Evaluating the Peel Community Health Ambassador Program:

Building Trusting, Equitable, and Responsive Healthcare during the COVID-19 Pandemic

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Acknowledgements

Our community partners and networks in the Peel region

pchs Leading With Conviction And Courage

Canadian Mental Health Association Peel Dufferin Mental health for all

roots community services Inspiration. Empowerment. Action.

DBNC Dixie Bloor Neighbourhood Centre

WellFort Community Health Services

Indus Community Services

ABR & SD COLLECTIVE

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We would also like to thank our Community Advisory Board (CAB) and Peer Research Assistants (PRA)

CAB Members: Annalisa Rassmusen, Sadia Mahmood, Dr. Srimanta Mohanty, Hameed Shaheer, Dianne Fierheller, Ugonna Ofonagoro, Cameron Thompson, Ingrid Giesinger
PRA's: Rashmi Narkhede, Lavinia Lakhan, Jamaul Taylor, Midhury Karunanithy, Ivana Grabez, Mustaf Egal
*PRA's also contributed to the CAB

Land Acknowledgement

We would like to centre this community work by acknowledging the land on which this work took place, and which the Region of Peel operates, is part of the Treaty Lands and Territory of the Mississaugas of the Credit. For thousands of years, Indigenous peoples inhabited and cared for this land, and continue to do so today. In particular we acknowledge the territory of the Anishinabek, Huron-Wendat, Haudenosaunee and Ojibway/Chippewa peoples; the land that is home to the Metis; and most recently, the territory of the Mississaugas of the Credit First Nation who are direct descendants of the Mississaugas of the Credit. We are grateful to have the opportunity to work on this land, and by doing so, give our respect to its first inhabitants.

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roots
community
services
Inspiration. Empowerment. Action.


COVID-19 Support
Community Health
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Indus
Community Services
www.induscs.ca


DBNC
DBNC
Health Program


pchs
Leading With Conviction And Courage


Open Focuser


seva
food bank


roots
community
services


WellFort


Indus
Community Services

Executive Summary

During the COVID-19 pandemic, health disparities in the Peel region were amplified through precarious employment, lack of affordable housing, and the inability to access health and social services. Collective advocacy by community agencies in the region led to provincial recognition of these inequalities and the development of Ontario's High Priority Communities Strategy (HPCS). Through HPCS, the Community Health Ambassador (CHA) program was established and implemented in January 2021 across six community agencies in Peel that serve racialized and marginalized communities, including Indus Community Services, Punjabi Community Health Services, Roots Community Services, WellFort Community Health Services, Dixie Bloor Neighbourhood Services and the Canadian Mental Health Association Peel Dufferin. The purpose of this intervention was to employ community members as trustworthy health ambassadors to address structural inequalities, including systemic discrimination, racism and barriers to care in Peel. Approximately 100 CHAs were hired, trained, and deployed, providing culturally safe community outreach, education and support in multiple languages to people significantly impacted by the COVID-19 Pandemic.

This 12-month mixed method evaluation used a community-based participatory research (CPBR) approach bringing together HPCS community agencies, healthcare workers, researchers, and community members in the region. We used the Practical Robust Implementation and Sustainability Model (PRISM) extension of the RE-AIM (reach, effectiveness, adoption, implementation, and maintenance) framework to conduct a mixed methods process evaluation of the CHA Program.

The CHA Program:

- Increased testing and access to vaccinations by establishing community based vaccine clinics.
- Distributed rapid antigen testing (RAT) kits and personal protective equiptment (PPE) kits
- Helped individuals maintain safer isolation practices.

- Distributed **>430,000** PPE Kits to adults and children in their target communities.

- Provided detailed information about vaccines.
- Provided clarity on eligibility and vaccination timelines.
- Provided resources and guidance to individuals with preexisting conditions.

- Developed accessible resources in commonly spoken languages.

- Assisted the elderly population with appointment booking.

- Provided wraparound case management support where possible (i.e., meal support programs, bill subsidy programs).

Findings from the evaluation were shared at Peel's inaugural Health Equity Forum that was held October 26th, 2023 at the University of Toronto, Mississauga Campus. The event was hosted by the research team and brought together community residents, service providers and leaders, and health system partners. In addition, findings have been used in advocacy efforts from community leaders to support the continuation of the program to support chronic health and disease prevention with equity-deserving communities post-pandemic.

Executive Summary

Key Findings

The Need: Traditional public health strategies and practices could only reach some individuals and communities, creating the need for innovative strategies that considered the social determinants of health and social conditions to effectively address the needs of Peel's racialized and diverse communities.

Clients Served: The CHA program was able to reach **866, 834** individuals, strategically targeting diverse and equity-deserving communities. In the initial stages, agencies consistently exceeded predetermined outreach goals, engaging extensively with individuals from the Black, African and Caribbean (BAC), South Asian, Southeast Asian, and Arabic-speaking communities.

Barriers to Access: Despite the broad reach, the program encountered several barriers to access and engagement. Barriers for service users included distance and limited access to information about the CHA program and services. Provider-level challenges included difficulty in reaching particular equity-deserving groups that were identified as needing resources and support during the pandemic (unhoused, seniors, and students). Challenges connecting with other organizations and bureaucratic hurdles were also highlighted, underscoring the need for strategic coordination between partners and outreach locations.

Partnerships: Agencies established partnerships with organizations such as food banks and places of worship to enhance access to services while being mindful of the diverse cultural needs of the target communities. The lessons learned from these partnerships contributed to developing a more comprehensive understanding of the effectiveness of various strategies, and the importance of contextual factors influencing partnership development and sustainability.

Community Trust-Building: The CHA program supported trust-building within diverse communities across Peel. Trust was fostered by delivering information and services in a culturally sensitive manner and tailoring outreach efforts to the needs of specific cultural and religious groups. Service users expressed high confidence in the program and the CHAs, whom they reported as responsive, reliable and effective in sharing accurate information about COVID-19 and related resources to support their unique needs.

Key Recommendations

1.Health Equity and Anti-racist Framework: To ensure transparency, accountability and fairness, funders must prioritize community strengths and needs, structural capacity, cultural competency and awareness to foster equity and reduce systemic discrimination when adopting and implementing public health community programs.

2. Understanding and defining "high priority communities": There is a need to collectively redefine the term "high-priority communities," as a system, taking into account access to healthcare and social services and historical healthcare funding per capita.

3. Use an intersectoral lens and framework for co-design, involving partners, funders and service users to ensure a holistic approach to program planning, implementation and evaluation.

4. Reimagine and Redesign Service Provision: Reimagine the overview of service provision among smaller organizations and equity-seeking groups.

5. Integrated Evaluation Plan: Funding must be allocated for a comprehensive program evaluation. The evaluation framework will allow real-time decision-making about adoption, implementation and impact.

6. Capacity Building and Training: Invest in building capacity for project management and coordination, data collection and evaluation, and implementation processes across agencies.

7. Multi-Media Outreach: Develop a multi-media strategy to effectively market future iterations of the Community Health Ambassador and High Priority Community Strategy's programs and services.

8. Co-design Methodologies and Future Adaptations: Future iterations of the program should include co-design activities with identified groups and communities would did not access the CHA Program to ensure excluded communities are reached.

9. Emergency Response Plan: Develop a comprehensive preparedness plan that proactively identifies delivery agencies and defines their scope.

10. Maintain and Strengthen Partnerships: Continuously assess and expand partnerships across sectors to strengthen community building efforts, enhance care and avoid duplication of services.

11. Staff Retention: In future emergencies or program iterations, prioritize staff retention by addressing job security and burnout and providing necessary training and resources to support the workforce.

Introduction

The Community Ambassador program intervention:

The importance of the social determinants of health on overall health and well-being has been known for decades, yet there has been little progress in generating high-quality evidence regarding effective interventions that address these determinants and can be scaled across diverse communities (1). Structural inequalities are deeply rooted within Canadian social systems and institutions, including healthcare (2-4). Within the Peel region, structural racism and systemic discrimination have led to significant health disparities through social determinants of health such as precarious employment, lack of affordable housing, barriers to education, and policies and practices which perpetuate cultural bias and stigma, all of which have been amplified throughout the COVID-19 pandemic. These structural inequalities contribute to suffering, delayed care, and premature death for people who identify from racialized and marginalized communities.2-4 During the second wave of the COVID-19 pandemic, geographic and newly collected race-based data showed that the COVID-19 pandemic disproportionately impacted people from racialized communities in Peel compared to other regions across the province and Canada (5). People from racialized communities encountered barriers to accessing personal protective equipment, COVID-19 testing services, self-isolation facilities, and meal delivery services.5 Collective advocacy by community agencies in Peel led to provincial recognition of these inequalities and the development of Ontario's High Priority Communities Strategy.

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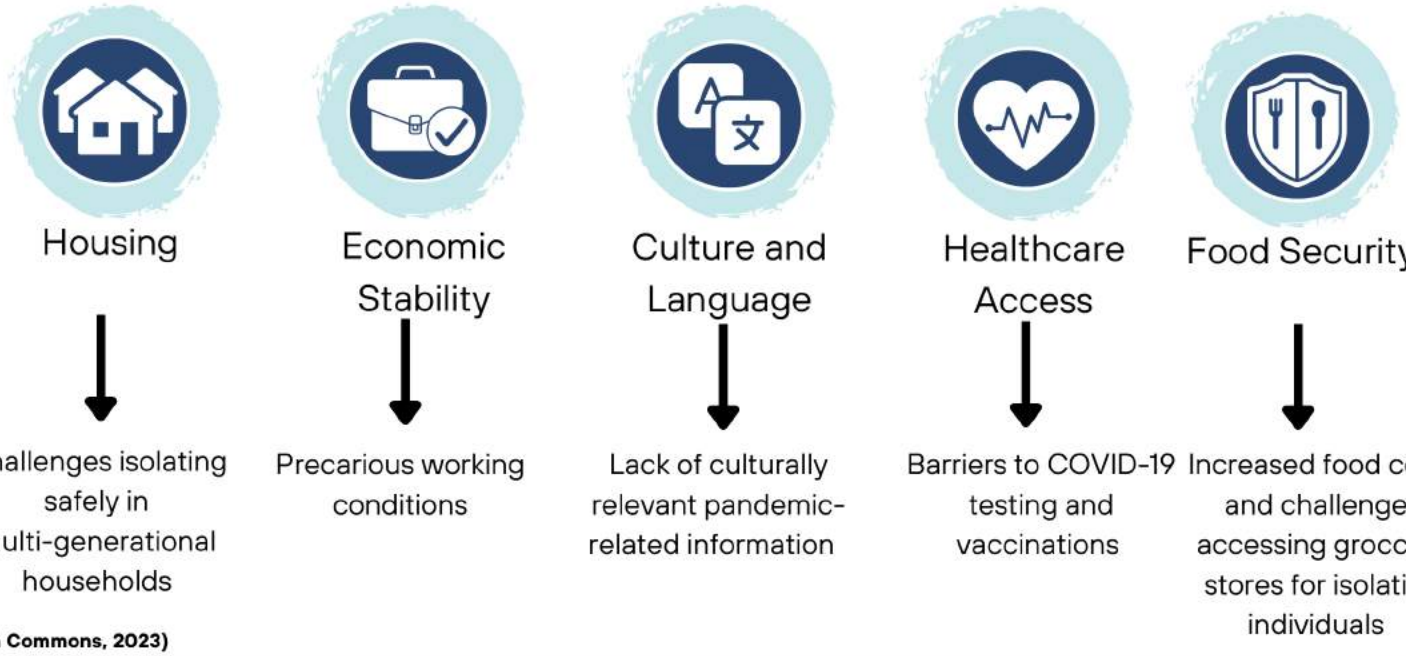
High Priority Community Strategy

"Local agencies worked with Ontario Health, public health units, municipalities, and other partners to deliver interventions for the province's hardest-hit neighbourhoods."

Social Determinants of Health and the COVID-19 Pandemic



(Health Commons, 2023)

Introduction

Through the High Priority Communities Strategy, the Community Health Ambassador (CHA) Program was established and implemented in January 2021 across six community agencies in Peel that serve racialized and marginalized communities, including **Indus Community Services, Punjabi Community Health Services (PCHS), Roots Community Services Inc. (Roots), WellFort Community Health Services, Dixie Bloor Neighbourhood Centre (DBNC) and the Canadian Mental Health Association (CMHA) Peel Dufferin**. Similar to other CHA programs (7), the **Objective of this intervention** was to employ community members as trustworthy health ambassadors to address structural inequalities, including systemic discrimination and racism and barriers to care in Peel.

Approximately 100 CHAs were hired, trained, and deployed, providing culturally safe community outreach, education, and support in multiple languages to people significantly impacted by the COVID-19 Pandemic. Implementation of the program differed across sites; however, the common goals and activities of the CHAs included providing COVID-19 resources to local businesses and residents, distributing specialized personal protective equipment, answering queries through a phone helpline, promoting vaccine confidence by door-to-door canvassing targeting postal codes with a higher prevalence of COVID-19 positivity, and designing and delivering workshops and informational sessions to high priority communities through partnerships with cultural centres, religious institutions, libraries, hospitals, and schools.

