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Advanced Nursing Practice in Primary Health Care in India: Evolution, Current Status, and Challenges

Abstract

Advanced Nursing Practice (ANP) transforms Primary Health Care (PHC) by utilizing highly trained professionals like Nursing graduates, GNMs, ANMs, LHVs etc. to assess, classify, and manage (in order of urgency for referral with first aid bleeding control, relieving pain, or stabilizing the patient on priority or treat if case can be handled locally) both acute and chronic conditions in Primary Health Care system. This approach must be based on standard protocols and drugs dispensing, expands access to care, lowers overall costs, and alleviates the burden on traditional physician-led systems.

While initial empowerment for treatment of peripheral health workers in India began for fever cases suspecting all fever cases to be Malaria unless proved otherwise in 1961. The approach of minor ailments treatments empowerment for field health workers was introduced under Minimum Needs Program through training Health worker (HW Male & Female) under Multipurpose health workers scheme (MPHW) in 1974. Core Roles of Advanced Practice Nurses in PHC in Indian Health System took the designation of Community Health Officers (CHOS). Community Health Officers (CHOs) are a relatively new, specialized cadre of mid-level healthcare providers in India, established in 2018 under the Ayushman Bharat initiative. Their creation marked a historic shift to bridge the gap in rural healthcare access at Health and Wellness Centers (HWCs) called Ayushman Arogya Kendras, a vital step in unlocking people-centered primary healthcare.

Materials and Methods: This review is based on authors person experience from July 1968 till now as a public health practitioner in Karnataka State, until 1989, followed by UNICEF India's program officer between 1989-2006, as Freelance Public Health Consultant between 2006-2018 and as Professor of practice mentoring Masters in Public Health Scholars (MPH) in one of Karnataka's Government Public Health School till now. Recent observations of AAMs functioning are from field visits to mentor MPH scholars. The qualitative data is from visits to about 25 AAMs in 3 low performing districts of Karnataka (Kalburgi, Gadag, Yadgiri) and a few in UP, Bihar and MPs. The quantitative data for 5 key indicators - 1) Antenatal care 2) skilled birth attendance 3) Use of Brith Spacing methods 4 & 5) diagnosis and treatment for Diabetes & Hypertension at AWWs, is drawn from fact sheet of NFHS 6 and compared with similar data from NFHS 5 (2019-21) for Karnataka. The situation reflects only in lowly performing districts. It is neither a representative data of any State or Country, but situation is likely to be similar in most Hindi speaking States/and low performing districts in the entire country.

Outcomes: Overall contribution of CHO's has been of value add in running Outpatient care, postnatal care where CHO is female, continued and quality Antenatal care, screening for Diabetes and Hypertension and referral services in the last 4 years of the data availability.

Keywords & Abbreviations: Advanced Nursing Practice = **ANP**, Community Health Officers= **CHOs**, Health Assistants (Female & Male) = **HA (F &M)**, Senior

Review Article

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Health Assistants (Female & Male) = **SHA (F&M)**, Block Health Educators = **BHEs**, Ayusman Arogya Mandirs = **AAMs**

Introduction

The rapid and complex changes taking place in health systems worldwide continue to present opportunities for nurses to expand and advance their practice roles to better meet and respond to the needs of the people and systems they serve. Several forces like gaps in health service coverage, particularly in rural and remote communities; rising demand for specialized nursing roles; workforce shortages; escalating global burden of disease; and economic pressures and rising consumer expectations. Advanced nursing practice (ANP) is one of several diverse professional paths available to nurses. It has been estimated that close to 40 countries have established or are in the process of developing advanced practice nursing roles. Advanced Nursing Practice (ANP) transforms Primary Health Care (PHC) by utilizing highly trained professionals like Nursing graduates, GNMs, ANMs, LHVs etc to assess, diagnose, and treat both acute and chronic conditions in Primary Health Care system [1]. This approach expands access to care, lowers overall costs, and alleviates the burden on traditional physician-led systems.

Core Roles of Advanced Practice Nurses in PHC in Indian Health System took the designation of Multipurpose workers scheme in 1974, village health guides (VHGs) scheme in 1977 and Community Health Officers (CHOS) under National Health Policy 2017 and subsequent National Health Mission to achieve UHC by 2030). Community Health Officers (CHOs) are a relatively new, specialized cadre of mid-level healthcare providers in India, established in 2018 under the Ayushman Bharat initiative. Their creation marked a historic shift to bridge the gap in rural healthcare access by leading primary health care Team (PHCT) at Health and Wellness Centers (HWCs) called Ayushman Arogya Kendras, now a vital step in unlocking people-centered primary healthcare [2]. Th first pillar of provision and access to health services to address sickness were dependent upon medical degrees (MBBS, BAMS, BHMS) holders, who are certified to diagnose illnesses, conduct certain procedures and prescribe treatments as an independent physician after registering with State specific Medical Council. Whereas Nursing education (B.Sc., GNM) trains the individuals to execute these medical treatments, assist in procedures, and provide continuous care for hospitalized patients [2,3].

This article reviews the process of empowering peripheral heath workforce in India to cater to the need of sickness care at community level. It compares the long-standing service providers categories with recently inducted Nursing graduates designated as Community Health Officers (CHOs -M&F), at Ayushman Arogya Mandirs (AAMs). All CHOs are in contractual service, provide critical, decentralized care across thousands of sub-centers, navigate complex systemic challenges, administrative workloads, and challenges of working with Block Health Educator (BHEs) senior health assistants (M&F) and experience Health Assistants (F&M), and navigating referral pathways to higher hospitals This article analyzes the Public Health Nurse's advance nursing practice since 2018 and challenges [4].

Discussions

Empowering health workers for Presumptive and radical fever treatments were introduced in 1961 alongside the organized Active Case Detection (ACD) surveillance program of the National Malaria Eradication Program. Until 1974 Malaria Surveillance Workers (MSWs) were trained to take blood smears and administer a single dose of a 4-aminoquinoline to all fever cases, followed by Chloroquine and Primaquine (an 8-aminoquinoline) for radical treatment on confirmation of malarial parasites in the blood smears. The next empowerment of treatment of peripheral health workers was introduced under the Multi-Purpose Health Worker (MPHW) scheme, in 1974. MPHWs were provided with equipment and formal training to treat minor ailments at Sub Health Centers (SHCs). Starting 1980, various vertical programs like Diarrhea control program, ARI program, Homebase Newborn care program, and Integrated management of neonatal & Childhood illnesses (IMNCI) in early 2020's treatment protocols were developed and trained peripheral health workers, authorized to dispense drugs based on protocols of classifying conditions. These efforts evolved over time, culminating in the comprehensive primary care model initiated in 2018 [1,2,5].

