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Determining the Scalability Readiness of a Transitional Care Stroke Intervention for Older Adults With Multimorbidity: A Mixed Methods Study

RESEARCH AND THEORY

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ABSTRACT

Background: Following a stroke, the transition from inpatient care to home is a vulnerable period for older adults with multimorbidity and their care partners. The Transitional Care Stroke Intervention (TCSI) is a patient-oriented intervention, shown to be effective in improving physical functioning, stroke self-management, and patient experience through a pragmatic randomized controlled trial. The objective of this study was to assess the scalability readiness of the TCSI in selected community stroke rehabilitation programs in Ontario, Canada.

Methods: A convergent mixed methods design was used, guided by the Implementation Scalability Assessment Tool. Three diverse community stroke rehabilitation programs participated, including people with lived experience. Data were collected from relevant documents, meetings with working group participants in each setting, and interviews with key informants.

Results: Participants noted that the TCSI had many benefits for persons with stroke and their care partners, including the provision of system navigation and care coordination. Key considerations for scale up included interprofessional team development, local contextual adaptations, optimizing virtual care, provincial standardization for ongoing program quality monitoring, a digital health solution, and designated care coordinator roles.

Discussion: Supporting transitions in care for persons with stroke and their care partners continues to be a pressing issue in Ontario and in many other jurisdictions. Implementation of the TCSI has the potential to improve outcomes and foster integrated health and social care delivery for older adults with stroke and multimorbidity.

Conclusion: This study improves our understanding of implementation considerations to inform future scale up of the TCSI.

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INTRODUCTION

Persons with stroke often experience several transitions across health care settings and between health care providers along the continuum of care (e.g., emergency care, acute care, post-acute care, home) and may even move back and forth between settings before returning home to the community [1]. At each transition, persons with stroke cope with changes and fluctuations in their physical, cognitive, and emotional function while also receiving care from different providers in different settings [1, 2]. As such, each transition represents a period of uncertainty, vulnerability, and significant psychosocial and health-related challenges for the person with stroke and their family/care partners [1, 2]. The funding and organization of stroke care across health and social care sectors is not currently well integrated, contributing to siloed care that lacks the benefits of formal care coordination [3].

The majority (up to 60%) of older adults hospitalized for stroke are discharged home after an acute care or inpatient rehabilitation hospital stay; up to 60% of those persons will require continued rehabilitation in the community [4]. The transition from inpatient care to home and the community is a particularly vulnerable period for persons with stroke and, if done poorly, can reduce quality of life and patient satisfaction, increase stress and burden for care partners, compromise patient safety and quality of care by increasing the risk for adverse outcomes such as medication errors, injury, delays in care, avoidable hospital readmissions, and increased health care costs [1, 5]. Older adults with stroke and multimorbidity (≥ 2 chronic conditions) experience more frequent care transitions between primary care and speciality care and among specialists, placing them at increased risk for adverse outcomes [6]. As well, in the absence of formal care coordination, performing routine self-care for chronic disease management post-stroke can be challenging for older adults as they work to improve their cognitive and physical functioning though rehabilitation [7]. As a result, community stroke rehabilitation (CSR) providers play a critical role facilitating and supporting the transition from hospital to the community for persons with stroke and their care partners [8].

The Transitional Care Stroke Intervention (TCSI) is a multi-component, evidence-based, and patient-oriented intervention, co-designed with stroke experts and persons with stroke, to improve the quality and experience of transitions from hospital-to-home by enhancing self-management and community reintegration [6, 9]. The TCSI is provided in addition to usual outpatient stroke rehabilitation services. It involves virtually delivered transitional support by an interprofessional team including an occupational therapist, physical therapist, speech language pathologist, social worker, and nurse. The foundational component of the TCSI is post-acute care coordination and system navigation provided by a designated member of the interprofessional team who serves as a care coordinator. The care coordinator contacts the older adult by phone within two days post-discharge and conducts the first virtual visit by phone or videoconference within 14 days of discharge. The other components of the intervention are: 1) up to six virtual visits delivered by a member of the interprofessional team, 2) monthly virtual interprofessional team conferences where the team discusses and evaluates the older adult's plan of care, and 3) an online resource to support self-management and system navigation, the *My Stroke Recovery Journey website* (https://mystrokerecoveryjourney.ca/) [9]. The feasibility and effectiveness of the TCSI was previously established in a feasibility study [6] and a multi-site pragmatic randomized controlled trial within two geographical areas in Ontario, Canada (Hamilton and Niagara) [9]. The TCSI was found to be feasible to deliver and produced greater gains in patient-reported physical functioning, stroke self-management, and patient experience, compared to usual stroke care [9]. These improvements did not result in additional costs from a societal perspective [9].

Ontario Health oversees publicly funded health care in the province. Since 2022 Ontario Health has engaged in a multi-year project to implement a standardized, equitable, integrated, and patient-centred system of care that supports recovery of patients after stroke [10]. Informed by best practices and expert patient and provider opinion, Ontario Health developed a CSR model of care and a guidance document on navigation [8, 10]. The core components of the TCSI are well aligned with the Ontario CSR model with its focus on care transitions, interprofessional team care delivery, system navigation support, and education and support for persons with stroke and their care partners [10]. To help inform implementation and scale-up of the Ontario CSR model, the objective of this study was to conduct a mixed methods assessment of the scalability readiness of the TCSI, identifying perceived benefits and implementation considerations to inform potential future scale-up in selected CSR programs across the province. Scalability is defined as the ability of a health intervention shown to work on a small scale and/or under controlled conditions to be expanded to reach a greater proportion of an eligible population while remaining effective [11]. Scale up is the process of integrating a health program or intervention into routine practice [12].

