Editor's key points

- Medical assistance in dying (MAID) became legal across Canada on June 17, 2016, creating a need for MAID-specific education for practising physicians and medical learners. Family medicine preceptors and residents are interested in MAID and desire more education.
- Residents rate their confidence and competence in discussing MAID with patients lower than preceptors rate their own confidence, and even among preceptors, fewer than half describe themselves as confident or competent. Residents appear more willing to be part of a team providing MAID than their preceptors are; however, there is currently a shortage of providers.
- These findings demonstrate a need to develop a residency curriculum that addresses MAID, with faculty development or continuing professional development for preceptors. More research is needed to further inform MAID education in all Canadian residency programs.

Exploring family medicine preceptor and resident perceptions of medical assistance in dying and desires for education

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Abstract

Objective To examine the perspectives of family medicine preceptors and residents, including their interest and intent to participate in and their knowledge and willingness to teach or learn about medical assistance in dying (MAID).

Design Two anonymous surveys were distributed via e-mail using a Dillman approach to residents and preceptors. Responses were collected between August 23 and November 29, 2016. Data were analyzed using descriptive and inferential statistics.

Setting The large, 4-site Queen's University family medicine residency program in southeastern Ontario.

Participants A total of 71 preceptors and 62 residents.

Main outcome measures Physician and resident knowledge of and experience, comfort, and confidence with MAID; willingness to participate in MAID; perspectives on the effect of MAID on team relationships; and the importance, desired content, and delivery of MAID education.

Results Overall, 45.2% of preceptors and 33.3% of residents responded. A low proportion of both preceptors and residents felt competent or comfortable discussing and exploring MAID with a patient, with preceptors feeling significantly more competent and comfortable than residents ($P<.001$ and $P<.01$, respectively). Paradoxically, significantly more residents than preceptors were willing to be part of a clinical team providing MAID through oral or intravenous routes ($P<.001$). In spite of this willingness to be involved, significantly fewer residents felt safe discussing personal perspectives on MAID in various clinical environments ($P<.001$). Most participants from both groups believed it was important to include MAID in the core family medicine residency curriculum and identified specific curriculum content and delivery strategies.

Conclusion Family medicine preceptors and residents are willing and want to learn about MAID. Our research demonstrates a need to integrate MAID into the family medicine residency curriculum, with faculty development and continuing professional development for preceptors.

Étudier les perceptions qu'ont les enseignants en médecine et les résidents de l'aide médicale à mourir et ce qu'ils souhaitent comme formation

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Résumé

Objectif Étudier les perceptions qu'ont les enseignants et les résidents en médecine familiale de l'aide médicale à mourir (AMM), y compris leur intérêt et leur intention d'y participer, de même que leurs connaissances et leur volonté de faire de l'enseignement ou de la formation dans ce domaine.

Type d'étude Deux enquêtes anonymes ont été envoyées par courrier électronique à des enseignants et à des résidents au moyen de la méthode de conception sur mesure (*Dillman approach*). Les réponses ont été reçues entre le 23 août et le 29 novembre 2016. Pour l'analyse des données, on a utilisé des statistiques descriptives et inférentielles.

Contexte Les 4 sites du programme de résidence en médecine familiale de l'Université Queens, dans le sud-ouest de l'Ontario.

Participants Un total de 71 enseignants et de 62 résidents.

Principaux paramètres à l'étude Les connaissances, l'expérience, l'aisance et la confiance des médecins et des résidents relativement à l'AMM; leur volonté d'offrir des services d'AMM; leurs points de vue sur l'effet que pourrait avoir l'AMM sur les relations au sein de l'équipe de travail; et l'importance de la formation sur l'AMM, le contenu et l'offre éducative.

