



The Canadian Society of Palliative Care Physicians Staffing Model for Palliative Care Programs

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1. Introduction

Why do we need a staffing model?

The Canadian Society of Palliative Care Physicians (CSPCP) is often asked to recommend how many palliative care specialists are needed to implement and support an integrated palliative care program. This information would allow health service decision makers and educational institutions to plan resources accordingly to manage the needs of their communities.

The CSPCP is well positioned to answer this question as many of its members are Directors of palliative care programs and have been responsible for creating and overseeing such pioneering work over the past few decades.

Calculating staffing needs for specialist palliative care services is complex, and there is little published evidence to suggest best practice. Staffing needs are often dependent on factors such as patient demographics, access to primary care, competency levels, models of care, and geography, to name a few.

Recognizing these challenges, the CSPCP has developed a model based on a review of international literature, expert opinion from Canadian palliative care medical directors and feedback from key stakeholder groups.

This proposed model is intended as a starting point.

Once the model is in place in communities across Canada, programs will need to apply and adapt it based on their needs and experiences. In addition, research will be required to evaluate it, with further adjustments made as warranted.

Definition and model of palliative care

The World Health Organization defines palliative care as “an approach to care that uses a team approach to address the needs of patients and their families, including bereavement counselling, if indicated”.¹

Palliative care is a philosophy of care best delivered by an interprofessional team. Therefore it is essential that any model incorporates other health care professionals. In this model, nurses, physicians and social workers have been included. Future models will ideally include other specialist palliative care team members including volunteers, pharmacists, spiritual care providers, program managers, administrative assistants and others. These team members should be added when possible, during the development of the specialist team.

In a palliative approach to care, as described in *The Way Forward*², the role of primary care is central³. In order to facilitate care for all patients throughout the many transitions, it is recommended that core competencies and understanding of a palliative approach to care be developed in all practice settings for all disciplines. Specialist palliative care teams provide education and mentoring with the ultimate goal being that both formal and informal care providers deliver integrated palliative care.² A collaborative approach is needed between primary care (see reference 3 below) and all sectors and disciplines.

2. Foundation of the Model

This paper describes a model and formula for calculating palliative care specialist team staffing needs.

The model theorizes as a standard, a specialist palliative care team that provides care in an advisory-consultant-educational-coaching role and shared care with primary care clinicians. (See reference 3.)

The model embraces a team approach to care and recognizes that the numbers of palliative care physicians, nurses and social workers are all interdependent.

The model supports the philosophy that specialist palliative care teams need to be involved in both clinical and non-clinical domains:

¹ WHO Definition of Palliative Care. <http://www.who.int/cancer/palliative/definition/en/>

² Canadian Hospice Palliative Care Association, *The Way Forward National Framework: A roadmap for an integrated palliative approach to care*, The Way Forward initiative, March 2015.

³Definition of “primary care”: Primary care practitioners can include family physicians, medical specialists (e.g., oncologists, internists, geriatricians, etc.), nurse practitioners, nurses from a variety of settings (home care, ambulatory care, residential care, etc.), social workers, pharmacists, volunteers, spiritual care workers, physiotherapists, occupational therapists, speech-language pathologists, etc.

1. Clinical Care responsibilities
 - a. Direct Patient Care – including consultation, shared care or Most Responsible Physician (MRP) care based on patient need.
2. Non-Clinical responsibilities
 - a. Education – including direct teaching of learners, continuing education of other providers and the public, and mentorship of colleagues.
 - b. Administration – including developing metrics to measure outcomes, quality improvement measures and processes, and development of tools, standards, policies, and programs.
 - c. Research – scholarly work to contribute to the larger body of knowledge.

This model focuses on care for adults. A similar process could be used to develop a staffing model for pediatric palliative care.

3. Assumptions Underlying the Model

1. **The staffing numbers are based on need.** They are grounded on a palliative approach to care, with early identification of patients who would benefit from this approach using tools such as the surprise question – “Would you be surprised if the patient died within the next 12 months?” This is a result of studies indicating that there are maximum benefits both clinically and financially in accessing a palliative approach to care early.^{4 5 6}
2. **Key to the model is to start where program currently functions and grow the program based on referrals,** while incorporating in the rationale for the staffing ratio an integrated team approach. Therefore, the model provides a mechanism to plan human resources based on increasing referrals as a program is initiated and grows.
3. **The model of care presented in this paper is intended for a needs/population-based approach,** not for a time-based approach, and growth is based on referrals. Using annual deaths, this model provides

