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Original Research Article

Assessment of infrastructure and manpower as per IPHS guideline of the primary health centers in a district of Maharashtra: a descriptive study

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ABSTRACT

Background: Primary health care is provided through PHCs. Primary health care includes the curative care for the diseases, preventive, promotive and rehabilitative care to the specified population of the defined area. The aim of the study was to assess infrastructure and manpower at primary health care centres as per IPHS guidelines.
Methods: This was a cross-sectional descriptive study conducted in 13 PHCs randomly selected, 1 from 13 blocks of Buldana district. A face-to-face interview was conducted using the semi structured questionnaire.
Results: The 13 PHCs have MBBS medical officer. There are 10 (77%) PHC having their own building. The infrastructure for counselling room and health and wellness room is available at 11 (85%) PHCs. Major of the gap in human resource was seen in staff nurse (54%), pharmacist (23%), lab technician (46%), health assistant female (15%), counsellor (85%), dresser (77%), Data entry operator DEO (77%). Interrupted drug supply was reported for some drugs.
Conclusions: The infrastructure at PHC needs to be improved and manpower at PHC can be filled up for better quality of health services delivery.

Keywords: Buldana, Indian public health standards, Primary health care

INTRODUCTION

The declaration of Alma-Ata stated that primary health care is an important parameter for achieving an acceptable level of health for all by 2000.[1] A primary health centre (PHC) serves as a first port of call to a qualified doctor in the public health sector in rural areas providing a range of curative, promotive and preventive health care. A typical primary health centre covers a population of 20,000 in hilly, tribal, or difficult areas and 30,000 populations in plain areas with 6 indoor/observation beds. It acts as a referral unit for 6 sub-centres and refer out cases to CHC (30 bedded hospital) and higher order public hospitals located at sub-district and district level.[2]

The Bhore Committee in 1946 gave the concept of a PHC as a basic health unit to provide as close to the people as possible, an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care.

The National Health Policy 2017 envisages the attainment of the highest possible level of health and wellbeing for all. It aspires to achieve increased and equitable access to health care. Indian public health standards (IPHS) is important step towards improving the quality of healthcare delivery. IPHS gives a set of uniform standards to provide norms and benchmark for quality of infrastructure, human resources and services to be delivered from public health facilities at all levels.

It is essential for public health facilities to deliver quality services through defined standards known as the Indian public health standards (IPHS). IPHS 2022 document covers urban and rural health facilities. Since 2012 new health programmes and initiatives National Urban Health Mission 2013, National health policy 2017, Ayushman Bharat 2018, health and wellness centres have been introduced by the government. Recent COVID-19 pandemic affected the health systems of the country and highlighted the need for a resilient health system. The revised IPHS guidelines incorporate the needs and interventions for these initiatives.

The present study was taken up to provide useful inputs regarding the existing level of infrastructural, manpower and essential health services at primary health centers.

METHODS

A descriptive observational study was conducted in Buldana district of Maharashtra. The district consists of 13 blocks, from which 1 primary health centre (PHC) from each block was selected randomly by lottery method. A convenience sampling method was used for data collection and the study duration was for 3 months (June 2023-September 2023).

The inclusion criteria were PHCs which were randomly selected in Buldana district were selected and subcentres, rural hospital, sub-district hospitals, district hospital were excluded from the study.

For the assessment of the facilities at PHCs, the observational and interview methods are used. Check list for infrastructure and manpower as per the standard of the IPHS 2022 was used. A pilot study was conducted in which two PHCs were selected and using the semi structured questionnaire, a face-to-face interview was conducted. The selected PHC were visited. The consent from MO PHC incharge was obtained and following which using a semi structured questionnaire, face to face interview was conducted. The questionnaire has sections: infrastructure, manpower, and services provided at PHC. Onsite findings were also considered in data collection related to infrastructure, man power availability and services.

Descriptive statistics was presented in the form of mean ± standard deviation, for continuous data, and proportions or percentages for categorical data. The necessary approval was taken from district health authority.

RESULTS

Buldana district is divided into 13 blocks as follows: Khamgaon, Deolgaon raja, Sangrampur, Buldana, Lonar, Mehekar, Chikali, Sinkhedraja, Motala, Malkhapur, Jalgaon Jamod, Shegaon, Nandura. In these 13 PHCs selected, MO PHC are MBBS and their work experience is from 3 months to 3 years. Few MOs were recruited 3 months back. The average population under each PHC is 39380 which more than the standard population norms for a PHC.

