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Original Research Article

Assessment of primary health centres of a district in North Karnataka according to Indian Public Health Standards 2012 guidelines: a cross sectional study

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ABSTRACT

Background: Primary health centre (PHC) is a basic health unit to provide an integrated curative and preventive health care to the rural population as close to the people as possible, with emphasis on preventive and promotive aspects of health care.
Methods: A facility based cross-sectional study was conducted in Belagavi district of Karnataka in India. Twenty PHCs, two PHCs from each of the 10 talukas of Belagavi district were selected by simple random sampling. The study period was from 1st January 2014 to 31st December 2014. Data was collected using a predesigned and structured questionnaire for IPHS facility survey.
Results: In this study, only 60% of primary health centres covered the population as per the IPHS norms. All the PHCs were providing the regular outpatient department (OPD) services, referral services, antenatal care, family planning and in-patient services. Bed occupancy rate was less than 40% in 55% of PHCs. Building area in 75% of PHCs were inadequate according to IPHS norms. Residential facility for staff was available only in half of the studied PHCs.
Conclusions: IPHS guidelines were not fully being followed at PHC level in the district. Though the requirement of medical officers and pharmacists was fulfilled in almost all the PHCs, deficiency was seen in the appointing of Ayush doctors and staff nurses at PHCs. There is an urgent need of recruiting the deficient staff for efficient functioning of the PHCs.

Keywords: Primary health centres, Indian public health standards, Assessment

INTRODUCTION

Primary health centres (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-centres for curative, preventive and promotive health care.[1]

The ninth five year plan (1997-2002) observed that inappropriate location, poor access, poor maintenance, gaps in critical manpower, mismatches between personnel and equipment, lack of essential drugs or diagnostics, poor referral linkages, are some of the factors responsible for sub-optimal functioning of primary health care institutions.[2]

In order to provide optimal level of quality health care, a set of standards called Indian Public Health Standards (IPHS) were recommended for PHCs in early 2007. IPHS are envisaged to improve the quality of health care delivery in the country under NRHM. A task group under Director General of Health Services (DGHS) was

constituted to recommend the standards. The IPHS is based on its recommendation and act as a bench mark for facilitating health institutions to reach desirable levels of resource provision.[3]

In view of the above considerations, the present study was undertaken to assess to what extent standards prescribed by IPHS are followed by PHCs of Belagavi district in Karnataka state, India.

METHODS

The Belagavi district is situated in North Karnataka, has 10 talukas and 140 primary health centres. A facility based cross-sectional study was conducted from 1st January 2014 to 31st December 2014 and total 20 PHCs (two PHCs from each taluka), were selected out of 140 PHCs by simple random technique. The permission letter was obtained from the District Health Officer (DHO) of Belagavi before initiating the study. The study was approved from the institutional ethics committee for human subjects' research of the medical college. Written informed consent was obtained from all the participants. Predesigned and structured questionnaire was constructed according to the proforma for IPHS facility survey given by IPHS guidelines 2012 for PHCs.

RESULTS

Availability of services and manpower at the PHCs

In our study, 60% of the PHCs covered population less than 30,000. Regular services like outpatient department (OPD) services, inpatient services, and referral services were available in all the surveyed PHCs of the district. Emergency services for 24 hours/day were given in 85% of the PHCs.

All the PHCs had 4 to 6 inpatient beds. The bed occupancy ratio remained less than 40% in 55% of PHCs. Primary management of wound was done in all the PHCs. The service availability of minor surgeries, management of poisoning, burns and fractures were found to be between 70 to 85%.

Table 1: Availability of antenatal and intra-natal services at PHCS (n=20).

S. No.	Services or facilities	No. of PHCs	%
1	Antenatal care	20	100
2	Availability of labour room	19	95
3	Deliveries conducted in labour room	18	90
4	Availability of facility for normal delivery for 24 hours	16	80
5	Use of partograph where deliveries are conducted	4 (out of 18)	22*
6	Availability of separate area for septic and aseptic deliveries	0	0

*Percentage calculated out of 18 PHCs where deliveries were being conducted.