The CHAs also helped people find wraparound support (e.g., food, shelter, isolating centers, transportation and help with bills) and provided financial assistance to those in need. The CHA Program was initially funded until August 30, 2021, but was extended until March 31 2022 given the ongoing need for support in these high-priority communities during the fourth wave of the pandemic, presenting a timely opportunity for evaluation.

Community Health Ambassador (CHA)
"Non clinical, hyperlocal roles filled by trusted community members to reduce barriers when accessing and navigating the health care system."
(Health Commons, 2023

CHA Role in Peel

- Engaged in community outreach, distributing personal protective equipment (PPE) kits and information
- CHAs partnered with Metrolinx and GO VAXX bus to deliver vaccines to communities.
- CHAs serviced those who needed wraparound support by providing case management support at some food banks.

While the six community agencies submitted monthly data on key performance indicators to Ontario Health, to date, evaluations of the CHA Program are very limited (HC, 2023) creating a critical research gap in the response to COVID-19. Our project has filled this gap by yielding timely, high-quality, and relevant evidence to help Peel region and other jurisdictions across Canada and globally respond effectively to the ongoing pandemic and minimize the direct and indirect impacts on people who identify from racialized communities experiencing structural inequalities.

Evaluation Methodology

The evaluation was conducted by the Family and Child Health Initiative (FCHI) collaboratively with PRAs and various community collaborators , who were equal partners. This Community-Based Participatory Research (CBPR) approach ensured timely collective action and meaningful change in addressing structural inequities and health disparities among racialized and diverse communities in Peel. Funding for the project was provided by CIHR.

Community-Based Participatory Research (CBPR) approach

The objectives, research questions and methods were developed alongside members of the six community agencies that implemented the CHA Program in Peel. We engaged community agency members, CHAs and service recipients in a **Community Advisory Board** (CAB) and as **Peer Research Assistants** (PRAs). Best practices for public and patient engagement in healthcare were used, including significant contributions to research activities, training, recognition and inclusion in publications and other knowledge dissemination products, appropriate compensation through stipends, and equity between all research team members (12, 13). Figure X illustrates CBPR approach

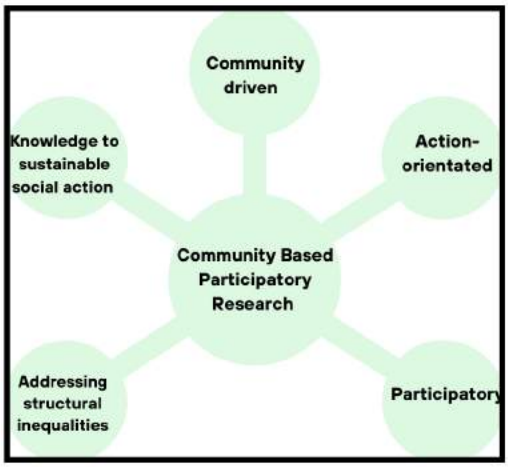


Figure X: Community-Based Participatory Research (CBPR) approach

Figure: Time line of the project

Time line	Phase 1: Project Initiation & Initial Engagement
Jan 2022 - Jun 2022	Protocol Development and REB
Jan 2022 - Mar 2022	CAB Development - Initial meeting - Initial Evaluation
April 2022 - May 2022	PRA Recruitment and Training
Time line	**Phase 2: Data Collection & Analysis**
May 2022 - Sep 2022	Quantitative Data Abstraction and Analysis
May 2022 - Aug 2022	Qualitative Data Collection - Recruitment - Interviews - Focus Group Discussions
July 2022 - Sep 2022	Qualitative and Mixed Methods Analysis - Thematic analysis - Intersectionality analysis - Framework analysis
Time line	**Phase 3: Knowledge Translation and Dissemination**
Sep 2022 – Oct 2022	Summative Report - Generation - Distribution
24th Oct 2023	Peel Region Health Equity Forum Event - Dissemination of Project Findings
Sep 2022 – Nov 2022	Manuscript Generation and Submission
Nov 2022	CAB and PRA Evaluation - Analysis and Report for Toolkit

Evaluation Methodology

Study Objectives and Setting

This one-year project aimed to conduct a process evaluation of the CHA Program, which was initiated in January 2021 in the Peel region of Ontario. A process evaluation was used to understand how and why an intervention works or fails and can be used in other settings by exploring the relationships that exist between the context and the intervention (cite). The CHA Program addressed systemic inequalities facing racialized people living in high-risk communities by providing culturally safe community outreach, education, and support to reduce the spread of and improve protection and recovery from COVID-19.

Study Objectives

Explore how the CHA Program has addressed the social determinants of health and structural inequalities, such as systemic racism, that have impacted access to services, resources, and information during the COVID-19 response with people who identify from South Asian, Black and other racialized communities in Peel; and

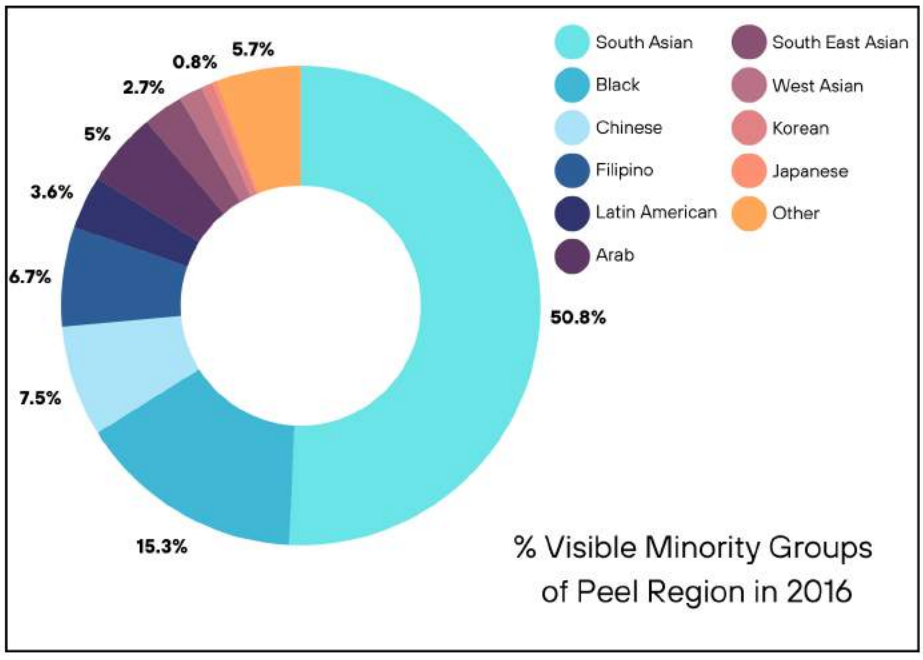
Assess the overall reach, effectiveness, adoption, implementation and maintenance of the CHA Program, as well as the contextual factors that impacted the implementation and sustainability of this community-driven service delivery model.

Study Setting

Peel Region is one of the most diverse communities in Canada with more than 50% of residents having immigrated to Canada (14, 15). In 2016, more than half of Peel's residents reported South Asian visible minority group membership followed by Black (15.3%), Chinese (7.5%), Filipino (6.7%), and Arab (5.0%) (16). The recent immigrant and newcomer population comprises 13% of Peel's immigrant residents.

Equity-deserving groups are **those that identify barriers to equal access, opportunities and resources due to disadvantage and discrimination and actively seek social justice and reparation.**

Figure 3: {ercentge of visible minority groups in Peel Regiion in 2016



Evaluation Methodology

Phase 1: Project Initiation and Community Engagement (January – June 2022)

Community Engagement

Community engagement and co-design was ongoing throughout all project activities. In January 2022, a virtual project launch meeting included researchers, CHAs, community agency leaders and service providers who expressed interest in the project, to revisit the project activities and timelines including next steps for the project and engagement opportunities.

Community Advisory Board (CAB)

To guide the research activities, a CAB was established composed of 2 community agency leaders, 3 CHAs, and 3 researchers. The CAB represented diversity across agencies and within the community to ensure a variety of perspectives were incorporated throughout the project. The CAB established a project governance structure and principles of collaboration that addressed power differentials within the team based on individual identities such as profession, education, health, gender, race, ethnicity, age, socio-economic position, and ability (22-24). The CAB met monthly for one hour to guide participant recruitment, data collection, analysis, and interpretation, identification of key issues for action and strategies for next steps, dissemination of project findings, and evaluation of study processes and the products of research (25). During the first formal CAB meeting, service user recruitment for the CAB and Peer Research Assistant (PRA) recruitment was discussed.

Peer Research Assistants (PRAs)

Six CHAs were hired part-time and trained as PRAs. PRAs completed Tri-Council Policy Statement 2 (TCPS-2) research ethics and anti-oppressive/anti-racist research training. PRA's contributed to protocol development, refining and piloting data collection instruments, data collection, analysis and knowledge translation activities. The Centre for Community-Based Research (https://www.communitybasedresearch.ca/) co-designed and supported the PRAs' training activities.

Research Methodology

Table 1: CAB Member and PRA roles and responsibilities

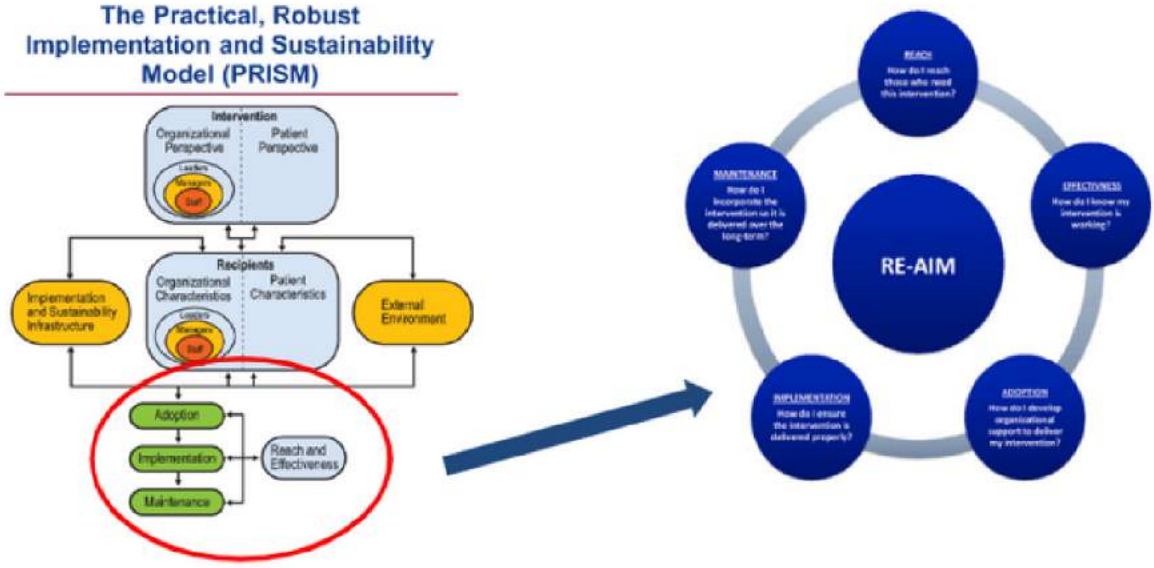
	CAB	PRA
Role	Formal member of the research team who contribute to ongoing project oversight, governance and guidance for research, knowledge translation activities and decision-making.	Similar to a CAB member but with a more active role in study execution, including project planning, data collection and analysis and knowledge translation.
Training	• Zoom Training • Protocol Development	• Training in TCPS-2 • Zoom training • Protocol development • Intro to CBPR • Intro to qualitative methods • Quantitative data abstraction • Training in anti-oppressive/anti-racist research
Sample Tasks/Activities	• Attending bi-monthly CAB meetings • Developing the PRA recruitment strategy • Reviewing the data collection instruments • Opportunities to contribute to manuscripts and presentations • Participation in evaluation activities	• Extraction of Quantitative Data • Protocol development • Conducting interviews and focus group discussions • Analyzing qualitative and quantitative data • Opportunities to contribute to manuscripts and presentations • Participation in evaluation activities

Research Methodology

PRISM RE-AIM Framework

We used the Practical Robust Implementation and Sustainability Model (PRISM) 30,31 extension of the RE-AIM framework 32-34 to conduct a mixed methods process evaluation of the CHA Program. RE-AIM is a pragmatic model developed to assess individual- and setting-level outcomes important to program impact and sustainability in diverse real-world settings in dimensions including Reach, Effectiveness, Adoption, Implementation, and Maintenance (RE-AIM). 33-35 RE-AIM has been applied in various settings, communities, and health issues across diverse clinical and community contexts.33-35 Importantly, RE-AIM has been utilized to address health inequities in low-income health centres.33 PRISM includes the RE-AIM dimensions and identifies contextual factors, including multi-level organizational and recipient characteristics and perspectives, implementation and sustainability infrastructure, and external policies or guidelines. For this mixed methods evaluation, we drew from quantitative metrics collected by the six community agencies and qualitative interviews and focus groups to provide a holistic and robust understanding of the implementation of the CHA Program and the contextual factors that influenced program outcomes

Figure X: PRISM, RE-AIM framework



Research Methodology

Quantitative Data Roadmap

Data Abstraction

We extracted quantitative data from standardized monthly reports and metrics submitted by the six community agencies to Ontario's Ministry of Health. The research staff conducted this data extraction. An appendix, including a report template, was provided for reference.

