Dragons' Den symposium to catalyze the spread of primary healthcare innovations

Abstract:	Background: Healthcare innovations rarely spread. In 2017, the Quebec College of Family Physicians hosted a Dragons' Den symposium, where primary healthcare innovations were shared with clinical leads and Dragon-Facilitators (e.g. decision-makers). We evaluated the effects of the symposium on catalyzing the spread of innovations. Methods: Quality improvement data was collected. An immediate post-symposium online survey on spread outputs (innovation discovery, intention to spread) was sent to innovators, clinical leads and Dragon-Facilitators (n=82 respondents). Three months post-symposium, innovators (n=20 respondents) were emailed qualitative questions on short-term spread outcomes (follow-ups, successes, barriers). Nine-months post-symposium, innovators and clinical leads (n=48 respondents) were sent an online survey on medium-term spread outcomes (spread, perceived impact, need for support). Data were analyzed using descriptive statistics and thematic analysis. Results: Immediately after the symposium, a large majority of clinical leads and Dragon-Facilitators (86%) agreed that the event had allowed them to discover new innovations and reported a high likelihood of adopting an innovation in the next year (mean=8.02/10). Nearly all innovators (95%) intended to follow-up with potential adopters. Three months post-symposium, 62% of innovators reported following-up with clinical leads or Dragon-Facilitators (e.g. email contact, setup committee, partnerships). Nine-months post-symposium, 18 clinical leads (72% of respondents) had implemented at least one innovation, 9 innovators

	(39%) had spread their innovation, and 3 innovators (13%) reported spread was in progress. Interpretation: The symposium catalyzed the spread of primary healthcare innovations.

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1   **INTRODUCTION**

2   While countless innovations show promise to improve health systems, few are successfully spread
3   beyond the context where they are piloted (1-3). Over a decade after Canada was infamously
4   described as the "land of perpetual pilot projects" (3), lack of innovation spread remains one of
5   the largest challenges to improving healthcare (4-7). Spread is the diffusion of local improvements
6   and innovations, through knowledge translation, to increase their reach and adoption within a
7   health system (8). Substantial research has identified key elements needed to successfully spread
8   innovations, including observability to potential adopters, compatibility with potential adopters'
9   values, contexts and needs, relative advantage of the innovation, sufficient time and resources,
10   innovators and early adopters championing spread, capacity building and structures supporting
11   spread (1, 2, 9-13). These elements, although fundamental, offer limited tangible pragmatic
12   strategies for organisations seeking to foster the spread of innovations (e.g. medical associations,
13   professional colleges, ministries of health, practice-based research networks).

14   In 2016 in Quebec, amidst major health system reform, family physicians were facing new
15   regulations, striving to meet ambitious targets, pressured to improve performance and
16   experiencing change fatigue (14). At the same time, they were being encouraged by the College
17   of Family Physicians of Canada to implement the Patient's Medical Home (15): a family practice
18   identified by its patients as the central hub where they feel most comfortable for all their
19   healthcare needs. The Patient's Medical Home model features patient-centered care, a personal
20   family physician, team-based care, timely access, comprehensive care, continuity, electronic
21   medical records, education, training, research, system supports, evaluation and quality
22   improvement (15).

23   Faced with these challenges, the Quebec College of Family Physicians decided to organize a
24   Dragons' Den symposium in May 2017 to: 1) catalyze the spread of primary healthcare
25   innovations; 2) showcase real-world innovations that strengthen the vision of the Patient's
26   Medical Home; 3) foster networking between stakeholders; 4) reinforce the transformative power
27   of innovations on the next generation of family physicians; and 5) celebrate the successes and
28   contributions of primary healthcare teams to the health of their communities.

29   The **objectives** of this paper are to describe the Quebec College of Family Physician Dragons' Den
30   symposium and evaluate the effects of the symposium on catalyzing the spread of primary
31   healthcare innovations. Sharing the format and results of this event may inspire health
32   organisations across Canada, both in primary healthcare and other areas of healthcare, looking
33   for a concrete way to catalyze the spread of innovations.

34   **METHODS**

35   *Setting: Dragons' Den Symposium on primary healthcare innovations*

36   The symposium was inspired by *Dragons' Den:* a reality television show in which entrepreneurs
37   pitch their business ideas to a panel of potential investors in the hope of securing funding,
38   mentoring and support. Adapting this idea to primary healthcare in Quebec, a call for promising
39   innovations was sent out to departments of family medicine, and practice-based research

networks. The selection criteria for innovations presented at the symposium are detailed in Table 1.

