Building capacity for palliative care delivery in primary care settings

Mixed-methods evaluation of the INTEGRATE Project

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Abstract

Objective To evaluate an intervention aimed at building capacity to deliver palliative care in primary care settings.

Design The INTEGRATE Project was a 3-year pilot project involving interprofessional palliative care education and an integrated care model to promote early identification and support of patients with palliative care needs. A concurrent mixed-methods evaluation was conducted using descriptive data, provider surveys before and after implementation, and interviews with providers and managers.

Setting Four primary care practices in Ontario.

Participants All providers in each practice were invited to participate. Providers used the "surprise question" as a prompt to determine patient eligibility for inclusion.

Main outcome measures Provider attitudes toward and confidence in providing palliative care, use of palliative care tools, delivery of palliative care, and perceived barriers to delivering palliative care.

Results A total of 294 patients were identified for early initiation of palliative care, most of whom had multiple comorbid conditions. Results demonstrated improvement in provider confidence to deliver palliative care (30% mean increase, $P < .05$) and self-reported use of palliative care tools and services (25% mean increase, $P < .05$). There was substantial variation across practices regarding the percentage of patients identified using the surprise question (0.2% to 1.5%), the number of advance care planning conversations initiated (50% to 90%), and mean time to conversation (13 to 76 days). This variation is attributable, in part, to contextual differences across practices.

Conclusion A standardized model for the early introduction of palliative care to patients can be integrated into the routine practice of primary care practitioners with appropriate training and support. Additional research is needed to understand the practice factors that contribute to the success of palliative care interventions in primary care and to examine patient outcomes.

Editor's key points

- Many Canadians only receive palliative care in the last month of life. Integrating palliative care into primary care enables early identification and access. However, many primary care practitioners lack training in palliative care and report few resources and supports.
- After the INTEGRATE Project was implemented, significant increases were identified in primary care practitioner confidence to deliver a palliative approach to care, use of palliative care tools, initiation of advance care planning (ACP) or goals of care (GoC) conversations, home visits for palliative care, and referrals to community palliative care services. There was considerable variation across sites with regard to the number of patients identified using the "surprise question," the percentage of patients for whom an ACP or GoC conversation was initiated, and the time between identification and the ACP or GoC conversation.
- Overall, the results suggest that the care processes introduced by the INTEGRATE Project can be successfully incorporated into practice with appropriate and regular education, and a flexible approach that enables local tailoring.

Édifier les capacités de prestation des soins palliatifs en milieux de soins primaires

Évaluation à méthodes mixtes du projet INTEGRATE

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Résumé

Objectif Évaluer une intervention ayant pour but l'édification des capacités à dispenser des soins palliatifs dans les milieux de soins primaires.

Type d'étude Le projet INTEGRATE était un projet expérimental qui comportait une éducation interprofessionnelle en soins palliatifs, de même qu'un modèle de soins intégré pour favoriser l'identification précoce des patients ayant besoin de soins palliatifs et leur soutien. Une évaluation concomitante à méthodes mixtes a été effectuée à l'aide de données descriptives, de sondages auprès des professionnels avant et après la mise en œuvre et d'entrevues avec les professionnels et les gestionnaires.

Contexte Quatre cliniques de soins primaires en Ontario.

Participants Tous les professionnels dans chaque clinique ont été invités à participer. Les professionnels utilisaient une «question surprise» comme incitatif pour déterminer l'admissibilité des patients à être inclus.

Principaux paramètres à l'étude Les attitudes et la confiance des professionnels face à l'offre de soins palliatifs, à l'utilisation des outils de soins palliatifs, à la prestation de soins palliatifs, de même que les obstacles perçus nuisant à la prestation des soins palliatifs.

Résultats Un total de 294 patients ont été identifiés comme sujets propices à une amorce précoce des soins palliatifs, dont la plupart avaient des problèmes de multimorbidité. Les résultats ont révélé une amélioration dans la confiance des professionnels de dispenser des soins palliatifs (augmentation moyenne de 30%, $p < ,05$) et dans l'utilisation des outils et des services de soins palliatifs signalée par les intéressés (augmentation moyenne de 25%, $p < ,05$). Il y avait des variations considérables d'une clinique à l'autre concernant le pourcentage de patients identifiés à l'aide de la question surprise (0,2 à 1,5%), le nombre de conversations amorcées sur les directives préalables (50 à 90%) et le temps moyen écoulé entre l'identification et la conversation (13 à 78 jours). Cette variation est en partie attribuable aux différences contextuelles entre les cliniques.

