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Review Article

Strengthening urban primary health care in India: a critical appraisal of evolving service delivery models

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ABSTRACT

Urban India is facing a growing burden of non-communicable diseases, migration-linked vulnerabilities, and overdependence on tertiary care. While the National Urban Health Mission (NUHM) was launched to strengthen urban primary health care, its implementation has varied across states. This review presents a critical appraisal of evolving urban PHC models such as Delhi's Mohalla Clinics, Hyderabad's Basti Dawakhanas, Maharashtra's Aapla Dawakhana, Karnataka's Namma Clinics and Rajasthan's Jan Arogya clinic. This review presents a comparative analysis of five state-led urban PHC models implemented between 2015 and 2023. Data sources included official implementation guidelines, state reports, NHSRC best practice compendia, and peer-reviewed articles. The models were selected based on visibility in policy discourse, geographic representation, and documented field experience under the NUHM framework. The analysis highlights key gaps in staffing, digital infrastructure, governance, and alignment with Indian Public Health Standards (IPHS). While some models offer promising examples of decentralized, community-responsive care, they remain limited in scope, scalability, and integration with existing health systems. Most facilities suffer from inadequate infrastructure, fragmented referral linkages, and a lack of standardized human resource norms. The paper recommends a harmonized urban PHC strategy anchored in IPHS, a dedicated HR policy for urban areas, digital health integration, and financial sustainability mechanisms. A renewed focus on equity, digital readiness, and convergence with urban development and social protection schemes is essential to make UPHCs the first point of contact for urban populations. This review highlights key enablers for strengthening UPHCs as the cornerstone of India's urban health system.

Keywords: Urban health, NUHM, UPHC, UAAM, UHWC, Digital health, Governance

INTRODUCTION

India is experiencing rapid urbanization, with over 35% of its population projected to live in urban areas by 2036.[1] This demographic shift has led to increased demand for accessible, affordable, and quality healthcare in urban settings. Despite significant progress in rural health systems, urban primary healthcare remains underdeveloped, underfunded, and fragmented.

Urban poor populations, particularly those living in slums and informal settlements, face multiple barriers to accessing healthcare, including high out-of-pocket expenditure, lack of awareness, limited-service availability, and poor referral linkages.[2] Public sector urban health facilities are often overcrowded, inadequately staffed, and poorly equipped. As a result, tertiary hospitals are overburdened with minor ailments that could be addressed at the primary level.[3]

Recognizing these gaps, the Government of India launched the National Urban Health Mission (NUHM) in 2013 as a sub-mission of the National Health Mission (NHM), aiming to strengthen the primary healthcare system in cities through urban primary health centres (UPHCs) and outreach services.[4] While NUHM provided a framework,

states have implemented urban PHC models with varying designs, operational structures, and degrees of success. Some states introduced their innovations, such as Mohalla Clinics in Delhi, Basti Dawakhanas in Telangana, and Aapla Dawakhana in Maharashtra.

METHODS

This article is a narrative review of urban primary healthcare delivery models implemented in India between 2015 and 2023. The objective was to critically assess their design, functionality, and replicability in the context of the National Urban Health Mission (NUHM). The models selected represent a mix of state-led and centrally guided innovations. Sources included official policy documents, government implementation guidelines, NHSRC compendia, peer-reviewed publications, and grey literature such as state annual reports, media summaries, and field assessment findings. Comparative domains were identified based on the Indian Public Health Standards (IPHS 2022), the NUHM framework, and common implementation challenges identified by the NHSRC and state reviews. The review used a thematic framework covering infrastructure, human resources, digital integration, referral linkages, community engagement, and financing mechanisms.

Healthcare model descriptions

The review covers five state-specific urban PHC models that demonstrate diverse strategies under the broad umbrella of NUHM.

Mohalla clinics – Delhi

Launched in 2015, Mohalla clinics are neighbourhood-level facilities offering outpatient services, basic diagnostics, and free medicines. They aim to decentralize care delivery and reduce the burden on tertiary hospitals. Staffed by a single doctor and nurse, most clinics function out of pre-fabricated cabins placed near high-footfall urban slums. Services are limited to outpatient consultations, with weak referral integration.

