

How to Cite:

Saxena, S., Kumar, A., Arora, D., Tyagi, V., & Saxena, A. (2022). Assessment of IPHS standard in sub-centre for providing maternal and child health services at Bareilly District of Uttar Pradesh. *International Journal of Health Sciences*, 6(S3), 12136–12147. <https://doi.org/10.53730/ijhs.v6nS3.9505>

Assessment of IPHS standard in sub-centre for providing maternal and child health services at Bareilly District of Uttar Pradesh

Sumit Saxena

Assistant Professor Department of Community Medicine, Autonomous State Medical College & Allied Pt Ram Prasad Bismil Memorial Hospital. Shahjahanpur. (U.P)

Ashish Kumar

Assistant Professor Department of Community Medicine, Autonomous State Medical College & Allied Pt Ram Prasad Bismil Memorial Hospital. Shahjahanpur. (U.P)

Deval Arora

Assistant Professor Department of Dentistry, Autonomous State Medical College & Allied Pt Ram Prasad Bismil Memorial Hospital. Shahjahanpur. (U.P)

Vedang Tyagi

Junior Fellow Epsom & St. Helier University NHS Trust, London, United_Kingdom

Anju Saxena*

Associate Professor Department of Pharmacology, Rohilkhand Medical College & Hospital. Bareilly (U.P)

Abstract---A sub centre is the most peripheral point of contact of the public health system with the population at large, so most of our demographics depend on the efficient functionality of these centres. The study facilities were assessed in terms of availability of infrastructure, logistics, human resources and find out the disparity in the facilities existing at Sub Centre in comparison to IPHS norms. A community-based cross-sectional study was conducted in Bhojipura block, rural field practice area of department of Community Medicine, Shri Ram Murti Samarak Institute of Medical Sciences, Bareilly India. The study was conducted from May 2014 to Sept 2014. All 24 Sub-centres catering to 100 villages of Bhojipura block covered in the study. All the assessed sub-centre's provided Ante-natal care (ANC), Child care including immunization (as per given government schedule), Family Planning and contraception & facilities under Janani Suraksha Yojna (JSY), whereas only 78.9% provided Intra-

Natal Care (INC) and 63.1% of them provided Post-Natal Care (PNC). The results were commendable in terms of maternal and child care by the ANM and ASHA but in terms of logistics and infrastructure the results weren't as good as expected with deliveries not being conducted in any centre due to lack of basic amenities such as electricity and deficient manpower.

Keywords---IPHS, MCH, Services, Subcentre.

Introduction

In a country of 1.2 billion people, most of who live in rural areas, it is not possible for health care to be delivered to all through cities or district hospitals. Hence the government introduced a three-tier health care system which includes Sub-Centres (SC), the lowest rung of the system. A sub centre is the most peripheral point of contact of the public health system with the population at large, so most of our demographics depend on the efficient functionality of these centres. These centres use an Auxillary Midwifery Nurse (ANM) as an instrument to interact with the masses. As per the present population norms, one SC is meant to serve every 5000 population in plain areas and every 3000 population in hilly, tribal and backward areas.¹ The purpose of these sub centre's is to provide preventive and promotive as well as curative care, to a lesser extent. In the year 2005, National Rural Health Mission (NRHM) was launched which laid down a set of guidelines, known as Indian public health standards (IPHS), which are to be followed by district hospitals, primary health centres, community health centres and sub centres. These guidelines lay down the basic infrastructural and functional requirements for a sub centre. All sub centres are expected to work in line with these guidelines.²

Setting standards is a dynamic process. Currently the IPHS for Sub-centres has been prepared keeping in view the resources available with respect to functional requirement for Sub-centres with minimum standards, such as building, manpower, instruments and equipment, drugs and other facilities and desirable standards which represent the ideal situation. The overall objective of IPHS is to provide health care that is quality oriented and sensitive to the needs of the community. For a developing nation like ours it is imperative that our work force, comprising mostly of farmers, is at its best which requires them to be in adequate health. Most of our country's workforce lives in rural areas thus making basic / quality healthcare services out of their reach. The establishment of sub centres was aimed at bridging this gap and making healthcare more accessible.