Categorization

To analyze the data, we categorized the metrics according to the RE-AIM Framework, which facilitated triangulation with Qualitative Data using the Analysis Matrix.

Data Analyses

All quantitative analyses were iteratively presented at CAB meetings to gather feedback on the best way to present the findings and ensure that they accurately represented the agencies' efforts.

Research Methodology

Quantitative Data

Data Collection

Quantitative data were extracted from the standardized monthly reports submitted by the six community agencies to Ontario's Ministry of Health (see figure X). Each metric was categorized under the three pillars of the HPCS program: 1) Community Outreach and Education, 2) Access to Testing, and 3) Wraparound Supports. The metrics were then categorized according to the RE-AIM framework for triangulation with Qualitative Data. In addition to monthly reporting of the above metrics, each agency reported quarterly targets they could expect to reach during that time frame.

Data Analyses

We conducted descriptive analyses to summarize the metrics collected, including means, medians, standard deviations, and ranges, as appropriate. Metrics captured consistently across all agencies (harmonized) were pooled. Metrics not captured consistently (non-harmonized) were reported as agency-specific metrics. For non-harmonized metrics, agency representatives were asked to provide contextual information about how their agency captured these metrics. To assess quarterly target-setting, ratios of monthly totals or maximum values to quarterly targets were generated. All quantitative analyses were iteratively presented at CAB meetings to solicit feedback on how best to present findings.

Figure X- Standardized monthly reports

	Community Outreach and Education		Access to Testing		Wraparound Support	
Agencies	# of CHAs engaged	# individuals contacted through CHA activities	Number of individuals contacted through CHA activities	Number of PPE kits distributed	Number of individuals provided transportation	Individuals contacted/CHA
roots community services	Harmonized	Not Harmonized	Harmonized	Harmonized	Not Harmonized	Not Harmonize
Canadian Mental Health Association Peel Dufferin						
Indus Community Service						
DBNC						
pchs						
WellFort Community Health Services						

Research Methodology

Qualitative Data Roadmap

Inclusion and Exclusion Criteria

Eligible participants had to be at least 18 years of age and either be:

- Funder.
- CHA or a member of one of the six HPCS agencies; or
- Recipient of CHA-related services who identified as members of diverse communities.

Recruitment and Consent

Flyers for the study were circulated via community agency collaborators to recruit participants. Participants were screened to assess eligibility and later contacted to schedule their interview and/or focus group discussion, during which formal verbal consent was documented.

Data Collection

- Individual virtual interviews were conducted with agency leaders and service users, each lasting approximately one hour in length.
- Virtual focus groups were conducted with CHAs.
- Focus group was conducted with service users.

Data Analyses

Thematic analysis was guided by the RE-AIM framework and used to identify themes within and across the interview and focus group data.

Research Methodology

Recruitment and Consent

The PRAs created flyers for the study and circulated them via community agency collaborators across Peel community networks, including the Peel Anti-Black Racism & Systemic Discrimination Healthcare Collective, the Peel Newcomer Strategy Group, and the Peel Family Support Network. Agency partners disseminated the recruitment materials within their organizations and to service users. All interested participants were invited to email the research staff, and an initial telephone interview was scheduled.

During an initial telephone screening interview, we assessed eligibility and participant attributes to support a maximum variation sampling approach to achieve diverse group of participants(cite). Selected individuals were then contacted to schedule their interview or focus group discussion. The study information and consent form were emailed in advance (at least two days prior) of the interview or focus group appointment to ensure potential participants had ample time to review and ask questions. Before the interview or focus group discussion, study information and detailed consent forms were explained, and formal verbal consent was audio recorded. Additional individuals who met project eligibility criteria but were initially not selected were kept on a list for future research involvement. People who did not meet eligibility criteria were sent a note thanking them for their interest. Participants were provided with a demographic survey form post interview, however none of the participants completed the surveys.

Research Methodology

Qualitative Data Collection

PRA Training

A research associate provided relevant training to PRAs to support interviews and focus group co-facilitation. These trainings included best practices for qualitative data collection, shadowing trained interviewers, and participating in duo interviews.

Data Collection

A total of 24 virtual interviews were conducted with 11 agency leaders and three service users, each lasting approximately one hour. Three virtual focus groups were conducted with 14 CHAs, and one focus group was conducted with three service users.

All interviews and focus group discussions were conducted virtually via Zoom. Participants were allowed to choose whether to have their cameras on, and all conversations were recorded. Interview and focus group discussion guides explored the following topics reflecting the RE-AIM dimensions and the PRISM contextual factors: 1) Who the target recipients were and whether they reached them (Reach); 2) How the program addressed structural inequalities and what conditions and mechanisms lead to effectiveness (Effectiveness); 3) Why there might be variation in outcomes across the sites (Adoption); 4) Program initiation and the recruitment and training of CHAs and program barriers and opportunities for improvement (Implementation) and; 5) Possible applications of the program during COVID-19 pandemic recovery (Maintenance) Participants were also asked to complete a short demographic survey during their interview.

Data Analyses

PRA Training

A research associate trained the PRAs to support qualitative analysis.

Data Analyses

Recorded interviews and focus group discussions were professionally de-identified, transcribed, and entered into MAXQDA, a qualitative data management software program (cite). Thematic analysis was then used to identify themes within and across individual-based and focus group-based interview data through a series of analysis team meetings focused on code development, review of coded transcripts, and the development of cross-cutting themes related to the research objectives (32). We used open, inductive and deductive coding strategies to ensure codes related to the PRISM dimensions were captured. Two research team members double-coded all data and discussed discrepancies with the larger research team to resolve interpretation differences and ensure coding consistency. To ensure study rigour and transparency, we maintained an audit trail of all meetings, analytical questions and decisions.

Research Methodology

Mixed Methods Synthesis and Interpretation

We used framework analysis to bring together all of the data points within a matrix created in Microsoft Excel (35). Framework analysis is an appropriate method for inter-professional and interdisciplinary teams such as ours because it provides a clear and concise way of categorizing findings to support multiple data-driven analyses (36). This matrix table (figure X) included columns representing themes from qualitative and quantitative findings and rows representing the PRISM dimensions. Relevant data from the transcripts and quantitative analyses were summarized in the corresponding cells in the matrix. Presenting the data in this format allowed the research team and community partners to identify patterns of meaning between the codes/themes and quantitative findings by comparing and contrasting the information in the matrix. Research staff reviewed the matrix independently and memoed their thoughts and initial interpretations. The team then discussed and compared memos together through regular team meetings. The interpretive stage was guided by the original research questions, ideas that emerged from the data, and the local knowledge of the community partners. Using triangulation, we observed convergence, corroboration, and correspondence of results from both methods (37). This approach allowed us to cross-reference the results and produce richer conclusions. The figure below shows the mixed methods analysis matrix.

Figure X: Mix Methods Analysis Matrix

Primary Codes	Sub-Headings	Service Users	CHAs	Leaders	Quantitative linkages
Reach	The Need	x	x	x	
	Clients Served	X	X	X	X
	Barries to Access	X	X		
Effectiveness	Trust building	X	X	X	
	COVID-19 Specific Service Access and Uptake	X	X	X	X
Adoption	Diverse Reach Strategy	X		X	X
Implementation	Bureaucratic challenges		X	X	X
	Flexible Approaches		x	x	x
Maintenance	Leveraging on existing CHA framework	X	X	X	x

Health Equity Forum

Objectives
Methodology
Recruitment & Participants
Activity
Outcome

Results

Representation of PRISM contectual factors effects on RE-AIM outcomes

External Environment (Drivers of Inequity)

- COVID-19 Pandemic
- System Discrimination
- Public Health Mandates

Multi-Level / Multi-Sector Characeristics

- Funders - Organizational readiness for the program
- Community Organizations - complexity and costs of implementation
- CHAs - Program instability
- Targeted Population - Addressing barriers

Implementation & Sustainibility Infrastructure

- Integration of the six HPCS agencies
- Long-standing community partnerships
- Support from external bodies (Health Commons)
- Operationalization of funding and CHA model

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CHA Program Implementation Strategies

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RE-AIM Outcomes

Reach

- 866,834 high risk Individuals served
- Immigrants and Racialized communities
- Marginalized communities
- Seniors, students, unhoused

Effectiveness

- Building trust
- Tailored community outreach
- Improved access to vaccinations, testing and PPE
- Wraparound case management support

Adoption

- Multi-modal outreach strategy

Implementation

- Bureaucratic challenges
- Funding instability and inequity
- Program uncertainty and short-term contracts

Maintenance

- Leveraging the existing CHA framework
- Post-pandemic recovery

Mix Methods Analysis Results

Reach

The Need

COVID-19 positivity disproportionately impacted racialized and equity-deserving communities in Peel. The region experienced one of the highest rates of COVID-19 infection in Canada, even with low testing uptake.

Recognizing these factors at the community and systems levels created the opportunity to re-evaluate public health messaging and develop innovative strategies to address the needs of Peel's racialized and diverse communities and mitigate the spread of COVID-19.

Traditional public health strategies and practices could only reach a few individuals and communities, creating the need for specialized approaches considering the social determinants of health and social conditions.

> *"I needed help. Firstly, I had little kids. I needed money. I needed food. Secondly, my husband was bedridden. He could not even move. He had stitches from his surgery."* - ***Service User***

> *"we were recognizing that COVID was not hitting all geographies equally. And in particular at the time, Peel region was being very hard hit by COVID in comparison to the rest of our sort of geographies. And so working with the region of Peel, we were trying to really look at, and with Peel Public Health really look you know, how can we do something different to better address the challenges that we were seeing in COVID, where we were having higher rates of COVID infection and sort of lower rates of uptake on testing. "***- Community Agency Leader***

> *So I think it was problematic when the quarantining – that the home isolation rule was put in, so it was just very difficult for people to kind of figure out, which is why a lot of them were hiding it also. Like how can – like how do you isolate in a home when you have – it's a small place and you have five people living in it and you can't expect people to just not talk. You can't expect a grandfather to not talk to his grandkid or not do his evening prayers and all that."***- CHA**

Mix Methods Analysis Results

Reach

Clients Served

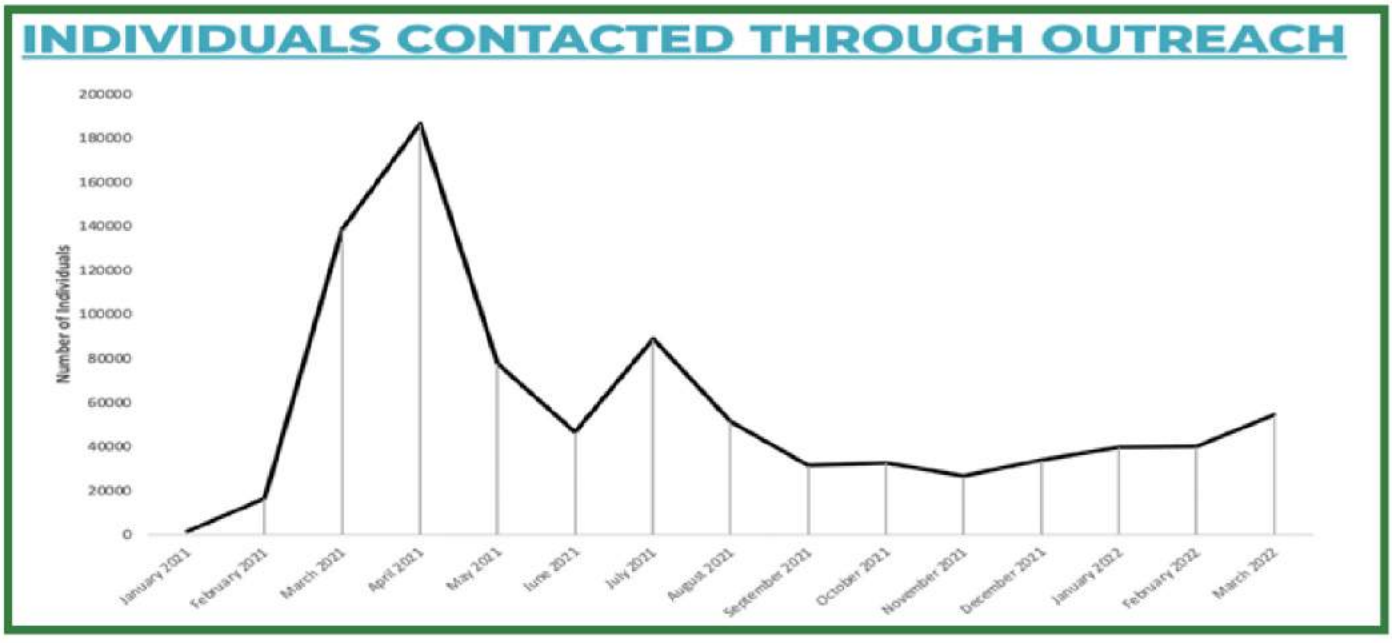
The eligibility requirements for the CHA programs' case management support included individuals testing positive for COVID-19, experiencing symptoms related to COVID-19, or facing challenges in maintaining their well-being and safety.

