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HUMAN RESOURCES FOR HEALTH: AVAILABILITY AND COMPETENCIES FOR MATERNAL AND NEWBORN HEALTH CARE SERVICES

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ABSTRACT

Background: Human resources are the largest component of health care delivery system in India and motivated health workers are essential for improving health outcomes.

Objectives: The objective of this paper is to study the availability and competency of staff at community health centers (CHCs) and 24X7 primary health centers (PHCs) and compare these with the Indian Public Health Standards (IPHS).

Materials and Methods: Data were collected from various health service providers and managers at district, block and community level through well structured questionnaire.

Results: Shortage of manpower especially specialists were observed at CHCs whereas at 24*7 PHC shortage of laboratory technician and pharmacist were observed. More than 75 percent medical officers were competent in history taking and physical examination during ANC followed by antenatal counseling and interventions (71.4%), health education and counseling (66.7%) and providing newborn care (61.9%) whereas nearly 70 percent of the nursing staff were competent in ANC history taking, establish I/V line and give fluid and conduct normal delivery. Fourteen programme managers found themselves competent in monitoring and evaluation followed by implementation planning (76.5%), managing training programmes (76.5%), programme management and review (58.8%), quality management (58.8%), essential computer skills (58.8%), developing action plan (58.8%) and managing contracts (58.8%).

Conclusions: Important deficiencies were revealed in the studied CHCs and 24X7 PHCs of Bharatpur district and by additional inputs such as recruiting staff health facilities can be upgraded. Training is essential for enhancing the competencies which should be addressed on the priority basis.

Key words: Human Resources, Indian Public Health Standards, Clinical Competency, Techno-managerial Competency, Maternal and Newborn Care

BACKGROUND

Human resources are the largest component of health care delivery system in India and defined as "all people engaged in actions whose primary intent is to enhance health". Human resource for health (HRH) encompass all of the men and

women who work in the health field including clinical staff such as physicians, nurses, pharmacists and dentists, as well as management and support staff, those who do not deliver services directly but are essential to the performance of health systems, such as health workers, policy makers, educators, clerical staff, scientists, pharmacists, managers, ambulance drivers and accountants. It has been estimated, however, that countries with fewer than 23 physicians, nurses and midwives per 10 000 population generally fail to achieve adequate coverage rates for selected primary health-care interventions, as prioritized by the Millennium Development Goals. [1, 2]

Health care delivery in India has been envisaged at three levels namely primary, secondary and tertiary. The primary and secondary level of health care essentially includes Primary Health Centers (PHCs) and Community Health Centers (CHCs) respectively. CHCs are public health facility, designed to provide referral health care for cases from the primary level and for cases in need of specialist care approaching the CHC directly whereas PHCs are the cornerstone of rural health services; a first port of call to a qualified doctor of the public sector in rural areas for the sick and those who directly report or referred from Sub-centers for curative, preventive and promotive health care. Some PHCs has been selected which provide round the clock services by increasing the number of medical officers and staff nurses and called as 24X7 PHCs. [3, 4]

According to Rural Health Statistics Bulletin (2011) of Ministry of Health and Family Welfare, Government of India, there are 4809 CHCs and 23887 PHCs are functioning in India. [5] However, the density of health workforce was found pity. According to the World health Statistics (2012), 6.5 physician, 10 nursing and midwife personnel and 0.5 community health worker per 10,000 population are available in India. [6]

Indian Public Health Standards (IPHS) are the set of standards formed to provide optimal level of quality health care, with the aim to deliver high quality services which are fair and responsive to client's needs, which should provide equitably and which deliver improvements in the health and wellbeing of the population. Draft guidelines for Indian Public Health Standards for PHCs and CHCs were published in 2006 which were then modified in 2010. [7, 8]

One major challenge in health care delivery system is the availability of non competent staff. A competency need exists when there is a gap between what is required of a person to perform efficiently and what he actual knows and this can be reduced or eliminated by training and development. To assess the competency need little efforts have been made. However, there are studies conducted for training needs assessment such as those of Christiane Brems et al (2010) and Reena Isaac (2011) both of which have been conducted among health care providers. [9, 10] Very few studies such as Michael Nash (2002); Markaki A (2009) carried out to assess the training needs of nursing staff. [11, 12]