METHODS

STUDY DESIGN

A convergent mixed methods study design was used to assess the scalability readiness of the TCSI [13]. This study was conducted in accordance with the Tri-

Council Policy Statement, Ethical Conduct for Research Involving Humans [14]. Institutional ethics approval was obtained from the Hamilton Integrated Research Ethics Board (#16488) and the ethics boards at each site of the CSR programs. Informed verbal consent was obtained from each participant prior to their participation in the research. All electronic documents were stored using the Microsoft SharePoint web-based collaboration system and accessed on password-protected computers by the research team.

FRAMEWORK: THE INTERVENTION SCALABILITY ASSESSMENT TOOL

The Intervention Scalability Assessment Tool (ISAT) was used to guide both data collection and analysis [11, 12] The ISAT was designed to support practitioners and policy makers in conducting systematic assessments of the suitability of health interventions or programs for population scale-up within health and community settings of high-income countries. The ISAT was selected for use in this study as it considers most of the important scalability components and predictors of challenges compared to other tools [15, 16]. Our research team also found the ISAT to be a very useful, structured approach to guide data collection and analysis in a previous study [17]. The ISAT consists of domains for consideration when determining the scalability of an intervention or service, such as those related to the intervention's effectiveness, costs and benefits, and implementation issues including reach, acceptability, delivery, and sustainability. Refer to Supplementary Table 1 for a brief description of each ISAT domain.

RECRUITMENT

The aim was to recruit three CSR programs in Ontario, 12 to 18 providers and leaders (four to six per program site), three to six patient partners (one or two per site), and 10 to 15 key informants across the province of Ontario, Canada.

Programs were eligible to participate if they met the following inclusion criteria: 1) were one of the 45 CSR programs in Ontario (at the time of the study), and 2) had the capacity to provide team-based stroke rehabilitation services by physiotherapists, occupational therapists, and speech-language pathologists. Purposive sampling was used to recruit programs with variation sought by area of province (north and south, rural/remote and urban) and presence of a system navigation role). All members of the interprofessional team and their managers within each of the three participating CSR programs were invited to participate in the study. To introduce the study and identify programs, our collaborator from Ontario Health sent an email to the directors and coordinators of the Regional Stroke Networks across Ontario who shared information about the study with the programs in their regions through email. For those programs that expressed interest, our collaborator sent their email contact information to the research team. All members of the interprofessional team and their managers within each of the three participating CSR programs were invited to participate in the study. Persons with stroke and/or their care partners were eligible to participate in the study if they: 1) had accessed care from the participating CSR program, 2) could provide informed consent, and 3) were competent in English. They were recruited through the patient/family advisory council of the participating site or by CSR program staff. Persons with stroke and care partners were provided $30 gift cards per hour of direct participation and preparation time in acknowledgement of their contributions. They also received orientation to the study in one-on-one sessions over Zoom with a member of the research team. Key informants met one or more of the following criteria: 1) involved in the delivery of community stroke rehabilitation services, 2) experienced in scaling up health interventions, 3) familiar with the current political climate regarding community stroke rehabilitation, and 4) in a position to advise on scalability. Potential key informants were approached to participate in the study by a working group member who was known to them.

DATA COLLECTION AND ANALYSIS

Qualitative data were collected and analyzed from the following sources: 1) relevant practice, policy, and research documents, 2) documentation from working group meetings with participants from each CSR program, and 3) individual key informant interviews. Quantitative data were collected through surveys sent individually to working group members for independent completion to capture each working group member's quantitative ratings of the scalability of the TCSI. Qualitative findings are reported in accordance with COREQ criteria (Supplementary Table 2) [18].

Research Team Reflexivity

Most members of the research team were registered nurses. Three research team members were PhD-prepared faculty members with extensive experience in leading quantitative, qualitative, and mixed methods research. Only one research team member (MMR) was involved in the co-design and previous testing of the TCSI, mitigating potential bias related to previous involvement with research related to the intervention. To ensure participants did not feel undue pressure to endorse the potential scalability of the TCSI, the first author (MN) facilitated the working group meetings. Research triangulation with different combination of team collaboration was employed during all phases of data analysis to ensure a balanced assessment of the scalability readiness of the TCSI, including reflection on lessons learned in previous phases of the research and distinct findings during the readiness assessment.

Relevant Practice, Policy, and Research Documents

A document analysis was undertaken to synthesize information related to the domains of the ISAT related to the intervention itself (e.g., political context, evidence of effectiveness). Reviewed documents included: 1) participating CSR program documents (e.g., program descriptions, referral forms, assessment forms, etc.), 2) provincial and regional health policy documents regarding community stroke rehabilitation, 3) qualitative and quantitative findings from previous studies of the TCSI, and 4) published literature regarding transitional care stroke interventions. Two research team members (MN, TC) conducted the directed content analysis of these documents, which involved extracting key content from the documents relevant to the domains of the ISAT [19]. The findings were summarized in a working document.