In total, the Community Health Ambassadors (CHAs) reached **866,834 individuals.**

Although CHA engagement remained steady, certain outreach metrics displayed irregularities, showing significant fluctuations in meeting pre-determined metrics at specific intervals.

Across various sites, there was a notable consistency in outreach patterns, indicating a general adherence to a similar approach.

Figure X: Individuals contacted through outreach



Mix Methods Analysis Results

Reach

Clients Served

In the initial stages, agencies consistently exceeded pre-determined outreach goals, engaging extensively with communities, particularly those from equity-deserving backgrounds such as African, Caribbean, South Asian, Southeast Asian, and Arabic-speaking groups.

The CHA program strategically targeted diverse and equity-deserving communities, specifically those in high-risk areas that needed additional support. By targeting neighbourhoods characterized by high COVID-19 prevalence, the program brought services to diverse communities where they lived, removing barriers to access.

The program significantly expanded its reach through virtual and some in-person service delivery, effectively engaging within various community spaces.

> *"So our catchment area is Southwest Mississauga and the people we – we tend to go for lower income communities. Also, we've helped the South Asian community. We've also helped the Black community. It's very widespread in terms of individuals we've reached and individuals we've helped In addition to South Asian and Black communities, we also served a lot of people living in – or who have like Middle Eastern background –* ***CHA***

> *"So, the purpose of the program, Community Health Ambassador Program was to decrease the high rate of COVID in high risk communities. In neighborhoods where the rates of COVID are very high, and the population was very diverse. So diverse in the sense of newcomers. A diversity sense of, from African and from Caribbean heritage, from the South Asian background, Southeast Asian background, Arabic speaking community. These communities were newer to Canada for marginalized to begin with, they didn't have enough support system in Canada and as a result had higher rate of COVID."* - ***Community Agency Leader***

> *"We switched immediately to offer online services [...]doing our best to help them that way. We had townhall meetings where doctors and specialists came in to talk to the community... answering questions that came from the community."-****Community Agency Leader***

Mix Methods Analysis Results

Reach

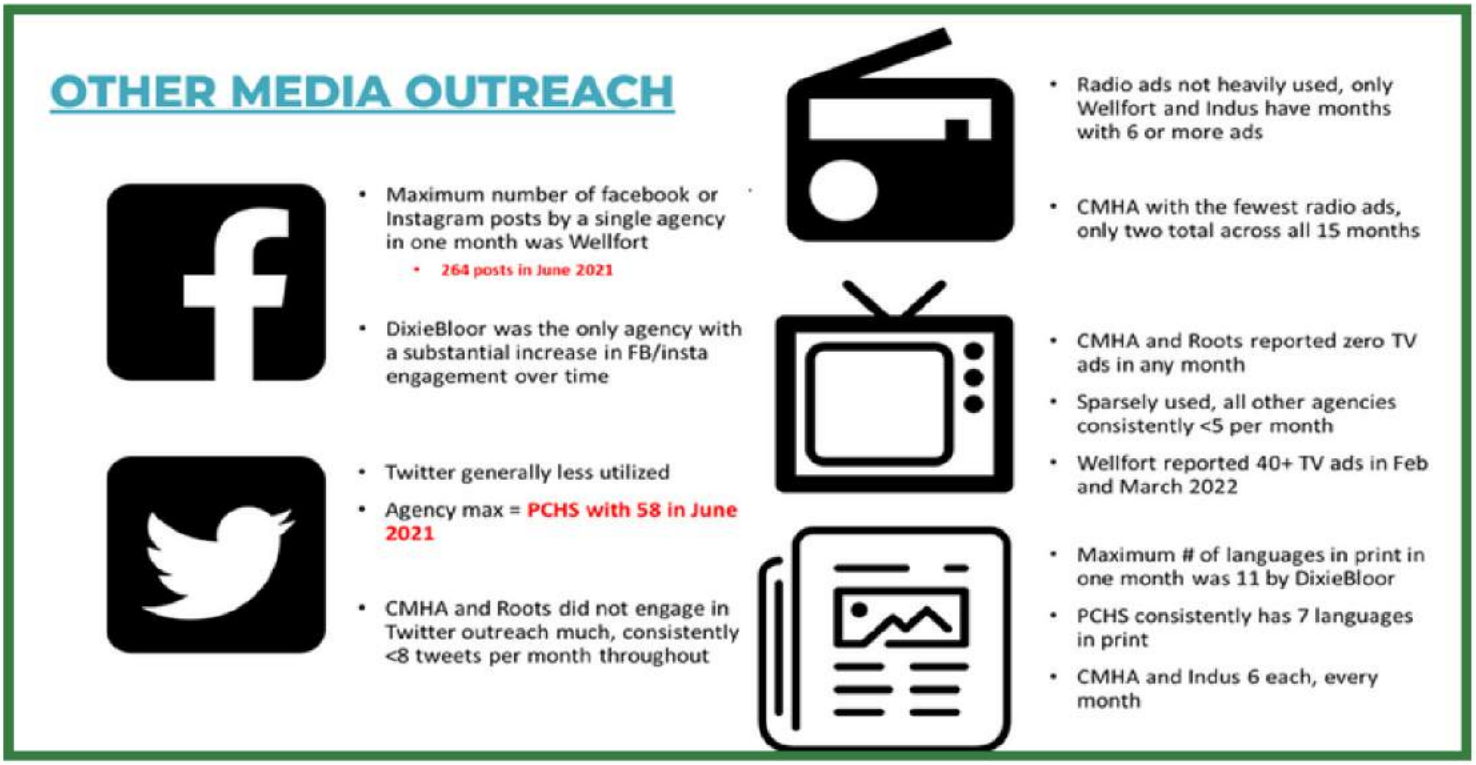
Media Outreach

Sharing reliable information on social media in multiple languages ensured that a larger group of community members could access resources from the safety of their own homes.

Using technology such as social media ensured that youth were engaged in familiar everyday technology platforms. Facebook and Instagram were the primary and preferred platforms for social media engagement across all agencies, a phenomenon presumed to be indicative of the targeted user demographics prevalent in these social media spaces. While ranking as the second most common platform, Twitter (now X) witnessed a decline in usage over time.

Traditional media channels such as television and radio exhibited minimal utilization, potentially reflecting cost-related considerations. This strategic choice suggested a propensity towards more cost-effective and widely accessible digital platforms.

Figure X: Media Outreach



Mix Methods Analysis Results

Reach

Barriers to Access

Despite its broad reach, the program encountered several barriers to access and engagement with specific communities before and throughout implementation. Service users expressed difficulties accessing information and services due to barriers such as distance, lack of access to information about CHA program and services and reaching diverse groups.

The program also had difficulty reaching particular equity-deserving groups (unhoused, seniors, students) that were identified as needing resources and support during the pandemic.

While collaboration and partnerships were instrumental to the program's implementation, it was also noted that connecting with different organizations or groups was challenging. Funding partners echoed these complexities, highlighting bureaucratic hurdles and the need for strategic coordination to navigate challenges associated with partnerships and outreach locations.

> *"It's a bit far from my home. So, I would like it a little bit closer to my home, you know."* - ***Service User***
>
> *"I would definitely say that a lot of the homeless population were a group that was definitely missed, or had a lot more barriers than others who aren't homeless."* - ***CHA***
>
> *"Seniors might not have been equally addressed because they were isolating at home and not going out. So, probably, until unless you were going door to door..."* – ***CHA***

> *"Managers or authorities in some areas hesitated to grant us permission due to personal beliefs or skepticism surrounding COVID-19. This impeded our outreach efforts, limiting connections with specific communities."* - ***CHA***
>
> *"Navigating bureaucratic processes posed significant challenges in implementing the CHA program, requiring strategic coordination and clear communication channels."* – ***Community Partners***

Results

Implementation

Funding Challenges

A series of challenges, such as the selection of program sites and funding delays, impacted the implementation of the CHA program.

Initially, funding was provided in short intervals, beginning with a three-month period, likely due to uncertainties about the pandemic's duration. Funding was repeatedly extended, creating a stop-and-start pattern that made it difficult for smaller organizations to sustain implementation. While the lead organizations needed and appreciated extended funding, this funding model limited consistent service delivery.

Funding uncertainty impacted agencies' abilities to provide consistent services within the community and the onboarding, training, and support required for CHAs. Inconsistent funding also increased the workplace stress that agencies and CHAs were experiencing. The funding model also created precarious employment for the CHAs.

> *think that, yes, funds were provided to kick everything off, but by the time they got strong and ready and in place, the funding was delayed the contract was winding down and then there was left, well what happens next. Are we going to have funding to continue this important work. And smaller agencies and I base my learning and understanding is just second-hand knowledge, but you need to have kind of promised funds in hand in order to make decisions such as hiring.-* ***Community Partner Organization***

> *"I think one big thing was just the instability. Maybe, it could be a possible reason. I think we – when I first started I was only kind of signed on for eight weeks and then I'm almost two years in, working with the same organization. So I think every two months we get an extension, but we really weren't notified until the last minute or the last few days before the end date." -**CHA***

> *So the bespoke piece started to continue as we get to another phase or another quarter for another set of funding with another delay on the funding. So every time funding gets delayed, the staff that are working for you don't know if they're going to keep working for you. Every time we get a delay, if someone leaves, you can't hire someone and say, "Could you come work for us?" "Oh, how long?" "Could be a week, might be a month. -**Community Agency***

Results

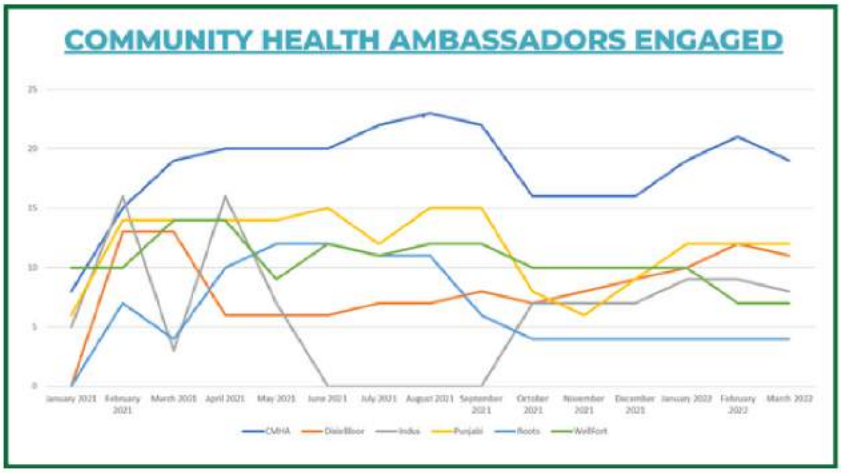
Implementation

CHA Workforce Instability

The uncertainty of funding resulted in short-term, typically 6-month contracts, which made hiring and retaining qualified candidates easier.

Despite the funding challenges, the CHA program demonstrated resilience and adaptability.

Figure X: Community Health Ambassadors Engaged



*" And so it affects staffing because you lose people, right. Because people are waiting, and you're not sure if they're going to just naturally look for other work. Because if the funding doesn't come through, they would just be left, unemployed, right? So that affected service delivery, effected planning, and even in this stage right now, it's continues to do the same thing, right. You get the money late. You wait. You're not able to do all the things that you want to do. And then you still provide, you still have to conduct all of the services that you said that you're going to do and meet all the targets that you say you're going to meet. And so it puts a lot of pressure on you because the time is limited."-**Community Agency Leader***

*We are but if there's no funding for them, we can't use them. We see them as a valuable resource to really get into the heart of our community. And we think this is a program that should continue. But we would love to know ahead of time that is going to continue because it's very stressful for us to have to go through this and ramp up every time because we lose valuable knowledge and skills from people we've trained before and then it takes time to get new people come on aboard and stuff.- **Community Agency Leader***

*"They crippled us with the late funding, which I told you the check still hasn't arrived... we still managed to be able to get a lot of people help. - **Community Agency Leader***

Results

Implementation

Community Hesitancy

Community hesitancy, notably prevalent within the BAC communities, was present during implementation of the program. Rooted in skepticism and mistrust towards institutional and governmental health initiatives, this hesitancy significantly impacted community acceptance.

Efforts were made to address this challenge, emphasizing the importance of community service providers representing the socio-demographics of the community they serve.

Providing information through trusted sources within the community was crucial in building trust and overcoming hesitancy. CHAs reported that while providing services they continued to face public skepticism and mistreatment connected to the pandemic and governmental responses.

> *"I wouldn't necessarily call it discrimination, rather maybe racially influenced or something of that nature. But there's a lot of misconceptions and controversies with all communities."* - ***CHA***

> *"A lot of the information was translated into a lot of other languages... to help those groups, especially to be able to hear from community agencies that are reflective of them."* - ***Community Agency Leader***

> *There's skepticism, mistrust... some people thought we were, as they said, in cahoots with the government, to force people to get this vaccine."* - ***Community Agency Leader***

Mix Methods Analysis Results

Effectiveness

Partnerships

The agencies established partnerships with other organizations, such as food banks or religious houses, to enhance access to services and ensure that culturally appropriate foods were distributed.

