

Evidence-based support for community outreach worker programme in Rural British Columbia, Canada

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Abstract

Introduction: Community outreach workers (CWs) provide critical services to their community by connecting marginalised people to community and primary care services. The importance of CWs is overlooked in the current provincial primary health-care transformation due to perceived lack of evidence. This evaluation describes the efficacy of the CW programme in a rural British Columbian community. **Methods:** Capacity of the programme was determined by reviewing service and financial reports. Outcomes of the programme were analyzed from the electronic medical records and health systems data. Group discussions were conducted with providers, care team members and CWs for a deeper understanding of programme efficacy and impact.

Results: For 64 h per month, CWs supported 15 clients, provided 28 visits and executed 10 referrals to community resources. The typical client was an adult of low socioeconomic status, unable to effectively organise themselves and navigate the health-care system and/or community resources, often as a result of undiagnosed low mental or cognitive functioning. The programme positively impacted the health-care system by facilitating 142 attachments to providers, reducing client emergency department use by 41%, while marginally increasing primary care services (6%), and supporting more appropriate emergency department visits.

Conclusion: Clients enrolled in the programme did not fit into already defined services offered by the health authority. However, they required support to effectively function in their community. With the current health-care system transformation in British Columbia, it is imperative that the CW programme is recognised for its value to attract and maintain stable funding.

Keywords: Community health workers, community outreach workers, team-based care

Résumé

Introduction: Les travailleurs communautaires assurent des services essentiels à leur communauté en rapprochant les personnes marginalisées et les services communautaires et médicaux de première ligne. La transformation actuelle des soins provinciaux de première ligne ne reconnaît pas l'importance des travailleurs

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communautaires en raison de l'absence perçue de données probantes. Cette évaluation décrit l'efficacité du programme de travailleurs communautaires dans une communauté rurale de la Colombie-Britannique.

Méthodologie: La capacité du programme a été déterminée par l'étude des services et des rapports financiers. Les résultats du programme ont été analysés à partir des dossiers médicaux électroniques (DME) et des données du système de santé. Des discussions en groupe ont eu lieu avec les fournisseurs de soins, les membres des équipes de soins et les travailleurs communautaires afin de mieux comprendre l'efficacité et l'impact du programme.

Résultats: Pendant 64 heures par mois, les travailleurs communautaires ont aidé 15 clients, effectué 28 visites et exécuté 10 recommandations à des ressources communautaires. Le client typique était un adulte à faible statut socio-économique, incapable de s'organiser efficacement et de naviguer dans le système de santé et/ou les ressources communautaires, souvent en raison d'un déficit mental ou cognitif non diagnostiqué. Le programme a eu un impact positif sur le système de santé en permettant 142 contacts avec des fournisseurs de soins, en réduisant de 41% les visites à l'urgence, tout en augmentant marginalement les services de soins de première ligne (6%), et en favorisant plus de visites appropriées à l'urgence.

Conclusion: Les clients inscrits au programme n'arrivaient pas à s'intégrer aux services préalablement définis offerts par les autorités de santé. Mais ils avaient quand même besoin d'aide pour fonctionner efficacement dans leur communauté. Avec la transformation actuelle du système de santé en Colombie-Britannique, il est impératif que le programme de travailleurs communautaires soit reconnu pour sa qualité réelle et qu'il reçoive et maintienne un financement stable.

