

A Novel and Practical Care Process Framework to Inform Model of Care Development

Abstract

Breaking free of pre-existing assumptions to achieve transformative change in care delivery remains challenging. This paper presents a care process framework (CPF) using a Rapid Task Analysis (RTA) tested with healthcare teams across five communities in British Columbia, Canada, to provide leaders a novel and practical approach to care model development. The study's goals were to determine if the care process framework was replicable even though the population care needs differed for each community. The results showed the framework was replicable, informed the care model development and identified ideal scopes of practice and team composition given the context of care. The framework also captured expert tacit knowledge and decision-making to build capacity given our current workforce challenges. For operational leaders and government agencies, the use of the framework may influence a shift in historical approaches that better aligns health and human resources capacity to population health and service needs.

Problem

Breaking free of pre-existing assumptions to achieve genuine transformative change in care delivery remains challenging. There is a lack of practical frameworks and explicit designs of studies in the health sciences literature that inspire leaders to think differently. There is also a need to shift from historical approaches to model of care development to one that is more responsive, flexible, and collaborative, where patient and population health needs drive model of care development and align better to a range of scopes of practices and staff mix.

Background

For more than a decade, health care experts across the globe have been warning about the looming health human resource crisis. The Covid-19 pandemic hit a health system already facing multiple challenges: an overworked workforce struggling to keep pace with service expansions in healthcare, magnified by an aging staff and growing percentage of less experienced clinicians. The shift in workforce composition and demographics has widened an already increasing experience-complexity gap.¹ Nelson et al found that the current Canadian system is characterized by insufficiencies in the appropriate and sustainable use of health care providers and resources. This is not just a Canadian problem: as Nelson et al have argued, "The misalignment of Health Human Resources capacities with the need to provide health care services relevant to population demands is a global issue...."² In the report *Defining Health and Health Care Sustainability* it was stated that the World Health Organization believes somewhere between 20 to 40 per cent

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3 of resources spent on health are wasted due to inefficiencies including inappropriate or
4 costly staff mixes.³ Having all clinicians work at top of scope or license just because the
5 regulation allows them to do so without determining the context of the care and the care
6 model in which they function, or without addressing a care gap is also problematic.
7 Determining the ideal scopes of practice and roles required to meet the gap(s) for
8 particular care contexts is optimal.
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11 The Rapid Task Analysis (RTA) and the Practice Change Guide were two fundamental
12 tools embedded in the development and the refinement of this novel and practical Care
13 Process Framework (CPF). A consistent approach or methodology was needed to
14 capture the tasks (care activities) and the concepts (the education and training required
15 to perform the care activities), involved in addressing the care needs of patients as they
16 journey through a service or program. At the time of this study, a modified Cognitive Task
17 Analysis (CTA) known as an RTA, coined by Goffredson and Mosher in their book
18 *Innovative Performance Support*, was an approach being used within the health authority
19 to build education and learning and performance support resources.⁴ This aligns with the
20 Militello & Hoffman depiction that CTA methods not only help focus on better
21 understanding of the cognitive demands of a task, but also on the knowledge and
22 strategies underlying performance.⁵ The RTA was chosen and incorporated into the CPF.
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28 We also learned after the first couple of communities we tested that implementation of
29 the recommendations was more likely to be successful when a practical and deliberate
30 guide was followed to better articulate to the team the steps involved in implementing
31 practice changes or care model development or re-design. Having a practical framework
32 that maps out the care needs from the patient's perspective, (not the service, professional
33 or provider perspective) created common ground. Seeing how the patient's care needs
34 shift throughout their care journey helped the leaders (and to a lesser extent their teams)
35 overcome pre-existing assumptions about what care should look like, how it should be
36 delivered, and by which profession. Incorporating a change management approach and
37 engaging teams early and throughout the process was a key learning. Using evidence¹
38 and our experience, a practice change guide for leaders to work through when undergoing
39 small to large-scale changes was developed. (See Table 1: Breakdown of the Elements
40 of the Practice Change Guide Steps).
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52 **Table 1:** Breakdown of the Elements of the Practice Change Guide Steps