Résultats Dans l'ensemble, 45,2 % des enseignants et 33,3 % des résidents ont répondu. Une faible proportion d'entre eux se disaient à l'aise et compétents pour discuter de l'AMM avec un patient, les enseignants se disant significativement plus à l'aise et compétents que les résidents ($P < .001$ vs $P < .01$). Paradoxalement, un plus grand nombre de résidents que d'enseignants étaient prêts à faire partie d'une équipe offrant l'AMM par voie orale ou intraveineuse ($P < .001$). Malgré cette volonté de participer, il y avait un nombre significativement plus faible de résidents que d'enseignants qui se disaient à l'aise de discuter des aspects personnels de l'AMM dans différents contextes cliniques ($P < .001$). La plupart des répondants croyaient qu'il était important d'inclure l'AMM dans le programme de base de la résidence en médecine familiale, et ont suggéré un contenu de programme spécifique et des stratégies de formation.

Conclusion Les enseignants et les résidents en médecine familiale sont disposés à en apprendre davantage sur l'AMM et désireux de le faire. Les résultats de cette étude montrent qu'il est nécessaire d'intégrer l'AMM au programme de la résidence en médecine familiale, avec une formation professorale ou un perfectionnement professionnel continu à l'intention des enseignants.

Points de repère du rédacteur

- C'est le 17 juin 2016 que l'aide médicale à mourir (AMM) est devenue légale au Canada, ce qui a créé un nouveau besoin de formation à l'intention des médecins déjà en pratique et des étudiants en médecine. Les enseignants et les résidents en médecine familiale s'intéressent à l'AMM et souhaitent davantage de formation.
- Par rapport aux enseignants, les résidents se disent moins confiants et compétents pour discuter de l'AMM avec les patients; même chez les enseignants, moins de la moitié se jugent compétents et à l'aise pour le faire. Les résidents semblent plus disposés que les enseignants à faire partie d'une équipe qui fournit l'AMM; toutefois, il y a présentement très peu de fournisseurs de l'AMM.
- Ces observations montrent qu'il est nécessaire de mettre au point un programme de résidence portant sur l'AMM, avec une formation professorale ou un perfectionnement professionnel continu à l'intention des enseignants. D'autres études seront nécessaires pour déterminer les meilleures façons d'introduire une formation sur l'AMM dans tous les programmes de résidence au Canada.

The Supreme Court of Canada delivered an unanimous decision on February 6, 2015, decriminalizing medical assistance in dying (MAID).[1] This decision prompted the creation of Bill C-14, allowing consenting, competent adults with a "grievous and irremediable"[2] medical condition to receive assistance from physicians or nurse practitioners to end their lives. This marked an important change in practice for all physicians across Canada. Given the relative newness of MAID in Canada, there is minimal Canadian-specific literature in the education field. A study of one Canadian medical school showed students were largely in favour of MAID and desired education surrounding medicolegal considerations, communication skills, and technical aspects of MAID provision.[3] These data supplement previously published surveys polling medical students and residents outside of Canada about their opinions on MAID and willingness to comply with requests.[4,5] Additionally, a primer was published on MAID for those teaching Canadian family medicine residents.[6] Increasing integration of palliative care education into medical school and residency curricula is supported by the literature, and some authors suggest that more palliative care education is required before focusing teaching on MAID.[7-10]

A need for education for practising physicians and medical learners is clear: online modules, courses, practice guidelines, and guiding documents were made available to provide education surrounding provision of end-of-life care and MAID.[11-15] However, practitioners' desires for education about MAID, how best to provide that education to practising physicians and medical learners, and the importance of incorporating MAID into existing curricula are unknown. The purpose of this research was to examine the perspectives of preceptors (physicians who supervise and teach residents in clinical settings) and residents at one Canadian family medicine program to inform MAID-related revisions to the residency training curriculum. Through a survey, we examined the domains of interest, knowledge, intent to participate, and willingness and readiness to teach or learn about MAID, and determined how participants anticipated MAID would affect their relationships with colleagues and other health care professionals. This research marks the first published data on perspectives of Canadian preceptors and residents on MAID since the passage of Bill C-14.