The objective of the present paper are as follows: a) to study the availability of human resources at CHCs and 24X7 PHCs and compare these with the Indian Public Health Standards; b) to assess the clinical competencies required by health care providers (i.e. Medical Officers and Nursing Staff) on the core skills of maternal and newborn care at various public health facilities i.e. CHCs and 24*7 PHCs; and c) to assess the techno-managerial competencies required by programme managers at district and block levels as well as medical officer in charge (MOIC) at various public health facilities i.e. CHCs and 24*7 PHCs in the Bharatpur District of State of Rajasthan.

MATERIALS AND METHODS

The present paper is based on a study conducted in Bharatpur district of the State of Rajasthan, India. There are thirteen CHCs and nineteen 24*7 PHCs in the study district. As we know, Rajasthan is one of the 18 special focused states identified by the National Rural Health Mission (NRHM) to provide effective healthcare, because of weak public health indicators. [13] From the State of Rajasthan, Bharatpur district is identified purposively for the present study because of weak health outcomes.

To assess the availability of human resources at CHCs and 24*7 PHCs with respect to Indian Public Health Standards (IPHS), a facility assessment tool was developed referring the Revised Draft of Indian Public Health Standards (IPHS) for Community Health Centers and Primary Health Centers (2010) developed by the Ministry of Health and Family Welfare, Government of India. [7, 8] To assess the clinical and managerial competencies required, two

separate checklists were developed by referring various guidelines regarding maternal and neonatal care developed by Ministry of Health and Family Welfare (MoHFW), Government of India. [14, 15]

To assess the clinical competencies required by the health providers such as Medical Officers (MOs) and Nursing Staff including Staff Nurses, Auxiliary Nurse Midwives (ANMs), General Nurse Midwives (GNMs) and Lady Health Visitors (LHVs) to provide maternal and newborn health care services at CHCs and 24*7 PHCs, 89 health providers including 21 medical officers and 68 nursing staff were interviewed.

Similarly, to assess the techno-managerial competencies required to perform better, 3 district level officials [Chief Medical and Health Officer (CMHO), District Programme Manager (DPM), and District Maternal and Child Health Consultant (DMCHC)], 14 block level officials [6 Block Chief Medical Officers (BCMO) and 8 Block Programme Managers (BPMs)], eight CHC Medical Officers In-charge, and nine 2*7 PHC Medical Officers In-charge were interviewed.

Data were collected through interviews at public health facilities including district hospital, CHCs and 24*7 PHCs during the months of September and October 2010. Written consent was obtained from all the participants. Clinical competencies were assessed on core skills of maternal and newborn care including : a) ante-natal care such as antenatal history taking, antenatal physical examination and antenatal counseling and interventions; b) intra-natal care such as basic emergency obstetric care (BeMOC), emergency obstetric care (EmOC), manual removal of placenta, identification of danger signs during pregnancy, labor, delivery and postpartum period, giving deep intramuscular injections, establish I/V line and give fluids, fill client care and referral slip, use of partograph during labour , conducting normal delivery, and application of forceps and vacuum; and c) post-natal care such as family planning, abortions, providing newborn care, providing postpartum care to normal mothers and newborns and health education and counseling. However, techno-managerial competencies were assessed on the following skills such as leadership, hospital management, programme management and review; procurement, logistic and inventory management, quality management, budgeting and finance, fund management, monitoring and evaluation, essential computer skills, implementation planning, developing district action plan, managing training programmes, developing terms of references and managing contracts.

RESULTS AND DISCUSSION

Availability of Human Resource

In order to provide round the clock services, appropriate human resources including both medical and support should be made available at health facility. According to the Indian Public Health Standards (IPHS) from revised draft (2010) for CHCs, five specialists such as one general surgeon, one physician, one obstetric and gynecologist (OBG), one pediatrics and one anesthetist; six medical officers; sixteen nursing staffs (including ANM and staff nurses); three pharmacists; three laboratory technicians and two radiographers should be made available at CHC.

