Section: Community Medicine

Original Research Article

ADHERENCE TO INDIAN PUBLIC HEALTH STANDARDS 2022: A CROSS-SECTIONAL STUDY ON INFRASTRUCTURE, MANPOWER AND LOGISTICS OF PRIMARY AND SECONDARY HEALTH CENTRES IN AN ASPIRATIONAL DISTRICT OF WESTERN ASSAM

Parimita Roychoudhury[1], Rinku Borah[1], Anku Moni Saikia[2]

[1]*Assistant Professor. Department of Community Medicine, Dhubri Medical College and Hospital, Assam, India*
[2]*Professor, Department of Community Medicine, Dhubri Medical College and Hospital, Assam, India*

Received : *16/03/2026*
Received in revised form : *24/04/2026*
Accepted : *13/05/2026*

Corresponding Author:
Dr. Parimita Roychoudhury
1Assistant Professor. Department of Community Medicine, Dhubri Medical College and Hospital, Assam, India.
Email: parimitaroychoudhury16@gmail.com

DOI: 10.70034/ijmedph.2026.2.442

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2026; 16 (2); 2669-2674

ABSTRACT

Background: Indian public health standards (IPHS) for health centres are steps towards improving the quality of healthcare delivery. Studies assessing IPHS of aspirational districts of Assam for Primary and secondary health centres has not been done earlier. The study aims to assess the adherence to Indian Public Health Standards 2022 of Primary and Secondary health centres in infrastructure, logistics and manpower in an aspirational district of western Assam.
Materials and Methods: A facility-based, descriptive study was conducted to assess the current status of Primary Health Centres and secondary health centres (Community Health Centres) in Dhubri district of Assam selecting 3 CHC s and 9 PHCs randomly out of 7 blocks of Dhubri district for the study duration of 3 months.
Results: In infrastructure 55% of the PHCs only meets the criteria of total built in area and drainage and sanitation criteria. Garden and landscaping were present in only 33% of the centres. It has been observed that two (2) of the PHCs out of the 9 PHC s there were more than 50% vacancies among all sanctioned posts. Only Medicine specialist and MO AYUSH posts were occupied in all three CHCs others all specialist post were vacant.
Conclusion: Infrastructure and Logistics were as per IPHS 2022 in most facilities but there was a shortage of manpower specially specialists in CHCs. This mismatch is a matter of serious concern and require strengthening.
Keywords: Primary Health centre, Community Health centre, Indian Public Health Standards, Infrastructure, Health Manpower, Logistics.

INTRODUCTION

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) are 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.[1] In India, the Bhore Committee in 1946 gave the concept of a primary health centre (PHC) as a basic health unit to provide as close to the people as possible, an integrated preventive and curative health care to the rural population with emphasis on preventive and promotive aspects of health care. Indian Public Health Standards (IPHS) was first drafted in 2007. IPHS, most recently updated in 2022, serve as a critical framework for standardizing and enhancing the quality of primary healthcare delivery. These standards provide clear benchmarks for infrastructure, human resources, equipment, and service protocols across all healthcare facilities.[2] The 2022 IPHS norms support government health

facilities to attain a minimum acceptable functional standard as to accelerate India's progress towards achievement of Universal Health Coverage (UHC) and Sustainable Development Goal - 3 (SDG-3).The public health care delivery system in India is structured as a three-tier network comprising Primary Health Centres (Sub Centres ,Ayushman Arogya Mandir, PHCs),Secondary Health Centres (CHCs, FRU), Tertiary Health Centres (Medical College and Hospitals) designed to provide accessible and quality healthcare to the rural population.[3,4] To ensure uniform standards of service delivery, the Government of India introduced the Indian Public Health Standards (IPHS). 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 Primary and secondary health centres of a rural block of an aspirational district of Assam. Studies pertaining to the assessment of IPHS in health facilities of aspirational districts of Assam are rare. This study aims to assess whether the district meets the minimum "Essential" criteria for Primary health and secondary health centres as given by the latest IPHS 2022 guidelines. By evaluating the physical infrastructure, human resource availability, and service readiness against these updated benchmarks, this study seeks to identify specific compliance gaps and recommend context-specific strategies for strengthening the primary health care delivery system in the region.

