

Health system readiness for roll out of the *Ayushman Bharat* Health and Wellness Centres – Early experiences from Punjab State

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ABSTRACT

Background: The Government of India launched the *Ayushman Bharat* (AB) program in 2018 which aims to transform 150,000 existing Sub Health Centres and Primary Health Centres into *Ayushman Bharat* Health and Wellness Centres (HWCs). In this study, we assessed health system readiness for establishment of HWCs. **Methods:** The assessment comprised of a cross sectional facility assessment and a knowledge assessment of community health officers (CHOs) and female multipurpose health workers also known as auxiliary nurse midwives (ANMs), in 26 HWCs in one community development block of Punjab state. HWCs were assessed for key input and process parameters such as a human resource, physical infrastructure, supplies, capacity building etc., and processes including health promotion, community participation, digitization of management information system, and service delivery. **Results:** It was observed that only 7 of the 26 HWCs had all human resources as per guidelines. The median knowledge score of CHOs and ANMs was 54% and 51% respectively. 11 of the 26 HWCs were co-located with *Zila Parishad* SHCs. Out of the 15 standalone HWCs, while 9 had independent buildings, 5 were located in buildings of other community level institutions. 50 percent of the HWCs were not able to perform diabetes screening due to lack of glucometers or testing supplies. While services for non-communicable diseases were available, a two-way referral tracking system for patients was missing. The mean job satisfaction rated by the newly appointed CHOs was 3.12 on a scale of 1 to 5, where 5 represented very high job satisfaction. **Conclusion:** The operationalization of HWCs requires State and local level interventions for strengthening of existing physical infrastructure, ensuring a regular supply of medicines and consumables, development of referral mechanisms for patients and enhancing community participation.

Keywords: *Ayushman Bharat*, facility assessment, health and wellness centres, knowledge assessment, universal health coverage

Introduction

In 2018, the Government of India launched the *Ayushman Bharat* program to strengthen primary healthcare. The program

aimed to transform 150,000 Sub Health Centres and Primary Health Centres into *Ayushman Bharat* Health and Wellness Centres (HWCs).^[1] The HWCs are envisaged to be the first point of contact for comprehensive primary healthcare (CPHC), delivering an expanded range of services spanning preventive, promotive, curative, rehabilitative and palliative care.^[2] The conceived expanded services at HWCs range from care during childhood and pregnancy to elderly and palliative care; from treatment of communicable diseases to screening and

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management of chronic diseases; and from preventive to rehabilitative care. [Figure 1] The establishment of HWCs involves a paradigm shift at many levels including innovations in human resources, provision of medication for chronic conditions, financial reforms and use of digital and information technology.^[3]

Health being a state subject, the implementation of the program involves local context specific challenges and opportunities. Public healthcare system in Punjab state in north India has evolved considerably over the last few decades and comprises of 4 key stakeholders including the Directorate of Health Services (DHS), Punjab Health Systems Corporation (PHSC), the National Health Mission as well as the Rural Development Department in rural areas and Municipal Corporations in urban areas. In January 2018, Punjab announced creation of 2,950 HWCs in a phased manner.^[4] The overlap of institutions of the DHS and *Zila Parishad* in rural areas creates special coordination challenge in Punjab for the roll out of HWCs.

At this nascent stage of operationalization of HWCs, it was imperative to assess system readiness on key input and process parameters such as a human resource, supplies, physical infrastructure, capacity building as well as processes including health promotion, community participation, digitization of management information systems and service delivery, for the optimal implementation of the program in the state of Punjab. Such information is vital for program managers, as well as primary care practitioners for implementing CPHC.

