses), 1:3,991 (ANMs),

1:61,742 (LHVs), 1:15,656 (MHWs), and 1:71,685 (MHAs)

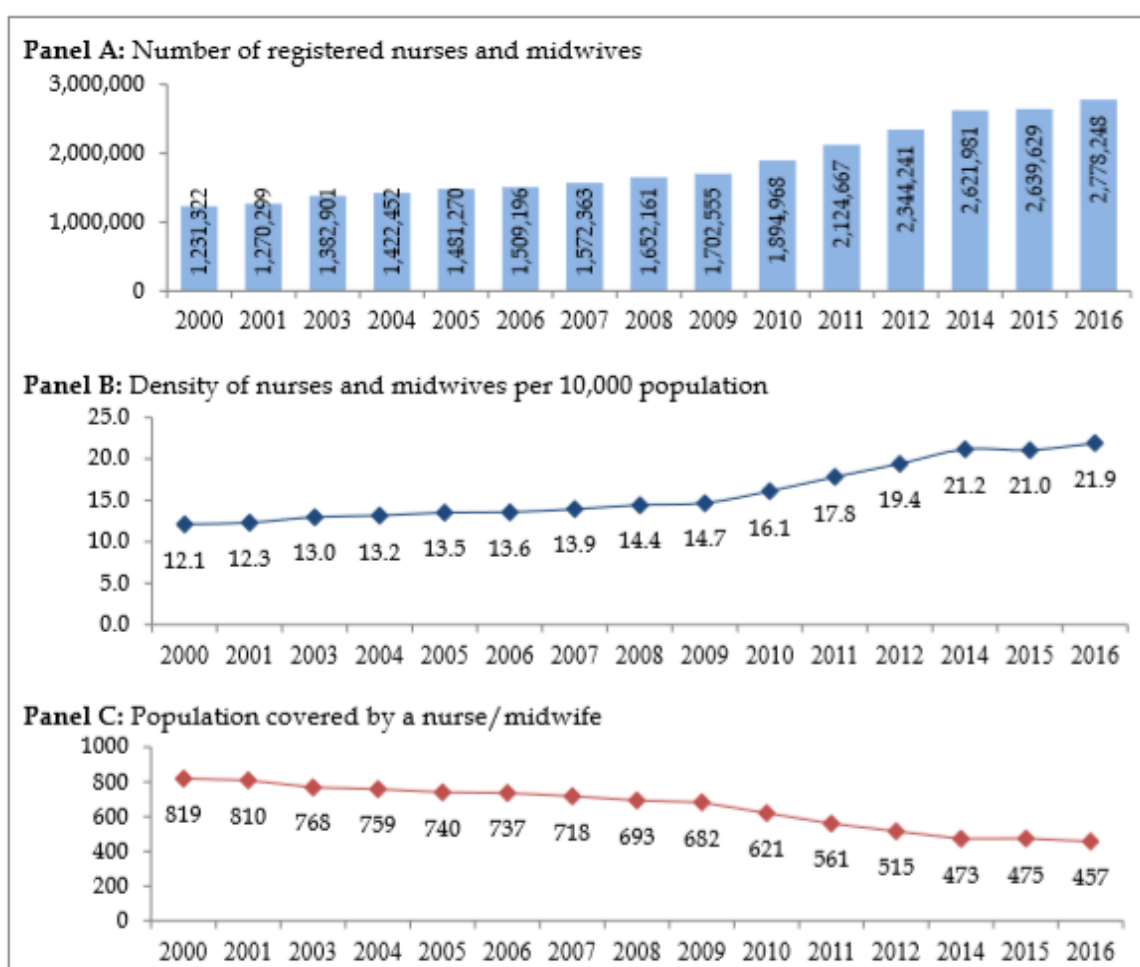
In other words, 4.2 nurses and midwives were found for every 10,000 people in 2017 compared to 3.3 in 2005

The densities of staff nurses and ANMs increased, whereas the densities of LHVs, male health workers, and male health assistants declined between 2005 to 2017.

The ratio of nurses to doctors was 2.3:1 in 2017 compared to 1.2:1 in 2005 (including midwives the ratio was 11:1 in 2005 and 12:1 in 2017.)

