Original Article

What makes primary healthcare facilities functional, and increases the utilization? Learnings from 12 case studies

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Abstract

Background: The last few decades have witnessed a number of innovative approaches and initiatives to deliver primary healthcare (PHC) services in different parts of India. The lessons from these initiatives can be useful as India aims to strengthen the PHC system through Health and Wellness Centers (HWCs) component under Ayushman Bharat Program, launched in early 2018. **Materials and Methods:** Comparative case study method was adopted to systematically document a few identified initiatives/models delivering the PHC services in India. Desk review was followed by field visits and key informant interviews. Twelve PHC case studies from 14 Indian states, with a focus on equity and "potentially replicable designs" were included from the government as well as the "not-for-profit" sector. The cases studies comprised of initiatives/models having the provision of PHC services, whether exclusively or as part of broader hospital services. The data was collected from May 2016 to March 2017. **Results:** The "political will" for government facilities and "leadership and motivation" for "not-for-profit" facilities adjudged to contribute towards improved functioning. A comprehensive package of services, functional 'continuity of care' across levels, efforts to meet one or more type of quality standards and limited "intention to availability" gap (or assured provision of promised services) were considered to be associated with increased utilization. A total of 10 lessons and learnings derived from the analysis of these case studies have been summarised. **Conclusions:** The case studies in this article highlights the components which makes PHC facilities functional and have potential for increased utilization. The article underscores the need for institutional mechanisms for health system research and innovation hubs at both national and state level in India, for the rapid scale of comprehensive primary healthcare. Lessons can be applied to other low- and middle-income countries intending to deliver comprehensive PHC services to advance towards universal health coverage.

Keywords: Ayushman Bharat Program, case studies, India, primary healthcare, universal health coverage, urban health

Introduction

Primary healthcare (PHC) is considered the foundation of any well-functioning healthcare system. The need for stronger PHC was first highlighted during the Alma Ata Conference in 1978[1] and then reinforced once again through the Astana Declaration of 2018.[2] As the global public health community aims to advance universal health coverage (UHC)[3] and achieve health-related sustainable development goal 3 (SDG-3),[4] effective PHC systems are being considered an integral part of the process. Many low- and middle-income countries (LMICs) such as Thailand and Brazil, prioritized and strengthened PHC systems, years before moving to other strategies to achieve UHC.[5,6] The Government

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of India started expanding the network of the PHC system in a rural area, soon after Alma Ata conference in 1978. Nearly 40 years since then, there is an extensive network of nearly 200,000 government primary healthcare facilities (GPHCF) in both rural and urban parts of the country. Yet, this vast network of GPHCFs delivers around 3.5% and 11% of total out-patient services in urban and rural India, respectively, excluding the services for mothers and children.[7] The health services for emerging challenges such as noncommunicable diseases are often not available. Recognizing the challenges of underutilized facilities and limited provision of health services, Indian government set up a task force on PHC in 2015.[8] The task force recommended, inter alia, to study the models or newer initiatives to deliver PHC services in the country. Therefore, this study was conducted to document the common characteristics of initiatives and models of PHC in India, which have been aiming to reach the poor and marginalized. The second objective was to derive lessons on what makes PHCs functional and results in the increased utilization. It was done with expectations that the finding may help in designing and developing new approaches to deliver comprehensive PHC services in Indian states.

Materials and Methods

The study included the models/initiatives which had focus on reducing inequities and increasing access to health services by the marginalized and underserved from the public, private, and not-for-profit sectors. There was an explicit attention to include those initiatives which aimed at reaching the poor and focused on low-cost yet quality PHC services. The case studies were also chosen to ensure geographical representativeness as well as initiatives known for innovations (in PHC service delivery).

