



Accessing primary health care for urban slum dwellers in Ghana – a commentary

Delali Kumapley, Adanna Uloaku Nwameme, Selase Odopey, Genevieve Aryeetey, Helen Elsey & Bassey Ebenso

To cite this article: Delali Kumapley, Adanna Uloaku Nwameme, Selase Odopey, Genevieve Aryeetey, Helen Elsey & Bassey Ebenso (30 Apr 2026): Accessing primary health care for urban slum dwellers in Ghana – a commentary, *Cities & Health*, DOI: [10.1080/23748834.2026.2645462](https://doi.org/10.1080/23748834.2026.2645462)

To link to this article: <https://doi.org/10.1080/23748834.2026.2645462>



© 2026 The Author(s). Published by Informa UK Limited, trading as Taylor & Francis Group.



Published online: 30 Apr 2026.



[Submit your article to this journal](#)



Article views: 164



[View related articles](#)



[View Crossmark data](#)

Accessing primary health care for urban slum dwellers in Ghana – a commentary

Delali Kumapley^a, Adanna Uloaku Nwameme^a, Selase Odopey^a, Genevieve Aryeetey^a, Helen Elsey^b and Bassey Ebenso^c

^aSchool of Public Health, Colleges of Health Sciences, University of Ghana, Accra, Ghana; ^bDepartment of Health Sciences, Hull York Medical School, University of York, York, UK; ^cNuffield Centre for International Health and Development, University of Leeds, Leeds, UK

ABSTRACT

This commentary discusses the challenges faced by urban slum dwellers in low-and-middle-income countries (LMICs) like Ghana, where resources are poorly invested in the improvement of living conditions and quality of health care which is central to human development and the achievement of the Sustainable Development Goals. Using two case studies of fast-growing neighbourhoods in the Greater Accra Region of Ghana to understand mechanisms through which residents access Primary Health Care, we suggest creative ways of modifying the system to fit the urban context.

ARTICLE HISTORY

Received 22 August 2024
Accepted 10 March 2026

KEYWORDS

Primary Health Care; urbanization; urban slums; Universal Health Coverage (UHC); Community-based Health Planning and Services

Introduction

During the past half-century, rapid unplanned urbanisation has been associated with glaring disparities among urban populations regarding economic and health well-being (Hague 2015). This is partly because the most rapidly urbanizing zones (also called slums) have become areas of concentrated disadvantage, characterized by environmental hazards, overcrowding, inadequate access to services, and poor living conditions that present a significant global health challenge (United Nations 2018). A United Nations report on human settlements provided the most extensive account of demographic and economic determinants of slums globally, which included extreme poverty, substandard living conditions, the insecurity of tenure and marginalization from the formal sector such as exclusion from essential health services (Unger and Riley 2007). But why do urban slums remain a low priority globally, when improving the living conditions and quality of health care for all is central to human development and achieving the Sustainable Development Goals (SDGs) in any nation? Why are more resources not invested to improve environmental threats, upgrade housing, provide water and sanitation as well as healthcare facilities in slum areas to save lives and improve well-being? Why are low-and middle-income countries (LMICs) such as Ghana stalling in their implementation of policies to address infrastructure deficits? This article draws from learnings from continuous engagement with community members, health workers and district managers in two fast-growing urban neighbourhoods of Ashaiman and La-

Nkwantanang-Madina in the Greater Accra Region of Ghana, to understand the mechanisms through which residents access essential Primary Health Care services. We argue that as national and local governments devise policies to address stark urban inequities, emphasis should be placed on implementing programmes that prioritize access to essential Primary Health Care services for all city dwellers. This is in the bid to achieve SDG-11 of making cities and human settlements inclusive, safe, resilient and sustainable (United Nations Department for Economic and Social Affairs, 2023).

Urbanisation as a global phenomenon

In the 21st century, it has been predicted that urban change will occur in three ways. First, many people will move to urban centres; secondly, slums will be home to a significant proportion of the world's poor which is going to have an implication of their health; and thirdly, cities will spread spatially with implications for the environment and human health (Vlahov *et al.* 2007). Currently, 56% of the world's population lives in urban areas and this is expected to increase to 68% by 2050 (Castells-Quintana 2017).