When we consider the World Bank's recommendation of optimal nurse to doctor ratio, it is found that although public health sector in rural India fulfills the minimum norm of two nurses per doctor, it is still far from desirable norm of four or more nurses per doctor

SOURCE: Data of 2000-04 from WHO (2014) and 2005-16 from NHP 2017
FIGURE: Registered Nurses and mid-wives in India in the period 2000-16



Analysis based on NITI Aayog Health Index Report 2017

NITI Aayog being the nodal agency for responsible for charting India's quest for attaining commitments under SDGs- Sustainable Development Goals 3 devised mechanisms to measure outcomes of India in critical social sectors like Health and Education where India's performance hasn't been very stellar.

NITI Ayog has spearheaded the Health Index Initiative to bring about transformational change in achieving desirable health outcomes.

The index is a composite Index based on indicators in 3 critical domains:

1. Health Outcomes
2. Governance and Information
3. Key Inputs or Processes

Each domain is assigned a weight depending on its importance.

The indicator values are standardized (scaled 0 to 100) and are used in generating composite Index Scores and overall performance rankings for Base year (14-15) and Reference Year (15-16).

Punjab is second in overall Reference Year Rank,

Overall performance Index Score has **Increased** from **62.02** to **65.21** by **3 points** from base year to reference year with an **Incremental Change of 3.19 points** and is **second after Kerala with 76.55 points**.

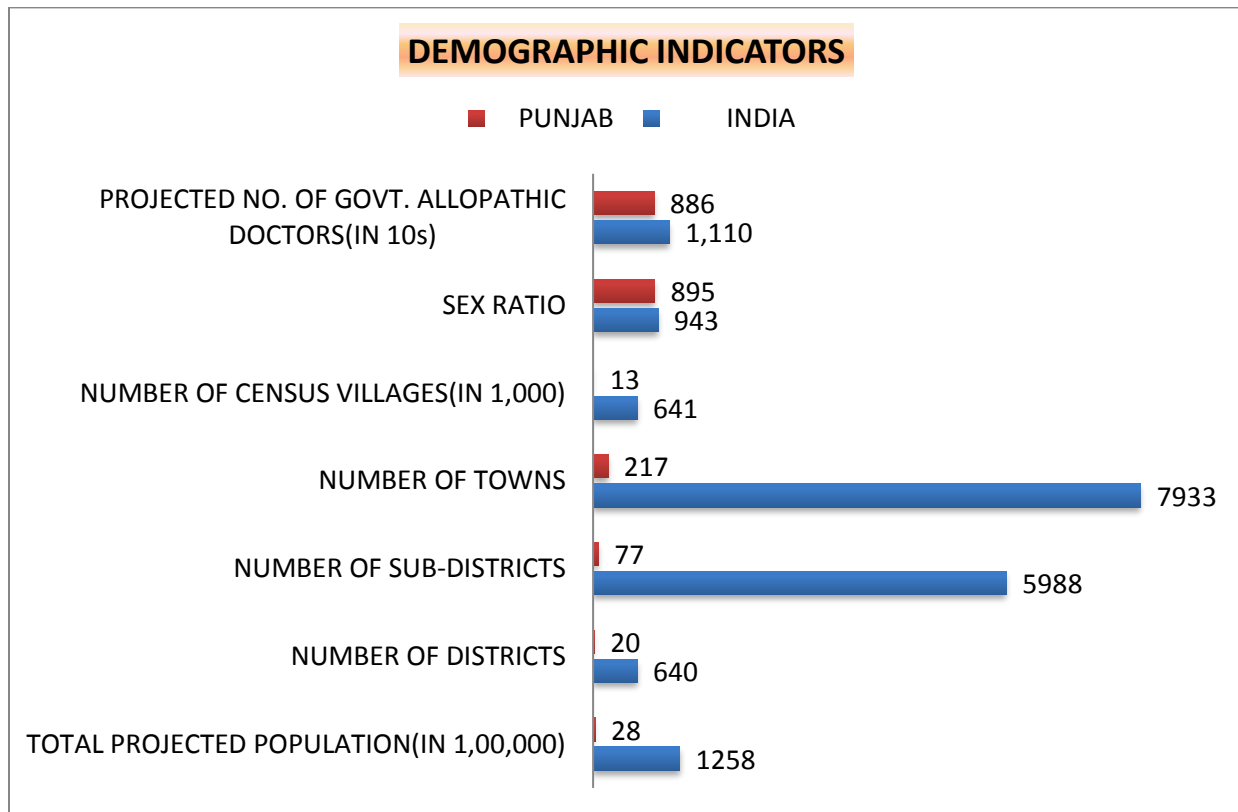
It shows maximum improvements in health outcomes from **base to reference years in indicators like NMR, U5MR, full immunization coverage, people living with HIV, ART therapy**.