Mots-clés: Travailleurs communautaires, travailleurs d'approche communautaire, soins en équipe

INTRODUCTION

According to the World Health Organisation, there is a growing need for community-based workers who deliver a range of preventive and promotive health services to improve client outcomes¹ and contribute to reducing inequalities in access to care and services.¹⁻⁵ According to Najafzada *et al.*, community health workers (CHW) are deployed to provide health and socioeconomic services to clients within their community, including guiding them through the healthcare system and other services.² There is much confusion in the literature and practice due to varying title names. For example, the literature identifies these positions as CHW or aboriginal health workers.² In the Interior Health Authority (IH), the CHW role resembles that of an aide worker, where CHWs assist with personal care, household duties and meal preparation.⁶ The closest similar position, as defined by literature, is the community mental health worker (CMHW). However, these services are directed only to clients with previously diagnosed or assessed mental health or cognitive conditions. Regardless of the terminology, these roles are heavily used in low-income countries, as they have been shown to be cost-effective⁷ as key positions linking clients with needed services.^{8,9} Recently, high-income countries such as Canada, US, UK and Australia have also been increasingly

using such roles in the primary care setting^{2,10} and the emergency department.¹¹

Community outreach workers (CWs) have been introduced as integral members of the primary care team in the patient-centered medical home (PMH), a care delivery model where care is coordinated through the primary care physician.^{2,10} Their role closely resembles that of the CMHW but is not guarded by the rules of client eligibility or any unionised bargaining unit. In the British Columbia primary care transformation, the PMH serves as a foundation of care delivery in the integrated system of primary and community care.¹² PMHs integrate into Primary Care Networks which serve as the backbone of the team-based approach that allows patients access to a full range of health-care options.^{13,14} Thus far, team members can include family providers, specialists, nurses, social workers and other allied care providers, such as therapists and pharmacists.^{13,14} Interestingly, CWs have not been recognised as potential members of the team in their funding models, despite literature suggesting that such roles have been recommended to take on the coordination of care functions for patients.^{10-12,15}

Princeton, British Columbia began its CW programme on 1st March, 2015 as a response to disparities for clients who were unable to navigate the health and social systems and programmes themselves. The purpose of the programme

is to enable primary care providers (general practitioners and nurse practitioners) to support their clients with psychosocial needs. Princeton CWs support two nurse practitioners and five family physicians. CWs connect clients with community services and programmes, such as day programmes, skills centres, lawyers, food bank, tax preparation, new mom supports, children's programmes and rehabilitation; these services support an ageing population that is expected to grow 39% by 2023, increasing the current rates of top chronic diseases, including mood and anxiety disorders (43%) and depression (39%).¹⁶ CWs advocate for clients with government agencies, including the Ministry of Health. As well, they help clients transition from home to facilities, assess needs and attend physician/client appointments, if necessary. Since the programme's inception, CWs have been integrated as part of the PMH team that supports team-based care.

The objectives of this evaluation were to depict one community's CW programme structure within the community context, determine the barriers and facilitators of a successful programme implementation and highlight potential return on investment. To achieve these objectives, a retrospective quantitative analysis of past CW reports, health authority data, annual financial reports, Electronic Medical Record (EMR) data and integrated team member surveys were conducted. As well, qualitative data were collected to obtain a deeper understanding of the efficacy of the programme.

METHODS

The Princeton PMH is located in the local health area (LHA) that extends over 4895 km² and is classified as a rural hub with a population of 4795 people.¹⁶ This LHA contains various community services with access to specialised care available at the Penticton Regional Hospital, 100 km away. Local services include a health centre with a medical clinic, general hospital, laboratory and X-ray outpatient services, home and public health, mental health and substance use, and assisted living. Available community resources include a child and youth mental health counsellor, crisis assistance society, foodbank, adult day programmes, home support, meals on

wheels, subsidized housing, family services and Red Cross equipment loan programme.

Our study was a mixed method retrospective evaluation of the CW programme in Princeton, British Columbia. Data collection and utilisation details are summarised in Table 1.

The data collection protocol for this quality improvement study was submitted for a review as per A Project Ethics Community Consensus Initiative guideline and a second review was provided through the Quality Improvement Board and the Privacy Information Department at the IH Authority. The protocol was exempt from research ethics review, as per the Tri-Council Policy Statement guidelines. Consent was sought from the participants for the focus group discussions, consulting sessions and CW feedback.