Infrastructure and facilities

The 13 PHC are located in the village to which they are serving. Approximately 3-4 village are under each PHC. There are 10 (77%) PHC having their own building while 3 PHC are using Gram Panchayat building. 10 PHCs have the drinking water supply facility and water storage facility. Available at 11 PHCs (85%). The other two PHCs had nonfunctional toilet due to renovation issues. Among all PHCs, 12 have suggestion box which is opened by MO PHC every month. 12 PHC (92%) have their own vehicle which is used for patient referral to higher centre. There was clear signage displayed for all PHC (100%) on the main road directing towards the facility. All 13 (100%) facilities have adequate parking as per the estimated vehicle load, ambulances parking. 77% of PHCs have garden especially the newly constructed PHCs.

For easy access of non-ambulant (wheelchair, stretcher), semi-ambulant, physically, and visually disabled and elderly people. 11 PHC (85%) had disabled and elder friendly access. Fire extinguishers, and water connections were functional and easily accessible (100%). Periodic monitoring and audit for fire safety and drills is organized and conducted. The public health facilities should have access to adequate, affordable, continuous and reliable electricity supply.

Appropriate power backup/inverter is available at all PHCs to ensure that there is no disruption of services and cold chain for vaccine and diagnostics is properly maintained. All such waste which can adversely harm the environment or health of a person is considered as infectious and termed as bio-medical waste (BMW).

All the infectious waste is segregated at one common area and the district has tie up with private company (Jalna and Khamgaon) which visit PHCs daily to collect BMW.

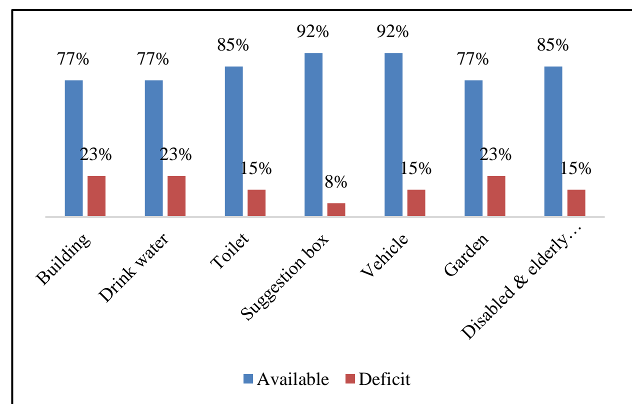

Figure 1: Infrastructure and facilities available at PHCs.

Infrastructure for clinical services

All the 13 PHCs provided the OPD services from 8 am to 12 pm then 4 pm to 6 pm. Single counter for registration was available and case paper was given to patients after noting the demographic details. A barrier between visitors and registration clerk was available at 12 PHCs (92%). Registration is free of charges.

Adequate seating arrangement was available in all 13 PHCs. Posters, messages for various National health programmes were displayed in waiting area. The waiting area had facilities of fan (100%), LED screen is provided to all PHCs. The consultation room is as per the recommended standards and consists of examination table, curtains, X-ray view box, wash basin in all selected PHCs. Immunization room with waiting area having an area of 3 m × 4 m and cold chain facility is available in PHCs (100%). The counselling room was available at 11 PHCs (85%).

Separate laboratory is functional in 12 PHC (92%). 1 PHC as PHCs is under renovation. In the laboratory patient reception, registration, waiting area are identified. Adequate storage space is available. Refrigerator is available for storage of diagnostic kits. All 13 PHC s (100%) have drug dispensation counter. Medicines were dispensed by pharmacist based on the prescription of the consulting doctor. This room is functional at all PHCs. Procedure like injection administration, dressing of wound, first aid care is carried out. Minor OT is functional in all PHCs. All 13 PHCs (100%) have 6 beds, 3 male bed and 3 female beds.12 PHCs (92%) have labour room and per month 3-4 deliveries are conducted in each PHCs.

Supportive services

Residential quarters are available for MOPHC and staff is available who are providing on call duty. The dietary services were not available at PHC level for patients. 3-4 Oxygen cylinder were available at each PHC's. In all PHC the name of members of Rogi Kalyan Samiti (RKS) were displayed which is established for patient support.