India's history of empowering community health

workers to treat minor ailments relies on “task-shifting “relieving skilled doctors by training grassroots workers to provide frontline care. It has evolved from early policy recommendations into a formalized, national, Auxiliary Nurse Midwives (ANMs) and Lady Health Visitor (LHVs) led workforce. The Sokhey Sub-Committee (National Planning Committee, 1948) suggested creating an “army of grassroots health workers” to provide immediate first aid and simple medical treatments to tackle rural disease and poverty. Following the success of smaller demonstration projects, the Government of India launched the Village Health Guides (VHG- 1977)) scheme. These guides were locally selected individuals trained to provide both preventive and basic curative care to rural populations. Institutionalization under the National Rural Health Mission (2005), to overcome severe shortages in the human healthcare workforce, the government integrated community health workers into the newly launched National Rural Health Mission (NRHM). This era established the primary three-tier cadre of field-level workers: Auxiliary Nurse-Midwives (ANMs), Anganwadi Workers (AWWs), and Accredited Social Health Activists (ASHAs). The ASHA Workers (Accredited Social Health Activist (2005–Present) act as the primary interface between the community and public health facilities [5,6]. A brief tracking of empowering public health staff under Vertical Program initiatives for treatment include:

1. **Malaria Control Program:** The Government of India launched the National Malaria Control Program (NMCP) in April 1953. The NMCP was established to reduce malaria transmission nationwide. Core activities included i) active and passive fever case surveillance fortnightly by Malaria Surveillance workers (MSWs), providing anti-malarial treatments (Prophylaxis with Chloroquine for all fever cases and Radical treatment with Chloroquine and Primaquine talker for all blood smear reporting positive for malaria parasites cases, and annual indoor residual spraying (IRS) with DDT. The program was scaled up into the National Malaria Eradication Program (NMEP) to interrupt transmission entirely, leading to massive drops in cases. Following a resurgence of malaria in the 1970s, the program launched a Modified Plan of Operation (MPO). This overhaul decentralized and reorganized surveillance, specifically prioritizing early diagnosis and prompt treatment (EDPT). When it got integrated into MPW scheme female workers were also trained in making blood smear and do active surveillance.

2. **Village Health Guides (VHG- 1977)) scheme:** Under National Health Mission (NRHM) initially and the current National Health Mission (NHM), every village has a trained female worker selected directly from the community. Their formalized duties include providing first aid and basic treatments for minor illnesses (e.g., fevers, diarrhea, ARI, & operating as depot holders for essential health commodities like ORS, condoms, oral contraceptive pills, and iron/folic acid tablets. Health workers are increasingly tasked with providing basic screening, medicine compliance monitoring, lifestyle interventions for non-communicable diseases (e.g., hypertension, diabetes) and mental health.

3. **National Control of Diarrheal Diseases (NCDD) Program:** National Control of Diarrheal Diseases (NCDD) Program in 1980, was launched closely following the World Health Organization launch of the global Diarrheal Disease Control Program me in 1978. The program was started to combat high infant and child mortality rates by promoting standard case management, primarily the use of Oral Rehydration Therapy (ORT), It got integrated into larger health initiatives like the Child Survival and Safe Motherhood (CSSM) program in 1992. Today, the issue is tackled through the annual Intensified Diarrhoea Control Fortnight (IDCF) and the STOP Diarrhoea Campaign.

4. **The National Acute Respiratory Infection (ARI) Control Program:** The National Acute Respiratory Infection (ARI) Control Program was launched in India in 1990, to reduce the mortality and morbidity rates of ARI—specifically pneumonia—among children under the age of five. The program introduced standardized scientific protocols for case management, such as the use of co-trimoxazole antibiotics, and trained healthcare personnel and mothers to recognize early danger signs. Since 1992, the ARI Control Program was integrated into the Child Survival and Safe Motherhood (CSSM) program and later became a core part of the Reproductive and Child Health (RCH) initiative.

5. **The national Home-Based Newborn Care (HBNC) program:** HBNC was officially launched by the Government of India in 2011 under the National Health Mission. It mandated ASHAs (Accredited Social Health Activists) to conduct scheduled visits up to the first 42 days of life. The schedule of home visits days 0, 3, 7, 14, 21, 28, and 42) for newborns. Observe for respiratory rate, umbilical infection, etc.

6. **Home-Based Care for Young Child (HBYC):** Launched in 2018, this program extended the initial newborn care framework to children aged 3 to 15 months to focus on nutrition, development, and early illness detection.

7. **Integrated Management of Neonatal and Childhood Illnesses (IMNCI):** The Integrated Management of Neonatal and Childhood Illness (IMNCI) strategy was piloted in India between 2003 and 2005 under the Reproductive and Child Health (RCH) program. After a national consultation, the global IMCI strategy was adapted including neonatal care for India. Renaming it as IMNCI to place a stronger emphasis on neonatal health in 2003. Following the launch of the National Rural Health Mission in 2005, it was officially adopted and scaled up as a key community-based child survival strategy nationwide. The Indian version of the strategy and its training modules were finalized and officially launched, with early pilot programs initiating in selected districts.2005–2009. Following integration into the National Health Mission, the program aggressively expanded and was initiated in over 200 districts across the country, with skill-based training in hospitals and community foe 8 days the frontline workers like health assistants (M&F), LHVs, Sr, HIs, ASHAs & Anganwadi workers [7].