Although urbanisation can be a conduit for economic growth, in the Global South, sustainable urbanisation remains a pressing challenge, where millions lack adequate access to basic services like electricity, clean water and sanitation (Castells-Quintana 2017). In Africa and South and East Asia, where rapid urbanisation is observed, slums are fast springing up. A slum or informal settlement is a term the UN-

Habitat uses to describe a wide range of low-income settlements and/or poor human living conditions. These fast-growing neighbourhoods are well-noted for the high presence of vulnerable minority groups.

Urban slums, health and the need for Primary Health Care

The plight of slum dwellers in most LMICs is not distinguished from non-slum areas in census data. This is because Demographic and Health Surveys, based on sampling frames derived from national censuses, do not distinguish between households that are located in a slum area of a city and those that are not. Surveys based on such censuses replicate the well-known association between poverty and health, ignoring the importance of space (Satterthwaite and Mitlin 2013, Lilford *et al.* 2017). Additionally, slums are typically not designated as formal residential areas and thereby ignored in censuses and national sampling frames (Lucci and Bhatkal 2014, Elsey *et al.* 2016). There have therefore been calls for the health of the residents in these areas to be studied independently as spatial entities and not subsumed in urban health or studies of poverty and health (Ezeh *et al.* 2017).

About 54.8% of Ghana's population currently live in slum conditions, which is characterised by the non-existing basic amenities for sanitation and health among others, making these people susceptible to ill health and diseases (Nwameme *et al.* 2018; UN-Habitat 2020). People who live in slums share what is known as environmental risks that arise from poor sanitation called the 'neighbourhood effects' (Meijer *et al.* 2012, van Ham *et al.* 2012). They also face health crises due to poor referral systems for maternal and child health emergencies, increased infant and child mortality rates, the rapid spread of Human Immunodeficiency Virus (HIV) and other Sexually Transmitted Infections (STIs), unwanted teenage pregnancy and unsafe abortions (United Nations 2007). The predicament of urban slum dwellers is exacerbated when they work in the informal sector, where statutory rights are minimal, and income is lost when they are absent from work. They may also be disadvantaged by long commuting hours. Consequently, when they fall ill, they are unable to access health facilities, even those located within the slums, as many are closed by the time they return from work. Women, who earn an average of only a third of men's earnings in urban areas of sub-Saharan Africa and elsewhere, cannot even attend appointments for immunisation, antenatal care, or receive care for chronic conditions due to the nature of their work (Neuwirth 2011, Ezeh *et al.* 2017). While the majority of urban slum dwellers depend on private and unregulated providers, the lack of amenities in their neighbourhoods, coupled with their low socio-economic status and poor education, makes it vital for primary

health care to be provided for them at the household and community levels (Owusu-Ansah *et al.* 2016).

Universal health coverage and the Community-based Health Planning and Services concept

Ghana's health policy development dates as far back as the 1950s and through research evidence and national health systems learning, the Community-based Health Planning and Services programme was launched as a national policy in 1999 (Elsey *et al.* 2023). The Community-based Health Planning and Services programme is Ghana's flagship initiative for achieving Universal Health Coverage (UHC). The main aim of Community-based Health Planning and Services is to enhance community involvement and create ownership of primary healthcare interventions in every community using strategies originally developed and tested by a Navrongo Health Research Centre plausibility trial (Ghana 2016). The key component of UHC, which is to make primary health care accessible, is reflected in the Community-based Health Planning and Services policy. Although resource and organisational constraints have slowed the expansion of Community-based Health Planning and Services coverage over its first decade of operation (Wright *et al.* 2020), Community-based Health Planning and Services has remained central to Ghana's UHC ambition.

According to Nyong'o *et al.* (2005), the Community-based Health Planning and Services programme has certain key characteristics including a resident professional nurse supported by community volunteers, engagement with traditional leaders to ensure commitment to the concept, and participation and mobilisation of volunteers, among others. Community Health Officers are trained to provide Primary Health Care at the community level. The model requires Community Health Officers to provide curative and preventive child health services, antenatal care, promotion of skilled delivery, post-natal care, and family planning (Ghana 2016). In the hard-to-reach rural settings, for which the Community-based Health Planning and Services was originally designed, health posts were developed where Community Health Officers lived and provided care through immunisations, health promotion, weekly outreach clinics, and continuous household visits (Binka *et al.* 2009, Awoonor-Williams and Phillips 2021).