Table 1. Selection criteria for innovations presented at the Dragon's Den symposium

Clinical leads and a team member from all 47 University Family Medicine Groups in Quebec were invited to attend the symposium. In addition, stakeholders with resources to support the spread of innovations were invited as Dragon-Facilitators during the symposium: representatives from the Ministry of Health and Social Services, the four primary healthcare practice based research networks in the province, the College of Family Physicians of Canada, the Canadian Medical Association, the Réseau-1 Québec (provincial Primary and Integrated Healthcare Innovation Network), the Strategy for Patient-Oriented Research Support Unit, the four departments of family medicine, the *Fédération des médecins omnipraticiens du Québec and* the *Institut National d'excellence en santé et services sociaux.*

The symposium was held in May 2017. Nearly 200 participants attended the event: 66 clinical leads, 37 Dragon-Facilitators, and 51 innovators presented 31 innovations. The 31 innovations are briefly described in Supplementary file 1. Out of the 47 University Family Medicine Groups, 42 participated in the symposium (89%).

During the symposium, two plenaries provided an overview the Patient's Medical Home and implementation examples from a University Family Medicine Group. Next, the 12 innovations deemed most mature for spread by the selection committee made their pitch to clinical leads and Dragon-Facilitators in short 6 minute-rapid-fire presentations (two sessions of six). Each rapid-fire session was followed by a blitz networking innovation fair where clinical leads and Dragon-Facilitators visited innovators' booths to obtain more information, ask questions, and express their interest in adopting or supporting the innovation. In the afternoon, an innovation café of the other 19 innovations allowed participants to connect with additional innovators.

Each innovation booth had a visitor card where interested clinical leads, Dragon-Facilitators and other innovators could apply a sticker with their name and contact information. This simple method easily captured the interest generated by each innovation and allowed innovators to follow-up with interested parties after the symposium. Clinical leads, innovators and Dragon-Facilitators then separately participated in tailored workshops on: implementing Patient's Medical Home innovations (e.g. advanced access, Patient's Medical Home self-assessment tool, interprofessional collaboration with social workers, electronic medical records), spreading and scaling up innovations. The day was concluded with closing remarks and a networking cocktail.

Design and data collection

The symposium was evaluated to document whether participants perceived it had catalyzed innovation spread and to find areas for quality improvement. To evaluate the effects on catalyzing spread of innovations, data was collected in three phases.

1) Immediate post-symposium survey on **spread outputs** – The day after the event, an online survey containing 18 questions, on Simple Sondage, was sent by email to clinical leads and Dragon-Facilitators to evaluate: satisfaction with format of the event, perceived usefulness of the content, highlights, areas for improvement and suggestions, and spread outputs (discovery of new

innovations, intention to adopt/support one of the innovations over the next year). Innovators were sent a similar survey containing 21 questions on spread outputs (intention to follow-up with interested parties, expected follow-up method, suggestions to support the spread of innovations post-symposium). Surveys included multiple choice, Likert scales and open-ended questions.

2) Three-month qualitative follow-up on **short-term spread outcomes** – Innovators were contacted by email three months after the symposium and asked three open-ended questions on short-term spread outcomes: follow-up with potential adopters, spread successes and barriers to date. One innovator per innovation was designated to answer.

3) Nine-month post-symposium follow-up survey on **medium-term spread outcomes** – an online follow-up survey containing 10 questions was sent by email to clinical leads and innovators. Questions asked about medium-term spread outcomes: whether innovations had been spread (or why not), perceived impact of implemented innovations, if the symposium had sparked other ideas for innovations, how spread could better be supported. Questions were multiple choice, Likert scales or open-ended.

Data analysis

For the analysis, descriptive statistics were calculated using Excel. Responses to open-ended questions were thematically analysed. Quantitative and qualitative (responses to open-ended questions) results are presented in joint displays to facilitate integration and interpretation (16).

Ethics approval

As a quality improvement evaluation, an ethics exemption was granted by St. Mary's Hospital Center Research Ethics Committee.

RESULTS

Table 2 presents results from the survey sent out immediately post-symposium aiming to evaluate satisfaction with the symposium, spread outputs and suggestions for symposium improvement. Response rates were of 68% (21/31) for innovations and 59% (61/103) for clinical leads and Dragon-Facilitators.

Table 2. Immediately post-symposium survey: satisfaction and spread outputs

For the three-month post-symposium qualitative follow-up with innovators, 68% (21/31) responded: themes are presented in Table 3.

