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Community Health Worker Requirements to Accelerate Progress Towards Universal Health Coverage in Africa: An Overview of Contemporary Estimates and Implications of Full-Time Versus Part-Time Working Arrangements

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Abstract

Primary health care is the most effective approach to achieving universal health coverage (UHC) and ensuring health security. In this approach, community health workers play a crucial role by delivering a comprehensive array of preventive, promotive, and curative services. Their contributions are vital in addressing health inequities, ensuring that all individuals have access to essential health services. By empowering these workers, we can foster a more equitable health system that meets the diverse needs of communities. African leaders are pursuing a 2 million community health worker agenda, but there are lingering questions about how to set targets of the density of community health workers needed in countries to achieve the sustainable development goals. By examining the implications of empirical estimates and incorporating nuances of working hours of community health workers, we find a wide range of density from 11.2 to 59.5 community health workers per 10 000 population depending on country context and the community health worker's working arrangements. If community health workers are not full-time workers and work between 30% and 65% of their time, the current shortage of community health workers is between 580 000 and 954 500. However, if all the existing community health workers were to be employed full-time, the needs-based shortage of community health workers would shrink significantly to just 210 000. These should be considered ordered guesses and not planning targets for countries. Countries are encouraged to use the available health workforce planning tools to estimate its context-appropriate requirements for community health workers as part of the broader health workforce planning.

Keywords

community health workers, community health, health workforce densities, needs-based requirements, full-time work, part-time work, health workforce, universal health coverage, primary health care, modelling

Highlights

- Community health workers (CHWs) are critical in the in the journey towards achieving universal health coverage (UHC) in Africa as they deliver preventive, promotive, and curative services that significantly improve health outcomes.
- No one tool or method can provide estimates of the required CHWs for all contexts. Contemporary estimates show a wide range of the required CHW densities from 11.2 to 59.5 per 10,000 population, depending on work hours, population needs and model of health services. These translates into estimates suggesting a shortage ranging from 580,000 to 954,500 CHWs in Africa if many CHWs continue working part-time.
- Employing existing CHWs full-time could narrow the gap significantly and enhance accountability from CHWs.
- In so doing, policymakers must integrate CHW programs into health systems, ensuring comprehensive training, adequate remuneration, and strengthened support.

Background

Primary health care remains the surest pathway to achieving universal health coverage and ensuring health security within which the impact of community health workers in saving lives cannot be overstated.[1] Following the Alma Ata declaration on primary health care in 1978, the role community health workers became more prominent and increasingly recognised.[2] The history, impact and challenges surrounding community health workers is well documented in literature.[1,3-5] Among the challenges identified were inadequate planning; limited coordination among multiple competing partners; verticalized and fragmented disease-specific community health worker programming; donor-driven investments; and high workload; multiple tasks but the under-recognition of community health worker's contributions, among others. Recent studies have helped to gain better understanding of the effectiveness and value of community health workers as well as their return on investments.[5-8] There are several pieces of evidence on the cost-effectiveness of community health workers in the delivery of various health interventions and programmes.[9-12]

From the available evidence, community health workers can effectively deliver a range of preventive, promotive and curative health services, contributing to reducing inequities once they are well trained and supported within health systems. The 2018 WHO community health worker guideline consolidated evidence on optimizing community health worker programmes by identifying effective policy options on selection, education, management, remuneration, system support, and community embeddedness of community health workers.[13] It emphasizes the importance of ensuring that community health worker programmes are not implemented in isolation but as an integral part of the broader health workforce, primary health care, and health system efforts.

Lessons from recent health emergencies have reinforced the vital role of community health workers during response actions and as the world prepares for the next pandemic. For example, during the initial phases of the COVID-19 pandemic, community health workers played a critical role in surveillance and contact tracing.[14] In some contexts, they also helped to decongest health facilities by ensuring continuity of long-term care by implementing home-based delivery of medications, an intervention that was considered scalable and affordable.[15]

In 2017, the WHO African Region developed a policy brief to guide governments, partners, and implementers in maximizing the role of community health workers in strengthening health system capacities.[16] Subsequently, the more comprehensive global guidance on community health workers was developed in 2018[13] synergizing the 2018 Astana declaration on Primary Health Care that put community health workers at the core of community systems for high-quality, comprehensive, accessible, available, and affordable health.[17] These examples reinforce the spirit behind the 72nd World Health Assembly resolution on "Community health workers delivering primary health care: opportunities and challenges." Complimentarily, the African Union is leading the agenda to have at least 2 million community health workers in the continent and estimates that $5.4 billion is needed annually in Africa to scale up community health workers to 2 million, which could save at least 3 million lives annually.