Table 2: Availability of specific services at PHCs (n=20).

S. No.	Services	No. of PHCs	%
1	Availability of facility for tubectomy and vasectomy	11	55
2	Treatment of gynecological disorders	18	90
3	Facility for MTP (abortion)	0	0
4	Family planning services	20	100
5	Treatment of STI/RTI	18	90
6	Treatment of anemia	18	90

Table 3: Availability of manpower resources at PHCs (n=20).

S. No.	Personnel	Availability in No. of PHCs	%
1	Medical officer (MBBS)	18	90
2	Ayush M.O.	8	40
3	Pharmacist	19	95
4	Staff nurse	19	95
5	Health assistant male (senior supervisor)	11	55
6	Health assistant female (LHV)	12	60
7	Laboratory technician	17	85
8	Health educator	2	10
9	Clerks (FDC and SDC)	20	100
10	Drivers	4	20
11	Class IV workers	20	100

Table 4: Status of operation theatres of PHCs (n=20).

S. No.	Parameter	No. of PHCs	%
1	**OT exists**	19	95
2	**Area adequate**	19	95
3	**Functional**	17	85
4	**Surgeries conducted**	11	55
5	**Reasons for not conducting surgeries**		
	No OT	1	45
	Non availability of doctors/staff	1	
	Lack of equipment/poor physical state of OT	2	
	No power supply in OT	0	
	Not trained	5	

Antenatal care was given in all the studied PHCs. In 95% of PHCs the labour room was available (Table 1). In 60% of PHCs the number of deliveries conducted per month was more than 10. New born care services on 24 hours×7 days/week basis were offered in 90% of the PHCs. Facility for tubectomy and vasectomy was available in 55% of PHCs (Table 2).

Immunization activities thus were present in all the PHCs. Management of severe acute malnutrition (SAM) was done in 70% of PHCs. Family planning services like IEC activities, provision of at least one type of contraception (barrier or IUCD or pills), referral and follow up were provided by all the PHCs.

Laboratory facility was available in all the PHCs. Laboratory diagnosis for HIV, pregnancy and blood smear for malaria were found in nearly all the PHCs. Malaria rapid diagnostic test kits were supplied only in 65% of the PHCs. Diagnostic tests for STIs were found in 20% of the PHCs only. Facilities for CT, BT and Blood grouping and Rh typing were available in 60% of the PHCs.

In our study, 95% of the PHCs had Medical officers (Table 3). Lady medical officers were posted in only 20% of PHCs. Out of 65% 24×7 PHCs, only around 38% had the adequate number of the staff nurses.

Physical infrastructure of the PHCs

All of the PHCs were easily accessible. About 65% of PHCs were within 30 km from the nearest CHC. All the PHCs had the designated government buildings. In 95% of PHCs, operation theatre was present (Table 4). Residential facilities for medical officers were available in 60% of the PHCs.

All PHCs utilized the area to display health education related materials and banners. All the PHCs had personal computers, 95% had telephone connection, computer with internet facility. 75% PHCs did not have their own vehicle. Many doctors were using personal vehicles for field work. However, all the PHCs had facilities of 108 ambulance services.

Equipment's like normal delivery kit, radiant warmer, suction apparatus, equipment for neonatal resuscitation, IUCD insertion kit were available in 95% of the PHCs. Standard surgical kit was available in only 65% of the PHCs. All the PHCs had the anthropometric measurement equipment's and cold chain equipment's for the vaccine storage and transport.

About 50% of the PHCs had the equipment's less than 50% of the required and 50% of PHCs had 50-75% of the equipment's. All the PHCs had less than 50% of the drugs (as per essential drug list). In a rather surprising finding, supply of condoms and oral contraceptive pills was found to be limited to nil in many PHCs at the time of this study.