The initial list of models/initiatives was developed, following a series of discussions with the health policymakers, national program managers, and subject experts. For data collection, a mixed-method approach of desk review; field and/or facility visits; in-depth interviews, and group discussions were adopted. The data was collected on a pretested structured interviews schedule. Considering the variation in these models and type of data available, "comparative case studies" approach was adopted for documentation and analysis.[9] The initial desk review, field visits, and primary data collection were completed from May 2016 and March 2017. The preliminary findings were presented in a consultative workshop in May 2017, which was attended by study investigators, program officials, subject experts, and senior health policymakers. The inputs received were used for further refinement in analysis and interpretations. Though 15 such initiatives were studied in detail,[10] this paper is based on 12 of those case studies. Three case studies were excluded at the stage of writing this paper, for the non-comparative and the variable quality of information. The 12 case-studies included were from 14 states of India, which represent nearly 78% of the Indian population. The number of states was higher than the number of case studies, as a few initiatives were based upon facilities from more than one state. The terms 'initiatives' and 'models' have been used interchangeably in this article, as often referred by health officials and program managers in Indian states while referring to the case studies detailed.

Results

A majority of the case studies included in this article were exclusively focused on delivering the PHC services, a few were secondary level facilities delivering PHC services and two were tertiary care facilities, delivering a large volume of primary care services [Table 1].[11] It was noted that these case studies had a few common characteristics [Box 1], and possible learnings for India and other LMICs, which are summarized below:

1. **Provision of a 'broader packages of services' is the first step towards increased utilization of health facilities and services.** The case studies which had relatively higher utilization provided broader package of health services beyond maternal and child health (MCH), later is the case with a majority of PHC facilities in India. The facilities with services that cater to the health needs of the entire family and all age groups had higher utilization than those mainly focused on specific target populations. All "not-for-profit" initiatives included in these case studies had a broader range of packages and higher than average utilization. In contrast, the public-private partnership (PPP) models and most GPHCFs, provided selective care. The facilities which were less utilized- in their catchment areas- there was a considerable burden of healthcare needs without appropriate services, and this was perceived as poor quality and had low credibility and utilization.
2. **Assured provision of services offered and/or "intention - provision assurance" increased utilization.** Facilities with assured availability of services and providers had higher utilization and sustained patient attendance. This can be called "intention–provision assurance" at the facility level. In other words, if the intended health service was being provided, it resulted in the increased utilization. It was noted that the popularity and higher use of secondary and tertiary care facilities for PHC services were partially due to a broader range of services and some assurance on the availability of those services.
3. **Well-performing facilities were, almost always, better harmonized with a secondary level of services and focused on "continuity of care."** A functioning referral system for ensuring continuity of care was reported as a key factor for increased utilization. In one case study, the formulation of a treatment plan for chronic diseases was done in consultation with the providers at two levels (primary and secondary) and was followed by the clearly laid down procedures and standard treatment protocols, to ensure that need for specialist consultation was met seamlessly. Another model used telemedicine efficiently to ensure "continuity of care." Even with the adequate provision of PHC services, insufficient support

Table 1: Key features of case studies included[9,11]