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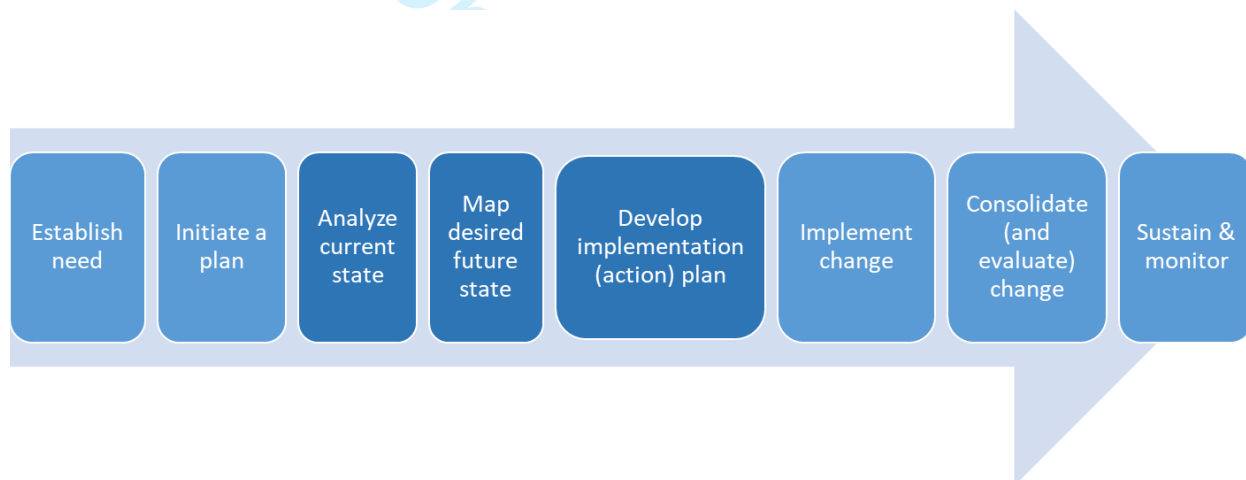
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55 ¹ PROSCI©, [John Kotter's 8 step Change Model Methodology](#) and [The PEPPA Framework](#) (McMaster) were used to
56 inform our Practice Change Guide framework.
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Steps	Elements
Establish Need	<ul style="list-style-type: none"> • Identify the drivers • Assess readiness to analyze current/ future state • Document and obtain leadership approval
Initiate a Plan	<ul style="list-style-type: none"> • Draft a charter • Obtain leadership approval for the charter • Assess readiness of stakeholders/ partners involved • Document and communicate with sponsors
Analyze Current State	<ul style="list-style-type: none"> • Define the patient population (patient care needs) • Review evidence • Review workload and patient care needs data • Assess team's delivery of collaborative care/ communication processes • Assess pre-existing assumptions of what care should look like <ul style="list-style-type: none"> ○ This will help answer the question, "what may be some of the barriers in redesigning the care model?" • Review technology and/ or equipment requirements
Map Desired Future State	<ul style="list-style-type: none"> • Articulate expected outcomes <ul style="list-style-type: none"> ○ This will help answer the question, "what are the patient/population care needs? Consider future needs. • Identify the skills and competencies to address patient care needs <ul style="list-style-type: none"> ○ This will help answer the question, "who can do the work?" • Determine who should do the work • Decide what practice changes or care model changes required and analyze implications • Draft report with analysis and recommendations/ briefing note for decision for practice or care model options • Obtain management review and sponsor sign off as appropriate • Communicate with stakeholders/partners
Develop Implementation (Action) Plan	<ul style="list-style-type: none"> • Assign a change leader • Draft project plan • Obtain management review, sponsor sign-off and permission and resources to implement the plan • Communicate with stakeholders/partners
Implement Change	<ul style="list-style-type: none"> • Assemble the team • Complete the work identified in the plan • Establish/ revise standard operating procedures for change(s) • Document progress/ status reports as required • Communicate with stakeholders/ partners
Consolidate and Evaluate Change(s)	<ul style="list-style-type: none"> • Re-enforce the new practice or care model processes/ expectations with team following a change management strategy • Evaluate performance metrics • Engage stakeholders/ partners as required