Data analysis

Quantitative data

Overall, programme capacity and utilisation were determined by calculating frequencies, averages and median scores for services provided, as recorded in the CW monthly and financial reports. Network analysis was determined by categorising all logged CW services for the duration of the programme and determining the types and frequencies of referrals. Gephi open graph platform programme (<https://gephi.org/>) was used to depict the strength and vastness of the CW reach to various service agencies. These services were also categorised based on function, for example, financial support and tabulated to highlight the type of supports needed most.

Number of visits to primary care providers and the emergency department was collected by CB from the shared EMR and consolidated for clients based on their programme referral date as the base point. Number of visits was counted for 1 year prior and post referral. Conservative inclusion criteria were implemented ensuring that the client was a resident of Princeton and was not receiving primary or emergency care anywhere else during that time. As well, it was ensured that the data were complete for the full year prior and post referral, i.e., clients were enrolled in the programme early enough to ensure that, at minimum, a full year of data were available post referral.

Table 1: Overview data sources and utilization

Data type	Data source	Data details	Data utilization purpose
Quantitative	Monthly CW reports	November 1, 2015 to March 31, 2019	Caseload, attachment, and capacity
	Division of family practice and OneSky (contractor)	Programme cost summary for fiscal years: 2015/16, 2016/17, 2017/18	Cost of programme delivery
	CW service log	Client records from March 2015 to March 2019	Network analysis: Scope of work, types of services, frequency of contacts
	EMR	Number of visits to ED and primary care provider one year prior and after enrollment in programme	Impact on emergency department and primary care services
Qualitative	Interior health authority strategic information unit	Health system data from January 1, 2015 to August 31, 2019 ^a ED visits, CTAS distribution, admissions, visits by presenting complaint	Comparison of emergency department utilization
	Primary care provider and integrated team focus groups	Total of 25 participants: providers, CWs, local leadership, integrated team members. Three 1 h focus group discussions, two 1 h interviews	In-depth understanding of community worker integration in primary care services
	Information and consulting sessions	4×1 h sessions with working group, consisting of 3 providers and 2 CWs	Context, elaboration and clarification of themes
	Feedback from community workers	Written responses from 2 (current and past) CWs	Reflection of community workers on the programme, including facilitators and CW characteristics for success

CW: Community outreach workers, CTAS: Canadian Triage Acuity Scale, ED: Emergency department, EMR: Electronic medical record

Qualitative data

During semi-structured focus group discussions, participants were asked about programme outcomes, observable benefits to the clients, challenges of the programme, qualities of a successful CW, impact of the programme on the providers and their satisfaction. Discussions continued until a saturation point was reached. Content was thematically analysed and presented to participants afterwards, ensuring comprehensiveness and representativeness.

RESULTS

Programme structure and capacity

The programme studied was delivered by the South Okanagan Similkameen Division of Family Practice and contracted to OneSky Community Resources which covers expenses incurred by their contracted staff, including onboarding, travel and meetings. The CW position was out of the scope of any union and was provided outside of the regional health authority. Since its inception, a total of 1065 visits were provided and 376 referrals were executed to community services. Monthly, the CW provided 64 h of service, averaging 15 clients, 28 visits and

10 executed referrals. The programme facilitated 142 client attachments to a primary care provider. This was an unexpected benefit, as referrals stem from providers. Therefore, facilitation of attachment resulted from unattached clients entering the emergency department. The overview of programme structure and organisation is summarised in Table 2.

Characteristics of clients referred to the programme

Although there are no specific criteria needed to be referred to the programme, the common persona of clients consists of having undiagnosed or unassessed low cognitive functioning, lower IQ, mental illness and/or learning disability. Clients may also be elderly with no children or family nearby and are unable to seek supports themselves. Functionally, the population is similar to that served by the community mental health worker (CMHW) programme; however, the CW programme fills the gap by focusing on clients with undiagnosed mental health and/or cognitive disability.