Table 1: Availability of Human Resources at Community Health Centers in Bharatpur District, Rajasthan

Human Resources	IPHS (Revised Draft)-2010	Human Resource at all 13 CHCs			Existing Gap (%)
		Required	Availability	% availability	
General Surgeon	1	13	4	30.8	69.2
Physician	1	13	5	38.5	61.5
OBG	1	13	5	38.5	61.5
Pediatrics	1	13	4	30.8	69.2
Anesthetist	1	13	1	7.7	92.3
Medical Officers	6	78	32	41	59
Nursing Staff (SN+ANM)	16	208	163	78.4	21.6
Pharmacist/Compounder	3	39	12	30.8	69.2
Lab Technician	3	39	26	66.7	33.3
Radiographer	2	26	13	50	50

The study shows that around 31 percent general surgeon and pediatrics are available as per the requirement. However, out of the 13 CHCs in the study district, only one had the availability of Anesthetist. Only four CHCs have general surgeon in place. However, only five CHCs have physician. Table 1 depicts that only five CHCs were functioning with OBG and four CHCs were functioning with a pediatrics. The above finding shows that the availability of specialists to provide various specialist services at CHCs was found to be very poor in the study district. As far as medical officers are concerned, data shows that only 32 medical officers are there at the CHC level. Data depicts that only 163 (78.4%) nursing staff are available at CHCs. However, 12 (30.8%) pharmacists/compounders and 26 (66.7%) laboratory technicians were available at CHC level in the study district. It was observed that only 13 (50%) radiographers were available at CHC level in the study district.

According to the IPHS (2010) for primary health centers, two medical officers, five staff nurses, two pharmacist/compounder and two laboratory technicians should be available at 24*7 PHCs. Table 2 shows the availability of human resources at 24*7 PHC in the study district. Data depict that only 23 (60.5%) medical officers were available at 24*7 PHCs. However 79 (83.2%) staff nurses are available in all the study 24*7 PHCs. It was observed that only 4(10.5%) pharmacists/compounders and 18 (47.4%) laboratory technicians were available at 24*7 PHC level.

Table 2: Availability of Human Resources at 24*7 Primary Health Centers in Bharatpur District, Rajasthan

Human Resources	IPHS (Revised Draft) -2010	Human Resources at all nineteen 24*7 PHC			Existing Gap (%)
		Required	Availability	% availability	
Medical Officer	2	38	23	60.5	39.5
Staff Nurses	5	95	79	83.2	16.8
Pharmacist/ Compounder	2	38	4	10.5	89.5
Laboratory Technician	2	38	18	47.4	52.6

Competencies Found

Competencies among medical officers and nursing staff were identified on two aspects: clinical skills and techno-managerial skills. In clinical skills, focus was on maternal and newborn care.

Clinical Competencies found in Medical Officers (MOs): Data depicts that more than 75 percent medical officers were competent in history taking and physical examination during ANC followed by antenatal counseling and interventions (71.4%), health education and counseling (66.7%) and providing newborn care (61.9%). Only one MO found to be competent in EmOC followed by application of forceps and vacuum (4 MOs)) and abortion (6 MOs).

Clinical Competencies found in Nursing Staff: Data depict that nearly 70 percent of the nursing staff were competent in ANC history taking, establish I/V line and give fluid and conduct normal delivery. It was found that 46 nursing staff out of 68 were competent in ANC counseling and intervention, providing newborn care and health education and counseling followed by antenatal physical examination (64.7%), give deep intramuscular injections (61.8%) and providing postpartum care to normal mothers and newborns (61.8%). Only 23 nursing staff reported the use of partograph during labour. Competency regarding abortion, BeMOC and manual removal of placenta was found to be poor.

Techno-Managerial Competencies Found

Programme Managers at District and Block Level: Programme managers in public health are responsible for successful management of public health facilities. This responsibility requires a lot of technological and managerial skills which are assessed in programme managers at study district. Findings depict that 14 programme managers found themselves competent in monitoring and evaluation followed by implementation planning (76.5%), managing training programmes (76.5%), programme management and review (58.8%), quality management (58.8%), essential computer skills (58.8%), developing action plan (58.8%) and managing contracts (58.8%). Only 5 programme managers out of 17 were competent in procurement followed by budgeting and finance (7) and fund management (9).

