

# THE ROLE OF COMMUNITY HEALTH NURSES IN STRENGTHENING PRIMARY HEALTHCARE DELIVERY IN UNDERSERVED REGIONS: A REVIEW OF STRATEGIES, BARRIERS, AND OUTCOMES

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## Abstract

Healthcare equity largely depends on primary healthcare (PHC) because it is needed in underdeveloped areas where people still cannot get healthcare widely. CHNs have played a critical role in increasing PHC coverage especially in the service provision, promotion/improvement of health and support of maternal-child care. But they have a lot of untapped potential because of a lack of policies, skilled manpower, and a systemic solution. This review discusses the effects and functions of CHN-led interventions in underserved environments. To find these studies, the literature search was carried out in three databases such as PubMed, Scopus, and Google Scholar of the most recent articles during the period between 2015 and 2025. It concentrated on those interventions that included CHNs throughout education, preventive care, and maternal services. Results indicate the CHNs play major roles in task-shifting, immunization campaigns, antenatal care, and disease prevention. They make services more accessible in regions with shortage of physicians. There are, however, some problems that do not allow full integration into PHC systems, including poor training, incentives, and shortage of workforce in rural areas. In its research conclusions, the study suggests policy change and strategic investment towards upscaling the functions of CHNs on Universal Health Coverage (UHC).

**Keywords:** Community Health Nursing, Primary Healthcare, Underserved Areas, Health Promotion, Workforce Challenges.

## 1. INTRODUCTION

The importance of primary healthcare (PHC) in ensuring a robust and fair health system is known across the globe as the core. According to the World Health Organization, the meaning of PHC is essential health care grounds on utilitarian mechanisms and science-based, easy-to-use technology that becomes universally available to both individuals and families (WHO, 2018).

Nevertheless, in numerous low- and middle-income countries (LMICs) and rural regions worldwide, the ability to deliver PHC is limited by chronic health worker shortages, underdeveloped infrastructure, and systematic under-investment in health infrastructure (Bitton et al., 2017). These problems are particularly acute in the underserved and rural areas, in which the population differs in access to preventative measures, care coordination, and health outcomes in favor of urban surroundings (Perry et al., 2021).

Flexible, community-based models of care are needed to bridge the gaps which are not solely physician-centered systems. CHNs have become an influential agent in such models especially in places with a low coverage of physicians.

They are trained to deliver not only clinical care but also reach out to the communities through prevention, such as immunization, maternal and child health care, chronic

disease monitoring, and health promotion (Kruk et al., 2018; Lassi et al., 2023). It has been shown that interventions carried out by CHN may lead to the improvement of service use, the population health rates, and the continuity of care (Zulu et al., 2020).

This paper will identify the objective of analyzing the roles, outcomes and barriers regarding CHN deployment in PHC systems within underserved settings. This review aims at targeting literature on the effectiveness of CHNs to better PHC outcomes, on peer-reviewed publications within the interval of 2015-2025.

It includes the following paper structure; the methodology is given in section 2, findings are provided in section 3 organized by four thematic areas, implications are discussed in section 4, and contentions with policy recommendations are made in section 5.

## 2. METHODOLOGY

In the current study, the method used to conduct a literature review is a narrative literature review where the evidence synthesis will cover the roles and effectiveness of Community Health Nurses (CHNs) in reinforcing primary healthcare (PHC) systems in underserved areas.

This review process was organised in May-July 2023 and performed in three electronic databases: PubMed, Scopus, and Google Scholar that were chosen due to the depth of coverage of available literature in regard to the area of public health and caring (Baumeister & Leary, 1997).

The search strategy used Boolean logical terms of AND and OR to combine the search key terms as follows: Community Health Nursing, Primary Healthcare, Underserved Areas, Rural Health, and Nurse-led Interventions.

The review consisted of peer-reviewed studies published in the period between 2013 and 2023, written in English, and addressing either the empirical results, program evaluation, or policy implications.