Aim and Objectives

Aim: To assess the adherence to Indian Public Health Standards 2022 of Primary and Secondary health centres in infrastructure, logistics and manpower in an aspirational district of western Assam

Objectives:

1. To ascertain the Infrastructure (General infrastructure and clinical infrastructure) of Primary and Secondary health centres as per Indian Public Health Standards (IPHS)2022
2. Manpower of Primary and Secondary health centres as per Indian Public Health Standards (IPHS)2022
3. To assess the availability of logistics in terms of equipment and drugs as per IPHS 2022.

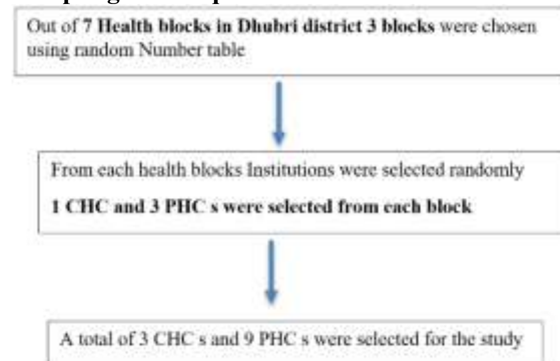
MATERIALS AND METHODS

Study Design: A facility-based, descriptive cross-sectional study was conducted to assess the current status of primary health centres and secondary health centres (Community Health centres) in an aspirational district of Assam

Study Setting: The study was carried out in the Dhubri district, which is an aspirational district in Assam. This region characterized by high population density and challenging geographical features, including riverine Char areas. Dhubri district has 7 Health blocks - Raniganj, Dharmasala, Halakura, Golakganj, Salamara, Bilasipara, Chapar A total of 43 Primary Health centres ,192 Sub Centres and 9 Community Health Centres are there in Dhubri district. Out of the 7 blocks 3 blocks were selected randomly using random number table for the assessment of the primary, secondary health centres of each block as per IPHS 2022.

Study duration: 3 months

Sampling Technique



Data collection tool: The data collection tool was a pre-designed, pre-tested, semi-structured checklist developed directly from the IPHS 2022 guidelines2 for, HWC (Health and Wellness centres)-PHCs and CHCs available on the National Health Mission/NHRC website.

The questionnaire has sections: Infrastructure, Manpower, Logistics (Drugs, Equipments, Supplies)

Study variables: For input indicators we will assess the following variables -

- General information (facility type, location, catchment population, functional status).
- Infrastructure (building ownership and condition; layout; water, electricity, sanitation; residential quarters; barrier-free access).
- Human Resources (sanctioned vs. in-position posts for all categories as per IPHS 2022: medical officers, specialists at CHC, community health officer, staff nurses, ANMs/MPWs, pharmacists, lab technicians, support staff, etc.).
- Equipment and supplies (availability and functional status of essential equipment listed for each level of facility).
- Drugs (presence of IPHS-recommended essential drug list and selected tracer medicines; stock-outs).

Data Collection Procedure: Data was collected through field visits to the selected health institutions. The assessment utilized a mixed method approach comprising:

- **Direct Observation:** The principal investigator physically verified the infrastructure, physical assets, cleanliness, and branding to ensure objectivity, minimizing self-reporting bias.
- Interview Technique

Data Analysis

- The collected data was entered into a structured format (Microsoft Excel) to calculate compliance rates. Each facility was evaluated against the "Essential" standards of the IPHS 2022

guidelines. Gaps were identified by comparing the observed ground realities with the standard benchmarks.

- Descriptive statistics was presented in the form of proportions or percentages for categorical data.

Ethical approval: Ethical approval for the study was obtained from the Institutional Ethical Committee (Reg. No. ECR/1807/Inst/As/2023 Dated:17/04/23) Written informed consent was obtained from the participants before the data collection.

The necessary approval was taken from District health authority.

RESULTS

In this study a total of three (3) CHCs from the secondary health centre and 9 primary health centres (PHC) were selected. Out of the indicators which were compared as per IPHS 2022 the availability of the infrastructure and facilities in the PHCs are described in [Figure 1].

From the study it has been observed that 55% of the PHCs only meets the criteria of total area required for the facilities as per IPHS standards. Availability of separate toilets specially for Elderly friendly and for disable person was available in 67 % of centres. Waiting area and Drinking water supply was available in 100% of the centres. Designated parking area separate for ambulance and staff were present in most of the PHCs. Garden and landscaping were present in only 33% of the centres. Fire safety which is a very essential component was as per norms in 88% of PHCs. Drainage and sanitation criteria meet in 55% centres.