Table 3. Three-month post-symposium qualitative e-mail follow-up: themes related to short-term spread outcomes

For nine-month post-symposium follow-up surveys after the symposium, response rates were 38% (25/66) for clinical leads and 74% (23/31) for innovators (Dragon-Facilitators were not surveyed at nine months). The survey results are presented in Table 4.

Table 4. Nine-month post-symposium follow-up survey: medium-term spread outcomes

116 **Suggestions for symposium improvements**

117 When asked what improvements could be made to the symposium (immediate post-symposium
118 survey), participants suggested that workshops should focus more on pragmatic strategies for
119 implementation, change management, and supporting innovation spread. A few participants also
120 expressed their interest in a follow-up session at the next edition of the symposium – which would
121 feature the most popular innovations' progress and lessons learned about spread. Innovators
122 advocated for more structured interactions with Dragon-Facilitators to obtain better feedback
123 and potential buy-in from Dragon-Facilitators to support future spread efforts. Additionally, it was
124 suggested that a few Dragon-Facilitators should provide closing remarks at the end of the
125 symposium to reflect on the most promising innovations, trends in innovations and next steps.
126 Several participants recommended that regional-level decision-makers (e.g. representatives from
127 hospitals, community health centers, integrated centers for health and social services – *Centres*
128 *intégrés de santé et des services sociaux*) and additional patient-partners be included as Dragon-
129 Facilitators. It was also proposed the symposium could be an opportunity to design innovative
130 solutions to currently unaddressed primary healthcare issues and catalyze further innovation
131 development, through facilitated discussion between multiple stakeholders.

132 **Suggestions for further support for innovation spread**

133 In the nine-month post-symposium follow-up survey, innovators and clinical leads were asked
134 what additional support the College of Family Physicians of Quebec could provide. Both
135 innovators and clinical leads encouraged the College to find more channels to feature promising
136 innovations: video clips summarizing innovations, newsletters, a searchable web-platform or blog
137 posts. Several innovators mentioned the need for additional human resources or coaching to
138 support spread activities. Clinical leads expressed their interest in a second edition of the
139 symposium and requested innovations in specific areas (e.g. interprofessional collaboration,
140 practice management, resident training, advanced access).

141 **INTERPRETATION**

142 Our results suggest that the Dragons' Den symposium catalyzed the spread of primary healthcare
143 innovations. Immediately after the symposium, a large majority of clinical leads and Dragon-
144 Facilitators (86%) agreed that the event allowed them to discover new innovations and reported
145 a high likelihood of adopting an innovation in the next year (mean=8.02 out of 10). Nearly all
146 innovators (95%) intended to follow-up with potential adopters. Three-months post-symposium,
147 over half (62%) the innovators had followed-up with potential adopters or Dragon-Facilitators
148 (e.g. email contact, setup committee, partnerships). Nine-months post-symposium, 18 clinical
149 leads (72% of respondents) had implemented at least one innovation, 9 innovators (39%) had
150 spread their innovation to at least one new context and 3 innovators (13%) reported spread was
151 in progress.

152 The Dragons' Den symposium aimed to catalyze the spread of primary healthcare innovations,
153 supporting the Patient's Medical Home model. The symposium activated key spread mechanisms,
154 as described in Rogers' seminal *Diffusion of innovation theory* (10) and Don Berwick from *the*
155 *Institute for Healthcare Improvement* (1). Through its open call for innovations, the symposium
156 became a venue for potential adopters to discover otherwise unknown innovations (1). Screening

157   and selecting promising, relevant and feasible innovations helped target those compatible with
158   potential adopters' values, needs and contexts (e.g. aligned with the Patient's Medical Home)
159   (10). Showcasing identified innovations during an innovation café, rapid-fire presentations and a
160   blitz networking innovation fair created new communication channels (10), where information
161   was directly transmitted from innovators to potential adopters. By convening innovators,
162   potential adopters (clinical leads) and supporters (Dragon-Facilitators) in a single venue, the
163   symposium embodied several of Berwick's recommendations to successfully disseminate and
164   spread innovations (1): a) it made innovators/early adopters observable and approachable, b) it
165   ensured that potential adopters heard about innovations directly from credible peers (e.g.
166   physicians speaking to other physicians about an innovation), and c) helped promote a culture of
167   innovation.

