Coronavirus Disease 2019 (COVID-19)

Engaging Community Health Workers to Support Home-based care for people with COVID-19 in low-resource settings

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Document purpose: This document provides suggestions for how Community Health Workers (CHWs) can support home-based care in low resource settings, including different actions CHWs can implement to support patients, their families, and their communities during COVID-19, and how to identify which people are eligible for home-based care. These suggestions can be adapted to follow national or local guidelines and to account for local context.

Intended audience: These considerations are intended for program managers and other public health officials supporting COVID-19 efforts in Country Offices working with CDC global programs in low-resource settings. CHW programs may vary in structure, organization, and scope. CDC Country Offices may be working with governments, international organizations, non-governmental organizations, and community- or faith-based organizations may manage or implement CHW programs.

Most people with COVID-19 will experience only mild to moderate symptoms . People with COVID-19 who do not have co-morbidities or underlying health conditions placing them at risk for severe disease can often be cared for at home. Home-based care provided by CHWs to people with COVID-19 can help relieve the substantial burden the COVID-19 pandemic has placed on healthcare systems worldwide. Relying on CHWs can help maximize available resources for managing and caring for people with more severe illness and also can help maintain essential health services. Additionally, home-based care decreases the risk of infecting others during transport to and stay at the health facility.

CHWs are valuable assets to public health in low resource settings. Broadly, CHWs work as community advocates, conduct outreach and community engagement for public health programs, and provide health education and services. CHWs are well-suited to provide the necessary sensitization, training, and support to communities to allow people with COVID-19 to be safely cared for at home. Protecting the health and safety of CHWs is critical. With training about prevention and appropriate infection prevention and control measures, CHWs can protect their own health while serving as good examples in the communities they serve.

CHW Level of Support for COVID-19 Activities May Vary

The level of CHWs engagement with COVID-19 activities, as well as the types of activities (e.g. general community education or direct engagement with persons diagnosed with COVID-19), will depend on many factors, including available resources, the skills of available CHWs and their willingness to participate in various activities, and the scale of the epidemic in a specific community. The following four scenarios are examples of how CHWs may operate within the COVID-19 pandemic response and how different mitigation activities may be layered to serve multiple functions. Level of individual risk for each scenario should be assessed to determine the need for appropriate personal protective equipment (PPE), keeping in mind that the overuse or misuse of PPE could lead to supply shortages (also see WHO guidance in this area) In general, CHWs providing direct patient care or assistance to a COVID-19 patient at home (e.g., scenario 4 below) should use appropriate PPE, which may include a medical mask, gown, gloves, eye protection, filtering facepiece respirators [i.e., N95, FFP2 or FFP3] or other equipment. In instances where direct patient does not require the CHW to be within 2 meters of the patient (e.g., scenarios 1, 2 and 3 below), other mitigation measures should be used (e.g. cloth mask, social distancing, hand hygiene, routine cleaning and disinfection of surfaces) and PPE should not be used.

Scenario 1: CHW is not engaged in COVID-19 activities. This may be a CHW who is engaging in non-COVID-19 activities, such as management of chronic illnesses in people with no symptoms of or contact to people with COVID-19, or general health promotion.

Scenario 2: CHW has limited engagement in some COVID-19 activities (e.g. community education and sensitization) but they are primarily focused on delivering other health services in people with no symptoms of or contact to people with COVID-19.

Scenario 3: CHW has moderate engagement in COVID-19 activities. The CHW incorporates COVID-19 community education and prevention messages into their primary non-COVID-19 duties, such as during health campaigns in the community. This allows CHWs to continue providing essential health services and prevents duplication of effort.

Scenario 4: CHW is fully engaged in COVID-19 related activities. The CHW is hired specifically to work on COVID-19 activities, such as COVID-19 symptom monitoring and supporting home-based care for COVID-19 patients.