Basti Dawakhanas – Telangana

Initiated in 2018 by the Greater Hyderabad Municipal Corporation, Basti Dawakhanas deliver services to about 10,000–40,000 people per unit. The clinics offer general OPD care, NCD screening, diagnostic tests, and pharmacy services. Most are housed in converted community buildings and have better infrastructure and lab services than many UPHCs. They are closely linked to state diagnostic hubs and secondary hospitals through digital referral mechanisms.

Aapla Dawakhana – Maharashtra

Started in Mumbai in 2022, these clinics are co-located with municipal facilities or housed in rented spaces. They cater to 10,000–20,000 people, provide NCD and general outpatient services, and integrate with the municipal referral system. The model includes unique digital prescription software and data dashboards monitored by the Brihanmumbai Municipal Corporation.

Namma clinics – Karnataka

These are functional UPHCs rebranded under the Namma Clinics initiative in urban and semi-urban areas, with enhanced digital tracking and a broader mandate for outreach, IEC, and public health reporting. The model attempts convergence with local municipal wards and public grievance systems.

Jan Arogya clinics – Rajasthan

These facilities were launched in urban areas as part of the state's Mukhyamantri Chiranjeevi Swasthya Bima Yojana. The model emphasizes co-location with wellness services, diagnostics, and pharmacy access. They cater to nearly 20,000-30,000 people and aim to improve linkages to empaneled secondary hospitals under the state insurance scheme.

RESULTS

The comparative overview highlights the diversity of UPHC models across states. While each reflects context-specific innovations, they also reveal recurring structural and operational challenges. It also focuses on systemic gaps across five critical domains: infrastructure, human resources, digital systems, governance mechanisms, and service utilization.

The reviewed urban PHC models reveal diverse design elements but share common systemic challenges that limit their efficiency, scalability, and sustainability.

Over the past decade, several Indian states have implemented innovative models of urban primary health centres (UPHCs) under NUHM or through state-supported schemes. These models vary in terms of institutional arrangements, service delivery, human resources, infrastructure, and digital integration. While some models have expanded rapidly, others remain limited in scale or functionality (Table 1).

These models share the objective of improving primary healthcare access in underserved urban areas, but their effectiveness varies. Telangana's Basti Dawakhanas are notable for their integration with digital health platforms and referral hospitals, while Delhi's Mohalla Clinics are widely visible but face limitations in infrastructure and data use.[5,6]

Aapla Dawakhana in Mumbai offers decentralized care with local government ownership, but struggles with standardization and digitalization. Namma clinics and Jan Arogya clinics are relatively new and evolving.

Table 1: Presents a comparative brief of urban PHC models currently operational in India.

Model	State/city	Launc-hed	Avera-ge OPD/ day	Services offered	Staffing norms	Digital health integration	Referral linkages	Special features
Mohalla clinics	Delhi	2015	80–100	OPD, medicines, diagnostics	1 MO, one pharmacist, 1 ANM	e-Health card (limited use)	Weak; limited integra-tion	Community-based, portable cabins
Basti Dawa-khanas	Telangana (Hyderab-ad)	2018	50–150	OPD, diagnostics, NCD, tele-consultation	MO, ANM, lab tech, pharmacist	Linked to eSanjeevani ANM app	Strong with sec-ondary/ tertiary hospitals	Fully public-funded, linked with ULB
Aapla Dawa-khana	Maharash-tra (Mumbai)	2020	80–120	OPD, minor procedures, NCD, labs	MO, ANM, MPW	Paper-based, in transition	Limited	Municipal initiative under the HBT model
Namma clinics	Karnataka (Bangal-ore)	2022	70–90	OPD, minor ailments, health education	MO, ANM, pharmacist, group D staff	Basic digital tools	Weak, early phase	State-funded, focuses on the urban poor
Jan Arogya clinics	Rajasthan (Jaipur)	2022	50–100	OPD, diagnostics, NCD	MO, ANM, lab tech	Partial eSanjeevani linkage	Moderate	Co-located with wellness centres

