

Characteristics of Older Adults Accessing Medical Assistance in Dying (MAiD): a Descriptive Study



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ABSTRACT

Background

Medical Assistance in Dying (MAiD) is an end-of-life option for Canadians accounting for 2% of all deaths in Canada in 2019. Adults over 80 years old represent a significant proportion of these deaths, yet little is known about how they compare with their younger counterparts.

Methods

This study retrospectively reviewed our tertiary care institution's MAiD database to compare MAiD recipients <65, 65–80, and >80 years of age. Extracted data included basic demographics, illness characteristics, functional status, social living arrangements/contacts, and outcomes of MAiD assessments.

Results

Of 267 patients assessed for MAiD, 38.2% were over 80. Compared to the younger groups, those over 80 were more likely to be female, to live alone, and to be widowed; however, they did not self-identify as 'socially isolated'. The majority fit into the illness categories of malignancy, cardiopulmonary or neurologic diseases, but those over 80 were more likely to have other more chronic/subacute conditions leading to the MAiD request.

Conclusions

Older adults accessing MAiD are distinct in that they tend to be increasingly frail and without a predominant underlying diagnosis as compared with younger adults, but rather have an accumulation of losses resulting in global functional decline and subsequent loss of autonomy and independence.

Key words: Medical Assistance in Dying, MAiD, assisted dying, older adults

INTRODUCTION

Medical Assistance in Dying (MAiD) has been a legal option for Canadians since June 2016 when Bill C-14 was passed, decriminalizing such assistance. The bill outlined criteria for accessing assistance in dying including:⁽¹⁾

- i) age 18 and older with eligibility for provincial health insurance;
- ii) voluntary request for MAiD and capacity to make medical decisions, and
- iii) presence of a grievous and irremediable condition, itself defined as an advanced illness resulting in intolerable suffering where the individual's natural death is seen as being reasonably foreseeable (noting that this is not related to any specific time frame).

Through to the end of 2019, 13,946 Canadians have received MAiD and, in 2019, MAiD accounted for 2% of all deaths in Canada.⁽²⁾ Several papers have outlined the implementation of MAiD programs in Canada and presented the demographic features of individuals choosing MAiD.^(3,4,5,6) These studies report the median age for MAiD deaths in Canada in the mid-70s, with a relatively even split between sexes,^(3,4,5,6,7,8) findings that are consistent with data from other international jurisdictions that permit medically assisted deaths.^(9,10,11,12) Further, cancer is consistently the primary diagnosis, in Canada accounting for 67.2% of completed MAiD cases,⁽²⁾ comparable to the United States, the Netherlands, Belgium, and Australia.^(9,10,11,12)

While these statistics provide an overview of the population choosing MAiD, little is known regarding differences between younger cohorts and older adults. In Canada in 2019, the majority of MAiD recipients were 65–80 years old (45.9%), but over a third (34.7%) were over the age of 80.⁽²⁾ This paper examines similarities and differences between those under age 65, those aged 65–80, and those over age 80 to better understand the demographic, social, and medical

characteristics of this unique group of patients requesting medically assisted deaths.

METHODS

Study Setting

This study was conducted at Sunnybrook Health Sciences Center (SHSC), a tertiary care academic hospital with a regional cancer centre serving a broad population range in Toronto, Canada. The hospital has a central MAiD coordinator who receives all requests for MAiD assessments and maintains the institutional database. Assessments are available for inpatients and ambulatory patients, and are assigned to assessors/providers whose backgrounds include psychiatry, palliative care, emergency medicine, and internal medicine. MAiD provision is available on the inpatient medical wards or the affiliated inpatient palliative care unit (PCU); patients preferring home provision are accommodated by primary providers on the team or through referral to providers in the patient's home area. Those at home who prefer same day admission to hospital for MAiD are also accommodated through admission to an acute care ward bed on the day of MAiD.

The study was approved by the hospital's Research Ethics Board.

