



### Implementing COVID-19 home-based care (HBC) using community health volunteers: Early experiences and lessons learned in Uganda, January - May 2021

Ben Masiira<sup>1,&</sup>, Atek Kagirita<sup>2</sup>, Herbert Kazoora<sup>1</sup>, Bernard Lubwama<sup>2</sup>, Emmanuel Kaggwa<sup>3</sup>, Faith Nakiyimba<sup>3</sup>, Issa Makumbi<sup>2</sup>, Winyi Kaboyo<sup>4</sup>, Daniel Albert Cohn<sup>5</sup>, Simon Nyovuura Antara<sup>1</sup>, Henry Mwebesa<sup>2</sup>

<sup>1</sup>African Field Epidemiology Network, Programs Department, Kampala, Uganda, <sup>2</sup>Ministry of Health, Kampala, Uganda, <sup>3</sup>Masaka District Local Government, Department of Health, Masaka, Uganda, <sup>4</sup>DAI, Tackling Deadly Diseases in Africa (TDDA) programme, Kampala, Uganda, <sup>5</sup>DAI, Tackling Deadly Diseases in Africa (TDDA) programme, Apsley, Hertfordshire, United Kingdom

#### ABSTRACT

Uganda's initial coronavirus disease 2019 (COVID-19) response strategy was institutional isolation and management of confirmed cases, and physical monitoring for contacts of confirmed cases. However, this strategy was replaced by the home-based care (HBC) strategy once the epidemic expanded and overstretched the country's health system. The Ministry of Health (MoH) in collaboration with African Field Epidemiology Network (AFENET) rolled out the HBC strategy in Masaka District from January-May 2021. The objective was to document experiences and lessons learned to guide the rollout of the HBC strategy elsewhere in the country. Implementation of the HBC strategy involved identification and orientation of the key stakeholders on COVID-19 infection, HBC procedures and criteria, and activation of the COVID-19 coordination structures. We enhanced COVID-19 surveillance and conducted community sensitization on COVID-19 and the HBC strategy. Essential supplies for HBC were procured and distributed to community volunteers/ village health teams (VHTs). Monthly supervision visits were conducted to assess progress, provide technical support, and review data quality. Findings showed that the HBC intervention was initially met with skepticism among healthcare workers due to the fear of delayed detection of severe symptoms by VHTs and risk of infection among household contacts. When VHTs were empowered with knowledge and skills, and provided with the required supplies, they managed to safely implement COVID-19 HBC. The HBC strategy was accepted within the community and among patients diagnosed with COVID-19 infection. Lack of adequate space for home isolation and stigmatization by the community were the main challenges reported by patients. Community-based approaches should be therefore used to address stigmatization and to make patients feel secure in the community.

**KEYWORDS:** Coronavirus disease 2019 (Covid-19), Home-Based Care (HBC), Village health teams (VHTs), Uganda

\*CORRESPONDING AUTHOR Ben Masiira, African Field Epidemiology Network, P.O Box 12874, Kampala, Uganda.

#### bmasiira@afenet.net

**RECEIVED** 25/04/2023

ACCEPTED 19/10/2023

PUBLISHED 27/10/2023

LINK

https://www.afenetjournal.net/content/series/6/1/13/full

© Ben Masiira et al. Journal of Interventional Epidemiology and Public Health [Internet]. This is an Open Access article distributed under the terms of the Creative Commons Attribution International 4.0 License (https://creativecommons.org/licenses/by/4.0/),

which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

CITATION

Ben Masiira et al. Implementing COVID-19 home-based care (HBC) using community health volunteers: Early experiences and lessons learned in Uganda, January - May 2021. J Interval Epidemiol Public Health. 2023 October; Suppl 6:13 DOI:

https://www.doi.org/10.37432/jieph.supp.2023. 6.3.06.13



### Introduction

The emergence of coronavirus disease 2019 (COVID-19), caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), was first detected in Wuhan City, China in December 2019. By May 2021, it had caused 169.5 million cases and 3.5 million deaths of which 3.4 million cases and 87,000 deaths were reported from Africa [1-4]. In the World Health Organization's African region, 19 countries (40%). including Uganda. were experiencing a significant increase in the number of COVID-19 new infections by the end of May 2021 [<u>3</u>].

