REVIEW

Community health workers as a sustainable health care innovation: Introducing a conceptual model

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Health care delivery in the Circumpolar North is challenged by a scarcity of culturally relevant health care services, few medical providers trained in cross-cultural care, and high costs of transportation. Community health workers (CHWs) are primarily Indigenous individuals who provide on-the-ground health care and health promotion services in their own communities. The CHWs' scope of work varies from health education to clinical care and often focuses on upstream factors that impact the public's health. Although often overlooked and underutilized, the CHW role is an innovative approach to promoting more sustainable and culturally relevant care within health systems. Investigating and understanding the potential ways that CHW-integrated health care systems support health and wellness could allow for a clearer understanding of how to translate this approach to other regions seeking a transition to sustainability in health and wellness. Drawing on experiences with CHWs in the Circumpolar North, this article introduces a conceptual model summarizing pathways that describe how integrating CHWs supports wellness in their communities. The proposed model includes five pathways for how CHWs could support wellness: (1) the recruitment of CHWs from within a community promotes community capacity and control; (2) the CHW role allows them to advocate to address structural and systemic inequalities that contribute to ill health, if CHWs are supported to organize their communities around wellness; (3) CHWs have the potential to support and empower community members; (4) CHWs have the potential to develop culturally relevant, feasible, and effective health promotion strategies; and (5) CHWs have the potential to build on community strengths. This model allows for CHW-integrated health care systems to be critically examined to both test and refine this proposed model, and support and empower community health workers as a transition to a more sustainable health care delivery system that reduces inequities and promotes health.

Keywords: Health equity, Culture, Health promotion, Community health workers, Theoretical model

Introduction

The role of community-based health workers varies between countries and regions in the Circumpolar North and includes community health representatives in Canada, community health aides and community health practitioners in Alaska, prevention workers (*forebyggelseskonsulenter)* in Greenland's municipalities, health workers (*bygdesundhedsarbejdere*) in health posts in Greenland's settlements, and state-sponsored "volunteer" households in northern Russia.

In this article, we refer to these roles collectively as community health workers (CHWs). The role has different definitions and scopes of practice across regions; however, commonalities exist across the Circumpolar landscape, which include the following: CHWs are often recruited from the communities they serve, receive some professional training, and operate within a designated scope of work in conjunction with a team of health workers (including supervisors). CHWs' roles are heterogeneous as a result of their unique community responsivity and the subsequent diversity of skills that are needed in community-based health. Depending on the region, their role may be limited to public health and health promotion activities in their communities (Canada and

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Greenland cities) or they may provide health and medical services (Alaska, remote Russian settlements, and Greenland settlements; Simoni et al., 2011). For example, in small settlements in remote places in Russia, one household in each settlement is responsible for providing first aid in sudden, life-threatening conditions, and a first-aid kit is mandatory in those households (Boyev, 2013). For this purpose, medical organizations are required to attract a household for state-sponsored "volunteering," whereupon the household is trained in first aid and provided with first-aid instructional materials and handbooks for the most common life-threatening conditions (Shubkin et al., 2015).

CHWs provide services to their community members in venues both within and outside of health care settings. In some cases, CHWs are senior members of their communities and have sufficient community clout or regional connections to raise concerns about structural barriers to good health and promoting structural change. This role of community advocate and change maker, although crucial, is rarely seen as an integral part of the CHW role.

CHW initiatives are increasingly recognized for the range of services and access to care they are able to provide, contributing to the realization of universal health coverage. The World Health Organization (WHO) developed the *WHO guideline on health policy and system support to optimize community health worker programs*, which is based on systematic reviews of existing literature and provides recommendations for improving the implementation and support of CHW initiatives (WHO, 2018). Expanding the role of CHWs in the Circumpolar world is one strategy to provide care in remote and underserved communities and has the potential to alleviate disparities in CHW-served communities. CHWs often work in communities with disproportionate health burdens, limited access to health resources, and substantial barriers to wellness. Because of this context, interventions that recognize and support CHWs have the potential to not only improve community health but also reduce health disparities and promote health equity by improving outcomes for underserved populations (Viswanathan et al., 2009; Perry et al., 2014). When compared with alternative strategies, CHWs' knowledge of context and culture has the potential to increase the effectiveness of an initiative, resulting in improved health outcomes for community members (Viswanathan et al., 2009). For example, in Alaska communities with dental health aides, there were significantly higher dental examinations and completed treatments when compared with communities served only by usual dental care (itinerant dentists; Lenaker, 2017).