8. **Operational Guidelines for Elderly HWC:** The Primary Health Care team led by CHO would

- Identify care givers and empower them to take care of bed bound elderly [8].
- Ensure continuous psychosocial support to family members and other informal caregivers, of care-dependent elderly people.
- Impart training to caregivers in basic nursing skills of care of bedridden patients, wound care etc.
- Provide dietary advice like Oral supplemental nutrition etc. for undernourished elderly.
- Support use of assistive devices.
- Deliver home based geriatric care on the line of home-based palliative care & end of life care to those elderly requiring such services.
- Provide rehabilitative services at home for bed bound elderly, at HWC for others on a regular basis in consultation with physiotherapist at CHC/DH.
- Generate awareness in the community regarding modifications within the physical home environment to help reduce hazards that cause falls and fractures in the elderly.
- Organize health education camps to address basic issues like personal hygiene maintenance, nutritional counseling and explaining the associated risks to the caregiver.

Basic Rehabilitation Equipment's at AAMs under NPHCE

1. Shoulder Wheel*, 2. Wall ladder finger Exerciser**, 3. Finger Exerciser web 4. Free exercise weight cuff (0.5 kg, 1 kg, 1.5 kg), 5. Shoulder Pulley, 9. One wheelchair. 6. Walking aid for training – Adjustable Walker, Reciprocal walker, 7. Exercise Couch, pillow, towel, 8. Floor patterns may be designed having alternate patterns different color tiles (1 feet X 1 feet) so to help in teaching gait pattern/ visual feedback for neurological impaired geriatric patients. 10. Charts for teaching basic exercise for neck, back, shoulder, knee joint etc. 11. Chart for teaching basic positioning/posturing the patient suffering from hemi- neglect /GBS/ Spinal cord injury. 12. Spiro meter with disposable mouthpiece for those patients who need to perform breathing exercise multiple times in a day (Diagnosed cases of chronic bronchitis, emphysema, cystic fibrosis).

Operational Guidelines for NCD Management:

Village SHC-HWC PHC-HWC Data source- ASHA screening register through Form 1A by ASHA to SHC-HWC. ANM/ CHO screening register & Compiled all Form 1A; Reported through Form 1 by ANM/ CHO to PHC-HWC by last day of every month [9].

Response of Government of India for Achieving UHC: Government of India launched National Health Policy 2017 to address the challenges of Universal Health Care by 2030. Universal health coverage means that everyone in society will have access to basic healthcare services without the burden of paying a lot of money.

NITI Ayog, India had carefully studied and summarized the situation in 2015 as i) India shares 17.5 % of the world population & 2.4 % of the surface area, with a GDP (nominal) at current prices was $2,049.5 billion in 2014. ii) Health expenditure globally was about 1067.987 US$ (9.945% of GDP) and in India it was 75 US$ (4.7% of GDP) in 2014 as against 16 USD (4% of GDP) in 1995. iii) Out of Pocket (OOPs) expenditure on health globally was 18.15% & India 62.4%. Having analyzed the existing national health policy and programs it inferred in 2015 that almost exclusive focus of policy and implementation often masked the fact that all the disease conditions for which national programs provided universal coverage account for less than 10% of all mortalities and only for about 15% of all morbidities. 75% of communicable diseases were not part of existing national programs. Non- communicable diseases contributed 39.1%, communicable diseases to 24. 4% of the entire disease burden, Maternal and neonatal ailments contributed to 13.8%, and injuries (11.8%) constituted the bulk of the country's disease burden. But National Health Programs for non-communicable diseases were limited in coverage & scope, except in the case of the Blindness control program.

NHP2017- recognized the fact that the present health interventions are powerful enough to address the health challenges but the capacity of the existing health systems across the country particularly in remote rural & urban poor localities to deliver them in a comprehensive way, and on an adequate scale was doubtful and continues to be so even in 2026. To address the challenges NHP 2017 made 7 key Policy Shifts:

1. **In Primary Health Care:** From a selective care that had fragmented secondary / tertiary care to assured comprehensive Primary Health care that has continuity with higher levels
2. **In Secondary and Tertiary Care:** From an input oriented, budget line financing to an output based strategic purchasing.
3. **In Public Health Facilities:** From user fees & cost recovery based Public Hospitals to assured free, diagnostic and emergency services to all
4. **Infrastructure & Human Resource Development:** From normative approaches in their development to targeted approaches to reach under-serviced areas.
5. **In Urban Health:** From under-financed interventions to scaling up with a focus on urban poor, establishing linkages with national programs, achieving convergence among wider determinants of health.
6. **Integration of National Health Programs with health Systems:** NHPs for their own effectiveness and in turn strengthening health systems efficiency
7. **Strengthening Indian system (Ayurveda, Yoga, Unani, Siddha and Homeopathy-AYUSH) of health services:** ISM facilities which were stand-alone and demanded a three-dimensional mainstreaming to contribute for the health of the people.

UHC is founded on three pillars of access to services, financial risk protection, and quality and equitable healthcare delivery. A significant move in the direction of UHC in India is the Ayushman Bharat, which extends insurance coverage to vulnerable families. Health and Wellness Centers called Ayushman Arogya Mandirs enhance primary healthcare by laying emphasis on preventive and low-level curative care. UHC financial protection is intended to curb excessive out-of-pocket healthcare costs in India. Ayushman Bharat Digital Mission is a program that facilitates the use of digital health IDs and electronic health records to enhance access and continuity to healthcare. The major issues to be addressed are infrastructure, a lack of medical practitioners, and rural-urban inequalities. Full universal health coverage needs increased public spending on health, enhanced primary care and policy reforms.

