

CFMS Task Force for Seniors' Care, a Perspective onto the Canadian Medical Curricula

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Briefing Note

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POSITION PAPER

Educating all future physicians to be competent in providing care to older adults, including palliative care is essential in providing better healthcare in Canada. Medical students show strong interest in improving the medical care for the aging population. The National Seniors' Strategy Task Force (NSSTF) of the Canadian Federation of Medical Students (CFMS), encompassing medical students across Canada with the common goal of understanding how medical curricula approaches seniors' care, as well as if there are gaps that deserve acknowledgement and action. Medical students across Canada face medical curricula that aims to best represent an adequate foundation of medical education knowledge, as well as information surrounding vulnerable population, that are often determined by the geography of the school and specific interests of the students. This paper aims to provide information in regards to relevant topics in the context of seniors' care education, as determined by the informal survey that was released to medical students across the country, as well as external literature review that had been conducted.

Introduction/Background

The Canadian population continues to age, with the proportion of individuals older than 65 years of age rising, educating all future physicians to be competent in providing care to older adults, including palliative care is essential in providing better healthcare in Canada. Medical students show strong interest in improving the medical care for the aging population. The National Seniors' Strategy Task Force (NSSTF) of the Canadian Federation of Medical Students (CFMS), encompassing medical students across Canada with the common goal of understanding how medical curricula approaches seniors' care, as well as if there are gaps that deserve acknowledgement and action.

Student Surveys:

The NSSTF released an informal survey to assess medical student perspective and experience with medical education about senior-specific health issues. Informal results of the survey suggested a significant interest in seniors health amongst medical students, with a vast majority of respondents being somewhat or very interested in being involved providing care for seniors.

Education surrounding senior's health in Canadian medical school curricula for pre-clerkship is perceived to be largely delivered through a combination of didactic lectures (86%), student-interest groups (50%), while clinical teaching via 'skills days', electives, selectives, and observerships accounted for only 27% of exposure. It became interesting to do search externally to evaluate the effectiveness of exposure via didactic lecture and hands on exposure, either via real clinical exposure or simulation.

Some clerkship programs include palliative care training programs for third year medical students. Students were given topic goals such as: breaking bad news, talking about death and dying, discussing DNR, exploring end of life care, talking about religious or spiritual values [1]. At the end of this training, students agreed that this type of training helped develop the skills needed for end of life care communication [1]. However, it was variable how much didactic versus hands-on exposure was elicited during this time, as the elective process varied across the schools.

Critical areas for improvement in senior's health, identified within the informal student survey, consisted of palliative care, polypharmacy, awareness of caregiver respite, advanced care planning, and medical assistance in dying (MAID). These topics were based on both pre-clerkship and clerkship consensus. This paper aimed to identify content and provide recommendations to the CFMS membership, to call for better review in supplementing and incorporating these topics within medical education, in light of the growing Canadian geriatric population. Students within each school should be provided opportunity to reflect if their medical curricula equips them with the ability to practice with this population in their future as health care practitioners.

Principles/Stance:

The Canadian Federation of Medical Students task force for National Seniors' Care provide a written framework for the topics identified within the student surveys that were identified as needing improvement. We also aim to provide evidence as to specific areas where hands-on exposure may be more effective than didactic exposure. This is to provide students with the opportunity to compare and reflect with their own medical curricula, to see if there is opportunity for reform within their own realms.

1. *Polypharmacy and Medical Education*

Integrating polypharmacy education into the medical education curriculum is important in the medical student's learning experiences, as older adults experience polypharmacy and may be prescribed inappropriate medications [2]. Furthermore, encouraging interdisciplinary collaboration in the management of polypharmacy can be beneficial for medical trainees. An interprofessional workshop asking medical trainees to complete a medication management worksheet for patients over 70 years of age and on at least eight medications was conducted.

Palliative care was identified as an important topic within undergraduate medical education as per the informal survey. Studies suggest that despite interest in symptom management and communication about end-of-life issues, medical trainees feel that they are underprepared with respect to end of life care and that medical education in this area is lacking (Fitzpatrick et al., 2017; Chiu et al., 2014, Kawaguchi et al., 2017). For example, only 44% of residents in British Columbia have reported to have received over 5 hours of palliative care training (Spicer et al., 2017), and PGY-3 internal medicine students at the University of Toronto reported feeling unprepared when it comes to palliative care (Kawaguchi 2017). Given that nearly every physician will manage a palliative patient in some capacity at some point in their career, these numbers reflect a gap in training that can be remediated with an increased emphasis on palliative care education throughout every medical student's training to optimize competency in this field (Head et al., 2016; Kawaguchi et al., 2017).