The global COVID-19 pandemic has highlighted the potential for CHWs to both provide necessary and culturally appropriate care, as well as to be disproportionately burdened by the impacts of a public health crisis. For example, in Greenlandic settlements, CHWs were contacted to serve as frontline health educators and first responders. Greenlandic CHWs were given personal protective equipment, informational posters, and instructions on how to react if they found a potential COVID-19 case in their community. CHWs had the opportunity to play a critical role in their communities, and in response to their new scope of work, a motivated CHW organized a community meeting to discuss COVID-19 and appropriate safety measures to help keep their community safe.[1] On the other end of the COVID-19 progression, in Alaska, health aides have taken care of the sick and dying in their communities in ways that are culturally relevant. For example, a news article documented one health aide waiting with a community member as he took his last breaths, singing him songs as bad weather prevented a medivac from reaching him in time (Kim, 2020).

Background

While much evidence exists on the positive impact of CHWs, little has been published on the theoretical rationale for such interventions and their subsequent impact. Only one known article explores a similar topic, a paper published in 2011 by Simoni et al., which focused on conceptual considerations when developing peer health interventions, defined by the authors as including community health workers, community health representatives, *promotoras de salud*, and so on. Simoni et al. (2011) recommended that individuals interested in implementing a health intervention with CHWs engage in a two-step process—first, identify a theoretical model for the health behavior the intervention would be designed to impact; then examine the role of CHWs in the intervention through the lens of another theory, such as dynamic social impact theory, the diffusion of innovations theory, or social cognitive theory. This proposed two-part framework allowed for developing a theoretical understanding when designing a specific intervention with CHWs aimed at influencing individual patients; however, health behavior change is a narrow range of CHWs' potential impact on community wellness.

There is a gap in the literature on a conceptual model that outlines potential mechanisms of how interventions with CHWs may impact community wellness at multiple levels. Describing the potential pathways of CHWs' impact could lead to testable hypotheses to support the effectiveness of CHWs and community wellness promotion strategies they are engaged in, potentially resulting in shifts in practice, increased health equity, and improved health impacts. This article addresses that gap by exploring the theoretical foundations of CHWs' potential impact on community wellness and introducing a conceptual model.

Theoretical background

The proposed conceptual model integrates several theoretical frameworks to explain the impact of CHW-integrated interventions: social network and social support theories, principles of primary health care (PHC), and empowerment theories.

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1. Personal communication with the National Board of Health on COVID-19 response in Greenlandic settlements.

Social networks and social support

Social networks are the web of relationships between individuals in a given community (Heaney and Israel, 2008). These networks can be diagrammed by connecting each individual in a geographic, cultural, or other community to those with whom they are acquainted through a web of relational ties. In this model, individuals with many such ties, who are relatively centrally located in a network, are called "nodes." Individuals who work as CHWs may have already been "nodes" in their community's social networks before becoming CHWs, potentially having chosen to become a CHW because of their previous community role as a "natural helper," an individual who is trusted by their community as a person to turn to for advice and support (Heaney and Israel, 2008). In addition, the CHW role may strengthen existing health-related relationships between community members and CHWs and could facilitate the addition of additional social network ties, both of which may strengthen CHWs' potential to support health and wellness.

In social network theory, health and wellness can spread through social networks through changing social norms and role modeling, catalyzed by individuals who have large amounts of influence (Latkin and Knowlton, 2015). For example, Alaska's tribal primary care providers have reported making healthy behavior changes to take better care of themselves (76%), their communities (72%), and their families (70%), such as making meals with healthier foods, having a tobacco-free house, and encouraging family and community members to receive screening exams (Cueva et al., 2014). These CHW choices to support individual, family, and community wellness as a result of a CHW-centered initiative have the potential to ripple outward along social networks to empower other families and community members.