The standard entry-to-practice modern evidence-based Allopathic medicine in India is the Bachelor of Medicine

and Bachelor of Surgery (MBBS). Alternative Indian Systems of Medicines (ISMs) offer includes BAMS - Bachelor of Medicine & Surgery in Ayurveda, Unani (BUMS), Siddha (BSMS) and Homeopathy (BHMS). On the other hand, Nursing education in India is a highly structured, progressive system regulated by the Indian Nursing Council, offering multiple entry points—from diplomas to doctoral degrees—with varying durations and eligibility criteria, designed to meet the growing demands of the healthcare sector [3]. Five-year plans after plans the investments in health services continuously declined and urban hospital-based services got priority over the rural 3-tier system proposed by Bhore Committee. The current framework includes several distinct educational tiers tailored to different healthcare roles:

i. ***Diploma & Certificate Programs ANM (Auxiliary Nurse & Midwife):*** A 2-year program focused on community health and basic healthcare services in rural areas. Requires passing the 10+2 level in any stream.

ii. ***Lady Health Visitors (Senior Health Assistant-Female):*** The main role of Health assistant female in Indian Public Health system as and continues to be to Supervise and guide the female health workers in the delivery of health care services to the community. GOI introduced the Minimum Needs Program in the Fifth Five Year Plan (1974), that recruited young women with 10 years of schooling, and providing pre-service training (for 2 years for freshers & 6 months for ANMs based on seniority) to compliment the supervisory role as LHV s. Inservice group of public health nurses were challenged due to their age, commuting limitation, low basic educational background, inferiority complex as most of the FHWs better educated than them, poor training and retraining, family, and personal health problems. Unfortunately, the effort of young LHVs introduction was short lived for 5 years, as a result the supervisory tire continues to be the weakest link even today. Their job descriptions include supervising and on-job training of Female health workers, fostering a PHC team work, monitoring and replenishing supplies and equipment, guiding FHWs in maintenance of individual records and collating progress reports, organizing community level reproductive and child health services, immunization services, Family planning and Nutrition services, oversee comprehensive primary health care services, disease surveillance and skill upgradation of FHWs and training of community level functionaries and health promotion. They are expected to visit 4 subcenters once in a week on fixed days for on- job training to female health workers They are expected to do community mobilization though the Mahila mandalas. Consequently, the first level supervision is the weakest link in today's public health system. Job description & LHVs role clarity vice versa CHOs is the need of the time.

iii. ***GNM (General Nursing & Midwifery):*** A comprehensive 3 to 3.5-year diploma covering general nursing, midwifery, & community health. Open to 10+2 students. For the first time such staff nurses were recruited to a PHC under MNP program in 1974-75 for institutional deliveries & assist the medical officer in examining female patients. In 1996 7 posts of GNMs in CHCs and 1 each in PHCs were created to support institutional deliveries and reproductive health services. While CHC are benefitted by GNMs, in most PHC's GNMs are underutilized for want of a labor room.

iv. ***Undergraduate Degree Programs (B.Sc. Nursing):*** A 4-year professional university degree that includes both clinical training and theoretical coursework. It is strictly for 10+2 students with Physics, Chemistry, and Biology. Since 2002, Graduates nurses were appointed in Hospital services. The first batch of graduate nurses was officially inducted as Community Health Officers (CHOs) in India beginning in 2019, following the launch of the Ayushman Bharat initiative. The Indian Nursing Council (INC) integrated the Mid-Level Health Provider (MLHP) curriculum into the B.Sc. Nursing program for the academic year 2020-21. By the 2024-25 period, the total number of CHOs engaged nationwide surpassed 150,000 (Press Information Bureau) and studies indicate that roughly 7% to 80%) are BSc Nursing or GNM graduates,

v. ***Post Basic B.Sc. Nursing:*** A 2-year condensed undergraduate degree was designed specifically for registered GNM nurses to upgrade their qualifications to a bachelor's.

vi. ***Postgraduate & Doctoral Programs (M.Sc.***

Nursing): A 2-year postgraduate program for B.Sc. Nursing graduates, requiring one year of work experience. It allows specialization in areas of Medical-Surgical, Psychiatric, Pediatric, or Obstetric Nursing.

vii. ***Post Basic Diploma Programs:*** 1-year specialized clinical programs (e.g., Critical Care, Emergency, or Psychiatric Nursing).

viii. ***M.Phil. & Ph.D.:*** Advanced research-oriented programs designed for nurse educators, administrators, and researchers [10].

All nursing courses are recognized by the Indian Nursing Council, which sets the curriculum standards, while state-level councils and universities conduct examinations and confer degrees.

Feature	Medical (MBBS, BAMS, BHMS)	Nursing (B.Sc., GNM)
Role	Primary diagnosis, surgery, skilled birth attendance, medical procedures, and prescription.	Continuous patient monitoring, medication administration, and care implementation.
Course Duration	**5.5 years** (4.5 years of academic study + 1 year of compulsory rotating internship).	**3 to 4 years** (Includes practical clinical rotations and often a shorter internship).
Entrance Exam	Mandated qualification through the National Eligibility cum Entrance Test (NEET UG).	Admission is generally merit-based on 12th-grade marks, though some state/ university exams apply.
Career Path	General practice, opening a clinic, or pursuing Postgraduate (MD/MS) specializations.	Hospital nursing, ward management, CHOS, or specialized nursing roles.

Table 1. Key Educational & Practical Differences

Level of Nursing	Duration	Description & Entry Requirements
ANM (Auxiliary Nurse Midwife)	2 Years	Focuses on community health and primary care. Open to 10+2 students.
GNM (General Nursing & Midwifery)	3.5 Years	A foundational diploma for hospital and bedside nursing.
B.Sc. Nursing (Basic)	4 Years	An undergraduate degree requiring 10+2 (Science) for entry.
Post Basic B.Sc.	2 Years	A degree conversion course for registered GNM nurses.
M.Sc. Nursing	2 Years	Postgraduate specialization and clinical leadership.
M.Phil. & Ph.D.	1-5 Years	Doctoral programs designed for nursing education and research.

Table 2. Nursing Education in India

Community Health Officers (CHOs): Launched under the Ayushman Bharat initiative and implemented via the National Health Mission (NHM), the Community Health Officer (CHO) is a specialized mid-level healthcare provider in India since. CHOs lead grassroots primary care teams at Health and Wellness Centers (HWCs), now called Ayushman Arogya Mandirs (AAMs), to bridge the rural healthcare gap. The program transforms primary healthcare by expanding the range of free, essential services available at the villages and Urban poor localities. CHOs provide ambulatory care through outpatient clinics for 6 hours each day. They conduct routine check-ups, and manage common, non-communicable diseases. They supervise Auxiliary Nurse Midwives (ANMs) and Accredited Social Health Activists (ASHA) at the HWC level. For community engagement, they coordinate with local communities, schools, and local self-help groups to promote public health awareness. Candidates are typically required to hold a B.Sc. in Nursing, Post Basic B.Sc., or an Ayurveda Practitioner (BAMS) degree. The graduate Nurses after brief training of about 3 months in district hospitals, were to function with autonomy

to conduct comprehensive examinations, prescribe medications, and order diagnostic tests [11].

