RESEARCH ARTICLE

Case Report: Telehealth Initiative Project in Koibarak Community, Markawet West Subcounty, and Elgeyo Markawet County in Rural Kenya

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ABSTRACT

COVID-19 has worsened existing and exposed new healthcare challenges, especially in the weakest healthcare systems. Telehealth has been used to overcome some of these challenges, especially in African economies such as Kenya. World Vision Canada's Enhancing Nutrition Services to Improve Maternal and Child Health in Africa and Asia (ENRICH) project has implemented the Telehealth Initiative to improve the well-being and reduction of life-threatening effects of COVID-19 on children and their families within targeted areas of rural Koibarak Community, the Marakwet West Subcounty and Elgeyo Markawet County in Kenya by June 2021. The Telehealth Initiative intervention has leveraged technology to spread preventative measures against COVID-19, distributing personal protective equipment (PPE) and facilitating Psychological First Aid services to all households. Overall, these efforts have resulted in a proactive COVID-19 response and improved access to healthcare services, as there were less cases of COVID-19 in these areas (cumulative 322) compared to the national average. Challenges arose, however, such as limited resources for COVID-19 testing, reporting and logistics. Other challenges include the rising COVID-19 case count that will continue to constrain the healthcare system, inadequate behaviour change, and the lack of COVID-19 resources available for school reopening. Future directions to address these challenges include health system strengthening, possibilities of upscaling the Telehealth Initiative, increasing local production of PPE, ensuring a functional vaccine rollout, and improvements to in-school precautions.

INTRODUCTION

COVID-19 has exacerbated existing problems in healthcare as the world adapts to the virus, especially in rural Africa [1,2]. Indeed, the world is only as strong as the weakest healthcare system [3]. New challenges surface, such as inconsistent funding directed towards COVID-19 supplies, underreporting, reallocating the delivery of healthcare services (testing, screening, and vaccinations), and ignoring COVID-19 precautions because of limited awareness and education [3]. Telehealth is a strategic approach to overcoming healthcare challenges such as lack of access and resources and reduces direct transmission of infectious agents [4,5]. Telehealth is a method of health provision that uses computers, webcams, video conferencing, television, tablets and mobile phone [4-7]. Digitalization and technology use has been progressing in African economies such as Kenya since before the pandemic [8].

The Enhancing Nutrition Services to Improve Child and Maternal Health in Africa and Asia (ENRICH) project utilizes telehealth to prevent COVID-19 cases in rural Kenyan counties. As of the quarterly report in September 2020, 38,379 COVID-19 cases were confirmed in Kenya [9,10]. The goal of this project was to improve well-being and reduce life-threatening effects of COVID-19 on children and their families within targeted areas of rural Koibarak Community, the Marakwet West Subcounty and Elgeyo Markawet County by June 2021. This case report will explore results, challenges, and future directions of the Telehealth Initiative.

METHODOLOGY

An intervention was completed within World Vision Canada (WVC)'s ENRICH project. The information used was provided by the WVC update reports and a virtual conversation with the Kenyan project lead.

Case Presentation

This project worked rurally, targeting women, men, and children. Personal protective equipment (PPE), digital technology and Psychological First Aid (PFA) services were provided to the community. The project outputs included:

1.1 - Community health workers (CHWs), community health volunteers (CHVs) and farmers spread accurate information about COVID-19 by sending mass texts to mobile phones in the community twice per month. Participants were provided with mobile phone airtime and telehealth center phone numbers. Phone appointments were set up between healthcare providers and their clients, and Zoom calls between healthcare providers and the project management team in Nairobi were conducted to obtain expert advice (Table 1).

1.2 - CHWs and CHVs distributed PPE (masks, aprons, goggles, face shields, and gloves), handwashing facilities, sanitizers, disinfectants, and disposal bins in the community. Capacity-building sessions were provided for health care providers to learn about the COVID-19 national guidelines [11]. These sessions communicated a deeper understanding of COVID-19, Infection Prevention and Control (IPAC), and

Table 1. Tools and Services Used in Output 1.1 of the Telehealth Initiative Project.

	Telehealth Tools	Telehealth Services
Clinician to Clinician	Communication regarding COVID-19 via email, video, and Skype	COVID-19 prevention and surveillance, COVID-19 clinical care services
Clinician to Patients	Phone, video, email, and remote wireless monitoring	Post-discharge follow-up, medication management, counselling, mental health, and sexual & reproductive health (SRH) education and concerns

revised protocols for home-based care, isolation, reproductive maternal, and child health, and nutrition services.