There are multiple ways in which CHWs can support COVID-19 response efforts regardless of their level of engagement in the response (i.e. limited versus fully engaged). Table 1 below highlights general community education and prevention activities that can be integrated into the routine activities performed by CHWs. These activities are ideal for CHWs with limited hours to work, CHWs with less clinical experience, or CHWs who have extra capacity to integrate these activities into the non-COVID-19 services they are already providing to the community.

Table 1: Integrating COVID-19 Support Activities: Community education and prevention of COVID-19

	Examples of materials	Operational

Activities	needed for implementation	considerations and challenges
Educate communities on signs, symptoms, and transmission routes of COVID-19. Answer questions raised by community members and address myths, rumors, and misinformation circulating in the community. Monitor myths, rumors and misinformation within the community and inform local surveillance officer. Provide education to combat stigma against community members (e.g. people with cases of COVID-19 and their contacts; frontline or essential workers such as healthcare workers, contact tracers, truck drivers). Speak out against negative behaviors and statements and encourage empathy and support to community members who are quarantining or isolating. Promote COVID-19 prevention measures such as physical distancing (>2 meters), wearing a mask, hand washing and respiratory hygiene (coughing/sneezing into elbow). People should understand that **most people with COVID-19 have mild symptoms or no symptoms at all**, and using a mask prevents people who do not realize they are sick from spreading the virus to others. Encourage community members to seek testing or clinical care for symptoms consistent with COVID-19 or	• Bullhorn or microphone/speaker system • Informational fliers or leaflets targeted to a low-literacy audience • Hand washing stations with water and soap • Alcohol-based hand rub with at least 60% alcohol (for CHW to use when in the field and soap and water are not available) • Mask • Informational, educational, or communication (IEC) materials for COVID-19-infected individuals and their caregivers on safe home-based care, including hygiene practices and when to seek emergency medical attention • Misinformation/rumor tracking monitoring data collection tools, as part of routine surveillance • Mobile phone and airtime to call if a person in the community needs health care referral or for social media posting/dispelling rumors	If CHWs typically communicate going door to door, adapting to using bullhorn/microphone may be challenging. CHWs can model the behaviors they are promoting during educational sessions. Develop a system for CHWs to refer and connect people to COVID-19 testing and treatment facilities. A referral system or hotline for community members to call if they are experiencing violence/abuse or need social support should be in place before promoting this support. CHWs may be tasked with delivering test results for people they have referred for testing or those in the community as part of the referral and assessment pathway.

close contact to someone with COVID-19 per Ministry of Health guidance. For households or communities already supported by a CHW, screen for COVID-19 symptoms as part of routine duties. Refer any individuals experiencing symptoms, or who have been in close contact with someone with COVID-19, for testing. WHO provides guidance for prioritizing testing when diagnostic capacity is limited . Provide awareness and support for prevention of secondary impacts of COVID-19 (e.g. violence, food insecurity, lack of routine health care including childhood immunizations). Undertake social media activities including dispelling rumors or false information and posting factual information		

Operationalization of CHW support for home-based care

With training in infection prevention and control and sufficient supplies, CHWs can support home-based care for eligible individuals with confirmed or probable COVID-19. How CHWs support home-based care will vary by location, available resources, and the CHW management structure. This section describes general considerations for recruiting, training, and supervising CHWs supporting home-based care for COVID-19.

Recruiting CHWs

- A who-what-where assessment to assess existing organizations, their scope of work and capacity to expand scope should be first conducted to determine current capacity.
- In order to maintain continuity of services and not overburden CHWs already

working to provide essential health services, CHW cadres can be expanded wherever possible by hiring additional CHWs to support the COVID-19 response.

- Depending on the level of SARS-CoV-2 transmission, programs can consider adding tasks to existing CHWs or adding a new cadre of CHWs specifically to address COVID-19.

Training CHWs on COVID-19 and home-based care

- Provide CHWs with training relevant for any additional roles and responsibilities. This may include training on confidentiality as it relates to patient data.
- Conduct virtual trainings through mobile or online platforms, whenever possible. Provide easy-to-use algorithms or job aids translated into local languages when possible. In addition to materials available at CDC, COVID-19 training modules relevant to specific settings have been or are being developed by numerous organizations, including the WHO , Africa CDC through their Partnership to Accelerate COVID-19 Testing (PACT) Initiative , IFRC , and Johns Hopkins University .
- Follow strict physical distancing protocols for any necessary in-person trainings in addition to requiring all attendees to use masks.