And in Larger States it is among the fore runners with **Tamil Nadu and Kerala**.

COMPARITIVE ANALYSIS: INDIA V/s PUNJAB

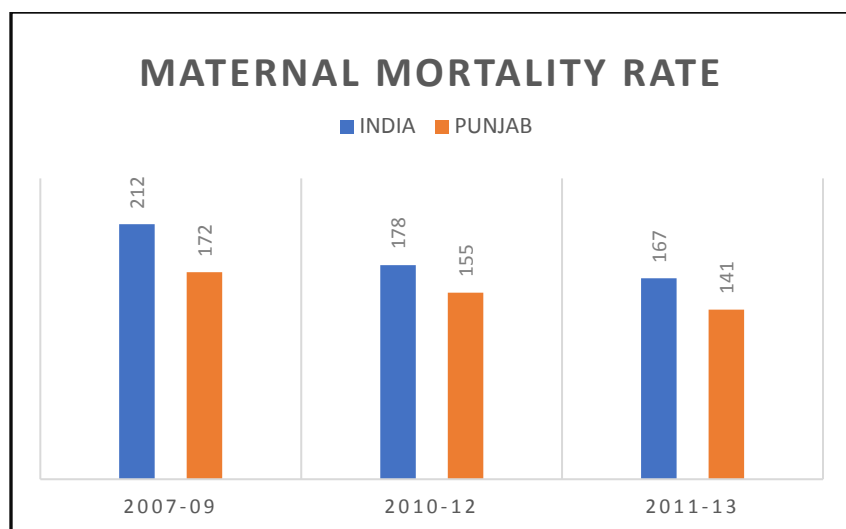
1) PARAMETER 1:DEMOGRAPHIC INDICATORS

Source- Register General Of India and DHS as on 1.1.17

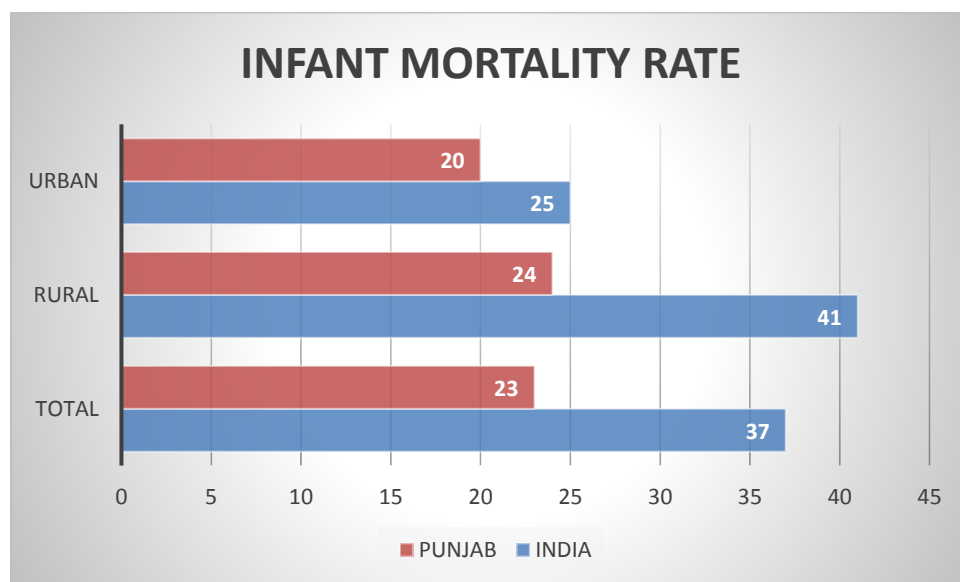


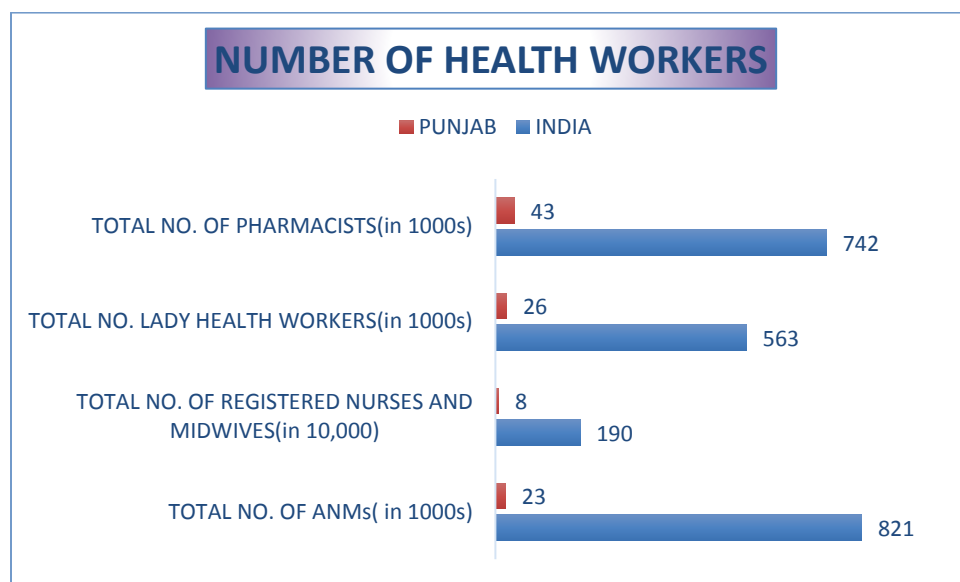
2)PARAMETER 2: VITAL HEALTH STATISTICS

Maternal Mortality Rate

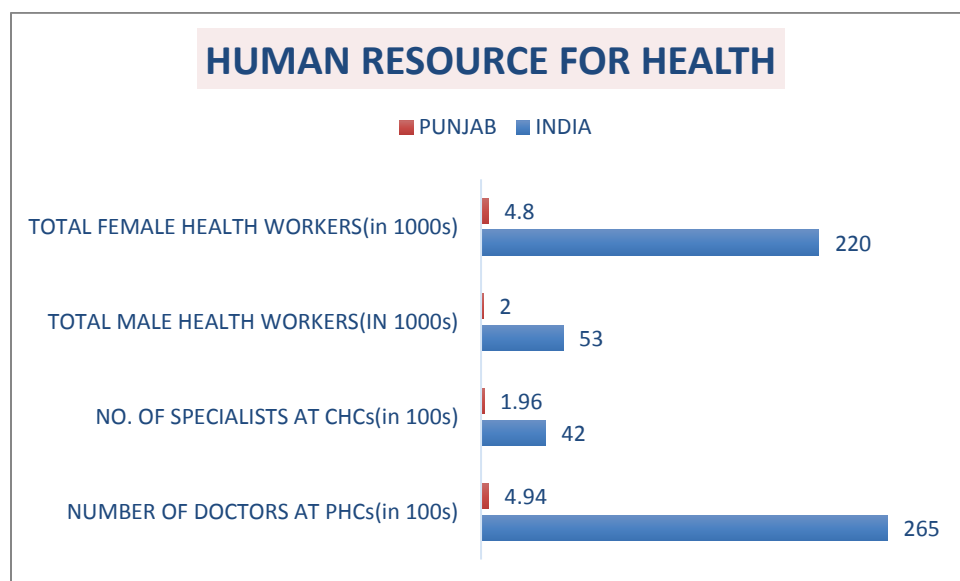


3)INFANT MORTALITY RATE





(Source- Indian Nurse Council and Pharmacy Council of India upto 31.12.2015)



NURSING STAFF at PHCs and CHCs in Punjab

FOR YEAR 2005

PERCENTAGE

Required(R)- 1296	
Sanctioned(S)- 697	53.8% Of Required
In Position(P) -640	91.8% of Sanctioned
Vacancy (S-P) -057	8.17% of
Sanctioned	
Shortfall(R-P) - 656	4.39% of Required

FOR YEAR 2017

PERCENTAGE

Required(R)- 1489	
Sanctioned(S)- 2189	+47% Of Required
In Position(P)- 2019	92.24% of Sanctioned
Vacancy (S-P) -170	7.76% of Sanctioned
Shortfall(R-P)	No Shortfall, Only Surplus