Some agencies achieved higher partnership scores, which indicates variable approaches and outcomes in cultivating collaborative relationships.

This variability in partnership dynamics highlighted the nature of community engagement strategies implemented by each agency, contributing to a comprehensive understanding of the contextual factors influencing partnership development and sustainability.

> ***"With food, we have a current partnership with Mississauga Food Bank. And so, we're able to give some people some food, canned goods, non-perishable goods, but when, in the first phase of the project, we were able to purchase food that was more culturally appropriate that we know people actually use in their home."- Community Agency Leader***

> ***But our lead agencies understood the needs, and so like in partnership with a college in the region, they actually were able to – and they vaccinated I think it was something like first dose, like almost 10 000, maybe between 9 and 10 000 students who did not have a health card. – Community Partner Organization***

Mix Methods Analysis Results

Effectiveness

Community Trust Building

During the pandemic, the CHA program supported trust-building with diverse communities across Peel.

Service users expressed high confidence and trust in the program and the CHAs, whom they reported as responsive, reliable, and effective in sharing accurate information about COVID-19 and related resources to support their unique needs.

CHAs also reported that providing culturally informed and tailored outreach to specific cultural and religious groups helped improve receptiveness and acceptance amongst community members. Transparency and open communication were reported as crucial elements in trust-building.

> *"The Community Health Ambassador program really made a difference. I knew I could trust them to provide accurate information about COVID-19. They were always there when we needed them." –* ***Service user***
>
> *"The fact that the CHAs were from the community made a huge difference. They knew the people, the families, and the concerns. It wasn't just a stranger talking; it was one of their own." –* ***Community Partner Organization***
>
> *We made sure the materials were available in different languages. It showed that we valued everyone in the community, regardless of their background. That made a huge difference in how they perceived us." –* ***Agency leader***

> *I think it truly made a big difference and it definitely drew strong attention to our table and it also provided that barrier breakdown where people were like, oh, this is written in a language that I actually can resonate with and understand or this is written under the framework of a religion that I follow, so I think it's a little bit more trustworthy for me to understand and take this and talk to somebody about it within this institution...I think that that was a strong strategy at the time." -* ***CHA***
>
> *"We were honest about what we knew and what we didn't. We addressed their questions and concerns head-on. That level of transparency really built a strong foundation of trust."* ***Community Agency leader***

Mix Methods Analysis Results

Effectiveness

Vaccinations, Rapid Antigen Tests (RATs), and Personal Protective Equipment (PPE)

The CHA program increased access to COVID-19 testing and vaccine clinics, and it distributed independently used RATs.

The program also supported many individuals in adopting safer isolation practices and eliminated barriers to obtaining hard-to-reach RAT kits. An essential service provided by the CHA program at all six sites was the provision of PPE kits.

While uptake was slow in January and February 2021, as agencies began to roll out, program-wide distribution was high throughout the remaining 13 months of data collection.

> ***"I remember there was one instance where not only were we supporting the faith organization's foodbank but we were also supporting their vaccine clinics. So literally, right after the foodbank we packed up shop and then switched the table over completely to just vaccine information".- CHA***

> ***"One thing I'm sure of is that because of those additional effort, I will say that we got the RAT kits and the vaccines pretty early as compared to if I went to Shoppers Drug Mart or somewhere else, where it was a lot of waiting and so many appointment cancellations due to lack of resources. I believe. I think, yeah that helped" – Service User***

Mix Methods Analysis Results

Effectiveness

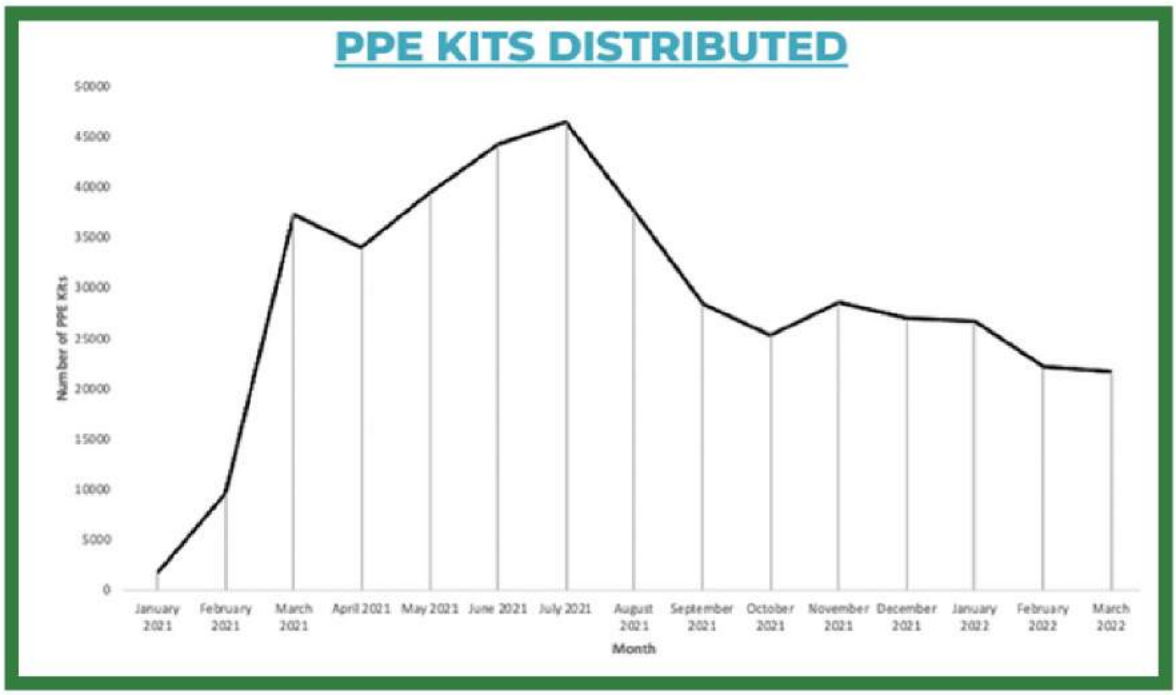
Vaccinations, Rapid Antigen Tests (RATs), and Personal Protective Equipment (PPE)

In total, 430,035 PPE kits were distributed to adults and children in the communities served by the CHA program.

In the Q3/Q4 period of 2021-22, kit distribution remained relatively high, but agencies fell short of targets more frequently (only 2/6 agencies hit their Q3/Q4 targets).

PPE kit distribution in Q3/Q4 was only 67.1% of what was achieved in Q1/Q2 of 2021-22, which may have been a response to decreased community demand or increased availability of PPE in other settings.

Figure X: PPE Distributed



Mix Methods Analysis Results

Effectiveness

Vaccinations, Rapid Antigen Tests (RATs), and Personal Protective Equipment (PPE)

CHAs actively provided detailed information about the benefits and potential side effects of COVID-19 vaccines. Through open conversations, CHAs were able to address community concerns and questions about the vaccine to help individuals make informed decisions.

For individuals with pre-existing medical conditions, CHAs guided them on whom to approach for accurate information and provided them with resources. For the elderly with limited technology access, CHAs assisted in booking appointments online.

Setting up vaccination clinics at community centres, schools, and faith-based organizations was also reported as beneficial, as it eliminated the need for extra travel and encouraged community members to get vaccinated during their routine visits.

Many new immigrants were still determining their eligibility for vaccination in Canada, particularly those without a health card or those who had received a previous COVID-19 vaccination in a foreign country. CHAs provided clarity on eligibility criteria and vaccination timelines.

> ***" Like you know clear out all the misinformation that you hear from other people and read online. And you get these weird forwards that, "Oh, don't get vaccinated. It's going to cause this and this." So, there was a lot of clarity on that end and I would say CHA'S also helped me to make informed decision to go ahead and take the vaccine." – Service user.***

> ***"The CHA told us where we could walk-in at the centers where she was, you know, going or she knew about where their program was ongoing and the wait times were not that long, especially when you have small kids and you're leaving them at home and going out."- Service User***

Mix Methods Analysis Results

Effectiveness

Wrap Around Case Management Support

Wraparound case management support included distributing social services, community-based programs and system navigation to help isolated people or those experiencing adverse social conditions during the pandemic. Wrap around case management allowed the CHA program to directly address social determinants of health factors that were impacting individual's and families.

Social support varied across service users and agency types; however, the main functions of the wraparound case management support included access to isolation hotels, transportation to and from testing/vaccination clinics, grocery or food drop-offs and connections to income supplement programs.

Commonly noted cases of wraparound case management support included access to a food bank or temporary food supplement programs, bill subsidy programs and supplemental income applications. Service users expressed immense gratitude for the wrap-around services provided during the challenging times of the pandemic.

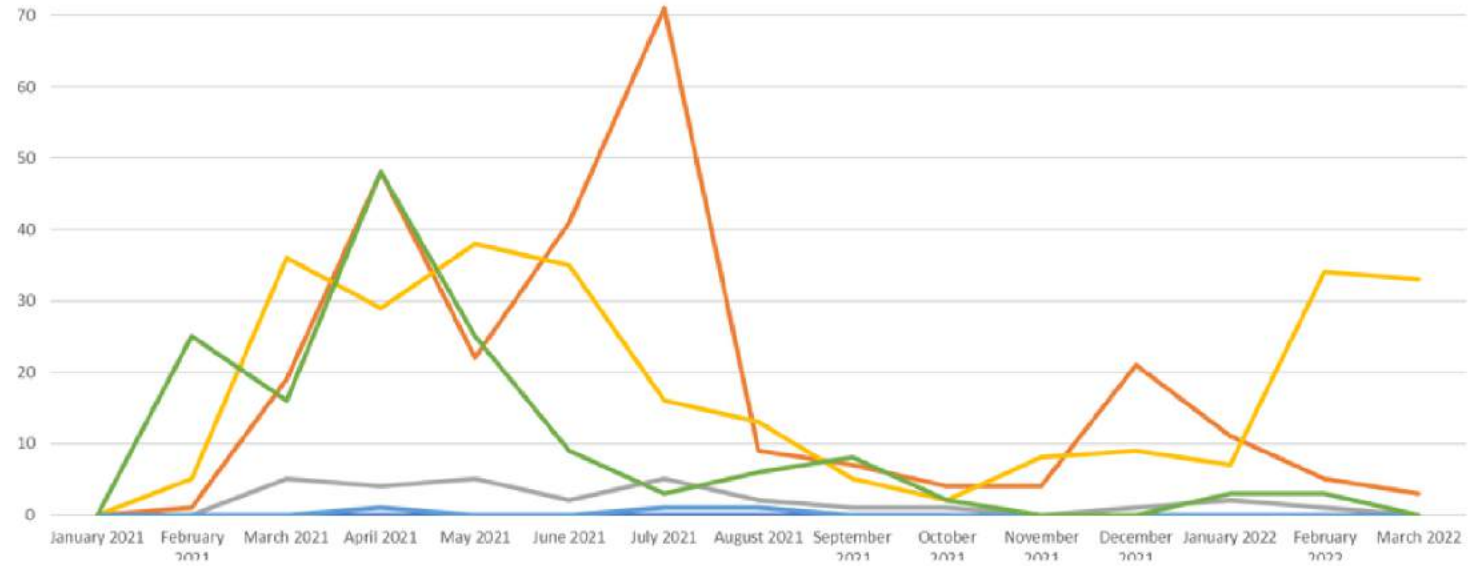
> ***"But then we got a next step, and then we were also helping people with food, groceries in case they were isolating. We were offering them isolation support, if they needed transportation, free taxi to and from the clinics for testing, vaccines, so that helped. And then we had some places to go, like, we were providing support to save a food bank. Yes, and we got a lot of – for example, Walmart, Costco, they never allowed us, because they said, "Oh, you need to go to the headquarters," and stuff. And you know, they never replied. If they allowed one person, they were going to allow everybody else, so that was very challenging". - CHA***

> ***My problem during those days were my starving kids in the house, lack of food, etc. CHA's helped us clear out all the random things that you hear from other people and read online about COVID-19. Also, to book an appointment for vaccines in the Gurudwara. So, we don't have to go into a hassle of book appointment." – Service User.***

Mix Methods Analysis Results

Effectiveness

Figure X: Transportation Services



Agency	Q4 2020-21	Q1/Q2 2021-22	Q3/Q4 2021-22	Total
Peel Region	4.1%	178.4%	55.4%	22.9%

Notes:

- Fell well short of initial targets (2,600 individuals collectively)
- Recalibrated targets after initial Q, more reasonable from that point on

Transportation services:

The provision of transportation services were provided to individuals requiring assistance traveling to and from vaccination centers. Specifically, the focus is on senior citizens, those without access to vehicles, and individuals with special needs.

Meal support:

The Meal Support Program emerged as a vital component in the multifaceted strategy to mitigate COVID-19 transmission in the Peel Region. Addressing nutritional needs and social isolation among vulnerable groups, the initiative contributed significantly to safeguarding public health while fostering community resilience. Each agency had different distribution patterns which often mirrored their other service provisions. Service use greatly exceeded targets across the board—it was high-need but well-distributed. Service use was variable by agency—some were actual hot meal provisions, others were referrals to food security agencies, and others were provided with gift cards for groceries.