	<ul style="list-style-type: none"> Track implementation trends and progress
Sustain and Monitor	<ul style="list-style-type: none"> Plan and implement a continuous improvement / quality cycle Identify and respond to emerging issues, risks, and trends Document and communicate findings with stakeholders/partners/teams Engage stakeholders/partners and seek assistance as required Re-initiate process if / when new issues are identified

The CPF fits within the *Analyze Current State*, *Map Desired Future State* and informing the *Develop Implementation (action) Plan* (See Figure 1: Practice Change Guide Steps).

Figure 1: Practice Change Guide Steps



Method

The CPF was tested across five communities as part of a province-wide British Columbia Ministry of Health priority to integrate community-based health services. (See Table 2: Participating Communities for additional information about these communities).

Table 2: Participating Communities

Communities	Population ²	Hospital(s)	# beds	Avg. Age Pop
Mt. Waddington	11,035 (2016)	2 Rural, 3+ Remote	Rural: 11-bed & 12-bed	41.5
Comox Valley	66,527 (2016)	1 Community	146-bed	46.7
Alberni/ Tofino	20,712 (2016)	1 Community	45-bed	45.1
Cowichan Valley	1,932 (2016)	1 Rural	10-bed	38.3
Saanich Peninsula	83,739 (2016)	1 Community	134-bed	45.7
	114,148 (2017)	1 Community	192-bed	48.8

Establish Need and Initiate a Plan were the first steps in the Practice Change Guide where community leadership reached out, expressed interest, and need, and then were invited to participate. *Analyze Current State* began with our initial review of the local health area profiles. This analysis informed a broader understanding of the population's demographics and social determinants of health. This included reviewing records from the local hospital emergency department (ED) visits to provide insight into the Canadian Triage and Acuity Scale Level (CTAS) range and what individuals in each community were presenting with to gather more insight in the population care needs. Like other ED reviews, up to half of ED presentations are usually manageable outside of the ED.⁶ *Map Desired Future State* included structured and semi-structured interviews, observational methods and think-aloud exercises with Subject Matter Experts (SMEs) which included clinical and non-clinical staff, physicians, and leaders.

A care process graphic was created from this engagement with the leaders and SMEs and buckets of like-care activities are grouped together. The 'Macro Care Process' represents the care activities or tasks an average or typical patient/ client would require while journeying through a service area. For example, a patient usually has different care needs depending on where they are at in their health journey mapped across the Macro Care Process (See Figure 2: Macro Care Process for Integrated Primary and Community Care).

Figure 2: Macro Care Process for Integrated Primary and Community Care

² Statistics Canada (2016) [Census Profile, 2016 Census - Vancouver Island and Coast \[Economic region\], British Columbia and British Columbia \[Province\] \(statcan.gc.ca\)](https://www150.statcan.gc.ca/n1/pub/92-627-x/2016001/article/00001-eng.htm)



Facilitating dialogue with the SMEs using the Rapid Task Analysis (RTA) then captured the care activities or tasks and steps under each macro care process. Next, each care activity was assigned a risk rating determined by task complexity and risk of failure to perform safely. Tacit decision-making, knowledge or concepts needed to perform those tasks included relevant legislation, regulation, evidence-based practice standards, training, and decision-support tools. The next steps were to map different professions and roles against those tasks (Audience Analysis) to determine who *could* perform those care activities according to their regulatory scopes of practice and/or role or job descriptions, in the case of unregulated care providers. Depending on severity, acuity, intensity, or complexity of care, the care activities are then used to inform ideal scopes of practices and team composition options for that clinical service delivery area given the context of care. The CPF also informs the learning and performance support resources needed to develop and support staff to perform the care activities safely and consistently (See Table 3: Sample of the Rapid Task Analysis (RTA) and Audience Analysis).