Data Sources

The database includes all patients who have requested an eligibility assessment, either through referral by a member of their circle of care (physician, nurse or social worker generally) or by self-referral. Requests include both informal verbal or written requests, as well as formal completion of a signed and witnessed document. Such requests result in an in-person assessment by one assessor, with subsequent assessments as required. Where patients were not found eligible for MAiD by the first assessor, they are offered an assessment by a different assessor.

The database includes all adults (18 years and older) who made a request for MAiD assessment from July 2016 to March 2020, whether or not they completed a formal written request. Data collected in the ongoing database includes basic demographics, primary diagnosis leading to the MAiD request, and the outcomes of all requests. SHSC chart review expanded the database to include:

- i) other medical comorbidities;
- ii) living situation at the time of MAiD request (alone vs. with significant others);
- iii) presence of key social supports (spouse/partner, children, other family, and/or close friends), including patient-defined social isolation;
- iv) functional status using the Clinical Frailty Scale score at the time of MAiD request; and
- v) palliative care involvement, defined as any palliative care contact in the month preceding the MAiD request (either through our outpatient ambulatory palliative care service, during an admission to the acute care setting or in the inpatient Palliative Care Unit).

To capture data on medical comorbidities, we utilized a modified version of the Deyo-Charlson Comorbidity index (DCCI).⁽¹³⁾ The DCCI assigns a weighted score to a number of chronic medical conditions and uses the sum to predict long-term mortality. We documented the presence of 17 comorbid illnesses encompassed in the DCCI, and calculated an (unweighted) sum total for each patient.

We utilized the expanded nine-point Rockwood Clinical Frailty Scale (CFS)⁽¹⁴⁾ as a measure of functional status, accessing admission notes, clinical progress notes, and occupational therapy/physiotherapy assessments to score each patient. The CFS employs clinical judgment to evaluate specific domains—including physical ability, cognition, and comorbidities—to generate a score predictive of global frailty, ranging from 1 to 9. A score of 1 represents 'very fit', with 8 classified as 'very severely frail' defined as completely dependent and approaching end of life; 9 is a separate category for the 'terminally ill' with a prognosis < 6 months, but who would not otherwise be evidently frail. Recognizing the challenges of retrospectively assigning a CFS value, we collapsed the categories to 1–4, 5–6, 7–8, and 9 to try to minimize error as much as possible.

RESULTS

We assessed 267 patients for MAiD eligibility during the study period (Figure 1). Of these, 102 patients (38.2%) were over the age of 80, with a similar proportion aged 65–79 years old, and roughly one-quarter of patients were under the age of 65.

A total of 229 patients were found eligible for MAiD, of whom 183 went on to receive MAiD. Of those patients who completed MAiD, 68 individuals (37.2%) were over the age of 80. Demographic variables for patients who received MAiD are displayed in Table 1. In patients under 80 years of age, malignancy was the predominant primary diagnosis in over 80% of patients receiving MAiD. In patients 80 years and older, cancer was the primary diagnosis only in half of patients. Cardiopulmonary disease accounted for 20% of primary diagnoses in older patients, neurological illnesses for about 10%, and "Other" illnesses made up 20% (n=13) of primary diagnoses in older adults receiving MAiD. Within this subcategory, 12 patients had subacute or chronic conditions causing global decline, with "Frailty" cited as the primary underlying diagnosis in six patients. Only one patient in the "Other" illness category represented a relatively acute illness.

More than half of patients ≥ 65 years old who received MAiD had a clinical frailty score of 7 or 8, whereas 70% of younger patients who received MAiD had a clinical frailty score between 1 and 6.

The median number of comorbidities was roughly similar across all age categories.

Patients ≥ 80 years of age who received MAiD were more likely to be widowed (60.3%) than their younger counterparts, and more often lived alone (69.1%). Older patients (≥ 65 years) more often identified children as their key support, with a smaller number relying on other family and close friends, as compared to younger patients.