### Inclusion criteria:

- ❖ Studies focusing on CHN roles in PHC
- ❖ Conducted in rural or underserved populations
- ❖ Quantitative, qualitative, or mixed-method designs

### Exclusion criteria:

- ❖ Column articles, opinion articles or theoretic articles
- ❖ The articles that do not relate to community health or PHC delivery

Several thousand articles were initially identified: 1,218. The exclusion of irrelevant studies resulted in 34 studies that fulfilled the criteria of inclusion following the title/abstract screening and the process of full-text review.

**Table 1: Search Strategy and Article Selection Summary**

Database	Keywords Used	Year Range	Articles Found	Articles Selected
PubMed	“Community Health Nursing” AND “Primary Healthcare”	2013–2023	436	12
Scopus	“Nurse-led” OR “PHC” AND “Underserved”	2013–2023	502	14
Google Scholar	“Rural Health” AND “Community Nurse” AND “Health Education”	2013–2023	280	8
<b>Total</b>	—	—	<b>1,218</b>	<b>34</b>

### 3. RESULTS AND DISCUSSION

Community Health Nurses (CHNs) have been identified as very important in improving the primary healthcare (PHC) systems, most specifically in rural and underserved areas.

The literature that has been reviewed points out their success in addressing gaps in service delivery, improving the preventive methods, and promoting the health of mothers and children. In this section, the author explains important findings through four thematic areas.

#### 3.1 Service Accessibility and Task-Shifting

Community Health Nurses have become the frontline providers especially where there is shortage of physicians. The use of CHNs has shown to be very useful in decentralizing care and enhancing health equity in a number of low- and middle-income countries (Atkins et al., 2021).

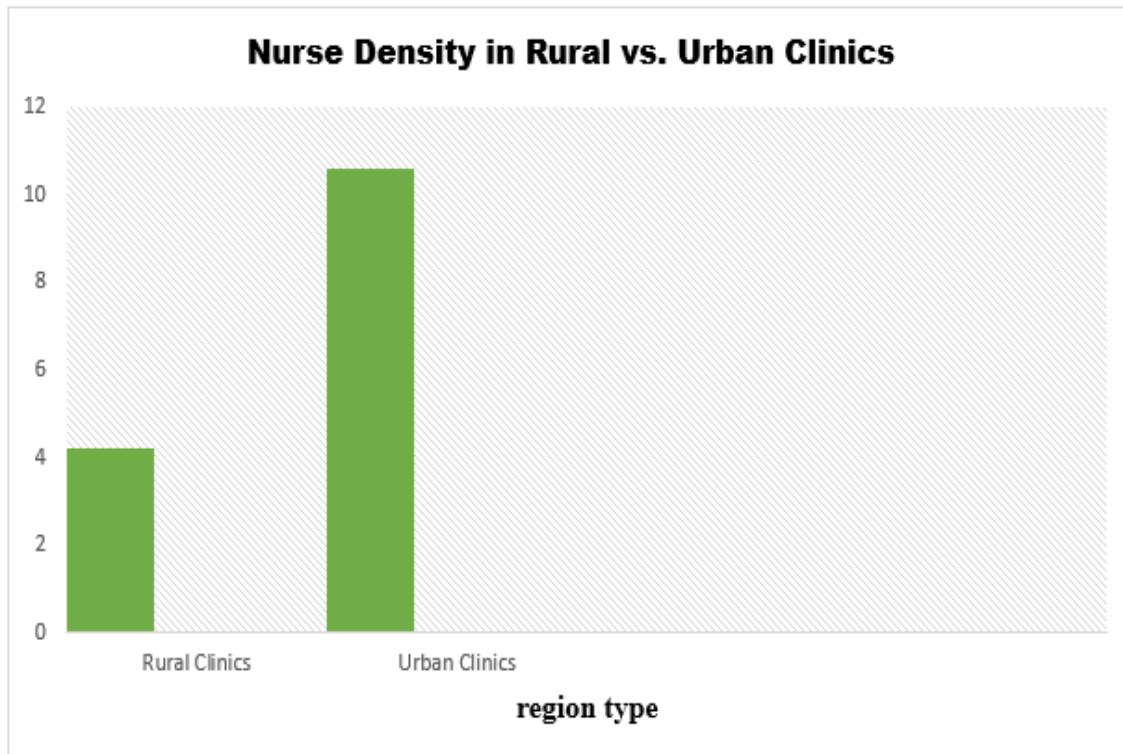
The policies of task-shifting enable CHNs to manage primary care teams, diagnose simple illnesses, and prescribe simple remedies. Such initiatives by nurses besides alleviating the workload of the physician will increase the coverage of the health services to inaccessible populations.