Conclusion Un modèle normalisé pour l'amorce précoce des soins palliatifs aux patients peut être intégré dans la pratique habituelle des professionnels en soins primaires au moyen d'une formation et d'un soutien appropriés. D'autres recherches sont nécessaires pour comprendre les facteurs d'une pratique qui contribuent à la réussite des interventions liées aux soins palliatifs en soins primaires et pour examiner les résultats chez les patients.

Points de repère du rédacteur

- De nombreux Canadiens ne reçoivent des soins palliatifs que durant le dernier mois de leur vie. L'intégration des soins palliatifs dans les soins primaires permet une identification et un accès précoces. Par ailleurs, de nombreux professionnels des soins primaires n'ont pas assez de formation en soins palliatifs et signalent un manque de ressources et de soutien.
- Après la mise en œuvre du projet INTEGRATE, on a constaté des hausses significatives dans la confiance des professionnels en soins primaires d'offrir une approche palliative dans leurs soins, d'utiliser des outils de soins palliatifs, d'amorcer des conversations sur les directives préalables (DP) ou les objectifs des soins (OdS), de faire des visites à domicile pour donner des soins palliatifs et d'orienter les patients vers les services communautaires de soins palliatifs. Il y avait des variations considérables d'une clinique à l'autre en ce qui a trait au nombre de patients identifiés à l'aide de la «question surprise», au pourcentage de patients pour qui une conversation sur les DP ou les OdS avait été amorcée et au temps écoulé entre l'identification et la conversation sur les DP ou les OdS.
- Dans l'ensemble, les résultats font valoir que les processus de soins implantés par le projet INTEGRATE peuvent être intégrés avec succès dans la pratique au moyen d'une éducation appropriée et régulière, de même qu'avec une approche flexible qui permet une adaptation locale.

Palliative care aims to relieve suffering and improve quality of life for patients and their families who are facing serious, life-limiting illness.[1] It focuses on open and sensitive communication with patients about their prognosis and illness trajectory, including advance care planning (ACP), setting goals of care (GoC), and discussing available treatments.[1] Palliative care also involves the provision of pain and symptom management and psychosocial and spiritual support to help patients and families cope with the illness.[1] In the past, palliative care was relegated to the last stages of care when patients were at or near the end of life. However, empirical evidence suggests that initiating palliative care earlier in the illness trajectory can improve symptom control, quality of life, and survival, and result in less aggressive care and less distress among family caregivers compared with patients receiving standard care.[2-8]

Despite increasing evidence regarding the benefits of initiating palliative care early, many Canadians only receive palliative care in the last month of life, and most continue to die in hospital.[9,10] Integrating palliative care into primary care enables early identification and access to palliative care, while reserving scarce specialist palliative care resources for the most complex cases.[11-13] Primary care practitioners (PCPs) are uniquely positioned to deliver effective "generalist" palliative care: they treat the whole person (not just individual illnesses), can readily identify patients who might benefit from a palliative approach to care, tend to have continuous relationships with patients and their families over time, and often wish to remain active in the care of their dying patients.[11,14-17] In addition to supporting most patients' preference to die at home in the care of a physician they know and trust,[18,19] home- and community-based palliative care can also generate statistically significant cost savings for the health care system.[3,20] However, many PCPs have not been trained to provide palliative care and report few resources and supports.[11,21-29]

In this study, we report the results of an intervention aimed at building the capacity of PCPs to deliver palliative care to patients in the community. The INTEGRATE Project was a 3-year (2014 to 2016) pilot project that delivered interprofessional palliative care education to providers and implemented an integrated care model to promote early identification of and support for patients with palliative care needs.[30] The overall goals of the INTEGRATE Project were to enhance provider knowledge and confidence in palliative care delivery, identify patients who might benefit from palliative care earlier in their disease trajectory, and increase the provision of palliative care and the use of palliative care tools. The INTEGRATE Project was implemented in 4 primary care practices (results reported herein) and select disease sites within 4 cancer centres (results to be reported elsewhere) in Ontario.