Uganda recorded the first case of COVID-19 on 21 March 2020 [5]. The initial interventions from Uganda's government, which included a countrywide lockdown, played a substantial role in containing the spread of the epidemic but community transmission increased rapidly once the control measures were eased in June 2020. By 30 September 2020, Uganda was in Phase 4 of the epidemic characterized by widespread community spread with an average of 1,300 cases per week [6]. Between February and April 2021, the number of reported new COVID-19 infections declined, fluctuating between 10 and 60 cases per day [7-14], after which the country went into a second wave of COVID-19 [15-17]. As of 30 May 2021, the cumulative COVID-19 case count was 47,763 including 362 deaths (case fatality rate of 0.8%) [17].

As COVID-19 overstretched national health care systems globally, innovative strategies and tools that could contain the pandemic became increasingly necessary. One such strategy was home-based care (HBC) for management of mild and moderate cases of COVID-19 as proposed by WHO [18, 19]. Management of asymptomatic patients and those with mild to moderate symptoms at home has the advantage of offsetting the pressure on health facilities and maximizing the use of limited clinical resources; it can also substantially reduce the risk of infection to health workers and other individuals in health facilities [20, 21] as occurred in Italy where within 35 days of response to the COVID-19 epidemic, 8,920 health workers were infected with COVID-19, hampering hospitals' capacity to respond and also causing early spread of infection to patients who were under management for other medical conditions [21]. In-person home visits and virtual monitoring by health workers are among the strategies that have been used to implement the HBC approach for COVID-19 patients with mild to moderate symptoms [22-24].

The initial COVID-19 response strategy in Uganda was institutional isolation and management of all confirmed COVID-19 cases using hospitals and other designated sites, and in-person visits by health workers for all the listed contacts of confirmed cases. However, by the end of September 2020, the COVID-19 epidemic in Uganda had expanded to such a magnitude that health facilities were overwhelmed and unable to admit all positive cases. To address this challenge, the Ministry of Health (MoH) adopted the HBC strategy to manage COVID-19 patients with mild to moderate symptoms [6, 25].

However, the country's districts were not yet familiar with the HBC approach and lacked the financial and human resources and other logistics to implement the strategy. The objective was to assist one district that was at high risk for COVID-19 in rolling out the HBC intervention and in so doing to document experiences and lessons learned to inform the rollout of HBC in other districts in the country. The intervention was implemented from January-May 2021.

### Lessons from the field

#### **Implementation site**

The intervention was implemented in Masaka District which is located in southwestern Uganda Figure 1, about 125 Km from Kampala City, the capital of Uganda. The district has an estimated population of 342,300 with 53% below 18 years of age [26, 27]. The major economic activity is agriculture with the main cash crops including maize, beans, coffee, sweet potatoes, and bananas, as well as livestock [26]. Masaka District was selected because it ranked among the top 6 districts with a high burden of COVID-19 (with a daily case count between 3 and 29) during the planning phase for the HBC intervention [28-32] and presence of active community health workers who are known as village health teams (VHTs). In addition, the district had an increased risk of cross-border COVID-19 transmission because many of its towns are major resting spots for high volumes of cross-border cargo trucks and population movements.

### Identification of the key stakeholders

The district-level implementation team identified the key stakeholders for COVID-19 HBC at district, subcounty, parish, and village levels. These stakeholders included politicians, religious and opinion leaders, health workers, heads of schools/tertiary training institutions, implementing partners, and VHTs.

### Activation of COVID-19 coordination structures

The MoH team first reactivated the COVID-19 district task force (DTF) weekly meetings which had not been held for the preceding two months. The main responsibilities of the DTF, which was made up of the district's political and technical leadership, were to design strategies, supervise response interventions, lead community mobilization and sensitization. and mobilize resources. The reactivated DTF held weekly meetings to discuss the COVID-19 epidemic and HBC, and reported to the national task force (NTF) on epidemics and public health emergencies. The district technical team with support from the MoH team then activated subdistrict level COVID-19 task forces in each of the 9 sub-counties and 36 parishes. The sub-district level task forces were responsible for mobilization and sensitization of communities on COVID-19 prevention and control, and supervision of HBC activities. The DTF coordinated with other public health programs such as Expanded Program for Immunization (EPI), Human Immunodeficiency Virus (HIV), Tuberculosis and Maternity Services, by inviting their respective focal persons to make presentations providing updates on their work.