Frameworks for palliative care education for undergraduate medical education have been set forth by the Educating Future Physicians in Palliative and End-of-life Care (EFPPEC) project in alignment with the 2015 CanMEDS Framework. This document underscores competencies geared towards undergraduate medical student in the realm of palliative care. Methods including simulation-based critical care can help teach students general skills, breaking bad news, goals of care, and resuscitation (Brock et al., 2018). et al., 2014). This workshop focused on how to review older adults' medication lists for regimen complexity, potentially inappropriate medications, and medications with high risk of adverse events. The updated Beers criteria, Screening Tool for Older Person's Prescriptions (STOPP), Screening Tool to Alert doctors to Right Treatment criteria (START), and the anticholinergic risk scale were discussed as tools for decreasing poly-pharmacy and its associated risks. This study found that the workshop improved a trainees' ability to perform complex medication reviews accurately and led to changes in self-reported prescribing behaviour (Kostas et al., 2014).

Implementing opportunities that allow students to use tools and resources that discuss different medications, their side effects, contraindications and overall efficacies in methods that are interactive may provide a more effective strategy in applying these skills within clinical settings.

2. *Caregivers*

Caregivers are individuals, typically close family members or friends, who act in an informal and unpaid capacity to provide care and support for those experiencing disability, chronic illness, or frailty, and they play an often unheralded but crucial role in the healthcare system. Given the importance of caregivers to the health of patients and the significant burden that caregivers can experience, it is imperative that physicians are able to recognize risk factors for caregiver burden, and perform assessments and interventions to reduce this burden (Adelman et al., 2014).

Caregivers are typically untrained and unprepared when they first take on the role, and often unequipped to handle the emotional toll it can cause, resulting in increased stress, depression, and burnout as well as diminished well-being, self-efficacy, and cognitive function (Meyers and Gray, 2001;

Pinquart and Sörensen, 2003; Allen et al., 2017; Zwar et al., 2018). Although the impact on physical health of caregivers is not as clear or extensive as psychological health, informal caregiving has been linked to muscle pain, skeletal injury, infection, cardiovascular risk, and even mortality (Schulz and Beach, 1999; Pinquart and Sörensen, 2007). Caregiving can also be a significant financial strain for caregivers by forcing them to take time off work and pay for more out-of-pocket expenses (Grunfeld et al., 2004; Longo et al., 2006; Lai, 2012). Estimates have suggested that a quarter of Canadians have previously taken on the role of caregiver, and that one in thirteen have done so in the past year, with a \$26 billion annual cost in unpaid labour (Hollander et al. 2009; Statistics Canada, 2013).

Since some of the burden that caregivers experience is rooted in the stress of having to act as an intermediary between the patient and healthcare providers, appreciating the issues faced by caregivers and improving communication between physicians and caregivers is critical for improved care (Chung et al., 2016; Wittenberg et al., 2017).

3. *Advanced Care Planning:*

Advance care planning (ACP) is the process by which capable individuals make decisions regarding their own future medical care through self-reflection and communication. (Brown et al., 2008; Smith et al., 2006). This process may include assigning a substitute decision maker, discussing “Do Not Resuscitate” preferences, and examining goals, fears, and values surrounding end-of-life care (Smith et al., 2006; “What Is Advance Care Planning?,” n.d.). Unfortunately, American data suggests that over a quarter of patients will be unable to make decisions regarding their healthcare when required, and 47 percent of Canadians have not discussed their wishes with a family member or friend if they were to become ill and unable to communicate (Silveira, Kim, & Langa, 2010; Teixeira et al., 2015). This often leads to unnecessary suffering for both the patient and their loved ones, as substitute decision makers may not fully understand the patient’s values. ACP allows for individuals to maintain their autonomy in circumstances where they may be incapable of sharing their wishes (e.g. cognitive impairment), and has been shown to positively impact the quality of end-of-life care, alleviates suffering, and increases family satisfaction (Brinkman-Stoppelenburg, Rietjens, & van der Heide, 2014; Brown et al., 2008; Detering, Hancock, Reade, & Silvester, 2010; Scholten et al. 2018; “What Is Advance Care Planning?,” n.d.).