Methods

To evaluate the effect of the INTEGRATE Project on primary care capacity to deliver palliative care, we analyzed descriptive data and conducted preintervention and postintervention surveys and semistructured interviews. Ethics approval for this study was granted by the University of Toronto Research Ethics Board.

Intervention settings and patient eligibility criteria

Four primary care practices in Ontario were invited to participate in the INTEGRATE Project. These practices were purposefully selected using maximum variation sampling to ensure diversity in geography and practice characteristics (eg, academic status, extent of interprofessional resources) (**Table 1**). All 4 practices accepted the invitation to participate and identified a local clinical champion to support the INTEGRATE Project implementation in their practice. Individual PCPs at each practice chose whether to participate in the INTEGRATE Project. To support early identification, participating PCPs used the surprise question: "Would you be surprised if this patient were to die within 6 to 12 months?"[31] The surprise question was used as a prompt for all patients expected to need symptom management in the next year based on age (ie, older than 75 years) and diagnoses (ie, diagnosis of life-limiting disease or presence of multiple comorbidities). If the answer to the surprise question was no, the patient was included in the intervention and a palliative approach to care was initiated, including symptom assessment and management, ACP and GoC conversations with patients and family members, and referrals to community supportive care.

Interventions

The INTEGRATE model consisted of 2 interventions: interprofessional palliative care education; and an integrated care model to facilitate early identification of patients with palliative care needs, early linkages to community-based resources, and improved communication between providers involved in patient care. The model was co-developed by the research team and provincial working groups comprising clinicians, allied health practitioners, administrators, and patient and family advisors, and was adapted from the Gold Standards Framework, which is endorsed by the National Health Service in the United Kingdom (**Figure 1**).[31]

Providers at participating practices completed Pallium Canada's Learning Essential Approaches to Palliative Care (LEAP) 2-day workshop ("LEAP Core"). The LEAP course provides a standardized, interactive, competency- and team-based approach to learning about current best practice in caring for patients with life-threatening illness.[32] Sites were strongly encouraged to include all members of the care team. For this reason, most

INTEGRATE Project providers were trained together, regardless of professional role. In addition, a trifold decision aid was developed, in both English and French, to support providers in the identification of patients likely to benefit from a palliative approach (available from the authors upon request).

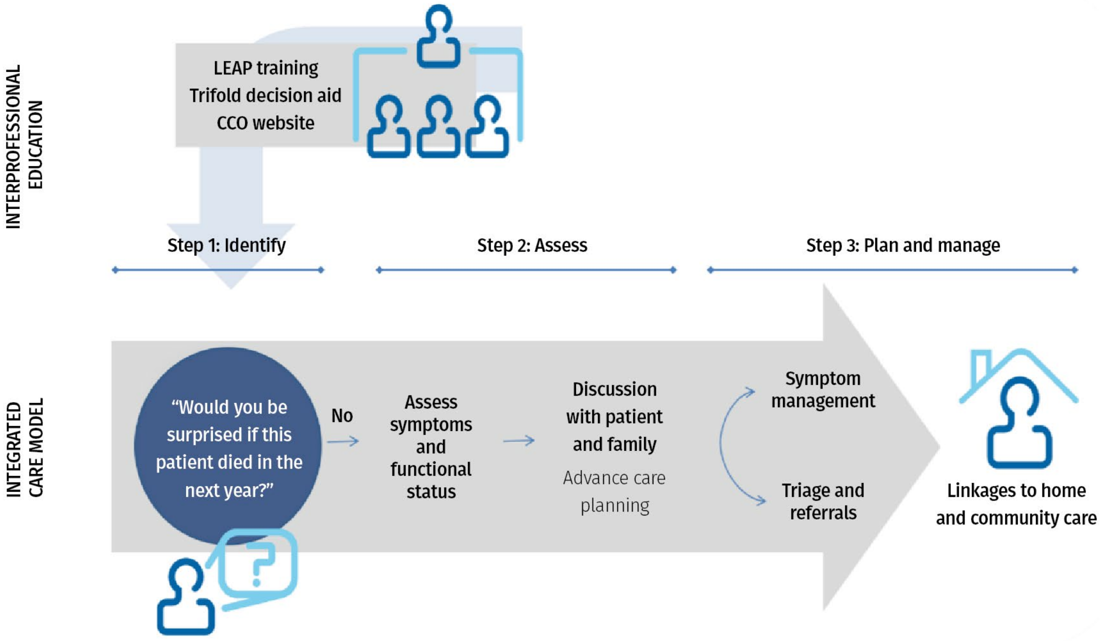
Once physicians identified a patient using the surprise question, a palliative approach to care was initiated. Patient assessment of symptoms and functional status was conducted using the Edmonton Symptom Assessment Scale and the Palliative Performance Scale.[33,34] Advance care planning conversations with