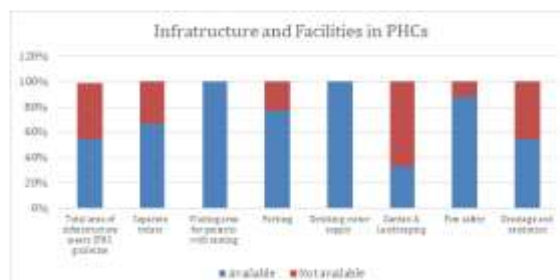


Figure 1: Distribution of PHCs as per availability of infrastructure and facilities

[Table 1] shows the distribution of CHC s and PHC s as per the availability of the clinical infrastructure. Counselling room, ASHA room, Health and wellness area were not available in any of the CHC s and PHC s. Consultation room, Registration, Laboratory, Drug dispensing centre, store, Dressing room, Emergency room, Immunization room are available as per IPHS 2022.In patient ward, oxygen support, labour room complex were not as per norms in some of the PHCs. Minor OT was present only in 22% of the CHC s and none of the PHC s.

Table 1: Distribution of CHC s and PHCs as per the availability of Clinical Infrastructure

Clinical Infrastructure	CHC (n=3)(%)	PHC (n=9) (%)
Waiting area for patients	3(100)	9(100)
Consultation room	3(100)	9(100)
Clinical Laboratory	3(100)	9(100)
Immunization Room	3(100)	9(100)
Registration	3(100)	9(100)
Drug dispensing counter	3(100)	9(100)
Store	3(100)	9(100)
Inpatient ward/day care room	3(100)	7(78)
Labour room complex	3(100)	8(89)
Oxygen support	3(100)	5(56)
Dressing room /injection room /emergency	3(100)	6(67)
Record keeping	3(100)	8(89)
Minor OT	2(22)	0(0)
Communication system	0(0)	0(0)
Counselling room	0(0)	0(0)
Health and Wellness area	0(0)	0(0)
ASHA room	1(11)	1(11)

The percentage of vacancies of the different health workers and staff in the PHCs has been shown in the [Figure 2]. It has been observed that two (2) of the PHCs out of the 9 PHC s there was more than 50% vacancies among all sanctioned posts.

Table 2: Distribution of CHCs as per availability of Specialist doctors

Availability of Specialist doctors	n=3 (%)
Medicine specialist	3(100)
Surgeon	0(0)
Obstetrician and Gynaecologist	0(0)
Paediatrician	0(0)
Ophthalmologist	1(33)
ENT surgeon	0(0)
Microbiologist	1(33)
PMR specialist	0(0)
MO AYUSH	3(100)
MO Dental	0(0)

Psychiatrist/Clinical psychologist	0(0)
Orthopaedician	1(33)

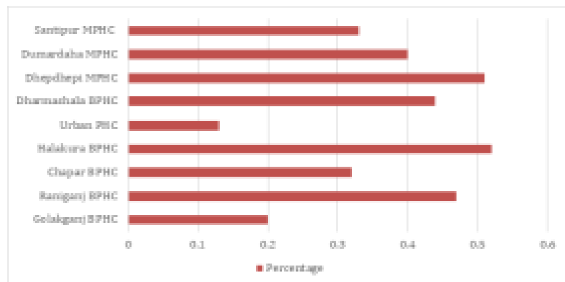


Figure 2: Distribution of the PHCs as per the percentage of vacancies of health care workers

[Table 2] Shows that Medicine specialist and MO AYUSH posts were occupied in all three CHCs. However, Surgeon, Obstetrics and Gynaecologists, Paediatricians, ENT surgeons, Ophthalmologists, Microbiologists, PMR specialist, MO Dental, Psychiatrist, Orthopaedician posts were vacant in all the CHCs.