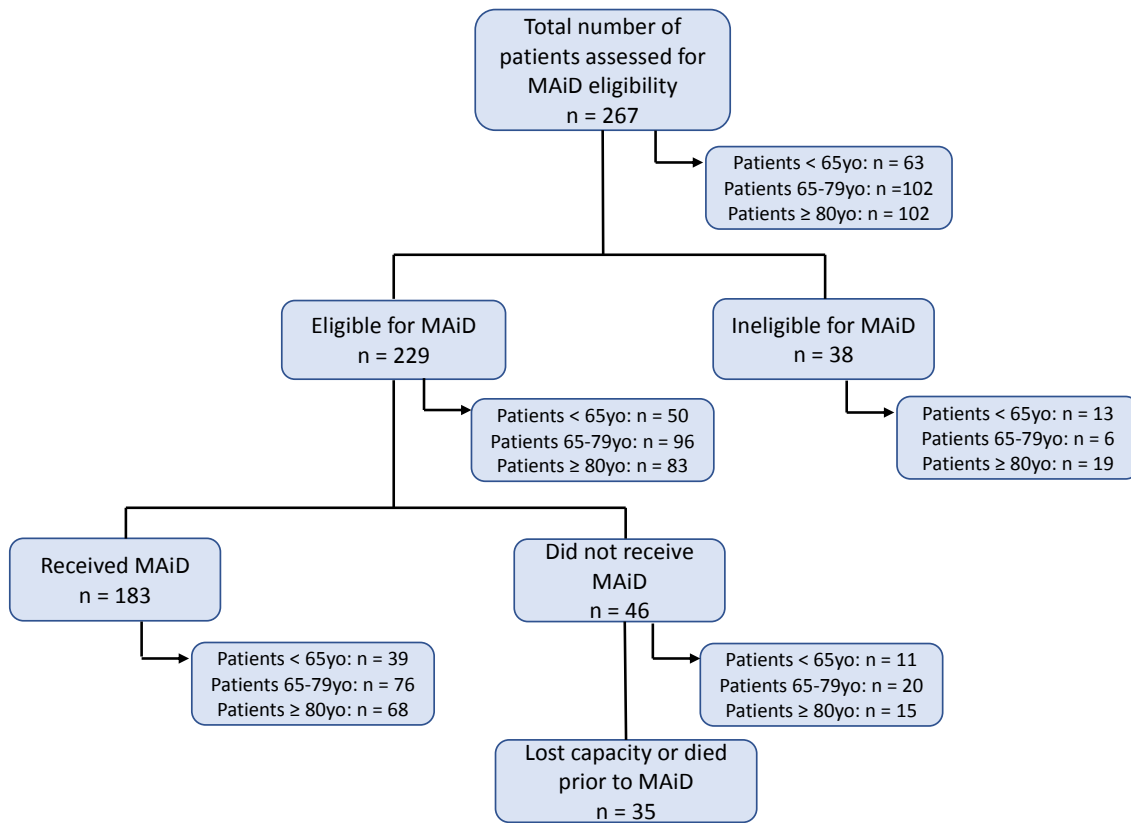


FIGURE 1. Outcomes of all MAiD eligibility assessments

Thirty-eight patients (14.2%) were found ineligible for MAiD (Figure 1). Of the total number of patients ≥ 80 years of age who were assessed for MAiD ($n = 102$), 19 (18.6%) were deemed ineligible. This compared to 6 (5.9%) patients 65–79 years of age who were ineligible, and 13 (20.6%) patients < 65 years of age who were ineligible for MAiD. The majority of individuals over 80 years who were ineligible for MAiD from the outset were deemed so because they lacked decisional capacity (16/19 of ineligible patients). For patients over 80 years of age who were initially found eligible but did not proceed with MAiD, loss of capacity or sudden death were the predominant reasons (13/15), though this occurred at a similar rate to other age groups (Table 2).