Most models are unable to fully align with IPHS standards, especially in terms of infrastructure, HR norms, and referral protocols.[7]

DISCUSSION

Infrastructure and facility readiness

Most urban PHC models operate in constrained physical spaces, often repurposed rental buildings or portable structures. While this enables faster rollout, it compromises compliance with IPHS infrastructure norms, especially for space, ventilation, patient privacy, and biomedical waste management.[8]

For example, Mohalla clinics function in prefabricated cabins with limited space for diagnostic services or privacy during consultations. Aapla Dawakhana and Basti Dawakhanas are located in urban slums or transit hubs, often facing water supply and sanitation issues. Only a few states have ensured co-location of services or upgradation of permanent infrastructure, such as in Rajasthan's Jan Arogya clinics.[9]

Human resources and staffing norms

Almost all models face shortages of trained medical officers, pharmacists, and ANMs. There is no standardized urban health workforce policy. Contractual appointments, high turnover, and limited career progression opportunities further weaken service continuity.[10]

Moreover, there is no provision for trained public health managers or AYUSH doctors in most UPHCs, despite their presence in rural PHCs under NHM. This creates an imbalance between rural and urban staffing norms. Telangana and Karnataka have partially addressed this by recruiting pharmacists and ANMs through local health societies, but sustainability remains uncertain.[11]

Digital health systems and IT integration

Digitalization in UPHCs remains uneven. Few models have functional electronic health records (EHRs), diagnostic data capture, or integration with state-level health management information systems (HMIS).

Basti Dawakhanas in Hyderabad use the ANM app and are partially linked to eSanjeevani for teleconsultation, while Delhi's Mohalla clinics have introduced e-health cards but with limited functionality.[12] Most other models use manual registers or fragmented digital tools. A robust digital backbone is essential to enable referrals, monitor NCD follow-up, and improve health data analytics.[13]

Governance and inter-agency coordination

Urban health governance suffers from fragmentation. In many cities, health services are split between state health societies, municipal corporations, and urban local bodies (ULBs), leading to duplication and a lack of accountability.[14] Recent policy guidance from MoHUA on convergence under smart cities and AMRUT 2.0 recognizes the need for integrated urban health governance

models, recommending ULB-led digital dashboards and cross-sectoral committees.[27]

Some models are fully operated by municipal bodies (e.g., Mumbai), while others are managed under NUHM with limited ULB involvement. This disconnect weakens convergence with urban development programs like SBM, AMRUT, or UDAY. Strong governance structures and clear administrative ownership are essential for service integration and financing.[15]

Service utilization and public trust

OPD utilization in most urban PHC models remains below potential. While some clinics report 70–100 patients per day, many operate at sub-optimal capacity due to limited awareness, lack of diagnostic services, and unavailability of medicines.[16]

Community awareness campaigns, involvement of ASHAs or Mahila Arogya Samitis, and provision of diagnostics and NCD screening have been shown to increase utilisation in some states (e.g., Telangana). Building public trust through assured services and continuity of care remains a major challenge for urban PHC models.[17]

Way forward

Strengthening urban primary health care requires more than fragmented pilot models. India needs a nationally guided, locally responsive strategy to make UPHCs effective, equitable, and sustainable. The following priority areas can guide future reforms.

Develop a comprehensive urban health strategy

The Government of India should formulate a dedicated urban health strategy aligned with IPHS (2022) and Ayushman Bharat principles. This strategy should define minimum service delivery norms, referral protocols, infrastructure guidelines, and HR standards for all UPHCs, irrespective of state-specific innovations.[18]

Standardize human resource norms and strengthen the workforce

There is an urgent need to standardize staffing patterns for urban PHCs. States should create dedicated urban health cadres, ensure timely recruitment of medical officers, pharmacists, and ANMs, and provide training in public health and NCD management. In-service training partnerships with SIHFWs and public health institutions should be scaled up.[19] Contractual insecurity should be addressed by introducing blended financing and career progression pathways.