There were two types of clients: Those who required short-term assistance and complex-needs clients. Short-term assistance was typically more straightforward, where linking the client to a certain service or providing information on a

Table 2: Overview of programme organization

Responsibility	Division of family practice	Providers	Primary contractor	Sub-contractor	Community worker
Contract and funding	Develop contract with primary contractor Identify deliverables Secure funding		Develop contract with division Human resources Consult on description	Develop contract with primary contractor Identify deliverables	
Onboarding				Advertise position	
Job description				Arrange logistics for hiring and selection committee	
Advertising					
Interviewing and selection					
Programme expenses	Covers expenses incurred by providers for contract, onboarding, and meetings related to programme		Expenses incurred by their staff for contract, onboarding and meetings	Covers time, travel etc., expenses incurred by staff Expenses for delivering programme (e.g., travel, administration)	Documents all expenses incurred while delivering programme
Salary					
Administrative costs					
Office and equipment					
Incidental expenses					
Electronic medical records	Basic EMR training	Grant access to EMR			Adhere to privacy and confidentiality policies
Access	Confidentiality agreement education and enforcement				
Confidentiality agreement	Privacy policies				
Monitoring and oversight					

EMR: Electronic medical record

service would suffice. Complex-needs clients were those who require more than one type of support from the CW and for an extended time (several months). Often, complex clients will require recurring support, depending on their life events.

Integration of the community outreach workers in primary care

Being an integral part of the team, CWs participate in team huddles, discharge planning and share the EMR system through which they communicate with providers and receive client referrals. As a result, CWs reported ease of communication, support and respect from providers who prioritise consultation with the CW.

Facilitators to successful programme delivery

Focus groups and consultation sessions revealed several factors required for a successful delivery of the programme:

- Community need for services and availability of resources to connect clients
- Stability of financial support
- Provider support and integration with the primary care team through shared EMR and discharge planning

- Nimble and adaptive structure that allows a response to population needs
- Role definition and clarity
- Strong, trusting relationship among the CW, client and provider.

Adaptability of the CW was identified as a key personality characteristic required to be successful, as CWs are required to develop responsive action plans during their first meeting with the client. Additional personality characteristics listed by the focus group included flexibility, outgoingness, resourcefulness, patience, trustworthiness, reliability and discretion. Previous experience navigating social and health service organisations were also listed as an invaluable knowledge.

Impact on providers

As the programme was initiated as a response to providers' needs for better client-centered care, numerous positive outcomes were reported that extend to clients, including:

- Improved wellness and reduced burnout resulting from increased confidence that clients were appropriately supported outside of the clinic

- Enabled full scope of practice, as providers no longer needed to complete tasks within CW scope
- Improved traction in treatment plans, as clients were connected to resources, for example, PharmaCare programmes
- Reduced *no shows* to medical appointments.

Impact on the healthcare system

JP and CB reviewed the number of appointments of their complex clients ($N = 45$) who were enrolled in the programme. A subset of 10 clients was selected based on availability of data 1 year prior and post-enrolment in the programme. This was done to control for confounding extraneous circumstances, such as moving outside of the service area. Although this is a conservative sample, it ensured availability of a complete history of visits 1 year prior and post-enrolment in the programme.

As shown in Figure 1, on average, in a year prior to enrolment in the CW programme, complex clients saw their primary care provider 6.5 times, ranging anywhere from 0 to 32 visits and visited the emergency department 2.7 times, ranging from 0 to 15 visits. Within a year after the enrolment, the number of visits to the primary care provider increased by 6%–6.9% visits, ranging from 1 to 31 visits. These visits were also described as more effective and appropriate by the providers. The number of emergency department visits decreased by 41%–1.6% visits. When considering that the average cost of emergency department visits in this area is \$5845, the estimated cost decreased from \$15,782 the year before enrolment to \$9352 (\$935 per client, per year).