⁴ Zimmermann, C, Swami, N, Krzyanowska, M, Hannon, B, Leighl, N, Oza, A, Moore, M, Rydall, A, Rodin, G, Tannock, I, Donner, A, Lo, C. Early palliative care for patients with advanced cancer: a cluster randomized-controlled trial. The Lancet 2014;(13)62416-2. <https://www.ncbi.nlm.nih.gov/pubmed/24559581>

⁵ Blackhall, J, Read, P, Stukenborg, G, Dillon, P, Barclay, J, Romano, A, Harrison, J. CARE track for advanced cancer: impact and timing of an outpatient palliative care clinic. J Pall Med 2016;19(1)57-63. <https://www.ncbi.nlm.nih.gov/pubmed/26624851>

⁶ Hui, D, Kim, SH, Roquemore J, Dev, R, Chisholm, G, Bruera, E. Impact of timing and setting of palliative care referral on quality of end of life care in cancer patients. Cancer 2014;1743-1749. <https://www.ncbi.nlm.nih.gov/pubmed/24967463>.

programs with an estimate of the potential staffing needs for a fully developed program. Calculations are based on annual deaths for the region and not just population, as they are not synonymous.⁷

4. Primary care practitioners (see reference 3) with core competencies in palliative care, and with access to specialist palliative care teams, should manage most patients and families.

Although core competencies have been developed for most health care professionals, they have not been fully integrated into professional schools. This leaves practitioners feeling ill prepared to deal with patients with palliative care needs.⁸

5. The specialist palliative care team should have clear referral and discharge criteria. Communication and information must be easily shared in a responsible and timely manner.

6. The specialist palliative care team needs to consist of at least the following team members, with the following recommended credentials:

- **Palliative care physician**, defined as a consultant with a minimum of a CCFP (PC)/CAC or Royal College Subspecialty designation FRCP(PM).
- **Palliative care resource nurse (RN)** with advanced training and CNA Palliative Care Certification – CHPCN(C) ®.⁹ (See Appendix 1 for a full description of the definitions and nursing roles in palliative care.)
- **Social Workers with a Masters in Social Work**, and when advanced palliative care credentials are developed, meet this standard.
- Note: This model does not address the role of Advance Practice Nurses in palliative care, as they may only be available in certain large centers. Where they are available, it is recommended that they have at minimum a CNA Palliative Care Certification – CHPCN(C) ® and experience in the field of palliative care.
- Note: This model does not specifically address the role of Nurse Practitioners in palliative care, but their roles can be developed and identified in some programs across the country. It is recommended that they have at minimum a CNA Palliative Care Certification – CHPCN(C) ® and experience in the field of palliative care until credentials for palliative care Nurse Practitioners are established.

⁷ Murtagh FE1, Bausewein C, Verne J, Groeneveld EI, Kaloki YE, Higginson IJ. How many people need palliative care? A study developing and comparing methods for population-based estimates. *Palliat Med.* 2014 Jan;28(1):49-58. doi: 10.1177/0269216313489367. Epub 2013 May 21.

⁸ Canadian Institute for Health Information. Access to Palliative Care in Canada. Ottawa, ON: CIHI; 2018.

⁹The palliative care resource nurse dedicates the majority of her/his time providing care to patients requiring palliative care by supporting the primary care team with education, helping with clinical assessments and advice. They generally serve as the first response to a request for specialist palliative care team involvement.

7. **The specialist palliative care team and the primary care team are fluid** and are not intended to exist or operate in silos. The teams could be conceived as being one with multiple layers.

8. It has been suggested in the literature that **palliative care specialists and consultants should spend 50% of their time in clinical practice and 50% on educating colleagues and organizational leadership, i.e., non-clinical responsibilities.**^{10 11} Due to human resources and costs, this model has reduced non-clinical responsibilities for physicians to a more modest 30%¹² and palliative care resource nurses and palliative care social workers to 10%, as a minimum.

4. Overview of the Model

In this model, patients and families are seen and assessed by primary care practitioners in their home, family physician's office, specialist's office, long term care facility, hospital, hospice or other location based on need.¹³

The primary care team (See reference 3) would identify patients who would benefit from a palliative approach early on to facilitate appropriate discussions and care.

Recognizing the need for a palliative approach is based on need or potential need, and not on time or prognosis.¹⁴

The primary care team continues to assess, educate, manage and support these patients and families, and ideally creates a roster/monitoring system. Then as changes occur or issues arise, the degree of care can be adjusted to meet the patient's goals and needs.

