International Journal for Quality in Health Care, 2016, 28(6), 830–837
doi: 10.1093/intqhc/mzw118
Advance Access Publication Date: 7 October 2016
Quality in Practice

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Triple Aim in Canada: developing capacity to lead to better health, care and cost

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Accepted 6 September 2016

Abstract

Quality problem: Many modern health systems strive for 'Triple Aim' (TA)—better health for populations, improved experience of care for patients and lower costs of the system, but note challenges in implementation. Outcomes of applying TA as a quality improvement framework (QI) have started to be realized with early lessons as to why some systems make progress while others do not.
Initial assessment: Limited evidence is available as to how organizations create the capacity and infrastructure required to design, implement, evaluate and sustain TA systems.
Choice of solution: To support embedding TA across Canada, the Canadian Foundation for Healthcare Improvement supported enrolment of nine Canadian teams to participate in the Institute for Healthcare Improvement's TA Improvement Community.
Implementation: Structured support for TA design, implementation, evaluation and sustainability was addressed in a collaborative programme of webinars and action periods. Teams were coached to undertake and test small-scale improvements before attempting to scale.
Evaluation: A summative evaluation of the Canadian cohort was undertaken to assess site progress in building TA infrastructure across various healthcare settings. The evaluation explored the process of change, experiences and challenges and strategies for continuous QI.
Lessons learned: Delivering TA requires a sustained and coordinated effort supported by strong leadership and governance, continuous QI, engaged interdisciplinary teams and partnering within and beyond the healthcare sector.

Key words: population management, integrated care, Triple Aim, quality improvement

Introduction

'Triple Aim' (TA) is the simultaneous pursuit of improved population health, care experience and per capita cost of care [1]. Formally introduced in 2008 as a quality improvement (QI) framework, outcomes of its application are being realized with varying success [1–4]. A recent study found three critical components of TA: 1) setting a foundation for population management; 2) delivering services 'at scale' for the population; and 3) creating a 'learning system' to drive improvements [2]. This article reports the results of nine Canadian healthcare organizations that participated in the TA Improvement Community (TAIC) cohort (September 2013–June 2014) [5].

Hosted by the Institute for Healthcare Improvement (IHI)—an independent not-for-profit organization focused on improving health and healthcare worldwide—TAIC supported an international cohort of healthcare sites. In 2013, the Canadian Foundation for Healthcare Improvement (CFHI)—a not-for-profit organization dedicated to accelerating healthcare improvement across Canada—cost-shared enrolment of Canadian sites into the TAIC cohort. Criteria for enrolment, included: 1) alignment of the site's priorities with TA; 2) responsibility of care delivery for a specific population (s); 3) sufficient capacity (e.g. staff, time and financial resources) to conduct the work; and 4) engagement and support of senior leadership. These criteria align with literature around key factors for successful implementation [6].

In August 2013, nine Canadian sites were selected (Appendix 1 presents an overview) to join an additional 31 organizations from the United States (26 sites), the United Kingdom (1), Denmark (3) and Sweden (1). TAIC faculty and staff provided structured support to guide the design, implementation, evaluation and sustainability of TA systems. The approach relied on the IHI 'Model for Improvement' [7], which includes clear aims, change management and measures for improvement. 'At scale' systems thinking is also foundational, wherein small changes are tested before application and scale-up (e.g. initiate interventions with a small number of patients, reflect on what is working and consider the necessary capacity before scaling) [3]. Team composition included: a senior leader to endorse and support the team; project leads and a team or 'portfolio manager' to manage progress across projects; and a measurement and data expert [8]. Canadian sites also received support and networking opportunities from Canadian coaches and CFHI staff.

CFHI undertook a summative evaluation of the first Canadian TAIC cohort to draw lessons learned.

Methods

The summative evaluation took place July–August 2014. Data sources included site reporting documents and semi-structured telephone interviews with team members. The evaluation explored the process of change, experiences and challenges associated with creating TA infrastructure. Specifically, TA populations, governance and team composition, project aims and foci, performance measurement and challenges/lessons learned were examined.