Despite the vital role ACP plays in healthcare, medical learners frequently report limited competency in end-of-life care (Gillett, O’Neill, & Bloomfield, 2016; Sullivan, Lakoma, & Block, 2003). Several qualitative American studies have shown that senior medical students feel unprepared to initiate and discuss end-of-life issues with patients (Gibbins, McCoubrie, & Forbes, 2011; Gillett et al., 2016). Similarly, medical school curricula are often reported to be inadequate in preparing students to traverse this complex topic, as teaching on palliative and end-of-life care is highly variable across and within medical schools (Gibbins et al., 2011; Horowitz, Gramling, & Quill, 2014; Sullivan et al., 2003). Accordingly, the lack of explicit and practical training on end-of-life care continues to translate into residency (Allen et al., 2015; Fraser, Kutner, & Pfeifer, 2001). Given the low rates of ACP conversations between patients and healthcare practitioners even among terminally ill patients, interventions that are able to improve completion of advanced directives are crucial as our population continues to age (Temel et al., 2010).

A research study designed a curriculum for 223 third-year medical students comprised of independent study materials, a live lecture, an in-home interview with a senior “trained patient”, and a debrief session. The study showed a significant improvement in confidence via a Likert scale questionnaire on introducing the topic of end-of-life care, assessing patient values, and explaining core ACP concepts (Nussbaum et al., 2019). One randomized controlled trial on 133 second-year medical students compared a computer-based decision aid (*Making Your Wishes Known: Planning Your Medical Future*) to

an advance care planning packet to facilitate an end-of-life discussion and help a patient complete an advance directive. Students used this computer program to walk through a patient's preferences and priorities in order to develop an advance directive document. In comparison to the standard group, the intervention group showed increased performance on knowledge tests, greater confidence in discussing end-of-life care, and higher patient satisfaction (Green & Levi, 2011). Especially since studies have reported that patients often believe that a physician will initiate an ACP conversation when appropriate, these interventions are promising methods to encourage early and comprehensive discussions in clinical practice (Emmanuel et al. 1991).

While these studies do not necessarily address the systemic barriers that preclude ACP completion (i.e. physician time constraints, patient and family discomfort), they represent valuable options to improve student discomfort towards ACP through medical training (Brown et al., 2008).

4. Medical Assistance in Dying (MAID)

Medical Assistance in Dying was legalized in Canada following a landmark ruling of the Supreme Court and the amendments to the Criminal Code with the passage of Bill C-14 (Government of Canada, 2016). As of June 2016, physicians and nurse practitioners (in certain provinces) can legally provide MAID to eligible Canadians without violating the Criminal Code. Patients who voluntarily request MAID must have a 'grievous and irremediable medical condition' to be considered eligible (Government of Canada, 2016).

Since the enactment of MAID, there have been a total of 6,749 assisted deaths (Health Canada, 2019). The average age of the patients was 72 years old, with the majority of patients being between the ages of 56 and 90, with the most frequently reported medical condition being cancer (Health Canada, 2017). As the number of Canadians partaking in MAID continues to rise (Health Canada, 2018), it is apparent that medical students, residents and physicians must become familiar with the details of the legal and ethical considerations, as well as the clinical and practical aspects of MAID. The College of Family Physicians recently published an article emphasizing that all family medicine physicians and residents must be able to discuss end-of-life care and medical assistance in dying with their patients. Providing patients with all the necessary information can relieve part of their anxiety surrounding treatments and death (Wiebe, Green & Schiff, 2018). CFP recommends that residents be able to witness an assessment and even provide MAID if comfortable (Wiebe, Green & Schiff, 2018).

Medical students should become familiar with MAID during their medical training so that as residents they will be able to have these important conversations with patients. In the United States, 1455 medical students responded to a telephone survey on end-of-life care. Only 25% of medical students have been explicitly taught how to respond to a patient's request for physician-assisted-suicide (Sullivan, Lakoma & Block, 2003).

Implications for Policy Reform:

It is well known that, advancement in seniors care in Canada requires strong leadership at the federal level[MOU1] to address the needs of our aging citizens, as more and more seniors lack the means to be their own health advocates, a key CanMEDS pillar (Sherbino et al., 2015).