### Orientation of stakeholders on the HBC strategy

During the orientations, the importance of collaboration and transparency among stakeholders was emphasized. The following stakeholders were oriented:

• District task force and district health team: The MoH team oriented the 20-member DTF on coordination and their roles and responsibilities. Afterwards, the MoH team conducted a training-oftrainers training for 10 members of the district technical team, known as the district health team (DHT). This orientation covered the DHT's roles responsibilities, and HBC guidelines and coordination, and screening and management of confirmed COVID-19 cases within a household setting. The DHT then cascaded the HBC orientation to lower-level health workers, subcounty and parish task forces, community/opinion leaders, and VHTs.

• Health care workers: A total of 93 health workers were oriented, consisting of health sub-district managers, in-charges of health facilities, and frontline health workers involved in COVID-19 care and surveillance. The orientation covered the epidemiological situation of COVID-19 in the district, coordination, implementation strategy for HBC, criteria for HBC, case management, and the reporting framework and tools.

•Sub-county and parish task forces: Nine sub-county task forces each comprising five members, and 39 parish task forces each comprising four members, were oriented on COVID-19 infection transmission, prevention and control, and the HBC strategy.

•Village health teams: A total of 352 VHTs were oriented, one from each of the 352 villages constituting Masaka District. The orientation covered COVID-19 prevention and control, detecting symptoms of COVID-19, patient monitoring, and referral pathways. The VHTs were provided with thermometers, reporting forms, face masks, and hand sanitizer for conducting home visits.

•Community/opinion leaders: Thirty-four influential community/opinion leaders, including religious and cultural leaders, heads of schools/tertiary training institutions, journalists, and local politicians, were oriented on COVID-19 prevention, HBC strategy, and their roles in implementation of HBC in their respective communities.

### Procurement of essential supplies

The MoH team procured and delivered face masks to the district to support implementation of HBC activities. Case-investigation and reporting forms were printed and distributed to streamline case investigation and reporting. Digital thermometers were procured and delivered to the VHTs, and patients with confirmed COVID-19 for daily monitoring. The district's surveillance and laboratory teams were supported with fuel to investigate suspected cases, and to facilitate specimen transportation.

### Procedure for COVID-19 HBC

Patients were diagnosed at health facilities by health workers. For each diagnosed case, the health facility surveillance team conducted a home visit and took samples from house-hold contacts for COVID-19 testing. Home care management was applied to COVID-19 patients who met the following criteria: (i) mild or no symptoms, (ii) without known risk of developing complications or progressing to severe disease, (iii) living in a home that was assessed and found to be suitable for home care, (iv) clear understanding of the rationale for staying home until cleared by health officials, and (v) discharged from a treatment center to continue with home-based management. Patients who did not meet all the above criteria were managed in COVID-19 treatment centers.

HBC-eligible patients were taken through a counseling session at health facilities focusing on prevention of infection during home isolation and on the warning signs associated with progression to severe disease. The VHTs conducted daily monitoring visits to document patients' (selfmeasured) temperature and to document any emerging symptoms. The VHTs were not allowed to make physical contact or to examine the patient. If a COVID-19 patient or contact developed a high temperature or other dangerous symptoms, the VHT contacted a health facility/district surveillance focal person who came to conduct further assessment. The VHTs also monitored household contacts for possible symptoms of COVID-19 and made referrals when appropriate.

### Supervision of the HBC intervention

Day-to-day supervision of the intervention was conducted by the DHT led by the district health officer (DHO). The MoH team conducted monthly supervisory visits to assess progress, provide technical support, review data quality, and ensure that the objectives of the intervention were being met. The supervision teams interacted with VHTs and patients and they noted and addressed any challenges faced by the VHTs and patients under home care.