Built on six implementation milestones, Community-based Health Planning and Services provides a structured framework for delivering Primary Health Care services at the community level. These milestones are: 1) preliminary planning, 2) community entry, 3) creation of community health compounds, 4) posting of Community Health Officers to these compounds, 5) procurement of logistics, and 6) deployment of

volunteers (Nyonator *et al.* 2005, Nwameme *et al.* 2018). As the Community-based Health Planning and Services strategy continues to facilitate access to primary health-care services in numerous parts of the country, the question arises whether such a health policy, with all its community-centred approaches, has a place in urban areas as well. If they do, how can primary healthcare systems developed for a rural poor population be adapted to suit the urban context? (Adams *et al.* 2018, Nwameme *et al.* 2018, Elsey *et al.* 2023). In its current form, the Community-based Health Planning and Services strategy is being implemented in urban settings, including underserved communities and slums. However, its implementation in these contexts is confronted with several operational and structural challenges. These constraints have been identified by researchers not only as limitations but also as opportunities to introduce context-specific innovations that adapt the existing implementation milestones to better respond to the unique demands of urban environments (Nwameme *et al.* 2018).

The main focus of the Community-based Health Planning and Services programme is on health promotion and prevention, and it thrives on community engagement (Elsey *et al.* 2023). It is assumed that the urban population is well-served and has access to primary care; however, most of the urban poor use private, often unregulated, health services, and the lack of preventive care underlines the need for an urban-specific Community-based Health Planning and Services model. Nonetheless, since its inception in urban areas in the 2010s, Community-based Health Planning and Services implementation in these settings presents peculiar challenges that put urban Community-based Health Planning and Services implementation at variance with the original rural model, such as the differences between rural and urban social networks and health challenges. Creative thinking is therefore needed in making modifications to the six milestones necessary to ensure that quality basic health services are made available to these disadvantaged urban communities (Adongo *et al.* 2014).

Insights from two districts in the Greater Accra Region

In Ghana, typical examples of fast-growing urban areas are Ashaiman and La-Nkwantanang-Madina Municipalities in the Greater Accra Region. Ashaiman Municipality has a total population of 208,060 covering a total land area of about 30.2 km², which is 100% urbanised with no rural population. La-Nkwantanang-Madina Municipal, on the other hand, has a population of 244,676, is 84% urbanised, and covers a total land area of 70.887 km² (Ashaiman Municipal Assembly *n.d.*, La Nkwantanang-Madina Municipal Assembly *n.d.*, Ghana Statistical Service 2021). Provision of primary

health care through Community-based Health Planning and Services in these municipalities has been fraught with challenges that are peculiar to many similar urban settings. Even the clear benefits to pregnant women and infants compound the problem as the strong emphasis on these groups reinforces perceptions that the target is maternal and child health care, thereby limiting broader community utilization. Efforts to address the many challenges call for innovative changes to the largely rural-focused Community-based Health Planning and Services programme.

Having come from the rural to settle in the urban areas in search of better means of livelihood opportunities in a bid to lift themselves and their families out of poverty, most of the residents in these municipalities come from different ethnicities thus leading to a lack of homogeneity amongst them. This heterogeneous characteristic of these migrant communities often results in the absence of recognised traditional leadership structures to oversee community affairs, thereby contributing to weakened social cohesion and limited collective identity among residents. This contradicts a core feature of the Community-based Health Planning and Services programme, community ownership, needed to support the Community Health Officers (Nwameme *et al.* 2018, Elsey *et al.* 2023). To mitigate this challenge, there is a need to engage with existing community structures such as mechanics associations (as seen in Ashaiman) or market-traders associations (as seen in Madina), in addition to religious leaders, assemblymen, and some traditional and opinion leaders, who serve as people of influence in these socially diverse communities. Understanding these communities has been possible through engaging community leaders and members, health workers and district managers in a series of participatory meetings and workshops, through which insights into the health conditions and challenges faced by the slum dwellers and the vulnerable groups among them have been gained.