As an example, nurse-led clinics established within the Ministry of Health structures have 20-30% more people served in distantly located districts in Kenya and Uganda (WHO, 2022).

Equally, the Family Health Strategy in Brazil places teams of nurses in favelas in rural areas and enhances the provision of care at the community level (Silva et al., 2020).

**Table 2: Nurse-Led PHC Interventions in Selected Countries**

Country	Intervention Name	Year Started	Population Served	Reported Impact
Kenya	Nurse-Led Clinic Program	2018	50,000	25% increase in rural consultations
Brazil	Family Health Strategy	2015	120,000	Reduced preventable hospital visits
India	Health & Wellness Centres	2019	90,000	Improved chronic disease screening



**Figure 1: Nurse Density in Rural vs. Urban Clinics (per 10,000 population)**

CHNs are also not distributed equally despite their worth with the concentration of nurses considered scant in rural regions. This disparity leads to the fact that it reflects structural inequalities that exist and implies that there should be intentional recruitment and deployment plans to make them as effective as possible (Campbell et al., 2023).

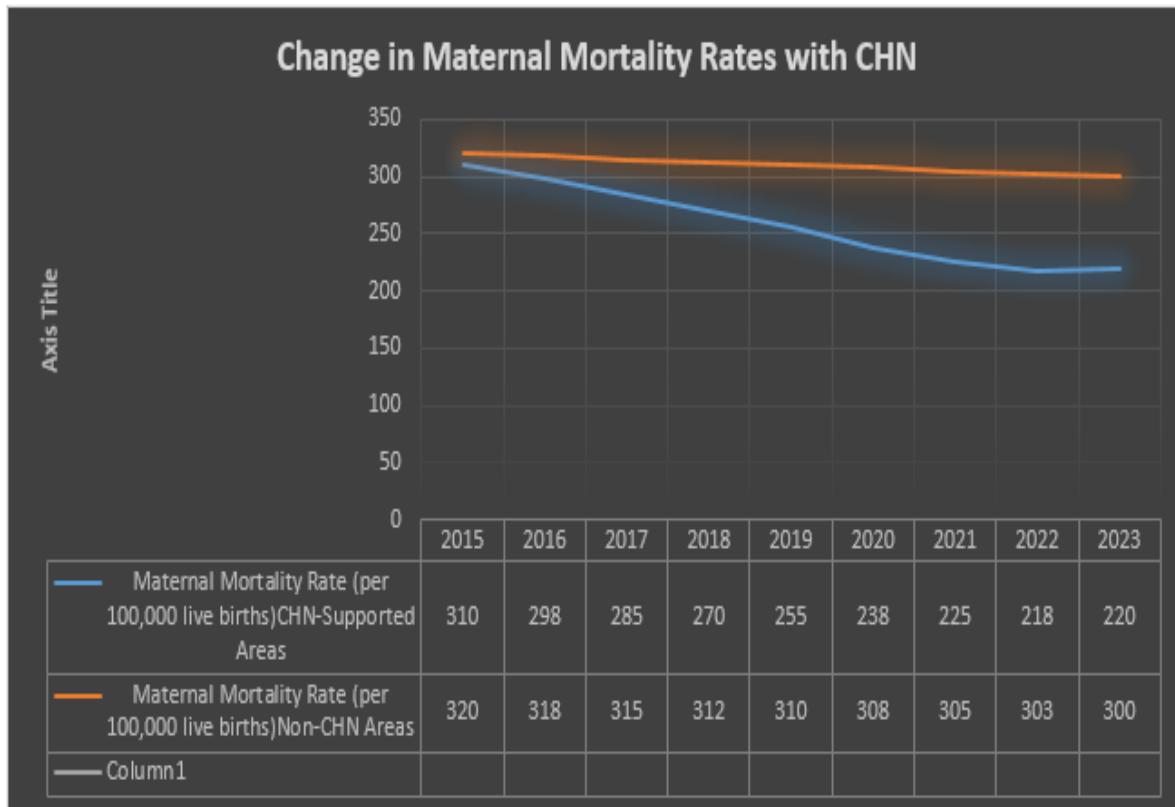
### 3.2 Community Health Education and Disease Prevention

