

Capacity Building Initiatives for Health Workforce Development in Gujarat, India

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ABSTRACT

Human resources are critical component of an efficient and effective health care system. In many developing countries including India, there has been a long-term neglect in the planning and implementation of capacity building efforts for the public health workforce. Recently several states in India have launched variety of initiatives to address this challenge. Efforts for manpower development in Gujarat were initiated in 2000. Present manuscript attempts to document the initiatives taken up by the state government for health workforce development and understand its impact on public health indicators. The information regarding the state health indicators in the last decade and capacity building initiatives for health workforce development undertaken by the state government was collected from the official sources (Websites, Government documents), consultation with key stakeholders and literature. The state has witnessed improvement in key health and demographic indicators in the last decade. The state has scaled up its training facilities to produce adroit workforce in different cadres. However, critical shortage of manpower is evident in some of the cadres which need corrective measures. The state has also undertaken several innovative programs (state sponsored trainings for capacity building, financial incentives for medical officers, training of MBBS doctors in emergency obstetric care, anesthesia and essential newborn care, training of skilled birth attendants for normal deliveries, IMNCI trainings, formation of Gujarat Medical Education and Research Society and several other capacity building initiatives as a part of NRHM) to build the capacity of existing workforce in the system.

Keywords: Human Resource in Health, Public Health Work Force, Manpower Development, Capacity Building Initiatives, Health Indicators, Gujarat, India

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INTRODUCTION

World Health Organization, in its *World Health Report 2000*, identified three principal health system inputs for efficient health care delivery: human resources, physical capital and consumables [1]. Although each of these is vital to the delivery of health services, human resources are critical component of an efficient and effective health care system. The ultimate impact of any health program depends upon the performance of the health care workers and professionals. Not

surprisingly, human capital is one of the largest assets available within the health system and is frequently the single greatest expense in any national health care budget [1,2]. However, World Health Organization estimates that many countries have severe health workforce shortages and require 4.3 million additional health workers to fill critical gaps in fragile health systems [3]. This number includes 2.4 million doctors, nurses, and midwives, many of whom perform essential public health functions. Among the remaining 1.9 million health workers, a large proportion

is of public health workers who support and manage health programs and services. Furthermore, in almost all countries, a shortage of qualified health workers in remote and rural areas impedes access to life-saving public health interventions and services. Sustained efforts to address these shortages, inadequate skill mix, and uneven geographical distribution of the health workforce are considered essential for achieving national health goals, and particularly the health-related Millennium Development Goals (MDGs) [3,4].

For many years, the focus of investment of the Government of India was mainly on capital infrastructure in health systems as compared to human resources [5]. While the country's rural health system is impressive, with almost 146,000 sub centres, 23,000 primary health centres (PHCs) and over 3,000 community health centres (CHCs), shortage of human resources is apparent at every level [5]. Shortage of grass root workers, medical officers as well specialists in the health care system has been well documented [5–7]. Keeping in view the varied geographical conditions, heterogeneous population and diverse political will at individual state level, status of health work force at the national level cannot be generalized to states. Each state confronts unique challenges related to health workforce which need to be addressed independently by them.

Gujarat, one of the most urbanized states in India, is situated on the western coast, and accounts for 6% of the land area and inhabits 5% (51 million) of the country's population, ranking it tenth in the country [8]. The decadal population growth rate (1991-2001) of the state has been 22.6%, which is higher than that of India (21.5%) [9]. It has 25 districts subdivided into 226 blocks, 18, 618 villages, and 242 towns [10]. The scenario of public health work force in Gujarat was no different than India until 2000, but since then the state has undertaken several human resource capacity building initiatives. During this period, the state also witnessed an improvement in key health indicators. A major factor that has contributed to this improvement is capacity building initiatives undertaken by the state for development of skilled human resources in public health [5]. The present manuscript documents the efforts undertaken by Government of Gujarat for addressing the needs of adroit human resources in public health and its possible impact on key public health indicators.