Community Stroke Rehabilitation Programs Working Group Meetings

Three working groups (one per site) were formed and consisted of the members of the research team (MN, TC, SB, MMR), stroke care providers, patient and care partner research partners, program or regional managers, clinical practice leads, and Ontario Regional Stroke Network representatives. The working groups in two sites met three times over the course of the study and one working group met twice (eight meetings in total). Working group meetings were held virtually by Zoom, ranging from 60 to 90 minutes, and were audio-recorded. Meeting minutes were circulated to working group members after each meeting. Before the first working group meeting, each member received a draft copy of the ISAT to provide background information about the intervention and the study.

Working group members, including patient and care partner research partners, contributed to the scalability assessment with the research team by: 1) informing the research team about current practice within their local CSR program and how it compares to the TCSI, 2) providing the research team with relevant documents regarding current stroke rehabilitation practice in their region, 3) advising the research team about potential key informants to inform the scalability assessment within their program and region, 4) assisting with completion of the ISAT, and 5) independently rating the scalability of the TCSI.

The research team conducted directed content analysis using the ISAT domains as coding categories to analyze the working group minutes [19]. Three research team members (MN, TC, SB) independently reviewed the meeting minutes to generate cross-cutting themes related to the benefits of the TCSI, implementation considerations for scale-up, and any other notable findings. These themes and supporting findings were reviewed in a research team meeting, compared and contrasted, and subsequently refined until consensus was achieved.

Key Informant Interviews

One-on-one semi-structured interviews were conducted by members of the research team (MN, TC, MMR) with key informants to answer questions in the ISAT that could not be addressed through the other data sources (refer to Supplementary Table 3 for the guide). Interviews ranged from 30 to 60 minutes and were conducted by phone or Zoom videoconference based on the participant's preference. Audio-recordings of the interviews were transcribed verbatim by a professional transcriptionist, then checked for accuracy by the team, and anonymized. In keeping with a rapid approach to qualitative analysis [20], research team members (MN, TC, MJ, MMR) independently extracted key points and illustrative quotes from two transcripts and organized them by domain of the ISAT in an Excel worksheet. The principal investigator reviewed these extractions for consistency and found the extractions were well aligned. The extraction of key points from the remaining interviews was divided among the team and completed [20]. Cross-cutting themes related to the benefits of the TCSI, and implementation considerations for scale-up by the ISAT domains were then identified by each team member for all interviews. These findings were reviewed in a research team meeting, and consensus was achieved on the themes,

Working Group Members' Ratings of Scalability

At the final meeting, working group members were asked to independently rate the scalability of the TCSI by responding to readiness questions adapted from the ISAT. Participants assigned individual ratings to each question using a four-point scale: not at all (0), to a very small extent (1), somewhat (2), and to a large extent (3). Participants were encouraged to discuss the rationale for their ratings and the score, if they wished. Following the meeting, the ratings for each question were totalled and averaged across all participants, as instructed in the ISAT [11]. The final scores for each of the 10 ISAT domains were entered into an Excel spreadsheet to generate a radar plot for each of the sites. The radar plot for each site was shared with the working group members via email to assist them in future planning.

Mixed Methods Analysis

The findings from the analyses of the qualitative and quantitative components were compared to generate the mixed methods interpretation [13]. The completed ISAT documents by site and the summary of the key informant interviews were reviewed to identify the benefits of the TCSI, required adaptations, and implementation considerations. Commonalities and divergence between sources were transposed by three

research team members (MN, TC, SB) into a shared working document [13]. Attention was paid to ensure the voices of patient and care partner research partners were conveyed in the findings. The refinement of the key themes under each of these topic areas was reviewed in weekly team meetings over a two-month period until a credible representation of scalability readiness was detailed. Upon review, convergence was found between the quantitative ratings of scalability readiness and qualitative findings from other sources, resulting in no additional changes to the themes. A summary of the key themes and supporting details was shared with all members of the research team for review and refinement culminating in a written report to the funder and the results as presented below.

RESULTS

PARTICIPANTS

The three participating CSR programs included: a home-based CSR program funded by a hospital serving an urban/rural region (site 1); a hospital-based outpatient CSR program in a northern/rural region (site 2); and a hospital-based CSR program serving an urban/rural region with a dedicated system navigator role (site 3). A total of 32 participants were involved in the study: 15 CSR providers, nine rehabilitation program leaders, four patient and care partner research partners (a patient partner was not identified at one site), and four representatives from the Ontario Regional Stroke Networks. Over half (53.6%) of the providers, leaders, and regional stroke representatives were new to their current role (less than three years), but the majority (71.4%) had worked for more than 10 years in practice (see Table 1 for a summary of the demographic characteristics of the participants).

SCALABILITY READINESS OF THE TRANSITIONAL CARE STROKE INTERVENTION

Participants in the working group meetings and one-on-one interviews identified several benefits to implementing the TCSI in their setting, such as a providing a comprehensive approach to supporting persons with stroke as they transition across care providers and settings, providing care coordination and system navigation, and the alignment of the TCSI with current system political/strategic goals. Key implementation considerations for scale up were noted in the document analysis and shared by participants regarding intersectoral interprofessional

CHARACTERISTICS	CATEGORY	n	%
Current Role	Community Stroke Rehabilitation Providers		
	Occupational Therapist	3	9.4
	Physiotherapist	2	6.3
	Speech Language Pathologist	2	6.3
	Registered Nurse / Registered Practical Nurse	2	6.3
	Social Worker	2	6.3
	Rehabilitation Therapist / Rehabilitation Assistant	2	6.25
	Therapeutic Recreation Specialist	1	3.1
	Community Stroke Navigator	1	3.1
	Rehabilitation program leaders (i.e., program leads, managers, directors)	9	28.1
	Patient or Care Partner Research Partners	4	12.5
	Regional Stroke Network Representatives	4	12.5
Years in current role[a]	0–3 years	15	53.6
	4–10 years	8	28.6
	11–15 years	4	14.3
	16–20 years	1	3.6
Years in practice[a]	0–3 years	2	7.1
	4–10 years	6	21.4
	11–15 years	7	25.0
	16–20 years	3	10.7
	21+ years	10	35.7

Table 1 Demographic Characteristics of Scalability Assessment Participants at All Sites (*n* = 32).