1.3 - Healthcare workers were equipped with skills on PFA and were assigned to target communities. The most vulnerable families (determining factors included family income, children living with disability, and malnourishment) were given cash transfers for economic support. CHVs, lead farmers, and care group members were sensitized on stigma, referral, monitoring, and risk communication related to COVID-19.

RESULTS

Telehealth expansion improved delivery of healthcare services in the counties included in this study. Telehealth appointments offered a means for remote communication between community and healthcare providers when access to healthcare facilities was difficult, and helped to prevent COVID-19 transmission. PPE distribution increased local availability and access. Health system workforce and service capacity, including health facility-based IPAC, were improved by conducting interviews with facility heads, distributing PPE, training CHWs, and engaging the communities involved. Households were given the support they needed to cope with the psychosocial and economic impact of the

COVID-19 pandemic. Additionally, a significant reduction in cases of child defilement and teenage pregnancies has been observed in the Koibarak Community.

Overall, this project contributed to an increase in knowledge of and access to preventive measures against COVID-19 amongst community members in the target villages. The intensified prevention initiatives and behaviours have been shown to lead to less COVID-19 positivity rates compared to national averages. As of March 31, 2021, there have been 322 cumulative COVID-19 cases in project areas in comparison to the 132,646 cumulative national cases in Kenya.

DISCUSSION

The ENRICH telehealth project outputs showed similarities to other initiatives put forth in the global response to COVID-19. Other projects such as those in Bangladesh also utilized CHWs and farmers to distribute COVID-19 information [3]. Telehealth has also been used effectively for contact tracing in South Africa, Ethiopia, and Kenya [5,12]. Gaining expert advice through interactions between county health management teams and doctors has also shown to be effective in a Canadian rural setting [13]. The ENRICH project output 1.2 aligns with the global response for securing PPE to prevent the spread of COVID-19 [3]. Furthermore, PFA and other essential services such as education about SRH, gender-based violence (GBV), HIV/AIDS, nutrition and pre-existing illnesses (i.e. malaria, cholera and hypertension)have been provided to the community [3,14-17].

Challenges

Challenges faced throughout the project included limited resources for mass testing which led to inaccurate reporting of COVID-19. Particularly, there was a late arrival of the case numbers in Africa due to inadequate reporting [18]. Additionally, some people in Kenya were resistant to COVID-19 testing due to fears of quarantining and the self-incurred cost [2]. This could in part explain the low reported positivity rate of COVID-19. Other challenges included difficulty scheduling phone consultations among rural physicians and specialists.

Major challenges that have arisen since the September 2020 quarterly report have included the rising number of COVID-19 cases that have constrained the Kenyan healthcare system in regards to limited PPE, funding, personnel and the rising prevalence of pre-existing illnesses [15-17]. Inadequate health service provision and PPE supply have compromised the safety of health providers and patients, thus increasing the risk of transmission among these groups [17]. The negative impact of COVID-19 is likely to be worse as community transmission rises, especially in the hard-to-reach, highly populated, and poverty-stricken regions of Elgeyo Marakwet and Koibarak Community [19]. Furthermore, with limited project funding, there is uncertainty of cash transfer replenishments for the vulnerable families.

Other challenges to consider moving forward include the possibility of inadequate behavior change with low compliance and the functionality of the vaccine roll-out plan. Resistance to attending healthcare facilities when necessary due to fear of travelling and lack of transportation, the potential lack of SRH services, and the scarcity of family planning commodities are other challenges. Finally, the lack of COVID-19 training for teachers, lack of internet connection, and suboptimal water conditions present when reopening schools poses additional threats to the success of this intervention.

CONCLUSION

Future Directions

Future directions to address the challenges mentioned include health system strengthening through directing funding towards effective public health surveillance, increasing SRH services, upscaling the Telehealth Initiative to reach more beneficiaries, increasing local production of PPEs, ensuring proper distribution with the vaccine roll-out, and improving in-school preventative procedures.

To further elaborate, upscaling the Telehealth Initiative through engaging government, private

sector and civil society organizations to reach even more beneficiaries inside these and other counties would be an effective response. We anticipate that attaining resources in advance through this collaboration with stakeholders will allow focused supply delivery in the local community, and partnerships in implementation sites [3]. For example, training local university students to create PPE and ventilators provides innovation in these counties [14,18]. A well-planned COVID-19 vaccine distribution is needed to ensure everyone has access, starting with healthcare workers and the most vulnerable [20]. Furthermore, ensuring continued education and awareness of COVID-19 will lower stigma. Finally, partnering with stakeholders to allocate resources and reopen schools will ensure support for water, PPE coverage, and proper training of COVID-19 precautions for teachers [21].

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