On behalf of Canada's aging population, we the Canadian Federation of Medical Students [MOU4] look to the federal government to provide guidance and leadership in the form of improved funding from Canada Health Transfers with designations for home, community and palliative care in order to reduce costly acute care resources. Currently close to three-quarters of end-of-life costs are for acute care

services, averaging \$25,000 per patient, in the form of lost caregiver wages, healthcare system costs, third-party insurer expenses (Hodgson 2012). An estimated \$7,000-8,000 can be saved per patient with appropriate hospital-based palliative care compared to care provided in an acute setting (Siciliani 2013).

Additionally, it is our hope that a greater shift in our healthcare system toward improved home and community care services will not only improve patient satisfaction but also allow for greater alliances between allied health professionals, thus fostering interprofessional collaboration, another key pillar of medical education (Richardson et al., 2015).

Conclusion:

Medical students across Canada face medical curricula that aims to best represent an adequate foundation of medical education knowledge, as well as information surrounding vulnerable population, that are often determined by the geography of the school and specific interests of the students. This paper aims to provide information in regards to relevant topics in the context of seniors' care education, as determined by the informal survey that was released to medical students across the country, as well as external literature review that had been conducted.

Recommendations

The CFMS National Seniors' Task Force proposes the following recommendations for Canadian medical schools to support and enhance the care of older adults

1. Enhancing Medical Education surrounding the following topics, through the following suggestions:
 - a. Palliative Care.
 - i. To incorporate a formalized OSCE station on palliative care during undergraduate medical education.
 - ii. To foster the ideal that palliative care is a principle provided by all physicians in the medical profession (Downar 2018).
 - iii. Effective strategies to improve student exposure to palliative care include small group learning incorporating standardized patients in pre-clerkship and ward rounds, case-based teaching, and clinical observations in clerkship (Educating Future Physicians in Palliative Care and End of Life Care, 2018; Downar 2018).
 - b. Advanced Care Planning (ACP)
 - i. Incorporate multi-modal learning strategies to develop and strengthen skills in ACP discussions, that encompasses a patient's health status, their substitute decision maker, and a framework to guide the discussions.
 - ii. Increase patient awareness of ACP resources. These resources can include *Speak Up!*, part of the *Advance Care Planning Campaign* (www.advancecareplanning.ca), or their provincial guidelines (www.dyingwithdignity.ca), to encourage best practices for medical students and help individuals learn how to make a plan.
 - c. Polypharmacy
 - i. Provide opportunity to review medication lists through lens that identify multiple conditions and patient priorities.
 - ii. Include interprofessional medication review training and bedside rounds on the topic of polypharmacy in complex older adult patients. (Include education on resources such as the Beers criteria, Scretting Tool for Older Person's Prescriptions, Screening Tool to Alert doctors to Right treatment criteria, and anticholinergic risk scale)
 - d. MAID
 - i. Provide opportunity (i.e. more didactic sessions, group-based discussions) for medical students to become familiar with the legal and ethical considerations of MAID.
 - ii. Allow learners to observe end-of-life discussions with patients, as per appropriate consent retrieval from relevant parties.
 - iii. Create formalized testing (i.e. via OSCE, mock OSCE, examinations) to challenge knowledge acquired by medical students of MAID.

2. Increase awareness about what constitutes a caregiver in addition to better supporting caregivers in the unique challenges they encounter
 - a. Promote a better understanding of the role and expectations that caregivers face and create opportunities for medical students to recognize and manage caregiver burnout. Specifically:
 - b. Increase awareness among medical students about what constitutes a caregiver and recognize some of the challenges they face using approaches such as traditional lecture-based learning, drama-based educational programs, and service-learning programs
 - c. Train students to identify risk factors for caregiver burden and become more effective in providing information and emotional support for caregivers
 - d. Be aware of community care services that will allow for improved home care.
 - e. Encourage interprofessional collaboration with greater partnerships with allied health services.
3. Review federal and provincial policy towards the needs for aging citizens, and identify areas for improvement locally within our own communities.
 - a. Recognize and address opportunities to implement local and regional advocacy campaigns or motions for improved funding for home, community and palliative care.
 - b. Provide better mental, financial, and community resources for caregivers, while also raising education on signs of caregiver burnout.
 - c. Bettering comprehension towards the aging process, and removing stigma on the autonomy and frailty of the aging population.
 - d. Increasing advocacy within long-term care facilities and residential homes towards enhancing quality of life for the aging population.
 - i. This may include bettering counseling, OTC, and physiotherapy services.