# Enhanced community and health facility surveillance

The VHTs, opinion leaders, and community leaders reported suspected COVID-19 cases to health facility surveillance focal persons or to the district surveillance focal person. The DHT enhanced COVID-19 surveillance at health facilities through distribution of case definitions and supervision of continuing medical education (CME) sessions. CME sessions were conducted at 26 of the 36 health facilities by the health workers who had received orientation on HBC; in the other 10 facilities the sessions did not take place due to competing activities.

Upon detection of an alert, the health worker, VHT member, or community member sent a notification to the health facility or district surveillance focal person for verification and further investigation if it fitted within the case definition. Financial support was provided to transport COVID-19 or other priority disease specimens to a collection point/hub from which the specimens were transported to the national reference laboratory.

Alert reporting improved from an average of 60 alerts per month in October-December 2020 to over 300 alerts per month from January to May 2021. In total 2,050 alerts were reported, of which 1,386 (68%) were investigated for COVID-19. Out of the 1,386 alerts investigated, 120 (9%) tested positive, of which 64 (53%) were females.

## Enhanced community engagement and sensitization

Community sensitization was conducted using radio jingles and radio talk shows in the local language, film vans, and sensitization meetings. Targeted health education sessions were conducted in highrisk locations including hotels, markets, and fishing communities, villages where a case of COVID-19 had been confirmed, and in schools and tertiary institutions each with more than 500 learners. The heads of the educational institutions ensured that teachers delivered sensitization sessions on COVID-19 to students every week and enforced mask wearing and hand washing. Politicians and community leaders talked about COVID-19 prevention during their interaction with communities.

## COVID-19 cases detected during HBC implementation

A total of 120 COVID-19 cases were diagnosed from 16 villages during implementation of the HBC intervention of which 108 (90%) were managed by a total of 28 VHTs using the HBC approach. The number of confirmed COVID-19 cases increased from 2 cases in January 2021 to 64 cases in May 2021. Twelve cases (10%) were referred to the treatment center for management of which eight had severe symptoms, two were above 60 years of age, and one had diabetes and hypertension and died in the treatment centre. Two cases (2%) managed under the HBC approach developed severe symptoms and were referred to the treatment center for further management.

### Experiences

The COVID-19 HBC intervention in Masaka District commenced four months after the MoH adopted the HBC strategy. Although the district had committed to implement the strategy, it was struggling to roll it out for all patients. Monitoring of the patients was conducted by the district surveillance focal person, the HBC focal person at Masaka regional referral hospital, and a few committed COVID-19 surveillance focal-persons at health facilities.

During early stages of the HBC intervention some health workers expressed skepticism about the HBC strategy. Their main concerns included: i) delayed detection by the VHTs of the symptoms associated with progression to severe COVID-19 infection, ii) increased risk of transmission of COVID-19 among home contacts, VHTs, and the community due to inconsistent adherence to guidelines for infection prevention, iii) challenges in accessing adequate supplies for infection prevention and control within households with confirmed cases, and iv) patient safety in the hands of VHTs who lacked knowledge and technical capacity to detect dangerous symptoms. These issues were important and helped to guide the implementation of the HBC intervention.

The mobilization and deployment of the VHTs to support the COVID-19 HBC intervention eased the pressure on Masaka District's health personnel. Although the VHTs were already playing a pivotal role in the implementation of other public health programs, an anticipated challenge was that the VHTs would not cooperate for fear of being infected with COVID-19. However, once the VHTs were oriented, they felt empowered and confident to manage and provide the required support to COVID-19 cases. The VHTs were involved in patient monitoring and delivered health promotion and infection prevention messages within the affected households. There were no confirmed infections among the VHTs who were involved in implementation of the HBC intervention.

Despite health workers' initial skepticism about the HBC strategy, patients and the community at large received the HBC intervention favourably. This favorable reception was in part linked to community resentment toward the original strategy of managing patients in treatment centers, based on reports of: i) poor feeding, ii) congestion in the treatment centers, iii) family members not being able to participate in the management or not being able to access their loved ones, and iv) rumors that patients admitted in treatment centers were being harmed or killed to stop transmission of the disease.