For any nation-wide health program to succeed, it is essential that these sub centre's function to the best of their abilities. Unfortunately, available literature indicates a very murky situation of the sub-centres in India, despite all policies and schemes laid down and implemented by the government. Statistically, Uttar Pradesh has a 34% shortfall of SC's, 1749 shortfall of ANM's and 18792 short-fall of male workers.³ The 2006 World Health Report stresses that the probability of infant, child and maternal survival is positively correlated with increasing density of competent health workers.⁴The Indian rural IMR is 48%, total IMR is 57% and

urban IMR is 29% while UP has a rural IMR of 60%, urban IMR of 41% and total IMR of 57%.⁵ Around 0.76 million new-borns die each year mainly due to preventable causes,⁶ whereas, the MMR is 28.75%.⁷

Such facts and figures make one contemplate the reason behind it. If the mothers and new born, the future bearers of a progressive and developing nation like ours are dying at such a rate, then it is indeed a problem which requires immediate attention. Ergo, this study was carried out to find out about the available infrastructure and facilities and compare the disparity between the laid norms and the results of the research as sub-centres crucial role to decrease the Infant Mortality Rate (IMR) and Maternal Mortality Rate (MMR) in the rural areas without which the Millennium Development Goals (MDG) cannot be achieved. The study facilities were assessed in terms of availability of infrastructure, logistics, human resources and find out the disparity in the facilities existing at Sub Centre in comparison to IPHS norms.

Materials & Methods

The present cross-sectional study entitled "Assessment of Indian public health standards in Sub-centre's for providing Maternal and Child health services at Bareilly District of Uttar Pradesh" were being planned to assess the available infrastructure and logistics at Sub Centre's and to find out the disparities in the facilities existing at Sub Centre's in comparison to IPHS norms. A community-based cross-sectional study was conducted in Bhojipura block, rural field practice area of department of Community Medicine, Shri Ram Murti Samarak Institute of Medical Sciences, Bareilly India. The study was conducted from May 2014 to Sept 2014. The Bareilly district has a network of health infrastructure from district to village level which includes one District Hospital, two CHCs and seven (24X7) PHCs, three PHCs and 398 Sub Centres out of which 327 are in government buildings and 71 in rented accommodation.⁸ There are 15 Community Development Blocks in the district out of which, the present study was carried out at Bhojipura block, which selected purposively for the study.

Sampling Technique

A multi-stage sampling design with a mix of purposive and random approaches was used.

- **First stage:** Selection of Block: Out of the 15 blocks of Bareilly district, Bhojipura block selected purposively for the study purpose. Bhojipura block have a population of 1,91,181 (population of Town area: 20784, Rural population: 1,70,397) according to census 2011 and has 100 villages & 24 Sub centre.⁹
- **Second stage:** Selection of Sub-Centre: All 24 Sub-centres catering to 100 villages of Bhojipura block covered in the study. The facilities were assessed in terms of availability of infrastructure, logistics, human resources as per IPHS norms. Standards were assessed using a pre designed and pre tested questionnaire. The study was carried out in 2 months. Out of the 24 Sub-centres in Bhojipura block of Bareilly district, 19 were assessed. 2

Subcentres were vacant, 1 was converted into a PHC and no contact could be made with the remaining 2 Subcentre in-spite of two visits.

- **Third stage:** Interview of ANM: ANM will be interviewed for Maternal and Child Health services (MCH) provided by. After learning the immunization day of that village from ASHA (Accredited Social Health Activist), ANM will be interviewed on the day of immunization.

Ethical approval

The study was approved by the Institutional Ethics Committee.

Data Collection and Analysis

Data was collected by personal visits to all selected Sub-Centres and observing the services and infrastructure, and interviewing the government functionaries using a pre-designed proforma and checklists. Data was entered in Microsoft Excel 2014 and results were expressed in percentages and proportions.