¹⁰ Weissman DJ. Improving care during a time of crisis: the evolving role of specialty palliative care teams. *Pall Med* 2015; 18(3): 204-207

¹¹ Halton JM et. al. Establishing physician to patient ratios and predicting workforce needs for Canadian Pediatric Hematology-Oncology Programs. *Pediatr Blood Cancer* 2013; 60:564-569.

¹² This is based on standard Academic job descriptions at most Canadian universities. There are different types of academic roles, including Clinician-Scientist, Clinician-Scholar and Clinician-Teacher. The maximum clinical time that any of these categories has is 70%. An example is found at <https://www.schulich.uwo.ca/humanresources/docs/FacultyForms/ARCAcademicRoleCategoriesDocument.pdf>.

¹³ The College of Family Physicians of Canada. Section of Teachers. The Scope of Training for Family Medicine Residency: Domains of Clinical Care and Evolving Professional Competencies. 2011.

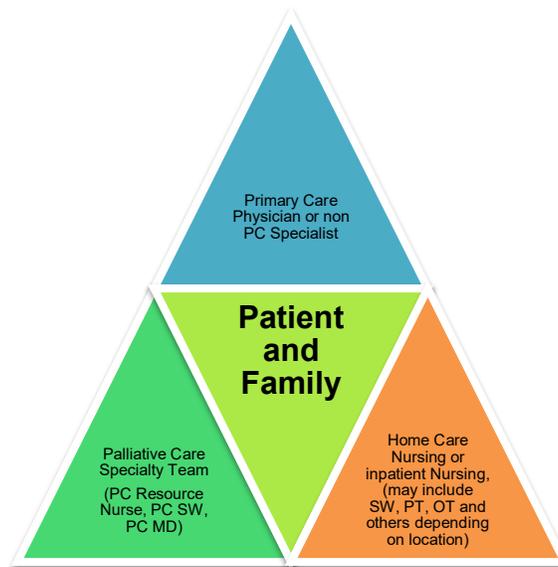
¹⁴ Traditionally, a palliative approach to care has been directed to patients who are predicted to be in the last weeks to months of life – resulting in an underestimate of the number of patients who would benefit from a palliative approach. A needs-based approach is more accurate, or an approach based on those who may die within the next 12 months, for example as identified by the 'surprise question', (Would you be surprised if they died within the next 12 months?), or other tools.

We ask much of our families when providing care at home for their loved ones at the end of life. One critical element that must be available to support caregivers is access to skilled home care nursing 24/7.

This may be only by phone in some areas. For many families, with good pre-planning, it is enough to know that they can call and speak to someone for support. Secure virtual technologies such as Skype for Business, telemedicine and telephone, or utilizing other providers such as paramedics trained in palliative care, can fill some of the voids where 24/7 home visits are not feasible.^{15 16 17}

Appendix 2 describes the necessary supports for quality home care in more detail.

Figure 1



At any point in the care journey, if the primary care provider/team needs support in managing issues/needs of a patient or family, they may request a palliative care consult with the specialist palliative care team to support them.

¹⁵ McCallum, M., Carver, J., Dupere, D., et al. The Palliative Care Capacity Building Working Group. The Nova Scotia Palliative Care Competency Framework: A Reference Guide for Health Professionals and Volunteers. Halifax, Nova Scotia: Nova Scotia Health Authority, 2017.

¹⁶ Paul LR, Spice R, Sinnarajah A, Ho G, Uniacke J, Webb, Kettle J, Mohammed R and Salmon C. Web-Based Videoconferencing for Rural Palliative Care Consultation in the Home: A Pilot Project in the Calgary Zone of Alberta Health Services. Journal of Pain and Symptom Management, Volume 52, Issue 6, e98 - e99

¹⁷ Alberta Health Services. EMS Palliative and End of Life Care Assess, Treat, and Refer <https://www.albertahealthservices.ca/info/page14899.aspx>

Specialist palliative care teams (page 4 (6)) are an invaluable resource and collaborative partner to primary care teams. Their knowledge, expertise and skills in dealing with issues related to the multiple domains of care, makes the specialist palliative care team members useful facilitators of care.

Palliative care resource nurses can be invaluable in advising, coaching and modeling comprehensive palliative care assessments, ensuring that advance care planning, goals of care and end-of-life care planning takes place in a timely way. They can also help coordinate appropriate and timely care in the various places where patients and families want their care to occur (home, care residences, hospice).