	Name and location	Start year and type of ownership	Approx. catchment area and population being covered	Level of services and provision	Key features of financing	Key learnings
1	Jan Swasthya Sahyog, Bilaspur, Chhattisgarh	1999, Private, Not for Profits	35,000- catered to, by four health and wellness centers	Comprehensive primary healthcare services with continuity of care	Supported by a mix of external grants and affordable "fee for services"	Locally trained youth as health human resources; Multiple approaches to the continuity of care; Addresses social determinants of health through effective community engagement.
2	The Health spring Clinics; Mumbai	2011, Private, Commercial	36 Clinics about 250 members each- 8000 members in all	Comprehensive PHC services through a team of specialists.	A business model based upon an annual fee paid by members, choosing from different packages of care. Investors and concessional bank loans	PHC services are also the need of the middle income population. If quality PHC services are provided, the middle-income population has some ability and willingness to pay. Important to keep PHC services comprehensive and ensuring diagnostics and referral support
3	Public-Private Partnerships in Uttarakhand	2013, Private, Commercial	12 community health centers- intending to cater to about 1 million population	Provide clinical care- both primary and secondary level, leaving public health functions to the govt. providers	Government contracts in a private agency and outsources government CHCs to them.	PPP has a similar challenge of securing human resources as in the govt facilities. There is the limited capacity of government in contract drafting and management with regards to variable performance-linked payments.
4	Deepak Foundation's MCH Center, Vadodara, Gujarat	2006, Five centres Private, Not for Profit	Tribal blocks of Vadodara district- approximate population of 260,000	Only maternity and child care services, rest of out-patient by govt. providers.	A Corporate Social Responsibility (CSR) Initiative partners sharing in initial investment.	Motivated agencies can bring much-needed value addition in select areas of PHC services Finding and retaining health workforce remains a challenge
5	Aravind's Eye Care Hospital's Vision Centre Network, Madurai, Tamilnadu	1976, Hospital, Vision centers in 2004 Private, Not for Profit	3.5 million people through 60 vision centers	Focus on comprehensive vision care- preventive and promotive and curative	Fee for services with a strong element of cross-subsidy to reach the poorer population.	Major innovations using telemedicine for continuity of care Population-based care for a wide range of eye-diseases Innovative HR strategies
6	St. Stephens Community Health Center, Delhi	1981, Private, Not for Profit	About 70,000 population	Comprehensive PHC services with strong secondary care support.	Capital investment on donations. Running costs supported by cross-subsidy. No user fees for primary care.	Population-based data and registry Comprehensive care including innovative care for the elderly and rehabilitative care
7	Mission Hospitals and facilities: Holy Cross Hospital Jashpur, Chhattisgarh; Ruxaul, Bihar;	Private, Not for Profit 1958- Jashpur; 1941, -Ruxaul; 1955: Oddanchatiram; 1970: Amboory,	Administrative block or tehsil where situated- about 100,000 to 200,000	Combination of facility-based primary and secondary care with varying levels of outreach services.	Capital investment based on donations. Running costs recovered from user fees. Differential pricing and cross-subsidy to reach the poor.	Facilities find it difficult to balance sustainability and inclusiveness. Use of grants for capital investment help.

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	Name and location	Start year and type of ownership	Approx. catchment area and population being covered	Level of services and provision	Key features of financing	Key learnings
	Oddanchatram, Tamil Nadu; Amboory , Kerala			Act as referral support to primary care for both public and private providers		Successfully address HR issues using a combination of local skilling and a positive workforce environment.
8	Shaheed Hospital, Dilli Rajhara, Chhattisgarh and Peoples Polyclinic Nellore, Andhra Pradesh	1960 Private, Not for profit- run by pro-poor political worker- organizations	Mainly population in that district- but also anyone coming to seek care at these facilities	Affordable primary and secondary healthcare and referral support to both public and private primary care providers.	Capital investment based on donations and some savings. Running costs recovered from very low user fees.	Ownership by people ensures continuity of any primary healthcare model. Effective use of funds generated through Govt insurance scheme to cross-subsidize poor but not insurance (Shaheed Hospital)
9	JIPMER, Puducherry and King Edwards Memorial Hospital (KEM), Mumbai	1956, Public Sector	Whole region for secondary and tertiary care- and primary care for surrounding districts and urban areas.	Advanced tertiary care hospitals- yet about 60% to 80% patients attend these facilities for primary care needs	Budget financed by government. Small supplementation from publicly funded health insurance.	Comprehensive care for many PHC needs. Often the first port of affordable care for the poor. The high degree of trust in providers
10	Mohalla Clinics of Delhi	2015, Public Sector	Nearly 130 clinics by mid 2017 Each for 10,000 population	Medical doctor, nurse, pharmacist and attendant. Medicines and diagnostics that cater to common ailments	Budget financed. Doctors and nurses could be govt employee or contracted in and paid by the government on "Fee for service" basis	Situated close to the community. Assured service provision and medicine and diagnostics available along with referral Population-based preventive care mostly through referral Private sector engagement through a series of innovative partnerships
11	District Hospital, Shillong, Meghalaya,	1935, Public Sector	Caters to nearly 500,000 people	Comprehensive secondary care services	Budget financed.	Comprehensive services. Quality assurance system in place.
12	Government Primary Health Centers in 4 states: Meghalaya; Maharashtra, Tamil Nadu, Kerala	1960s, Public Sector	Each caters to about 20-40,000 population	A package of services- with mother and child and national programs focus along with add-ons	Budget financed.	These "best practice" primary health centers are proof that government facilities can deliver more than what is currently being delivered. Detailed learnings provided in the results section.

from specialist consultation at secondary levels affected the credibility and reduced the utilization. It can be argued that PHC services functioned well, only when well-linked to specialist and curative services.