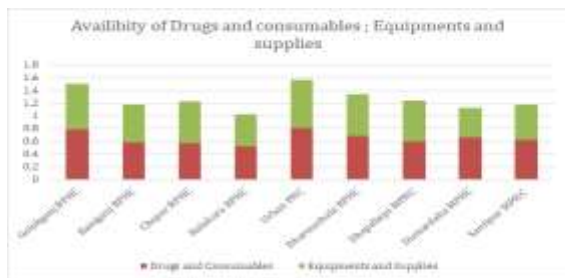


Figure 3: Distribution of the PHCs as per the percentage of availability of Drugs and Consumables as well as Equipment and Supplies

[Figure 3] shows that Urban PHC had an availability of Drugs and Consumables at 81%, followed by Golakganj BPHC at 78%, Dharmashala BPHC at 69%, Dumardaha MPHC at 66%, Santipur MPHC at 62%, Dhepdhepi MPHC at 60%, Raniganj BPHC at 58%, Chapar BPHC at 57% and Halakura BPHC at 52% in decreasing order of availability. Besides, as far as Equipments and Supplies is concerned, Urban PHC stands at 76%, followed by Golakganj BPHC at 72% Dharmashala BPHC and Chapar BPHC at 65%, Dhepdhepi MPHC at 64%, Raniganj BPHC at 60%, Santipur MPHC at 55%, Halakura BPHC at 50% and Dumardaha MPHC at 47%.

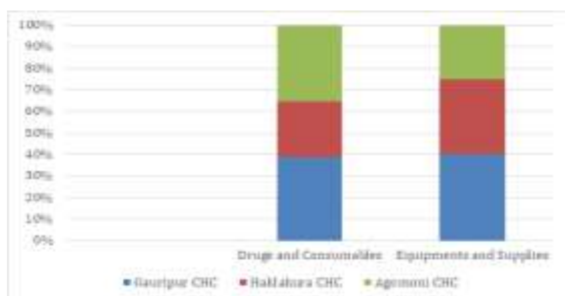


Figure 4: Distribution of the CHCs as per the percentage of availability of Drugs and Consumables and Equipment and Supplies

[Figure 4] demonstrates the availability of Drugs and Consumables as well as Equipments and Supplies in the three CHCs. It has been observed that availability of Drugs and Consumables at Gauripur CHC stands at 80%, Halakura CHC 53% and Agomoni CHC at 72%. Besides, as far as equipment and supplies is concerned, Gauripur CHC stands at 77%, Haklakura CHC 66% and Agomoni CHC at 48%.

DISCUSSION

In the present study there were 3 CHCs and 9 PHCs that were studied from the three blocks chosen randomly out of the 7 blocks in Dhubri district. The infrastructure, logistics and human resource of these secondary and primary health facilities were studied in comparison to the IPHS 2022. Out of the indicators in infrastructure, total in built area covered by the facility, waiting area for patients and attendants, drinking water facility, separate toilets, Gardening and landscaping, fire safety, drainage, parking, residential quarters, electricity were studied. From the study it has been observed that 55% of the PHCs only meets the criteria of total area required as per IPHS standards. Garden and landscaping are present in only 33% of the centres, drainage and sanitation criteria meets in 55% centre. Waiting area is available in 100% of the centres. In a study done by Kadam M et al,[5] it was found that there were 10 (77%) PHC having their own building. The infrastructure for counselling room and health and wellness room was available at 11 (85%). Among all PHCs, 12 have suggestion box, 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. Available at 11 PHCs (85%). The other two PHCs had nonfunctional toilet due to renovation issues. A study in the tribal districts of Karnataka by Steinmann P et al,[6] showed that only 32% of the PHCs had their own building. The basic services like toilet (85%), drinking water (77%), disabled and elderly friendly access (85%) were not available in few PHCs in which new building is being constructed. Kaur et al,[7] in their study in Punjab among health and wellness centres found that in the available general infrastructure all the facilities had 24 hour electric supply and required infrastructure for bio medical waste disposal and illumination. Further parking facility, water supply and screening and holding area was available in all the R-PHCs. Out of all facilities 94% of R-PHCs had washroom facilities, whereas for UPHCs and SHCs, the figures stood at 88% and 89%, respectively. None of the UPHCs had residential quarters In Chauhan et al,[8] in their study found that Six CHCs (85%) had a

designated government building and one CHC was located in a government building not designated for the CHC. Eight PHCs (66.7%) had a designated government building, two PHCs (16.6%) were located in some other government building, and 2 PHCs (16.6%) were located in rented premises Waiting room for patients was present in five CHCs (71%) and six PHCs Residential accommodation for the doctors and other staff was provided by six CHCs (85%) and two PHCs (16.7%) in the study. All the PHCs and CHCs in the study had access to electricity and piped water supply. However, telephones were available in only six CHCs (85%) and two PHCs (16.6%).