Methods

We distributed 2 separate anonymous online surveys via e-mail to preceptors and residents at the large, 4-site Queen's University family medicine residency program in southeastern Ontario. Using a Dillman design,[16] 3 e-mail contacts were made with eligible participants, which included all 157 family physician preceptors and 186 family medicine residents during the data collection time frame (August 23 to November 29, 2016). The final version of the preceptor survey consisted of 37 items organized into 5 domains: knowledge; experience, comfort, and confidence; willingness to participate; team relationships; and curriculum and resident education. The resident survey mirrored the preceptor survey, with minor wording changes. Survey items were constructed based on a literature review and consensus among researchers. It was pilot-tested and revised through a think-aloud protocol[17,18] with 5 family physician preceptors. Statistical analyses were conducted using SPSS, version 24, through *t* tests to identify significant differences (2-sided, $\alpha = .05$) and 1-way ANOVA (analysis of variance) to determine significant differences between survey items associated with demographic variables. Pearson correlation coefficients were calculated to determine correlation between variables. Our study was approved by Queen's University and the Health Sciences and Affiliated Teaching Hospitals Research Ethics Board.

Results

Of the 157 preceptors and 186 residents who were e-mailed the survey, 71 preceptors (45.2%) and 62 residents (33.3%) responded. The demographic characteristics of the respondents are shown in **Table 1**.

Knowledge of MAID

Most preceptors (67.6%) and residents (61.3%) agreed or strongly agreed that they followed with interest the Supreme Court decision to legalize MAID (**Table 2**); however, only a minority from both groups were confident they understood Bill C-14 as it related to their role as a family physician (40.8% of preceptors and 14.5% of residents agreed or strongly agreed). Preceptors were significantly more confident than residents in their understanding of Bill C-14 as it related to their role as a family physician ($P < .001$). Overall, 38.0% of preceptors reported having participated in an education or information event related to MAID in the past year, while 25.8% of residents reported having any formal teaching related to MAID.

Experience, comfort, and confidence with respect to MAID

Nearly half of preceptors (47.9%) and one-quarter (25.8%) of residents reported having had or observed discussions, respectively, with patients about MAID since it was decriminalized. Of these, 44.1% and 87.5% of preceptors and residents, respectively, reported that they had experienced 1 or more direct requests for MAID (any formal or informal request) during these discussions. While preceptors' self-described competence and comfort levels were low (33.8% and 43.7%, respectively; **Table 2**), they were significantly more likely to feel comfortable than competent in the discussion and exploration of MAID with patients ($P < .001$). This was similar for residents, who also felt significantly more comfortable

Table 1. Characteristics of respondents

CHARACTERISTIC	FACULTY (N = 71),* N (%)	RESIDENTS (N = 62),†‡ N (%)
Sex		
• Male	35 (49.3)	25 (40.3)
• Female	36 (50.7)	36 (58.1)
• Prefer not to answer	0 (0.0)	1 (1.6)
Age, y		
• 20 to 29	0 (0.0)	50 (80.6)
• 30 to 39	23 (32.4)	10 (16.1)
• 40 to 49	11 (15.5)	0 (0.0)
• 50 to 59	27 (38.0)	0 (0.0)
• ≥ 60	8 (11.3)	0 (0.0)
• Prefer not to answer	2 (2.8)	2 (3.2)
Time since residency completed, y		
• ≤ 5	12 (16.9)	NA
• 6 to 10	15 (21.1)	NA
• 11 to 15	7 (9.9)	NA
• 16 to 20	7 (9.9)	NA
• > 20	29 (40.8)	NA
• Prefer not to answer	1 (1.4)	NA
Time as a resident supervisor, y		
• ≤ 5	29 (40.8)	NA
• 6 to 10	16 (22.5)	NA
• 11 to 15	9 (12.7)	NA
• 16 to 20	6 (8.5)	NA
• > 20	10 (14.1)	NA
• Prefer not to answer	1 (1.4)	NA
Family medicine site at Queen's University§		
• Academic site	37 (48.7)	47 (75.8)
• Community sites	33 (43.4)	13 (21.0)
• Prefer not to answer	6 (7.9)	2 (3.2)

NA—not applicable.
*In the overall study population, including the nonresponders, 80 (51.0%) preceptors were male and 77 (49.0%) were female.
†In the overall study population, including the nonresponders, 81 (43.5%) residents were male and 105 (56.5%) were female.
‡There were 25 first year residents (40.3%), 31 second-year residents (50.0%), 4 third-year residents (6.5%), and 2 preferred not to answer (3.2%).
§Some faculty members worked at both academic and community sites.