Note. a = Does not include patient and care partners.

team development, TCSI adaptation requirements, virtual care integration, program quality monitoring, digital health solutions, and health human resources.

Implementation Benefits

Comprehensive Approach Across Transitions. Both key informants and working group members, including patient partners, noted numerous benefits of the TCSI in supporting persons with stroke and their care partners through critical transitions. Working group members felt that the strengths-based approach (rather than deficit-focus) of the intervention could potentially lead to enhanced stroke prevention and post-stroke self-management skills. Key informants also appreciated that the TCSI includes a comprehensive assessment of the person with stroke (i.e., mental health, housing, medications, and food security) and promotes goal setting by the person with stroke and the development of a holistic plan of care aimed at supporting successful community reintegration. The early and proactive post-discharge follow-up and the longer (6-month) follow-up period offered by the TCSI were also noted as beneficial by providing support to patients and families during critical transitions.

Key informants and working group members also appreciated that the intervention promotes continuity of care during transitions between settings (e.g., hospital to home). Another benefit of the TCSI cited by both patients and providers was its flexible delivery (e.g., the number and duration of visits) tailored to the needs and preferences of the person with stroke. Patient partners noted it was valuable to have a dedicated person (i.e., care coordinator) that they could contact outside of their scheduled rehabilitation sessions.

Provision of Care Coordination and System Navigation. The care coordination and system navigation component of the TCSI was identified as key to improving access to services and supports, for both patients and care partners. One key informant noted that patients and care partners would benefit from consistent support from a dedicated and experienced provider who serves as a single point-of-contact with the rehabilitation team. Key informants and working group members felt that the care coordinator/system navigator would provide necessary supports to patients as they transition to the community and reduce the risk of "things falling through the cracks." The role would facilitate making connections with other health care professionals in acute and primary care, and to community services, and assisting patients and care partners to navigate the system at a time when patients often struggle with communication and planning skills. Connections to community programs, which included peer support, exercise, education, and system navigation were highly valued by patient partners.

Alignment with Current System Political/Strategic Goals. The document review and study participants suggested that the aims of the TCSI are well aligned with Ontario Health's initiative to deliver care that is person-centred and in the 'right place at the right time.' The development of integrated care pathways for chronic conditions and the reorganization of home care as a single service organization (Ontario Health at Home) provide new opportunities to support implementation of the TCSI [21, 22]. Specifically, lessons learned in current integrated pathway developments within Ontario Health Teams could inform strategies to better integrate stroke care across both health and social care sectors. Restructuring of traditional delivery of home care could present opportunities for more collaborative or shared care between home care and hospital-based CSR in line with the aims of the TCSI.

Implementation Considerations for Scale Up

Intersectoral Interprofessional Team Development. Several participants identified the historical challenges created by siloed stroke and other health care services that are managed and funded separately, resulting in poor communication and coordination of care between interprofessional stroke rehabilitation teams and other community stroke care providers such as, home and community care, stroke prevention clinics, and primary care. The fragmented care system makes enacting care coordination and system navigation very challenging, as providers do not know each other or have processes to support effective collaboration. Key informants identified the need to foster communication and develop strong working relationships between providers across the stroke care continuum, including community-based services.

Key informants identified that initial and ongoing education/training and support of providers would be needed to facilitate implementation. Standardized education on the intervention for all providers, with emphasis on the strengths-based approach to care, self-management and goal setting, and community reintegration, was suggested. Participants identified that a dedicated project management role would be required for the initial implementation period. Participants also emphasized the need for the TCSI to be delivered by a team that is knowledgeable about local community programs and services and that building the knowledge and relationships may also be required.

Adaptation Requirements of the TCSI to the Local Context. Participants emphasized the importance of adapting the TCSI to the local context, requiring an understanding of the diverse characteristics and needs of different communities. Also, to optimize expertise across health and social care services and avoid duplication of services, an accurate picture of current services and supports for transitional care would be required. Refer to Table 2 for a summary of the site-specific adaptations that were proposed.

CORE COMPONENT	ADAPTATION
1. Post-hospital discharge telephone follow-up by dedicated care coordinator/ system navigator on CSR team	• Post-hospital discharge telephone follow-up by registered nurse in Stroke Prevention Clinic or in-patient unit
2. Up to 6 monthly virtual visits by member of the team	• Offer care in-home or virtual based on the person's needs and preferences • Offer group-based education during CSR • Transition longer follow-up period to robust community support service programs (where available)
3. Monthly team care conferences to develop/evaluate care plan	• More frequent team meetings (e.g., weekly)
4. Care coordination and system navigation by a dedicated care coordinator on the CSR team	• Support navigation with paper-based binder in addition to website of community-based services and resources • Support navigation with existing provincial website of community-based services and resources • Regional care coordinator/navigator role as not all persons with stroke receive care at CSR • Care coordinator/system navigator role in both CSR program and region

Table 2 Proposed Adaptations to the Transitional Care Stroke Intervention.