Table 3: Clinical Competency found in Medical Officers and Nursing staff in Core Skills of Maternal and Newborn Care

Core Skills	Competent Medical Officers (N=21) (%)	Competent Nursing Staff (N=68) (%)
Ante-natal Care		
Antenatal history taking	16 (76.2)	48 (70.6)
Antenatal physical examination	16 (76.2)	44 (64.7)
Antenatal counseling and interventions	15 (71.4)	46 (67.6)
Intra-natal Care		
Basic emergency obstetric care (BeMOC)	7 (33.3)	33 (48.5)
Emergency obstetric care (EmOC)	1 (4.7)	-
Manual removal of Placenta	8 (38.1)	34 (50.0)
Give deep intramuscular injections	11 (52.4)	42 (61.8)
Establish I/V line and give fluids	- (-	48 (70.6)
Client care and referral slip	- (-	38 (55.9)
Use of partograph during labour	12 (57.1)	23 (33.8)
Application of forceps and vacuum	4 (19.0)	-
Identification of danger signs during pregnancy, labor, delivery and postpartum period	-	38 (55.9)
Conducting normal delivery	-	48 (70.6)
Post-natal Care		
IUCD insertion	11 (52.4)	41 (60.3)
Abortion	6 (28.6)	32 (47.0)
Providing newborn care	13 (61.9)	46 (67.6)
Providing postpartum care to normal mothers and newborns	8 (38.1)	42 (61.8)
Health education and counseling	14 (66.7)	46 (67.6)

Medical Officer In-Charge (MOIC) at CHC/24*7 PHC: MOIC is overall in-charge of the public health facility i.e. CHCs and PHCs. MOIC at CHCs and 24*7 PHCs are engaged in clinical services as well as in the management of public health institutions. To fulfill these responsibilities, they should have techno-managerial needs, which are assessed and presented in table 4. Data depict that ten MOIC were competent in quality management, monitoring and evaluation, implementation planning, developing TOR and managing contracts. However, only 5 MOIC were competent in essential computer followed by hospital management (6), procurement (8) and budgeting and finance (8).

Table 4: Techno–Managerial Competencies found in Programme Managers and Medical Officer In-Charge (MOIC) in Bharatpur District, Rajasthan

Techno-managerial Skills	Competent Programme Managers (N=17)	Percentage of competent programme managers	Competent MOIC (N=17)	Percentage of competent MOIC
Leadership	13	76.5	9	52.9
Hospital management	7	41.2	6	35.3
Programme management and review	10	58.8	9	52.9
Procurement	5	29.4	8	47.0
Logistics and inventory management	8	47.0	9	52.9
Quality management	10	58.8	10	58.8
Budgeting and finance	7	41.2	8	47.0
Fund management	9	52.9	9	52.9
Monitoring and evaluation	14	82.3	10	58.8
Essential computer skills	10	58.8	5	29.4
Implementation planning	13	76.5	10	58.8
Developing action plan	10	58.8	9	52.9
Managing training programmes	13	76.5	9	52.9
Developing terms of reference (TOR)	9	52.9	10	58.8
Managing contracts	10	58.8	10	58.8

CONCLUSION

Findings shows that there is vast shortage of manpower at studied public health facilities and available human resource are not competent to provide quality services to the beneficiaries as they reported several clinical and techno-managerial competency needs. Vacant posts should be filled and efforts should be put to place human resource as per the IPHS.

District hospital should be identified as **"District Health Training Center"** and a separate committee should be formed, which should be responsible to deliver competent health staff to the district. Committees should be responsible to identify the training needs of health service providers working at different levels of health system at regular intervals, organize training programmes and prepare training material as per the need. District hospital, civil hospitals and first referral units (FRUs)/community health centers (CHCs) should be identified as training sites on the basis of patients load and convenience of the trainees, where trainees can learn and use their skills at the same place which can be cost effective too.

Training is an effective way to enhance the competencies of health providers which ultimately results in overall improvement in health indicators.

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