Patients reported feeling safe and satisfied with the care provided by the VHTs within their households:

"My VHT reviewed me on daily basis. He asked me about the symptoms I was experiencing, noted my temperature and provided me with reassurance that I was going to survive the infection" (Patient in Nyendo-Senyange village, translated from Luganda).

"After sending my two children to stay with relatives at my village home, I was taken care of by my wife in our house in Masaka. The VHT checked on me on daily basis to assess my condition and document any new symptoms I was experiencing. At the same time, I had access to the district surveillance focal person whom I would call at any time for consultation. Being managed at home was a good experience and at no time did I feel unsafe" (Patient in Kimanya village, translated from Luganda).

### Challenges

Although the majority of patients had good experiences under home care, a few reported stigmatization by the community and in some cases, that stigmatization continued beyond discharge from home care. This was not surprising as several reports had indicated that individuals diagnosed with COVID-19 were exposed to high levels of stigmatization within communities in Uganda generally [33-35].

"During and after home-based care, my family and I were isolated by many people within our community. People stopped visiting our household and some would run away when one of my family members was seen approaching their home. Even the retail shop owners were not willing to serve me or any of my family members and as such we had to buy household supplies in distant locations where we were not known" (Patient in Kiyumba sub-county, translated from Luganda).

Lack of knowledge and misinformation have been identified as key drivers of stigma associated with infectious diseases including COVID-19 [36-38]. Therefore, it is important that communities are sensitized about stigma and provided with reliable information on COVID-19 prevention and transmission in the local language.

Patients with inadequate space in their homes had difficulty in self-isolating there. A similar finding was reported in Spain where patients managed under the HBC strategy found it difficult to isolate at home, potentially putting the community at risk of infection [39]. Patients with inadequate space were advised to self-isolate at a relative's or friend's home or to send some members of the family to their relatives/friends. Patients without an option for selfisolation were managed at COVID-19 treatment centers until they tested negative for COVID-19.

As the community became aware of the COVID-19 HBC option, the implementation team found it difficult to convince some HBC-ineligible patients to accept referral to the designated COVID-19 treatment centre as these patients preferred to be managed within the comfort of their homes. Although the HBC implementation team managed to counsel and convince these patients to accept admission, this created delays in referral and commencement of treatment.

### Lessons learned

The key lessons learned during implementation of the HBC intervention included: i) a DTF platform can successfully be used to improve the coordination not only of the COVID-19 response but also of other public health programs such as EPI, HIV, and tuberculosis, ii) a district-level technical team that has been oriented by a more senior-level team, can in turn ably cascade an HBC intervention to the community level, iii) empowering VHTs with the required skills and knowledge is a critical part of the HBC intervention, and needs to be included as part of any successful attempt to replicate this pilot approach in other districts, iv) VHTs can implement the HBC strategy successfully, provided there are strong linkages to treatment centers to manage cases that progress to the severe stage, and v) rolling out HBC services is expected to lead to an increase in the number of COVID-19 confirmed cases due increased reporting and investigation of alerts.

### Conclusion

This paper describes the process, experiences and lessons learned during one Ugandan district's transition from the approach of hospitalizing all confirmed COVID-19 cases, to an HBC strategy implemented using VHTs. The COVID-19 HBC approach was received and accepted favorably by the community, patients, and VHTs. To ensure the safety of patients and that of the VHTs themselves, it is important that VHTs are adequately empowered with the required knowledge and skills for monitoring of patients in a household setting. Additional resources such as infection prevention and control supplies (gloves and sanitizer) and thermometers should be provided to the VHTs to enable safe and effective patient monitoring. Stigmatization of COVID-19 patients within the community is a key challenge that can hinder implementation of the HBC strategy. Therefore, community-based approaches need to be designed to address stigmatization and to enable recovered patients to re-integrate in the community after they are discharged from home care.

### What is known about this topic

• The COVID-19 HBC strategy was implemented successfully in Australia, Canada, and United States of America. However, these are high-income countries where the HBC was implemented using health workers

### What this study adds

• Experiences and lessons learned during implementation of the pilot HBC intervention (using VHTs/community health workers) will provide important information to other districts in Uganda as well as other countries in Africa on how to roll out the HBC strategy for COVID-19 and other similar infectious diseases

### **Competing interests**

The authors declare no competing interests.