References

Adelman, R. D., Tmanova, L. L., Delgado, D., Dion, S., & Lachs, M. S. (2014). Caregiver Burden. *JAMA*, 311(10), 1052.

Allen, A. P., Curran, E. A., Duggan, Á., Cryan, J. F., Chorcóráin, A. N., Dinan, T. G., ... Clarke, G. (2017, February 1). A systematic review of the psychobiological burden of informal caregiving for patients with dementia: Focus on cognitive and biological markers of chronic stress. *Neuroscience and Biobehavioral Reviews*. Pergamon.

Allen, S. L., Davis, K. S., Rousseau, P. C., Iverson, P. J., Mauldin, P. D., & Moran, W. P. (2015). Advanced Care Directives: Overcoming the Obstacles. *Journal of Graduate Medical Education*, 7(1), 91–94. <https://doi.org/10.4300/jgme-d-14-00145.1>

Brinkman-Stoppelenburg, A., Rietjens, J. A., & van der Heide, A. (2014). The effects of advance care planning on end-of-life care: A systematic review. *Palliative Medicine*, 28(8), 1000–1025. <https://doi.org/10.1177/0269216314526272>

Brock, K.E., Tracewski, M., Allen, K.A., Klick, J., Petrillo, T., Hebbar K.B. (2019). Simulation-based palliative care communication for pediatric critical care fellows. *American Journal of Hospice & Palliative Medicine*

Brotman, S. L., & Yaffe, M. J. (1994). Are physicians meeting the needs of family caregivers of the frail elderly? *Canadian Family Physician Medecin de Famille Canadien*, 40(10), 679–685.

Brown, P., Enns, B., Wasylenko, E., Barwich, D., Grant, S., Hoffman, C., ... Dunbrack, J. (2008). Implementation Guide to Advance Care Planning in Canada, (March), 1–48. Retrieved from https://www.canada.ca/content/dam/hc-sc/migration/hc-sc/hcs-sss/alt_formats/pdf/pubs/palliat/2008-acp-guide-pps/acp-guide-pps-eng.pdf

Cameron, J. I., Herridge, M. S., Tansey, C. M., McAndrews, M. P., & Cheung, A. M. (2006). Well-being in informal caregivers of survivors of acute respiratory distress syndrome. *Critical Care Medicine*, 34(1), 81–86.

Canadian Society of Palliative Care Physicians. Educating future physicians in palliative and end-of-life care (EFPPEC): palliative care competencies for undergraduate medical students in Canada. 2018. <https://www.cspcp.ca/information/efppec-competencies/>

Chiu, N., Lutz, S., Lao, N., Pulenzas, N., Chiu L., McDonald, R., ... Chow, E. (2014). Inadequacy of palliative training in the medical school curriculum. *Journal of Cancer Education* 30, 749-753.

Chung, H. O., Oczkowski, S. J. W., Hanvey, L., Mbuagbaw, L., & You, J. J. (2016). Educational interventions to train healthcare professionals in end-of-life communication: A systematic review and meta-analysis. *BMC Medical Education*, 16(1), 131.

Competency in Palliative Care: Development and Evaluation of a New Objective Structured Clinical Examination Station. *J Palliat Med.* 19(7). Available at <https://doi.org/10.1089/jpm.2015.0462>

DeCoste-Lopez, J., Madhok, J., & Harman, S. (2015). Curricular Innovations for Medical Students in Palliative and End-of-Life Care: A Systematic Review and Assessment of Study Quality. *Journal of Palliative Medicine*, 18(4), 338–349. <https://doi.org/10.1089/jpm.2014.0270>

Detering, K. M., Hancock, A. D., Reade, M. C., & Silvester, W. (2010). The impact of advance care planning on end of life care in elderly patients: randomised controlled trial. *BMJ (Clinical Research Ed.)*, 340, c1345. <https://doi.org/10.1136/bmj.c1345>

Dhillon, K., Jerome, D., Teeluck, R., & Yu, Y. (2018). Advance care planning in family medicine training. *Canadian Family Physician*, 64(5), 394–396.

Dornan T, Ashcroft D, Heathfield H, Lewis P, Miles J, Taylor D, Tully M, Wass V. An in depth investigation into causes of prescribing errors by foundation trainees in relation to their medical education. EQUIP study. London: General Medical Council. 2009 Dec:1-215.