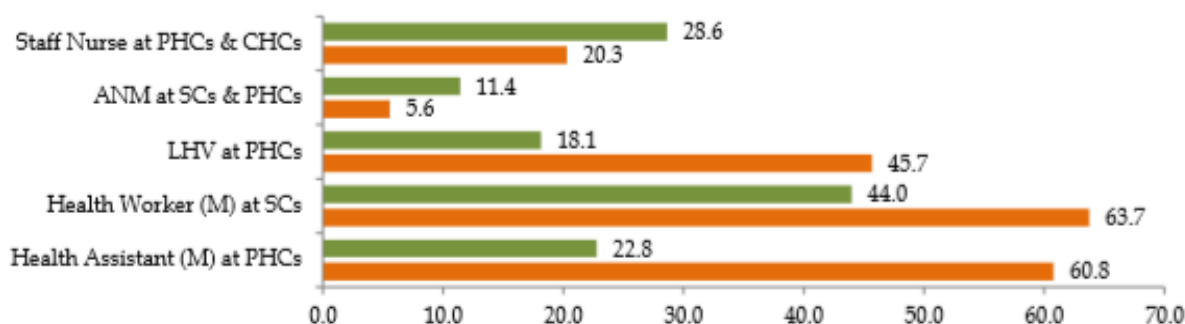
Analysis of Shortage of Nurses in India and States

The findings of previous section reveal that the rural public health sector across the nation lacks sufficient nurses and midwives.

As of March 2017, out of the 156,231 Sub-Centers functioning in rural India, 4% were without an ANM, 50.3% were without a male health worker, and 2.7% were without both an ANM and a male health worker

As of March 2017, the percentage of Sub-Centers without an ANM was highest at 89% in Arunachal Pradesh, followed by 32.5% in Tripura, 19% in Himachal Pradesh, 12.3% in Rajasthan and 11.4% in Tamil Nadu

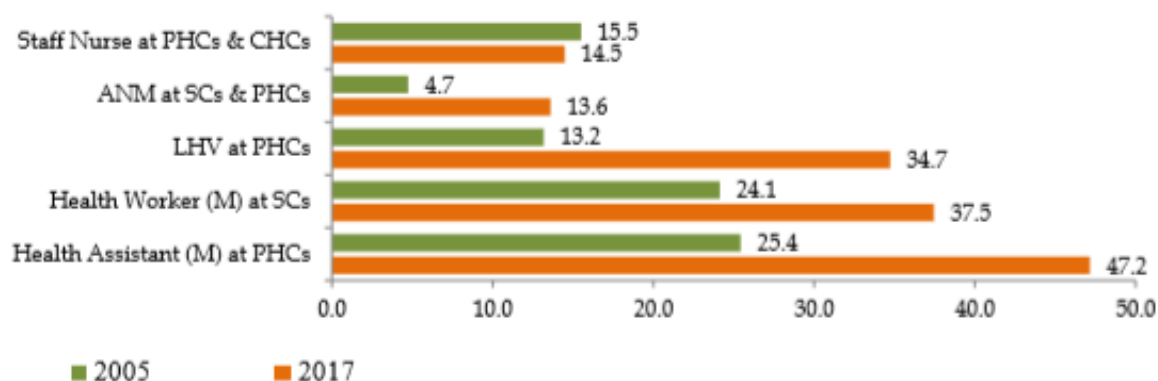
Panel A: Percentage shortfall of nurses and midwives



Panel B: Percentage of required posts remaining non-sanctioned



Panel C: Percentage of sanctioned posts remaining vacant



SHORTFALL AND VACANCY OF NURSES AND MIDWIVES IN RURAL HEALTH CENTERS, 2005- 2017

SOURCE: Estimated from Bulletin on Rural Health Statistics in India (2006 and 2016-17)

The shortages of LHVs, male health workers, and male health assistants were found to be widespread across states/UTs, whereas not many states have faced a shortage of staff nurses and ANMs.

The states with a shortage of nurses and midwives higher than the national average were mostly the NRHM's high-focus states.

As of March 2017, the shortage of LHVs at PHCs was as high as 100% in Himachal Pradesh, Dadra and Nagar Haveli, and Daman and Diu, between 75%-99% in eight states/UTs, between 50%-74% in eight states/UTs; and between 30%-49% in five states.

The shortage of male health workers at Sub-Centers was above 75% in 11 states/UTs; between 50%-75% in 12 states/UTs; and between 30%-50% in five states/UTs.

The shortage of male health assistants at PHCs was above 75% in 17 states/UTs; between 50%-75% in seven states/UTs; and between 30%-50% in four states.