Participants gave informed consent and interviews were audio-recorded and transcribed for analysis. Qualitative analysis was conducted as per Taylor and Bogdan and included: 1) generating themes and categories, 2) reducing themes and coding, 3) gathering and analysing all data related to the objectives, and 4) triangulating data considering the context in which they were collected [9].

Results

A total of 15 individuals participated in telephone interviews (five team members; 10 portfolio managers). A document review was conducted for all sites. Results are summarized by key theme.

Population identification and segmentation

Understanding population needs underpins TA delivery and two population types generally exist: 1) 'geographically' defined populations within a community who share a common set of needs or issues, such as all older adults with complex needs in a health region; and 2) 'discretely' defined populations that make 'business sense' such as all employees covered within an employee health benefits plan [10]. IHI devised three working groups for populations: 1) high-cost/high-risk (HCHR) patients; 2) frail older adults; and 3) employed populations. Sites were encouraged to initiate their work with subpopulations who could derive the greatest benefits from TA intervention. Sites then segmented their population by stratifying sub-groups based on common population features, risk factors or needs. Population segmentation approaches included: 1) defining a population threshold based on healthcare utilization (e.g. all patients who visited the emergency department or ED 'X' times or were hospitalized 'X' times over the past 6–12 months); 2) considering the acuity of patients (e.g. who is most likely headed for a hospital admission? Who is at risk of decline?); and/or 3) using predictive modelling to forecast probabilities and trends.

Given the predominantly regional approach to care delivery in Canada, all sites began with geographically defined populations (see Table 1 for site-specific population foci). In Canada, considerable attention is paid to 'high users' or the '5%' who account for up to two-thirds of healthcare use and costs [11, 12]. All sites targeted HCHR patient populations (ranging in size from 2000 to as many as 13 000 patients), for example:

- Alberta Health Services (AHS) Edmonton Zone defined a population with low socioeconomic status and high health risk, relying on a threshold of five or more visits to the ED over the last 6 months. Their target population represented five subpopulations: 1) older tri-morbid adults (persons living with mental illness, substance use disorder and a medical condition) with multiple visits to EDs, 2) frail older adults, 3) young adults with addictions and mental health concerns, 4) high-risk child-bearing women and 5) high-needs children and complex infants and toddlers.
- Toronto's Women's College Hospital (WCH), focused on the top 1.5% of high users and 'hot spotting' of primary care providers with the highest number of patients with frequent use of EDs.
- Several sites selected populations based on morbidity. For example, the Canadian Mental Health Association—Toronto Branch (CMHA) focused on comorbidity—people living with mental health, substance use and chronic diseases. Owen Sound's Gray Bruce Health Services (GBHS) focused on patients living with Chronic Obstructive Pulmonary Disease (COPD), which is the chronic disease most responsible for the highest hospital use in Canada.

Governance team composition, purpose statement and business case

Governance

Engaging leadership and cross-sector stakeholders is imperative for successful implementation, whether protecting dedicated staff time to enabling broad communication of the work to mitigating barriers and securing organizational buy-in. Without this leadership support, teams noted their work was 'off the side of their desks,' compromising their overall success.

All Canadian sites developed partnerships and formal and informal multi-stakeholder governance structures to redirect populations from episodic emergency and acute care to primary and community care in addition to addressing the upstream social determinants of health. External partnerships often included community partnerships (e.g. community health clinics, social services, housing and shelters, mental health and substance use supports, rehabilitation programmes, etc.) to provide better continuity of care. Noting the challenges with forging external partnerships, the sites indicated the