Table 1. Primary care practices that participated in the INTEGRATE Project

PRACTICE NAME AND MODEL*	REGION OF ONTARIO	PRACTICE CHARACTERISTICS
Petawawa Centennial Family Health Team	Champlain	• Rural • 8 family physicians and various other professionals, including nurse practitioners, nurses, a pharmacist, a social worker, and a dietitian • Roster of about 6300 patients
Sunnybrook Academic Family Health Team	Toronto Central North	• Urban • Academic • 13 family physicians and various other professionals, including nurses, social workers, dietitians, diabetes nurse educators, an occupational therapist, a pharmacist, and a nurse navigator • Roster of about 9300 patients
Forest Hill Family Health Group	Toronto Central South	• Urban • 10 family physicians and various other professionals, including nurses, a social worker, a child psychologist, a speech pathologist, a nephrologist, an endocrinologist, physiotherapists, and chiropractors • Roster of about 10 000 patients
Barrie and Community Family Health Team	North Simcoe Muskoka	• Rural • 84 family physicians in teams of 2 to 4 across 35 sites • Roster of about 131 000 patients

*A *family health team* is an interprofessional team of health care providers—family physicians, nutritionists, social workers, and other professionals—who provide comprehensive care to patients enrolled within the family health team. Physicians are paid through blended capitation or blended salary. A *family health group* is a group of 3 or more family physicians who work together but not necessarily in the same office. Patients are typically enrolled under the care of 1 doctor. Physicians are paid through fee for service.

Figure 1. INTEGRATE model of care for primary care practices



CCO—Cancer Care Ontario, LEAP—Learning Essential Approaches to Palliative Care.

patients and family members were also initiated by physicians and, at some sites, followed up by other members of the team, such as a nurse or social worker. Providers agreed to common referral criteria: a Palliative Performance Scale score of less than 60 (indicating substantial disease and reduced mobility) triggered a referral to a Community Care Access Centre (CCAC). (Community Care Access Centres were regional bodies that coordinated and provided access to home and community care services.) Each site was assigned a coordinator through its local CCAC. The coordinators, who were on site for 1 half day or 1 full day per week, supported implementation of the INTEGRATE Project, facilitated patient navigation, and participated in interprofessional discussions where possible. Symptom management, triage, and referrals to home and community care (including palliative care specialists) were performed continuously by the care team based on patient need.

Data collection and analysis

Project managers were responsible for documenting patients identified using the surprise question, the date of identification, and other clinical data elements for evaluation purposes. These data was collected on an ongoing basis from the point of implementation (**Table 2**) until August 31, 2016.

To provide a baseline against which to assess the effect of the INTEGRATE Project, a Web-based self-administered survey was co-developed by the research team and provincial working groups, drawing from existing surveys where possible, such as from the Canadian Hospice and Palliative Care Association. The survey consisted of 20 questions with primarily Likert-type agreement scales, and was administered before and after implementation to measure provider attitudes toward and confidence to provide palliative care; use of palliative care tools; delivery of palliative care; and perceived barriers to delivering palliative care. All PCPs who participated in the project were invited via e-mail to participate. In accordance with the Dillman method, partial respondents and nonrespondents were sent 3 reminders to complete each survey.[35] To compare preimplementation and postimplementation survey participant characteristics and responses, 2 members of the research team used the χ^2 test.

Two members of the research team also conducted semistructured interviews with care providers and clinical and administrative leaders. The aim was to understand their views and experiences, identify implementation enablers and barriers, and assess the sustainability of the model. Interviewees provided verbal consent to participate in the interviews. Interviews were recorded and a summary of each interview was generated using a combination of interviewer notes and verbatim transcripts. The interview summaries were sent back to participants for review as a form of "member checking."[36] Two members of the research team inductively coded the interview transcripts, reconciled their differences through discussion, and thematically analyzed the coded data using NVivo software.