Table 2: State-wise shortfall and vacancy of nurses and midwives (in percentages), 2017

States/UTs	Staff Nurse at		ANM at		LHV		HW(M) at		HA(M) at	
	PHCs & CHCs		SCs & PHCs		at PHCs		SCs		PHCs	
	S	V	S	V	S	V	S	V	S	V
High focus States										
Arunachal Pradesh	15	+	+	0	96	0	71	0	43	0
Assam	+	0	+	+	70	19	40	7	90	0
Bihar	61	31	+	0	95	89	87	42	89	67
Chhattisgarh	3	29	+	+	18	20	26	26	46	28
Himachal Pradesh	53	35	32	20	100	100	60	59	91	57
Jammu & Kashmir	+	13	+	3	84	36	77	18	96	48
Jharkhand	30	+	+	+	95	95	57	23	89	90
Madhya Pradesh	4	31	+	16	18	18	60	13	54	54
Manipur	+	18	+	13	31	21	11	20	24	12
Meghalaya	+	+	+	4	34	+	56	+	24	+
Mizoram	+	63	+	+	67	78	1	4	61	74
Nagaland	+	+	+	+	81	+	100	0	58	+
Odisha	53	+	+	+	56	52	46	20	100	0
Rajasthan	+	25	2	25	47	47	92	48	98	71
Sikkim	13	+	+	11	50	50	41	41	96	+
Tripura	+	+	33	+	65	+	26	+	75	+
Uttar Pradesh	53	2	+	+	47	49	81	58	74	83
Uttarakhand	48	+	1	5	40	19	96	80	95	80
Non-high focus States										
Andhra Pradesh	+	15	+	17	0	12	61	38	100	0
Delhi	+	+	+	18	+	36	100	0	100	0
Goa	+	2	18	25	63	44	60	0	100	0
Gujarat	10	12	15	16	13	31	13	13	33	37
Haryana	+	13	+	13	25	19	53	43	58	26
Karnataka	12	+	39	28	54	25	65	45	+	45
Kerala	+	+	+	+	98	0	37	0	+	0
Maharashtra	42	22	2	35	1	25	57	42	11	6
Punjab	+	8	+	6	+	+	52	52	38	34
Tamil Nadu	+	8	21	21	27	27	76	36	24	30
West Bengal	+	11	+	10	83	22	79	77	92	74
Union Territories										
A & N Islands	+	3	+	4	9	0	63	0	50	0
Chandigarh	+	+	+	+	0	+	88	0	100	+
D & N Haveli	+	+	+	+	100	0	11	+	100	0
Daman & Diu	11	+	+	+	100	0	35	29	50	0
Lakshadweep	+	0	+	+	75	0	0	0	100	0
Pondicherry	+	+	+	+	70	8	100	0	15	0

Notes: S- Shortfall (as percentage of required posts), V- Vacancy (as percentage of sanctioned posts). + indicates surplus, SC- sub-center, PHC- primary health center, CHC- community health center, ANM- auxiliary nurse midwife, LHV- lady health visitor, HW- health worker, HA- health assistant, M- male, F- female.

Source: Estimated from Bulletin on Rural Health Statistics in India, 2016-17

Interestingly, there is Surplus of Staff Nurses in Punjab and upto 8% vacancy.

So it is worthwhile to note here that the effective availability of nurses depends not only on the numbers of in-position nurses but also on the absence rate and attrition rate.

As the above discussion shows, as well as suffering from grossly inadequate numbers of nurses and midwives in public health centers, the public health sector in rural areas has also suffered from a **high degree of absenteeism** and a **low level of participation** in the provision of health care services utilizing existing nurses and midwives

“A recent study by Muralidharan et al. (2011), based on a nationally representative all-India survey conducted in 19 states between December 2002 and March 2003, found the absenteeism rate among nurses at PHCs and CHCs in India to be about 40%”.

The absence rate was above 50% in Karnataka, Uttar Pradesh, Bihar and Uttaranchal; between 40%–50% in Gujarat, Assam, Kerala, Punjab, Jharkhand and Haryana; and between 25%–40% in Himachal Pradesh, West Bengal, Rajasthan, Orissa, Maharashtra, Tamil Nadu, Andhra Pradesh, Chhattisgarh and Madhya Pradesh

In addition, the study reports that in many instances public health facilities, most often Sub-Centers, do not open on time, and on some occasions not at all, leading to inconvenience for patients.

Scenario in Punjab and Overseas Migration

The Indian Government recently approved setting up of 260 government nursing schools at district level to meet the shortage of nursing staff, and also increased the budgetary allocation for nursing education.(Senior K, 2010)

Currently across India, there are 5806 nursing educational institutions; these include those established by government and private.

More recently the trend towards choosing nursing as a career in Punjab has increased tremendously.