Human resources

All the PHCs have MBBS medical officers (MO) as in-charge MO. Though all PHC s have medical officer at this point of time attrition is observed. In such situation one medical officer has to work alone.

AYUSH doctors were posted in 7 (54%) PHCs and 4 had only one MO. The vacancies for staff nurse, pharmacist, lab technician, health assistant female was 7 (54%), 3 (23%), 6 (46%), 2 (15%) respectively. Staff nurse, pharmacist, lab technician, health assistant are backbone of PHC.

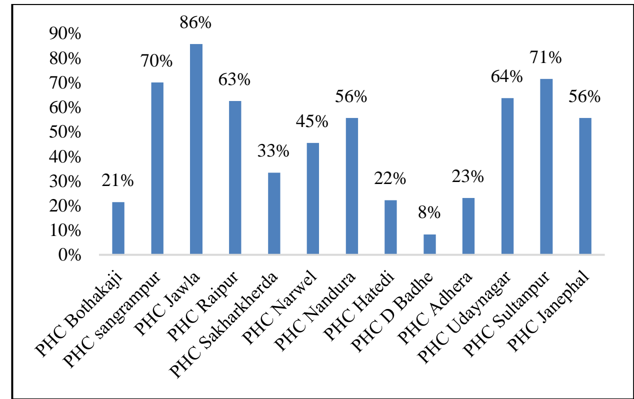

Figure 2: Percentage of vacancy at PHC.

In the above figure, PHC Jawla (86%) followed by PHC Sultanpur (71%) has maximum vacancies among the selected PHCs.

Majority of post were vacant for counsellor (85%), dresser (77%), Data entry operator DEO (77%). The sanitation staff was available in 7 PHCs (54%).

The non availability of lab technician post hampers the work related to vector born disease, tuberculosis. The data entry operator has major role in reporting the data related to National health program on portal like RCH, Nikshay. With vacancy of these posts additional responsibility is given to some staff which causes exertion of staff.

As per IPHS 2022 standards a line list of 171 essential medicines which is grouped into 34 categories is recommended for PHC. Psychotherapeutic drugs, thyroid and anti-thyroid medicines, anti-parkinsonism medicines were not included as they are not available in PHC. The medicines available at all PHCs were antipyretics, analgesics, anti TB drugs, anti-hypertensives, anti-helminthic, antiseptic, vaccines, multivitamin, contraceptives. There was limited supply of anesthetics (lignocaine), antidote poisoning, anticonvulsant, palliative care drugs, medicines used in shock and heart failure, hypolipidemic medicine, diuretics, solutions correcting electrolyte. Oxygen supply was not available at any PHCs. The patients who require oxygen support are referred to nearest rural hospital/sub district hospital by ambulance. The challenges mentioned by medical officer were vacancy for the second medical officer post, support staff driver for ambulance, sanitation staff, regular supply of essential medicine

DISCUSSION

According to IPHS 2022, it is expected that all PHCs function in their own buildings. The status of ownership of a designated PHC building in Buldana district is slightly lower when compared with Assam and Karnataka, where the designated government building ownership was 100%.[3] A study in the tribal districts of

Karnataka showed that only 32% of the PHCs had their own building.[4] In this study, PHC's have identified the location for new building.

The residential quarters for the staff are available in PHC. In the study by Mathur et al in Jaipur reported that only two PHCs out of 9 selected PHC have residential quarters.[5] Residential facilities for staff (medical officers, pharmacists, and nurses) were lacking in a study conducted by Akhtar in empowered action group (EAG) and non-EAG states.[3] In a study by Chauhan et al 83.3% PHC had no laboratory technician.[6] The availability of staff quarter is basic need for health care personnel.