Virtual Care Integration. While participants saw a place for virtual care delivery in community stroke rehabilitation, challenges to providing virtual care were noted. Participants noted that virtual visits could reduce travel time for teams providing home-based rehabilitation and improve access for patients to outpatient services. The ability to follow-up virtually with patients after discharge from outpatient stroke rehabilitation services was identified as a facilitator to ongoing support by one working group member. Key informants and working group members appreciated that virtual delivery of the TCSI would provide patients and care partners with remote access to ongoing, specialized care and for longer than usual care (up to six months), especially in underserviced areas. However, one key informant shared that while virtual care is well integrated into current practice of some CSR teams, this is not the case for all programs. Several supports would be needed by persons with stroke and their care partners to engage in virtual care, including education on virtual care access, technical support, and access to reliable internet connection and equipment. For example, participants noted that patients' computer literacy and poor internet connectivity in northern and rural communities are existing barriers to providing virtual care.

Program Quality Monitoring. Participants indicated that provincial data regarding CSR program performance is not routinely collected and reported. Ontario Health has developed CSR indicators and standardized metrics (e.g., minimum data set) and is engaged in mobilizing a provincial approach to launch CSR reporting in 2026. This could be used to monitor the TCSI and support continuous quality improvement. Participants emphasized the importance of having information for ongoing quality assurance and to monitor fidelity of TCSI implementation. In addition to patient- and care partner-reported outcomes, working group members and key informants suggested that the minimum data set include elements that could facilitate reporting of measures such as wait times for service, volumes of referrals and discharges, time to first follow-up, length of time on service, and number of visits. Other key program measures that participants suggested were number of team conferences, number of assessments/clinical screens completed, and number of communication points with primary care (e.g., alerts) completed during the program. Key informants suggested that the metrics to monitor implementation fidelity and ongoing program quality could be embedded in the electronic health record or an electronic dashboard, rather than extracted from charts or tracked manually, as is the current practice in some sites.

Digital Health Solution. Several participants identified the need for a common, digital platform to enhance communication, coordination, and access to information among providers and between settings (hospital, home care, community support services, and primary care). The lack of an integrated electronic patient management system linking different providers, settings, and sectors was cited as a key implementation challenge contributing to care fragmentation and lack of communication between providers. Even in sites with electronic health records, these records were not available for viewing by other parts of the health care system, such as home and community care. While a digital health solution would foster communication and support interprofessional teamwork, participants also noted that financial investment would be required to integrate electronic health records across health- and social-care organizations.

Health Human Resources. As reflected in the readiness ratings of the working groups, participants identified sustained funding and health human resources as challenges to implementation of the TCSI. Funding would be needed to support a dedicated project management role to oversee initial implementation of

the TCSI, the care coordinator/system navigator role, and staff compensation for delivering the intervention. Some participants also identified that funding would be required to support longer-term follow-up of stroke survivors, beyond the traditional eight to 12 weeks of outpatient community stroke rehabilitation services [10].

Participants indicated that implementation of the TCSI would require increased health human resource (HHR) capacity at a time of significant HHR challenges in the province and ongoing strain in the health care system post-pandemic. Additional human resources would be needed for the care coordinator/system navigator role in sites that do not currently have this role, and to facilitate the additional time by CSR providers to offer virtual care after formal rehabilitation services are completed.

SCALABILITY READINESS ASSESSMENT RATINGS

The radar plots in Figures 1 to 3 present the results of the scalability assessment based on the responses of the working group members at each site. Points on the outer portion of the radar plot indicate domains that were scored higher, while points located closer to the centre are domains that were scored lower. The results of the radar plot show that the problem being addressed (transitions in stroke care), the TCSI, the strategic and political context, and evidence for program effectiveness received high scores across all three sites. The delivery setting and workforce, implementation infrastructure, and sustainability domains received lower scores indicating areas requiring further consideration. Mean scores for the readiness for scalability questions across the three sites are presented in Supplementary Table 4.

DISCUSSION

Supporting transitions in care for persons with stroke and their care partners continues to be a pressing issue in Ontario and in many other jurisdictions. Implementation of the TCSI has the potential to improve outcomes and foster integrated care delivery for older adults with stroke and multimorbidity. Readiness for scalability of the TCSI at the included sites would be facilitated by interprofessional team development, local contextual adaptations, optimizing virtual care, provincial standardization for ongoing program quality monitoring, a digital health solution, and designated care coordinator roles. Having undertaken this formative assessment with the participating sites, the next steps were to further explore each site's capacity for implementation as part of Ontario Health's ongoing work to support a standardized, patient-centred system of stroke care.