Results

A total of 294 patients were identified using the surprise question across 4 primary care practices (**Tables 2** and **3**). Only 1 practice reached the hypothesized 1% of patients in primary care who are expected to die within a year and would benefit from palliative care.[37] The primary disease that contributed to the decision to initiate a palliative approach to treatment varied. Cancer was reported as the most common diagnosis (41%), with heart disease (17%) and dementia (10%) being the next most common diagnoses. Frailty (8%), chronic lung disease (6%), and chronic kidney disease (5%) were less common. Other diagnoses (10%) reported included liver disease, motor neuron disease, Parkinson disease, amyotrophic lateral sclerosis, diabetes, stroke, multiple sclerosis, seizure disorder, and hypertension. More than 3 comorbid conditions were reported by 65% of patients, likely contributing to their need for a palliative approach to care.

Preimplementation and postimplementation provider survey

The preimplementation and postimplementation surveys yielded 55% (n = 71) and 34% (n = 49) response rates, respectively. A description of the survey respondents is provided in **Table 4**. A summary of the results before and after implementation across the 4 primary care practices is provided in **Table 5**. The results demonstrate improvement in provider confidence to deliver

Table 2. Patients identified with the surprise question by primary care practice: *N* = 294.

PRIMARY CARE PRACTICE	START DATE	NO. OF PARTICIPATING PHYSICIANS	NO. OF PATIENTS ACROSS PARTICIPATING PHYSICIANS	PATIENTS IDENTIFIED, n (%)	REPORTED DEATHS, n (%)
PCFHT	Nov 2014	8	6293	96 (1.5)	24 (25)
SAFHT	Apr 2015	10	7932	55 (0.7)	25 (45)
FHFHG	May 2015	3	4666	9 (0.2)	6 (67)
BCFHT	Jun 2015	15	24 553	134 (0.5)	47 (35)

BCFHT—Barrie and Community Family Health Team, FHFHG—Forest Hill Family Health Group, PCFHT—Petawawa Centennial Family Health Team, SAFHT—Sunnybrook Academic Family Health Team.

Table 3. INTEGRATE Project patient characteristics and milestones by practice: *N = 265 patients; owing to missing data for 29 patients, this table reports on 265 of 294 identified patients (90%).*

PRIMARY CARE PRACTICE	NO. OF PATIENTS IDENTIFIED	MEAN (SD) PATIENT AGE	ACP OR GoC CONVERSATION INITIATED, n (%)	MEAN (SD) TIME TO CONVERSATION, d
PCFHT	91	77 (13)	72 (79)	39 (100)
SAFHT	40	87 (8)	36 (90)	24 (53)
FHFHG	9	75 (11)	8 (89)	76 (114)
BCFHT	125	77 (13)	63 (50)	13 (36)

ACP—advance care planning, BCFHT—Barrie and Community Family Health Team, FHFHG—Forest Hill Family Health Group, GoC—goals of care, PCFHT—Petawawa Centennial Family Health Team, SAFHT—Sunnybrook Academic Family Health Team.

Table 4. Profile of preimplementation and postimplementation survey respondents

DEMOGRAPHIC VARIABLE	PRE-IMPLEMENTATION SURVEY, % (N = 71)	POST-IMPLEMENTATION SURVEY, % (N = 49)
Primary care practice		
• PCFHT	31	0*
• SAFHT	35	51
• FHFHG	6	8
• BCFHT	28	41
Profession or specialty		
• Family physician	55	67
• Nurse (NP, RN, RPN)	29	23
• Pharmacist or pharmacy technician	7	4
• Dietitian	6	6
• Social worker	1	0
• CCAC coordinator	1	0
• Clinical practice manager	1	0

BCFHT—Barrie and Community Family Health Team, CCAC—Community Care Access Centre, FHFHG—Forest Hill Family Health Group, NP—nurse practitioner, PCFHT—Petawawa Centennial Family Health Team, RN—registered nurse, RPN—registered practical nurse, SAFHT—Sunnybrook Academic Family Health Team.
*Significant difference at $P < .05$.

palliative care and self-reported use of palliative care tools and services; 14 of 17 (82%) of these improvements are statistically significant ($P < .05$). The most prominent shifts occurred in providers' belief that they have sufficient education to provide palliative care (21% to 64%), use of the surprise question (54% to 91%), and confidence to initiate the ACP conversation (25% to 62%).