4. **Assuring basic quality standards at government facilities improves patient attendance (possibly, satisfaction):** GPHCF in four states, considered as "the best" government primary health centers (GPHC) in the states (by the state officials, based upon various criteria including utilization) had either already fulfilled or were making active efforts to meet at least one of the existing and agreed quality standards. However, this was not applicable to the nongovernmental initiatives included in this study, which were mostly focused on meeting the self-defined quality criteria and were not always desirous of getting certification for quality standards. Experience shows that meeting quality standards in government facilities increases patient attendance; however, a few respondents in this study opined that the quality standards used for a health facility in a large city or district may not be applicable for a facility situated in a far and remote tribal district, with resource constraints.
5. **Innovative and creative approaches to address gaps and deficiencies in the health human resources works:** In the better performing and popular initiatives/case studies in the nongovernment sectors, except for doctors, all other cadres of health staff were "locally" (the geographical location and residence of person) recruited and trained or both. The training provided was also job-oriented and hands-on for their specific job roles. The availability of qualified doctors was a big challenge and "customizing incentives" to attract doctors and creating a value-based, positive workforce environment were reported as successful measures.

Box 1: Key learnings from case studies on primary healthcare in India

1. Provision of a 'broader packages of services' is the first step towards increased utilization of health facilities and services.
2. Assured provision of services offered and/or "intention-provision assurance" increases the utilization.
3. Well-performing facilities are, almost always, better harmonized with a secondary level of services and focused on "continuity of care."
4. Assuring basic quality standards at government facilities improves patient attendance (possibly, satisfaction)
5. Innovative and creative approaches to address gaps and deficiencies in the health human resources works and should be adopted more as routine
6. Utilization of computer-based health information system continues to remain an operational challenge. The equal attention should be on strengthening paper-based recording and reporting system.
7. "Leadership and motivation" at a small scale and "political will" at large scale contributes in making facilities functional
8. There is a need for focused interventions to increase community civil society and engagement and participation. This helps in increasing the functioning and utilization at all stage of service provision.
9. Access and choice of technologies, at present, is limited and the climate of innovation is not common at grassroot level primary health care facilities. These needs to be actively promoted beyond use of mobile and tablets based "Apps".
10. Increased utilization of GPHCFs is a lot dependent upon assured provision, an appropriate mix of providers, quality assurance, amongst other. These can be called "Secret-sauce" for increased utilization of GPHCF in India.

6. **Utilization of computer-based health information system continues to remain an operational challenge:** Almost all case studies were using computers and software for billing and diagnostic reports and very few were using the customized softwares for the entire range of care management. Almost all had recognized the role of digitization in the continuity of care (across levels) and across time (at the same level); however, the use of technology for health information systems (HIS) was limited. These were considered as resource-intensive, dependent upon many external factors such as assured power supply, need for maintenance, and not feasible in the immediate term and especially in underserved areas and settings
7. **"Leadership and motivation" at a small scale and "political will" at large scale contributes in making facilities functional**: Many of the initiatives studied, especially those of nongovernmental organizations, were started by motivated individuals (leadership). Overall staff motivation and performance at work were largely dependent upon the vision of the leadership of that facility/initiative. In a few case studies, the staff motivation was attempted to be ensured through selection of self-motivated individuals, their value to service, and willingness to work in those underserved settings. Most initiatives studied reported to have creating a work-culture, where people fulfilled their assigned responsibilities. Even for those facilities, which were in the government sector and performing better, it was both stronger political and administrative will as well as local leadership, which helped in improving performance. In some of the case studies in the government sector, it was political will at the top level, which contributed to improved performance and assured service provision.
8. **There is a need for focused interventions to increase community engagement and participation:** This was mostly limited to government initiatives. In a few places, community members were involved in the selection of the site for a facility (and thus the utilization of such facilities was reportedly higher). The role of the community in the prevention of noncommunicable diseases was encouraged in a few case studies. Community engagement was considered an integral part of the process, especially when the case studies had a specific focus on addressing social determinants of health. However, there was a perceived need for increasing community engagement in all aspects of service delivery.
9. **Access and choice of technologies were restricted, and a climate of innovation not common**: In a few case studies, the challenges in service delivery were attempted to be tackled through local and frugal innovation. One of the cases studies had innovations documented for the infection-free environment; lowering the cost of diagnostics, and the use of information and communication technology (ICT) for continuity of care. Another case study demonstrated a few technological innovations including indigenously manufactured intraocular lenses (IOL) and eye suture. This tertiary care facility was also delivering PHC services using innovations like telemedicine and e-prescriptions.
10. **"Secret-sauce" for increased utilization of GPHCF is 'nearly' revealed**: One of the case study was of 10 GPHC in four states, namely, Kerala, Tamil Nadu, Maharashtra, and Meghalaya. These are relatively better performing states as far as PHC services are concerned. Health facilities included for this case study were purposively selected, in consultation with state officials who identified these GPHCs as amongst the best in their states. Common characteristics identified amongst the best performing GPHC included: (a) assured provision of services promised with a few additional services; (b) sufficient availability and mix of providers; (c) continuum of care for all services available; (d) any form/stage of certification in quality standards; (e) strong facility-level leadership; and (f) functional community engagement and participation.