Result

All the assessed sub-centre's provided Ante-natal care (ANC), Child care including immunization (as per given government schedule), Family Planning and contraception & facilities under Janani Suraksha Yojna (JSY), whereas only 78.9% provided Intra-Natal Care (INC) and 63.1% of them provided Post-Natal Care (PNC). (Table 1)

Table 1
Services provided at Sub-centre (n=19)

Services	N (%)
Ante-natal care	19(100)
Intra-natal care	15(78.9)
Post-natal care	12(63.1)
Immunization	19(100)
Family Planning and contraception	19(100)
Adolescent health care	08(42.1)
Facilities under Janani Suraksha Yojana	19(100)
Treatment of minor ailments	17(89.4)

Table 2
Current status of specific services provided at Sub-centre (n=19)

Availability of specific services	N (Percentage)
Doctor visit the Sub-centre at least once in a month	08(42.2%)
Is the day and time of this visit fixed?	01(5.3%)
Are the residents of the village aware of the timings of the doctor's visit?	05(26.4%)
Is the Antenatal care (Inj. T.T, IFA tablets, weight and BP checkup) provided by those in the Sub-centre?	19(100%)
Is the facility for referral of complicated cases of pregnancy / delivery available at Sub-centre for 24 hours?	17(89.5%)
Does the ANM/any trained personnel accompany the woman in labor to the referred care facility at the time of referral?	15(79%)
Is the ORS for prevention of Diarrhoea and Dehydration available in the Sub-centre?	19(100%)
Is the treatment of minor illness like fever, cough, cold, worm disinfestations etc. available in the Sub centre	17(89.5%)
Is the facility for taking Peripheral blood smear in case of fever for detection available in the Sub-centre?	0(0)
Are the contraceptive services like insertion of Copper-T, distributing Oral contraceptive pills or condoms provided by the Sub-centre?	19(100%)
Is it a DOTS centre?	05(26.4%)

A doctor visited the Sub-centres at least once a month in 8(42.2%) subcentre's whereas the day and time were fixed only in 1(5.3%) subcentre. The residents of the villages are made aware of the visiting of doctor only by 5(26.4%) subcentre. All subcentre were having Inj.TT, IFA Tablets, weighing machine, BP apparatus, ORS for diarrhoea and facility of insertion of Copper T. None of the centres had the facility to take a peripheral blood smear. Only 5(26%) Subcentre served as DOTS Centre. (Table 2)

Table 3
Monitoring and Supervision activities at Sub-centre

Monitoring and Supervision activities	N(Percentage)
Training of traditional birth attendants and ASHA	15(79%)
Watch over unusual health events	19(100)
Coordinated services with AWWs, ASHA, Village Health and Sanitation Committee, PRIs	17(89.5%)
Coordination and supervision of activities of ASHA	18(94.8%)
Proper maintained of records and registers	19(100%)
Is there a Village Health Plan / Sub Centre Plan?	0(0)
Monitoring of Water quality in the village	0(0)
Is the scheme of ASHA implemented in Sub Centre?	18(94.8%)

Training of birth attendants and ASHA took place in only in 15(79%) of the sub-centres The scheme of ASHA was implemented in 94.8% of the SC's. Proper maintenance of records and registers and watch over unusual health events was carried out by all the SC's. Implementation, Coordination and supervision of activities of ASHA was seen in 18(94.8%) of the centres, whereas none of the SC's Implemented any Village Health Plan / Sub Centre Plan nor do they Monitor the Water quality in the village. (Table 3)

Table 4
Infrastructure & Logistics Available at Sub-centre

Infrastructure & Logistics	
Location of Sub-Centre	
Within Village Locality	15(79%)
Far from village locality	4(21.1%)
Located at an easily accessible area	
Yes	13(68.5%)
No	06(31.5%)
Designated government building available for the Sub Centre	
Yes	16(84.3%)
No	3(15.8%)
Sub Centre located at	
Rented premises	3(15.8%)
Present condition of the existing building	
Good	12(63.2%)
Bad	6(36.8%)
Stage of construction of the building	
Construction complete	15(79%)
Construction incomplete	4(21.1%)
Compound Wall / Fencing	
All around	10(52.6%)
Partial	4(21%)
None	5(26.4%)
Condition of plaster on walls	
Well plastered with plaster intact every where	08(42.2%)
Plaster coming off in some places	05(26.4%)
Plaster coming off in many places or no plaster	06(31.6%)
Condition of floor	
Floor in good condition	5(26.4%)
Floor coming off in some places	10(52.7%)
Floor coming off in many places or no proper flooring	4(21.1%)
Cleanliness of Sub-centre	
Good	0(0)
Fair	13(68.5%)