Methodology

The assessment comprised of two components, a cross sectional facility assessment of HWCs and knowledge assessment of two core members of the HWC team. The study was undertaken in 26 HWCs of one community development block of *Sabibzada Ajit Singh Nagar* district in Punjab state, India. A Comprehensive Primary Healthcare Innovation Learning Centre (ILC) Punjab, a tripartite collaboration of the National Health Systems Resource Centre (NHSRC) – the technical assistance body to the central government’s Ministry of Health and Family Welfare, State

Health Society Punjab – the implementing body for HWCs in the State, and Post Graduate Institute of Medical Education and Research, Chandigarh – a leading medical education and research institute, was established to undertake this implementation research.

Data collection

Facility assessment

A physical observation of HWCs was undertaken using an assessment tool adapted from the World Health Organization’s Service Availability and Readiness Assessment (SARA) tool.^[5] The tool comprised of three major sections. The first focused on staffing pattern, infrastructure, biomedical waste management and infection control. The second section focused on information related to provision of outpatient care services including availability of instruments, services, diagnostics and medicines. The final section of the tool was used to interview the staff for job satisfaction levels rated on a Likert scale from 1 to 5 (1-dissatisfied and 5-very satisfied), and to elicit major operational problems faced by them. Additionally, the study investigators observed referral mechanisms and interviewed the staff for sharing of responsibilities between Multipurpose Health Worker Female also known as Auxiliary Nurse Midwives (ANMs) and Community Health Officers (CHOs). The assessment was supplemented with qualitative interviewer observations, which were compiled in form of daily visit diary.

Knowledge assessment of CHOs and ANMs

A cross-sectional survey was conducted to assess knowledge of 25 CHOs and 40 ANMs. The knowledge assessment tools were developed based on consultations with the HWC guideline developers at NHSRC, the program implementers at the state level and researchers at the ILC. Separate tools were prepared for CHOs and ANMs, which comprised of 2 sections. The first section contained demographic details of the participant including age, gender, educational qualifications and work experience. The second section contained 35 multiple choice questions, adapted from various modules, study material and guidelines related to the job responsibilities of the respective cadres. The knowledge-based questions were categorized into different service provision themes such as maternal health, child health, communicable diseases, non-communicable diseases, family planning, recent pandemic of novel corona virus 2019, health planning, supervisory activities and reporting of data. The questions were also classified into clinical and program-based questions.

Data analysis

Data from all three components of the study was entered and analysed in MS Excel. Binary responses of the facility assessment were summarized as counts and proportions. Observations from the facility visits were noted and summarized in a table. Scores for the knowledge assessment were generated for the overall questionnaire as well as theme wise question groups in percentages.

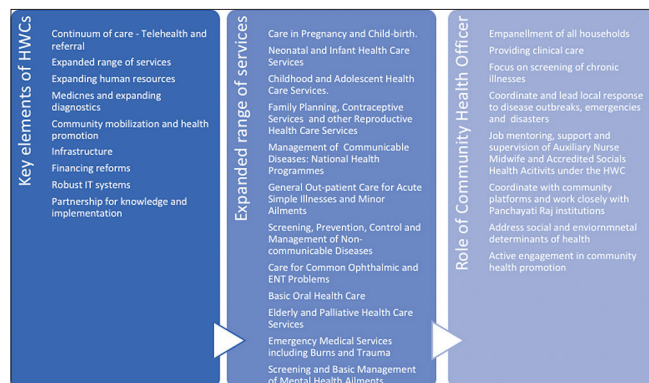


Figure 1: Tenets of establishment of HWCs under the Ayushman Bharat Program

Ethical considerations

The study was approved by the Institute Ethics Committee of the Post Graduate Institute of Medical Education and Research Chandigarh. Administrative approval was obtained from the state, district as well as block health officials prior to the assessments. A verbal informed consent was obtained from participants prior to all the interviews.