Involving the specialist palliative care team, as needed, enables the primary care team to remain the primary point of contact for the patient.

Support from the specialist palliative care team in its various forms, has the potential to enhance the capacity of the primary care team and optimize care for the individual in the right place by the right person at the right time.

In straightforward situations, the palliative care resource nurse may simply give advice to the primary care physician or primary care nurse after reviewing the situation with the palliative care physician and team. Examples of this would be a one-time visit to help with advance care planning or management of a symptom such as opioid neurotoxicity. If the case is more complex, the specialist palliative care team may continue to follow the patient for a period of time providing advice to the primary care team. This may require a one-time palliative care physician or palliative care social worker visit or a period of shared care.^{18 19 20} Involvement of the specialist palliative care team will wax and wane depending on the complexity of the needs of the patient and family.

Figures 2 and 3 illustrate the model (page 8).

¹⁸ Quality Palliative Care in Long Term Care Alliance. (QPT-LPC). Personal Support Worker Competencies. May, 2012.

http://www.palliativealliance.ca/assets/files/QPC_LTC_PSW_Competyency_Brochure_Final_May_2_2012_V2_1.pdf

¹⁹ McCallum, M., Carver, J., Dupere, D., et al. The Palliative Care Capacity Building Working Group. The Nova Scotia Palliative Care Competency Framework: A Reference Guide for Health Professionals and Volunteers. Halifax, Nova Scotia: Nova Scotia Health Authority, 2017.

²⁰ Note: These are the patients that make up the “25” patient case load described in Section 3.1.1, as they need some ongoing follow up but not the direct hands on nursing care which can be provided by the primary care home care nurses.

Figure 2

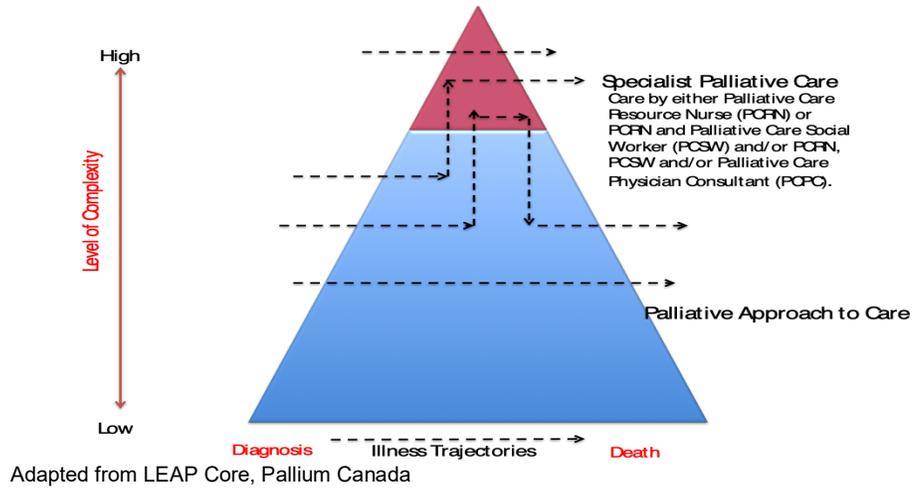
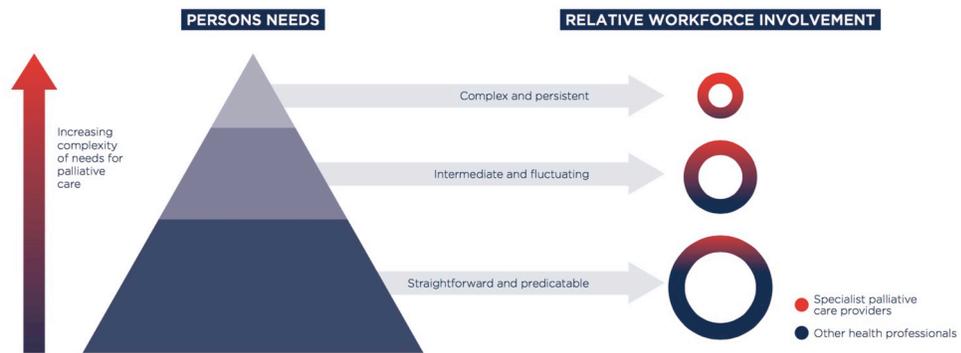


Figure 3



Palliative Care Australia. Palliative Care Service Development Guidelines. January 2018.
https://palliativecare.org.au/wp-content/uploads/dlm_uploads/2018/02/PalliativeCare-Service-Delivery-2018_web-1.pdf

5. The Numbers – Palliative Care Specialist Team Staffing

The staffing numbers for palliative care nurses, physicians and social workers are based on expert opinion unless indicated by reference.