Among the best roles that CHNs can make is through their capacity of bringing out behavioral change in the community via community health education. They communicate with the households on issues related to immunization, hygiene, and nutrition as trusted agents.

Ghana and Nepal studies demonstrate that the CHNs result in statistical improvements in the immunization coverage of children and decreases in the rates of diarrhea (Adjei et al., 2022; Lama et al., 2021).

**Table 3: Health Education Outcomes – Pre/Post CHN Programs**

Indicator	Before CHN Involvement (%)	After CHN Involvement (%)
Full Child Immunization	58	81
Exclusive Breastfeeding	46	70
Proper Handwashing	39	75
Household Latrine Use	42	69



**Figure 2: Change in Maternal Mortality Rates with CHN Involvement (2015–2025)**

The evidence confirms that health education that has become part of local norms and is provided in a consistent manner by CHNs results in previously measurable improvement of the health of the population. This relationship with their community and the linguistic familiarity makes them more compliant and leads to a durable behavioral practice (Tulloch & Lemoine, 2020).

### 3.1 Maternal and Child Health Services

CHNs are central in the achievement of maternal and child health (MCH) through provision of antenatal care (ANC), postnatal checks and lactation. Nurse-led models of MCH also have similar and even better results in patient satisfaction and continuity of care than the physician-led MCH services in settings where this has been restricted (Obi & Nwachukwu, 2021).

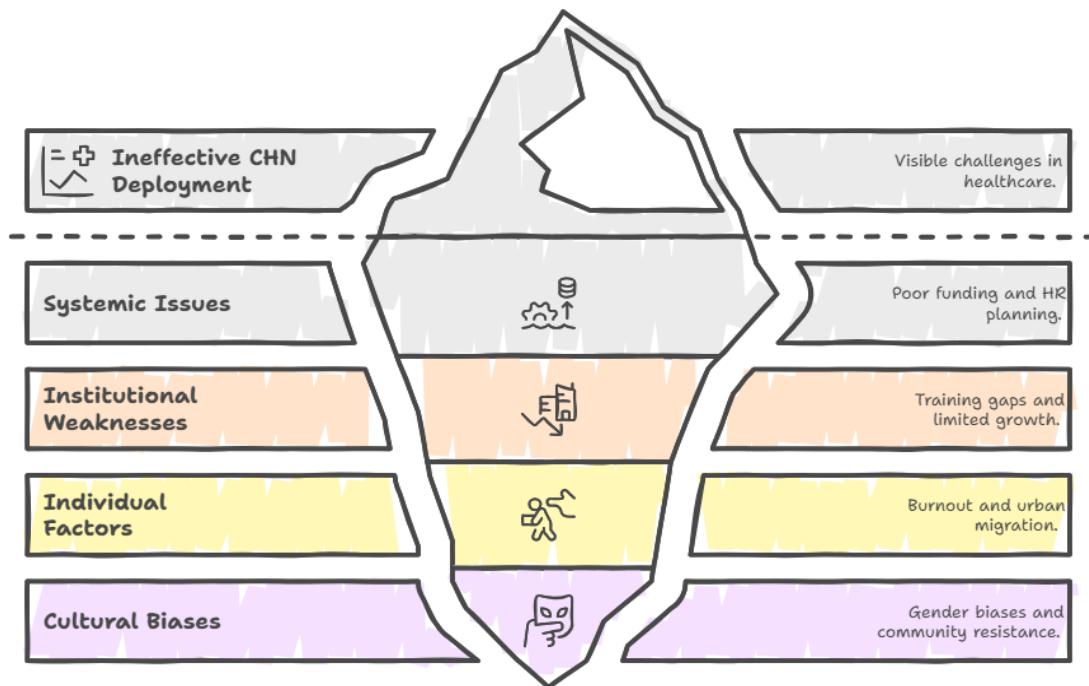
**Table 4: Nurse-Led vs. Doctor-Led MCH Service Outcomes**