(21.0%) than competent (11.3%) (P=.006). When groups were compared, preceptors felt significantly more competent and comfortable discussing and exploring MAID with a patient compared with residents (P<.001 and P<.01, respectively).

Willingness to participate in MAID

In total, 18.3% and 9.7% of preceptors and residents, respectively, reported that they were currently conscientious objectors (those opposed) to MAID, with no significant difference between groups. Few preceptors declared willingness to participate in the MAID process (**Table 3**). Overall, 28.2% of preceptors were willing to be first assessors for their own patients, and significantly fewer (P<.001) were willing to be second assessors for other physicians' patients. Fewer than half (35.0%) of those willing to be assessors for their own patients were willing to be part of the clinical team actually providing MAID. There was a medium to high positive correlation found between preceptor age and willingness to be part of the clinical team providing MAID to such patients by means of directly administering medications intravenously (R=-0.5), indicating that increasing preceptor age was correlated with increasing willingness to participate.

Most residents (69.4%) wished to observe an eligibility assessment for MAID. Residents were significantly more willing than preceptors to be part of the clinical team providing MAID, be it by oral prescription or intravenous administration (P<.001 for both). Of note, within their own group, significantly more residents were willing to be part of a team providing MAID by oral prescription (54.8%) than to be part of a team providing MAID by intravenous administration (37.1%; P<.001).

Team relationships

Fifteen preceptors (21.1%) reported that their immediate medical practice groups had formal discussions or meetings about MAID. Most preceptors (77.5%) and residents (61.3%) felt safe or very safe discussing their personal perspectives on MAID with their respective colleagues (preceptors with preceptors and residents with residents) (**Table 4**). Most preceptors felt safe or very safe discussing personal perspectives on MAID with residents for whom they were the primary preceptor. However, significantly fewer residents (56.5%) felt safe or very safe having these discussions with their primary preceptors (P<.001). Most preceptors felt safe or very safe discussing personal perspectives on MAID with other regulated health professionals and with nonclinical staff in their practice groups; however, when compared, significantly fewer residents felt safe or very safe in having these discussions with members of either of these groups (P<.001 for each).

Curriculum and resident education

Most preceptors (67.6%) and residents (75.8%) believed that it was important to include MAID in the core curriculum for family medicine, identifying a variety of topics they believed would be important to include in faculty development and resident teaching (**Table 5**).

Overall, 60 of the 71 preceptor participants (84.5%) reported that they would attend faculty development about MAID. Of these, seminars (30.5%) were identified

Table 2. Prevalence of positive responses to statements about MAID: *"Strongly agree" and "agree" were considered positive responses.*

STATEMENT	PREVALENCE, % (95% CI)		*P* VALUE*
	PRECEPTORS	RESIDENTS	
I followed with interest the process and decision of the Supreme Court to legalize MAID	67.6 (55.5-78.2)	61.3 (48.1-73.4)	.420
I am confident that I understand Bill C-14 regarding MAID as it relates to my future role as a family physician	40.8 (29.3-53.2)	14.5 (6.9-25.8)	< .001
I feel confident that I could explain Bill C-14 to a patient	38.0 (26.8-50.3)	12.9 (5.7-23.9)	< .001
I feel competent to discuss and explore MAID with a patient	33.8 (23.0-46.0)	11.3 (4.7-21.9)	< .001
I feel comfortable to discuss and explore MAID with a patient	43.7 (31.9-56.0)	21.0 (11.7-33.2)	< .01
I feel competent to model for a resident a discussion and exploration of MAID with a patient	32.4 (21.8-44.5)	NA	NA
I feel comfortable to model for a resident a discussion and exploration of MAID with a patient	36.6 (25.5-48.9)	NA	NA

MAID—medical assistance in dying, NA—not applicable.
*Significantly different if $P < .05$

Table 3. Prevalence of yes responses to questions about commitment to engage in MAID: *The questions included the statement, "Consider only cases of competent adults, with terminal illness or conditions, expected to die within the next few weeks to few months. These will be referred to as 'such patients.'"*