A further defining component of the Community-based Health Planning and Services model is the engagement of community volunteers who facilitate mobilisation, maintain health registers, and support essential service delivery (Nyonator *et al.* 2005). While volunteerism in rural settings is often sustained through strong community ownership and social recognition, challenges faced include limited motivation due to lack of funds, training or logistical support, as well as insufficient supportive services, such as assistance with farm or business responsibilities from other community members (Kweku *et al.* 2020). In urban areas, the participation of these volunteers decline more rapidly due to higher opportunity costs, compounded by the absence of monetary incentives to retain volunteers in the programme (Adongo *et al.* 2014, Nwameme *et al.* 2018). The case is not different

in Ashaiman and Madina where volunteers have expressed their displeasure at working for free at the expense of earning income meant for their families. In Kenya, there have been attempts to provide stipends for these community health volunteers. In Bangladesh, through the Manoshi programme, volunteers receive financial incentives for each pregnancy identified or woman that they accompanied to a delivery centre (Marcil *et al.* 2016; Omolu 2021). A robust model of incentivising volunteers should be carefully considered in the urban setting since volunteers' time is an opportunity cost. There have been suggestions for the provision of non-monetary compensations for volunteers to be provided by the community in the form of opportunities for further training, and provision of privileges such as access to credit through bank loans, among others (Alam *et al.* 2012, Greenspan *et al.* 2013, Haile *et al.* 2014).

Carrying along community members is a major pivot of the Community-based Health Planning and Services programme. However, both the district staff and the community members involved in our engagement workshops highlighted that awareness of the Community-based Health Planning and Services programme and its activities was low in both municipalities under discussion. To ensure the interests of community members are sustained in the Community-based Health Planning and Services programme, Nyong'oro *et al.* (2005) have suggested continuous education and motivation for the urban poor to participate in programmes that aid in sensitising them on the benefits of the Community-based Health Planning and Services, as well as to disseminate health information. This can be done intermittently by holding community gatherings known as *durbars*, as well as through radio broadcasts, mobile vans and Community Information Centres. This way of engaging them bolsters the need for community members to be fully on board with the programme as a means of getting healthcare services to the less privileged. These forums can also serve as avenues for collaboration between the community members, the local government and the health sector to address other major issues impacting health in the communities such as sanitation and poor infrastructure.

Although healthcare workers in Community-based Health Planning and Services zones have specialized knowledge in areas such as diabetes, hypertension and mental health diseases, they often lack materials, medicines, or authority to manage them. These healthcare workers are unable to treat common illnesses that require antibiotics and sometimes need a midwife to manage pregnancies and deliveries. They also felt inept at dealing with some of the security issues that they met while delivering their services in the communities. In

Ashaiman for instance, pockets of drug users were identified and discussions with Community Health Officers revealed that they were apprehensive about offering their services to substance users due to concerns for their safety. At the same time, these individuals felt unable to approach the Community Health Officers for healthcare needs due to a sense of fear or shame. Thus, workforce capacity building will ensure better coverage of the communities while supervision and refresher courses will equip the Community Health Officers with up-to-date skills they need to handle the peculiar cases they meet in the course of carrying out their duties in urban settings (Nwameme *et al.* 2018). With urban slum dwellers showing a preference for pharmacies and informal health providers, another approach to structuring urban primary health care could involve building linkages between the plethora of private, informal and NGO providers and the more limited public sector primary healthcare services (Albis *et al.* 2019).

Conclusion

Rapid urbanisation in Ghana is expected to expand fast-growing informal communities, which increasingly accommodate migrants and other vulnerable populations. The poor living conditions in these communities, compounded by limited access to healthcare services and heightened health risks, make slum dwellers susceptible to various diseases. In this context, there is an urgent need to strengthen the operationalisation of Community-based Health Planning and Services in urban environments. While the Community-based Health Planning and Services programme has been effective in rural settings, its adaptation to urban areas presents unique challenges. To ensure equitable health coverage, it is necessary to adapt the Community-based Health Planning and Services model for urban contexts by strengthening community engagement through existing social structures. While monetary or non-monetary incentives for volunteers can help sustain their participation, establishing linkages between formal public health services and the many private and informal providers can improve coverage and continuity of care. Addressing workforce capacity gaps, while ensuring consistent availability of logistics, is also critical to delivering effective, high-quality primary health care in urban slums. Ensuring that Community-based Health Planning and Services remains responsive and effective across both rural and urban settings requires ongoing adaptation guided by evidence and community engagement. This approach also advances Universal Health Coverage and contributes to achieving the SDGs, particularly SDG 11, which emphasizes inclusive, safe, resilient, and sustainable cities and settlements.

Disclosure statement

No potential conflict of interest was reported by the author(s).

Funding

This study was conducted as part of the Community-led Responsive and Effective Urban Health System (CHORUS) Research Program Consortium, funded by Foreign, Commonwealth and Development Office (FCDO).