Discussion

In India, strengthening PHC services received renewed priority since 2005 with the launch of the National Rural Health

Mission (NRHM) and then the National Urban Health Mission in 2013, for rural and urban areas, respectively.[12-15] These initiatives have been further supplemented by the work of the high-level expert group (HLEG) on UHC in India[16] and the release of India's national health policy (NHP) in 2017.[17] In February 2018, the Government of India announced Ayushman Bharat Program (ABP) with one of two components being Health and Wellness Centres (HWCs).[18] The HWC aims to strengthen and provide comprehensive and population-centric PHC services.[19] As the initial planning and deliberations on HWCs started in mid-2013, before the launch of the initiative in mid-2018, many of the learnings from these case studies had been shared with senior health policy makers and had contributed to the design of HWCs in India.

Since mid-2017, when data collection for these case studies was completed, a few Indian state governments have launched additional initiatives to expand PHC services. Kerala has started the Family Health Centres (FHC) in rural areas with the concept of family physician and by engaging the elected local government bodies, who will bring other social sectors (social justice, education, agriculture, water supply, and rural development) under one umbrella in delivery of PHC services. There is an emphasis on more medical officers and nurses at FHCs.[18] The Greater Hyderabad Municipal Corporation (GHMC) in Telangana state has started Basthi Dawakhana since April 2018, which arguably are the first urban local body led community clinics in India. Basthi Dawakhana brings state health department, the Mission for Poverty Elimination in Municipal Areas (MEPMA) and the urban local body together to deliver PHC services and has potential to become a model for convergence amongst multiple agencies and improved urban health governance, to improve urban PHC services.[20] Tamil Nadu state piloted UHC model to strengthen the health subcenters, without altering much of its existing policies and making all components tailor-made for public health system needs. The UHC pilot in Tamil Nadu had shown reduced out of pocket expenditure and increased utilization of GPHCF in a short span of a year.[21]

India's latest national health policy (NHP) has proposed to increase the government spending on health as well as to expand the comprehensive PHC services.[18] As part of implementing proposals in NHP, and under ABP, the country has set a target of making 150,000 HWCs functional by December 2022. The learnings from the case studies in this article and other emerging models, can provide important lessons for scaling up of the HWC. Understandably, a few of these initiatives/models (including those not covered in this article) need to be studied in greater detail, factoring in the cost-effectiveness dimension as well.

The case studies in this article provide empirical evidence on the importance of secondary and tertiary level facilities in the effective delivery of PHC services through well-functioning referral linkage. The case studies provide supporting evidence for the emerging consensus on breaking the "outmoded dichotomy" of primary and other levels of healthcare and underscore the need for better linkage.[22]

The role of research in advancing UHC is widely recognized.[23] In the last few months, since the completion of these case studies, there has been renewed focus and attention in India on documentation and design of the new models and approaches to deliver primary healthcare based upon available evidence and expert consultations.[24,25] Fresh from Astana 2018, as there is already focus at both global[26] and regional level,[27] the search for evidence and the policy priority to strengthen PHC system in India needs to be continued. Therefore, this work should be considered as beginning of the process to generate additional evidence, both quantitative as well as qualitative, to support the evidence-informed policy formulation and program implementation process in India.