DISCUSSION

This study examines important sociodemographic and clinical similarities and differences between older adults requesting MAiD at our institution and their younger counterparts. The demographic trend in Canada is steadily towards an older population, a shift that highlights an urgency for policies that prioritize quality end-of-life care for older adults. Medical assistance in dying is increasingly accepted as an option on the spectrum of end-of-life choices for Canadians. Attaining a more nuanced understanding of the characteristics of older Canadians requesting MAiD will educate providers to optimize care for this subpopulation. We are not aware of any

other studies specifically examining this topic in Canada or other jurisdictions.

The first annual report on medical assistance in dying in Canada⁽²⁾ compiled data on the Canadian MAiD experience from June 2016 to the end of 2019. During this time, patients over the age of 65 accounted for 80.6% of all cases (with the total number of MAiD provisions during the same period numbering 13,946). Of the 5,389 MAiD provisions in 2019 in Canada, 19.4% were for those under 65 years of age, 45.9% for patients aged 65–80, and 34.7% in those aged 81 and over. Our cohort was very similar to the Canada-wide MAiD population as shown in Table 3.

Cancer remains the primary underlying diagnosis in the majority of patients receiving MAiD across multiple jurisdictions in which assisted dying is legal.^(8,9,10) This finding is consistent for older adults receiving MAiD at our institution; however, we observed a higher prevalence of non-malignant diseases in adults ≥ 80 years compared to other age groups. This reflects mortality data from the general Canadian population, for which the leading cause of natural death in older adults is heart disease, followed by malignant neoplasms and then cerebrovascular disease.⁽¹⁵⁾ Most notable in our population of older adults is the significant portion (20%) whose primary diagnosis is not captured by these major disease subgroups. This collection of “other diagnoses” represents those older, frail patients without one single dominant diagnosis, but for whom a constellation of chronic illnesses portends

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TABLE 1.
Characteristics of Patients who Received MAiD by Age Category (N = 183)

Patient Characteristics	Age Category of Patients					
	Patients < 65 Yrs		Patients 65-79 Yrs		Patients ≥ 80 Yrs	
Total, n(%)	39	(21.3)	76	(41.5)	68	(37.2)
Age range in years, (median)	28-64	(57)	65-79	(73)	80-106	(88.5)
Sex, n (%)						
Female	19	(48.7)	33	(43.4)	42	(61.8)
Male	20	(51.3)	43	(56.6)	26	(38.2)
Diagnosis, n (%)						
Cancer	32	(82)	64	(84.2)	37	(54.4)
Cardio/pulmonary	0	(0)	3	(4)	12	(17.7)
Neurological	6	(15.4)	8	(10.5)	6	(8.8)
Other	1	(2.6)	1	(1.3)	13	(19.1)
Clinical Frailty Score, n (%)						
1-4	10	(25.6)	5	(6.6)	3	(4.4)
5-6	18	(46.2)	26	(34.2)	27	(39.7)
7-8	10	(25.6)	41	(53.9)	37	(54.4)
9	1	(2.6)	4	(5.3)	1	(1.5)
Comorbidities, M (SD) ^a	1	(0.51)	1.8	(1.14)	2.07	(1.28)
Palliative Care Contact, n (%)						
Yes	32	(82.1)	66	(86.8)	55	(80.9)
No	7	(17.9)	10	(13.2)	13	(19.1)
Location at time of request, n (%)						
Acute care inpatient	11	(28.2)	24	(31.6)	31	(45.6)
Palliative care unit	9	(23.1)	30	(39.5)	20	(29.4)
Outpatient	19	(48.7)	22	(28.9)	17	(25.0)
Reflection period waived, n (%)	12	(31)	37	(49)	36	(53)
Marital status, n (%)						
Married	21	(53.8)	43	(56.6)	12	(17.6)
Separated/divorced	4	(10.3)	9	(11.8)	4	(5.9)
Widowed	3	(7.7)	12	(15.8)	41	(60.3)
Never married	11	(28.2)	10	(13.2)	7	(10.3)
Unknown	0	(0)	2	(2.6)	4	(5.9)
Children, n (%)						
Yes	24	(61.5)	56	(73.7)	57	(83.8)
No	15	(38.5)	20	(26.3)	11	(16.2)
Key Supports, n (%) ^b						
Spouse/partner	21	(53.8)	42	(55.3)	12	(17.6)
Children	15	(38.5)	46	(60.5)	51	(75)
Other family	18	(46.2)	26	(34.2)	17	(25)
Close friends	9	(23.1)	15	(19.7)	8	(11.8)
Living arrangement, n (%)						
Alone	11	(28.2)	29	(38.2)	47	(69.1)
Not living alone	28	(71.8)	47	(61.8)	21	(30.9)
Social isolation	2	(5.1)	2	(2.6)	2	(2.9)