ORCID

Adanna Uloaku Nwameme  <http://orcid.org/0000-0002-7958-076X>

Notes on contributors

The authors are part of the CHORUS consortium, which undertakes research responding to the practical challenges of delivering equitable health in urban areas in Bangladesh, Nepal, Ghana and Nigeria. This is done with communities, health providers and city governments to design and build health systems by addressing four key pillars of the consortium which include linking the plurality of health care services; building collaboration across sectors to address wider determinants of health; strengthening systems to prevent and respond to the double burden of non-communicable and communicable diseases; and identifying, reaching, and engaging the urban poor.

References

- Adams, A.M., *et al.* 2018. Advancing universal health coverage in South Asian cities: a framework. *BMJ*, 363, k4905. doi:10.1136/bmj.k4905.
- Adongo, P.B., *et al.* 2014. Does the design and implementation of proven innovations for delivering basic primary health care services in rural communities fit the urban setting: the case of Ghana's Community-based Health Planning and Services (CHPS). *Health research policy and systems*, 12 (1), 16. doi:10.1186/1478-4505-12-16.
- Alam, K., Tasneem, S., and Oliveras, E., 2012. Performance of female volunteer community health workers in Dhaka urban slums. *Social science and medicine* (1982), 75 (3), 511–515. doi:10.1016/j.socscimed.2012.03.039.
- Albis, M.L.F., Bhadra, S.K., and Chin, B., 2019. Impact evaluation of contracting primary health care services in urban Bangladesh. *BMC health services research*, 19 (1), 854. doi:10.1186/s12913-019-4406-5.
- Ashaiman Municipal Assembly 2020 Annual Progress Report, n.d. https://www.ndpc.gov.gh/media/GR_Ashaiman_APR_2020.pdf.
- Awoonor-Williams, J.K. and Phillips, J.F., 2021. Developing organizational learning for scaling-up community-based primary health care in Ghana. *Learning health systems*, 6 (1), e10282. doi:10.1002/lrh2.10282.
- Binka, F.N., *et al.*, 2009. *In-depth review of the Community-Based Health Planning services (CHPS) programme a report of the annual health sector review*. Accra, Ghana.
- Castells-Quintana, D., 2017. Malthus living in a slum: urban concentration, infrastructure and economic growth. *Journal of urban economics*, 98, 158–173. doi:10.1016/j.jue.2016.02.003.
- Else, H., *et al.* 2016. Addressing inequities in urban health: do decision-makers have the data they need? Report from the urban health data special session at International Conference on Urban Health Dhaka 2015. *Journal of urban health*, 93 (3), 526–537. doi:10.1007/S11524-016-0046-9.
- Else, H., *et al.* 2023. Implementation of the Community-based Health Planning and Services (CHPS) in rural and urban Ghana: a history and systematic review of what works, for whom and why. *Frontiers in public health*, 11, 1105495. doi:10.3389/fpubh.2023.1105495.
- Ezeh, A., *et al.* 2017. The history, geography, and sociology of slums and the health problems of people who live in slums. *Lancet*, 389 (10068), 547–558. doi:10.1016/S0140-6736(16)31650-6.
- Ghana, 2016. *National Community-based Health Planning and Services (CHPS) policy*. Ministry of Health.
- Ghana Statistical Service (GSS), 2021. *Ghana 2021 population and housing census general report: Population of regions and districts*. Vol. 3B. Accra: Ghana Statistical Service.
- Greenspan, J.A., *et al.* 2013. Sources of community health worker motivation: a qualitative study in Morogoro Region, Tanzania. *Human resources for health*, 11 (1), 52. doi:10.1186/1478-4491-11-52.
- Hague, C., 2015. Rapid urbanisation, health and well-being: how informal settlements, slums and sprawling suburbs are globalising health problems. In: H. Barton, S. Thompson, S. Burgess, and M. Grant, eds. *The Routledge handbook of planning for health and well-being*. London: Routledge, 48–60. doi:10.4324/9781315728261.
- Haile, F., Yemane, D., and Gebreslassie, A., 2014. Assessment of non-financial incentives for volunteer community health workers – the case of Wukro district, Tigray, Ethiopia. *Human resources for health*, 12 (1), 54. doi:10.1186/1478-4491-12-54.
- Kweku, M., *et al.* 2020. Volunteer responsibilities, motivations and challenges in implementation of the Community-based Health Planning and Services (CHPS) initiative in Ghana: qualitative evidence from two systems learning districts of the CHPS+ project. *BMC health services research*, 20 (1), 482. doi:10.1186/s12913-020-05348-6.
- La Nkwantanang-Madina Municipal Assembly Composite Budget For 2020-2023: Programme Based Budget Estimates for 2020, n.d. Available from: <https://mofep.gov.gh/sites/default/files/composite-budget/2020/GR/La-Nkwantanang-Madina.pdf> [Accessed 2 April 2026].
- Lilford, R.J., *et al.* 2017. Improving the health and welfare of people who live in slums. *Lancet (London, England)*, 389 (10068), 559–570. doi:10.1016/S0140-6736(16)31848-7.
- Lucci, P. and Bhatkal, T., 2014. Monitoring progress on urban poverty. Are current data and indicators fit for purpose? *ODI Working Paper 405*. <https://cdn.odi.org/media/documents/9206.pdf>.
- Marcil, L., Afsana, K., and Perry, H.B., 2016. First steps in initiating an effective maternal, neonatal, and child health program in urban slums: the BRAC Manoshi Project's experience with community engagement, social mapping, and census taking in Bangladesh. *Journal of urban health: Bulletin of the New York Academy of Medicine*, 93 (1), 6–18. doi:10.1007/s11524-016-0026-0.
- Meijer, M., *et al.* 2012. Do neighborhoods affect individual mortality? A systematic review and meta-analysis of multilevel studies. *Social science and medicine* (1982), 74 (8), 1204–1212. doi:10.1016/j.socscimed.2011.11.034.