Results

Infrastructure

Of the 26 HWCs, 11 were co-located with *Zila Parishad* SHCs. Out of the 15 standalone HWCs, while 9 had independent buildings, 5 were located in buildings of other community level institutions such as *Gurudwaras*, *Seva kendras* and *dharamshalas*; and 1 centre was located in an *Anganwadi* or a child care centre. While all HWCs had sufficient space for general outpatient care, none had private space for examinations. Nearly 60% of the HWCs were located in single rooms shared by ANM and CHO. As such the space was inadequate for private examinations such as VIA, breast examination and others. Figure 2 depicts the infrastructural readiness of the HWCs. Electricity, water, toilet and internet facilities were available in 92%, 73%, 50% and 4% HWCs respectively.

Human resources

A CHO was present in all except for 1 HWC. Thirteen HWCs had at least 2 ANMs, 12 HWCs had 1 ANM while 1 facility did not have a permanently posted ANM. A male multi-purpose health worker (MPW-M) each was present in 20 of the 26 HWCs, of which 6 had been assigned additional duties at higher facilities. Only seven of the twenty-six facilities had all human resources as per guidelines. [Figure 3]

Profile and knowledge assessment of CHOs

Majority of the appointed CHOs (72%) were nursing graduates, the rest being *Ayurvedic* practitioners (28%). The mean age of CHOs was 31.6 (±2.59) years, with majority (81%) being females. The total experience of CHOs ranged from 6 months to 14 years, and the duration of appointment at the current post as CHO ranged from 6 to 16 months. The median knowledge score of CHOs was 19 (±3.22) out of 35 (54%). The knowledge score

was highest for team supervision related questions (questions related to duties of Accredited Social Health Activist (ASHAs) and ANMs) (96%) and lowest for questions related to maternal health (32%) and child health (40%). The CHOs scored better for clinical based questions (58% correct responses), as compared to program-based questions (48% correct responses). [Table 1] The CHOs belonging to the younger age group (29-31 years) and those with recent training had higher scores.

The mean job satisfaction rated by CHOs was 62.4%. The common problems faced by the CHOs included lack of clarity of job responsibilities, difficulties in cooperation between different personnel at the HWC, limited medicines supply, insufficient infrastructure, and technical issues with computer software for data entry.

Profile and knowledge assessment of ANMs

The mean age of ANM respondents was 43.3 (±9.47) years. Most of the ANMs (80%) had a diploma in Auxiliary Nurse Midwifery. The total experience of ANMs ranged from 5-32 years. The median knowledge score of ANMs was 51%. The score was highest for supervision related questions (questions related to services of ASHAs) (90%) and lowest for questions related to maternal health (20%) and family planning (27%). It was found that ANMs scored better for program-based questions (60%),

Table 1: Performance of CHOs and ANMs in the knowledge assessment survey

Categories of Health services	Percentage of correct responses	
	ANM	CHO
Team supervision	90%	96%
COVID	63%	74%
NCDs	59%	42%
Health and wellness planning	53%	45%
Child Health	48%	40%
Communicable diseases	36%	57%
Family planning	27%	73%
Maternal Health	20%	32%
Nature of health services		
Clinical	46%	58%
Program based/Non-clinical	60%	48%