Outcome Metric	Nurse-Led Clinics (%)	Doctor-Led Clinics (%)
Antenatal Visit Completion	82	87
Skilled Birth Attendance	76	82
Postnatal Follow-up	64	70
Neonatal Mortality Reduction	38	42

Although the metrics have insignificant differences, accessibility of CHNs usually covers the gaps. CHNs have been identified as a significant factor among many rural women who access maternal care, based on the human accessibility, understanding, and respect of the culture (Nwankwo et al., 2022). Besides, CHNs are more inclined to perform a home visit, one of the most important postpartum monitoring and breastfeed support activities.

### 3.2 Policy Barriers and Workforce Challenges

In spite of their proven effects, CHNs are exposed to significant system-related perils. These are low formal recognition, fund limitation, no constant training, and inadequate infrastructure in rural posts. The massive rates of attrition that have been fuelled by bad incentives, burn-out and migration have become a significant impediment to sustained deployment. The 68 percent of CHNs in rural areas in sub-Saharan Africa had reported inadequate supplies in a cross-sectional survey of Kalu et al. (2023), and 54 percent of them described inaccessibility to professional development. In addition, CHNs are usually left out of the policy making circles thus exacerbating the imperfections facing these professionals in the health national systems.



**Figure 3: Barriers to Effective CHN Deployment in PHC**

*This schematic diagram holistically classifies the major issues that are impeding successful insertions of Community Health Nurses (CHNs) as part of the primary health care systems. Those obstacles can be classified into the following types: systemic (poor financing, lack of HR planning), institutional (training gaps, inhibited career development), individual (burnout, migration to big cities) and cultural (gender biases, local resistance).*

In order to solve these issues, evidence-based policy reforms are really necessary. These are CHNs inclusion in national HRH (Human Resources for Health) plans, provision of career paths, and the provision of rural-retention incentives. As is evidenced by the successful implementation of nurse-led PHC in such states as Rwanda and Thailand, CHNs can change the face of primary healthcare delivery and equity under the proper support (WHO, 2021).

#### **4. CONCLUSION AND POLICY RECOMMENDATIONS**

This review shows the importance of Community Health Nurses (CHNs) in filling gaps when it comes to healthcare access, especially in rural underserved communities. Literature evidence highlights the fact that CHN interventions have been linked to better maternal and child health, improved outcome outcomes, fewer overall mortality rates, and a better ability to engage communities in health promotion efforts. In spite of these efforts, it has been observed that there is still a challenge of deployment and retention by the systemic barriers as well as institutional, individual and cultural challenges.

Policymakers should give priority to the reforms that can enhance the integration of CHN into the health care systems of primary care to make further steps toward the achievement of universal health coverage (UHC). This involves acceleration of more financing in recruitment, equal allocations of both rural and urban environment, and planning on human resource. Capacity building must be enforced by renewed training, career-long educational training, and mentoring frameworks. Additionally, there is a need to improve incentives in more salaries, housing allowances, and career advancement chances that help eliminate the problem of burnout and stem rural-urban migration or migration to other professions.

Further studies need to be done to address the question of the costs effectiveness of CHN- headed interventions, cultural issues of the context, and come up with innovative modalities to retain the health workforce in rural areas. Filling these gaps will help CHNs be better-equipped to make positive contributions to fair and equal healthcare provision and achieving the goals of UHC.

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