Bridge Program: Selected candidates undergo a rigorous Bridge program in Community Health to equip them with specialized public health management and clinical skills. State-Specific Recruitment Societies operating under the NHM hold periodic recruitment examinations and notifications based on regional requirements.

Recruitment drives of CHOs: As of April 1, 2026, States are continuously holding large-scale drives and written exams to staff rural called Ayushman Arogya Mandirs (AAMs) with Mid-Level Health Providers (MLHPs). Most CHO positions remain contractual under NHM but provide strong long-term continuity and the potential for eventual regularization depending on state policies. States increasingly use scenario-based nursing questions & local State general knowledge (GK) in written exams. Candidates are typically required to have a B.Sc. Nursing, Post Basic B.Sc., or GNM, along with an integrated Certificate Course in Community Health (BPCCHN).

The National Health Mission Karnataka, home state of this author processes large drives, operating out of Arogya Soudha in Bengaluru. Madhya Pradesh: NHM MP is managing the largest recruitment pipeline, featuring more than 10,000 vacancies. West Bengal: The CMOH North 24 Parganas completed document verification for over 100 CHO positions, with exams scheduled to place candidates for roughly ₹20,000 per month. Uttarakhand drive for 134 CHO / MLHP vacancies wrapped up recently via the HNBUMU Portal. Uttar Pradesh: NHM UP has been processing waiting lists from major 5505 & 2400+ staff nurse/CHO recruitment

The operational guidelines (TOG) for Ayushman Arogya Mandirs: TOG dictate the delivery of Comprehensive Primary Health Care. These outpatient departments (OPD) focus on preventive, promotive, and curative care, utilizing a specialized cadre of Community Health Officers (CHOs), teleconsultations, and free essential diagnostics to reduce out-of-pocket expenses for rural and urban poor populations [12].

1. *General Outpatient Care:* First-level management for minor trauma, emergencies, and basic mental health ailments.
2. *Expanded OPD Service Delivery:* Ayushman Arogya Mandirs move beyond basic maternal and child health to offer an expanded package of 12 guaranteed services
3. *Communicable Diseases:* Management of common ailments and National Health Programs for TB, malaria, dengue, ARI, Diarrhea etc.
4. *Non-Communicable Diseases (NCDs):* Screening, control, and management of hypertension, diabetes, and common cancers.
5. *Specialized Primary Care:* Basic ENT, eye care, and oral health screenings.

Staffing and Human Resources (The Primary Care Team- PCT): A multidisciplinary approach ensures continuous care delivery at the OPD level through i) *Community Health Officer (CHO):* A trained mid-level healthcare provider a Nursing graduate or a Ayurvedic Medical graduate practitioner leads the facility and clinical management ii*) Multipurpose Workers (MPWs- F&M)* MPHW -F (ANMs) assist in clinical care, immunization, and community outreach services, MPHW-M: assist in clinical care, fever surveillance, Radical treatment for malaria at homes, carrying vaccine to outreach sessions etc. iii) *Accredited Social Health Activist (ASHA):* Acts as the primary link between the community and the Mandir, driving demand for OPD services.

Diagnostics, Drugs, and Telemedicine: To function as an effective first-contact point, these units get free Drugs & Consumables consisting of a mandatory list of essential medicines free of cost to patients. Essential Diagnostics: Facilities are equipped with rapid testing kits (e.g., hemoglobin, malaria, dengue, blood sugar) to support immediate OPD diagnosis.

Teleconsultations: Staff utilize digital platforms for virtual case-management support and consultations with specialists, enabling a robust two-way referral system.

Patient Management & Record KeepingDigital Integration: Utilization of population-based screening portals, maintaining disease-specific forms, family folders, & patient-held OP slips.

Continuum of Care: Mechanisms are in place for regular home-based visits (particularly for the elderly or palliative patients) and tracking follow-up treatments.

Financial Management of AAMs: The annual recurring cost to maintain an Ayushman Arogya Mandir is part of an estimated Rs. 17.03 lakh total per center, which covers i)

initial establishment, ii) staffing, and iii) yearly operational expenses like maintenance. Out of this, the annual budget for desegregated costs for medicines and medical consumable supplies varies significantly depending on the facility type: i) *Primary Health Centers (PHC-AAMs):* These larger facilities with a qualified allopathic (**MBBS**) medical graduate, maintain a comprehensive inventory of up to 172 drugs and 63 diagnostic tools. The annual recurring supply and medicine budget ranges from Rs. 2.5 to Rs. 4.5 lakh, scaled according to the local population size and catchment area. ii) *Sub-Health Centers (SHC-AAMs):* These community-level facilities with CHO led Primary Crae Team, stock a focused list of 106 drugs and 14 diagnostics. The annual recurring medicine and consumable cost typically falls between Rs. 1.0 to Rs. 2.5 lakh.

Community Health Officers (CHOs) manage adult outpatient (OPD) cases at Ayushman Arogya Mandirs (formerly Health and Wellness Centers): CHOs use a 12-service delivery framework. The protocol emphasizes triage, standardized essential medications, rational investigations, and timely referral.

1. ***Triage and Initial Assessment Triage Categorization:*** Assess patients upon arrival into Red (critical/emergent), Yellow (urgent but stable), or Green/ White (walking wounded/routine) categories guided by a) Vital Signs: Record Level of Consciousness (using AVPU), pulse, blood pressure, respiratory rate, and temperature

2. ***ABCDE Approach****:* For emergent cases, PCT apply the ABCDE sequence (Airway, Breathing, Circulation, Disability, Exposure) while preparing for referral.