DISCUSSION

Availability of services and manpower at the PHCs

The National Rural Health Mission (NRHM) framework seeks to provide one primary health centre (PHC) for 30,000 population (20,000 in tribal or desert areas).[1] In our study, 60% of the PHCs covered population less than 30,000. This is same as the finding of DLHS-III, which observed that the average rural population covered by PHCs in Karnataka was 25,673 and was more than the finding of rural health statistics in India 2015, which derived it to be 15,924.[4,5] Around 40% of the PHCs had coverage higher than the stipulated population amongst which 12.5% had coverage of more than 50,000. This hampers the accessibility of health facilities to the rural population on one hand and also gives a higher work load on the existing staff. In the studied PHCs, 65% of PHCs were functioning on 24 hours×7 days/week basis, which is on higher side when compared to Karnataka state data of 55.6%.[6]

A study conducted in primary health centres of Chittoor district, Andhra Pradesh in 2012 for assessment of infrastructure facilities, manpower and services in 22 PHCs revealed that 63.6% of PHCs were providing in-patient services and 63.6%, the emergency services.[7]

The daily OPD attendance in 40% of PHCs was between 41 to 60, which were as per the IPHS minimum expected OPD attendance of 40 per day per doctor. In 40% it was more than 60 per day indicating the work overload on the staff.

A study done in Rajkot district on quality assessment of facilities available at primary health centres in 2011 showed that, all PHCs were providing OPD services, but emergency and inpatient services were available in 92% PHCs. Bed occupancy rate for last 12 months was less than 40% in 85% PHCs.[8]

The service availability of minor surgeries, management of poisoning, burns and fractures were found to be between 70 to 85%. The major reason for this was the non-availability of staff, operation theatres and adequate training of the staff.

The reasons for not conducting deliveries in 10% of PHCs were non-availability of labour room and staff. In 80% of PHCs there was availability of facility for normal delivery for 24 hours×7 days/week (Table 1). A study conducted in Chittoor district revealed; only 59 % of PHCs were conducting deliveries despite the presence of labour room.[7]

In the present study, in 60% of PHCs the number of deliveries conducted per month was more than 10. New born care services on 24 hours×7 days/week basis were offered in 90% of the PHCs. These were consistent with the findings of DLHS-4,in which our state had 64.2% of PHCs where at least 10 deliveries were conducted in the last one month and 96.6% of PHCs where Newborn care services on 24hours×7days/week basis.[6] MTP facility was not there in any PHC due to lack of trained staff.

Primary health centres were still dependent on peripheral blood smear for diagnosis. This might delay the treatment of malaria. Facilities for CT, BT and blood grouping and Rh typing were available in 60% of the PHCs, thus hampering and delaying services to cases like post-partum hemorrhage, complications of dengue, etc.

Another study was carried out to find out and compare to what extent the IPHS were followed by the PHCs in the selected districts of both the empowered action group (EAG) state of Assam and non EAG state of Karnataka in 2008 revealed basic laboratory facilities, for routine blood, urine and stool examination were available in 80% of the studied PHCs in the non-EAG state of Karnataka, while it was only in 20% of the studied PHCs of the state of Assam.[9]

Existence of medical officers was consistent with the rural health statistics 2015 data of the country, in which 8.1% of the PHCs were without doctors (Table 3).[5] Lady medical officers were posted in only 20% of PHCs, which is on higher side, when compared with the DLHS-4 data of the state, where the PHCs having lady medical officer was only 7.6%.[6] The availability of Ayush doctors in PHCs of Belagavi district was 40%, which was also more than the state data 27.6% of PHCs with Ayush doctor.[6] Rural health statistic-2015 data of Karnataka reported 20% of PHCs with Ayush doctors.[5]

In our study, the PHCs working without pharmacist and laboratory technician were 5% and 15% respectively. This was better when compared with the rural health statistics-2015 of the country, where 21.9% and 38.1% of the PHCs were working without a pharmacist and lab. technician respectively. In 5% of the PHCs, staff nurse was not available. Rural health statistics data 2015 reports, shortfall of nursing staff in 16% of the PHCs.[5]

In our study, shortfall of the health assistant (M) was 45% and LHV/health assistant (F) was 40%. This was better than the rural health statistics data 2015 of the country, where shortfall of health assistant (M) and LHV/ health assistant (F) was 61.3% and 49.2% respectively.[5]