Mix Methods Analysis Results

Adoption

Diverse Reach Strategy

The lead agencies recognized the diversity within the Greater Toronto Area (GTA) and strategically crafted materials in English, Bengali, Hindi, Punjabi, Tamil, and Urdu—targeting the most widely spoken languages—to ensure broad coverage and accessibility across the GTA.

Community organizations took a proactive approach, generating visual content and translating information into multiple languages. This involved a collaborative effort, networking with partners like the South Asian Health Network to establish connections within the community.

> ***So, there was no pictures we could have, we had to make them ourselves. And then we had to translate the material. And we started networking to our partners at South Asian Health Network and such, in order to connect the community up. There was the two of us building this. We put it out in English, Bengali, Hindi, Punjabi, Tamil and Urdu, the highest spoken languages in the GTA, because we knew we were capturing the GTA. – Community Agency Leader***

> ***And we put tons of social media, 'Know the Truth', because we're trying to debunk the myths, stop the spread. That's all in different languages, stop the spread. Help is here. Because then we added additional levels of help. And I will put the website into the chat there. Can I do that? I guess I can't. I'll put it into the chat as I stop sharing, so then you can have access to it. Community Agency Leader***

Mix Methods Analysis Results

Adoption

Initial Program Adoption

The funder selected organizations that were thought to have the capacity, resources and expertise to deliver this new community-based program. Due to the urgency of the pandemic, it was important that resources could be used to act quickly and that the infrastructure could be built to deliver the required services.

The funder highlighted the challenges smaller organizations faced, such as historically receiving less funding and having limited capacity to meet the demands of sudden large-scale programs.

Agency leaders also reflected on the program's initial design and adoption, expressing concerns about how the high-priority communities were chosen. While some were identified based on COVID-19 positivity and low testing rates, this approach excluded communities that were being disproportionately impacted, such as the Black, African and Caribbean (BAC) communities.

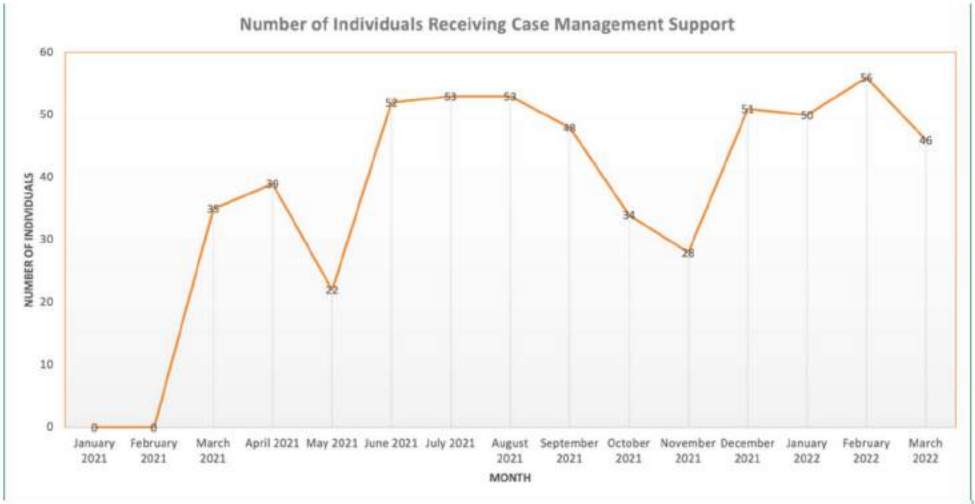
The question was raised about why a lead agency did not initially support the BAC community. Through community advocacy, a site was eventually chosen to support the BAC community in Peel.

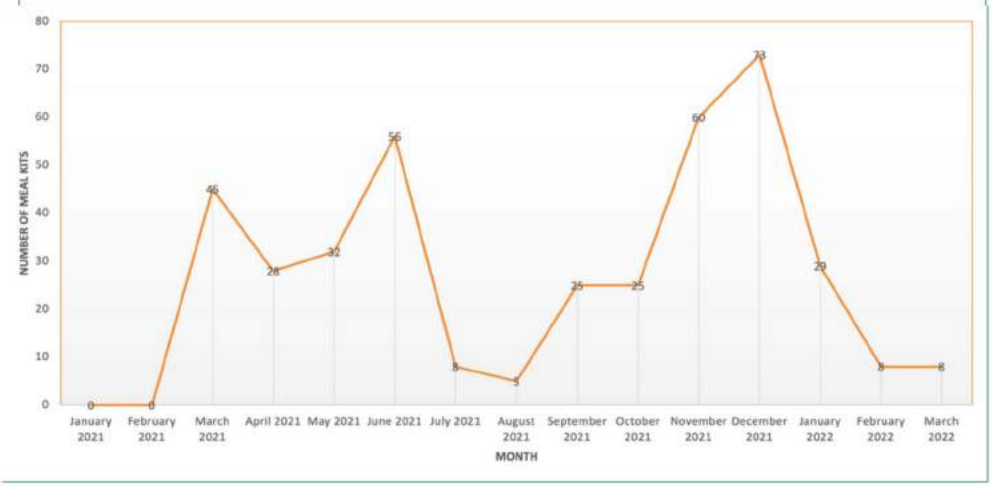
> ***"So we need people who had existing capacity right then and there to be able to deliver a program, people who had a history of being successful at standing something up very quickly, and to some extent, people who had good connections in with their community." – Funding partner***

> ***"we've worked with all of them before, but we have some providers that aren't necessarily big enough or as experienced enough. And I will say we do have one lead agency that historically has very little funding and very little infrastructure from us. And they did struggle with some of the delivery of it because they aren't as large enough to be able to stand things up easily. So a little bit more challenging for them." - Funding Partner***

Results

Roots Community Services Inc.





35,855

Individuals contacted

24,566

PPE kits distributed

567

Individuals received case management support

402

Meal Support

29,912

Service users receiving information directly from CHAs

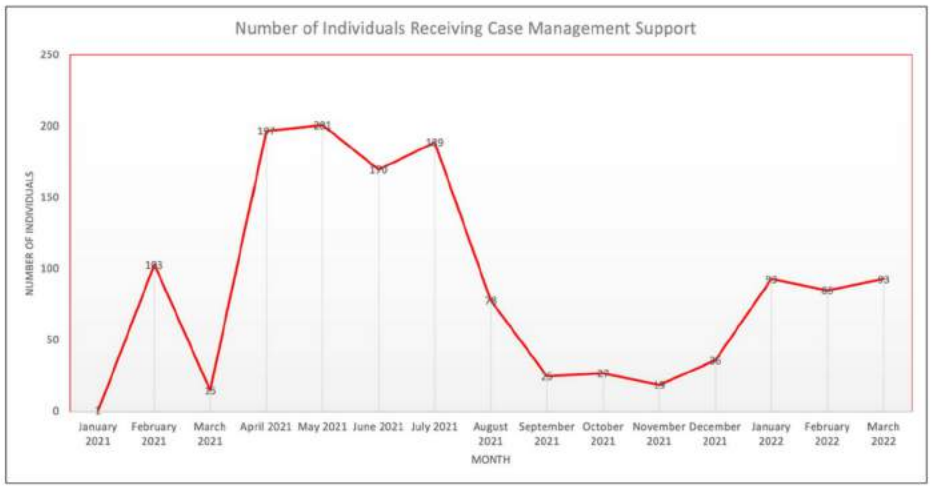
341.1

Average individuals engaged / CHA

Results

Punjabi Community Health Services

pchs
Leading With Conviction And Courage



45,510

Individuals contacted

35,405

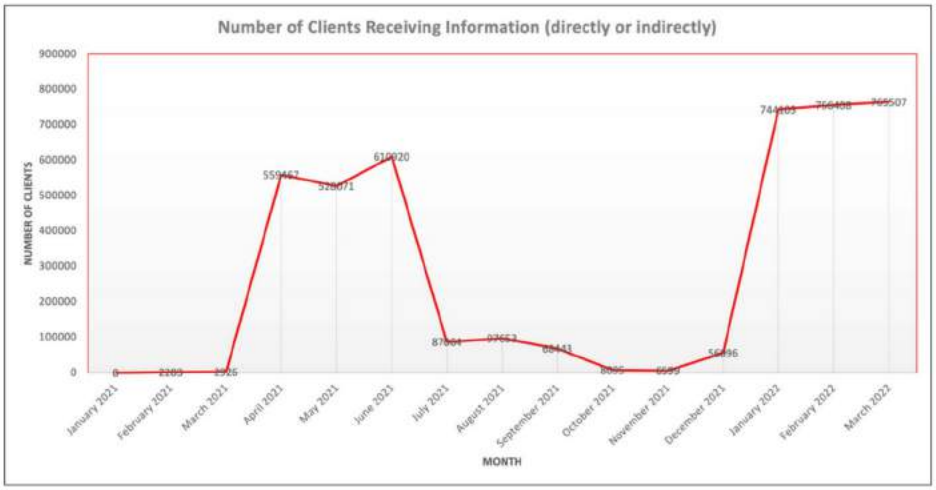
Total PPE kits distributed

1332

Individuals received case management support

71,933

Meal Support



57534

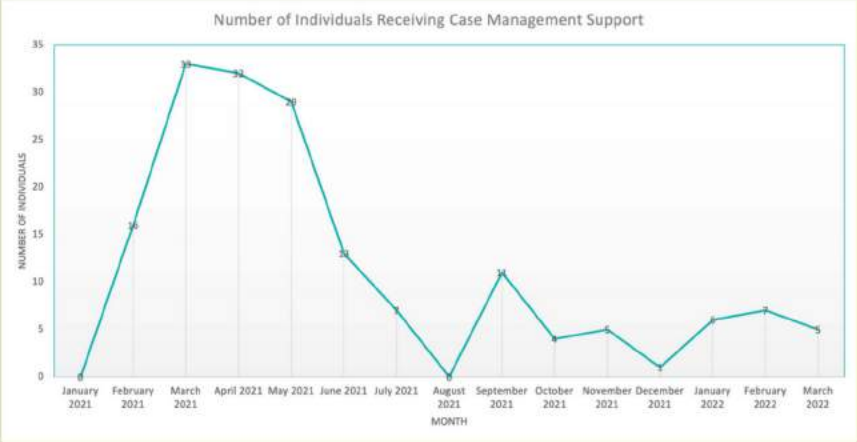
Service users receiving information directly from CHAs

237

average individuals engaged / CHA

Results

Canadian Mental Health Association Dufferin Peel

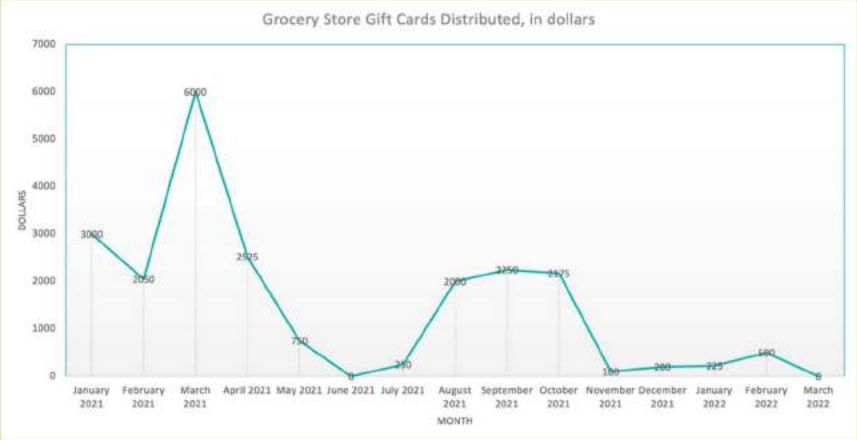


43,788

Individuals contacted

41,135

Total PPE kits distributed

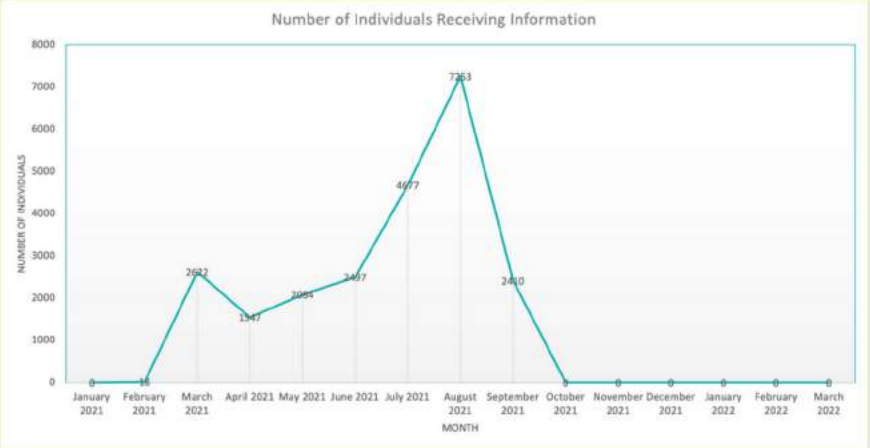


169

Individuals received case management support

22025

Meal support



23108

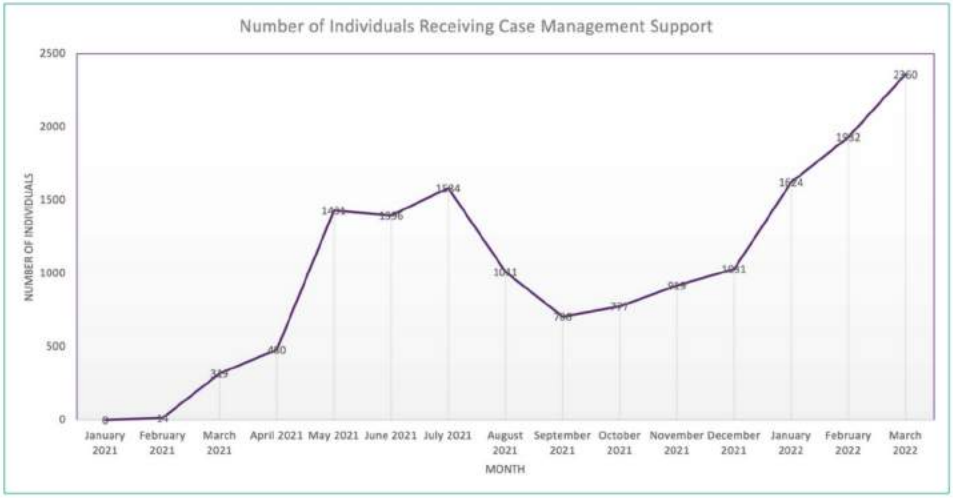
Service users receiving information directly from CHAs