168   Despite the symposium activating mechanisms essential to catalyze innovation spread,
169   participants identified substantial remaining barriers to spread, including insufficient time, lack of
170   dedicated resources and structures, clinical teams' change fatigue and competing priorities.
171   Participated suggested potential avenues to further support innovation spread. First, Dragon-
172   Facilitators should be expanded to include regional-level and other mid-level decision-makers.
173   Second, Dragon-Facilitators should play a more substantial role during and after the symposium
174   – coaching teams on finding resources, managing spread, and networking. Third, symposium
175   workshops should provide more pragmatic strategies to implement and spread innovations.
176   Fourth, the collective wisdom of innovators, clinical leads and Dragon-Facilitators brought
177   together at the symposium should be harnessed to find new innovation ideas to address currently
178   unsolved issues in primary healthcare (e.g. facilitated problem-solving brainstorming sessions).
179   These suggestions should be addressed in future iterations of the symposium, in other activities
180   to support innovation spread, and when adapting the symposium to other contexts.

181   *Limitations*

182   There are several limitations to this quality improvement evaluation. While response rates were
183   fairly high among innovators (68% immediately post-symposium; 68% at three months; 74% at
184   nine months), they were lower for clinical leads and Dragon-Facilitators (59% immediately post-
185   symposium, 38% for clinical leads at nine-months). This may have introduced nonresponse bias
186   in the results (e.g. if those who adopted/spread an innovation were more likely to respond).
187   However, the response rates among clinical leads comparable to average survey response rates
188   amongst providers (17). In addition, although a follow-up survey was conducted at nine months,
189   this period may be insufficient to observe sustained spread of innovations. Nonetheless, the
190   quantitative results, combined with qualitative responses to open-ended questions, suggest that
191   the symposium helped produce certain outputs (e.g. discovering new innovations, intention to
192   follow-up, likelihood of adopting an innovation) and short and medium-term outcomes (e.g.
193   having followed-up, having adopted/spread innovation in a new context) that are essential
194   intermediaries to achieving spread.

195   Future research and quality improvement evaluations of this event and similar activities should
196   collect more data respondents' characteristics, implement strategies to increase response rates,
197   collect data at 12 and 18 months to evaluate sustained effects on spread. Conducting qualitative

198   case studies of contrasting cases (e.g. spread vs. un-spread innovations) would provide valuable
199   insight into how to better support spread efforts.

200   **Conclusion**

201   Over the past few decades, spreading innovations has garnered substantial interest from
202   researchers, health professionals and health system stakeholders as a potential lever for large-
203   scale health system improvements. Yet, limited pragmatic strategies to support spread have been
204   described and evaluated. The *Dragons' Den* symposium catalyzed the spread of primary
205   healthcare innovations. In light of these promising results and participants' enthusiasm, the
206   Quebec College of Family Physicians' has decided to hold the symposium every two years. Efforts
207   are ongoing to improve of the format and incorporate participants' feedback. Describing the
208   symposium and sharing its results may inspire organisations, in primary healthcare and other
209   healthcare settings across Canada and elsewhere, who are looking for ways to catalyze the spread
210   of innovations.

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Table 1. Selection criteria for innovations presented at the Dragon's Den symposium

Innovations had to be:	Why?
1) pilot tested in a similar context and undergone some form of evaluation	The symposium was intended to showcase real-world, tested innovations as realistic and achievable examples of what could be implemented by participants.
2) related to service delivery in University Family Medicine Groups	The symposium targeted these team-based academic primary healthcare teams (*Groupe de médecine de famille – Universitaires*) because quality improvement is part of their mission and they train residents who will then practice in other teams, with a potential for further innovation spread.
3) Aligned with the vision of the Patient's Medical Home	The features of the Patient's Medical Home have been associated with better quality, access, efficiency, equity of health systems and better health outcomes for patients and were a major priority in Quebec and Canada (15).