Poor	06(31.6%)
Are any of the following close to the Sub Centre? (Observe)	
Garbage dump	07(36.9%)
Cattle shed	04(21.1%)
Stagnant pool	06(31.6%)
Pollution from industry	0(0)
Is boundary wall with gate existing	
Yes	12(63.0%)
No	07(36.8%)
Prominent display boards in local language	
Yes	15(79%)
No	04(21%)
Labour room available	
Yes	13(68.5%)
No	06(31.6%)
If labour room is present, are deliveries carried out in the labour room?	
Yes	0(0)
No	17(89.5%)
Sometimes	02(10.6%)
Reasons for not delivering in labour room	
Staff not staying	09(47.4%)
Poor condition of the labour room	13(68.5%)
No power supply in the labour room	13(68.5%)
Clinic Room	
Present	16(84.3%)
Absent	02(15.7%)
Examination room	
Present	17(89.5%)
Absent	02(10.5%)
Source of water	
Hand-pump	19(100%)
Medical waste disposed off:	
Burnt	03(15.8%)
Disposed	04(21%)
Sent to PHC	12(63.1%)
Electricity Telephone & Transport Facility	
Absent	0(0)
Residential facility for the staff (Health Worker (Female))	
Present	17(89.5%)
Absent	2(10.5%)

There was a prominent display board in the local language in 15(79%) of the centres and only 12(63%) had a gate with the boundary wall. Medical waste was sent to PHC for dispose in 12(63.1%) subcentre of the centres. IPHS recommends that sub centres should be within 3KM of the furthest village under its jurisdiction. It was found that 10 sub centres were more than 3KM away, the furthest being 8KM and the closet is 1KM. The average time taken to travel was 45mins. No telephone & Transport facility available in any centre of the Block. (Table 4).

Out of the given list of requirements of equipment's at a sub-centre according to IPHS, the following were assessed. Weighing scale adult and paediatric were found in 13(68%) and 12(63%) of the centres respectively. Haemoglobinometer and a stethoscope were seen in 15(79%) of the centres, whereas a BP machine was seen in 14(73%) of the centres. Only 04(21%) and 02(10%) of the centres had scissors and a torch respectively. Only 13(68%) of the centres had an examination and writing table. A labor table was seen in only in 06(31%) of the centres; armless chair in 14(73%) of the centres. Only 10(52%) of the centres had a wooden screen. IPHS recommends each sub-centre to have 2 ANM's, 1 male worker and 1 voluntary worker. All the assessed Sub-Centre had 1 ANM each, out of which only 17 had residential facilities, none of which were utilised. Only 4(21.1%) sub centres had a male worker with no residential facility and 2(10.6%) Sub-Centre had a voluntary worker helping the ANM. (Table 5).

Discussion

Due to lack of studies conducted on this topic, we could not present a vivid review of literature neither a vivid comparison. A doctor visited the Sub-centres at least once a month in 8(42.2%) subcentre's and the day and time were fixed only in 1(5.3%) subcentre in the present study whereas study done in Andhra Pradesh it was found that out of 34 Sub-centres, only 3 (8.8%) of the SCs were being visited once in a month on a fixed day by the medical officer.¹⁰ On the other hand, study conducted in Kerala, 58.9% of the SC were visited by medical officer every month.¹¹ All 19 subcentre having one ANM, 4 Subcentre having 1 male health worker and only 2 subcentre having 1 voluntary worker in the present study. In the contrary to this, study conducted in Sheikhpura district of Bihar, out of 85 Sub-Centre only twenty-two SCs had two ANMs and rest had only one ANM.