3. ***Common Adult OPD Cases & Protocols:*** CHOs are authorized to provide first-aid, administer life-saving drugs in acute cases, and dispense essential medications from the expanded primary care formulary

    a. Fever / Viral Illness: Administer Paracetamol (e.g., 650 mg TID).

    b. Screen for Dengue, Malaria, or Chikungunya as per National Health Programs.

    c. Upper Respiratory Tract Infection (URTI): Treat symptomatic cases with antihistamines, steam inhalation, and prescribed antibiotics (if bacterial involvement is suspected).

    d. Acute Diarrheal Diseases (ADD): Provide ORS & Zinc. If non-bloody, administer medicines like Ofloxacin + Ornidazole as per standard guidelines.

    e. Hypertension & Diabetes (NCDs): Screen and manage patients using standard treatment pathways. Provide regular follow-ups & maintenance medications (e.g., Metformin for T2DM, Amlodipine/Telmisartan for Hypertension).

    f. Scabies / Itching: Apply Permethrin cream overnight.

4. ***Procedure and Emergency Management*** i) *Bleeding Control:* Wash wounds thoroughly with soap and water, apply firm pressure, and elevate the limb ii) *Fracture Management:* Utilize the RICER approach (Rest, Ice, Compression, Elevation, Referral) with basic immobilization using splints.

5. **Referral Guidelines**: Stabilize critical (Red/Yellow) patients and execute timely referrals to the nearest Primary Health Center (PHC) or Community Health Center (CHC). Detailed step-by-step emergency care algorithms for CHOs are listed in the Emergency Care Training Manual for CHO at AB-HWC.

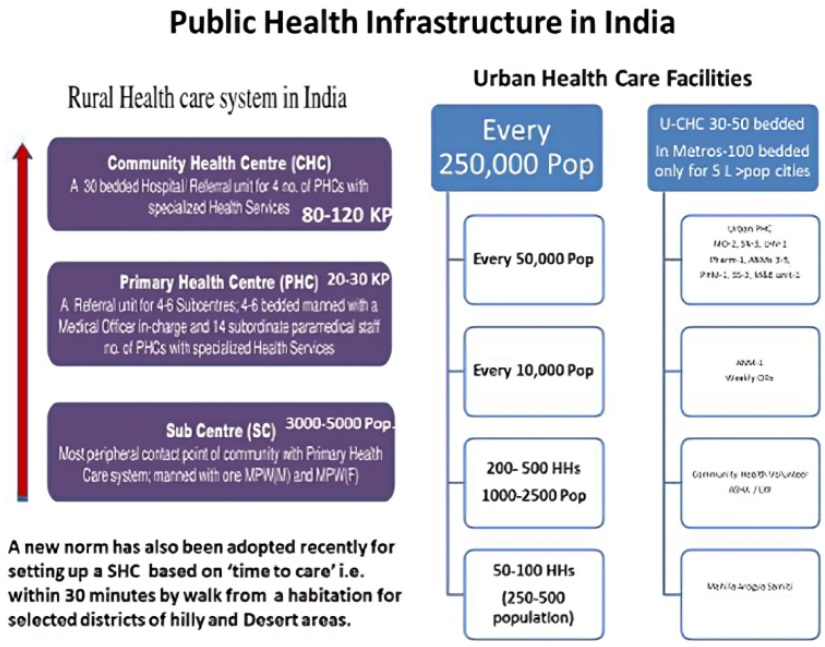

Figure 1: Public Health Infrastructure in India

Changed Strategy of Service Delivery in NHP 2017, Progress & Challenges of Decade: To move from sectoral and segmented approach of health service delivery to a comprehensive need-based health care service NHP 2017 aims to undertake path breaking interventions to holistically address health (covering prevention, promotion and ambulatory care), at primary, secondary and tertiary level. ***The changed strategies of providing comprehensive Primary Health Care (CPHC) and Complementing National Health Protection Scheme (NHPS) and Referral Institutes deemed backbones of the new strategy are struggling to coordinate and meet the goal of UHC 2030 with just less than 4 years left [13].***

Providing comprehensive Primary Health Care (CPHC): Though Basic infrastructure is in position, the number Health Sub centers and PHCs bases AAMs have increased in number, their locations are not necessarily doing justice to unreached population [14].

While most of these institutions do not have their own buildings and run from small, rented places, thereby privacy of the patients is compromised. The experiences of building capacity for the management of Malaria, diarrhea, Pneumonia, TB & Integrated management of neonatal and childhood illnesses (IMNCI in 1994-2005) over the last 3 decades have contributed to building much needed technical skills, but the comprehensive approach adapted is yet to find coherence at the ground level. The logistics of making available diagnostics, drugs, equipment and referral mechanism is not yet sorted out fully.

Human resource in health sector of the country have three key hurdles: 1) Inadequate number of skilled people especially of specialists and super-specialists for referral services. 2) The proportion of Vacant positions which range from 20-50% in different categories at all levels starting from AAMs to AIIMs 3) Most of health staff positions at all levels in states & GOI institutes are contractual with insecurity, lack of accountability and commitment.

The second component is the Pradhan Mantri Jan Arogya Yojana (PM-JAY): PMJAY was launched to provide health protection to poor and vulnerable families through both public and private sector facilities. In 2025–26 financial year, the allocation for the Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB-PMJAY) was ₹9,406 crore, accounting for approximately 9.4% of the total Ministry of Health and Family Welfare budget (₹99,859 crore) and roughly 14.26% of the direct scheme and core program expenditure. When compared strictly

to specific major scheme heads (like the National Health Mission and AIIMS), PM-JAY's share represented a larger proportional segment of around 14.26%. As a centrally sponsored health assurance scheme, the costs are shared between the central government and respective state governments on a standard ratio (typically 60:40 for most states, 90:10 for Northeastern and Himalayan states, and 100% for Union Territories). Review Article

The allocated budget allowed the flagship scheme to provide health insurance coverage of ₹5 lakh per family to approximately 12 crore beneficiary families, with an increase from the revised estimates of the previous year, indicating a continued scaling up of the program. By the end of the year 31 March 2026, 15,700 private hospitals were empaneled nationwide. However, the upgrading capacity of Public Health facilities for secondary, tertiary and super specialty care has seen little progress over last decade. There is inordinate delay in equipping newer institutions with functional equipment, skilled human resources & latest technologies for diagnosis and management.

Even teaching institutions may have to wait from 5-10 years for newer diagnostic and therapeutic equipment after they hit the private market. The observations of developing first referral units (FRU's) for maternal and childhood emergencies in last decade and half at districts a d sub-district levels is another evidence over 2 decades, points to low budgetary allocations for infrastructure development and capacity building, competing priorities among various interventions. All this drives this author to feel that CPHC for UHC 2030 was too optimistic, and District and sub- district level public facilities continue to face challenges.