Provider interviews

A total of 14 interviews were conducted with 12 physicians and 2 nurses across the 4 primary care practices (3 to 4 providers per practice). The providers agreed that the INTEGRATE Project enhanced awareness of and helped prioritize palliative care. Even providers who were using the surprise question or delivering palliative care before the INTEGRATE Project noted that the model supported a more proactive and explicit approach, particularly for initiating ACP conversations. There was also consensus that provider confidence and skill in delivering palliative care increased, and that ACP conversations were initiated earlier and for a broader group of patients than in previous practice. These results align with the quantitative results of the preimplementation and postimplementation surveys.

Providers also highlighted several enablers of and barriers to the implementation of the INTEGRATE Project. Common enablers across sites included the team-based LEAP training, which created a common language and approach; the dedicated CCAC care coordinator; physician champions; and the use of electronic medical records to alert providers about eligible patients (eg, based on age), to support documentation of the surprise question and ACP conversation, and to embed educational resources and referral forms. Notable barriers to the implementation and sustainability of the INTEGRATE Project included time per patient visit and physician workload (although it was noted that this became less of a barrier over time as the new model was normalized), technical challenges with documentation in electronic medical records in select practices, staff turnover, persistent discomfort initiating ACP conversations, varying levels of patient and family readiness for ACP conversations, and sharing a person's identified goals and values across care settings. Providers also flagged practice type as a factor influencing the success of the INTEGRATE Project; practices with more internal interprofessional resources (ie, Barrie and Community Family Health Team, Petawawa Centennial Family Health Team, Sunnybrook Academic Family Health Team) generally experienced fewer barriers integrating the model into their routine work flow compared with those that did not (ie, Forest Hill Family Health Group).

Discussion

The importance of integrating palliative care into primary care is well established and there is evidence

Table 5. Comparison of provider survey responses before and after implementation of the INTEGRATE Project

RESPONSE	BEFORE IMPLEMENTATION, % (N = 71)	AFTER IMPLEMENTATION, % (N = 49)
Attitudes and education*		
• Belief that "palliative care should be considered for patients who have a progressive, life-limiting illness (even if they still have many months to live)"	92	96[†]
• Belief that I have sufficient education or training to provide palliative care	21	64[‡]
Confidence[§]		
• Confidence to discuss patients' progressive noncurable illness	27	60[‡]
• Confidence to initiate ACP discussion	25	62[‡]
• Confidence to discuss different options for care settings	24	53[‡]
• Confidence to inform patients and families of support services available	17	36[‡]
Use of palliative care tools[‖]		
• Surprise question	54	91[‡]
• Palliative Performance Scale	44	67[‡]
• CCO Psychosocial Oncology Program and palliative care tools	3	16[‡]
• Edmonton Symptom Assessment Scale	28	62[‡]
• CCO symptom management guides	37	56[‡]
Delivery of palliative care[¶]		
• Held ACP or GoC discussions with patients	21	64[‡]
• Provided home visits for palliative care	48	71[‡]
• Linked patients to community palliative care services	59	84[‡]
Barriers to palliative care delivery[#]		
• Lack of time to have ACP or GoC conversation	82	76[†]
• Lack of comfort initiating ACP or GoC conversation	59	33[†]
• Lack of knowledge, training, or skills to provide palliative care	85	49[‡]

ACP—advance care planning, CCO—Cancer Care Ontario, GoC—goals of care.

*Respondents were asked to select 1 of 3 statements that best described their understanding of palliative care; other options were "Palliative care is for patients at the end of life (last days or weeks)" and "Palliative care is for patients with a life expectancy of several months or less."

[†] Not significant.

[‡] Significant difference at $P < .05$.

[§] Percentage who responded "yes"; other options were "no" and "not sure."

[‖] Percentage who responded "confident to perform independently," "confident to perform with minimal consultation," or "confident to perform with support or coaching"; other option was "need more information or further basic instruction."

[¶] Percentage who responded "always use" or "sometimes use"; other options were "rarely use," "never use," and "I do not know what this is."

[#] Percentage who responded "often provide" or "sometimes provide"; other options were "rarely provide" and "never provide."

to show that it has benefits; however, scholars highlight the need for more research to better understand how to best equip and empower PCPs to deliver a palliative approach to care.[11,13,15-17,27,29,38,39] We evaluated a 3-year intervention to build capacity for early palliative care delivery in primary care, and identified significant increases in PCP confidence to deliver a palliative approach to care, use of palliative care tools, initiation of ACP or GoC conversations, home visits for palliative care, and referrals to community palliative care services.