Table 2. Immediately post-symposium survey: satisfaction and spread outputs

Survey Items	% (Nb.) or Mean (s.d.)	Themes in open-ended responses
Innovators (n=21)		
Intend to follow-up with interested clinical leads & dragons	95% (20)	Comments on follow-ups:
Expected method for following-up with interested parties	95% (20)	• *No intention to follow-up (n=1): not applicable*
Individually (e-mail or phone)	85% (17)	• *Follow-up method will be determined with teams and based on mutual interests*
Follow-up meeting	30% (6)	
Create a committee	20% (4)	
Would recommend the symposium to a colleague		Symposium highlights:
Missing	5% (1)	• *Excellence of the innovations and format*
Yes	90% (19)	• *Motivation generated by positive leaders*
No	5% (1)	• *Networking between different stakeholders: clinical, researchers, dragons*
Would like to be invited to a 2nd edition		• *No (n=1): did not meet current needs*
Yes	95% (20)	
No	5% (1)	
Clinical leads & Dragon-Facilitators (n=61)		
Innovation café met objective of discovering new innovations		Comments on innovation café:
Missing	7% (4)	• *Highly dynamic format*
Agree	86% (53)	• *Enjoyed "shopping" for innovations*
Disagree	7% (4)	• *Insufficient time to see all innovators*
		• *Difficult to target which innovators to visit*
Mean likelihood of adopting or supporting an innovation in the next year (0=not at all likely, 10=extremely likely)	8.02 (±1.63)	Comments on innovations: • *Discovered promising innovations* • *Avoids having to "reinvent the wheel"*
Would recommend the symposium to a colleague		Symposium highlights:
Missing	2% (1)	• *A breath of fresh air in a difficult climate*
Yes	96% (59)	• *Rapid-fire presentations & networking*
No	2% (1)	• *Bringing together different stakeholders to share tested innovations*
Would like to be invited to a 2nd edition		• *No (n=1): good intentions, but did not meet team's need*
Missing	2% (1)	
Yes	96% (59)	
No	2% (1)	

Nb. Number of participants who answered
s.d. Standard deviation

Table 3. Three-month post-symposium qualitative e-mail follow-up: themes related to short-term spread outcomes

Open-ended questions	Themes in responses
Innovators (n=21)	
How have your post-symposium follow-ups been going?	Followed-up (n=13; 62%) • *Ongoing conversations with teams, but no concrete spread yet* • *Followed-up by email, but no significant conversations ensued* • *Selective follow-ups: strategically managing spread and growth* • *Implementation to start soon in several interested clinics* • *Have provided early implementation support (e.g. training, information, shared tools)* • *Created LinkedIn group with interested leads and dragons to further discuss* Did not follow-up (n=8; 38%) • *No follow-up, but plan to follow-up soon* • *No follow-up planned (e.g. lack of time, insufficient resources)*
What have your successes been to date?	Resources & partners • *Applied for/ obtained new research funding* • *Strong stakeholder engagement* • *Collaboration with Dragon-Facilitators & new partners* • *Established committee to support innovation spread* Innovation spread • *Spread use of tools (e.g. 42% increased use of online tool since symposium)* • *Initiated innovation implementation in new contexts (e.g. training, planning)* • *Additional teams have expressed interest post-symposium*
What barriers have you faced?	Innovation related barriers • *Lack of funding, resources and time to follow-up* • *Staff turnover in innovation team* • *Insufficient capacity to meet the demand of all interested parties* • *Further innovation development required before spreading* Clinical leads & dragon-facilitators related barriers • *Clinical leads and Dragons-Facilitators only moderately interested* • *Change fatigue due to ongoing health system transformations*

Table 4. Nine-month post-symposium follow-up survey: medium-term spread outcomes

Survey Items		% (Nb.) or Mean (s.d.)	Themes in open-ended responses
Innovators (n=23)			
Innovation has been spread to new context(s)			Comments on innovation spread:
	Yes	39% (9)	• *Difficult to keep track of spread*
	Not yet, but in progress	13% (3)	• *Many teams preparing for spread*
	No	30% (7)	• *Innovation being adapted to new contexts*
	Don't know	9% (2)	• *Lack of resources hindered spread*
	Missing/Not applicable	9% (2)	
Symposium sparked other new ideas, opportunities or projects			Comments on ideas sparked by symposium:
	Yes	48% (11)	• *Useful networking and new collaborations*
	No	52% (12)	• *Stimulated discussions on new projects* • *Ideas for knowledge translation*

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3 • *Ideas for new resources for innovations*
4 • *Too busy and lack of time for new ideas*
5 **Clinical leads (n=25)**
6 Adopted one or more symposium innovations
7 *Yes* 72% (18) Justification for not having adopted a
8 symposium innovation:
9 *If yes, degree to which it is perceived* • *Not yet, but ongoing conversations on*
10 *to have improved the primary* 6.89 *possible implementation*
11 *healthcare team's experience (0=not* (±2.00) • *Lack of resources to implement innovation*
12 *at all, 10=extremely)* • *Competing priorities and change fatigue*
13 *If yes, degree to which it is perceived* *(e.g. new electronic medical record)*
14 *to have improved the patient* 6.32
15 *experience* (±2.8)
16 *(0=not at all, 10=extremely)*
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18 *No* 28% (7)
19 Symposium sparked other new ideas, opportunities or projects Comments on ideas sparked by symposium:
20 *Yes* 60% (15) • *New interest in working with patient-*
21 *partners and improving patient experience*
22 *No* 40% (10) • *Lack of time and resources to innovate*
23 *Dragon-Facilitators were not surveyed at 9 months • *Change fatigue and competing priorities*
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Supplementary file 1 – Innovation description