Table 1 Population foci and identification approaches across Canadian sites

TA population focus/site (province)	Threshold	Clinical knowledge	Mixed threshold/clinical knowledge
Mental Health and Addictions Three sites (3/9): • AHS-Edmonton Zone (AB) • AHS-North Zone (AB) • Canadian Mental Health Association CMHA, Toronto Branch, (ON)	• High users in a geographically defined area with complex healthcare needs who made five or more visits to ED in a 6 month period (AHS-Edmonton)	• Diagnosis of a serious mental illness (18–65 years old), at risk for chronic diseases, with high nicotine dependency, and other substance abuse issues (CMHA)	• Addiction and/or mental health diagnosis with high-cost service utilization (AHS-North Zone) High-risk and high-cost adult population with addictions and mental health concerns who • make repeat/multiple visits to ED in defined geographic area (AHS-Edmonton Zone)
Chronic Diseases Three sites (3/9): • Central Health (NL) • Gray Bruce Health Services, GBHS, Owen Sound Site, (ON) • Montreal University Health Centre, MUHC (QC)	Not applied	• High-risk and high-cost patients with COPD, stroke and those at risk (MUHC)	• Diagnosis of one or more chronic diseases and two or more hospital admissions within the last year with the primary diagnosis on admission being a chronic disease (Central Health) • Patients who made five or more ER visits within a year for treatment related to chronic disease (GBHS)
Other (patients with long-terms needs; vulnerable, unattached populations) Three sites (3/9): • Eastern Health (NL) • The Region of Peel (ON) • Women's College Hospital, WCH (ON)	• Unattached patients and high needs and high-cost patients within defined geographic area who made two or more ED visits in last year (WCH)	• Homeless and at-risk of homelessness population within defined geographic area (The Region of Peel)	• Adult populations that utilize acute care services and for whom an alternate service is required or most appropriate following completion of acute phase of care (Eastern Health)

Note: Examples of modelling have not been presented in this table because this approach was not used by Canadian sites to identify their TA population.

overall experience was beneficial: 'We never worked collaboratively before. TA was an impetus to work together' (project lead).

Integrative processes are essential for TA, often requiring an 'integrator' role at the macro- or micro-level. Macro-integrators are 'an entity that can pull together the resources of numerous organizations to form a virtual system to support a defined population and make sure that the system is optimized' [13]. Micro-integrators may be a person or team that works directly with individuals and families in the defined population. What characterizes integrators is their central role in coordinating services across the health system and optimizing interactions with other community resources. Often engagement with patients and families led to better micro-integration. One team reported: 'Family and patient engagement provided leverage to work more deeply with family health teams and community health providers.' Fewer teams were successful at macro-integration. A few examples of successful macro-integration were:

- AHS-Edmonton Zone formed a multi-sector coalition (the 'Heavy Users of Services') supporting TA locally across sectors.
- Ontario's Region of Peel established a 'collective impact approach' bringing together community agencies and healthcare institutions that coordinate community-based care for those who are vulnerable, homeless or living in poverty, thereby creating the opportunity to work across a number of sectors/services.

Team composition

Team size varied (4–17 members) with an average of eight members per team. Teams relied on existing staff to build capacity and involved new members as needed. In smaller organizations, team members undertake multiple roles or tasks, whereas in larger sites roles were more distributed. All Canadian sites included the recommended team roles [8]. Many sites also included specialists in finance, clinical informatics and communications. Multidisciplinary teams were a precondition for success, facilitating collaboration and managing competing partner priorities and values, role clarity and conflict resolution [14]. Having formal structures and processes (e.g. regular team meetings and progress check-ins) to support the work and ensure accountability and alignment of team members' expertise with the portfolio to capitalize on existing capacity was also critical. For example, one team (GBHS) relied on an already-formed team with established internal and external partnerships.

Purpose statement and business case

Five of nine sites explicitly connected their statement of purpose to their organizations' strategic priorities. Others work seemed driven by budgetary constraints and concerns. Two teams sought to achieve greater equity in service delivery. Other cited aims included: securing physician buy-in and expanding scopes of practice and addressing restrictive funding models (e.g. that prohibit nurse home-visitations).

Sites developed business cases to support TA sustainability and scale-up. Many sites reported that business case thinking is relatively new in the Canadian healthcare context, which predominantly delivered through a single-payer publicly funded model. The business cases focused on efficiency gains, containing costs or improving population health targets, for example. For example, AHS-Edmonton Zone, projected significant cost-savings if the site of care