5.1 Staffing in the Community

The staffing for a **new program** will be based on need and will grow as referrals increase. Regions with very small populations will often start with one or more palliative care resource nurse(s) with access to a palliative care physician for support.

The model assumes that one palliative care resource nurse can carry a caseload of 25 patients at any time. The addition of a palliative care physician will be based on the number of referrals.

- Generally, one palliative care physician would be needed for four palliative care resource nurses (each carrying an active caseload of 25 patients), which would indicate a program caseload of approximately 100 patients at a time.
- For every six palliative care resource nurses (150 patients) the program would require one palliative care social worker.
- For each Full Time Equivalent (FTE) palliative care physician, 30% of dedicated time goes to non-clinical responsibilities. (See reference 11)
- Therefore, for 10 required clinical FTEs, you would need an additional 3.0 FTEs to meet the 10 FTE clinical time.
- 10% of palliative care nursing and social worker time is dedicated to non-clinical responsibilities such as education/administration/research and must be considered in any calculations.²¹

The service will grow based on the referral rates leading to the end point. Optimal staffing estimates can be calculated based on the regional deaths as the end point. (See Appendix 3.)

Sample calculation for a regional community-based specialist palliative care program that currently receives 525 referrals/year:

The program will require:

- 6.3 palliative care resource nurses (PCRNs)
 - Each PCRN carries approximately 25 patients on an active caseload. Based on 25 patients x 4 (average length on the case load of 3 months) = 100 per year = (525/100) = 5.3 PCRNs.

²¹ Recommendation by CSPCP

- Allowing (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%), the estimated FTE would be $5.3 + (5.3 \times 18\%) = 6.3$ FTE.
 - 1.9 FTE palliative care physicians (PCPs)
 - Based on 1 palliative care physician per 4 PCRN's (400 patients/year) $(5.3/4) = 1.3$ FTE.
 - Allowing (30%) non-clinical responsibility time, 4 weeks (8%) vacation and 2 weeks CPD (4%), (total 42%), the estimated FTE would be: $1.3 + (1.3 \times 42\%) = 1.9$ FTE.
 - 1.2 FTE Palliative Care Social Worker (PCSW)
 - Based on 1 PCSW per 6 PCRNs = 1.0 FTE.
 - Allowing for (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%), the estimated FTE would be: $1.0 + (1 \times 18\%) = 1.2$ FTE.

A new service would start with less staff and build based on increasing referrals.

5.2 Staffing in the Hospital

The calculations in the hospital are based on the number of inpatient beds and referrals. If there is more than one hospital, apply the same calculation to each.

Hospital Palliative Care Specialist Consult Teams

For hospitals without a dedicated palliative care unit, staffing is based on the numbers of referrals. Referrals can result in one-time visits, intermittent follow-up or shared care with a member of the specialist palliative care team.

- For smaller hospitals, consider starting with a 1 FTE palliative care resource nurse who has access to a palliative care physician who can do referrals as needed.
- If there are 25 referrals per month, it is recommended that there be 1 FTE palliative care resource nurse, 1 FTE palliative care physician and 0.5 FTE palliative care social worker to do inpatient referrals, provide education to staff and provide leadership
- As the consultations increase:
 - The hospital palliative care resource nurse positions should increase by 1 FTE for every additional 20 to 25 referrals/month.
 - The hospital palliative care physician positions should increase by 1 FTE for every additional 25 referrals/month.
 - The hospital palliative care social work positions should increase by 0.5 FTE for every additional 25 referrals/month.

Palliative Care Units (10 beds, Non Tertiary)

Recommended minimum staffing:

- The recommended minimum nursing staffing is 2 RNs and 1 LPN/RPN (licensed/registered practical nurse) from 7am to 7pm and 2 RNs from 7pm to 7am.²²
- All staff would require training in palliative care. RN's should ideally have CHPCN© certification.^{23 24}
- The recommended minimum dedicated clinical physician staffing is 0.5 FTE palliative care physicians + [(30%) non-clinical responsibility time + 4 weeks (8%) vacation + 2 weeks CPD (4%)] (total 42%). Therefore, 0.5 FTE + (0.5 x 42%) = 0.7 FTE.
- Primary care physician(s)/hospitalists/specialists (MRPs) should remain involved with the patients on the PCU to promote shared care, shared learning and optimal patient care.