Results of Quick Assessment: Having interviewed, 15 (2 male, & 7 female, 1 each gender Ayurvedic graduate) CHOs led PCT involving about 50 staff in 2025-26, this author is of the opinion that given on job support of skill building through periodical visits of medical officer

1. Triage and Initial Assessment Triage Categorization: There is a clear difference in favor of Ayurvedic graduates led AAMs, compared to Nursing graduates. Among the Nursing Female graduates have better rapport as form women and children seeking care and male Nurses for elderly men.

2. ABCDE Approach for emergencies cases: Ayurvedic graduates and Men nurses are handling the emergency situations better than female nurses.

3. Common Adult OPD Cases & Protocols: While most common OPD cases are handled by all, experienced health workers (F &M) trained under various vertical programs listed are doing better, and nursing graduates are picking up slowly. IN NCD (T2D, HT & Cancers) screening, all CHOs demonstrated better skills compared to most health workers.

4. Procedure and Emergency Management: Male Nursing graduate CHOs demonstrated better skills and confidence compared to female CHOs except in obstetric emergencies.

5. Expanded Care for ENT, Eye Problems: Are non-starts, as skills like use of Snellen's chart for testing vision, or torch for throat & ear infections were not demonstrated by most of the staff interviewed.

6. Referrals: Very few formal references are being made as of now, that too with no initial treatment and references. Very few cases given reference slips were either given due importance, or any formal feedback was given by referred hospitals.

Quantitative Analysis of Current status of Services at AAMs:

This is an effort to understand the roe of ANM, LHV, CHO as female workers and contribution of the role of Health Assistant (male) Sr. Health Assistant (male) and CHO (if Male) workers Under the Ayushman Arogya Mandir initiative of the National Health Mission, facilities are upgraded to deliver Comprehensive Primary Health Care (CPHC) and decipher their complementarity, coordination, and supervisory roles by the package of services.

There is a total of 1,86,341 functional Ayushman Arogya Mandir, as on 24 June 2026, with desegrated category wise numbers reading a) Sub health centers (SHC)= 1,34,269, b) PHCs= 24,499, c) UPHC= 5,470, d) AYUSH facilities = 12,257and Urban health and Family welfare centers (UHWC) =9,846.

These centers incrementally provide 12 core packages of services, expanding well beyond maternal and child health to ensure holistic primary care. The 12 Packages of Expected Services. Current contribution of each worker

and their coordination and value add Public Health Nurses by package of services analyzed based on field visits and interactions with the staff as a part of Field training of MPH scholars since last 2 years. The quantitative data for about 5 key indicators namely 1) Antenatal care 2) skilled birth attendance 3) Use of Birth Spacing methods 4) diagnosis and under treatment for Diabetes 5) diagnosis and under treatment for Hypertension. The data is drawn from fact sheet of NFHS 6 (Between October 2023-Febreuary 2024) and compares with similar data from NFHS 5 (2019-21) for Karnataka, which can be taken as a proxy for the contribution of CHOs at AWWs. The qualitative data is from visits to about 25 AAMs in 3 low performing districts of Karnataka (Kalburgi, Gadag, Yadgiri) and therefore reflects the situation in only such lowly performing districts. It is neither a representative data of the State or Country. However, situation is likely to be similar in most Hindi speaking Staes/district in the country.

From NFHS-6 data of 2026 (reflecting the situation in 2024-25), majority of primary health care institutions do not have their own buildings and run from small, rented places, thereby privacy of the patients is compromised. Basic Human resources at primary and secondary health care and even tertiary care public facilities are short by 20-40%. Among those posted at least one third of doctors and nursing staff do not stay in their Health Sub centers and PHCs have increased in number, their locations are not necessarily doing justice to the unreached population [15]

1. **Maternal & Child Health:** Safe pregnancy care, institutional delivery, immunization, and postnatal care: i) Antenatal care has been done at these levels weekly for more than 60 years. Mothers who had antenatal check-ups in the first trimester improved from 71% during 2019-21 to 82.4% in the study period. While mothers who had any antenatal care visits went down from 98.3 to 96.3%, Mothers who had at least 4 antenatal care visits improved to 84.5% from 70.9% reflecting the continuity of the care.

   Mothers whose last birth was protected against neonatal tetanus also improved from 93.6% to 95.9%. Mothers who consumed iron folic acid for 100 days or more when they were pregnant jumped to 78.9% from 44.7% in 2019-21, and Mothers who consumed iron folic acid for 180 days or more when they were pregnant (%) went up to 66.4% from 26.7%. One can infer that the quality of ANC has improved in general. The good news in recent survey, the difference between Urban and Rural women's care has narrowed down. While registration of pregnancies during first quarter was U=88.3, R=77.3, Full ANC (4 or more visits) was U=87.6 & R- 81.9, Supplementation of IFA for 100 (84% vs 75%) or 180% (73 % vs 60.4%) had a difference of 10% between Urban & Rural population.

   Qualitative assessment indicated value add to Antenatal care if the CHO was Female Staff Nurse as compared to a male CHO.

2. **Skilled Brith Attendance:** While the institutional deliveries remained at around 98.7% in NFHS 6, compared to 97% in 2019-21, the use of public (Govt.) facilities dropped from 64.8% to 58.1%. The Cesarian section proportion increased more (34%) in public sector (34% vs 26%) as compared to private sector (22% from 52.5% vs 63.8%).

3. **Postnatal Care:** The proportion of Mothers who received postnatal care from health staff within 2 days of delivery improved from (87.4% to 93.6%) and Newborns at home who were taken to a health facility for a check-up within 24 hours of birth jumped up from 12.3% to 23.4% and Newborns who received postnatal care at homes from a health personnel within 2 days of delivery+ (%) also improved from 85.5% to 93.2% in four years' time. The contribution of CHO/LHV/ ANM coordination in PNC at home or even referral to secondary/tertiary care facilities is appreciable.