CHW-integrated interventions could also help create empowering conversations between community members about wellness. A 2004 study found that patients were more motivated by health care practitioners who engaged in healthy practices, while providers with healthy habits were more likely to discuss these behaviors with their patients (Frank, 2004). This concept was tested in an evaluation of a CHW-centered health promotion project in 2017, where CHWs' intent to engage in healthy behaviors was found to be significantly correlated with their intent to disseminate health information to their patients, families, friends, and communities (Cueva et al., 2017). Given that this plan to share health information occurred not only in CHWs' professional capacity as CHWs (i.e. only to patients) but also in their personal capacity as community members (i.e. sharing with family, friends, and other community members) highlights the unique capacity of CHWs to reach a wide network of their communities.

Social support, flowing through social networks, is thought of as including services and tangible resources, emotional support, information, and constructive feedback/affirmation (Heaney and Israel, 2008). Richmond (2007) found that CHWs in Canadian Indigenous communities described sources of social support as institutional or intimate. Institutional supports reflected those employed to provide support in the community. The main professions mentioned were CHWs, social workers, and members of band councils. Intimate supports were defined as family members, friends, and fellow community members. In many of these communities, most of which are both geographically small and have small populations, there is often significant overlap between institutional and intimate supports. This overlap can lead to tension around the supportive roles community members are expected to fill. This was observed by one CHW, who remarked that she could not escape her occupational role, even outside of work hours:

> When you work in your community you can get called any time. I can be in the grocery store getting my groceries, and a person will come over and talk to me about their problem. It can be very hard because sometimes when you leave your job you like to go home and forget about your job, but you live here, you face it. (Richmond, 2007, p. 4)

One pathway that CHWs may impact community wellness is through their ability to strengthen social networks and disseminate social support through those networks. This social support may include CHWs' sharing, or facilitating the sharing, of health information, health care services such as treatment and referrals, emotional support, or information that mobilizes communities to address systemic barriers to wellness, such as housing shortages, lack of culturally relevant services, or a lack of youth-engaging activities. Supporting CHWs to organize and provide needed interventions in their communities is a pathway that has the potential to increase health equity by addressing disparities most keenly felt within marginalized communities. Supporting CHWs in ways relevant to their needs is essential. This support could include providing financial resources, relevant supplies, authority and institutional recognition, opportunities for mentorship or collaboration, or continuing education on relevant topics. CHWs are potential catalysts for change from within populations that bear a disproportionate burden of health disparities.

Alignment with principles of PHC

Interventions with CHWs leverage mechanisms rooted in PHC. PHC is characterized by working in partnership with communities, with interventions coming from, and building on, community strengths:

> When the Declaration of Alma-Ata enshrined the principles of health equity, people-centred care and a central role for communities in health action, they were considered radical. (WHO, 2008, p. 2)

Community engagement in the planning and implementation of health interventions is paramount to ensure that interventions align with cultural values and needs. As CHW-integrated interventions invite CHWs to connect with, organize, and support their communities, these programs leverage the strengths within a community to

catalyze individual, community, and systemic change to promote wellness. The application of PHC principles through CHWs has the potential to make interventions more effective by supporting local change makers (CHWs) to develop strategies appropriate to their communities, which can lead to more culturally relevant, feasible, and effective interventions. Furthermore, as CHWs are often employed in priority populations that are disproportionately burdened by health disparities, supporting effective interventions has the potential to improve health equity. It is worth noting that the WHO's 2008 report entitled "Primary health care: Now more than ever" argued that,

> The PHC movement has underestimated the speed with which the transition in demand from traditional caregivers to professional care would bypass initial attempts to rapidly expand access to health care by relying on non-professional "community health workers," with their added value of cultural competence. (p. 2)

Increasing cultural relevancy of health promotion strategies

The shared social backgrounds, and connectedness of CHWs within their communities, may increase the cultural relevancy of CHWs' strategies, if CHWs are acknowledged as experts in their own right and empowered to design or at least codesign interventions. Culturally appropriate interventions have the potential to reduce health disparities; a high intensity of culturally targeted behavioral interventions were found to be significantly more effective in changing health behaviors than interventions without a high intensity or package of culturally appropriate strategies (Nierkens et al., 2013). However, the definition of culture, and culturally relevant interventions, remains somewhat elusive. Angayuqaq Oscar Kawagley, an Alaska Native anthropologist, defines culture as "… the principles we acquire to make sense of the world around us" enabling individuals to "make artifacts to fit their world, generate behavior, and interpret their experiences" (Kawagley, 2006). Culture can be considered the ways of knowing and being that shape a community's understanding and practice of health messaging and health promotion, including social background and experience. While culture is a shared social characteristic, the diversity and nuanced understanding of their own contexts among CHWs also acknowledge both the diversity within cultural groups and shared attributes across differing populations.

