

## Original Research Article

# Are our subcenters equipped enough to provide primary health care to the community: A study to explore the gaps in workforce and infrastructure in the subcenters from North India

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### ABSTRACT

**Background:** A Sub-Centre (SC) is most peripheral and first point of contact between the primary healthcare system and the community in the rural areas. The success of any nationwide program largely depends on well-functioning SCs providing services of acceptable standards to people. Indian Public Health Standards (IPHS) for SCs was prepared keeping in view the minimum standards required to provide quality and need sensitive health care to the community. **Materials and Methods:** A cross-sectional study was conducted in Ambala District of Haryana to assess the availability of physical infrastructure, manpower, drugs and equipment in the SCs. A total of 30 SCs from a rural block was selected. The data was statistically analyzed using Microsoft Excel. The deficiencies in the availability of health workers male and female were found to be 66.6% and 50%, respectively. The residential facility for health workers was available only in 33.3% SCs but none being utilized. Although labour room with labour table was present in half of the Sub Centers, the deliveries were found to be conducted in none of those. Only 40% and 26.6% of SCs had stethoscope and functional B.P apparatus. The availability of essential drugs and equipment was also poor. **Conclusion:** The physical infrastructure and manpower availability at the SCs needs considerable improvement as per the Indian Public Health Standard (IPHS). Poor availability of essential drugs and equipment needs to be addressed at the earliest.

**Keywords:** Indian Public Health Standard, maternal and child health care, primary health care, subcenters

A subcenter (SC) is the first contact point for availing health services by the community, particularly for primary health care in the rural areas of our country. A SC is purported to serve a population of 5000 in plains and 3000 in hilly or tribal areas.<sup>[1]</sup> The resources in terms of infrastructure, manpower, and logistics are key determinants of the quality of services delivered by a particular SC. The SCs are under constant criticism for their inability to provide quality health services due to various reasons.<sup>[2]</sup>

In view of above context, the present study was undertaken with the objective to assess the availability of physical infrastructure,

workforce, drugs, and equipment in the SCs of a rural block of Ambala district in Haryana, North India. The Shahzadpur block, a community development block which is similar to other rural blocks of the district in terms of sociodemographic characteristics was chosen purposively as the area being close to Rural Health Training Centre of Department of Community Medicine, PGIMER, Chandigarh. The block had 1 community health center, 4 primary health centers (PHCs), and 32 SCs. All the functional SCs of the block, i.e., those providing routine maternal and child health (MCH) services such as antenatal care and immunization and manned by at least a multipurpose health worker (MPHW) either female or male at the time of the study were included. Thus, a total of 30 SCs fulfilling the

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eligibility criteria out of 32 SCs were included in the study. The study was conducted over a period of 6 months from February 2014 to July 2014. A pretested questionnaire adopted from the Indian Public Health Standard (IPHS) was utilized to collect the necessary information and the data gathered were computed and analyzed using Microsoft Excel.

The average population under the SC was 6123 ranging from 2134 to 12,148. The average number of SCs under each PHC was 8.0 ranging from 4 to 16. Two MPHWS (female) and one MPHWS (male) as recommended by IPHS were found in 15 (50.0%) and 10 (33.3%) of the SCs. Only 45 out of 60 (75%) female and 10 out of 30 (33.3%) male MPHWS were posted in the studied 30 SCs. Only 10 (33.3%) of the SCs had residential facilities for the MPHWS (female). However, none of them were being utilized as none of the MPHWS (female) was staying in them.

Although 20 (75.0%) of the SCs reported monthly visit by the medical officer, the day of the visit was not fixed in any of SCs. Only 18 (60%) of SCs were found to be regularly visited, i.e., once in a week by the supervisors (male or female health assistants).

Regarding availability of essential drugs as per IPHS, iron folic acid (IFA) (large) tablets and IFA syrups were found available at 21 (70%) and 12 (40%) of the SCs, respectively, but quantity was not sufficient (as per IPHS), whereas IFA (small) and folic acid tablets were not available at any of the SCs [Table 1]. Oral rehydration solution packets were found available in sufficient quantity at most (86.6%) of the SCs, but zinc sulfate tablets were found available only at 10 (33.3%) of the SCs. Tablet co-trimoxazole was found available at 20 (66.6%) of the SCs, whereas Vitamin A syrups were not available at any of the SCs. Tablet paracetamol and tablet albendazole were found available in all of the SCs, but quantity was not sufficient in any of SCs. Chloramphenicol eye ointments and povidone-iodine ointments were found at 4 (13.3%) and 6 (20.0%) SCs, respectively, only whereas tablet dicyclomine was also not found at any of SCs. None of the SCs has essential obstetric drug such as methylethylergometrine tablets, whereas methylethylergometrine injections were found at 6 (20.0%) of the SCs but routine deliveries were not being conducted at any one of them. Regarding availability of vaccines, all the SCs have good supply of OPV, DPT, DT, and TT and hepatitis B vaccines from the PHC, whereas Bacille Calmette-Guerin and measles were being regularly supplied to only 21 (70%) of the SCs.

Regarding availability of equipment, only 8 (26.6%) of the SCs had functional blood pressure (BP) apparatus whereas only 12 (40%) of the SCs had stethoscope. Delivery table and Sahli's hemoglobinometer were found in only 15 (50%) and 12 (40%) of SCs, respectively. Delivery kit was found at only SC, but none of the SC was found to conduct deliveries routinely.