### Authors' contributions

Ben Masiira participated in project conception, design, implementation, and supervision of project activities and led manuscript writing. Atek Kagirita participated in project conception, design, provided technical oversight and coordination of the project at MoH and participated in manuscript writing at all stages. Herbert Kazoora participated in project conception, design, implementation, and supervision of project activities and he reviewed and participated in manuscript writing at various stages. Bernard Lubwama participated in project design, implementation, and supervision of project activities and he reviewed and participated in manuscript writing at various stages. Emmanuel Kaggwa participated in project coordination and supervision at district level and participated in manuscript writing. Faith Nakiyimba provided overall technical project oversight, project coordination and supervision at district level, and participated in manuscript writing and approval of the manuscript at district level. Issa Makumbi participated in the project design and coordination at MoH, and participated in the writing of the manuscript at all stages. Winyi Kaboyo participated in project conception and design, and participated in the writing of the manuscript at all stages. Daniel A. Cohn participated in the writing of the manuscript at all stages. Simon Antara participated in project conception and design, and participated in manuscript writing and provided AFENET's approval of the manuscript for publication. Henry Mwebesa provided overall project technical oversight at national level, participated in manuscript writing, and provided the Ministry of Health's final approval of the manuscript for publication.

### Acknowledgements

We acknowledge the funding support offered by UK aid from the United Kingdom (UK) government, under the Tackling Deadly Diseases in Africa (TDDA) programme led by DAI. The views expressed are those of the authors and do not necessarily reflect the UK government's official policies, or the views, decisions, or policies of the institutions with which the authors are affiliated. Lastly, we thank the VHTs who participated in the monitoring of COVID-19 patients who were managed under the COVID-19 HBC strategy.

### Figure

**Figure 1**: Location of the HBC intervention site (Masaka District)

### References

- Spinato G, Fabbris C, Polesel J, Cazzador D, Borsetto D, Hopkins C, Boscolo-Rizzo P.<u>Alterations in smell or taste in mildly</u> symptomatic outpatients with sars-cov-2 infection. JAMA [Internet]. 2020 Apr 22 [cited 2023 Sep 23];323(20):2089. <u>https://doi.org/10.1001</u> /jama.2020.6771 Google Scholar
- Tang B, Bragazzi NL, Li Q, Tang S, Xiao Y, Wu J.<u>An updated estimation of the risk of</u> transmission of the novel coronavirus (2019-nCov). Infectious Disease Modelling [Internet]. 2020 Jan 01 [cited 2023 Sep 23];5:248-55. <u>https://doi.org/10.1016/j.idm.2020.0</u> 001 Google Scholar
- World Health Organization Regional Office for Africa. <u>Week 22: 24 - 30 May</u> <u>2021.</u> Weekly Bulletin on Outbreak and other Emergencies [Internet]. Brazzaville, Congo: World Health Organization Regional Office for Africa; 2021 May 30[cited 2023 Sep 23]. 20 p. Download OEW22-2430052021.pdf.
- World Health Organization. Weekly Operational Update on COVID-19 31 May 2021: Issue No. 57 [Internet]. World Health Organization; 2021 May 31[cited 2023 Sep 23]. 15 p. Download WOU\_2021\_31-May\_Cleared\_1.

- Lumu I.Covid-19 Response in Sub-Saharan Africa: Lessons From Uganda. Disaster med public health prep [Internet]. 2020 Jul 15 [cited 2023 Sep 23];14(3):e46-8. https://doi.org/10.1017/dmp.2020.248 PubMed | Google Scholar
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2020 Sep 30[cited 2023 Sep 23]. SitRep No.: 224. Download COVID19\_SitRep#224.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2021 Feb 03[cited 2023 Sep 23]. SitRep No.: 350. Download Ug\_COVID-19\_SitRep#350.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2021 Mar 04[cited 2023 Sep 24]. SitRep No.: 390.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2021 Mar 09[cited 2023 Sep 24]. SitRep No.:384. Download Ug\_COVID-19\_SitRep#384.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala Uganda; 2021 Apr 13[cited 2023 Sep 24]. SitRep No.: 406. Download Ug\_COVID-19\_SitRep#406.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2021 Apr 18[cited Sep 24]. SitRep No.: 408. Download Ug\_COVID-19\_SitRep#408.

- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u> [Internet]. Ministry of Health; Kampala, Uganda; 2021 Feb 19[cited 2023 Sep 24]. SitRep No.: 366 Download Ug\_COVID-19\_SitRep#366.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2021 Mar 22[cited 2023 Sep 24]. SitRep No.: 397. Download Ug\_COVID-19\_SitRep#397.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2021 Feb 28[cited 2023 Sep 24]. Report No.:375. Download Ug\_COVID-19\_SitRep#375.
- 15. Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2021 May 05[cited 2023 Sep 24]. SitRep No.: 412. Download Ug\_COVID-19\_SitRep#412.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2021 May 25[cited 2023 Sep 24]. SitRep No.:420. Download Ug\_COVID-19\_SitRep#420.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2021 May 30[cited 2023 Sep 24]. SitRep No.: 421. Download Ug\_COVID19\_SitRep#421.
- World Health Organization. Home care for patients with suspected novel coronavirus (COVID-19) infection presenting with mild symptoms, and management of their contacts: interim guidance, 04 February 2020[Internet]. World Health Organization; 2020[cited 2023 Sep23]. Doc No.: WHO/nCov/IPC/HomeCare/2020. Download WHO-nCov-IPC-HomeCare-2020.2-eng.

- World Health Organization. Home care for patients with suspected or confirmed COVID-19 and management of their contacts: interim guidance, 12 August 2020 [Internet]. World Health Organization; 2020[cited 2023 Sep 23]. WHO reference number: WHO-2019-nCoV-IPC-HomeCare-2020.4. Download WHO-2019nCoV-IPC-HomeCare-2020.4-eng.
- 20. Hollander JE, Carr BG.<u>Virtually Perfect?</u> <u>Telemedicine for Covid-19</u>. N Engl J Med [Internet]. 2020 Apr 30 [cited 2023 Sep 23];382(18):1679-81. <u>https://doi.org/10.1056/NEJMp2003</u> <u>539 Google Scholar</u>
- 21. Boccia S, Ricciardi W, Ioannidis JPA. What Other Countries Can Learn From Italy During the COVID-19 Pandemic. JAMA Intern Med [Internet]. 2020 Apr 07 [cited 2023 Sep 23];180(7):927. https://doi.org/10.1001/j amainternmed.2020.1447 Google Scholar
- 22. Robert Holly.<u>COVID-19 Patients</u> <u>Discharged from Home Health Care Often</u> <u>Have 'Excellent' Symptom Improvement,</u> <u>Functional Outcomes</u>. Home Health Care News[Internet]; 2020 Nov 23[cited 2023 Sep 23].
- 23. Hutchings OR, Dearing C, Jagers D, Shaw MJ, Raffan F, Jones A, Taggart R, Sinclair T, Anderson T, Ritchie AG. <u>Virtual health care for community management of patients with covid-19 in australia: observational cohort study</u>. J Med Internet Res [Internet]. 2021 Mar 9 [cited 2023 Sep 23];23(3):e21064. <u>https://doi.org/10.2196 /21064 PubMed | Google Scholar</u>

- 24. Pimlott N, Agarwal P, McCarthy LM, Luke MJ, Hum S, Gill S, Heisey R. <u>Clinical learnings from a virtual primary care program monitoring mild to moderate COVID-19 patients at home</u>. FamPra [Internet]. 2021 Dec 19 [cited 2023 Sep 23];38(5):549-55. <u>https://doi.org/10.1093/fampra/cma a130 PubMed | Google Scholar</u>
- 25. Ministry of Health (UG), Department of Health Promotion, Education & Health Communication. Basic Information for COVID-19 Patients Undergoing Home-Based Isolation and Care[Internet]. Ministry of Health, Department of Health Promotion, Education & Health Communication; Kampala, Uganda; [cited 2023 Sep 24]. 14 p.
- 26. Uganda Bureau of Statistics(UBOS). <u>The</u> <u>National Population and Housing Census</u> <u>2014, Area Specific Profiles - Masaka</u> <u>District</u>[Internet]. Kampala, Uganda: Uganda Bureau of Statistics; 2017 Apr[cited 2023 Sep 24]. 75 p. Download MASAKA.pdf.
- 27. Uganda Bureau of Statistics(UBOS). <u>The</u> <u>National Population and Housing Census</u> <u>2014-Main report</u> [Internet]. Kampala, Uganda: Uganda Bureau of Statistics; 2016[cited 2023 Sep 24]. 105 p. Download 03\_20182014\_National\_Census\_Main\_Rep ort.
- Ministry of Health(UG). <u>COVID-19</u>
   <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2020 Dec 21[cited 2023 Sep 24]. SitRep No.: 306. Download Ug\_COVID-19\_SitRep#306.