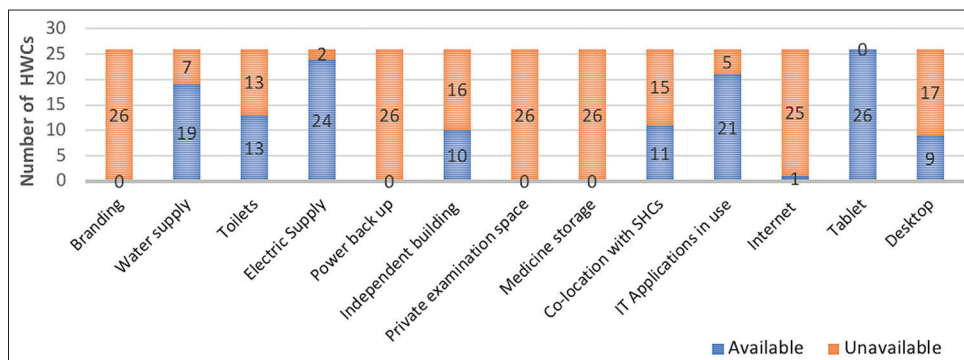


Figure 2: Infrastructural readiness of HWCs in Punjab state

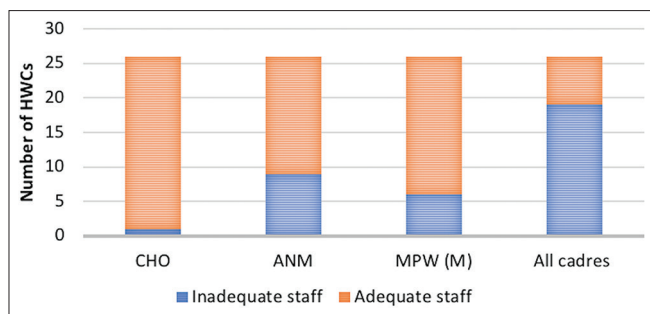


Figure 3: Adequacy of staff at HWCs

as compared to clinical based questions (46%). [Table 1] The ANMs belonging to younger age group (21-25 years) and those with matriculation as highest educational qualification had the highest median scores. ANMs with highest years of experience and highest years of service at current post scored higher.

Service delivery

NCD services

Screening for hypertension, oral cancer and breast cancer was being performed at all the facilities. Screening for diabetes was being performed at 13 HWCs. The remaining HWCs (13) were not able to perform diabetes screening due to lack of glucometers or testing supplies. Cervical cancer screening was not being undertaken due to lack of private space and equipment for Visual Inspection with Acetic Acid (VIA). While community-based assessment checklist (CBAC) forms were being filled by ASHAs at all HWCs, however prioritization for screening according to risk score, and follow up of screened positive individuals was not being done.

Mother and child healthcare

It was observed that all HWCs were providing the range of ANC services. At least 1 family planning method was available at all HWCs. The most common family planning method available was male condoms, followed by combined oral contraceptive pills. Injectable contraceptives, female condoms, Intra-uterine devices (IUCDs), implants, and sterilization services were not available at HWCs. All HWCs were providing child health services such as weight measurement, vitamin supplementation, iron supplementation, and oral rehydration and zinc supplementation for diarrhoea. However only few HWCs monitored height (10/26) and maintained growth charts (15/26).

Diagnostic services and medicine supply

The tests available at HWCs included haemoglobin (20/26), urine pregnancy test (20/26), malaria smear (17/26) and blood glucose (12/26). Only 7 HWCs had all 4 tests, while 5 HWCs had only 1 test available. None of the facilities had urine dipstick test, malaria rapid diagnostic kit, or dengue rapid diagnostic kit. It was found that while sphygmomanometer was available at most HWCs, a glucometer was available at 50% centres only. [Figure 4] Against a recommended list of 80 drugs mentioned in the CPHC-HWC guidelines², the mean number of drugs available

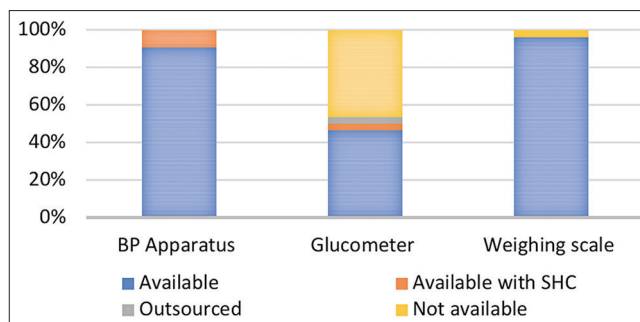


Figure 4: Availability of NCD screening equipment

at HWCs was 23 (range 8-20). Metformin and Glimepiride (for diabetes) and Amlodipine (for hypertension) were available in 23 out of 26 HWCs.