The population covered by each SC showed very high variations ranging from 2134 to 12,148. A similar study in Chittoor district

**Table 1: Availability of essential drugs at the subcenters (n=30)**

List of essential drugs	Number of SCs where available (%)	Number of SCs having Sufficient Quantity (%)
IFA (large)	21 (70.0)	0
IFA syrups	12 (40.0)	0
IFA (small)	0	0
FA tablets	0	0
ORS sachet	30 (100.0)	26 (86.6)
Zn tablets	10 (33.3)	3 (10.0)
Co-trimoxazole tablets	20 (66.6)	4 (13.3)
GV crystals	10 (33.3)	6 (20.0)
Vitamin A syrup	0	0
Paracetamol tablets	30 (100)	5 (16.6)
Albendazole tablets	30 (100)	6 (20.0)
Dicyclomine tablets	0	0
Chloramphenicol eye ointment	4 (13.3)	0
Methylethylergometrine tablets	0	0
Methylethylergometrine injection	6 (20.0)	0
Povidone-iodine ointment	6 (20.0)	3 (10.0)
Cotton bandage	4 (13.3)	0
Adsorbent cotton	20 (66.6)	5 (16.6)

SCs: Subcenters; ORS: Oral rehydration solution; IFA: Iron folic acid; FA: Folic acid; GV: Gentian violet

of Andhra Pradesh also came up with similar findings.<sup>[2]</sup> The population norm for a PHC is 30,000 in plain areas and 20,000 in hilly, tribal, and difficult areas.<sup>[3]</sup> This is equal to 5–6 SCs under each PHC. The average number of SCs under one PHC was 8.0 in our study ranging from 4 to 16. A study by Reddy *et al.* from Andhra Pradesh had on an average 9.5 SCs under one PHC.<sup>[2]</sup> It is practically quite difficult for one PHC to deliver services and supervise so many SCs. Hence, redistribution of population under each SC and redistribution of the SCs under each PHC are required along with creation of more SCs and PHCs as per IPHS norms so that quality services could be delivered to the community.

The deficiency in the availability of recommended two MPHWS females and one MPHWS male as per IPHS norms was to the extent of 50% and 66.6%, respectively. Similar study by Reddy *et al.*<sup>[2]</sup> reported deficiency of 27.7% in case of MPHWS (female) and 67.7% in case of MPHWS (male) whereas study by Nair *et al.*<sup>[4]</sup> in Kerala found that only in 56.4% of SCs had two MPHWS females. Hence, the deficiency in workforce is present countrywide and is more pronounced in case of MPHWS (male). This workforce deficiency particularly of MPHWS (male) needs to be filled up urgently as it is definitely affecting the smooth delivery of the health-care services leading to inadequate utilization of the SCs.

As per IPHS norms, the SCs should provide residential facility for MPHWS (female); our study found that only 33.3% of

the SCs had residential facilities for them, but none of them was being utilized. A study by Reddy *et al.*<sup>[2]</sup> also reported low percentage (26.4%) of SCs having residential facility for the ANMs.

In our study, medical officers were regularly visiting, i.e., once in a month in 70% of the SCs, but day and timing of their visit was not fixed at any of the SCs. A study by Kumar *et al.*<sup>[5]</sup> also came up with similar findings. The medical officer should fix his visits and communicate it to the respective MPHWs so that community could be benefitted from his visit. Similarly, the health supervisors were also irregular in their visits, which need to be regularized for better supervision.

A list of essential drugs as per IPHS norms for SC is for providing essential MCH care and for treating minor illnesses. Whereas 70% of SCs had IFA (large) tablets to be given to pregnant and lactating mothers for prevention and treatment of anemia, but none of the SCs had sufficient quantities of it in our study. Some of the other essential drugs were also either not available or if available then in insufficient quantities. All the SCs should be equipped with the recommended essential drugs as they are required for providing minimal MCH and patient care and without their availability, the utility of SCs is questionable.

In our study, more than 60% of the SCs did not have vital equipment such as functional BP apparatus and stethoscope. Study by Reddy *et al.*<sup>[2]</sup> and Pal *et al.*<sup>[6]</sup> also came up with similar results. IPHS norms specify that all the SCs should have sufficient basic equipment for carrying out routine MCH and patient care apart from facilities for conducting normal deliveries. Without these facilities, recently released health-related SDGs would be impossible to achieve.<sup>[7]</sup> Furthermore, India is signatory to Alma Ata declaration which lays emphasis on primary health care approach for attaining health for all.

The present study was taken up with the objective to find out the level of existing level of infrastructure and workforce facilities at the SCs so to provide useful inputs for their improvement. SCs have a big role in preventing maternal and infant deaths in rural areas by providing the necessary MCH services. With such a large deficiency in availability of workforce, drugs, and equipment, the SCs would not be able to fulfill their aim of providing essential primary health-care services to the community.

Hence, SCs need to be equipped with requisite workforce and infrastructure in terms of availability of essential drugs and equipment as per IPHS norms, which have set minimum standards to be followed by all SCs. Then only, the goal of Universal Health Coverage, i.e., to ensure that all people obtain the health services they need without suffering financial hardships, could be achieved in the country.

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### Conflicts of interest

There are no conflicts of interest.

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