Description adapted from innovation booklet: http://cqmf.qc.ca/wp-content/uploads/2020/01/PDF-2-Livret-des-innovations-2017.pdf

Innovation	Brief description
CoMPAS + : *Collectif pour les meilleures pratiques et l'amélioration des soins et services+* (Collective for best practices and improvement of care and services +)	Facilitated reflective quality improvement workshops – based on performance indicators, problem-solving, improvement targets and action plans – support local health networks and primary healthcare teams to implement best practices for chronic disease prevention and management (e.g. diabetes, mental health, COPD).
BASE™ eConsult : Building access to specialists through eConsultation	Primary care providers (e.g. family physicians, nurse practitioners) consult with specialists regarding their patients' medical issues in over 80 specialities (e.g. psychiatry, dermatology, geriatrics, cardiology, oncology) through asynchronous communication via a secure online platform.
Canadian Primary Care Sentinel Surveillance Network	A secure national database extracts clinical and administrative primary healthcare data from electronic medical records (adapted to 13 electronic medical records – 3 in Quebec) for research, surveillance and quality improvement. A web tool allows sentinel providers (i.e. local champions, nominated by peers) to autonomously explore their clinics' data.
Accueil clinique + (Clinical reception +)	To reduce overcrowding, emergency department providers and specialists refer subacute or semi-urgent patients – based on detailed and safe referral protocols – to family physicians in primary healthcare, who then have privileged access to technical and diagnostic platforms and specialist consultations.
V1SAGES (Faces): **Case management for frequent service users**	Case managers (nurses) in family medicine groups each support up to 30 patients with complex health needs (chronic diseases, frequent service users). They evaluate patients' needs, co-develop a tailored care plan with patients and providers, coordinate health, social and community services, and offer self-management support to patients and their families.
Maison bleue (Blue House):	To support optimal child development from pregnancy to age 5, a non-profit organisation helps pregnant women and their families, who live in vulnerable contexts, through interdisciplinary care (family physicians, midwives, nurses, social workers, specialized educators, and psycho-educators).
Patient-partner governance	A team with expertise in patient-partnership supports university family medicine groups (workshop, implementation guide, coaching) to integrate patient-partners in their clinic's governance structure (recruitment, mandate co-development, training, coaching, facilitating meetings)

Supplementary file 1 – Innovation description

Description adapted from innovation booklet: http://cqmf.qc.ca/wp-content/uploads/2020/01/PDF-2-Livret-des-innovations-2017.pdf

Collaborative mental healthcare	A workshop that brings together experts in collaborative mental healthcare, the regional adult mental health teams, a patient-partner and a family medicine group/university family medicine group to: 1) raise awareness of collaborative care and treatment for anxiety disorders and depression with regional adult mental health teams, 2) present two tools that support collaborative care, 3) create an opportunity for collaboration and support for primary healthcare teams.
Interdisciplinary pain program	A chronic pain prevention and management program integrates collaborative care between a nurse, physiotherapist, psychologist, physician with expertise in chronic pain) to support patient empowerment.
SPOT community and teaching clinic: a team and collective engagement for more health equity	A nurse-led clinic with interns/residents from a wide range of disciplines – co-constructed by community, healthcare and academic partners – offers integrated primary healthcare to persons living a situation of marginalization or social disaffiliation, in close collaboration with family physicians from university family medicine groups.
Practicing Wisely	An evidence-based interactive program to reduce negative impacts of unnecessary care (overdiagnosis, overprescribing) for family physicians and residents (case studies, decision-support tools, reflective evaluation, and websites) supports teams to reflect on their practice, identify issues and develop action plans.
REFLET and reflective practice	The REFLET tool produces, presents and exports clinical indicators (provider or practice-level) from electronic medical records to support primary healthcare teams in their reflective practice (e.g. to improve follow-ups for diabetes or accessibility), while data remains under the teams' control.
SEKMED: Software for the Evolution of Knowledge in MEDicine	A technological platform recognizes terms used by providers in their usual care processes (e.g. electronic medical records) and provides them with relevant just-in-time high quality evidence (e.g. guidelines, recommendations, Choosing Wisely)
Group prenatal care	To improve social support and pregnancy outcomes, midwives and physicians facilitate educational sessions (e.g. pregnancy, childbirth, newborn care, breastfeeding, contraception) for groups of women of similar gestational ages, following a brief medical assessment.
Discutons santé (Let's Discuss Health)	A website with tools and self-learning modules for both patients and providers (e.g. family physicians, nurses, pharmacists) supports effective communication and collaboration between patients and providers and encourages patients with chronic diseases to actively