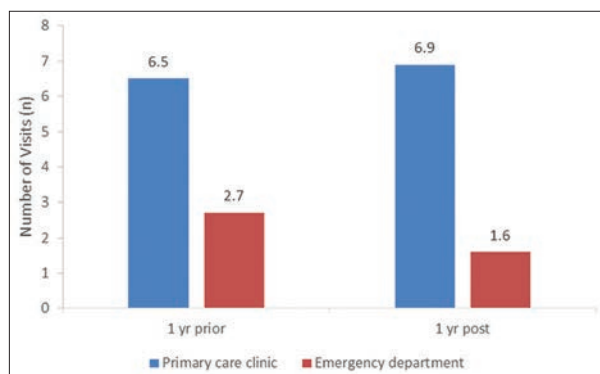


Figure 1: Number of visits to primary care provider and emergency department.

The providers corroborated these findings with their observations and recognised that there were fewer visits to the emergency department and the visits were more appropriate. By providing regular visits to the provider and ensuring that the client adhered to the treatment plan, the conditions for the clients were stabilised, which allowed a reduction in emergency department use.

The CW programme enabled an appropriate use of health-care services. Clients in the CW programme showed increased length of stay during ED visits (198 min), compared to when not in the programme (175 min). These findings indicated that once in the programme, the clients who were admitted were admitted for slightly longer. Furthermore, the presenting complaints to the ED varied when clients were in the programme compared to when they were not. The top three presenting complaints for clients in the programme included respiratory (18%), cardiovascular (15%) and orthopaedic (14%) concerns. For these same clients, when outside of the programme, the top presenting complaints were orthopaedic (17%), general and minor (14%) and mental health and substance use (12%). As indicated by providers, these general and minor and mental health and substance use complaints were better handled in the primary care setting and not the emergency department.

Network built by community workers

CWs support clients by building supports and networks to various agencies and services. This support can be based on temporary support or could require reaching out to numerous services with extensive follow up. An example of temporary support includes providing informational pamphlets. More complex support would include managing a sale of a large farm and moving clients to long-term care. The most common tasks performed by CW, and as reported by providers and CW, include:

- Determining resources a client needs and connecting clients to these resources
- Applying to various programmes, including PharmaCare, social support, disability, pension, etc.,
- Phone or in-person follow-up with agencies
- Bringing clients to their appointments with primary care providers, specialists and community (e.g., income tax, etc.)

In total, the CW connected clients to 60 various local, regional, provincial, and federal resources that included social services, financial support, mental health and health care. To gain an in-depth understanding of the extent of the network created by the CW, a review of referrals was conducted and quantified. Referrals from the inception of the programme to 31st March, 2019 were collated and categorised based on the main themes [Figure 2]. For example, the financial category represented services, including support with income tax, completion of forms for disability and networking with accountants.

A network analysis was conducted for a more representative overview of network vastness the CW provides and is shown as Figure 3. It is evident that the CW plays an essential role in the community as the connector and navigator of numerous resources for their clients, which otherwise would be a responsibility of the primary care provider or no one. It is evident that the most frequent connections made by the CW are to primary care providers, followed by Services BC, Persons with Disabilities services, PharmaCare and securing travel to out-of-town appointments.

Cost of the programme

On average, the programme cost \$26,000 per year for 64 h of service per month. This included the salary, benefits, administrative costs and travel expenses. The position was primarily self-directed with close relationships with providers; therefore, supervisory costs were considered to be minimal and not included. Provided that an average visit to the emergency department in Princeton costs \$5845,¹⁷ the services provided by the CW would need to prevent 4.5 visits per year to recover the

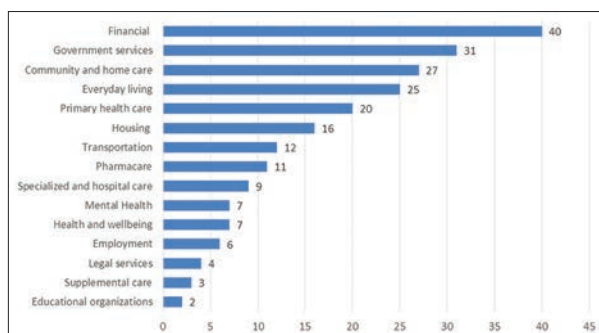


Figure 2: Type and frequency of services connected by community worker.

cost of the programme. The CW programme costs are summarised in Table 3.