Supervising CHWs

- Supervisory meetings (individual and group) can be conducted remotely and in collaboration with lowest administrative level health office/department.
  - Individual meetings can be held by phone. If in-person meetings are necessary, enforce physical distancing precautions and wear masks. If possible, conduct meetings outdoors or in well ventilated areas.
  - Group meetings can be held by virtual platform.
  - It may be necessary to increase frequency and extent of supervision due to increased need for technical and psychosocial support.
- Supervisors can initiate daily temperature and symptom checks for CHWs, to be reported via SMS, a phone call, email, or a mobile or web-based application. Refer CHWs reporting a temperature above 38 °C (100.4 °F) or other symptoms consistent with COVID-19 for COVID-19 testing. If a CHW tests positive, he/she should discontinue performing tasks until a negative test result is received or national/local criteria for discontinuation of isolation have been met. In areas where COVID-19 testing is not possible, but a CHW meets the case definition for a suspected case, the CHW should still isolate based on national guidelines.

Safety of Community Health Workers

The **safety** of CHWs and the patients and people they work with is of the utmost priority. To that end, CHWs **should:**

- Stay at least 2 meters away from other people, when possible
- Engage community members in an outside, open area
- Avoid typical physical greetings. Instead, practice no-contact greetings such as

waving, bowing, or head nodding

- Wear a mask at all times in the community. When coming into closer contact (less than 2 meters) with patients, a medical mask is needed
- Be provided with a sufficient supply of materials, including masks and enough soap and/or alcohol-based hand rub (at least 60% alcohol), needed to conduct their assigned tasks and properly protect themselves. Alcohol-based hand rub should be provided when running water is not available for handwashing.
- Be provided with appropriate personal protective equipment (PPE) for their responsibilities. CHWs should be trained in the proper use and disposal of PPE and other materials.

CHWs should NOT:

- Meet with groups or bring groups of people together
- Enter homes unless necessary to provide care while using appropriate PPE
- Touch anyone during the course of their duties without appropriate PPE

Additional safety precautions:

Provide all CHWs training on how COVID-19 is spread, how many people with COVID-19 are asymptomatic or presymptomatic, how most people with COVID-19 have mild infections (i.e., may not recognize that they are infected), and in-depth training on how infections can be prevented (mitigation strategies). CHWs should understand that infected children may have mild or no symptoms, but can spread the virus efficiently to others in the household. Also provide training on triaging patients or community members who develop symptoms of COVID-19 or may have had close contact with someone with COVID-19.

Offer older CHWs, pregnant CHWs, or CHWs with conditions that put them at increased risk for severe COVID-19 options that limit their risk of exposure (e.g. be assigned to duties with less risk for contact with a person with confirmed or suspected COVID-19, such as virtual symptom monitoring). CHWs living with family members at increased risk also may be considered for other duties. See **General COVID-19 Support Activities Table** below for activities with lower risk of contact with infected individuals.

Although CHWs should avoid touching anyone, if a CHW must touch someone as part of providing care (e.g. to hand over a pulse oximeter or other supplies) the CHW should wear, at a minimum, disposable gloves and a medical mask, and the person being tested should wear a mask. CHWs should always wash hands with alcohol-based hand rub or soap and water before and after touching someone, even if disposable gloves are used. The COVID-19 pandemic has resulted in global

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The COVID-19 pandemic has resulted in global shortages of PPE. A consistent, adequate supply of PPE may be challenging, particularly in remote and low-resource areas. Strategies to optimize PPE, including limited re-use of medical masks, should be explored.