Though Kerala holds the largest tradition of training nurses for migration both within the country and abroad (Walton- Roberts 2010, Nair 2012), recent trends **show Punjab is an upcoming states in terms of nurse migration and emigration.**

For Example- No. of B.Sc. Nursing Programs in Punjab recognized by the Indian Nursing Council increased from 11 in 2004 to 92 in 2011, which is an eight fold increase.(Data compiled from Indian Nursing Council data 2008 and 2010)

The perception of Nursing profession among nursing students is changing towards the positives and majority of students perceive that nursing is a profession that serves humanity, provides opportunity for personal growth, offers bright prospects abroad and economic security.

Though Punjab is providing Nurses in a variety of Health Care Settings but the disproportionate distribution of Health Expenditure between Public(18.8%) and Private (81.82%) sectors (National Health Accounts 2004-05) shows that there are concerns that the nurses are not being absorbed effectively in the public health sectors and quite a few are leaving for more lucrative opportunities in the private sector and overseas.

However, many administrators in healthcare sector in Punjab argue that there is no shortage of nurses- there are enough nurses being trained to meet both national and international needs- rather the problem is in the organization of the health sector and the ability of different levels of government to fund appropriate nursing positions at the correct level.

The interrelationship between these factors is complex to access.

Internationally required Nurse- Patient Ratio in a given population is 1:35

The 2008 data on manpower availability in Rural Health Institutions of Punjab revealed that there was a **shortage of 25% nurses or staff nurses in various PHCs and CHCs in Punjab.**(Rural Health Statistics 2009)

Though in Punjab qualified nurses are bonded to serve in the Public Health Sector, they are allowed to find a job in private sector or overseas if the Govt. is unable to find them employment within 6 months of Graduation.

In the absence of proper absorption plans and inadequate sanctioned posts, an increasing no. of nurses are expected to migrate in the coming years.

It is this mix of public, private and internal sector supply and demand planning that frames the opportunity structures trained nurses face once the graduate.

RECOMMENDATIONS-

- Trade Union rights for all the nurses
- End the bond system. Stop confiscation of educational and experience certificates by the hospital management at the time of resignation
- No to workplace harassment by doctors and the hospital management. All nurses should be treated with respect and dignity
- Standardised Wages at-least according to the minimum wages fixed by the Government. Wages to be revised and adjusted to the cost of living, with mandatory yearly increments
- 8 hour working day, overtime allowances, yearly leave and other social security benefits
- Health coverage for all nurses to be borne by the hospital management
- End the contract system in government hospitals. All nurses should be recruited on a permanent basis and remove all bureaucratic impediments in recruiting nurses in government run hospitals
- There is an urgent need for nursing transformation at the national and state levels in both the government and private sectors — a transformation that can change the practice of nurses, expand current nursing roles and create new ones, and open up opportunities for nurses to participate in shaping the future health care delivery system.
- It should bring about improvements in nursing education, nursing practice, nursing leadership and, over and above everything else, the quality of life of nurses.
- Short-term and long-term solutions are required to reform the nursing sector. From a demand perspective, it is one of the fastest growing professions and thus offers a strong career opportunity for today's youth, even in times of economic recession
- An integrated framework to strengthen the sector, focusing on
 - 1 Optimizing the existing workforce
 - 2 Anticipating future workforce
 - 3 Strengthening individual and institutional capacities
 4. Strengthening data, evidence and knowledge
 - 5 Strengthening nursing education.

These five components are dynamic in nature and will need to be revisited and realigned with the changing health care industry. The success of these five steps will critically depend

on political will, regulatory capacity at the national and state levels, and robust health systems and nursing management mechanisms

FRAMEWORK TO STRENGTHENING NURSING SECTOR

The following is a roadmap with 30 recommendations for strengthening the nursing sector. It is followed by an appendix that provides global best practices and case studies from Japan, Thailand, and Taiwan. Recommendation Stakeholder Long term/midterm/short term Nursing education

1. Redefining the INC Act

The Indian Nursing Council Act 1947 was amended in 1957. Since then, significant changes have taken place in the health care practice as well as in technology. So, the reformation of act will enhance the present nursing education system. INC/SNC National and state governments Short term

2. Skill/competency outcome based nursing curriculum

All Nursing courses/curriculum developed by INC to be competency based and in consultation with State Nursing Councils, Public Sector Health organizations and other developmental partners, including private sector, since nursing is a global curriculum. INC/SNC in consultation with Central and State Govt, NGOs, Public sector organizations (WHO, UNICEF etc.), Private sector Long term

3. Applied basic science subjects should be part of the nursing curriculum

Currently, both science and art graduates can take up nursing studies. So orientation to basic sciences (applied physics, chemistry and biology) should be part of the nursing curriculum. INC/SNC Short term