MATERIALS AND METHODS

The information regarding the state health indicators in the last decade and capacity building initiatives for health workforce development undertaken by the state government was collected from the following sources: Official documents published by

Government of Gujarat and Government of India, National Family Health Survey (NFHS) Reports (I, II & III), Sample Registration System (SRS) Bulletins published by Government of India and Proceedings of Federation of Indian Chambers of Commerce & Industries (FICCI). The websites of the Ministry of Health and Family Welfare, Government of India and Ministry of Health

and Family Welfare, Government of Gujarat were also searched for related information [5-16]. In-depth discussion with different stakeholders from the Department of Public Health, Government of Gujarat was also carried out to track various capacity building initiatives and related information. The information collected from these sources was then reviewed, collated and analyzed.

RESULTS

Health and Demographic Indicators

Table I: Comparison of Health and Demographic Indicators of Gujarat and India [8, 9].

Indicator	Gujarat	India
Population (million) (census 2001)	51	1,028
Decadal growth rate (1991-2001)	22.6	21.5
Population density per sq km (2001)	258	324
Birth rate (2006)	23.5	23.5
Death rate (2006)	7.3	7.5
Total fertility rate (2005)	2.9	3.2
Age (years) of effective marriage (2005)	20.3	20.2
Literacy rate: total (2001)	69.9	65.3
Male	80.5	75.3
Female	58.6	54.1
Sex ratio (no. of females per 1,000 males)	920	933
Life expectancy at birth—females (2005)	69	66.1
Infant mortality rate (2008)	47	57
Child mortality rate (2005)	16	17.3
Maternal mortality ratio (2003)	160	301

It is evident from Table 1 that Gujarat is doing better in most demographic and health indicators as compared to national indicators [5,6]. As per the SRS report, there has been a gradual decrease in the overall IMR of state from 68 per 1000 live birth in 2001 to 58 per 1000 live birth in 2008. A clear urban rural divide is apparently seen in IMR estimates since 2001 [8]. There is a considerable

improvement in maternal health indicators in Gujarat from NFHS-I to NFHS-III [11]. The proportion of institutional deliveries from 36% in NFHS-I has raised to 55% in NFHS-III. The proportion of deliveries conducted by trained personnel has also increased from 43% in NFHS-I to 65% in NFHS-III. However, a meager rise in proportion of females having at least three ANC checkups is observed, with 62% in NFHS-I to 65% in NFHS-III.

Public Health Care Facilities

Table II: Public Healthcare Facilities in Gujarat[12, 13].

Public Healthcare Facility	Number
Medical College Hospitals	14
District Hospitals	24
Taluka Hospitals	26
Community Health Centres	290
Urban Health Centres	316
Primary Health Centres	1096
Mobile Health Units	88
Sub Centres	7274

Public health care model in Gujarat is pretty similar to that of other states in India. Table II displays the public health infrastructure in Gujarat ranging from primary to the tertiary level of health care. The health care is delivered through Sub-centers, Primary Health Centers and Community Health Centers. The Block and District level hospitals provide the secondary level of health care. The tertiary level of health care is provided through

teaching hospitals associated with Medical Colleges and specialized hospitals. There is provision of Mobile Health Units for providing public health care in remote and inaccessible areas of state. Public health in urban areas is delivered through the Urban Health Centers which are under the control of the respective Municipal Corporations. There are seven Municipal Corporations in Gujarat having their own public health setup[10].

Training Facilities for Health Workforce

Table III: Training Facilities for Health Workforce in Gujarat [12]

Training Facility	No. of Institutes	No. of seats per year
Medical Colleges	14	1725
Government	6	925
Municipal	2	250
Self Financed	6	550
Dental Colleges	7	520
Government	2	140
Self Financed	5	380
Physiotherapy Colleges	14	485
Government	2	80
Self Financed	12	405
Nursing Colleges (UG)	6	230
Government	1	50
Self Financed	5	180
Nursing Colleges (PG)	1	15
Government	1	15
Nursing Schools	34	1017
Government	18	552
Municipal	3	80
Self Financed	13	385
Ayurvedic Colleges	9	375
Government	4	180
Self Financed	5	195
Homeopathy College	16	1525
Government	4	400
Self financed	12	1125

Table III narrates the status of training facilities for health workforce in Gujarat. The yearly output of MBBS doctors every year is 1725 from 14 Medical Colleges in the public and private sectors. The state has 4.45% of the total Medical Colleges in India contributing to 4.86% of the total MBBS Undergraduates produced every year. The number of Dental and Physiotherapy graduates produced every

year is 520 and 485 respectively [17]. A total of 245 nursing professionals with bachelors or masters degree are produced every year. The total number of nursing schools in Gujarat is 34, having a yearly output of 1017 nurses. There are 9 Ayurvedic colleges and 16 Homeopathic colleges in state with an output of 375 Ayurvedic doctors and 1525 Homeopaths every year.