How Community Health Workers can support home-based care

Individuals with mild to moderate COVID-19 symptoms who are not at risk of severe illness can recover at home if they are able to safely isolate. CHWs can support home-based care through three main strategies. Each strategy is comprised of different activities, with unique considerations for materials needed and operationalization. The strategies are interconnected and build on each other. CHWs can support one strategy or some strategies concurrently, though it may be more effective to group together all three strategies for operationalization by the same CHW, particularly a CHW dedicated to the COVID-19 response (Scenario 4 as previously defined).

Though any CHW could be trained to perform these activities, the activities may be better suited for CHWs with experience in community surveillance, integrated management of childhood illness, or other clinical expertise (e.g. HIV/AIDS, malaria, tuberculosis). Most of the activities in the three strategies can be conducted remotely (i.e. by phone) or in person; considerations for each are described in more detail below.

Strategy 1. Assessing eligibility for home-based care

Activities	Examples of resources for implementation	Operational considerations and challenges
Assess people with confirmed or probable COVID-19 for eligibility for home-based care. People with confirmed or probable COVID-19 *might be eligible* for home-based care if they have: • mild to moderate illness, including low-grade fever or chills, cough, shortness of breath or difficulty breathing, fatigue, muscle or body aches, headache, new loss of taste or smell, sore throat, congestion or runny nose, nausea or vomiting, or diarrhea • age < 65 years	• COVID-19 symptom assessment tool • Surveillance data collection tools • Home-based care individual eligibility assessment tool • Home-based care household/residence eligibility assessment tool • Alcohol-based hand rub (for CHW to use when in the field) • Mask • PPE (e.g. gloves, gown, masks) • Referral system to report people with	This strategy depends on the existence of a data and referral system that identifies people with confirmed or probable COVID-19 to be assessed for home-based care. The system(s) will vary by location and resource availability and should be in place and operational prior to activation of CHWs for eligibility assessment activities. Examples of possible referral systems include: • Local/national COVID-19 hotline • Rapid response teams • Testing center

- no co-morbidities (e.g. chronic heart disease, chronic respiratory disease, kidney failure, serious heart conditions, sickle cell disease, adult onset diabetes, obesity, or immunocompromising conditions such as cancer, HIV, TB or other auto-immune diseases). Additional conditions should be assessed that might put people be at increased risk for severe illness should also be considered (for example, asthma, hypertension or high blood pressure, pregnancy, smoking, liver disease, thalassemia, type 1 diabetes mellitus)
- a suitable and safe place for home isolation and care (see following)

Assess homes/residential setting for suitability for home-based care either by phone or home visit, based on the following conditions:

- The patient is stable enough to receive care at home
- Availability of appropriate caregiver(s). Caregiver, when possible, should not be at "higher-risk" for severe illness from COVID-19 (i.e. no chronic medical conditions, not

probable COVID-19 for symptom assessment or testing
- Referral system to link CHWs to people with confirmed or probable COVID-19
- Referral system to health care facility or community isolation center if setting is unsuitable for home care
- Referral system to link to contact tracing team (for identification/monitoring of contacts outside the household)

- Community-based surveillance
- Self-referral (i.e. per education/awareness campaigns listed above, the patient reaches out directly to health facility or directly to CHW)
- Noticed by CHW or referred by another CHW while in community
- House-to-house or route-based visits (active case search)
- Contact tracing team

COVID-19 testing may not be available everywhere, or may be limited. Referring people for testing when not available or clinically indicated may contribute to the spread of COVID-19. National or local recommendations regarding testing criteria and considerations for handling probable cases should be followed.

If patients are *not* eligible for home-based care, link them to care in a community isolation center, health facility, hospital, etc. CHWs could also help organize and support "house swaps", as described in the leftmost column, if a person meets criteria but their living space does not.

It may be difficult to determine who qualifies for food aid and

immunocompromised, not elderly, not pregnant). To minimize risk of transmission, designate one person as a caregiver until the patient recovers.