STATEMENT	PREVALENCE, % (95% CI)		*P* VALUE*
	PRECEPTORS	RESIDENTS	
Willing to act as first assessing physician for such patients from own practice who request MAID	28.2 (18.1-40.1)	NA	NA
Willing to act as first assessing physician for such patients from outside of own practice who request MAID	4.2 (0.9-11.9)	NA	NA
Willing to act as a second assessing physician for such patients requesting MAID	14.1 (7.0-24.4)	NA	NA
Willing to be present with a first or second assessing physician for such patients requesting MAID	NA	69.4 (57.6-81.1)	NA
Willing to be part of the clinical team providing MAID by means of prescribing oral medication for such patients	15.5 (8.0-26.0)	54.8 (41.7-67.5)	< .001
Willing to be part of the clinical team providing MAID by means of directly administering medications intravenously for such patients	14.1 (7.0-24.4)	37.1 (25.2-50.3)	< .001

MAID—medical assistance in dying, NA—not applicable.
*Significantly different if $P < .05$.

Table 4. Prevalence of positive responses to questions about perceptions of relationship vulnerability among colleagues when discussing MAID: *"Very safe" and "safe" were considered to be positive responses.*

HOW VULNERABLE DO YOU FEEL OPENLY DISCUSSING MAID WITH ...	PREVALENCE, % (95% CI)		*P* VALUE*
	PRECEPTORS	RESIDENTS	
Family physician colleagues or other family medicine residents	77.5 (66.0-86.5)	61.3 (48.1-73.4)	.115
Residents for whom you are a primary preceptor or your primary family medicine preceptors	76.1 (64.5-85.4)	56.5 (43.3-69.0)	< .001
Other regulated health professionals in your or your primary family medicine preceptors' practice group	74.6 (62.9-84.2)	41.9 (29.5-55.2)	< .001
Other nonclinical staff in your or your primary family medicine preceptors' immediate medical practice group	64.8 (52.5-75.8)	40.3 (28.1-53.6)	< .001

MAID—medical assistance in dying.
*Significantly different if $P < .05$.

Table 5. Prevalence of affirmative responses to questions about incorporating MAID in the curriculum: *"Very important" and "important" were considered to be affirmative responses.*

QUESTION	PREVALENCE, % (95% CI)		*P* VALUE*
	PRECEPTORS	RESIDENTS	
How important do you think it is to include MAID in the core curriculum of a family medicine residency training program?	67.6 (55.5-78.2)	75.8 (63.3-85.8)	.139
Consider the development of the MAID curriculum in your residency program. How important would any of the following be in MAID-related curricular content?			
• Advance care planning and end-of-life planning with patients	94.4 (86.2-98.4)	93.5 (84.3-98.2)	.321
• Discussion of MAID with patients	77.5 (66.0-86.5)	91.9 (85.2-98.7)	.072
• Regulations and legal aspects of MAID	85.9 (75.6-93.0)	90.3 (80.1-96.4)	.663
• Ethical issues related to MAID (including conscientious objection)	87.3 (77.3-94.0)	88.7 (78.1-95.3)	.154
• History and evolution of MAID in Canada	43.7 (31.9-56.0)	37.1 (25.2-50.3)	.743
• Technical aspects of MAID: general overview of processes and protocols	78.9 (67.6-87.7)	82.3 (70.5-90.8)	.489
• Technical aspects of MAID: specifics such as dosing protocols	67.6 (55.5-78.2)	61.3 (48.1-73.4)	.340
• Resident roles and challenges and involvement in MAID	81.7 (70.7-89.9)	74.2 (61.5-84.5)	.109
• Colleague and team relationships with respect to MAID	84.5 (74.0-92.0)	66.1 (53.0-77.7)	< .001

MAID—medical assistance in dying.
*Significantly different if $P < .05$.

as the preferred method of delivery. Residents agreed, with 46.7% identifying seminars as their preferred method of MAID teaching.