Health Workforce in Gujarat

Table IV: Status of public health workforce in Gujarat [8]

Cadre	Required*	Sanctioned	Filled	Percentage deficit in sanctioned manpower against required manpower	Percentage deficit in filled manpower against sanctioned manpower
HW (F) at SC	7274	7248	6431	0.36	11.27
HW (F) at PHC	8358	7248	6431	13.28	11.27
HW (M) at SC	7274	7239	4884	0.48	32.53
HA(F) at PHC	1084	1084	875	0.00	19.28
HA(M) at PHC	1084	1084	758	0.00	30.07
Doctors at PHC	1084	1084	1019	0.00	6.00
Specialists	1124	338	76	69.93	77.51
Notes: *The requirement is calculated on the basis of final total and tribal population of Census, 2001 in rural areas using the prescribed norms.					

Table IV describes the current status of health workforce in Gujarat. As a part of the public health network there is a female health worker (FHW) for every 5000 population posted at the sub centre. Such 5-6 sub centres are affiliated to a Primary Health Centre (PHC) which caters a population of 30,000. Each PHC has a Female Health Supervisor (FHS) who supervises the work of 5-6 FHWs posted at the sub centres. The FHW is promoted to the post of FHS after few years of field experience and on the basis of cadre seniority. They then undergo a six months in-service training related to their new job responsibilities. Earlier, the FHSs were called the lady health

visitors (LHVs) who used to supervise the work of the auxiliary nurse midwives, now designated as FHWs. There is a shortage of female and male health workers at the Sub Centres and PHCs [8]. To overcome this shortage the Government of Gujarat has implemented the Link Couple Scheme in which local couples are identified in villages where the ANM post is lying vacant. The work based honorarium is provided to them for the services they render [5]. A shortage of specialist doctors is also observed in the state both against required and sanctioned posts [8].

The efforts have already been initiated by the state government to overcome the shortage of specialists. One such initiative is Samaydan Scheme as a part of which government appoints honorary part time specialists and thus encourages the private practitioners to offer services in the public health sector [13, 16].

Budgetary Allocations for Health Sector The state increased the total budget allocated for medical and public health in last couple of years. From a meager 3.47% of total budget allocated to public health in 2007, it has risen to 6.44% in 2010. The state annual plan for 2010-11 has a budgetary provision of Rs 29,500 Cr of which Rs 1900 Cr have been allocated to medical and public health. This indicates the commitment of the government for improving the status of public health in the state.

Innovations Undertaken by the Gujarat Government for Health Workforce Development

Trained health work force is critical to the success of any health system. The state government has launched several initiatives to address this important issue.

State sponsored trainings for capacity building: Various academic and training institutes across the country have been identified by the state for training and capacity building of the health workforce. The candidates are selected and sent for specialized trainings based on their seniority and performance. The duration of these trainings ranges from a few weeks to couple of years. The expenses towards these trainings are borne by the state government. A detailed list of the institutes, courses offered and duration of training is described in Table 5.

Table V: List of Institutes Identified by Government of Gujarat for Training the Public Health Workforce.

Name of the Institute	Course	Nominat ed since	Health workforce cadre	Duration
All India Institute of Hygiene & Public Health, Kolkata	Diploma in Public Health (DPH)	1990	District level officers	1 Year
	MSc in Public Health	1990	District level officers	1 Year
Institute of Management, Junagad	Management Training for Medical Officers	1990	Medical officers	12 weeks
Shree Chitra Institute of Medical Sciences, Thiruvananthapuram	Diploma in Public Health (DPH)	2000	Medical officers	1 Year
		2000	Medical officers	2 years