Table 2 Summary of TA portfolio of projects across Canadian sites

Area of focus/site (Province)	Summary of projects by type of interventions
Diversion of emergency, acute care, hospitalization and readmissions Five sites (5/9): • AHS-Edmonton Zone (AB) • Gray Bruce Health Services (ON) • Eastern Health (NL) • The Region of Peel (ON) • Women's College Hospital	*Improvement projects:* • Implementation of a follow up clinic within 48 h after discharge for patients with addictions and mental health diagnoses • Evaluation by a gerontology nurse of patients age 65+ who visit ER for referral to appropriate non-acute care setting • Implementation of a documentation system to capture reasons for ALC to develop appropriate action plans • Development of a navigation hub for primary care physicians to improve access to appropriate medical imaging via telephone-assisted (1-800-) consultation to prevent unnecessary visits to the ER • Improvement of Home Care service delivery via interviews, partnership with clients, primary care network, community-based health centre, EMS and mental health and addiction services to directly address the needs of home care clients *Use of inter-sectoral collaborations and systems approach:* • Decrease and avoidance of hospital readmissions and ED visits related to COPD by using a systems approach, e.g. connect back to primary care within a week of discharge, share patient chart and notes with primary care provider, use COPD order set and pathway, self-management education prior to discharge, assessment by CCAC Nurse Practitioner, follow-up phone call. • Coordination of community-based care for vulnerable, homeless people and those living in poverty via a partnership of community agencies, health authority and healthcare institutions
Access to care (primary health and specialty care) Five sites (5/9): • AHS-Edmonton Zone (AB) • AHS-North Zone (AB) • Montreal University Health • Centre (QC) • The Region of Peel (ON) • Women's College Hospital (ON)	*Use of inter-professional models of care in primary care:* • Provision of primary care service through an inter-professional team of care providers located in one site *Referral process improvement:* • Facilitate access to appropriate medical imaging via telephone-assisted (1-800-) consultation with a high referral provider • Improve access to inpatient psychiatry services by utilizing constant observation, structured admission and discharge process • Establish hospital-based Rapid Access Clinic to provide direct access to patients from EDs or doctor's offices for rapid assessment to determine if the patient is having a stroke or symptoms usually associated as a precursor to stroke *Use of inter-sectoral collaborations:* • Partnership between a community health centre and a shelter to connect homeless population with a primary care provider • Supporting patient rehabilitation potential by providing timely access to rehabilitation services for stroke patients with swallowing disturbances specifically those with NG tubes
Health promotion & Disease prevention Five sites (5/9): • AHS-Edmonton Zone (AB) • AHS-North Zone (AB) • Central Health (NL) • Gray Bruce Health Services (ON) • Canadian Mental Health • Association, Toronto Branch (ON)	*Improvements addressing social determinants of health and behavioural risk factors:* • Address determinants of health with (pregnant) women who use illicit substances • Implementation of a hospital-wide smoking cessation ban and provision of educational opportunities to all units and staff • Implementation of a smoking cessation programme for individuals with serious mental illness (18–65 years old), who have or are at risk for developing chronic diseases, who have high nicotine dependency, and/or may have other substance abuse issues *Improvements in patient engagement and health literacy level:* • Provide people living with chronic disease with skills and confidence to better manage their health and health care • Improve patients' physical activities level, knowledge of nutrition, and encourage positive lifestyle changes through provision of information/educational on how to budget effectively and make healthy meals to address weight loss and reduce waist circumference • Improve knowledge, skills and confidence in patients with diabetes to enable them to take increasing control of their own condition and integrate effective self-management in their daily lives Smoke Stoppers Programme
Care Transitions Three sites (3/9): • AHS-Edmonton Zone (AB) • Gray Bruce Health Services (ON) • Eastern Health (NL)	*Outpatient care improvement:* • Addressing unmet needs that cause frequent ED admissions for Home Care clients to enable them to stay at home as long as possible and/or to support a successful transition to alternate levels of care • In collaboration with Provincial Ministry and community partners develop a 'Home First' strategy to support rapid response to safely and appropriately maintain our frail elderly population in their home environment • Improvement of service coordination by improving comprehensive data management system supporting outreach programmes, shelter services, and healthy babies healthy children programme

Table continued

Table 2 Continued

	• Provision of access to community resources and specialist care to primary care providers with high needs patients *Inpatient care improvement:* • Provision of better access, coordination of care, and ongoing assistance for the top five complex high needs patients • Reducing constant observations by improving understanding of the frequency, conditions, costs and outcome of constant observation levels on inpatient psychiatry and ED, and compare these to current best practices *Discharge process improvement:* • Improvement of discharge redesign via improved medication reconciliation, process mapping and the use of Teach Back