Supplementary file 1 – Innovation description

Description adapted from innovation booklet: http://cqmf.qc.ca/wp-content/uploads/2020/01/PDF-2-Livret-des-innovations-2017.pdf

	engage in their care.
Effectiveness and teaching excellence at Clinique de Santé Jacques-Cartier	Early adopters of the university family medicine group model implemented many pillars of the patient's medical home, while maintaining a large patient roster and a high-quality teaching program. The clinic offers mentorship to other clinics striving to implement a similar model.
Centralized waiting lists for patients without a primary care provider	Centralized waiting lists, in Quebec the *guichet d'accès aux clienteles orphelines,* help match patients looking for a primary care provider to an available family physician or nurse in their area.
Advanced access	To improve timely access to primary healthcare for patients, advanced access reorganizes primary healthcare teams' work according to 5 principles: balancing supply and demand for services, reducing appointment backlog, revising scheduling system, integrating interprofessional practice, and developing contingency plans.
Programme Service d'orientation individual (Individual orientation service)	A community health worker/navigator inspired model supports patients from disadvantaged neighborhoods when they are newly attached to a family physician and primary healthcare clinic (e.g. prepare for first appoint, understand clinic process, address access barriers, support health system navigation), in collaboration with social workers in family medicine groups.
VITASANTÉ: community engaged in chronic disease management	To empower patients and build community-patient-provider partnerships, an interdisciplinary team (nurses, kinesiologist, nutritionist, pharmacist, respiratory therapists, family physician, specialists in internal medicine) consults and coordinates around the patient. Services are offered in the patient's community through telehealth at home and through social clubs, community organisations, and municipal partners.
Method for reviewing medications in university family medicine groups	Residents meet with a pharmacist to discuss real patient cases and together they review patients' pharmacotherapy using a systematic method (*méthode R.I.P.)* and tool containing hyperlinks to relevant evidence (e.g. withdrawal plan, risks of suboptimal use).
Educational sessions on global review of medication use	A pharmacist offers interactive training sessions to residents, family physicians and allied health professionals in university family medicine groups. Each session, they revise a class of medication using clinical situations, practice guidelines and the latest evidence and discuss pragmatic implications (e.g. costs, risks, advantages, necessary follow-ups)
Contresens **arts-based workshops: Thinking differently to treat better**	Using works of art, a physician and psychologist facilitate thematic workshops (e.g. motherhood, death, aging, power, identity) to develop family medicine residents' desire and

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	ability to identify issues at stake through patients' attitudes, diseases, ailments and demands.
Troubleshooting activity: 'with this one, it's not working anymore!'	A psychologist facilitates a troubleshooting activity where family medicine residents take turns presenting patient cases that they are having trouble with. Practical learning related to personalities, therapeutic relationships, ethical considerations, and supervision are discussed in the group.
Physical activity group	A kinesiologist facilitates a weekly physical activity group training session for patients from a family medicine group, improving patients' adherence to their training programs through frequent follow-ups, training supervision and rapid program adjustments.
MRCR : *Méthode reflexive centrée sur la relation* (reflective method centered on the relationship)	To help residents develop their reflective capacity (e.g. quality of care for difficult patients, patient compliance), a supervisor facilitates a discussion with residents in 5 steps: explaining the situation, describing emotion, making an explanatory hypothesis, accepting the hypothesis, and adopting new perspectives.
Baromètre (Barometer)	A clinical digital tool used in interprofessional care empowers patients by highlighting their mental health strengths, progress in their community, changes in quality of life, based on their priorities.
Open Studio Projects @ Patient Medical Neighbourhood	Accessible and sustainable immersive environments utilize art as a tool for social change In healthcare and provide creative experiences that promote community engagement, trusting relationships and interprofessional collaboration.
CONCERTO – Digitial clinical intelligence for chronic disease management	Digital care pathways, based on Canadian clinical guidelines, include functional flowcharts, diagnostic, therapeutic and monitoring algorithms, care protocols, decision support tools, and toolkits for patients and professionals. The database produces indicators that allow simultaneous follow-ups for concomitant pathologies.
Programme UPF: Urgences en Pratique Familiale (Emergencies in family practices program)	An 8-hour training session for all clinic staff (physicians, nurses, administrative staff, allied health professionals) on emergency situations (e.g. certification in cardiopulmonary resuscitation [CPR] and automated external defibrillator use, a complete medical kit, emergency simulations)
Patient's Medical Home Self-Assessment	An online self-reflective questionnaire helps teams analyze how closely their practice aligns with the principles of the patient's medical home and identify areas for improvement.