Simoni et al. (2011) suggest that a health educator who is perceived to have substantially more power than an individual hearing a health message may be a barrier that dampens engagement and social control, particularly when individuals are members of marginalized populations. This difference in perceived power and subsequent disempowerment could also be perceived due to cultural differences that perpetuate disempowerment of marginalized populations. Haeney and Israel (2008) hypothesize that support is more effective when a health educator is socially similar to those engaging with the educator and is

consequently perceived to have experienced similar stressors and situations. CHWs often work within their own communities and may consequently have shared backgrounds, experiences, and stressors, both allowing for a perception of similarity that could support the acceptability of CHWs' wellness promotion strategies as well as lead to strategies that are more feasible and effective because they are more aligned with communities' actual needs, cultures, and strengths.

In Greenland, CHWs develop annual plans for locally relevant health promotion. Highly motivated CHWs interested in doing good for their communities are not constrained by restrictive direction from management (although this can be a challenge for those who want more guidance) and are consequently able to create initiatives based on community needs. These initiatives are then funded by national, municipal, or local organizations, which allows them to be realized. Well-functioning local prevention committees have been identified as an enabling factor in allowing CHWs' work to be efficient. The Greenlandic local prevention committees further support the work of the CHWs by being responsive to CHW requests for additional information, when needed (Ingemann et al., 2018; Evaldsen, 2020).

Empowerment theories

Empowerment is described as "the possibility for people to control their own lives," and as a contextual, participatory process that advances social justice and redistributes power to increase control (Gutierrez et al., 1995; Perkins and Zimmerman, 1995; Zimmerman and Rappaport, 1988). Empowering approaches encourage movement toward health equity by supporting marginalized populations to reclaim their sovereignty and control. Empowerment-oriented approaches are designed to

> … enhance wellness while they also aim to ameliorate problems, provide opportunities for participants to develop knowledge and skills, and engage professionals as collaborators instead of as authoritative experts. (Perkins and Zimmerman, 1995, p. 570)

Empowerment also counters the narrative of individual responsibility, which places the burden on marginalized peoples to improve their lives through passive reception of knowledge they somehow "failed" to master (Laverack and Labonte, 2000). Community empowerment instead seeks to build on the strengths and capacity of communities to build community control and allow initiatives to respond to community needs (Laverack and Labonte, 2000) and to address the structural issues that perpetuate ill health (structural and interpersonal racism, food insecurity, social exclusion, etc.).

The spread of COVID-19 has led to an expansion of existing CHW programs in Russia, which has empowered local CHWs to respond to emergent community needs. In the Yamalo-Nents Autonomous Okrug (YaNAO), a CHW program of "medical volunteers" responded to the pandemic by creating two new branches and recruiting 410
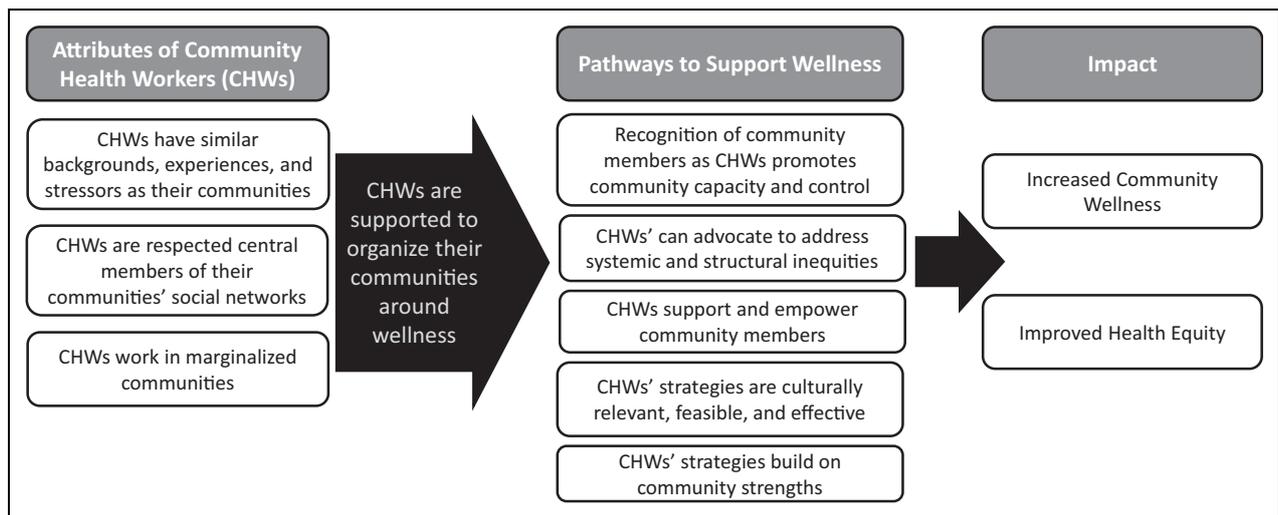
Figure 1. The Community Health Worker Impact model. DOI: https://doi.org/10.1525/elementa.2020.00093.f1