Downar, J. (2018). Resources for educating, training, and mentoring all physicians providing palliative care. *Journal of palliative medicine*, 21(S1), S-57.

Earle, C. C., ... Glossop, R. (2004). Family caregiver burden: results of a longitudinal study of breast cancer patients and their principal caregivers, 8(12).

Educating Future Physicians in Palliative Care and End of Life Care. (2018). *Palliative Care Competencies for Undergraduate Medical Students in Canada*. Canada

Ellman MS, Putnam A, Green M, Pfeiffer C, Bia M. (2016). Demonstrating Medical Student

Emanuel, Linda L., Michael J. Barry, John D. Stoeckle, Lucy M. Ettelson, and Ezekiel J. Emanuel. "Advance Directives for Medical Care — A Case for Greater Use." *New England Journal of Medicine* 324, no. 13 (March 28, 1991): 889–95. <https://doi.org/10.1056/NEJM199103283241305>.

Fitzpatrick, D., Heah, R., Patten, S., & Ward, H. (2017). Palliative care in undergraduate medical education – How far have we come? *American Journal of Hospice & Palliative Medicine* 34 (8), 762-773.

Fraser, H. C., Kutner, J. S., & Pfeifer, M. P. (2001). Senior Medical Students' Perceptions of the Adequacy of Education on End-of-Life Issues. *Journal of Palliative Medicine*, 4(3), 337–343. <https://doi.org/10.1089/109662101753123959>

Frist WH, Presley MK. Training the next generation of doctors in palliative care is the key to the new era of value-based care. *Acad Med.* 2015;90(3):268-271.

Gibbins, J., McCoubrie, R., & Forbes, K. (2011). Why are newly qualified doctors unprepared to care for patients at the end of life? *Medical Education*, 45(4), 389–399. <https://doi.org/10.1111/j.1365-2923.2010.03873.x>

Gillett, K., O'Neill, B., & Bloomfield, J. G. (2016). Factors influencing the development of end-of-life communication skills: A focus group study of nursing and medical students. *Nurse Education Today*, 36, 395–400. <https://doi.org/10.1016/J.NEDT.2015.10.015>

Government of Canada. An Act to amend the Criminal Code and to make related amendments to other Acts (medical assistance in dying), (2016). Retrieved from Justice Laws Website https://laws-lois.justice.gc.ca/eng/annualstatutes/2016_3/fulltext.html

Green, M. J., & Levi, B. H. (2011). Teaching Advance Care Planning to Medical Students with a Computer-Based Decision Aid. *J Cancer Educ.*, 26(1), 82–91. <https://doi.org/10.1007/s13187-010-0146-2>. Teaching

Grunfeld, E., Coyle, D., Whelan, T., Clinch, J., Reyno, L., Haley, W. E., Allen, J. Y., Grant, J. S., Clay, O. J., Perkins, M., & Roth, D. L. (2009). Problems and Benefits Reported by Stroke Family Caregivers. *Stroke*, 40(6), 2129–2133.

Head BA, Schapmire TJ, Earnshaw L, Chenault J, Pfeifer M, Sawning S, et al. Improving medical graduates' training in palliative care: advancing education and practice. *Adv Med Educ Pract.* 2016;7:99-113.

Head, BA., Schapmire, TJ., Earnshaw, L., Chenault, J., Pfeifer, M., Sawning, S., & Shaw, M. A. (2016). Improving medical graduates' training in palliative care: advancing education and practice. *Advances in medical education and practice*, 7, 99.

Health Canada. (2017). 2nd Interim Report on Medical Assistance in Dying in Canada. Retrieved from Government of Canada website <https://www.canada.ca/en/health-canada/services/publications/health-system-services/medical-assistance-dying-interim-report-sep-2017.html>

Health Canada. (2018). Third Interim Report on Medical Assistance in Dying in Canada. Retrieved from Government of Canada website <https://www.canada.ca/en/health-canada/services/publications/health-system-services/medical-assistance-dying-interim-report-june-2018.html>

Health Canada. (2019). Fourth Interim Report on Medical Assistance in Dying in Canada. Retrieved from Government of Canada website <https://www.canada.ca/en/health-canada/services/publications/health-system-services/medical-assistance-dying-interim-report-april-2019.html>

Hollander, M., Liu, G., & Chappell, N. (2013). Who Cares and How Much? The Imputed Economic Contribution to the Canadian Healthcare System of Middle-Aged and Older Unpaid Caregivers Providing Care to The Elderly. *Healthcare Quarterly*, 12(2), 42–49.