A study conducted in 2012-13 in four PHCs for assessment of health centers as per Indian Public Health Standards in Chandigarh Tricity showed, Human resources were adequate at PHCs in Panchkula (81%) while it was poor at PHCs in Mohali (59%).[10]

Physical infrastructure of the PHCs

Around 5% PHCs were more than 50 km from the nearest CHC. About 25% of the PHCs were located at more than 100 km distance from the district hospital. This will affect the referral services from PHC to the first referral unit for high risk cases and significantly affects the utilization of the services.[11] About 75% of the PHC building area was inadequate according to the IPHS norms. The Rajkot study showed that the most important factor affecting the provision of health services is the accessibility of health centre. 50% PHCs were located within the village area and 28% were within one km from village. 92.8% PHCs were in designated government building.[8]

In our study, surgeries were conducted in 55% of the PHCs. The reasons for not conducting surgeries were the lack of training and poor physical state of the OTs (Table 4). The rural health statistic 2015 reported availability of OTs in 52.7% in the state.

In 20% of PHCs the normal delivery for 24 hours was not conducted in the preceding year. The reasons for this were lack of staff and non-availability of the residential facility for the staff. The rural health statistics 2015 report observed that the labour rooms were present in 71.3% of PHCs in Karnataka.[5] DLHS-4 reported 44.9% PHCs had residential facility for medical officers. The residential distance affects the operational availability of doctors to the public.[12]

The Rajkot study showed that the signboard was available in 85% PHCs, but Only 42% PHCs had signboard available within premises showing important

parts of PHC. 92% PHCs had adequate drinking water facility. Transport vehicle in working condition was available in 35% PHCs. All PHCs were providing all RCH services, but none of the PHC was providing MTP services. Operation theatre was not available in any PHC. Residential facility is available in 21% of PHCs.[8]

DLHS-III had reported that 37% of PHCs had newborn care equipment. The findings point out that PHCs are found lacking in some essential equipment, which hampers the performance and service delivery of PHCs. Rural health statistics 2015 reported, 22% shortfall in health infrastructure as per 2011 population in India.[5]

The Chandigarh study showed that, all PHCs had their own building. The availability of equipments for laboratory (50%) and eye care and testing (50%) was found to be deficient at PHCs in Panchkula and Mohali. Among drugs it was observed that 93% of drugs were available at PHCs in Panchkula and 64% in Mohali.[10]

In the present study, all the PHCs had less than 50% of the drugs (as per essential drug list). In contrast, 11% of drugs were present in all the PHCs surveyed. Considering availability of 60% of the drugs as cut off, while DLHS-III reported that 96% of PHCs in the state had good drug supply.[4] In a rather surprising finding, supply of condoms and oral contraceptive pills was found to be limited to nil in many PHCs.

CONCLUSION

About one third of the PHCs covered population more than that required as IPHS. In about more than half of the PHCs, only two thirds of total required staff was available, indicating the increased workload on the existing staff. Incentives should be given to work at remote places and all the post of medical and paramedical workers should be filled up for efficient functioning of the PHCs.

Family planning methods though was provided by all PHCs till the level of IEC activities, the supply of contraceptives remained low. Medical termination of pregnancy was not available in any PHC. This may hamper the progress in achieving the demographic goals of the country. Laboratory was present in all the PHCs, but services for quick identification of malaria, STIs and need for blood transfusions were found lacking in almost all the PHCs. Laboratory facilities and services should be improved at all the PHCs. A deficiency worth high-lighting in the present study was the absence of residential facilities for the staff in half of the PHCs. Serious deficiencies were observed in supply of drugs and only a little more than half of the essential medicine list was available on an average. Service delivery will be compromised if there is such a deficiency. PHCs should be equipped with requisite facilities for conducting safe medical terminations of pregnancy. Supply of contraceptives should be regular and adequate and MTP services should be available at all the PHCs. Residential facilities must be provided to all the staff. The PHC should be periodically surveyed to identify the deficiency. All the PHCs should have their own vehicle or else the field work or other activities will be compromised.

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