149

average individuals engaged / CHA

Results

Indus Community Services



380,027
Individuals contacted

113,442
Total PPE kits distributed

15,584
Individuals received case management support

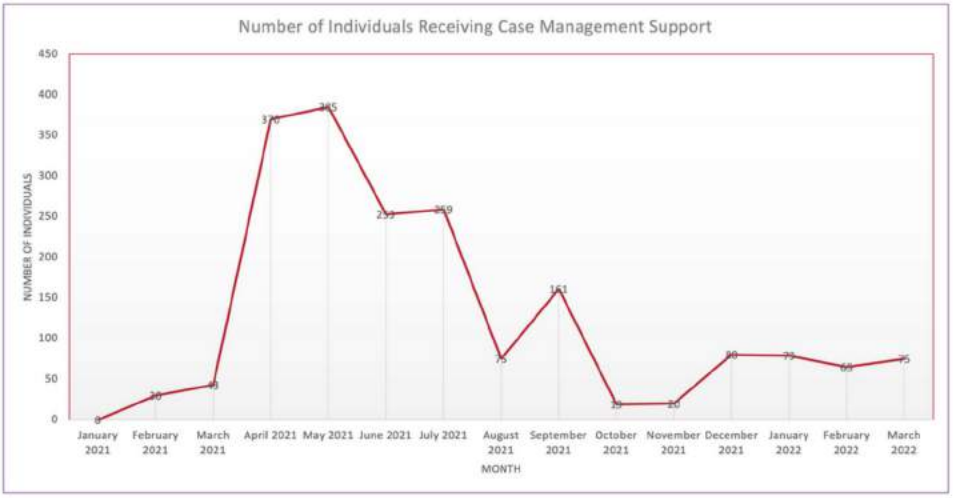
9,515
Meal support

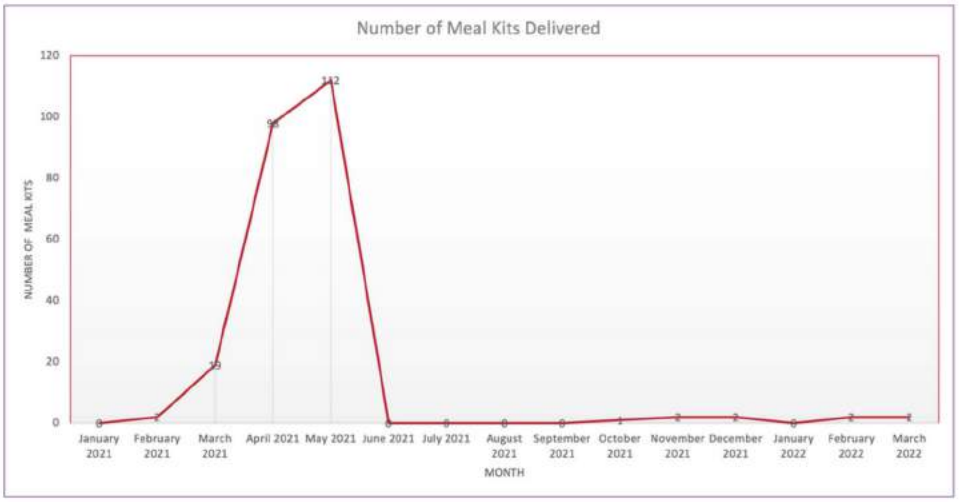
227,317
Service users receiving information directly from CHAs

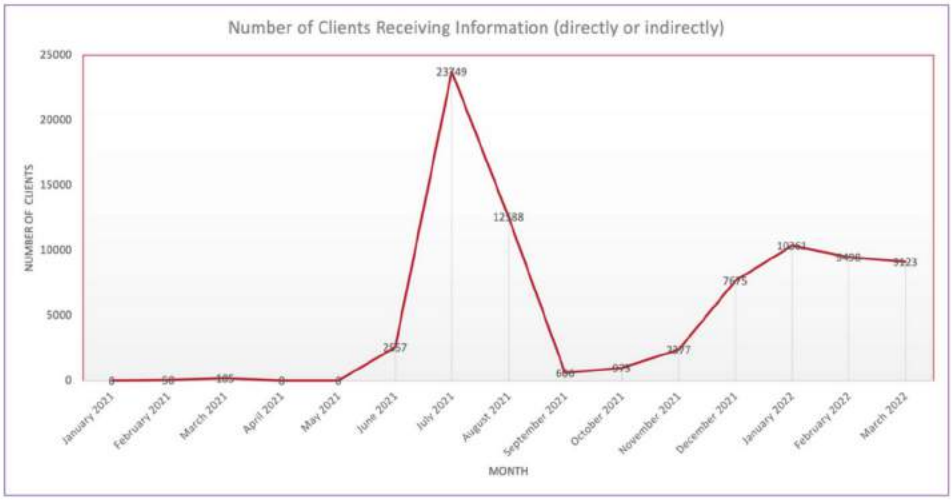
5,791.9
average individuals engaged / CHA

Results

Dixie Bloor Neighbourhood Centre







174,909

total individuals contacted

37,972

total PPE kits distributed

1,914

individuals received case management support

240

meal Support

35,045

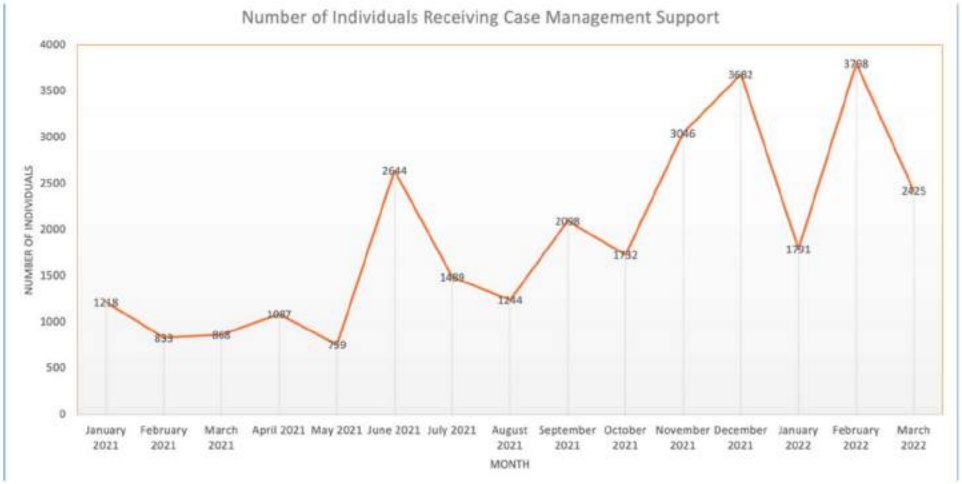
clients receiving information directly from CHAs

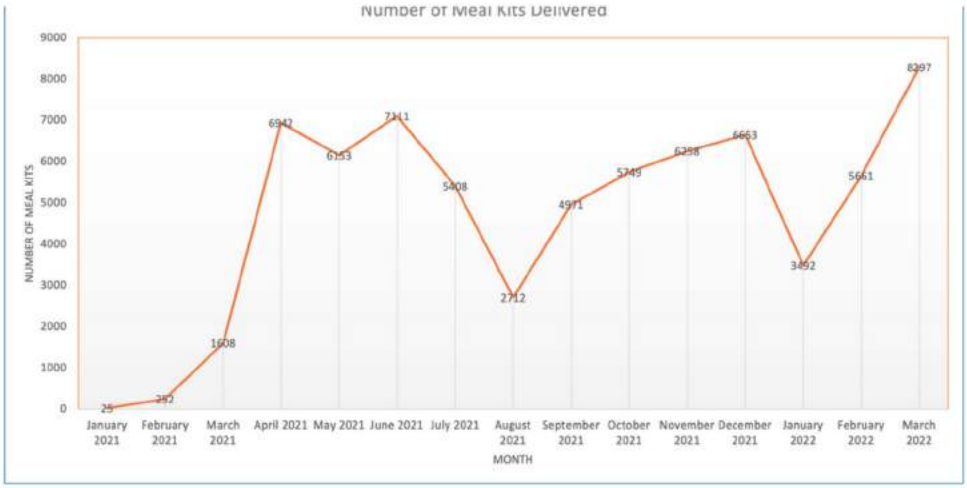
1,820.1

average individuals engaged / CHA

Results

WellFort Community Health Services





186,365

total individuals contacted

177,544

total PPE kits distributed

28,714

individuals received case management support

71,292

meal Support

185,040

clients receiving information directly from CHAs

1,196.6

average individuals engaged / CHA

Results

Maintenance

Continuing the CHA Model After the Pandemic

The CHA program is essential for supporting equity-deserving groups beyond pandemic support and preparedness. The program could be adapted to support health promotion and prevention efforts related to chronic diseases, including diabetes and mental health.

The CHA program could also be used to continue addressing mistrust in the healthcare system and bridge gaps for individuals hesitant to seek care in traditional healthcare settings.

Program maintenance will require ongoing cross-sectoral collaboration with community agencies, community leaders, healthcare providers, educational institutions, and governmental bodies.

> *"You can also utilize the same platform for issues such as mental health or diabetes issues or reach people who are not ready to go to the healthcare centers."* - **Service User**
>
> *The future trajectory of the program extends far beyond the immediacy of the COVID-19 pandemic, envisioning a sustainable impact on communities well into the future. As we transition beyond the acute phase of the pandemic, the program aims to metamorphose into a comprehensive health and community initiative.*- **Community Agency Leader**
>
> *"Sustainability lies in collaboration [...] by fostering partnerships and aligning our efforts with existing community resources, we can ensure the longevity and effectiveness of our initiatives."*- **Program coordinator**

> *"You can also utilize the same platform for issues such as mental health or diabetes issues or reach people who are not ready to go to the healthcare centers."* - **Service User**

> *So none of us anticipated that a pandemic would strike. Similarly there could be many. Like, it is good to – this CHA program can definitely be used to talk about, you know, talk about our mental wellness, physical wellness."* - **Service User**

"

> *"Because you never know what will strike in the future. It's better to be proactive and this channel, the model that's already been developed, can be used to give ongoing information to people as to how they can be proactive."* - **Service User**

Discussion

The evaluation of the CHA program was collaboratively designed with community leaders in Peel who supported the adoption and implementation of the program. The evaluation aimed to understand 1) How the CHA Program addressed social determinants of health and structural inequalities, such as systemic racism, that impacted access to services, resources, and information during the COVID-19 response with people who identify from South Asian, Black and other racialized communities in Peel 2) To examine the CHA program's implementation and effectiveness success, challenges and opportunities to improve and scale (reach, effectiveness, adoption, implementation, and maintenance (RE-AIM), with a specific focus on contextual factors influencing its implementation and sustainability as a community-driven service delivery model (Cite-RE-AIM)

Social Determinants of Health and Structural Inequalities

The COVID-19 pandemic disproportionately impacted equity-deserving communities and essential workers in Peel due to social determinants of health and underlying structural inequalities, including Peel's historically underfunded healthcare and social service systems (45)(add reference). Structural inequality can be defined as "disparities in wealth, resources, and other outcomes that result from discriminatory practices of institutions such as legal, educational, business, government and healthcare systems. Structural inequalities result from power imbalances when one group has historically set the rules that intentionally or unintentionally exclude others from access to wealth and resources"(cite). The historical design of healthcare systems, services, institutions and policies have been informed by colonialism and white supremacy, targeting and further marginalizing particular individuals and communities based on identities such as race, gender, ethnicity and ability (cite). Traditional one-size-fits-all approaches to healthcare often overlook unique individual needs and social determinants of health that impact overall health and well-being (51).