Continuum of care and community mobilization

HWC patients were referred to higher facilities including SHCs, Civil Hospital, or less frequently PHCs. The factor influencing the choice of referral centre was mainly distance and/or availability of the required service. Other than ANC patients who had ANC cards, referred patients were most often given a hand-written slip on plain paper. Patients did not have any health cards and no record of the referral was maintained at the HWC. There was an absence of two-way referral tracking. The CHOs played a limited role in community participation. Very few HWCs organized wellness activities such as yoga sessions at their centre. The common problems cited for organization of yoga camps were unavailability of trained person to conduct session and lack of interest in the participants.

Additional aspects observed as operational challenges have been summarized in Table 2.

Discussion

The importance of Universal Health Coverage (UHC) has been emphasized in the Alma Ata Declaration,^[6] the Declaration of Astana,^[7] Sustainable Development Goals agenda^[8] and the Indian National Health Policy of 2017.^[9] Improved access to primary healthcare, in a pilot in Tamil Nadu state, has shown to improve access and utilization, reduce out of pocket expenditure and over dependence on more specialized and private healthcare, thus contributing to UHC.^[10] There has been empirical evidence from community clinics of Delhi, and *Basthi Davakhana* of *Telengana* that people prefer government primary care facilities over hospitals, if there is assurance of availability of services.^[11,12] Similar findings have emerged from other South East Asian countries, Brazil, Ghana and South Africa.^[13,14] *Ayushman Bharat* initiative is a strong step towards strengthening CPHC to achieve UHC. The current study assessed the readiness of the health system to provide services as under the HWC guidelines and identify operational challenges and gaps that would need to be addressed for streamlining establishment of HWCs.

Table 2: Observations made at HWCs

HWC Input area	Observations
Human Resources	Cooperation among HWC staff is a challenge area observed at most HWCs. Allocation of additional duties to MPW-M at other facilities and absence of MPW-M in some centres posed a problem in their regular duties at the center.
Biomedical Waste Management	HWCs lacked color coded bags Disposal of sharps was done at the block PHC HWC team members transported the waste to PHC from where it was collected by the biomedical waste disposal agency.
Reporting	A lot of variation was observed in record maintenance and formats at different HWCs. While some records were not maintained by either CHOs or ANMs while there were some records that were being maintained in duplicate in some centres.
Financing	Nearly 65% of the HWCs had not received untied funds. Permitted utilization of funds was reported to be unclear among some CHOs. The concept of team incentive was not completely understood by all any of staff of HWC staff.

The study conducted after a year of operationalization of HWCs in Punjab revealed that there had been deployment of CHOs at almost all centres after a six-month bridge course. The HWCs provided OPD services, screening of NCDs apart from the conventional maternal and child health services. It is however important to continue the progress to expand the services to other five packages of CPHC and prepare HWCs to meet the local health needs. A few key areas that affected service delivery included staffing, infrastructure, medicine supply, referral mechanisms and community participation. Lack of resources, poor referral systems, low client-provider interaction and low perceived quality of care leads to poor performance of primary healthcare systems.^[15,16] The HWCs need to be sufficiently staffed according to population norms to deliver the expanded range of services.^[17] Insufficient staffing of sub centres has been observed in previous studies which stated the deficiency of Multipurpose health workers female and male to the extent of 50% and 66% respectively.^[18] It is also important to look beyond numbers and create a workforce that is properly oriented towards their roles and trained adequately.^[19] Our findings show an urgent requirement of effective trainings for both CHOs and ANMs to provide quality care. It was observed that there was a need to build a team spirit among the staff and reorientation was required towards the concept of team incentives. The philosophy of teamwork is considered strength of the HWC programme as a shift from doctor centred care, but conflicts between different cadres acts as a threat to the initiative.^[20] A study with similar findings suggested that regular trainings, cooperative staff members and support from higher authorities may improve the performance of CHOs and HWCs.^[21]