On the back of these efforts, the countries in the WHO African Region has made substantial progress in scaling up community health workers, increasing its community health workers stock by 76%, from 486 186 community health workers in 2018 to almost 853 500 in 2021.[18,19] However, there is still no reliable data on some dynamics of community health workers in various countries—how many are employed full-time or part-time, and their training level. There are also lingering questions by policymakers, health planners, and health workforce practitioners about the density of community health workers needed to maximize their contribution and accelerate progress towards universal health coverage (UHC) and how much it would cost to attain the same.

Data and Methods

We extracted data from the World Health Organization's National Health Workforce Account (NHWA)[20] on the aggregate stock of community health workers reported by Member States in 2022, as well as from publications of the World Health Organization's Regional Office for Africa regarding various normative densities of required community health workers.[21-23] We also relied on a multi-country study by Castellani et al[24] and an unpublished report from Zimbabwe by Sisimayi and Sisimayi[25] to ascertain the proportion of time community health workers allocate to performing their health-related duties when they are not full-time employees. We undertook a descriptive gap analysis between the reported stock of community health workers in 2022 and the required number of community health workers using different scenarios, incorporating part-time work assumptions based on the literature.

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How Many Community Health Workers Are Needed in Africa?

Several factors can be taken into account in determining the need for community health workers, and there seems to be no single approach that would be appropriate in all contexts. Different approaches have been tried. For example, in 2021, WHO AFRO applied a structural equation modelling methodology to estimate the overall threshold density of health workers needed to attain at least 70 out of 100 UHC service coverage index (SCI) points (other UHC SCI targets were also simulated).[23,26] The analysis yielded a combined threshold of 134.23 per 10 000 for 13 major occupational groups. Using a non-linear Generalized Reduced Gradient (GRG) optimization technique, controlling for other covariates and UHC service index constrained at 70 out of 100, the 13 occupations in the analysis were simultaneously varied to examine an "optimum mix" at which the UHC target of 70 out of 100 is efficiently attainable. This yielded the estimate of 25.2 community health workers per 10 000 population. It was not related to the share of community health workers in the health workforce's stock, which may vary year by year. Obviously, the density was not intended as a planning target for community health workers, and it implicitly assumes head counting of community health workers whether they are working part-time or full-time.

In 2024, the WHO Regional Office for Africa adopted a novel needs-based methodology to conduct health workforce projection,[22,27] where it used the disease burden of each country and an essential package of services. The new analysis found that if community health workers work full-time, the needed density is 11.6 per 10 000 (range: 7.3 per 10 000 in the minimum scenario and 18.75 per 10 000 in the maximum scenario). This analysis assumes full-time employment instead of the headcount that mixes full-time and part-time community health workers, most of whom are part-time workers. Under this baseline scenario, the needed skill mix would be approximately one doctor for every five to six nurses and midwives, with each group of five nurses or midwives supported by one community health worker.

There are very few studies that assessed the amount or proportion of time community health workers actually devote to undertaking their health-related responsibilities. Evidence from a multi-country study by Castellani et al[24] suggested that community health workers spend a median time of 417 h per year performing their health-related duties—159.5 h per year in Burkina Faso, 472 h per year in Nigeria, and 417 h per year in Uganda. Thus, the median is roughly 30% of the community health workers time spent on their health-related duties. In contrast, an assessment in a district in Zimbabwe by Sisimayi and Sisimayi[25] found that community health spent roughly 65% of their daily working time on their health-related duties.

Incorporating this evidence that community health workers who are not full-time employees spend 30% to 65% of their time performing their health-related duties[24,25] in our recent needs-based projection yields various policy scenarios with varying degrees of the order of magnitude of the estimated shortage of community health workers. For example, if one assumes that community health workers spend 30% of their time on health (as found by Castellani et al[24] in some countries), the adjusted density of community health workers needed per 10 000 population ranges from 24.3 to 59.5 (from minimum scenario to maximum scenario). On the other hand, if it is assumed that community health workers spend 65% of their time on health (as reported by Sisimayi and Sisimayi), the adjusted density of community health workers needed per 10 000 population ranges from 11.2 to 28.8 (from minimum scenario to maximum scenario).