Horowitz, R., Gramling, R., & Quill, T. (2014). Palliative care education in US medical schools. *Medical Education*, 48(1), 59–66. <https://doi.org/10.1111/medu.12292>

Jefferson, A. L., Cantwell, N. G., Byerly, L. K., & Morhardt, D. (2012). Medical student education program in Alzheimers disease: The PAIRS Program. *BMC Medical Education*, 12(1), 80.

Kamath, P., Zaw, K., & Zuilen, R. van. (2018). Discussing Advance Directives with Older Adults: A Competency-Based Medical Student Curriculum. *American Geriatrics Society*, 245(AGS 2018 Annual Meeting), S304.

Kawaguchi, S., Mirza, R., Nissim, R., & Ridley, J. (2017). Internal medicine residents' beliefs, attitudes, and experiences relating to palliative care: A qualitative study. *American Journal of Hospice & Palliative Medicine* 34 (4), 366-372.

Kerr, A. M., Biechler, M., Kachmar, U., Palocko, B., & Shaub, T. (2018). Confessions of a Reluctant Caregiver Palliative Educational Program: Using Readers' Theater to Teach End-of-Life Communication in Undergraduate Medical Education. *Health Communication*.

Kostas T, Zimmerman K, Salow M, Simone M, Whitmire N, Rudolph JL, McMahon GT. Improving medication management competency of clinical trainees in geriatrics. *Journal of the American Geriatrics Society*. 2014 Aug;62(8):1568-74.

Lai, D. W. L. (2012). Effect of financial costs on caregiving burden of family caregivers of older adults. *SAGE Open*, 2(4), 1–14.

Liaison Committee on Medical Education. (2008). Functions and structure of a medical school: Standards for accreditation of medical education programs leading to the MD degree. *Medical Education*, (June), 1–26.

Longo, C. J., Fitch, M., Deber, R. B., & Williams, A. P. (2006). Financial and family burden associated with cancer treatment in Ontario, Canada. *Supportive Care in Cancer*, 14(11), 1077–1085.

Lum, H. D., Dukes, J., Church, S., Abbott, J., & Youngwerth, J. M. (2018). Teaching Medical Students About "The Conversation": An Interactive Value-Based Advance Care Planning Session. *American Journal of Hospice and Palliative Medicine*, 35(2), 324–329. <https://doi.org/10.1177/1049909117696245>

Mangin D, Bahat G, Golomb BA, Mallery LH, Moorhouse P, Onder G, Petrovic M, Garfinkel D. International Group for Reducing Inappropriate Medication Use & Polypharmacy (IGRIMUP): position statement and 10 recommendations for action. *Drugs & aging*. 2018 Jul 1;35(7):575-87.

Medina-Walpole, A., Clark, N. S., Heppard, B., Dannefer, E., Hall, W., & McCann, R. (2004). A user's guide to enhancing geriatrics in an undergraduate medical school curriculum: the ten-step model to winning the "geriatric game". *Journal of the American Geriatrics Society*, 52(5), 814–821.

Meyers, J. L., & Gray, L. N. (2001). The relationships between family primary caregiver characteristics and satisfaction with hospice care, quality of life, and burden. *Oncology Nursing Forum*, 28(1), 73–82.

Navaie-Waliser M, Feldman PH, Gould DA, Levine C, Kuerbis AN, & Donelan K. (2002). When the caregiver needs care: The plight of vulnerable caregivers. *American Journal of Public Health*, 92(3), 409–413.

Nussbaum, S. E., Oyola, S., Egan, M., Baron, A., Wackman, S., Williams, S., ... Levine, S. (2019). Incorporating Older Adults as “Trained Patients” to Teach Advance Care Planning to Third-Year Medical Students. *The American Journal of Hospice & Palliative Care*, 1049909119836394. <https://doi.org/10.1177/1049909119836394>

Pinquart, M., & Sörensen, S. (2003). Associations of caregiver stressors and uplifts with subjective well-being and depressive mood: A meta-analytic comparison. *Aging and Mental Health*, 8(5), 438–449.