^aComorbidities: cerebrovascular disease, congestive heart failure, peripheral vascular disease, coronary artery disease or myocardial infarction, peptic ulcer disease, chronic pulmonary disease, connective tissue disease, dementia, diabetes (without end-organ damage), diabetes (with end-organ damage), moderate to severe renal disease, hemiplegia, liver disease (mild), liver disease (moderate/severe), malignancy.

^bPatients may have identified more than one key support group, therefore percentages do not add up to 100 per cent.

TABLE 2.
Cohort Assessed But Did Not Receive MAiD (N = 84)

Reason Patient Did Not Receive MAiD	Patients 18–64 Yrs	Patients 65–79 Yrs	Patients ≥ 80 Yrs
	N = 24	N = 26	N = 34
<i>Never Eligible</i>			
Did not have a ‘grievous or irremediable’ illness, including not meeting criteria for ‘reasonably foreseeable natural death’, n (%)	2 (8.3)	2 (7.7)	3 (8.8)
Did not have capacity at initial assessment, n (%)	8 (33.3)	3 (11.5)	16 (47.1)
Did not complete a formal written request after assessment, n (%)	3 (12.5)	1 (3.8)	0
<i>Eligible But Did Not Receive MAiD</i>			
Initially eligible but lost capacity prior to provision, n (%)	6 (25)	13 (50)	11 (32.4)
Died waiting for MAiD (planned date), n (%)	3 (12.5)	0	2 (5.9)
Other, n (%)	2 (8.3)	7 (27)	2 (5.9)

TABLE 3.
Age Demographics for MAiD Recipients in our Study Population Compared to all Canadian MAiD Recipients in 2019

Age Category (in years)	Study Population (N=183)	Canadian Data for 2019 (N=5,389)
18–64	39 (21.3%)	1047 (19.4%)
65–80 ^a	76 (44.8%)	2473 (45.9%)
≥81 ^a	68 (33.9%)	1869 (34.7%)

^aWe adopted the age categories utilized by First Annual Report on Medical Assistance in Dying in Canada, 2019⁽²⁾ for comparison purposes.

overall physical vulnerability to minor medical stressors. This was particularly evident in our largely acute care population, and is relevant for those caring for older adults who may be transferred to acute care institutions.

We collected data on disease subcategories utilized by the Deyo-Charlson Co-morbidity Index, a validated tool to predict one-year mortality based on a weighted sum of a patient’s comorbidity scores. We did not find a substantial difference between age groups in the absolute number of major comorbidities typically associated with a higher mortality risk; the median number of comorbidities remained very low (~2) between patients 65–79 years and those ≥80 years of age. This re-enforces the finding that illnesses conventionally viewed as carrying higher mortality risk in older adults are not disproportionately represented in this age group. Rather, the older adults receiving MAiD in our study typically experienced a more global decline in function related to less conspicuous, less easily identified conditions.