	Masters in Public Health (MPH)			
Department of Community Medicine, Government Medical Colleges in Gujarat	Diploma in Community Medicine (DCM)	2001	Medical officers	2 years
	MD	2001	Through entrance exam	3 years
State Institute of Health and Family Welfare, Gandhinagar	Professional Development Course (PDC)	2006	Medical officers	12 weeks
Indian Institute of Public Health, Gandhinagar	Postgraduate Diploma in Public Health Management (PGDPHM)	2008	Medical officers	1 year
Indian Institute of Public Health, Hyderabad	Postgraduate Diploma in Biostatistics and Data Management (PGDBDM)	2008	Faculty from Medical colleges	1 year
Institute of Hospital Administration, Noida	Hospital Administration (Distance learning program)	2008	Senior Health Officials & Faculty from Medical College	6 months
Hemchandra Institute of Management, Patan	Master in Hospital Administration (MHA)	2010	District level Quality assurance officers	2 years

Financial Incentives for Medical Officers: The state government has implemented Tikku Commission's recommendations with a slight modification for time bound promotions after 6th, 13th and 19th year of continued service with government. Moreover, Dynamic Assured Career Progression (DACP) Scheme for the Medical Officers working in the state government is also being considered by state [15].

Training of MBBS doctors in Emergency Obstetric Care (EmOC): Gujarat started a two weeks basic EmOC training for all Medical Officers (MBBS) and staff nurses in 2003-2004 to improve access to skilled birth attendance in the rural areas. Initially, the

training was started in district hospitals in five backward districts and then subsequently scaled up to cover all the districts in the state. The training program was then expanded to cover medical officers working at all the CHCs and PHCs where deliveries are conducted. In 2005, the Federation of Obstetrics and Gynecology Societies of India (FOGSI) started an initiative in partnership with the Government of Gujarat, to train doctors (Medical Officers with MBBS degree) in comprehensive EmOC. This 16-week comprehensive EmOC training includes six weeks of theoretical training at the teaching hospital and 10 weeks practical training at the district hospital.

Anesthesia Training for MBBS doctors: There is a dearth of qualified anesthetists in the public health sector especially in the rural areas. The Government of Gujarat started training for MBBS doctors in obstetrics anesthesia in four teaching hospitals to address to this existing shortage. These trained medical professionals are then posted in the rural areas.

Training of MBBS doctors in Essential New Born Care: The state has implemented training in essential newborn care to the medical officers since 2008. The duration of this training is three months and is conducted at various medical colleges. The doctors are also trained for implementation of Infant and Young Child Feeding (IYCF) Guidelines.

Training of Skilled Birth Attendants (SBA) for normal deliveries: The Government of India started an initiative to train ANMs for skilled birth attendance in 2005. Gujarat is one of the initial states to start the 15-days, competency-based, hands-on training at selected centers based on the Government of India's SBA guidelines. The trained ANMs are provided with equipment and supplies after the training.

Integrated Management of Neonatal and Childhood Illnesses (IMNCI) training in Gujarat: Gujarat was the first phase state where IMNCI was rolled out in 2007-08. All the Anganwadi workers and health care workers including Medical Officers (MBBS & AyUSH) in state have been trained under IMNCI. Follow up evaluation of IMNCI

training is currently in process. In an initiative to improve neonatal care, the state government started phase wise implementation of Facility based IMNCI. The training of trainers for rolling out F-IMNCI is presently being conducted. Gujarat is the first state in India to initiate this training program on a pilot basis. Medical Officers at the CHCs and PHCs will be trained in a phased manner. This step has been taken by the state keeping in view the acute shortage of trained pediatricians in public health sector. Pre service IMNCI training of all students in III/I Professional of MBBS course has been incorporated in all the 14 Medical Colleges of the state. This seven days modular training was initiated in 2008.

Formation of Gujarat Medical Education & Research Society (GMERS): State Government has set up a GMERS to increase MBBS seats from 2055 to 3500 in the next few years in order to respond to the shortage of doctors particularly in the rural areas. New Medical Colleges at Sola, Gotri, Gandhinagar, Patan and Valsad are already established and the administrative inspection is due in early 2011. State has also set up a public private partnership with Adani Group and Gujarat Cancer Research Institute to set up two medical colleges at Kutch and Ahmedabad.

Bond to serve in rural areas for undergraduate & postgraduate medical students: All undergraduate and postgraduate students from Government Medical colleges are required to sign a bond to serve in rural areas for a period

of three years, failing which they have to pay Rs. 75000/- to the government. However, it has been observed through informal discussions with some postgraduates that only 10 percent of the medical graduates join government services.