4. **Contraception:** The proportion of Female sterilization remained at 56.9% as compared to 57.4% in 2019-21, overall use of Modern family panning reduced from 68.2% to 63.2%

5. **Neonatal & Infant Care:** Sick newborn care, malnutrition management, and early childhood development have improved by about 10% in the last 4 years.

6. **Non-Communicable Diseases (NCDs):** Free screening and management for hypertension, diabetes, and common cancers (oral, breast, and cervical): The screening & detection and initiating Diabetes improved from 14 (%) to 22.3% among

women and from 15.6% to 26.1 % in men reflecting the improved screening. The defection and treatment remained stagnant around 25% among women but showed marginal improvement from 26.9% to 28.2%.

7. **Communicable Diseases:** Screening and management of national programs tuberculosis (TB), malaria, and vector-borne diseases continue to be stagnant.

8. **Mental Health & Neurological Disorders:** Screening and first-line treatment for common mental illnesses, epilepsy, and substance abuse (tobacco, alcohol) is in an infancy state.

9. **Elderly & Palliative Care:** Health assessments, support for chronic conditions, and end-of-life care management is a non-starter.

10. **Oral, Eye & ENT Care:** Basic screening and management for common dental issues, vision problems, and ear infections have just begun and need more support from concerned specialists for referral and desired outcomes.

11. **Basic Emergency Medical Services:** First aid, trauma stabilization, have improved, though far from satisfaction and burn management before referral is a non-starter

12. **Free Medications:** Access to an expanded Essential Medicines List (EML) for common ailments and chronic diseases has improved though a lot needs to be achieved.

13. **Free Diagnostics:** Comprehensive pathological & radiological services (including routine blood tests and X-rays) under the Free Diagnostics Service Initiative is also in an initial stage.

14. **Specialist Teleconsultation:** Integration with telemedicine hubs allowing patients to consult doctors and specialists remotely from their local AAM is still on the papers.

15. **Wellness Activities:** Regular promotive care sessions such as yoga, meditation, and healthy lifestyle counseling have started on a small scale and need lot of skill support.

Key Challenges of Achieving UHC in India: The realization of Universal Health Coverage requires adequate healthcare financing and human resources to provide financial protection to the economically disadvantaged population by covering their medicine, diagnostics, and service costs. For decades inadequate financing for public health care and the lack of skilled human resources-where available their insecurity in the last decade, due to short time hiring on low pay packages are the major barriers towards achieving UHC in India.

GNMs entered the Indian Health system dominated by ANMs and Lady Health Visitors, to step up primary medical care where doctors are scarce, and have helped to expand care availability, in rural and underserved urban areas. Studies show that care led by advanced practice nurses leads to significantly reduced healthcare costs, fewer emergency department visits, and decreased hospital readmissions.

Communicable Diseases and Outpatient care for acute simple illnesses and minor ailments, Screening, Prevention, Control and Management of Non-Communicable diseases, Care for Common Ophthalmic and ENT problems, Basic Oral health care, Elderly and Palliative health care services, Emergency Medical Services and Screening and Basic management of Mental health ailments are totally new areas at this level of institutions and capacity building appears to be a herculean task though not impossible.

Most medical officers do not stay in designated places and therefore are not available round the clock for providing services.

The upgradation of 150,000 Sub centers and PHC's appears to be daunting task given resource crunch and logistics management. Capacity building of the staff at this level for the new tasks is posing a big challenge.

Though the experience of building capacity for the management of Malaria, diarrhea, Pneumonia, TB and Integrated management of neonatal and childhood illnesses (IMNCI in 1994-2005) over the last 3 decades indicates the potential to build such technical skills, but lack of standard operational guidelines (SOPs) for managing other ailments are yet to be made available. Another big hurdle is of the logistics of making available diagnostics, drugs, equipment and referral mechanism has not improved much.

Management of Common communicable Diseases and outpatient care for acute simple illnesses and minor

ailments progressing well. Screening, Prevention, Control and Management of Non- Communicable diseases, Care for Common Ophthalmic and ENT problems, Basic Oral health care, Elderly and Palliative health care services, Emergency Medical Services and Screening and Basic management of Mental health ailments are totally new areas at this level have remained dormant and need handholding.

Poor referral mechanism continues to build the credibility of AAMs

Conclusion

Advanced Nursing Practice (ANP) transforms Primary Health Care (PHC) by utilizing highly trained professionals like Nursing graduates, GNMs, ANMs, LHVs etc. to assess, classify, and manage (in order of urgency for referral with first aid bleeding control, relieving pain, or stabilizing the patient on priority or treat if case can be handled locally) both acute and chronic conditions in Primary Health Care system.

This approach must be based on standard protocols and drugs dispensing, expands access to care, lowers overall costs, and alleviates the burden on traditional physician-led systems.

Core Roles of Advanced Practice Nurses in PHC in Indian Health System took the designation of Multipurpose workers scheme in 1974, village health guides (VHGs) scheme in 1977 and Community Health Officers (CHOS) under National Health Policy 2017 and subsequent National Health Mission to achieve UHC by 2030).

GNMs entered the Indian Health system dominated by ANMs and Lady Health Visitors, to step up primary medical care where doctors are scarce, and have helped to expand care availability, in rural and underserved urban areas.

Community Health Officers (CHOs) are a relatively new, specialized cadre of mid-level healthcare providers in India, established in 2018 under the Ayushman Bharat initiative. Their creation marked a historic shift to bridge the gap in rural healthcare access by leading primary health care Team (PHCT) at Health and Wellness Centers (HWCs) called Ayushman Arogya Kendras, now a vital step in unlocking people-centered primary healthcare.

Management of Common communicable Diseases and outpatient care for acute simple illnesses and minor ailments progressing well. Screening, Prevention, Control and Management of Non- Communicable diseases, Care for Common Ophthalmic and ENT problems, Basic Oral health care, Elderly and Palliative health care services, Emergency Medical Services and Screening and Basic management of Mental health ailments are totally new areas at this level have remained dormant and need handholding. Poor referral mechanism continues to build the credibility of AAMs.

The realization of Universal Health Coverage requires adequate healthcare financing and human resources to provide financial protection to the economically disadvantaged population by covering their medicine, diagnostics, and service costs. Short term contractual hiring on low pay packages are the major barriers towards achieving UHC in India.

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