Although we did not specifically extract data on some illnesses/disabilities more prevalent in older adults (largely due to concerns regarding reliability of documentation in prior charting), anecdotally we noted a significant frequency of health challenges such as recurrent falls, osteoporosis, osteoarthritis, visual and hearing impairment, and generalized frailty

as prominent drivers of older individuals’ advanced state of irreversible decline in capability. Multiple studies across many jurisdictions, including Canada, have highlighted that the predominant reasons cited for choosing MAiD (or other forms of assisted death) relate to the loss of ability to engage in activities bringing meaning to life or enhancing quality of life, or to loss of independence.^(7,9,16,17) As older adults experience loss of critical senses (hearing and vision), lose mobility (arthritis, sequelae of falls), and accumulate more chronic illnesses, such factors may reasonably loom increasingly large for them. This may be reflected by our data documenting a very high median CFS score in the oldest cohort. As noted by Downar:⁽¹⁸⁾ “... frailty can be just as grievous and irremediable as cancer,” leading to both debility and death.

There exist long-standing concerns that older individuals are disproportionately placed at risk by assisted dying legislation, referencing the so-called “slippery slope” argument. This is despite legal safeguards in place to protect vulnerable populations, and population-based evidence demonstrating no evidence of heightened risk to the elderly.⁽¹⁹⁾ In particular, certain groups argue that older adults may request a medically assisted death due to poor access to formalized supports, because of social isolation, or the internalized belief that they are dispensable or less deserving of care in the face of a greater health burden.^(19,20) In our study, patients over age 80 were more likely to be widowed as compared to their younger counterparts, and more likely to be living alone. However, a large proportion of patients over age 80 identified their children as a key social support, with others identifying extended family and close friends as key supports. Indeed, there was not an increased rate of social isolation identified by the patients themselves nor by the care team in the cohort over 80 years old. There exists evidence that, when controlling for other factors, social variables (loneliness, satisfaction with family relationships, and perception of being a burden to others) are no longer significant predictors of older adults’ attitude toward euthanasia.⁽²¹⁾

Limitations and Future Research

This study was completed at a single tertiary care centre and therefore may not be generalizable to other settings (predominately home populations, other hospital settings). In addition, all data were collected from hospital records and aspects of past medical health may have been incompletely or incorrectly recorded in these records. Future prospective trials in multi-centre settings would be valuable to overcome these limitations, and allow more complete data collection regarding contributions to MAiD decisions in older adults, such as mobility issues/falls, hearing/visual loss, psychosocial contributors to distress, and other symptom issues. Further, an understanding of these contributors would allow more tailored responses to the distress experienced to ensure appropriate measures are available to older adults to mitigate the challenges faced.

CONCLUSION

As a result of Canada's increasingly aging population, understanding how older adults may be both similar to—and distinct from—their younger counterparts is important in all areas of health-care provision, which includes the delivery of MAiD. Canadian data show that over a third of all MAiD provisions occurred in those over 80. Our data highlight a number of findings for this group, perhaps the most notable being that a significant proportion were seeking MAiD in the context of global health decline rather than from a sole illness such as cancer or cardiopulmonary disease. With the recurring focus on autonomy and independence cited in multiple studies examining reasons for choosing assisted dying, such losses accumulating over time are relevant to note for those caring for older adults, for whom discussions of goals of care and choices around end-of-life care are crucial.

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CONFLICT OF INTEREST DISCLOSURES

The authors declare that no conflicts of interest exist.