Discussion

The results of this first study to assess Canadian family medicine preceptor and resident perceptions of MAID demonstrate a need for further education. Medical assistance in dying had only recently been legalized at the time of this survey, and yet most preceptors and residents had already engaged in at least one conversation about MAID with a patient. Despite this experience, fewer than half of preceptors reported feeling confident that they understood Bill C-14, and while not describing themselves as conscientious objectors, few preceptors were willing to act as first or second assessors of MAID eligibility for their own or referred patients. This indicates a need to provide preceptors with a means to increase their comfort and competence with MAID, not only to care for their own patient populations, but also to teach and model MAID discussions for residents.

Of interest, a significant subset of both preceptors and residents reported feeling more comfortable than competent discussing MAID ($P < .001$ and $P = .006$, respectively). This is curious, as competence and confidence usually are directly related: if one feels more competent in completing a task, then they also feel more confident.[19,20] Additional research into this phenomenon is required to see if it is continuing as physicians become more familiar with MAID.

While the residents felt significantly less comfortable and competent discussing MAID with a patient, they were significantly more willing to be part of a team providing MAID than their preceptors were ($P < .001$). This is an expected result. Previous studies have shown that family medicine residents are more liberal than their preceptors are in their willingness to take part in MAID.[5,21] This willingness to take part in MAID is echoed in the recent study by Bator et al of Canadian medical students.[3] However, nearly half of residents feel unsafe or very unsafe discussing their personal perspectives on MAID with their primary preceptors. This is important for preceptors to be aware of as they engage in discussions with their residents. Furthermore, the fact that a substantial minority of preceptors and residents feel vulnerable discussing MAID across clinical contexts has the potential to affect team functioning[21] and is a gap in practice that urgently requires attention. Bushwick et al suggest this variability might lead to conflict between residents and preceptors when providing end-of-life care.[21] Examples of difficult interactions between MAID providers and colleagues are highlighted in a recent Canadian study.[22] Our data show that preceptors feel more comfortable discussing their opinions on MAID with residents. Perhaps the fact that preceptors' anticipated practice patterns are more conservative compared with those of the residents contributes to this security.

Of interest, more residents feel significantly more comfortable being part of a team providing patients with self-administered rather than clinician-administered death ($P < .001$), whereas preceptor responses

remain stable between both methods. Only 1 of the 1587 MAID deaths in Ontario as of May 31, 2018, was self-administered versus clinician-administered (unpublished data, Office of the Chief Coroner for Ontario, Ontario Forensic Pathology Service, 2018). While residents might feel more comfortable taking a comparatively passive role in provision of MAID, clearly there is a very strong patient and provider preference for direct administration by a physician. Thoughtful planning and implementation will be required to effectively integrate these findings into a residency curriculum.

Limitations

Although these surveys had face validity, they are not validated surveys. Surveys have potential sources of bias including recall bias, bias associated with self-assessment and self-reported responses, and misinterpretation or unintentional ambiguity of questions. Additionally, as the study was completed 5 months after Bill C-14 was passed, participants had limited practical exposure to MAID. Survey fatigue might have contributed to the lower-than-expected response rate; however, the sex distribution of respondents was representative of the total population. Given that the study setting was one residency program, there is limited generalizability. Regional variability across Canada and variability among medical specialty areas might exist. Studies are currently being undertaken by the researchers to address these limitations.

Conclusion

Family medicine preceptors and residents are interested in MAID and desire more education. Residents rate their confidence and competence in discussing MAID with patients lower than preceptors rate their own, and even among preceptors, fewer than half describe themselves as confident or competent. Residents appear more willing to be part of a team providing MAID than their preceptors are; however, there is currently a shortage of providers. These findings demonstrate a need to develop a residency curriculum that addresses MAID, with faculty development or continuing professional development for preceptors. Future directions for research involve the development and evaluation of the above-mentioned curriculum. More research is needed to further inform MAID education in all Canadian residency programs.

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Contributors

All authors contributed to every aspect of this research from design, to data collection and analysis, to writing and revising the manuscript. Each author meets the 4 authorship criteria of the International Committee of Medical Journal Editors.

Competing interests

None declared

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