Tertiary Care Palliative Care Units

Tertiary care PCUs with high acuity and short stays will require 1 FTE palliative care physician per 5-6 beds with Registered Nurse staffing determined by standard acute care operations for medical units.²⁵

5.3 Clinics

Palliative care teams providing service in clinics (e.g. oncology, cardiology, neurology, dedicated palliative care clinics) will require additional staffing based on the number of clinics and time requirements.

For each clinic day:

- 0.25 FTE palliative care physician and 30% non-clinical responsibility time, 8% vacation and 4% CPD time, (total 42%), therefore a total of 0.25 FTE + (0.25 x 42%) = 0.4 FTE.
- 0.25 FTE palliative care resource nurse and 10% non-clinical responsibility time and 8% vacation, therefore a total of 0.25 FTE + (0.25 x 18%) = 0.3 FTE.
- 0.2 FTE social worker and 10% non-clinical responsibility time and 8% vacation, therefore a total of 0.2 FTE + (0.2 x 18%) = 0.2 FTE.

²² Canadian Institute for Health Information. Access to Palliative Care in Canada. Ottawa, ON: CIHI; 2018.

²³ Recommendation by CSPCP

²⁴ Covenant Health. Palliative Care Matters: How Canada's Health System Needs to Change. 2016.

²⁵ The Association for Palliative Medicine of Great Britain and Ireland, Consultant Nurse in Palliative Care Reference Group, Marie Curie Cancer Care, National Council for Palliative Care, and Palliative Care Section of the Royal Society of Medicine, London, UK. Commissioning Guidance for Specialist Palliative Care: Helping to deliver commissioning objectives, December 2012.

Appendix 1 The Roles of Nurses

Nurses assume different roles with regards to palliative care and require competencies to perform these roles. The terminology assigned to these roles and the competencies vary across the country. For the purposes of this model, we use:^{26 27}

- The **Generalist Nurse** who provides a palliative approach to care for some patients as part of their usual nursing duties.
- The **Palliative Care Resource Nurse**, who has advanced training and certification in palliative care. This individual dedicates the majority of their time supporting the primary care team with education and helping with clinical assessments and advice. They generally serve as the first response to a request for specialist palliative care team involvement.²⁸
- The **Palliative Care Nurse Specialist**, is a clinical nurse specialist, advance practice nurse, palliative care nurse consultant, or nurse practitioner, usually only available in urban centers. Their roles would include consultation; care for individuals with complex and demanding palliative care needs; clinical education and mentoring of front line nurses; and system level responsibilities.

For the purpose of this paper the model generally recommends using the Palliative Care Resource Nurse as part of the specialist palliative care service due to economics and availability of human resources.

Nursing ratios will be quite different based on the model of care – whether the nurse functions solely as a clinician (palliative care expertise) or also has system level responsibilities.

The staffing levels would need to be modified based on local contextual factors, including the education of the nurse and whether the nurse is in a collaborative practice model working with an RPN or LPN.

The ideal model has the members of the specialist palliative care team all working for the same organization to maximize communication and coordination of service.

²⁶ McCallum, M., Carver, J., Dupere, D., et al. The Palliative Care Capacity Building Working Group. The Nova Scotia Palliative Care Competency Framework: A Reference Guide for Health Professionals and Volunteers. Halifax, Nova Scotia: Nova Scotia Health Authority, 2017.

²⁷ BC Centre for Palliative Care. Inter-professional Palliative Competency Framework. Discipline Specific Competencies: Nurses. June 20, 2018. https://www.bc-cpc.ca/cpc/wp-content/uploads/2018/11/Nurse-competencies-ONLINE.pdf?pdf=Nurse_Competerencies

²⁸ Nurses can be certified in hospice palliative care nursing through the Canadian Nurses Association and receive their CHPCN(C)® designation. The certification is based on clinical experience or a combination of education and clinical experience.

Appendix 2

Supports for quality home palliative care^{29 30 31}

- Willing, available, able and competent caregiver.
- Access to a primary care physician/nurse practitioner.
- Access to skilled, supportive home care:
 - Home care nurses
 - Personal support workers/home support workers.
- Access to specialist palliative care team.
- Integration and effective communication between providers, patients and families.
- Access to pharmacy/medication.
- Access to required equipment and other practical supports.
- Supports available 24/7.