- Neuwirth, R., 2011. *Stealth of nations: the global rise of the informal economy*. New York: Knopf Doubleday Publishing Group.
- Nwameme, A.U., Tabong, P.T.-N., and Adongo, P.B., 2018. Implementing community-based health planning and services in impoverished urban communities: health workers' perspective. *BMC health services research*, 18 (1), 1. doi:10.1186/s12913-018-3005-1.
- Nyonator, F.K., et al. 2005. The Ghana community-based health planning and services initiative for scaling up service delivery innovation. *Health policy and planning*, 20 (1), 25–34. doi:10.1093/heapol/czi003.
- Omulo, C., 2021 (June 30). *Community health volunteers in Nairobi to receive monthly stipend*. Daily Nation; Nation. Available from: <https://nation.africa/kenya/counties/nairobi/community-health-volunteers-in-nairobi-to-receive-monthly-stipend-3455912>. [Accessed 2 Apr 2026].
- Owusu-Ansah, F.E., Tagbor, H., and Togbe, M.A., 2016. Access to health in city slum dwellers: the case of Sodom and Gomorrah in Accra, Ghana. *African journal of primary health care and family medicine*, 8 (1), 1. doi:10.4102/phcfm.v8i1.822.
- Satterthwaite, D. and Mitlin, D., 2013. *Reducing urban poverty in the global south*. London: Routledge. doi:10.4324/9780203104330.
- UN, 2023. *The sustainable development goals report 2023*. United Nations. <https://unstats.un.org/sdgs/report/2023/The-Sustainable-Development-Goals-Report-2023.pdf>.
- Unger, A. and Riley, L.W., 2007. Slum health: from understanding to action. *PLOS medicine*, 4 (10), e295. doi:10.1371/journal.pmed.0040295.
- UN-Habitat, 2020. *Ghana country profile*. Available from: <https://unhabitat.org/ghana> [Accessed 2 April 2026].
- United Nations, 2007. *Report of the international Law Commission: Fifty-ninth Session (7 May-5 June and 9 July-10 August 2007)*. UN.
- United Nations, 2018. *Revision of world urbanization prospects*. New York, NY: United Nations.
- van Ham, M., et al. 2012. Neighbourhood effects research: new perspectives. In: M. van Ham, D. Manley, N. Bailey, L. Simpson, and D. Maclennan, eds. *Neighbourhood effects research: new perspectives*. Springer Netherlands, 1–21. doi:10.1007/978-94-007-2309-2_1.
- Vlahov, D., et al. 2007. Urban as a determinant of health. *Journal of urban health*, 84 (1), 16–26. doi:10.1007/s11524-007-9169-3.
- Wright, K.J., et al. 2020. Community perceptions of universal health coverage in eight districts of the Northern and Volta regions of Ghana. *Global health action*, 13 (1), 1705460. doi:10.1080/16549716.2019.1705460.