Revised Standards for Quality Improvement Reporting Excellence (SQUIRE 2.0)

Title and Abstract

1. Title	Indicate that the manuscript concerns an initiative to improve healthcare (broadly defined to include the quality, safety, effectiveness, patient-centeredness, timeliness, cost, efficiency, and equity of healthcare)	Title: *Dragons' Den* symposium to catalyze the spread of primary care innovations
2. Abstract	a. Provide adequate information to aid in searching and indexing b. Summarize all key information from various sections of the text using the abstract format of the intended publication or a structured summary such as: background, local problem, methods, interventions, results, conclusions	Abstract contains all key information.
3. Problem Description	Nature and significance of the local problem	Problem is described.
4. Available knowledge	Summary of what is currently known about the problem, including relevant previous studies	Summary of what is known is included.
5. Rationale	Informal or formal frameworks, models, concepts, and/or theories used to explain the problem, any reasons or assumptions that were used to develop the intervention(s), and reasons why the intervention(s) was expected to work	Rationale for the symposium is explained in the introduction.
6. Specific aims	Purpose of the project and of this report	Aims of the symposium and of the paper are specified in the introduction.
Methods	*What did you do?*	
7. Context	Contextual elements considered important at the outset of introducing the intervention(s)	The setting is described.
8. Intervention(s)		The intervention (symposium) is described in detail.

		a. Description of the intervention(s) in sufficient detail that others could reproduce it b. Specifics of the team involved in the work	
9. Study of the Intervention(s)		a. Approach chosen for assessing the impact of the intervention(s) b. Approach used to establish whether the observed outcomes were due to the intervention(s)	Design and data collection is described.
10. Measures		a. Measures chosen for studying processes and outcomes of the intervention(s), including rationale for choosing them, their operational definitions, and their validity and reliability b. Description of the approach to the ongoing assessment of contextual elements that contributed to the success, failure, efficiency, and cost c. Methods employed for assessing completeness and accuracy of data	Rationale for choosing these measures is explicit. Data collection is described.
11. Analysis		a. Qualitative and quantitative methods used to draw inferences from the data b. Methods for understanding variation within the data, including the effects of time as a variable	Both qualitative and quantitative analysis are briefly described.
12. Ethical Considerations		Ethical aspects of implementing and studying the intervention(s) and how they were addressed, including, but not limited to, formal ethics review and potential conflict(s) of interest	Ethical exemption is described.
13. Results		a. Initial steps of the intervention(s) and their evolution over time (*e.g.*, time-line diagram, flow chart, or table), including modifications made to the intervention during the project	Results present qualitative and quantitative data integrated to better contextualize results. Results are presented in three phases of data collection. Missing data is indicated.

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b. Details of the process measures and outcome
c. Contextual elements that interacted with the intervention(s)
d. Observed associations between outcomes, interventions, and relevant contextual elements
e. Unintended consequences such as unexpected benefits, problems, failures, or costs associated with the intervention(s).
f. Details about missing data

Discussion   *What does it mean?*

14. Summary	a. Key findings, including relevance to the rationale and specific aims b. Particular strengths of the project	Key findings, relevance and strengths are outlined.
15. Interpretation	a. Nature of the association between the intervention(s) and the outcomes b. Comparison of results with findings from other publications c. Impact of the project on people and systems d. Reasons for any differences between observed and anticipated outcomes, including the influence of context e. Costs and strategic trade-offs, including opportunity costs	Findings are compared to the literature; the impact is described.
16. Limitations	a. Limits to the generalizability of the work b. Factors that might have limited internal validity such as confounding, bias, or imprecision in the design, methods, measurement, or analysis c. Efforts made to minimize and adjust for limitations	Limitations are detailed.
17. Conclusions	a. Usefulness of the work b. Sustainability	Usefulness, sustainability, potential spread and implication are described in the conclusion.

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c. Potential for spread to other contexts
d. Implications for practice and for further study in the field
e. Suggested next steps

18. Funding

Sources of funding that supported this work. Role, if any, of the funding organization in the design, implementation, interpretation, and reporting

Funding is reported. The roles of two of the co-authors in the symposium design are stated.