workers, with about 40% who had received medical education and the rest in training as of August 2020. The CHWs delivered medicine and food, helped to pay utility bills, and assisted with community members' unique needs, even taking pets on walks (Kriklivets, 2020). YaNAO was also one of the first in the country to open a headquarters for the #МыВместе ("We are together") CHW movement developed in response to COVID-19, which united the efforts of more than 850 public activists, 4 volunteer movements, and 15 public organizations ("Департамент молодежной политики и туризма Ямало-Ненецкого автономного округа," 2020). The CHWs collaborated with local businesses who provided personal protective equipment and, as of April 2020, had received over 5,400 requests for help ("Новости пресс-службы Губернатора Ямало-Ненецкого автономного округа/ Правительство Ямало-Ненецкого автономного округа," 2020). The capacity of empowered CHWs in YaNAO has allowed them to flexibly respond to community needs arising during the pandemic, including by uniting organizations, receiving government support, and providing relevant services.

Proposed model

The three distinct types of foundations—social network theories, alignment with principles of primary health care, and empowerment theories—have been integrated in the following proposed model (see **Figure 1**). By doing so, this article introduces a testable model to describe the unique potential of CHWs to impact community wellness and promote health equity.

The Community Health Worker Impact model proposes pathways for how CHWs impact community wellness and health equity. The model suggests that for maximum impact, CHWs should have similar backgrounds, experiences, and stressors as their communities, that they are respected members of their communities' social networks, and that they work in marginalized and underserved communities. There are five proposed pathways that CHWs

support wellness: (1) the recruitment of CHWs from within a community promotes community capacity and control, (2) their role allows them to advocate to address structural and systemic inequalities that contribute to ill health, if CHWs are supported to organize their communities around wellness, (3) CHWs have the potential to support and empower community members; (4) CHWs have the potential to develop culturally relevant, feasible, and effective health promotion strategies; and (5) CHWs have the potential to build on community strengths. The second pathway highlights that CHWs may also have opportunities to provide feedback on issues that might require the intervention of other systems, or political attention, to address barriers to health that are structural.

In this proposed model, CHWs impact community wellness because of the strengths of who they are and what their role means to their communities. If CHWs are supported to realize their capacity to organize their communities around wellness, the wellness strategies they develop and implement have the potential to build on community strengths and be culturally relevant and effective. In this model, the full realization of the CHWs' potential hinges on (1) support from community members and (2) recognition of the CHW role by other health care professionals. The latter might require professionalization and a defined scope of practice (Minore et al., 2009). Community and external recognition and trust may offer additional opportunities for CHWs to speak on behalf of their communities to advocate for structural changes.

In the Alaskan, Russian, and Greenlandic contexts, CHWs are often the only health care staff members who are from the communities served by a health system. In the Canadian context, CHWs are often the only Indigenous health care workers within the health care team. Because of this unique position, CHW recognition and professionalization has the unique capacity to support local control and capacity, if CHWs are supported to engage their communities in developing and implementing community wellness strategies that build on