Home care nursing and support workers

Limited or no home care nursing/support will limit the ability to provide the care required at home. Most families are not able to provide all of the required care without nursing and other support.

- Urban / Rural
 - Access to home care nursing visits daily as needed and 24 hour/day phone advice access (nursing).
 - Access for extra nursing visits as needed.
 - Availability of 24 hour or overnight coverage with appropriate level of staff (RN, LPN/RPN, personal support worker/home support worker) for the last two weeks of life (consider having 10 days of overnight coverage that can be used as needed, e.g., every couple of days to help prevent the family from becoming exhausted), or temporary periods of high symptom or care needs.
 - Respite time for caregivers (placement or in the home) with appropriately trained staff or volunteers based on current needs of patient.
 - Access to medication 24/7 in the home.
- Rural / Remote
 - Nursing visit to establish rapport and conduct an initial comprehensive assessment.
 - Communication link and plan established.

²⁹ Gomes & Higginson. Factors influencing death at home in terminally ill patients with cancer: Systematic Review. *BMJ* 2006; 332:515-521.

³⁰ Canadian Home Care Association. The Caregiver Voice: Consultations with Family Caregivers. July 2014. <http://www.cdnhomecare.ca/media.php?mid=4010>

³¹ Canadian Home Care Association. An Integrated Hospice Palliative Approach to Care in the Home and Community - Interactive Webinar. March 5, 2014. <http://www.cdnhomecare.ca/media.php?mid=3755>

- Care plan for end of life at home including medication allocation and instruction on usage.
- Access to home care nursing visits as needed
- Phone advice and/or other technology to allow for appropriate communication and surveillance 24/7.
- Access to palliative resource nurse visits if possible or via an alternative route such as emergency health services.
- Respite time for caregivers provided by home care workers (personal support workers/home support workers) or if possible, RN/LPN/RPN.
- Access to medication 24/7 in the home.

Appendix 3 Calculation of Estimated Staffing Requirements

The model of care presented in this paper is intended for a needs/population-based approach rather than a time-based approach, and is derived from the number of referrals the program receives.

An estimate of the number of staff that will be required for a developing program can be determined using annual deaths. Calculations are based on annual deaths for the region and not just population, as they are not synonymous.

The number of deaths will vary according to the size of the community and the age distribution of the population.

According to the Census, the proportion of the population over 65 is projected to rapidly increase over the next 15 years and we recognize most of these people will be living with multiple co-morbidities. Therefore, using population alone would not give an accurate picture. Annual deaths help to identify the actual number of potential cases per year.

This still underestimates all those who will benefit from a palliative approach to care, provided for the most part by primary care, but can help project potential number of staff required for the specialist palliative care team.

75% of annual deaths could benefit from contact with a palliative care team.^{32 33 34 35 36}

- Estimate:
 - 10% die suddenly
 - 15% are not complicated and are managed exclusively by primary care and family caregivers

³² Murtagh FE1, Bausewein C, Verne J, Groeneveld EI, Kaloki YE, Higginson IJ. How many people need palliative care? A study developing and comparing methods for population-based estimates. *Palliat Med.* 2014 Jan;28(1):49-58. doi: 10.1177/0269216313489367. Epub 2013 May 21.

³³ Palliative Care Council of New Zealand. 2011. National Health Needs Assessment for Palliative Care Phase 1 Report: Assessment of Palliative Care Need. Wellington: Cancer Control New Zealand.

³⁴ Canadian data: Statistics Canada reports that approximately 89% of deaths are due to chronic illness, 11% are sudden/unexpected.

³⁵ Only a small minority of Canadians experience sudden death - the reality of dying in the 21st century is that death frequently occurs after long, lingering dying processes that require ongoing and often intensive care and support. Arnup K. *Death and Dying in Canada*. 2018. The Vanier Institute of the Family.

³⁶ Statistics Canada reported that, in 2016, cancer, diabetes, heart disease, cerebrovascular diseases, Alzheimer's, chronic liver disease, chronic kidney disease and chronic lower respiratory diseases caused 66% of all deaths. The proportion was higher for older Canadians. Statistics Canada. Leading causes of death. Table: 13-10-0394-01.

- 65% can be managed primarily by primary care, but with as needed contact with member(s) of a specialist palliative care team through a consultative or intermittent shared care model
- 10% are more complicated and are best served by a specialist palliative care team through a transfer of care or shared care model

Therefore 75% may benefit from contact with palliative care services at some point in their illness journey.