The basic services like toilet (85%), drinking water (77%), disabled and elderly friendly access (85%) are not available in few PHCs in which new building is being constructed. In a study by Sriram et al on Availability of infrastructure and manpower for primary health centers in a district in Andhra Pradesh stated that the availability of toilet with water supply is 67%, locked complaint box in 0, drinking water (100%).[7] In a study by Chavan et al in Nashik, Buldana the availability of toilet is reported as 85%, 63%, suggestion box availability 100%, 75% respectively.[8]

A study by Steinman et al in availability and satisfactoriness of latrines and hand washing stations in health facilities in Pune rural district reported few public facilities had no latrine or hand washing station.[4]

In regards to manpower all the PHCs have MBBS medical officer. In Jaipur study also the medical officer posts were filled in all the selected PHC.[5] In a Gujarat study the medical officer post was filled in 80% PHCs whereas in 20% PHCs the post was vacant.[9] In a study by Ninama et al reported doctor, nurse, lab-technician and pharmacist is available in 92%, 57%, 100% and 100% PHCs respectively.[10] Similar studies have stated the deficiency in manpower at PHC.[10-14]

The availability of manpower in this study was found as staff nurse (46%), pharmacist (77%), lab technician (54%), ANM (92%), HA female (85%), counsellor (15%), vaccine logistic assistant (54%), dresser (23%), accountant (62%), DEO (33%), sanitation staff (54%). Due to acute staff crisis and additional load of paper works in absence of data handlers, there was overburdening of the staffs. The main reason for vacancy is that no new recruitment is announced after the post gets vacant.

The human resource gap directly affects the health services provided. All the staff gets overburdened and quality of the services is hampered. The vacancy of lab technician affects the diagnostic services of National health programmes like National vector borne disease control program, National tuberculosis elimination program. The data entry operator supports to report the work done on the various national/state portal.

The laboratory facilities like routine blood, urine and stool examination were provided by 80% of the studied PHCs in Karnataka and by only 20% in the EAG state of Assam.[3]

In the study by Chavan et al in Nashik Buldana, the doctor, nurse, lab-technician and pharmacist were available in 92%, 57%, 100% and 100% PHCs respectively.[8] Studies have reported more OPD footfall in PHCs with availability of laboratory test.[15,16]

In this study most of the laboratory services were provided by outsourcing mode. Few investigations like PS, sputum sample examinations, blood sugar, HIV testing, UPT is carried out by lab technician at PHC. In the PHCs with vacancy of lab technicians above tests couldn't be performed. Availability of laboratory services is essential in improving the PHC performance.

One of the important components of the health care system is medicine. A proper supply of safe, quality and affordable medicines to the public is the basis to achieve universal health coverage.[17-19] In a study by Meena et al availability of key essential medicines in public health facilities of South Indian Union Territory reported in median percentage availability in 10 selected public health facilities as 76%.[20]

In this study 8 (27%) group of medicines were available out of the 29 group medicines enlisted. The supply of drugs is irregular. Non availability of drugs can lead to increase in out-of-pocket expenditure for patients. A study by Dar et al has highlighted the out-of-pocket expenses bore by the patients in private sector. The rural population is dependent on PHC for the health services.[15]

A study conducted in Bangalore by Srinath et al on accessing the health care status in PHC stated that 45% manpower is available in the PHCs selected for that study. 71% of drugs were available.[5] PHC was effectively storing essential drugs, 32% of PHC had no drugs for TB, malaria drugs were most frequently stored but only 82% of PHC had those.[21] The manpower and infrastructure are necessary for effective functioning of PHCs.[22,23]

Standards are the cornerstone for producing quality health services and have minimum set expectations for health care activity. The set standards can be achieved by frequent internal audits, discussions.[5,11]

Sample size was small and generalizability of results is a limitation. All components under IPHS standards were not included in the study e.g. equipment, disaster and emergency preparedness were not included.

CONCLUSION

The development in infrastructure of PHCs in Buldana district is evident which establishment of new PHC building and facilities as per the standards. Primary health

centres are able to deliver 24×7 health facility as all PHC have permanent medical officers. The demand from PHCs have increased recently due to newer initiatives like Ayushman Bhav Mela, screening of >18 years population campaign, free of charge OPD and IPD services. To fulfil this increasing demand optimum staff should be made available. The physical infrastructure and manpower availability at the PHCs has scope for improvement as per the Indian Public Health Standard (IPHS) 2022.

Recommendations

The filling of vacant post is necessary to improve the health services. For better availability of drugs, essential drugs availability to be monitored on weekly basis can access the frequent stock out medicine. Jan Aushadi centres can help patients buy medicines at cheaper cost which are not available at PHCs. The capacity building of newly recruited manpower on all the services provided at PHCs and their role and responsibility can support patients in availing quality care. Robust internal and external monitoring is vital to maintain standards, identify gaps and address deficiencies in service delivery at public health facilities.

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