REFERENCES

- Government of Canada. Statutes of Canada 2016. An Act To Amend The Criminal Code And To Make Related Amendments To Other Acts (Medical Assistance In Dying) [S.C. 2016, c.3]. Ottawa, ON: Government of Canada; 2016. Available from: http://laws-lois.justice.gc.ca/eng/AnnualStatutes/2016_3/FullText.html
- Government of Canada. Health Canada. First annual report on medical assistance in dying in Canada 2019. Ottawa, ON: Government of Canada; 2020. Available from: <https://www.canada.ca/content/dam/hc-sc/documents/services/medical-assistance-dying-annual-report-2019/maid-annual-report-eng.pdf>
- Li M, Watt S, Escaf M, *et al.* Medical assistance in dying—implementing a hospital-based program in Canada. *N Engl J Med.* 2017;376(21):2082–88.
- Wales J, Isenberg S, Wegier P, *et al.* Providing medical assistance in dying within a home palliative care program in Toronto, Canada: an observational study of the first year of experience. *J Palliat Med.* 2018;21(11):1573–79.
- Silvius JL, Memon A, Arain M. Medical assistance in dying: Alberta approach and policy analysis. *Can J Aging.* 2019;38(3):397–406.
- Ball IM, Hodge B, Jansen S, *et al.* A Canadian academic hospital's initial MAiD experience: a health-care systems review. *J Palliat Care.* 2019;34(2):78–84.
- Selby D, Bean S, Isenberg-Grzeda E, *et al.* Medical assistance in dying (MAiD): a descriptive study from a Canadian tertiary care hospital. *Am J Hosp Palliat Med.* 2020;37(1):58–64.
- Downar J, Fowler RA, Halko R, *et al.* Early experience with medical assistance in dying in Ontario, Canada: a cohort study. *CMAJ.* 2020;192(8):E173–E181.
- Government of Oregon. Public Health Division. Center for Health Statistics. Oregon Death With Dignity Act 2019: data summary. Salem, OR: Oregon Health Authority; 2020. Available from: www.healthoregon.org/dwd
- Government of The Netherlands. Regional Euthanasia Review Committees. [Annual Report 2019] [in Dutch]. Rotterdam, The Netherlands: Regional Euthanasia Review Committees; 2020. Available from: <https://www.euthanasiecommissie.nl/de-toetsingscommissies/jaarverslagen>
- Dierickx S, Deliens L, Cohen J, *et al.* Euthanasia in Belgium: trends in reported cases between 2003 and 2013. *CMAJ.* 2016;188(16):E407–E414.
- Victoria State Government. Voluntary Assisted Dying Review Board. Report of Operations January – June 2020. Melbourne, Australia: Safer Care Victoria; 2020. Available from: https://www.bettersafercare.vic.gov.au/sites/default/files/2020-08/VADRB_Report%20of%20operations%20August%202020%20FINAL_0.pdf
- Deyo RA, Cherkin DC, Ciol MA. Adapting a clinical comorbidity index for use with ICD-9-CM administrative databases. *J Clin Epidemiol.* 1992;45(6):613–19.
- Rockwood K, Song X, MacKnight C, *et al.* A global clinical measure of fitness and frailty in elderly people. *CMAJ.* 2005;173(5):489–95.
- Statistics Canada. Canadian Vital Statistics—Death database (CVSD) and population estimates [Internet]. Leading causes of death, total population, by age group 2015–2019 [Table 13-10-0394-01]. Ottawa, ON: Statistics Canada. [cited 2020 Dec 20]. Available from: <https://doi.org/10.25318/1310039401-eng>
- Wiebe E, Shaw J, Green S, *et al.* Reasons for requesting medical assistance in dying. *Can Fam Physician.* 2018;64(9):674–79.
- Emanuel IJ, Onwuteaka-Philipsen BD, Unwin JW, *et al.* Attitudes and practices of euthanasia and physician-assisted suicide in the United States, Canada and Europe. *JAMA.* 2016;316(1):79–90.
- Downar, J. “Frailty can be just as grievous and irremediable as cancer” [Healthydebate Opinion Section, 2018 May 9] [Internet]. Toronto, ON: La Ki Shing Knowledge Institute, St. Michael's Hospital; 2018. [cited 2020 Dec 20]. Available from: <https://healthydebate.ca/opinions/frailty-and-maid>
- Battin MP, van der Heide A, Ganzini L, *et al.* Legal physician-assisted dying in Oregon and the Netherlands: evidence con-

cerning the impact on patients in “vulnerable” groups. *J Med Ethics*. 2007;33(10):591–97.

20. Lamers CP, Williams RR. Older people’s discourses about euthanasia and assisted suicide: a Foucauldian exploration. *Gerontologist*. 2016;56(6):1072–81.
21. Castelli Dransart DA, Lapierre S, Erlangsen A, *et al*. A systematic review of older adults’ request for or attitude toward euthanasia or assisted-suicide. *Aging Ment Health*. 2021;25(3):420–30.

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