Contact with a palliative care service can vary from a one-time phone call from a nurse or physician for advice to intermittent visiting from a palliative care resource nurse or palliative care social worker to shared care with a specialist palliative care team. This allows for an estimate of what optimal human resources may be required for a fully-developed program.

Sample Calculations

Based on a region with 3,000 deaths per year.

Community

3,000 deaths/year x 0.75 = 2,250 patients who could benefit from contact with a palliative care team.

- 26.6 FTE palliative care resource nurses (PCRNs)
 - Each PCRN carries approximately 25 patients on an active caseload.
 - Based on 25 patients x 4 (average length on the case load of 3 months) = 100 per year.
 - $2,250/100$ patients/year/palliative care resource nurse = 22.5 FTE.
 - Allowing for 10% non-clinical responsibility time and 4 weeks (8%) vacation time, the estimated FTE would be $22.5 + (22.5 \times 18\%) = 26.6$ FTE.
- 8.0 FTE palliative care physicians (PCPs)
 - Based on 1 PCP per 4 PCRNs (400 patients/year).
 - $2250/400$ patients/year/PCRN = 5.6 FTE PCP.
 - Allowing for (30%) non-clinical responsibility time and 4 weeks (8%) vacation and 2 weeks (4%) CME = (total 42%), the estimated FTE would be $5.6 + (5.6 \times 42\%) = 8.0$ FTE.
- 4.5 FTE palliative care social workers (PCSWs)
 - Based on 1 PCSW per 6 PCRNs.
 - $2,250/600$ patients/year/palliative care social worker = 3.8 FTE PCSWs.

- Allowing for (10%) non-clinical responsibility time and 4 weeks (8%) vacation time, (total 18%), the estimated FTE would be $3.8 + (3.8 \times 18\%) = 4.5$ FTE.

Hospital:

(If more than one hospital the same formula would apply)

532 referrals/year = 44 referrals/month

Based on 44 referrals/month:

- 2.5 FTE palliative care physicians (PCP)
 - 1 FTE PCP for the first 25 referrals/month, and .76 FTE PCP for the 19 additional referrals/month (i.e., $44 - 25$ and $19/25 = 0.76$; $0.76 \times 1 = 0.76$) = 1.76 FTE.
 - Add (30%) non-clinical responsibility time and 4 weeks (8%) vacation and 2 weeks (4%) CPD, (total 42%) = $1.76 + (1.76 \times 42\%) = 2.5$ FTE.
- 2.1 FTE palliative care resource nurses (PCRN)
 - 1.0 FTE PCRN for the first 25 referrals/month, and 0.76 FTE PCRN for the 19 additional referrals/month (i.e., $44 - 25$ and $19/25 = 0.76$; $0.76 \times 1 = 0.76$) = 1.76 FTE.
 - Add (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%) = $1.76 + (1.76 \times 18\%) = 2.1$ FTE.
- 1.1 FTE palliative care social worker (PCSW)
 - 0.5 FTE PCSW for the first 25 referrals/month, and 0.4 FTE PCSW for the additional 19 referrals/month (i.e., $44 - 25$ and $19/25 = 0.76$; $0.76 \times 0.5 = 0.4$) = 0.9 FTE.
 - Add (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%) = $0.9 + (0.9 \times 18\%) = 1.1$ FTE

Clinics:

4 clinic days week

- 1.4 FTE palliative care physician (PCP)
 - 1 FTE PCP and (30%) non-clinical responsibility time and 4 weeks (8%) vacation and 2 weeks CPD (4%), (total 42%) = $1 + (1 \times 42\%) = 1.4$ FTE.
- 1.2 FTE palliative care resource nurse (PCRN)
 - 1 FTE PCRN and (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%) = $1 + (1 \times 18\%) = 1.2$ FTE.
- 0.6 FTE palliative care social worker (PCSW)
 - 0.5 FTE PCSW and (10%) non-clinical responsibility time and 4 weeks (8%) vacation, (total 18%) = $0.5 + (0.5 \times 18\%) = 0.6$ FTE.

Summary

Palliative Care Specialty Team Staff for a Community with 3000 deaths/year

	Palliative Care Physicians (FTE)	Palliative Care Resource Nurses (FTE)	Palliative Care Social Workers (FTE)
Community	8.0	26.6	4.5
Hospital	2.5	2.1	1.1
Clinic	1.4	1.2	0.6
Total	11.9	29.9	6.2

*Approved by CSPCP Board March 29, 2019
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