- 29. Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2020 Dec 23[cited 2023 Sep 24]. SitRep No.: 308
   9. Download Ug\_COVID-19\_SitRep#308.
- Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2020 Dec 24[cited 2023 Sep 24]. SitRep No.: 309. Download Ug\_COVID-19\_SitRep#309.
- 31. Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2020 Dec 25[cited 2023 Sep 24]. SitRep No.: 310. Download Ug\_COVID-19\_SitRep#310.
- 32. Ministry of Health (UG). <u>COVID-19</u> <u>DAILY SITUATION REPORT</u>[Internet]. Ministry of Health; Kampala, Uganda; 2020 Dec 04 [cited 2023 Sep 24]. SitRep No.: 289. Download Ug\_COVID-19\_SitRep#289.
- 33. WHO Regional Office for Africa. <u>A</u> <u>Teacher's tale of COVID-19</u> <u>Stigmatization and WHO's Invaluable</u> <u>Assistance</u> [Internet]. Kampala, Uganda: WHO Regional Office for Africa; 2021 Mar 01[cited 2023 Sep 24].
- 34. Amir K.<u>COVID-19 and its related stigma:</u>

  <u>A qualitative study among survivors in Kampala, Uganda</u>. Stigma and Health [Internet]. 2021 May 27 [cited 2023 Sep 24];
  6(3):2726. <u>https://doi.org/10.1037/sah0000325 G oogle Scholar</u>

- 35. WHO Regional Office for Africa. <u>Surviving</u> <u>COVID-19 and fighting stigma in</u> <u>Uganda</u>[Internet]. Kampala, Uganda: WHO Regional Office for Africa; 2020 Sep 24[cited 2023 Sep 24].
- 36. Fischer LS, Mansergh G, Lynch J, Santibanez S.<u>Addressing disease-related</u> <u>stigma during infectious disease</u> <u>outbreaks</u>. Disaster med public health prep [Internet]. 2019 Jun 03[cited 2023 Sep 24];13(5-6):989-94. <u>https://doi.org/10.1017/dmp.2018.15</u> 7 PubMed | Google Scholar
- 37. Logie CH, Turan JM.<u>How Do We Balance</u> <u>Tensions Between COVID-19 Public</u> <u>Health Responses and Stigma Mitigation?</u> <u>Learning from HIV Research</u>. AIDS Behav [Internet]. 2020 Apr 07 [cited 2023 Sep 24];24(7):20036. <u>https://doi.org/10.1007/s10461-020-</u> 02856-8 PubMed | Google Scholar
- 38. IFRC, UNICEF, WHO. <u>Social stigma</u> <u>associated with the coronavirus disease</u> (COVID-19)[Internet]. UNICEF; 2020 Feb 24[cited 2023 Sep 24]. 5 p. Download Social stigma associated with the coronavirus disease 2019 (COVID-19).
- 39. Romay-Barja M, Pascual-Carrasco M, Tena-Dávila MJD, Falcón M, Rodriguez-Blazquez C, Forjaz MJ, Ayala A, Fuente IM de la, Burgos A, Muñoz A, Benito A.<u>How</u> patients with COVID-19 managed the disease at home during the first wave in Spain: a cross-sectional study. BMJ Open [Internet]. 2021 May 21[cited 2023 Sep 24];11(5):e048702. http://dx.doi.org/10.1 136/bmjopen-2021-048702 PubMed | Google Scholar



Figure 1: Location of the HBC intervention site (Masaka District)