Note: The number of sites exceeds the total number of sites supported in TAIC as sites took on more than one project.

for the target population was shifted (and scaled) from acute to community. GBHS, through a needs assessment of patients with COPD and their families, made the business case for instituting a smoking ban on their campus and focussing activities on COPD prevention and smoking cessation. Meanwhile, WCH focused on creating a centre of innovation and excellence for HCHR patient care; they aimed to become an innovation laboratory on efficient and effective care delivery models for HCHR patients in health system solutions and chronic complex conditions and they focused on building leadership capacity, securing TA commitment and skills across the organization and introducing a structured and evidence-based approach to the design, implementation and evaluation of models of care in order to scale up innovative models across and beyond WCH.

Project Portfolio

In total, the portfolio of Canadian sites included 31 projects (across nine sites), with an average of 3.4 projects (2–5 projects) per site. Projects targeted: 1) ED and hospital diversion; 2) access to care; 3) health promotion and disease prevention, and 4) care transitions (see Table 2 for a summary of projects). To redesign care, interventions included process of care improvements, inter-professional models of care and inter-sectoral collaborations. For example:

- AHS-Edmonton Zone's portfolio included five projects to achieve client-centred integration of services for HCHR patients: 1) reduction of emergency care by mental health and addictions clients; 2) inter-professional collaborative primary care under one roof; 3) addressing social determinants of health for women with substance use issues; 4) provision of primary care at a wound clinic for homeless people; and 5) reducing ED and ambulance use among home care clients.
- WCH's portfolio included three projects to meet the needs of HCHR patients: 1) team-based primary care for 'unattached' complex patients; 2) improved integration between specialist and community care; and 3) improved access to urgent imaging.

Data and measurement

The process sites took to data collection and management were: 1) explore available data; 2) select practical measures per each TA dimension; 3) collect baseline data; 4) integrate data into an organizational 'learning system' (e.g. plotting data on run and control charts); and 5) track improvement in population measures over time. After 10 months, five out of nine reached step three, while two organizations reached steps one/two, and the remaining sites reached step four. No Canadian site achieved improvements across all three TA dimensions by the end of the collaborative (see Table 3 for a summary of TA indicators and data sources by dimension).

Most sites relied on healthcare utilization data, disease burden indicators, behavioural and physiological risk factors and health outcomes. Fewer sites relied on population health measures, citing challenges in defining population health and finding reliable data.

Many sites reported patient experience measures as the most feasible to collect at the project-level, but reported challenges in collection at a population-level. The McGill University Health Centre (MUHC) collected patient experience data using the Consumer Assessment of Healthcare Providers and Systems (CAHPS) survey [15], while the AHS-Edmonton team developed and piloted an in-house patient experience questionnaire. Often patient experience was measured using the Institute of Medicine's quality dimensions (safety, effectiveness, patient-centeredness, timeliness, efficiency and equity) [16]. For example, to assess improved access to urgent diagnostic imaging for patients seen by primary care physicians in the community, the WCH site focused on time to obtain urgent imaging representing timeliness as a way to measure patient experience. As a measure of efficiency, they also examined inappropriate diagnostic imaging avoided for patients through provision of a call centre access to a radiologist on call.

Capturing per capita cost of care was arguably the most challenging due to the lack of data, which did not provide sufficient detail. Sites relied on efficiency measures (e.g. ED visit rates, hospitalization rates, length of stay, 30-day readmission rates) and cost was viewed as an improved and redirected resource rather than as a reduction or saving. As a result, many sites focused on cost-avoidance instead of cost-reduction.

Challenges and lessons

Reflecting on their TAIC experience, teams cited numerous challenges and lessons learned (see Table 4 for a summary). The key challenges revolved around garnering broad leadership support and organizational capacity to reorient toward TA. The key lessons revealed areas and insights that were helpful in initiating progress. Overall, TA offered a new perspective or way of thinking. Its use of small, tests of change to build momentum for improvement offers a tangible example.