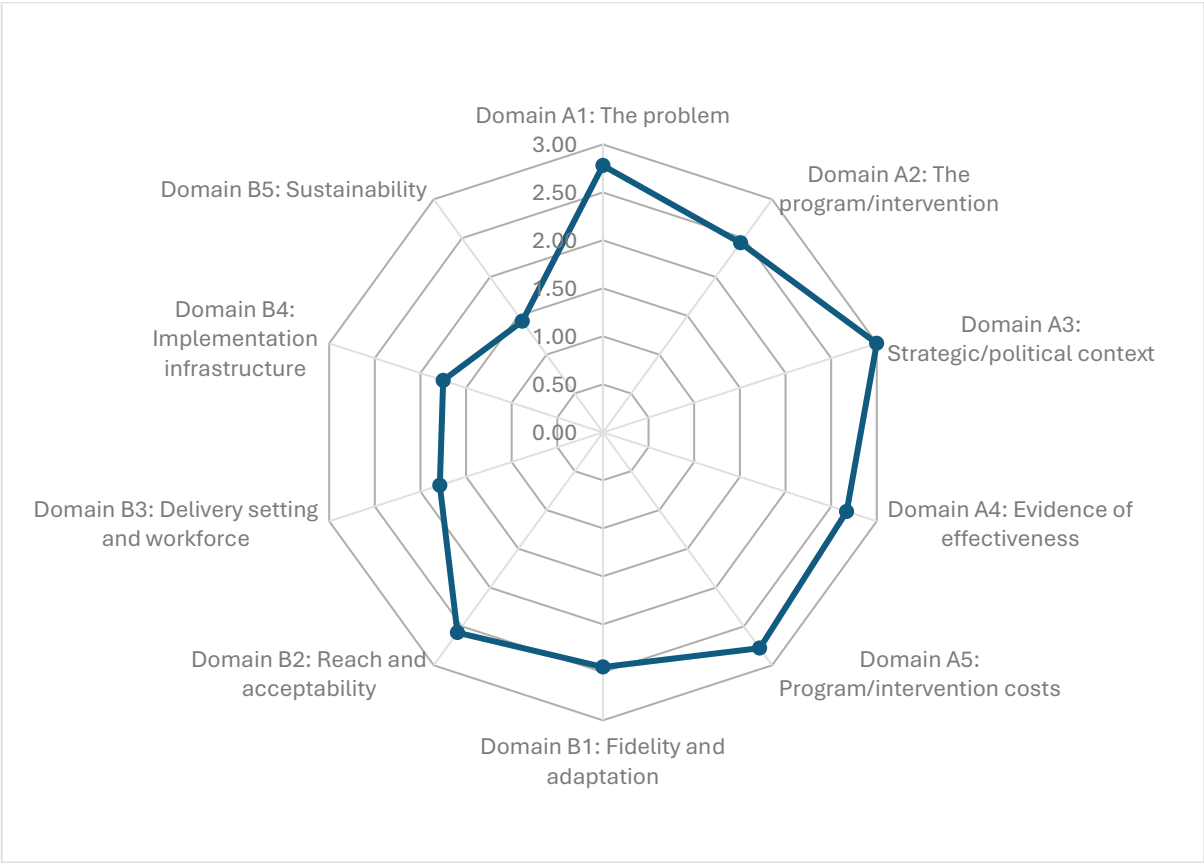


Figure 1 TCSI Readiness Assessment Radar Plot: Site 1 Home-based CSR Program.