Placing trained and qualified health professionals at appropriate administrative positions in Department of Health & Family Welfare: The Department of Health and Family Welfare (DHFV) in Gujarat is headed by the Principal Secretary (PS) for Health. National Rural Health Mission (NRHM) has a separate administrative set up headed by Mission Director. The Commissioner of Health, who heads the technical wing of the DHFV reports to the Principal Secretary (PS)-Health and is assisted by six Additional Directors. The major administrative divisions of the DHFV are the Directorates of Rural Health, Medical Services, Medical Education and Research, Vital Statistics, and Family Welfare. The senior officials at the state level are well trained in public health from various public health institutes across the country.

Other capacity building initiatives undertaken as a part of NRHM: A total of 24,065 Accredited Social Health Activists (ASHAs) have been selected & their induction training is conducted. About 7071 sub-centers are operational with at least one ANM posted at each sub center. As a part of manpower augmentation initiative, 865 Specialists, 554 MBBS Doctors, 773 AYUSH Doctors and 271

Staff Nurses are recruited on contractual basis [16].

DISCUSSION

Although public health is increasingly viewed as central to ensuring a well-functioning health system and to achieving national health goals [20], surprisingly very little is known about the size, structure, performance, and training needs of the public health workforce and reflects the relatively low priority accorded in many countries to the public health workforce and its related infrastructure, including its long-term development [18]. In recent past several states in India have recognized the importance of strengthening the capacities of their health workforce through systematic efforts. However, there is a need for documenting such initiatives for better learning and adaptation.

Present manuscript is an attempt to understand and document the capacity building initiatives for the public health work force undertaken by Government of Gujarat and correlate them with the improvement of key health indicators. It was observed that in spite of consistent efforts by government, reduction in IMR at state level is slow i.e. 1.25 points per year between SRS 2001 and SRS 2009 [5]. Similar trends are observed for reduction in MMR in spite of support from other initiatives like Cheeranjeevi Yojna and Janani Suraksha Yojna (JSY) [5]. One of the reasons attributed to this slow progress is a shortage in the health workforce. Despite the efforts undertaken by

the state in man power development, some sectors of public health are grossly under developed, for instance there are no demographers or state epidemiologists. Other issues include poor human resource management like additional charges, ad-hoc appointments, poorly designed transfer and posting policies [15]. Inadequately trained supervisory cadre at various levels has also been a matter of concern [13].

In spite of various efforts undertaken, there is still a shortage of medical officers & specialists in the state. One of the major reasons for this shortage is inability of the state government to retain the work force after graduation and post graduation. The state has identified institutions for capacity building of the existing work force. However, the selection procedure to these courses is cumbersome [15]. The state has fixed an upper age limit of 35 years and a permanency as a prerequisite for admission to many of these programs. Hence many of the senior medical officers are not able to apply to these courses leading to demotivation. A surety bond as bank guarantee of five lac (INR) after completion of course and five years of mandatory service with the state acts as a major obstacle.

Reservation of seats for post graduate courses in government medical colleges for in-service doctors is an incentive for medical officers working in rural areas. It also helps the state in

improving the availability of post graduate doctors. However, the age constraints for admission to these courses are a major obstacle for attracting medical officers. One of the major concerns as per the Class II Medical Officers Association is absence of a transparent transfer policy in state [15]. The state should adopt a time bound transfer policy where a person has to serve in the rural and remote areas for a fixed duration after which they get an opportunity to serve in urban areas for a defined time period. Though various efforts have been undertaken by the state for capacity building of the health workforce, a comprehensive training policy needs to be developed. This policy should have linkages with the promotion policy and the desired skills and competencies required for promotions.

In order to effectively execute its HR functions, the state health directorate should have a full fledged unit for managing human resources within the department with specialized staff and dedicated budget for its activities. The activities of this unit would include human resources planning and management. Keeping in view of the existing shortage of human resources, state should develop short and long term human resource strategies. The strategies for analyzing the gaps should focus on the assessment of current and future demand and supply of manpower. Building the public health workforce requires strong leadership from national and state

governments and a huge political will. It may also need a support and investment from a wide variety of national and international agencies for fulfilling the training needs and capacity building of the workforce.

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