community strengths. For this pathway to be more fully realized, CHWs could be selected who share similar backgrounds, experiences, and stressors as other members of their communities; are well-connected in their communities; understand community dynamics and cultural norms; and have existing social networks that can be strengthened through their role as CHWs. These CHWs would then need to be supported to organize around wellness issues that are relevant to their communities. This also highlights the need for CHWs to be individuals who are respected in their communities—a relatively low social standing may limit a CHW"s reach or the extent to which they can contribute to health and wellness in their communities. Conversely, if CHWs are not well respected, they may be perceived by peers as delivering substandard care, due to a lack of community trust (Lehmann and Sanders, 2007). In small communities, there may be a relatively limited number of community members who are well respected, actively engaged, and committed to the health of their communities. Making the CHW role one that is attractive to these individuals and has the support needed to recruit and retain individuals in that position may be a challenge. CHWs could be supported through empowering and PHC approaches that recognize and provide CHWs with the resources, knowledge, and skills to be effective leaders in their communities. In addition, interventions that focus on supporting and empowering CHWs to be community change makers, strengthening CHW capacity and intent to promote wellness, as well as those that support CHWs to be effective may make better use of this pathway.

Discussion

This article explores theoretical understandings of CHWs' potential to impact wellness in their communities and introduces a conceptual model summarizing these potential pathways. CHW-integrated health care systems and CHW-centered initiatives could be a sustainable innovation in promoting wellness. In the Circumpolar North, health care delivery in rural and remote communities is often a challenge addressed with extensive resources and relatively poor outcomes, exacerbated by systems that are not culturally relevant and do not recognize and empower community members to identify and organize to alleviate barriers to wellness. Empowering and supporting local capacity may be a more cost-effective, culturally relevant, and sustainable solution.

In this model, empowerment and support of CHWs are essential elements for CHW-integrated health care systems to realize potential community wellness and reduced health inequities. In health care systems where CHWs are not supported, or are disempowered, the benefits of CHW-integrated health care systems may be lost entirely or at least substantially attenuated. Consequently, intentional work to support and empower CHWs may be a necessary element of successful CHW-integrated health care systems. This work could include acknowledging and supporting CHWs as leaders in their communities and providing CHWs with the necessary funding and resources to do their work.

In the Canadian context, CHWs experience a significant lack of empowerment in many settings. While they have been provided with formal training opportunities in community colleges, this training has not resulted in opportunities for career advancement in the health care field, although some have transitioned into community leadership positions. Overall, the scope of practice of Canadian CHWs has been more narrowly defined over time, reflecting concerns for safety and liability, and largely subordinated to biomedically trained practitioners (Lavoie, 1993; Minore et al., 2009). The role has been largely framed as transitional, a stop-gap measure, until nursing retention is achieved, effectively dismissing the potential for unique strengths that CHWs bring to their role (Minore and Boone, 2002; Minore et al., 2004, 2005).

Although this model characterizes the pathways of potential positive impact of CHWs on their communities, many of the same pathways have potential negatives. For example, the role of CHWs as members of their communities with similar stressors could increase the risk of burnout of CHWs who witness, and attend to, the health care needs of their families and friends. In small communities where people are intimately familiar with one another, both the chances of commitment to the community and burnout from continual trauma of close family and friends may increase. Likewise, the role of CHWs as community members could be a barrier to community members accessing care, as someone may not want to visit a clinic where they would have to approach a family member or friend about potentially sensitive matters such as sexually transmitted infections or thoughts of suicide. In addition, the role of CHWs as central to communities' health and wellness social networks could be perceived as a barrier to confidentiality or could isolate CHWs from processing traumatic experiences if they did not have appropriate support systems. Supportive supervision, community-engaged selection of wellness initiatives, and relevant training are essential to CHW-integrated interventions (WHO, 2018).

This proposed model addresses a gap in the literature on the potential mechanisms underlying CHWs' impacts on community wellness, which creates an opportunity for the proposed pathways to be strengthened and tested in future CHW-integrated initiatives and health care systems. Increased understanding of how CHWs support health and wellness in their communities could facilitate shifts in practice that may lead to more sustainable community health and reduced health equities. This article and the proposed model draw from the body of research in the Circumpolar North but may be translatable to CHW-integrated initiatives in other geographies. These findings may both suggest shifts in programs that incorporate CHWs to strengthen positive impact and inspire new ideas for countries and regions that do not currently incorporate CHWs. In the Canadian context, the proposed model, which reflects previous recommendations from the National Indian and Inuit Community Health Representatives Organization, might result in a fuller realization of the role's potential.

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