The results demonstrate that the surprise question can be feasible and useful as a standard method for identifying patients who might benefit from a palliative approach in primary care settings, but key enablers are required, such as a physician champion. Although recent evidence suggests that the surprise question performs poorly to modestly as a prognostic tool,[40] it was not used for this purpose in the INTEGRATE Project; rather, the surprise question was used as a prompt to identify patients who could benefit from a palliative care approach earlier in their disease trajectory.[41-43]

The results also suggest that, with appropriate training and support, a palliative approach to care can be integrated into the routine practice of PCPs. However, there was considerable variation across sites with regard to the number of patients identified using the surprise question, the percentage of patients for whom an ACP or GoC conversation was initiated, and the time between identification and the ACP or GoC conversation. This variation might be attributable, in part, to contextual differences across the sites, including co-location of interprofessional resources, leadership commitment, capacity to conduct research, rurality, practice culture, clinician buy-in over time, and clinician and patient readiness to have these conversations. Overall, the results suggest that the care processes introduced by the INTEGRATE Project can be successfully incorporated into practice with appropriate and regular education, and a flexible approach to implementation that enables local tailoring.

Limitations

Limitations of our study include that the evaluation relied on self-reported data. However, a number of strategies were used to ensure data quality, including triangulation between data sources such as the surveys and interviews, standardized Microsoft Excel spreadsheets with data rules, opportunities for sites to review and correct submitted data, and the investigation of anomalies. Physicians at each practice could choose whether to participate the INTEGRATE Project, which might have introduced selection bias. We do not have comparative data on the physicians at each practice who chose to participate in the INTEGRATE Project versus those who did not. The postimplementation provider survey generated a poor response rate (34%) compared with baseline (55%), and thus might not be representative of all providers who participated in the INTEGRATE Project. The lower response rate might have been owing to competing priorities and initiatives taking place at 1 or more practices at the time of administration. Furthermore, we were unable to create "matched pairs" of preintervention and postimplementation responses for each individual. However, no significant differences were identified in the demographic profiles for the preintervention and postimplementation survey respondents, with the exception that no providers from the Petawawa Centennial Family Health Team participated in the postimplementation survey. Finally, the evaluation measures were focused on assessing intervention implementation and feasibility from the perspective of participating PCPs. As such, no measures of effect were included, such as patient-reported quality of life or health outcomes.

Conclusion

The results of this real-world pilot study have relevance to primary health care reform efforts. Primary care professionals can support early identification and initiation of palliative care for patients, thereby improving the reach and sustainability of palliative care. However, education and a thoughtful approach to implementation are required. Additional research is needed to better understand the practice factors that contribute to the success or failure of palliative care interventions in primary care, and to examine associated patient outcomes.

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Acknowledgment

The INTEGRATE Project was funded by the Canadian Partnership Against Cancer and was supported in kind by Cancer Care Ontario.

Contributors

Dr Evans performed formal data analysis and wrote the original draft of the manuscript. **Ms Mackinnon** participated in conceptualization, funding acquisition, methodology, project administration, and supervision of the project, and reviewed and edited the manuscript. **Dr Pereira** participated in conceptualization, funding acquisition, methodology, investigation, and formal data analysis, and reviewed and edited the manuscript. **Dr Earle** participated in methodology and formal data analysis, and reviewed and edited the manuscript. **Dr Gagnon** participated in conceptualization, funding acquisition, methodology, and formal data analysis, and reviewed and edited the manuscript. **Ms Arthurs** participated in project administration and formal data analysis, and reviewed and edited the manuscript. **Ms Gradin** participated in project administration and data curation, and reviewed and edited the manuscript. **Ms Walton** participated in tool development and project administration, and reviewed and edited the manuscript. **Drs Wright** and **Buchman** participated in conceptualization, funding acquisition, data curation, and formal data analysis, and reviewed and edited the manuscript.

Competing interests

Dr Pereira is Scientific Officer of Pallium Canada. The remaining authors have no conflicts of interest.

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This article has been peer reviewed.
Cet article a fait l'objet d'une révision par des pairs.
Can Fam Physician 2021;67:270-8. DOI: 10.46747/cfp.6704270