Table 3: Sample of the Rapid Task Analysis (RTA) and Audience Analysis

Care Activities (Tasks and/or Functions)	Physician	Nurse Practitioner (NP)	Registered Nurse	Registered Psychiatric Nurse	Licensed Practice Nurse	Community Health Worker	Pharmacist	Pharmacist Technician	Psychologist	Registered Clinical Social Worker	Registered Social Worker	Audiologist	Speech & Language Pathologist	Registered Dietitian	Respiratory Therapist	Occupational Therapist	Physical Therapist	Rehabilitation Assistant/Activity Worker	Clinical & Medical Office Assistant	Medical Office Assistant	Administrative Assistant	Booking Clerk/ Interdisciplinary Team Clerk/ Central Team Clerk	Scheduler	Community Paramedic CP	
1. Connecting (with) the client																									
1.1. Connect clients in need of support in the community (connection point)																									
1.2. Greet client when presenting for services (access point)																									
1.3. Initiate handover to care team																									
2. In-taking the Client																									
2.1. Determine urgency of client's need																									
2.2. Register the Client																									
2.3. Prepare health record as appropriate																									
2.4. Determine most appropriate intake clinician																									
2.5. Conduct intake																									
• Select and conduct suitable screening (e.g. immunization history, swallowing, malnutrition, GI system, home safety, cognition, suicide, abuse, neglect)																									
2.6. Identify resources for client																									

In scope of practice
 College limits/conditions
 Out of Scope

Fit for both Primary Care Home AND Integrated Community Services teams
 Task includes range of options

All the data and information gathered from the leaders and the team were then analyzed and a recommendation report was produced. The *Develop Implementation (Action) Plan* was completed in collaboration with the leaders and team after validation and refinement of the information gathered. This enabled the team to identify with the input they provided and contribute to the future state vision. At this point, the CPF team finalized and handed over the final recommendations report to the operational leaders to *Implement Change, Consolidate and Evaluate Change and Sustain and Monitor*.

Results

Our experience was that the Care Process Framework (CPF) was replicable as the next team built upon the commonly observed patterns and themes and the learnings were incorporated to strengthen and validate the CPF. Even though each community had differing population care needs, the patient's overall journey consistently aligned with the same Integrated and Community Care Macro Care process across the five communities. Additionally, given their knowledge of the patient population, capturing SME clinical decision-making and service delivery expertise, the CPF captured their insights to inform team functioning, optimizing scopes of practice, and determining ideal team composition to address the care, service, and/or practice gaps. SME involvement was critical in identifying the care activities experienced by the patients and informing the possibilities for future care model re-design and better aligning the care to the population care needs.

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3 For example, this analysis informed opportunities for members of the team to take on or
4 let go of certain activities and for others on the team to perform care activities at the top
5 of their professional scope or sometimes known as top of license. Mapping the care
6 activities from the patient perspective and seeing how the patient's care needs changed
7 depending on where they were at in their health journey, leadership began to shift the
8 assumptions they held about which professions or care team members could address the
9 care needs and when in the care process. This shift in thinking could change how
10 operational leaders and government agencies in the future approach care model
11 development.
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18 Two key findings were consistent across five communities:
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20 1) Review of the care activities/ tasks and steps in the earlier part of the Macro Care
21 Process (*Intaking the Client, Assessing the Client, and Initiating a Health Plan with the*
22 *Client*), identified opportunities to standardize preventive measures to promote health in
23 high priority areas. Focusing on the right care activities with the right clinicians in the early
24 part of the care process set the stage for the patient to optimize their health and self-
25 management, which can prevent hospitalizations and improve population health.
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29 2) Most care activities the RTA identified within the Macro Care Process were
30 competencies shared amongst multiple members of the interdisciplinary team and only
31 few were unique to certain professions according to their regulatory scope of practice,
32 role, or job description. This finding presented an opportunity to target scarce education
33 and training resources on shared learning opportunities such as competency
34 development in interprofessional competencies, brief action planning, mental health and
35 substance use, and cultural humility and safety.
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40 In summary, consistent with building on existing strengths, maximizing the potential
41 impact on patient health outcomes, and minimizing the impact of change for staff, all five
42 community recommendation reports included aligning integration of care and resources
43 (e.g., Health Human Resources [HHR], education and training) to the care process; and
44 highlighted key areas to optimize roles, team functioning, and scopes of practice.
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49 **Key Success Factors**