4. Merge GNM courses with BSc. (Nursing)

Diploma in general nursing course to be replaced with degree course and to be considered under one Registered nurse and midwife (RNRM)license. INC/SNC Short term

5. Integrating nursing education with medical colleges

Nursing education should be provided in institutions with parent hospital and medical college attached instead of imparting it in standalone institutions

It will enable working with the health care team during student period. It facilitates cross-learning, improving team spirit, respect for both professions and developing healthy work environment. INC/SNC National and state governments Short term — mid term

6. Improving quality of nursing faculty in teaching institutes

Centers of excellence for nursing faculty and leadership to be introduced in each state along with ensuring availability of experienced faculty for nursing students. INC/SNC National and state governments Short term — mid term

7. “Competency based skill testing for licensing”

“There should be a common licensing exam at the time of graduation that ensures an optimum level of knowledge and skills before nurses enter the workforce. The exam to comprise of a written segment along with a competency based skill testing to ensure optimum patient readiness. The licensing written exam can be online to ensure convenience. -SNC and Central Govt.- Short term”

8. Redesigning/upgradation of the existing specialty programmes as nurse practitioner courses

That is all MSC(N) and PB Diploma (N): The existing specialty nursing course may be redesigned/upgraded to practitioner courses -INC/SNC Central/State Govt., NGOs, Development partners - Short term -mid-term

9. Rationalization in the number of nursing institutions

Need based assessment of the number of nursing institutions as per the population of the state to remove skewed distribution in the number of nursing institutions in every state and to avoid migration of nurses to other states for nursing education. -INC/SNC National and state governments- Long term

10. Availability of accurate data of number of nurses passing out and getting registered

Development of Nurses Human Resources Management System and development of a technology based system for maintaining nurse’s live register. -INC/SNC -Long term Nursing service

11. Compensation should be reviewed from time to time to make the profession competitive and comparable to market trends/other industry benchmarks

National and state governments and Pvt. Sector - Short term

12 Strengthening in-service education through CNE/ e-learning courses

CNE framework needs to be established uniformly to strengthen in-service nursing education.

CNE in the form of e-learning courses should be made available at National/Central level for easy access to any nurse/midwife. - National and State governments, Development partners and NGOs- Short – term

13. Public Private Partnership for Nursing Education/ Academic clinic partnerships (with both public and private hospitals)

Formal partnerships between private schools/ colleges of nursing and public health facilities, PHCs and CHCs Taluk hospitals, district hospitals, medical colleges and specialty hospitals where the rich clinical resources/study materials are available

This should be shared to enhance and correlate nursing education with practice within the state.
-National and state governments -Short

14. Standardization of nursing procedures and protocols

Nursing procedures must be evidence based, need based and must be standardized for practice uniformly by all nurses across the country in alignment to the accreditation standards of NABH.- INC/SNC Central/State Govt., NGOs, Development partners- Short term-mid-term

15. Teaching hospitals should follow NABH standards

NABH standards should be mandated in all teaching hospitals affiliated with nursing schools and colleges

The NABH standard procedures, protocols and checklists must be incorporated into nursing procedures - INC/SNC National and State/Central governments, NABH - Short term

16. Nursing Practice Act

Nursing Practice Act need to be developed in order to spell the scope of nursing practice based on qualification, designation and license along with safe nurse patient ratios for different services in hospitals- National and State governments Central/State Govt., NGOs, Development partners, Private sector - Short term

17. Nurse welfare to be addressed by developing a separate service condition bill for nurses

There should be a strong emphasis on positive practice environment for nurses to provide a quality health care services. (Supports such as crèches, hostels, meals and safety will make the profession more attractive) - National and State governments Central/State Govt., NGOs, Development partners, Private sector- Short term

18. Strengthening Public health programs

A number of government programs currently focus on training and capacity building of ANMs, ASHAs and even midwives and traditional healers for reaching out to community with services. The public health program can be strengthened further to enable nurses to run PHCs and sub-centers in their local areas and provide basic health care services, prescribe identified medicines and make referrals.- Central/State Government - Short term

19. Certifications and mid-career skill development

Post degree specialization courses could be designed to allow even working nurses to take a short time off and pursue them. Added financial benefits on returning to work with a specialization would also serve as an enabler for them

Such specialized courses/certifications can be conducted at select hospitals and centers so that working nurses can pursue them.- INC/SNC National and state governments- Short term — mid-term