Discussion

TA has redefined value in healthcare in a way that is easily understandable and garners widespread support. But change in healthcare is difficult and there are many challenges to its wholesale adoption. Perhaps one of the greatest impediments to TA adoption is the

Table 3 Canadian TA measures and data sources summary

Dimensions of the TA	Definition	Measure/indicator	Data sources
Population health	**Health outcomes**		
	Mortality	• Years of potential life lost • Life expectancy • Standardized mortality ratio • Crude death rate • Infant mortality rate • Neonatal mortality rate	• Vital Statistics, Birth and Death • Database, Statistics Canada • Canadian Community Health Survey (CCHS), Statistics Canada • Hospital Standardized Mortality Ration (HSMR), Canadian Institute for Health Information (CIHI) • Health-adjusted Life Expectancy • Rates (HALE), Statistics Canada • Consumer Assessment of Healthcare Providers and Services (CAHPS) Survey
	Health and Functional Status	• Self-reported health status • Health related quality of life	• Canadian Community Health Survey, Statistics Canada • Healthy Days Measure (HRQOL-4), Centres for Disease Control and Prevention • SF-12v2 Health Survey, Optum
	Healthy Life Expectancy	• Combines life expectancy and health status—reflects remaining years ofife in good health	• Health-Adjusted Life Expectancy (HALE), Statistics Canada
	Disease Burden (Morbidity) Incidence and/or Prevalence of Chronic Illness	• Yearly rate of onset • Average age of onset • Prevalence of major chronic conditions • Incidence rate • Prevalence rate • % contracting disease over time in set population • % with no chronic illnesses • % with certain (e.g. diabetes, heart failure) chronic illness	• Canadian Health Measures Survey (CHMS), Statistics Canada • Canadian Community Health Survey (CCHS), Statistics Canada • Electronic Health Records (EHR) • Disease Management Registries • Discharge Abstract Database (DAD), Canadian Institute for Health Information (CIHI)
	Behavioural/psychological factors		
	Behavioural	• Smoking • Alcohol consumption • Diet • Physical activity	• Canadian Health Measures Survey (CHMS), Statistics Canada • Canadian Community Health Survey (CCHS), Statistics Canada • Electronic Health Records (EHR) • Canadian Tobacco Use Monitoring Survey (CTUMS) • Composite Health Risk Assessment (HRA) Score
	Physiological factors	• Blood pressure • Body Mass Index (BMI) • Cholesterol • Blood glucose	
	Other		
	Social Determinants of Health	• Obesity Rate • Education Level • Housing Status • Age • Income Level	• Canadian Community Health Survey (CCHS), Statistics Canada • National Household Survey (NHS), Statistics Canada • Census Technical Reports, Statistics Canada
Experience of care	Individual patient as they interact with health system	• Likelihood to recommend care or other summary questions • Global experience question	• Patient satisfaction surveys • Consumer Assessment of Healthcare Providers and Systems (CAHPS), Agency for Healthcare Research & Quality, CIHI • Pan-Canadian Acute Care Patient Experience Survey Tool, CIHI
	Health system providing high-quality care experience	Six Institute of Medicine (IOM) dimensions of quality: • Clinical effectiveness (best practice adherence)	• Hospital Results Report, CIHI • Canadian Patient Experiences Reporting System (CPERS), CIHI

Table continued

Table 3 Continued

Dimensions of the TA	Definition	Measure/indicator	Data sources
		• Safe (rates of infection) • Timely (access to primary care) • Efficient (readmissions rates) • Equitable (clinical effectiveness by race)	• Canadian Patient Experiences Survey – Inpatient Care (CPES-IC) • The Care Transition Measure (CTM), University of Colorado Denver
Per capita cost	Total health care spending per person	• Expenditure per capita • Age-adjusted public spending per person • Total cost per member of the population per month	• National Health Expenditure Trends, CIHIC
	Hospital and ED utilization rate and/or cost	• Hospitalization rates • Readmission rates within 30 days • Average length of stay • Change in frequency and length of stay (LOS) • # hospital beds per 1000 people • ED visits per 1000 people • ED cost per visit • ED share of hospital expenditure	• Canadian Management Information System (MIS) Database, CIHI • Discharge Abstract Database (DAD), CIHI • Financial Performance of Hospital Indicators, CIHI • National Health Expenditure Database (NHEX), CIHI
	Case costing (using proxy measures)	• Emergency room utilization • Hospital admissions/readmissions o Volume and unit costs o Stratify by Ambulatory Care Sensitive Conditions (ACSC)	• Discharge Abstract Database (DAD), CIHI • National Ambulatory Care Reporting System (NACRS)