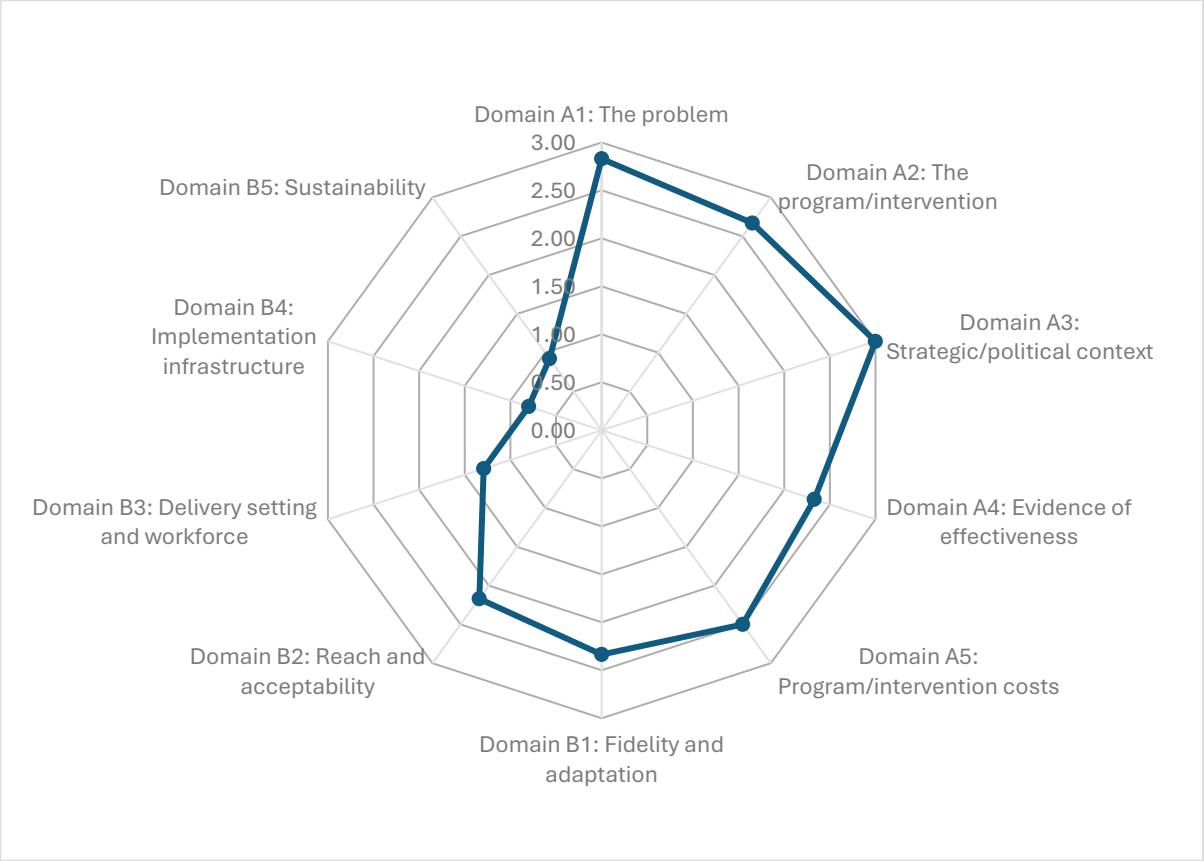


Figure 2 TCSI Readiness Assessment Radar Plot: Site 2 Rural-Remote Hospital Outpatient CSR Program.

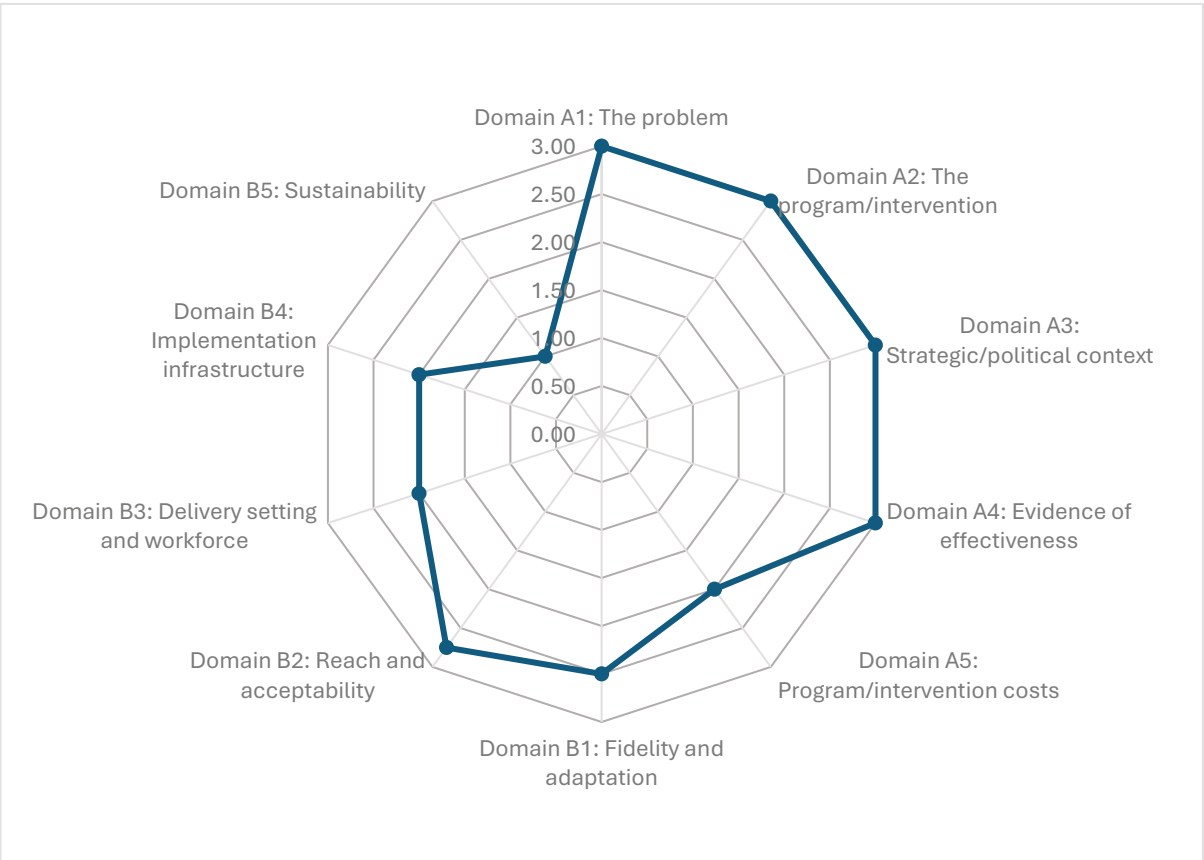


Figure 3 TCSI Readiness Assessment Radar Plot: Site 3 Urban-Rural Hospital Outpatient CSR Program with Dedicated System Navigator Role.