These case studies and the need for additional and timely evidence for stronger PHC services, as described in earlier paragraphs, underscore the need for establishing institutional mechanisms so that the policy questions in need of answers are identified; a robust system for operational research, documentation, and concurrent evaluations is put in place and the solutions are based upon ongoing learnings and evidence. Such mechanisms needs to be supported by health systems research, as being envisaged under the national knowledge platform in India.[28,29] There is a strong case for the institutional mechanisms for health system research and innovation hubs, both at national and state-level with sufficient opportunities for cross-learning and sharing.

The challenges in scaling up of HWCs and strengthening PHC services need to be addressed timely and innovative ways. In this context, the 'policy labs' organized by the Ministry of Health & Family Welfare, Govt of India with WHO and other development partners on 12 Dec 2019 at New Delhi, on the occasion of the International Universal Health Coverage (UHC) Day 2019, could be a good model and approach to follow. In these structured 'Policy Labs', the identified experts and participants deliberated upon emerging operational and health policy challenges in scale up of comprehensive PHC services in three broad thematic areas of "Communitization and wellness"; 'Comprehensive PHC services in urban areas' and 'Strengthening service delivery for provision of an expanded package of services'. It is hoped that such dialogue between experts, academicians, practitioners, and policy makers engagement would contribute to accelerated scale up of comprehensive PHC services in India. This approach of policy lab need to be continued and can also be taken up by Indian state governments to improve PHC services in their settings.

In 2018, before Astana Conference, a few case studies on PHC were released.[30] A global initiative regularly analyses and publishes the lessons on common characteristics of a better functioning PHC system.[31] While the approach and methods of the case studies in this paper are somewhat different, this article

provides additional evidence for accelerating global progress to strengthen PHC services.[32]

There are a few limitations of the evidence presented in this article. The method of comparative case studies, used for this work, is ranked lower in the hierarchy of evidence. Second, there was, by design, limited attention on collection of quantitative data on health outputs or outcomes. The research teams followed qualitative and subjective approaches for documentation, as the focus was on understanding how these successful models had addressed some of the well-known "problematics of establishing PHC systems."

Finally, in this article, the authors have used the terms "models", "initiatives" and "case studies" interchangeably, for simplicity of language and ease of understanding; however, they are fully aware that each case study needs to be further examined before being termed as "model for replication." In this backdrop, though observations from these case studies need to be cautiously interpreted, the studies do bring out the wealth of learning from the diversity of PHC service delivery experiences within India.

Conclusion

A wide range of initiatives/models to expand the provision of PHC services have emerged in India, in the last few decades. Many of these initiatives have focused upon the under-served and poor populations. The case studies included in this article provide the archetype of inclusive & comprehensive primary healthcare, 'where healthcare for poor is not poor healthcare'. The popular models/initiatives, both in public and nongovernmental sectors have a few common characteristics, which can be used as guiding steps to scale-up and deliver comprehensive primary healthcare (CPHC) services through HWCs in India. There is a need for more implementation and health systems research, preferably through institutional mechanisms for operational research with multi-stakeholder engagement. The lessons could be used by other low- and middle-income countries, with similar challenges, to advance and accelerate progress towards universal health coverage.

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Author contributions

CL, TS, RRV, MJ were involved in designing of this study. CL, TS, and HDG, prepared the first draft, which was reviewed by all other authors (RRV, GSA, MJ, and HB). All authors were involved in data interpretation, analysis, and review of the final draft, which was approved by all authors listed.

Disclaimer

The affiliations in this paper reflect the author's institutions at the time of completion of the study in mid-2017. TS and MJ had a change in their affiliations since then. At the time of publication of this paper, MJ was with the World Health Organization South-east Asia Regional Office based at New Delhi. CL, HDG, MJ, and HB are the staff member of WHO. The views expressed in this article are those of authors and does not reflects the views and opinion of the institutions/organizations they are or have been associated in past or at present.

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Conflicts of interest

There are no conflicts of interest.

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