None of the SCs had any other recommended workers.¹² Out of 19 subcentre, 16(84.3%) SCs were housed in government buildings and present condition of the existing building was good only in 12(63.2%) SCs in the present study, contrary to this, study done in Andhra Pradesh, out of 34 SCs, 17(50.0%) SCs that were housed in government buildings, 14 (41.2%) were in designated government buildings and 3 (8.8%) were in the government buildings of other departments. Out of 14 (41.2%) SCs housed in designated government buildings, only 9 (26.4%) were in good condition.¹⁰ On the other hand, all SCs in Mohali had their own government building while only 50% SCs in Chandigarh and Panchkula were being run in own buildings.¹³ These findings were better than studies by Kumar A in District Jhajjar, Haryana¹⁴ and by Sadana R in Jhansi district¹⁵ where only 6.67% SCs and 29% SCs had government building.

Out of 19 Sub-Centre, construction was complete only in 15(79%), compound wall all around was present in 10(52.6%) SCs. Examination room was present in 17(89.5%) of the SC's, but clinic room and labor room were present in 16(84.3%) and 13(68.5%) of the SCs, respectively in the present study. On the other hand, study done in Lucknow¹⁶, SCs Construction was complete in only 37.5% of the SCs. Compound wall all around was present in 62.5% of the SCs. Examination room was present in 81.2% of the SC's, but clinic room and labor room were present in 62.5% and 50% of the SCs, respectively.

In a study conducted in Sheikhpura district of Bihar, 85 Sub-Centre's were included. Of the total SCs, the team could visit only 60 SCs. Of these 20 were found closed so the schedule could be administered only 40 SCs. IPHS recommends 2 ANMs, one health worker male and one voluntary worker to be appointed in each SC. Twenty -two SCs had two ANMs and rest had only one ANM. None of the SCs had any other recommended workers. 3 SCs were in rented apartments and the rest were in government buildings. In most of the SCs, walls were painted in the local language depicting services delivered. However, none of the centres had their own communication system, residential facilities, regular electricity, waste disposal facility, separate examination room, clinic room, labor room, public utilities and boundary wall.¹²

Conclusions

The results were commendable in terms of maternal and child care by the ANM and ASHA but in terms of logistics and infrastructure the results weren't as good as expected with deliveries not being conducted in any centre due to lack of basic amenities such as electricity and deficient manpower. The results make us contemplate the reason behind the disparities. The answer to which lies in further detailed investigation of the system and the chains in it (both governmental and non-governmental).

Table 5
IPHS recommended Equipment's, Furniture & Manpower available at Sub-centre

Equipment's	IPHS recommended	No of centres present and functional in (n=19)
Weight scale(adult)	1	13(68.0%)
Weight scale(paediatric)	1	12(63.0%)
Hemoglobin	1	15(79.0%)
BP machine	1	14(73.0%)
Stethoscope	1	15(79.0%)
Scissors	1	04(21.0%)
Torch	2	02(10.0%)
Furniture available at Sub-centre		
Examination table	1	13(68.0%)
Writing table	1	13(68.0%)
Labor table	1	06(31.0%)
Armless chair	3	14(73.0%)
Medicine chest	1	11(58.0%)
Stool	3	08(42.0%)
Almirah	1 (desirable)	08(42.0%)
Lamp	1	04(21.0%)
Basin stand	1	06(31.0%)
Bucket	1	11(58.0%)
Mug	1	12(63.0%)
Kerosene stove	1	7(36.0%)
Sauce pan with lid	1	03(15.0%)
Talquist Hb scale	1	16(84.0%)
Wooden screen	1	10(52.0%)
Personnel	Recommended	Current (Percentage)
Health Worker (Female)	2	19 (100)
Health Worker (Male)	1	4(21.1%)
Voluntary worker	1	2(10.6%)