Implications of the Scenarios on Community Health Worker Requirements in Africa

Threshold of 25.2 per 10 000 population: In 2022, using the threshold of 25.2 community health workers per 10 000 population translated into 2 318 400 headcounts of CHWs (a combination of all-volunteer, part-time and full-time community health workers). In 2022, about 853 500 community health workers of various types (volunteer, part-time, and full-time) were reported by Member States through the WHO's National Health Workforce Account (NHWA),[20] which represents about 36.7% of the threshold density leaving a gap of 1.46 million community health workers.

Using the base scenario of recent estimates[27] and under the assumption of all CHWs working full-time: the community health worker needs-based requirement would have been 1 063 537 in 2022, which could increase to 1 261 868 by 2030. Compared with an estimated 853 500 available community health workers in 2022, the shortage was only 210 037, which implies that 80% of the needs-based requirements could have been met if the available community health workers were all full-time workers and appropriately deployed.

Using the base scenario of recent estimates[27] and adopting a scenario of hours worked that uses the findings of Castellani et al[24] that community health workers only spend 30% of their time on health-related activities (part-time work), the needs-based requirements for community health workers in 2022 would be adjusted to 1 808 013 and could reach 2 145 175 by 2030. In this scenario, the elevated community health worker requirement emphasizes the impact of reduced working hours that necessitate a larger number of community health workers to fulfil the same population's health service needs. In this scenario, the 2022 shortage would be 954 513, or 47% of the needs-based requirements could have been met if each available community health worker worked 30% full-time equivalence.

Using the base scenario of our recent estimates[27] and adopting a scenario of hours worked that uses the findings of Sisimayi and Sisimayi[25] that community health workers spent about 65% of their time on health-related activities (part-time work) the needs-based requirements for community health workers in 2022 would be adjusted to 1 435 775 and

could reach 1 703 521 by 2030. This scenario reflects almost an intermediate approach, balancing between the full-time assumption and the 30% full-time equivalence adopted from the work of Castellani et al, in which in 2022, the shortage was 582 275 or 59.5% of the needs-based requirements could have been met if each of the available community health workers working 65% full-time equivalence.

Implications for Policy and Practice

In recent literature syntheses, experts have highlighted that for low-and-middle income countries to stand a chance of delivering the promise of universal health coverage, health systems needed to transition from a vertical, top-down approach toward people-centered health care services through community-centered health interventions.[5,28] This paper highlights data and evidence that reiterate that integrating community health worker investments into broader primary health care, health workforce, and national health plans is an essential pathway to professionalizing community health workers into full-time jobs that could be more cost-effective and avoid fragmentation of planning and investments by level of care and/or occupational groups. To facilitate integration, policymakers must pay greater attention in the design of community health worker programmes to responsiveness to population health needs, health system and labor market requirements, and resource implications. They must also ensure that resource requirements for community health worker programmes are included in national budgets (including recurrent costs for remuneration) and align external development assistance with national priorities, pay scales and mechanisms. Embedding community health worker programmes in health systems through policies involves strengthening selection criteria, competency-based education, certification, and regulation, as well as providing financial packages commensurate with roles and hours worked, formal contracts and career development opportunities, and support from both the community and the health system. These recommendations are in tandem with various World Health Organization's guidance documents,[13,16] the Monrovia call to action[29] and the Community Health Delivery Partnership.

Conclusion

Countries would need different densities of community health workers to advance UHC depending on the working arrangement of community health workers and the assumptions adopted for the planning tool used. For the approaches considered in this commentary and the assumptions taken into account, it appears the plausible density is between 11.2 and 59.5 community health workers per 10 000 population. The different scenarios, from needs-based assessment to service package and disease burden, present a range of densities (from minimum to maximum scenarios), including the 25.2 per 10 000 population estimated in the 2021 report.[19,23] Compared with the recent estimates using needs-based epidemiological techniques, if community health workers are not full-time workers and work between 30% and 65% of their time, the current shortage of community health workers is between 580 000 and 954 500. However, if all the existing community health workers were to be employed full-time, the estimated needs-based shortage of community health workers would shrink significantly to just 210 000. One should note that these densities and estimates are not planning targets for countries and that WHO recommends that each uses the available tools to estimate its context-appropriate requirements for community health workers as part of planning for the broader health workforce.

Author Contributor Statement

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Disclaimer

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Reflexivity Statement

The paper has three authors from the same institution spanning different levels of seniority—a female who is at executive leadership level and two males – one at mid-level management and the other at technical advisory level. All the authors are from Africa—one each from Ghana, Nigeria and Zambia. The expertise of the authors cuts across global health, health policy and leadership, public health, health economics, health workforce planning and decision science.

Ethical Approval

No human subjects were involved in this study. Ethical approval for this type of study is not required by WHO.

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