Table 4 Canadian TA improvement community sites' key challenges and lessons learned

Challenges	Lessons learned
• Lack of leadership support • Difficulties creating partnerships • Communicating with and engaging staff and physicians • Struggling with funding models that perpetuate working in silos • Insufficient time and resources • Difficulty obtaining data, data management and measurement • Scoping improvement projects • Ensuring sustainability	• Start small, but think big; work toward incremental development: '… it's ok to start with a small number of patients and expand.' • Select a portfolio of projects that are manageable and align with Triple • Aim dimensions • Include partners at the outset • Strategize and build multidisciplinary teams and leverage existing capabilities • Do not make assumptions about patients/clients – '…we are too provider-focused and that needs to change.'

unfortunate routine in healthcare to consider QI as working in fits and starts—one QI project at a time. TA recognizes no single TA project is a panacea; it requires institutionalizing a learning system that draws lessons from small-scale tests of change toward population-sized benefits.

In Canada, as elsewhere, capacity building to understand, adapt and apply TA in practice is needed—and attention to this capacity development will level the playing field for all who have a stake in achieving greater health and higher quality care. Patient, public, provider and policymaker alike can appreciate the need for better care, better health and better value for money; and all players are needed to make that vision a reality. To get there, requires coordination at and across the micro, meso and macro levels of all sectors implicating health. The pursuit of TA certainly requires a healthcare journey, but the destination is health, after all.

Heiby *et al.* found that 'successful QI interventions that remain on a small scale have little impact' [17]. Delivering TA requires a sustained and coordinated effort supported by strong leadership and governance, continuous QI that builds on the strengths of an organization, engaging interdisciplinary teams and partnering within and beyond the healthcare sector.

Although no Canadian sites demonstrated improvements across all three TA dimensions, this is partially attributable to the short timeframe of the collaborative and the need to sustain efforts for a longer time trajectory to realize results. Granted, some teams are on their way, as early results published in recent impact stories indicate – they began to realize improvements in at least one or two aims for their pilot populations [18, 19]. Realizing improvements against all aims is possible with sustained efforts [2, 20, 21]. Whittington *et al.* [2] found that organizations/communities that realize improvements at a population-level prioritized integrating care and enhancing the role of the healthcare sector in making population health gains.

Health systems in Canada, as many worldwide, still lack an integrated healthcare system [22]. Leatt *et al.* described concepts of

defined population, needs-based planning, continuum of health services, strong primary care coordinated by physicians, population management and capitation or alternative payments as necessary [23]. Now that the concept of TA and integrated care are gaining momentum in Canada as a way to curb rising healthcare costs and to improve quality of care, it may bring large-scale change to care delivery.

While building a solid TA infrastructure, Canadian TAIC sites aimed to go beyond developing QI capacity to broader system change and fostering a new culture of healthcare improvement. Many sites focused on healthcare issues that have plagued healthcare in Canada for decades, e.g. examining solutions for the overuse of emergency care, delivery of care for HCHR populations, access to primary care and coordination of care, while also supporting patient and provider behaviour changes, connecting patients to community resources to meet non-medical health needs, and building partnerships across and beyond the healthcare sector. Over time, these sites may demonstrate the effectiveness of the TA approach in improving population health, controlling costs and improving patient-family experience of care.

Acknowledgements

The Canadian Foundation for Healthcare Improvement is a not-for-profit organization funded through an agreement with the Government of Canada. The views expressed herein do not necessarily represent the views of the Government of Canada. Thank you to Canadian TAIC teams who kindly agreed to participate in the evaluation and provided their insights. Thank you to Dr John Whittington, Kevin Nolan and Ninon Lewis of IHI for their support and continued interest in promoting TA in Canada.

Supplementary material

Supplementary material is available at INTQHC Journal online.

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