In examining the role of the CHA program in addressing structural inequalities among equity-deserving communities in Peel, we found that the program met various needs related to the social determinants of health. Examples included facilitating access to basic necessities and resources for food, housing, employment and income support, sanitation, PPE products, and transportation to social and healthcare services. Our results show the program was also able to provide reliable COVID-19-related information to diverse families and individuals who were negatively impacted (pre-pandemic and during pandemic) by social determinants such as low income, unemployment, language barriers, limited access to services, and those experiencing isolation without formal or informal social support. Our results align with Health Common's report, Community Health Ambassadors in Ontario (2023), that "all Community Ambassadors create access to the distinct social determinants of health each person needs to be well"(p.6).The CHA program's implementation demonstrated that engaging and leveraging community-based organizations' voices, expertise, trust, and infrastructure in pandemic response can effectively address widening health and social inequalities during emergencies. Findings further illustrate that cross-sectoral partnerships were able to address systemic and structural inequalities during the pandemic and were instrumental in alleviating the devastating impact of the disease itself, as well as countering the adverse effects of the social and public health measures implemented throughout the pandemic, especially within high-risk, underserved and excluded communities(CITE). To ensure meaningful programs are designed to address specific needs and challenges, approaches must be developed by collaborating with communities (CITE). Community-led strategies, such as the CHA program, empower local voices, identify strengths and concerns, and allow for co-designing interventions that foster inclusivity and equity from the ground up and increase reach(16). Our findings show that government-community collaboration is essential to addressing structural inequalities and co-designing effective and equitable public health initiatives like the HPCS that increase reach to diverse communities that have been marginalized by current systems and structures (CITE)

Adoption and Implementation Successes and Challenges

Evaluation findings related to adoption, implementation and impact found that the program achieved positive implementation outcomes, including successful adaptations, reach, and impactful outcomes such as partnership and community trust building, improved testing and vaccination rates, and enhanced access to personal protective equipment (PPE) and basic living resources like food. The program also encountered challenges, including unpredictable operational funding disbursement and the need for harmonized data collection and evaluation. These findings offer valuable insights to inform strategies for effectively strengthening, adapting, sustaining, and scaling up the program.

Findings from our evaluation show that the CHA program provided extensive reach to community members in Peel identified in high-priority areas that have historically experienced challenges in accessing healthcare services and resources. The program reached 825,000 individuals by increasing access to vaccinations, PPE kits, RATs, wrap-around services and supports that addressed social determinants of health, including food support and transportation. The program offered useful strategies to ensure success, such as flexible

Discussion

approaches to engage service users in local communities, developing culturally appropriate resources and collaborative networking and partnerships to enhance program delivery. In addition, the program leveraged virtual and in-person service delivery methods to maximize reach across diverse communities, complemented by media outreach and in-person community events. Engaging youth through social media ensured familiarity and accessibility, while alternative strategies like door-to-door outreach were used to engage seniors less familiar with technology. Similar to other community-based programs, multilingual resources and cultural tailoring of resources further enhanced accessibility (47). Our evaluation adds to the extant literature on community health ambassador models and community-based public health approaches (cite) by demonstrating the applicability of these models during a public health crisis.

While the CHA program reached many residents in Peel, our evaluation shows that structural inequalities existed throughout the adoption and implementation of the program. Findings highlight that barriers to accessing health services continued to exist for certain groups, such as seniors, new immigrants, students, and the unhoused. Factors that impacted access included transportation limitations, distance and geographic constraints of the programming, and a general need for more awareness about program services. Overcoming these barriers in the future is crucial to ensuring equitable access and engagement. Future iterations of the program should include engagement activities with these identified groups during planning phases to ensure that strategies account for their needs, values and preferences (CITE).

To urgently address the public health crisis, the funder for the HPCS initially selected agencies that were perceived to have the necessary infrastructure to adopt and implement the program quickly. Infrastructure, This approach however, led to the exclusion of a smaller agency, which is also the lead organization in the region that supports the BAC communities. This agency was later incorporated into HPCS through collective advocacy from community leaders in Peel. (37). The Peel region has been engaged in cross-sectoral advocacy work to address anti-Black racism and systemic discrimination within institutions and systems, including healthcare (cite). The initially excluded agency delivered the program components despite not satisfying these initial infrastructure requirements, demonstrating that smaller agencies' capabilities and capacities should be considered during a crisis. Our findings further illustrate the importance of engaging with the community at program inception to ensure that equity-deserving communities are not excluded. A significant implementation challenge was related to the retention of CHAs due to the inconsistent funding model. Participants shared that CHAs were hired on short-term contracts and were often uncertain about their employment due to last-minute funding decisions. CHAs and community organizations reported how the precarity of the employment model impacted the CHAs' overall health and well-being during the already stressful circumstances of the pandemic and put their own lives at risk by being out in the community during periods of social isolation. Our findings align with a strong body of literature that illustrate the impact that precarious employment has on individuals including community health workers such as increased stress and mental health concerns, job related stress and depression with associations to physical health issues such as cancer and heart disease (Access Alliance, 2012; Irvine, 2024; Lotta & Nunes, 2022)

Effectiveness, Successes and Challenges

Building trust within communities is essential for the success of any program, particularly in the context of public health programs. Existing literature shows that trust-building is vital to public health interventions as individuals increasingly report challenges with accessing and engaging with traditional health approaches and institutions (48, 49, 50) (37). Our findings add to this literature, showing that community health ambassadors can be used to help build and maintain trust with diverse communities during public health crises. Employing staff that provide cultural representation and awareness creates the opportunity for open communication through an individual's preferred language, dispelling misinformation in a non-judgemental way and addressing vaccine and overall community hesitancy (Health Commons, 2023). Our findings also show that partnerships between social service and community health organizations with strong community connections and networks, such as faith-based organizations, played a pivotal role in trust-building with service users, who could access services in a familiar space. Partnerships with cross-sectoral organizations facilitated the development and dissemination of accessible, multilingual resources, helping debunk myths and addressing misinformation about COVID-19. Our findings reflect similar studies that show the importance of partnerships in trust building with diverse communities (38).

The emphasis on aligning efforts with existing community resources and fostering collaboration with a broad range of stakeholders highlights the necessity of a cohesive and integrated approach to community health. Such collaborations can mobilize resources effectively and address immediate community needs, as exemplified by initiatives like mass vaccination efforts in collaboration with local institutions. Community organizations played a pivotal role in mobilizing individuals and mitigating

Discussion

transmission of COVID-19, resulting in the Region of Peel transitioning from a "hotspot" to one of Ontario's most extensively vaccinated regions.(cite) Our findings also highlight the challenges of forming partnerships with certain community organizations. These findings align with other literature that speaks to the challenges and work required to build partnerships and networks (Cite).

Our findings illustrate that the CHA model has the potential for reaching diverse communities that have experienced barriers to accessing healthcare services. Participants shared that the program's framework could be used to address the health needs of equity-deserving communities in areas such as mental wellness, physical wellness, and chronic disease management. These future suggestions about continuing to maintain the program align with other literature that indicates the critical role of community health workers in enhancing access to care, quality of service delivery, and chronic disease management (Collinsworth et al., 2014; McCarville et al., 2021, Health Commons, 2023). Building upon the foundation of trust, partnership and collaboration established during the pandemic, the CHA program has the potential to evolve into a comprehensive health and community initiative. Expanding the CHA service model and initiative can promote overall community health and resilience, embodying a vision of empowered, resilient communities equipped with the knowledge, resources, and support systems necessary to foster enduring health and well-being.

Strengths and Limitations

Our research approach has strengths and limitations. A strength of the evaluation is the community-based participatory research approach used to ensure community voice, experience and knowledge were central throughout all aspects, including embedding roles such as community advisory board members and peer research assistants. The project was also conceived and carried out in partnership with the HPCS agencies in the Peel Region that delivered the CHA Program, which ensured that the project aligned with community needs. The small sample size limits our qualitative findings. Ongoing recruitment of service users and CHA participants for the qualitative evaluation was challenging for several reasons, firstly the evaluation was designed after the program development and implementation, which made it difficult to connect back with service users without prior consent to be contacted. While the PRA's worked hard with the 6 agencies and the community advisory board to try and recruit more service users the process remained challenging. We only interviewed a single funding stakeholder, which limits the findings' generalizability. We could only capture a subset of experiences, which might limit the generalizability of our findings. An important limitation is that the Key Performance Indicators were insufficient for a robust program evaluation using the RE-AIM framework. Many indicators were not harmonized, and there was no standard operational definition or operation procedure for data collection, cleaning or validation. Further, social determinants of health (e.g. living and working conditions, education, unemployment and job security, basic amenities) indicators and race-based data were not systemically collected, so the CHA Program's differential impacts cannot be characterized.

Recommendations

The following section offers recommendations that can move these findings into action:

Design and Planning

1

Health Equity and Anti-racist Framework: To ensure transparency, accountability and fairness, funders must prioritize community strengths and needs, structural capacity, cultural competency and awareness to foster equity and reduce systemic discrimination when adopting and implementing public health community programs. We recommend that a health equity framework guide all future program designs and implementation. For example, Ontario Health's Equity, Inclusion, Diversity and Anti-racism Framework (cite here) should guide the allocation of funding models and program development to ensure the equitable distribution of resources.

2

Reimagine and Redesign Service Provision: Reimagine the overview of service provision among smaller organizations and equity-seeking groups. It is important that during the planning phase funders do not discount the capacities and capabilities of smaller agencies when implementing community-based public health interventions. These agencies often play a critical role in serving equity-deserving communities. Move towards a more sustainable funding approach, recognizing the limitations of one-time funding and the need for flexibility to account for different factors that create inequities and community needs. This redesign must integrate community-based approaches with traditional health services and systems to enhance overall services.

3

Intersectoral Lens: Use an intersectoral lens and framework for co-design, involving partners, funders and service users to ensure a holistic approach to program planning, implementation and evaluation. Align efforts with existing community resources and foster collaboration with a broad range of stakeholders to ensure a cohesive and integrated approach to community health. Such collaborations can mobilize resources effectively and address immediate community needs (ie. mass vaccination efforts).

Recommendations

4

Understanding and defining "high priority communities": There is a need to collectively redefine the term "high-priority communities," as a system, taking into account access to healthcare and social services and historical healthcare funding per capita.

5

I**ntegrated Evaluation Plan:** Funding must be allocated for a comprehensive program evaluation. The evaluation framework will allow real-time decision-making about adoption, implementation and impact. The plan should include:

Standardized data collection across all community organizations is needed to assess program reach, effectiveness, adoption, implementation, and maintenance.

Data collection and analysis related to the social determinants of health (e.g., race, ethnicity, socio-economic status, food security, housing, employment, etc.) are required to understand differential program impacts, address inequities, and ensure that resources are appropriately allocated.

Co-design methodologies must be employed to develop an evaluation framework with community leaders, service users and community organizations to ensure the collected data aligns with the program's intended objectives.

Comprehensive Reporting: Encourage the collection and reporting of both quantitative and qualitative data.

6

Capacity Building and Training: Invest in building capacity for project management and coordination, data collection and evaluation, and implementation processes across agencies. Training and support offered by institutions such as the Health Commons Solution Lab (Training for health and social care partners — Health Commons Solutions Lab should be expanded and adapted as the program continues to evolve.

Recommendations

Implementation

7

Multi-Media Outreach: Develop a multi-media strategy to effectively market future iterations of the Community Health Ambassador and High Priority Community Strategy's programs and services. Engage media sources as partners to amplify program awareness and impact. Market the program in multiple languages on social media, community organization websites, and public spaces such as community centres, transportation hubs, faith-based organizations, and schools.

Sustainability, Maintenance and Further Adaptations

8

Co-design Methodologies and Future Adaptations: Future iterations of the program should include co-design activities with identified groups and communities not reached through the CHA Program to ensure excluded communities are reached. Government-community collaboration is essential to addressing structural inequalities and co-designing effective and equitable public health initiatives like the HPCS that can increase reach to diverse communities that have been marginalized by current systems and structures.

9

Emergency Response Plan: Develop a comprehensive preparedness plan that proactively identifies delivery agencies and defines their scope. This plan should include clear roles, accountabilities, standards, outcomes, and collaboration mechanisms. It should centre the needs of community members and consider crosscutting impacts on education, community and social services, justice, and child welfare.

Recommendations

10

Maintain and Strengthen Partnerships: Continuously assess and expand partnerships across sectors to strengthen community building efforts, enhance care and avoid duplication of services. Investigate the reasons behind partnership fluctuations and address any issues that may arise. Cross-sectoral community networks such as Peel's Community Response Table (peelregion.ca), Peel's Anti-Black Racism & Systemic Discrimination Collective (abrsdpeel.ca), and Peel's community safety and well-being plan (peelregion.ca) can be a valuable space to ensure collective communication, problem-solving and accountability.

11

Staff Retention: In future emergencies or program iterations, prioritize staff retention by addressing job security and burnout and providing necessary training and resources to support the workforce.

Conclusion and Next Steps

References