Pinquart, M., & Sörensen, S. (2007). Correlates of physical health of informal caregivers: A meta-analysis. *Journals of Gerontology - Series B Psychological Sciences and Social Sciences*. Narnia.

Scholten, Guda, Sofie Bourguignon, Anthony Delanote, Bieke Vermeulen, Geert Van Boxem, and Birgitte Schoenmakers. “Advance Directive: Does the GP Know and Address What the Patient Wants? Advance Directive in Primary Care.” *BMC Medical Ethics* 19 (June 11, 2018). <https://doi.org/10.1186/s12910-018-0305-2>.

Schulz, R., & Beach, S. R. (1999). Caregiving as a risk factor for mortality: The caregiver health effects study. *Journal of the American Medical Association*, 282(23), 2215–2219.

Silveira, M. J., Kim, S. Y. H., & Langa, K. M. (2010). Advance Directives and Outcomes of Surrogate Decision Making before Death. *New England Journal of Medicine*, 362(13), 1211–1218. <https://doi.org/10.1056/NEJMsa0907901>

Smith, A., Ries, A., Zhang, B., Tulskey, J., Prigerson, H., & Block, S. (2006). Resident approaches to advance care planning on the day of hospital admission. *Archives of Internal Medicine*, 166(15), 1597–1602.

Spicer, D., Paul, S., Tang, T., Chen, C., & Chase, J. (2017). Survey evaluations of British Columbia residents’ education and attitudes regarding palliative care and physician assisted death. *Canadian Medical Education Journal* 8 (1), e6-e21.

Sullivan, A. M., Lakoma, M. D., & Block, S. D. (2003). The status of medical education in end-of-life care. *Journal of General Internal Medicine*, 18(9), 685–695. <https://doi.org/10.1046/j.1525-1497.2003.21215.x>

Sullivan, A. M., Lakoma, M. D., & Block, S. D. (2003). The status of medical education in end-of-life care. *Journal of General Internal Medicine*, 18(9), 685–695.

Tarlow, B. J., Wisniewski, S. R., Belle, S. H., Rubert, M., Ory, M. G., & Gallagher-Thompson, D. (2004). Positive aspects of caregiving: Contributions of the REACH project to the development of new measures for Alzheimer's caregiving. *Research on Aging*, 26(4), 429–453.

Teixeira, A. A., Hanvey, L., Tayler, C., Barwich, D., Baxter, S., Heyland, D. K., & Canadian Researchers at End of Life Network (CARENET). (2015). What do Canadians think of advanced care planning? Findings from an online opinion poll. *BMJ Supportive & Palliative Care*, 5(1), 40–47.
<https://doi.org/10.1136/bmjspcare-2013-000473>

Temel, J. S., Greer, J. A., Admane, S., Solis, J., Cashavelly, B. J., Doherty, S., ... Pirl, W. F. (2010). Code Status Documentation in the Outpatient Electronic Medical Records of Patients with Metastatic Cancer. *Journal of General Internal Medicine*, 25(2), 150–153. <https://doi.org/10.1007/s11606-009-1161-z>

Van Scoy, L. J., Green, M. J., & Volpe, R. (2019). Evaluating an Advance Care Planning Curriculum: a Lecture, a Game, a Patient, and an Essay. *Medical Science Educator*. <https://doi.org/10.1007/s40670-019-00713-5>

What Is Advance Care Planning? (n.d.). Retrieved May 6, 2019, from <http://www.advancecareplanning.ca/what-is-advance-care-planning/>

Wiebe, E., Green, S., & Schiff, B. (2018). Teaching residents about medical assistance in dying. *Canadian Family Physician*, 64(4), 315-316.

Wittenberg, E., Borneman, T., Koczywas, M., Del Ferraro, C., & Ferrell, B. (2017). Cancer Communication and Family Caregiver Quality of Life. *Behavioral Sciences*, 7(4), 12.

Yaffe, M. J., & Jacobs, B. J. (2008). Education about family caregiving: advocating family physician involvement. *Canadian Family Physician Medecin de Famille Canadien*, 54(10), 1359–1360, 1364–1365.

Zwar, L., König, H.-H., & Hajek, A. (2018). Consequences of different types of informal caregiving for mental, self-rated, and physical health: longitudinal findings from the German Ageing Survey. *Quality of Life Research*, 27(10), 2667–2679.