References

1. Park K. Health Care System. In: Park K, editor: Park's Textbook of Preventive and Social Medicine. 2021:802-06.
2. Govt. Of India. Indian Public Health Standards (IPHS) for Sub-Centres: Guidelines. Directorate General of Health Services, MOHFW. New Delhi; 2006. Rural Health Statistics. India. 2012,
3. WHO | The World Health Report 2006 - working together <https://www.who.int/whr/2006/en>.
4. Rural Health Statistics in. India. 2012. <https://www.nhm.gov.in/index4.php?lang=1&level=0&linkid=153&lid=174.2014>.
5. Maternal Mortality Ratio (MMR), Maternal Mortality Rate and Life Time Risk Special bulletin on Maternal Mortality in India 2010-12 Sample Registration System office of registrar general, India. (2010-2012). https://censusindia.gov.in/.../SRS_Bulletins/MMR_Bulletin-2010-12.pdf.
6. NRHM PIP monitoring in Uttar Pradesh, Bareilly district, series B monitoring survey report. March. 2014,
7. Uttar Pradesh population census data. (2011). <https://www.census2011.co.in/census/state/uttar+pradesh.html>.
8. Reddy NB, Prabhu GR, Sai T: Study on the availability of physical infrastructure and manpower facilities in sub-centers of Chittoor district of Andhra Pradesh. Indian J Public Health. 2012, 56:290-2.
9. Nair V.M, Thankappan K.R, Vasan R.S, Sarma PS: Community utilisation of subcentres in primary health care - An analysis of determinants in Kerala. Indian J Public Health. 2004, 48:17-24.
10. Devika Biswas and Vivekanand Ojha: Adhering to IPHS guidelines: A study of the Health Facilities in Sheikhpura District of Bihar. Voluntary Health Association (BVHA), Patna. 2012.
11. Dhiman Anupama, Goel Krishan Naveen, Walia Dinesh Kumar, Galhotra Abhiruchi, Navpreet: Assessment of Health Centers As Per Indian Public Health Standards in Chandigarh Tricity, India. 2014, 4:420-421.
12. Kumar A, Goel MK, Jain RB, Khanna P: Gaps in facilities available at health sub-centers as per Indian public health standards in a district of Haryana. Asian J Manage Research. 2011, 2:651-658.
13. Kumar, S. (2022). A quest for sustainium (sustainability Premium): review of sustainable bonds. Academy of Accounting and Financial Studies Journal, Vol. 26, no.2, pp. 1-18
14. Allugunti V.R (2022). A machine learning model for skin disease classification using convolution neural network. International Journal of Computing, Programming and Database Management 3(1), 141-147
15. Allugunti V.R (2022). Breast cancer detection based on thermographic images using machine learning and deep learning algorithms. International Journal of Engineering in Computer Science 4(1), 49-56
16. Sadana R, Fort A, Pasricha R, Henry R: Assessment of sub-centers in Jhansi district in preparation for Clinic-Based Family Planning (CBFP) Training and Upgrading Technical Report. New Delhi: PRIME Regional Office for Asia/Near East. 1998:9.

17. Manas PR, Mohan U, Singh SK, Singh VK, Shrivastava AK: Sub Centre Support, Need of the Hour: A Comparative Study from Lucknow. 2014, 7:33-7.
18. Rinarta, K., Suryasa, W., & Kartika, L. G. S. (2018). Comparative Analysis of String Similarity on Dynamic Query Suggestions. In 2018 Electrical Power, Electronics, Communications, Controls and Informatics Seminar (EECCIS) (pp. 399-404). IEEE.
19. Suryasa, I. W., Rodríguez-Gómez, M., & Koldoris, T. (2021). Get vaccinated when it is your turn and follow the local guidelines. *International Journal of Health Sciences*, 5(3), x-xv. <https://doi.org/10.53730/ijhs.v5n3.2938>
20. Asriyati, P. E., Swarjana, I. K., Sastriani, N. L. A., & Krisnandari, A. A. I. W. (2021). The effect of electronic discharge planning with SBAR approach to optimize the implementation of patient discharge. *International Journal of Health & Medical Sciences*, 4(3), 280-287. <https://doi.org/10.31295/ijhms.v4n3.1750>