Invest in robust digital health infrastructure

A national digital architecture should be adopted for UPHCs, including unique patient IDs, electronic medical records, diagnostic reporting systems, and integration with eSanjeevani and the HMIS. States should invest in training staff and ensuring digital literacy at the facility level. The use of AI for population health monitoring and NCD tracking should also be piloted in urban areas.[20] This aligns with the vision of the National Digital Health Blueprint and the ABDM framework, which recommend interoperability, unique health IDs, and e-health records across all health facilities.[13,26]

Improve facility infrastructure and co-location of services

UPHCs must be housed in well-designed permanent facilities that comply with IPHS standards. Where space is limited, co-location with maternity homes, health and wellness centres, or community centres should be encouraged. Provision of diagnostics, pharmacy, and space for counselling must be ensured. Facilities should also be climate-resilient and accessible to persons with disabilities.[21]

Strengthen referral linkages and continuity of care

Urban PHCs must be embedded within functional referral chains. Clear linkages should be established with UCHCs, district hospitals, and medical colleges. Referral transport mechanisms, tracking systems, and digital alerts must be introduced to reduce bypassing and ensure the continuum of care, especially for NCDs, maternal health, and TB.[22]

Enhance community engagement and outreach

Community-based institutions such as Mahila Arogya Samitis (MAS) and ASHAs must be empowered through capacity building and performance-based incentives. Monthly outreach services, community dialogues, and health promotion activities should be institutionalized. Public awareness campaigns, IEC material, and grievance redressal mechanisms can help build trust and increase service utilization.[23]

Ensure financial sustainability and ULB participation

States should explore innovative financing models, including performance-based grants, convergence with urban missions, and public-private partnerships for diagnostics, logistics, and health promotion. Urban Local Bodies must be empowered and made accountable for health facility performance and quality. NUHM financing should be ring-fenced and increased to at least 15% of NHM resources in urbanized states.[24] The Fifteenth Finance Commission has also emphasized the role of ULBs in managing urban health grants through performance-based indicators.[28]

Institutionalize monitoring, evaluation, and learning

Routine monitoring of UPHC performance using digital dashboards, citizen feedback, and quality assurance checklists should be adopted. Periodic third-party

evaluations, patient satisfaction surveys, and public disclosure of performance data will improve transparency and accountability. A national repository of best practices and innovations should be developed to facilitate cross-learning between states.[25]

Limitations

This review is based on publicly available reports, secondary policy documents, and documented field practices. The availability of disaggregated performance data across states and periods limits the analysis. Due to the evolving nature of urban PHC models, some implementation experiences may have changed post-review. Nevertheless, the article provides a synthesised understanding of core systemic issues and opportunities relevant for policy dialogue and reform.

Five models were analysed—Delhi's Mohalla clinics, Telangana's Basti Dawakhanas, Maharashtra's Aapla Dawakhana, Karnataka's Namma clinics, and Rajasthan's Jan Arogya clinics. These were compared across thematic domains: infrastructure, human resources, digital systems, governance structures, and referral linkages. The review synthesises these insights to inform a forward-looking policy roadmap.

CONCLUSION

Urban primary health care in India stands at a critical juncture. As cities grow and health needs become more complex, strengthening UPHCs is no longer optional, it is a public health imperative. While various models such as Mohalla clinics, Basti Dawakhanas, and Aapla Dawakhanas have demonstrated innovative ways to reach underserved populations, they remain limited by fragmented governance, inconsistent standards, digital gaps, and human resource constraints. This paper has highlighted the urgent need for a harmonized and future-ready approach to urban PHC reform. The way forward lies in establishing a unified policy framework, supported by strong digital infrastructure, adequate financing, and empowered local bodies. Equally important is the mobilisation of communities, the creation of an urban health workforce, and the institutionalisation of quality assurance and data-driven decision-making. Strengthening urban PHCs must not be seen as a stand-alone intervention, but as part of India's broader commitment to achieving universal health coverage and health equity. With strategic investment, inter-sectoral collaboration, and sustained political will, UPHCs can emerge as the cornerstone of India's urban health system. They must evolve into accessible, accountable, and resilient institutions, trusted by the people and responsive to the urban health transition.

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