Title*:   Prevent, Detect, Respond: Rapidly expanding healthcare teams through community health workers in the fight against COVID-19

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Over 184,000 cases of COVID-19 have been reported worldwide as of March 17 2020[1]—including in 27 African countries. Patients in countries with limited preparedness and response resources are particularly vulnerable to COVID-19. Sharp increases in COVID-19 caseloads may overwhelm health systems in countries already facing shortages of nurses, physicians and other health workers. In some cases, health workforce availability is less than 10% of what is estimated to be needed to deliver essential primary health care services. Strategies to rapidly expand healthcare teams and to develop innovative ways to deliver preventive, diagnostic and management services for COVID-19 are therefore urgently needed.

Rapidly expanding healthcare teams through community health workers (CHWs) has proven fundamental in effective epidemic response. During recent Ebola Virus Disease (EVD) epidemics in the Democratic Republic of Congo (DRC) and West Africa, nations like Liberia, Sierra Leone, Guinea, Nigeria and the DRC rapidly hired, trained and equipped thousands of community health workers from Ebola-affected and at-risk communities. As part of interdisciplinary teams with nurses, doctors and other health workers, CHWs played vital roles in reducing transmission through promoting social

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[1] Coronavirus disease 2019 (COVID-19) Situation Report - 49, https://www.who.int/docs/default-source/coronavirus/situation-reports/20200309-sitrep-49-covid-19.pdf?sfvrsn=70dabe61_4, accessed March 10 2020

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distancing and contact tracing, detecting and referring individuals with suspected EVD for testing, and encouraging EVD patients to seek care early[2].

Countries in Sub-Saharan Africa are engaging CHWs to conduct community surveillance and contact tracing, as well as promoting critical hygiene and behavioural change messages for COVID-19 (see Table 1). Liberia, for instance, is leveraging its National Community Health Assistant Program, with a strong track record of disease surveillance and expanding routine healthcare delivery, including malaria treatment and improving immunization and maternal health services[3],[4],[5], to strengthen COVID-19 preparedness. To *prevent* COVID-19, CHWs are conducting infection prevention and control measures, explaining and promoting social distancing and organizing hand hygiene stations, and educating their neighbors about interrupting disease transmission. Infection prevention supplies, including buckets, and soap are being distributed. To *detect* COVID-19, Liberia is considering engaging CHWs, supervised by nurses, to identify signs and symptoms of COVID-19 among community members, as part of Liberia's community event-based surveillance system. The Ministry of Health may involve them in coordinating testing (eg including collecting sample swabs) for those meeting case definitions (eg people exhibiting dry cough, fever). To *respond* to COVID-19, CHWs should learn to support self-isolation of non-critical patients with mild symptoms either at home or in appropriately designed congregate settings, monitor for clinical deterioration and organize rapid referrals for those requiring hospitalization. Plans are also underway to provide rapid COVID-19-specific training to teams of CHWs and equip them with *appropriate* personal

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[5] Paying and investing in last-mile community health workers accelerates universal health coverage. May 22, 2018. BMJ. Accessed March 6 2020, https://blogs.bmj.com/bmj/2018/05/22/paying-and-investing-in-last-mile-community-health-workers-accelerates-universal-health-coverage/.

protective equipment and the skills to use them appropriately to trace and monitor the contacts of confirmed COVID-19 patients. Finally, primary healthcare protocols are being reviewed to ensure the physical safety and health of CHWs, as well as their practice-specific knowledge, skills and supplies, while serving their neighbors with routine health services like malaria treatment and prenatal care, in the event of community-level transmission where healthcare facilities are overwhelmed with COVID-19 patients.

The time to prepare is now. Governments can mobilize resources to rapidly expand healthcare teams for COVID-19 preparedness through integrating prevention, detection and response interventions through existing community health workforces. Where additional investments are needed to scale community health workforces (e.g. provision of and training on adequate PPE use, paying new CHWs, and ensuring adequate clinical supervision and supply) countries can make use of COVID-19 funds available from The Global Fund[6], World Bank[7], Bill and Melinda Gates Foundation[8], USAID[9] and others to support preparedness and response efforts through existing healthcare platforms. As with past epidemics, it is likely that an effective COVID-19 response can benefit from strong resilient health systems with rooted in communities that can be surged at times of crises.

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[6] https://www.theglobalfund.org/en/news/2020-03-04-global-fund-issues-new-guidance-in-response-to-covid-19/

[7] https://www.worldbank.org/en/news/press-release/2020/03/03/world-bank-group-announces-up-to-12-billion-immediate-support-for-covid-19-country-response

[8] https://www.gatesfoundation.org/Media-Center/Press-Releases/2020/02/Bill-and-Melinda-Gates-Foundation-Dedicates-Additional-Funding-to-the-Novel-Coronavirus-Response

[9] https://www.usaid.gov/news-information/press-releases/mar-2-2020-administrator-green-37-million-assistance-novel-coronavirus-covid-19

	Table 1. Potential Roles for Community Health Workers in COVID-19 Epidemic
Prevent	Educate communities regarding signs, symptoms, and transmission routes, as well as promoting personal preventive measures such as social distancing, hand hygiene, coughing/sneezing into elbows, and WASH interventions.
	Organize hand hygiene stations in communities and health facilities.
	Support, lead or reinforce community and facility-based infection prevention and control measures, such as construction of triage areas, use of personal protective equipment (eg face masks, gloves, gowns).
	Support preparation of health systems and communities for the eventual introduction of COVID-19 vaccines in development, including outreach to high-risk groups.
Detect	With supervision from nurses, identify signs and symptoms in community members, support safe collection in communities and health facilities of samples and rapid transport to laboratories for analysis, thus reducing risks of nosocomial transmission.
Respond	Communicate rapidly and effectively to residents.
	Support self-isolation and monitor patients in the community while ensuring delivery of food, social, and medical support.
	Monitor patients for clinical deterioration and support rapid referral of individuals who require hospitalization, reinforcing links between the health system and communities.
	Support contact tracing, symptom reporting, and monitoring of contacts of COVID-19 patients to ensure access to testing and treatment for those who develop signs and symptoms.
	Implement or support disinfection of high-risk surfaces in communities using appropriate infection prevention and control supplies and procedures.
	Sustain routine primary healthcare services, e.g. vaccinations and integrated community case management of young children with malaria, pneumonia or diarrhoea.