The need to adapt the TCSI to the local context is an important consideration in scalability assessments and in keeping with the principles of integrated health and social care [12]. Integrated care refers to the systematic organization of health and social services to ensure persons receive comprehensive care tailored to their needs across their life span, in contrast to fragmented, disease-oriented care [23]. Recommendations for stroke systems of care emphasize the importance of connecting persons with stroke to community supports, such as exercise programs, fall prevention classes, care partner support, nutrition services, and transportation, all which are provided by community support services and will vary by community [24]. Considering local assets during the adaptation and implementation of new programs, such as the TCSI, facilitates addressing the social determinants of health that contribute to health and social needs of the local community [23]. The consideration of equity issues and local community needs were notably absent in most of the reviews included in an umbrella review of scaling up health and social care programs [25]. However, programs are more likely to be sustainable over the longer term if they are adapted for implementation in different contexts and populations from where the program was evaluated [26]. Adaptations are considered necessary given the diverse contexts in which evidence-based programs are implemented [26]. Consideration of whether a program needs to be changed or adapted is an important part of a scalability assessment [11]. However, these adaptations must retain the function of the core elements to remain effective [27]. In this study, participants and key informants suggested creative adaptations that might change the form of a TCSI core component. For example, having a care coordinator/system navigator role external to the CSR team would aim to retain its core function (e.g., care coordination and system navigation support) yet change the form of the team. These adaptations should be co-designed with CSR programs and older adults and care partners as patient research partners when assessing scalability and planning for scale-up [25].

During the assessment of the scalability of the TCSI, participants noted the critical role that the community support sector enacts in providing transitional care and supporting community reintegration for older adults with stroke. These findings highlight the need to consider the continuum of stroke care from the health care sector to community support services in planning and funding. Integrated care emphasizes the value of community engagement and intersectoral partnerships in supporting community members' needs but also in remediating fragmentation in the health care system [23, 28]. A recent systematic review of integrated care models for stroke noted a 'paradigm shift' in approaches to care across clinical, community and home settings supported by enhanced interprofessional team collaboration but also highlighted that financial planning and funding was least addressed component of integrated care in the included articles [3]. Implementing the TCSI could involve task-shifting or task-sharing between health and social care sectors. Task-sharing refers to the proactive redistribution of specific aspects of care to health care providers, administrative support positions, and community health workers, for example [29]. CSR providers are in a unique position in the period of community re-integration to make these key connections to community support programs as they might be the only community person that older adults with stroke have contact with as they continue their rehabilitation [30]. Importantly, stable funding is required from governments for ongoing community support service delivery, especially in the context of increasing demand for transportation and meal delivery services [31].

An efficient system to monitor the quality and delivery of CSR programs was identified as important to participants from the CSR community. Provincial work on CSR indicators and a minimum data set for CSR is underway in the province, which will support achieving this goal. Improving the health system's ability to readily access data related to impact on patients and then rapidly learn from and apply those learnings is the foundation of a learning health system approach [33]. This finding is consistent with the results of the previous implementation evaluation of the TCSI which reported that regular monitoring of intervention implementation, feedback mechanisms, and the flexibility embedded in implementation facilitated real-time adaptations to the local context and adoption of the intervention [32]. As well, a lack of integrated electronic health records for program monitoring has been found as a barrier to readiness in the scalability assessments of programs for community-dwelling older adults experiencing falls in Ireland [34] and those living with diabetes in Canada [16]. Education and support will likely be required to support CSR programs' engagement in continuous improvement efforts, such as using data to identify and monitor areas for improvement. For example, the Netherlands first implemented a national, integrated stroke program in early 2000 that involves collaborative networks of health and social care providers across the country [35]. While performance management ("measurement and analyses of the results of care as delivered") has been part of the integrated stroke program since its inception, a self-assessment by the regional programs revealed that implementation of activities related to performance management had reduced from 2016 to 2019 [36]. The authors concluded there is a need to implement these quality improvement activities, measure outcomes of integrated care, and identify how outcomes can be improved, but this is challenged by the number of organizations involved in stroke care

and the absence of a system to routinely collect and measure outcomes [36].

STRENGTHS AND LIMITATIONS

Strengths of the study were the involvement of three diverse CSR programs in Ontario and the alignment of the TCSI with policy initiatives to scale up an evidence-informed CSR strategy across the province. Interviews with 11 key informants added valuable insights and information. Working groups reflected diversity in CSR program roles, providing differing perspectives. Two of three working groups included the voice of patient partners.

The study had several limitations that point to potential directions for future research. From a methodological perspective, the outreach to CSR programs through the Regional Stroke Networks may have introduced bias as programs self-selected and the sample size is small with three sites. The participation of managers may have meant that staff were not completely candid, reflecting a social desirability bias. The length of the working group meetings was shorter than the research team would have preferred due to the very busy schedules of the CSR providers. Working group members had not implemented the TCSI themselves but were asked to theoretically consider factors that would influence the scalability of the TCSI in their program and how the TCSI would fit with their current practice. Participants also found it challenging to determine the sustainability of the TCSI at their sites given uncertainties regarding ongoing funding and health human resource shortages, so this important domain was underexplored. As such, this work is exploratory and intended to inform potential, future scale up. Finally, the scalability assessment was conducted at one point in time and ratings and perceptions could shift in the context of future political and practice context changes. Future research would include assessing the scalability of the TCSI in other regions of Canada and internationally.

CONCLUSION

This study provides a timely and practical contribution to understanding how evidence-based transitional care stroke interventions may be prepared for scale up within community rehabilitation settings and presents effective strategies to better integrate care for older persons with stroke and their care partners along the continuum of stroke care. The methods used in this study have real-world utility for community stroke rehabilitation programs to apply to assess their readiness for scalability of the TCSI and inform the state of the evidence on creative and collaborative approaches to stroke care that reduce the potential negative impact of care transitions for persons with stroke through to community re-integration.

ADDITIONAL FILE

The additional file for this article can be found as follows:

- **Supplementary file.** Supplementary Tables 1 to 4. DOI: https://doi.org/10.5334/ijic.10207.s1

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