Before the delivery of the programme, providers would carry out tasks now allocated to the CW. Therefore, the time allocation can be assumed to be 1:1, where providers would spend approximately 64 h per month, distributed among them, providing CW services. This would translate to approximately \$9900 per month, or \$118,800 annually.

DISCUSSION

Since the implementation of the CW programme in rural British Columbia the community, providers, and CW have used the position to best service their clients. The conducted quality improvement study provides a realist evaluation of the programme. The results show that the

Table 3: Community outreach workers programme cost (CAD \$) breakdown for 3 consecutive fiscal years, based on 64 h of service per month

	2015/16	2016/17	2017/18
Total wages and benefits	20,259.01	22,033.99	22,015.50
Administration costs	1262.87	2808.94	979.98
Facility costs	1650.57	1453.24	349.46
Professional services	218.22	86.00	53.00
Programme costs	387.44	344.47	154.39
Telephone	53.41	381.32	1040.49
Training expenses	4.20	N/A	327.25
Travel expense	1790.00	379.52	325.50
Other	N/A	N/A	18.55
Total	25,625.72	27,487.48	25,264.12

N/A: Not available, CAD: Canadian dollars

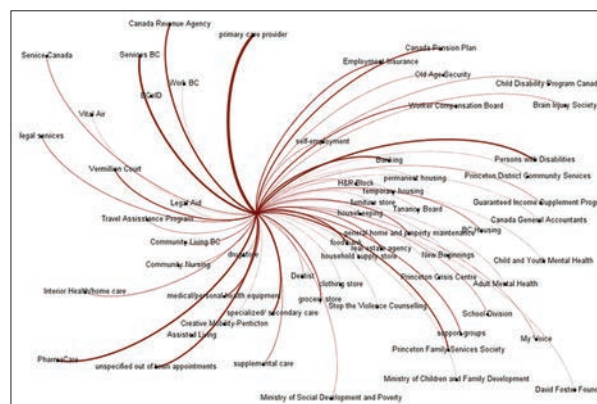


Figure 3: Reach of the network facilitated by the community outreach worker. The thickness of the line represents the strength of the relationship between the CW and services connected in relation to other services.

position is highly valued within the community, serves a sub-population that has 'fallen through the cracks' created by the system, and has substantial impact on the primary care providers and the health-care system. The major enabler of the programme is full integration of the CW as part of the primary care team, consistent funding and nimbleness of the position allowing responsiveness to population needs.

Limitations

A limitation of this study is that it is a retroactive approach. When the programme was developed by the province, it did not have a robust evaluation framework, especially when considering return on investment. The authors recognise this limitation and have approached the evaluation more conservatively. In addition, since inception of the programme, there was no in-depth external evaluation conducted or systematic approach to quality improvement. Changes were made to the programme on an as-needed basis, with little documentation. A systematic approach to monitoring of this programme is recommended to ensure its optimisation.

CONCLUSION

The CW programme is a cost-effective means of supporting primary care providers and clients, while reducing the cost to the emergency department. However, the programme remains under a continuous threat due to low support and recognition by the provincial Ministry of Health, making it ineligible for funding in the current health-care system transformation. With the changing primary health-care landscape in British Columbia, there is an unprecedented opportunity to economically and effectively enhance client outcomes by bridging primary care needs and sociopsychological challenges.

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A working group with representatives from all the provinces and territories with isolated fly-in communities has been formed to share concerns and offer advice. We will keep you posted on further initiatives.

Together we can work towards keeping everyone connected, safe, and up to date.

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