Major gaps existed in infrastructure, and supply of medicines, which inhibited the staff from providing full range of services at the HWCs. We observed that only 34% HWCs

had an independent building. This was similar to a study in Andhra Pradesh where 41% centres were located in designated government buildings.^[22] A proper referral mechanism was required for connecting referred patients with higher facilities to enable a continuum of care. Since focus has shifted from fragmented to long term care, establishing this linkage and strengthening secondary and tertiary care facilities is important to retain the trust of people in public health facilities and sustain utilization.^[23] Community engagement has been an integral part of successful primary health care models,^[23] therefore it should be prioritized through active participation of community members in HWC activities by increasing health literacy, promoting service feedbacks, enhancing involvement in decision making for service delivery etc.

The state of Punjab presents a special case for establishment of HWCs given its high dependence on private healthcare with only 14.5% outpatient consultations and 29.4% hospitalizations in the public sector.^[24] Another distinction is the multiplicity of stakeholders within the government healthcare set up including Directorate of Health Services, Punjab Health Systems Corporation, the National Health Mission, the Rural Development Department in rural areas and Municipal Corporations in urban areas. Punjab made a head start in establishment of HWCs being listed among the top 5 in the National Health Mission performance index in which one of the assessment parameters was operationalization of HWCs.^[25] The case of establishment of HWCs is based on strengthening six pillars of the health system and it is imperative to work on all these building blocks simultaneously.^[13,26,27] Some of the issues may be addressed at the local level, while others will require coordination between State and Central Departments of Health.

There is a dearth of original studies on assessment of HWCs and most literature presents viewpoints, reviews, and editorials on the concept. This study presents real world scenario and shares findings which should be prioritized before moving forward with the planned strategies. It brings into light the obstacles faced by primary care staff in effective delivery of services, which lead to low satisfaction among the primary health care staff as well as the community. The strengthening of PHC should be based on principles of efficiency and effectiveness. It is essential to work on all the areas synchronously to ensure that trained staff does not have to sit idle waiting for upgradation of centres or vice versa. However, the findings of this study must be seen in the light of certain limitations. This study was conducted in one block of Punjab state and the operational status of HWCs may vary in other regions of the state. The two study components were conducted over a span of six months, it is possible that the status of some centres may have changed since the first evaluation, however since all centres of the block were included, the sample consisted of centres at varied level of implementation, therefore we expect we have provided a fair representation.

AB-HWC programme has been considered as the second biggest reform in health system after National Health Mission. The

challenges with respect to human resources, financing, and service delivery pathways for expanded range of services would need to be addressed to achieve the goal of CPHC. Our study provides focal operational gaps and bottlenecks for strengthening of CPHC. A systematic and proactive approach in the identified key areas will help to eliminate organizational and technical inefficiencies during implementation process and lead to faster translation of policy into action. The effectiveness and success of AB-HWCs would depend on both supply and demand side interventions, as increased investment for provision of adequate infrastructure and consumables, capacity and team building of staff, appropriate use of information and communication technology, community engagement, provision of locally adapted services to meets the needs of the population and creation of effective referral linkages. Addressing these gaps would enhance quality of service, service utilization, patient satisfaction which in turn will lead to improved population coverage, reduced out of pocket expenditure, decongestion of secondary and tertiary care facilities and ultimately universal health coverage.

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Key Message

This study highlights the operational gaps for the implementation of comprehensive primary health care through Ayushman Bharat Health and Wellness Centres (HWCs) in Punjab. It presents vital information for program managers and policy makers, as well as primary care practitioners, to understand and address local implementation problems in order to streamline the roll out of the program. Addressing these gaps would help achieve the outcomes of improved population coverage, reduced out of pocket expenditure, decongestion of higher facilities, and ultimately universal health coverage.

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Conflicts of interest

There are no conflicts of interest.

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