- Ability to monitor changes in the patient's clinical status at home
- A separate bedroom and bathroom for the person who is sick, if possible. If that's not possible, try to separate them from other household members as much as you can. Possible mitigation measures for high-density households may include:
    - Opening a window, if possible and if safe to do so.
    - Maintaining at least 6 feet between beds, if possible. If this isn't possible, sleep head to toe.
    - Putting a curtain around or place another physical divider (e.g., shower curtain, large cardboard poster board, heavy blanket) to separate the sick person's bed.
    - Keeping people at higher risk separated from

distribution of locally recommended hygiene materials.

PPE and hygiene supplies may be difficult to obtain due to supply chain issues as the COVID-19 outbreak progresses.

Home isolation may contribute to an increase in violence (e.g. due to stress or increased time in the same space as an abuser). When assessing patients and homes for suitability of home-based care, look for and consider signs and symptoms of violence and abuse.

anyone who is sick. “House swaps,” in which neighboring patients are cohorted together and cared for by one person or set of people dedicated to providing care

- Reliable access to food, water, medicine, and other basic necessities. In certain contexts, CHWs may help ensure access by providing delivery of these necessities.
- Patients and their household members have access to adequate supplies for transmission-based precautions (at a minimum, masks and gloves) and for cleaning and disinfecting (re-usable or disposable gloves, and lined trash bin) for the duration of recovery. Disposable gloves should be used for taking out the trash. For cleaning, if no thick gloves are available, any kind of gloves can be used.
- Patient can adhere to respiratory and hand hygiene precautions
- Household has access and ability to conduct frequent (at least daily) cleaning and disinfection of household surfaces (Note: may not be

necessary if patient lives alone) When assessing the eligibility of a setting for home-based care, considerations should also include if there are household members who may be at increased risk of severe illness from COVID-19 infection. If the patient or household is not suitable for home-based care, refer the patient to the local healthcare facility or community isolation center.		
Strategy 2. Advising, training, and supporting households and caregivers to provide home-based care		
Activities	**Materials needed for implementation**	**Operational considerations and challenges**
Advise and train households and caregivers to provide home-based care for people with COVID-19, including: • Infection prevention and control, including personal hygiene and how caretakers can protect themselves and others in the household when caring for someone with COVID-19 • Signs and symptoms of severe illness requiring referral to health facility (e.g. light headedness, difficulty breathing, chest pain, dehydration, confusion or other severe sign or	• Distribution of handwashing station materials and soap Low-literacy job aids / informational materials available in local languages on: • How to make a handwashing station (instructions for various designs can be found here) • How to make disinfecting solutions • How to care for someone with COVID-19 symptoms • How to make handwashing solution	Advisory and training activities can be conducted remotely (e.g. phone or message-based), but distribution of home-based care kits and other household support would have to be conducted in-person. The CHW should wear a mask and practice physical distancing. Supplies can be left at the household entrance. A referral system or hotline for community members to call if they are experiencing violence/abuse or need social support should be in place before promoting violence-related support.

symptom).
 	
• Distribute home-based care kits or refer household to where home-based kits are available
• Provide leaflet on How to care for someone with COVID-19 symptoms . This leaflet may need to be translated into local language.
• Provide support to households and community members affected by secondary impacts of COVID-19 (e.g. food insecurity, interpersonal violence, abuse)
  ◦ Promote local resources (e.g. a confidential referral network or hotline) for community members to call if they or others are experiencing violence or abuse
  ◦ Distribute food, water, medicine, hygiene materials, and household essentials.
	• How to dispose of waste
	
	Home-based care kits include supplies for cleaning, disinfecting, handwashing, and patient care for the duration of recovery:
	
	• Paracetamol
	• Soap
	• Disinfectant
	• Disposable gloves
	• Wash cloth
	• Masks
	• Mobile phone and airtime
		There will be costs associated with distribution of handwashing station materials, home hygiene kits, PPE, and basic household essentials. It may be difficult to determine who qualifies for this support, but ideally this would be based on existing social safety net lists and discussed with the community beforehand.