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- 51 • Having individuals within the local health system that can lead and facilitate framework
52 activities. An objective lens, open perspective, and strong knowledge of the care
53 process framework was invaluable as operational leaders and teams do not always
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3 have the objectivity and/ or time required to lead this level of quality improvement
4 analysis on their own.

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6 • Like Simken et al, a planning process framework using our Practice Change Guide
7 with consultation and engagement with leaders and SMEs helped build trust and
8 commitment to carry out the study. Being unfamiliar initially with the new framework,
9 this trust building was a critical element to not only capturing the true current state and
10 the barriers to service delivery encountered but in providing recommendations that
11 resonated with the team.⁷
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13 • The Rapid Task Analysis (RTA) family of methods provides strength to our design as
14 it has a longstanding history and evidence of growing use ⁸⁻¹⁶ and untapped potential
15 in the health sciences research.¹⁷
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17 • Aligning the RTA with the care process to capture expert and tacit knowledge and
18 decision-making provided the novel design element Graham et al states are missing
19 from the health and implementation sciences literature.¹⁸
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24 Discussion

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26 Now more than ever the need to have a practical and evidence-informed approach to
27 designing care models is required given the shifting healthcare environment and
28 sustained HHR challenges. With the complexity of healthcare, it is imperative to have a
29 practical framework leaders can use to develop new care models that are aligned and
30 driven by patient and population health needs.

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32 There is also a need to shift approaches when determining care models given the current
33 number of employees and high demand for experienced staff. As Stevenson et al state:
34 “We must go beyond traditional approaches and challenge outdated beliefs that we can
35 recruit our way out of this situation.”¹⁹ Yet many leaders conceptually approach new care
36 model development with a focus on status quo or a strong pre-existing mindset about
37 what service delivery ‘should’ look like. This is often informed by individual experiences
38 even when the existing models are not consistently effective. These model changes
39 generally “add more” professions to the team without fully optimizing the professions they
40 already have. Innovations in policy, planning and funding must align and support changes
41 in care model development and health service planning must be aligned with HHR
42 planning.^{2-3, 20} In many ways, the COVID-19 pandemic and HHR challenges we are
43 currently experiencing have inspired some much-needed innovative thinking in care
44 model development.

52 Lessons Learned

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54 Our experiences consistently revealed four key lessons for scholars and leaders in this
55 area:
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- The need for strong executive leadership and sponsorship to drive engagement with the care teams.
- The conversations and recommendations related to redesigning the team and/ or performance expectations challenged the existing culture of independent practice; optimizing existing staff to top of scope of practice or license requires change leadership resources as does adding a new role, building team competency, or implementing a change in team processes.
- Building a care process and mapping the care activities using the RTA illuminated a valuable and deeper understanding of the care being provided, and only after the framework unfolded, were leaders/ teams able to envision and inform a future model of care.
- For operational leaders and government agencies, using the care process framework could represent a departure from engrained historical thinking about “add more” vs. “add right” HHR, education, and training allocation strategies.

Conclusion and Ongoing Work

There is a need to meet our population’s healthcare needs effectively and optimally given the health and human resources available. This paper presents a novel Care Process Framework (CPF) that can inform models of care development and help leaders break free of pre-existing assumptions to achieve transformative change in care delivery. Our framework is a practical one that is replicable across service or program areas despite differing population care needs. The CPF a) informs new thinking around care model development, scope of practice and team optimization in the context of that environment or care setting, and b) captures expert tacit knowledge to support novice decision-making, and so would intuitively expedite training and onboarding and further improve quality and care outcomes. Further application of our framework in other service areas is resulting in comparable results.

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2
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5

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11 **Ethical approval**

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