Out of the clinical infrastructure of the CHC s and PHC s, in the present study counselling room, ASHA room, Health and wellness area are not available in none of the CHC s and PHC s. Consultation room, Registration, Laboratory, Drug dispensing centre, store, Dressing room, Emergency room, Immunization room are available as per IPHS 2022. In the study done by Kaur et al,[7] out of 4 components of clinical infrastructure like waiting area, consultation room, clinical/central laboratory, immunization room and registration area were adequate as per IPHS 2022 whereas none had counselling room, minor OT and health and wellness area. Among the UPHCs, 80% had waiting area, consultation room and clinical/central laboratory whereas 6 components (communication systems, counselling room, oxygen support, minor OT, health and wellness area, ASHA room) were not present in any UPHC. As far as SHCs were concerned all had a consultation room whereas none had a health and wellness area. Only 14% and 21%, of the SHCs had oxygen support and clinical laboratory, respectively. Our study findings are almost similar to the findings of Kaur et al.[7]

The percentage of vacancy of the different health workers and staff in the PHCs is shown in the [Figure 2]. It has been observed that two (2) of the PHCs out of the 9 PHC s there is more than 50% vacancies among all sanctioned posts. Also is has been seen that in all the three CHCs, Medicine specialist and MO AYUSH posts are occupied in all three CHCs. However, Surgeon, Obstetrics and Gynaecologists, Paediatricians, ENT surgeons, Ophthalmologists, Microbiologists, PMR specialist, MO Dental, Psychiatrist, Orthopaedician posts are vacant in all the CHCs. Chauhan et al8 in their study at Shimla found that General duty Medical Officer, nurse and class IV were present in all the CHCs. Out of seven, 3 (43%) CHCs were without a pharmacist, 3 (43%) CHCs were without a laboratory technician, 3 (43%) CHCs were without an ophthalmic assistant, and 4 (57%) CHCs were without a radiographer. The other recommended staff was not there in most of the CHCs. Major shortcoming was that there was no specialist of any specialty present in any of the seven CHCs of Shimla District. The existing staff position in the 12 PHCs of Shimla district studied during the study period. The number was less than the recommended IPHS norm.

In Himachal Pradesh, specialists are posted at district hospitals, civil hospitals, and CHCs. A study conducted in subcentres, PHCs, and CHCs in different states revealed CHCs are usually manned by general physicians with basic qualifications. This was found to be as high as 92% in Madhya Pradesh 9Another study conducted in CHCs of Rajasthan 10 revealed that 75% of CHCs studied had a surgeon and obstetrician and 50% had a pediatrician, 25% had anaesthetist, and 25% had public health program manager. This deficiency could be due to lack of incentives, good salaries, and facilities. As per IPHS recommendations, there should be one specialist each of medicine, surgery, obstetrics, and pediatrics at a CHC and an anaesthetist and a public health program manager should also be there and an eye surgeon for every four CHCs.[9-12]

Kadam M et al,[6] in their study found that all the PHCs have MBBS medical officers (MO) as in-charge MO. 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. Majority of post were vacant for counsellor (85%), dresser (77%), Data entry operator DEO (77%). The sanitation staff was available in 7 PHCs (54%).

In Jaipur study 11 also the medical officer posts were filled in all the selected PHC. In a Gujarat 12the medical officer post was filled in 80% PHCs whereas in 20% PHCs the post was vacant. In a study by Ninama et al,[13] reported doctor, nurse, lab-technician and pharmacist is available in 92%, 57%, 100% and 100% PHCs respectively.

In the distribution of availability of Drugs and Consumables as well as Equipments and Supplies in the three CHCs, it has been observed that availability of Drugs and Consumables at Gauripur CHC stands at 80%, Halakura CHC 53% and Agomoni CHC at 72%. Besides, as far as equipment and supplies is concerned, Gauripur CHC stands at 77%, Haklakura CHC 66% and Agomoni CHC at 48%.

CONCLUSION

From this study has been observed that with respect to infrastructure, Manpower and Logistics there is a significant gap in comparison to IPHS 2022. While basic amenities like electricity and water supply were present in most facilities, a shortage of manpower specially in CHC s where other than Medicine specialist and AYUSH M.O other specialists posts are vacant. This mismatch between manpower and essential facilities is a matter of serious concern. This would require not only infrastructural strengthening but also adequate human resource support Investment in primary health care could generate positive health that is likely to reduce the need for

secondary and tertiary care facilities, reduce the cost of healthcare, and enhance health equity.