Strategy 3. Monitoring patients receiving home-based care and referring patients for treatment if their symptoms worsen		
Activities	**Materials needed for implementation**	**Operational considerations and challenges**

- CHWs can assist with daily symptom monitoring of patients until recovery, defined as at least 10 days since symptoms first appeared, at least 24 hours have passed since last fever without the use of fever-reducing medications, and symptoms (e.g., cough, shortness of breath) have improved
- Patients who remain asymptomatic may discontinue isolation 10 days after the date of their first positive viral diagnostic test or according to local/national guidance
- Patient or their caregiver can call CHW if symptoms worsen, and be counseled on symptoms requiring immediate medical attention (e.g. light headedness, difficulty breathing, chest pain, dehydration, etc.)
- CHW evaluates patient and refers to treatment, if necessary and if appropriate PPE/skillset is available
- CHW provides linkage to emergency transportation, if needed and available

Consider having CHW perform daily pulse oximetry monitoring of patients,[1],[2] where

- Patient symptom monitoring checklist and tool (paper or mobile app)
- Decision tree for referral to health provider or emergency medical attention (for patients experiencing worsening symptoms)
- Alcohol-based hand rub (for CHW to use when in the field)
- Mask, gloves
- Pulse oximeter
- Referral system to link patients to contact tracing team
- Communication/data system to share patient symptom monitoring data with community contact tracing team
- Hotline or other referral system for patients to call in the event of worsening symptoms after daily check-in with CHW
- Referral system to link patients with worsening symptoms to care

The CHW, caretakers, the patient themselves, or some combination of the former can conduct daily symptom monitoring. Daily symptom monitoring by a CHW can be done remotely, which is the preferred modality. In-person visits can be done for households without access to a mobile phone. CHWs should take steps to protect themselves (e.g. wear a mask, conduct frequent hand hygiene, practice physical distancing) when conducting in-person visits.
CHWs should avoid entering the home to take pulse oximetry readings; the patient can come to the doorway to be assessed. The CHW should wear a mask and disposable gloves to set the pulse oximeter on the floor for the patient (or caregiver) to pick up and put it on his/her own finger for assessment. In cases where the patient cannot bend down to pick up the pulse oximeter, the CHW can hand the pulse oximeter to the patient while remaining two arms lengths away. The CHW should wash his/her hands with soap and water for 20 seconds or use alcohol-based hand rub before putting on gloves and after taking them off, and safely dispose of gloves after use. The pulse oximeter

available, prioritizing monitoring on days 6-14 after onset of symptoms. Instruct patients and caregivers how to seek care if symptoms worsen.		should be properly sanitized after each use according to the manufacturer's instructions or with alcohol-based wipes or sprays containing at least 70% alcohol to disinfect screens/electronics . Dry surfaces thoroughly to avoid pooling of liquids. For continuity, contextual awareness, and rapport, to the extent possible, the same CHW should monitor the same patients (and potentially their household contacts) for the duration of the recovery period.

[1] Shah, S., Majmudar, K., Stein, A., et al. (2020), Novel use of home pulse oximetry monitoring in COVID-19 patients discharged from the emergency department identifies need for hospitalization. Acad Emerg Med. doi:10.1111/acem.14053 Accessed July 22, 2020

[2] Luks, A.M. & Swenson, E.R. (2020). Pulse oximetry for monitoring patients with COVID-19 at home: Potential pitfalls and practical guidance. Annals of the American Thoracic Society. doi: https://doi.org/10.1513/AnnalsATS.202005-418FR . Accessed August 5, 2020.

Resources

- Symptom assessment tool (to refer for testing)
- Home-based care kit checklist (i.e. what households need to support home-based care)
- Low-literacy job aids / informational materials on:
    - How to make handwashing solution
    - How to make a handwashing station (instructions for various designs can be found here)
    - How to make disinfecting solutions
    - How to care for someone with COVID-19 symptoms
- Community-based health care, including outreach and campaigns, in the context of the COVID-19 pandemic
- Home care for patients with suspected or confirmed COVID-19 and management of their contacts
- Rational use of personal protective equipment for coronavirus disease (COVID-19) and considerations during sever shortages

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