Limitation: In the study we did not evaluate for the service delivery (Process) and Output indicators as well as the gap analysis in comparison to IPHS 2022 among the health facilities. This will be taken care of in further studies.

Conflict of Interest: There is no conflict of Interest

REFERENCES

1. Indian Public Health Standards for Primary Health Centres Guidelines. Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India; 2006:3-4.
2. Indian Public Health Standard (IPHS) for Community Health Centres Level. Draft Guidelines, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India; 2005:5-6.
3. Indian Public Health Standard (IPHS) for Community Health Centres Level. Revised Draft Guidelines, Directorate General of Health Services, Ministry of Health and Family Welfare, Government of India;2010:9-10.
4. Taneja DK. National rural health mission – A critical review. Indian. J Public Health 2005; 49:152-5.and Family Welfare, Government of India; 2010:4-5.
5. Kadam M, Kherodkar D, Pawar H. Assessment of infrastructure and manpower as per IPHS guideline of the primary health centers in a district of Maharashtra: a descriptive study. Int J Community Med Public Health 2024; 11:3156-61.
6. Steinmann P, Bratschi MW, Lele P, Chavan U, Sundaram N, Weiss MG, et al. Availability and satisfactoriness of latrines and hand-washing stations in health facilities, and role in health seeking behavior of women: evidence from rural Pune district, India. J Water Sanit Hygiene Develop. 2015;5(3):474-82.
7. Kaur R, Mahajan S, Padda P, Jyoti K. Adherence to Indian public health standards 2022 standards: a cross-sectional study on infrastructure of health and wellness centres in Amritsar district of Punjab. Int J Community Med Public Health 2025;12:143-9.
8. Chauhan R, Mazta SR, Dhadwal DS, Sandhu S. Indian public health standards in primary health centers and community health centers in Shimla District of Himachal Pradesh: A descriptive evaluation. CHRISMED J Health Res 2016;3:22-7.
9. Summary of the Report on Workforce Management Options and Infrastructure Rationalization of PHC, Planning Commission of India; 2004.
10. Sinha TP, Anamika, Bhoi S. Application of Indian Public health standard for evaluation of community health centers of Rajasthan, India. Prehosp Disaster Med 2011;26:126-9.
11. Srinath V, Veena R. NRHM and IPHS-standards in primary health care. Int J Pharm Med Biol Sci. 2012;1(2).
12. Shah R, Bhavsar BS, Nayak S, Goswami M. Availability of services and facilities at primary health centers in Gujarat. Nat J Community Med. 2010;1:24-6.
13. Samreen S, Ashraf A, Hasssan M, Khan SS. Identifying the deficiencies in availability of services and manpower at primary health centers (PHCS) of Kashmir: a descriptive study. Paripex Indian J Res. 2019;8(5).
14. Shah R, Bhavsar BS, Nayak S, Goswami M. Availability of services and facilities at primary health centers in Gujarat. Nat J Community Med. 2010;1:24-6.
15. Dar K. Utilization of the services of the Primary Health Centres in India- an empirical study. J Health, Med Nurs. 2015;16:56-9.
16. Department of Community Medicine GMC Nagpur, Maharashtra, India, Narlawar UW. Assessment of Physical Infrastructure of sub-centres in Central India as per Indian Public Health Standards 2012 Guidelines: A Cross Sectional Study. J Med Sci Clin Res [Internet]. 2018 Mar 7 [cited 2025 Dec 6];6(3). Available from: http://jmscr.igmpublication.org/v6-i3/28%20jmscr.pdf
17. Patil SK, M. S. S. Assessment of sub-centres of Belagavi district according to Indian public health standards 2012 guidelines: a cross sectional study. Int J Community Med Public Health. 2017 May 22;4(6):1938.
18. Saxena S, Kumar A, Arora D, Tyagi V, Saxena A. Assessment of IPHS standard in sub-centre for providing maternal and child health services at Bareilly District of Uttar Pradesh. Int J Health Sci. 2022 June 23;12136–47.
19. Bashar MA, Goel S. 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. J Fam Med Prim Care. 2017;6(2):208–10.
20. https://www.nhm.gov.in/images/pdf/guidelines/iphs/iphs-revised-guidlines-2022/03_PHC_IPHS_Guidelines-2022.pdf