



## Building Career Pathways for Cancer Nurses: Ensuring Cancer Nursing's Future

Gemma McErlean<sup>a,b,\*</sup>, Catherine Paterson<sup>c,d</sup>, Carla Thamm<sup>c</sup>

<sup>a</sup> School of Nursing, University of Wollongong, Sydney, NSW, Australia

<sup>b</sup> Centre for Research in Nursing and Health, St George Hospital, Sydney, NSW, Australia

<sup>c</sup> Caring Futures Institute, College of Nursing and Health Sciences, Flinders University, Adelaide, South Australia

<sup>d</sup> Central Adelaide Local Health Network, Adelaide, South Australia

### ARTICLE INFO

#### Key Words:

Cancer nursing  
Frameworks  
Career pathways  
Specialization  
Australia

### ABSTRACT

**Objectives:** It is well established that cancer nurses and advanced practice nurses (APN) are critical to the delivery of high-quality, accessible, safe, and affordable cancer care globally. Specialized cancer nurses and APNs with a strong foundation in the pillars of nursing practice (clinical, leadership, education, and research) are essential to optimize patient outcomes, create increased cost-efficiencies through innovative models of care delivery, and can further leverage interprofessional collaboration in cancer care. To address the existing shortcomings in cancer control, Australian cancer nurses, including APNs, and cancer nurses and APNs globally, need an evidence-informed consensus drive framework to harmonize clinical, educational and career pathways leading to specialization, advanced practice, promotion, and equitable and accessible education.

**Methods:** Critical perspective.

**Results:** Scoping work has begun to build on the 2009 seminal Australian EdCaN framework, with ambitions to develop a contemporary practice and career framework for all cancer nurses which details clear pathways to specialized and APN roles inclusive of navigating to and through direct clinical care, research, academia, education, and management or executive leadership.

**Conclusions:** A revised framework that is cognizant of the changing landscape of contemporary cancer care, and the growing diversity of nursing roles is needed to address the imminent nursing workforce crisis.

**Implications for Nursing Practice:** The revised framework may support the implementation of the newly released Australian Cancer Plan and provide a career pathway model that may be adopted internationally, including in low- and middle-income countries.

© 2024 The Authors. Published by Elsevier Inc. This is an open access article under the CC BY license (<http://creativecommons.org/licenses/by/4.0/>)

In contemporary 21st-century health care, there is an increasing need to mobilize the full scope of practice among all members of the interprofessional cancer team to deliver high-quality cancer care through sustainable, efficient, and effective innovative models of care. Globally, cancer incidence and mortality are on the increase, with more than 19 million new cases and 10 million deaths reported in 2020 alone.<sup>1</sup> Over the next 20 years, there are a projected 30 million new cancer cases and 16 million deaths worldwide.<sup>1</sup> At the same time, with impressive progress in treatment innovation and care, more and more people are surviving cancer in the long term, adding to the more than 32 million cancer survivors who currently require survivorship care.<sup>2</sup> To address the burgeoning cancer incidence, successful cancer control is only possible with a specialized

and advanced practice cancer nursing workforce effectively working in interprofessional teams.<sup>3,4</sup>

Cancer nurses contribute to multidisciplinary care and directly influence patient outcomes by providing timely, accessible, and responsive evidence-based cancer care, psychosocial support, advanced clinical practice, care coordination, and navigation for patients in complex health care systems.<sup>5</sup> Additionally, advanced practice nurses (APNs) in cancer settings improve the efficiency of health care delivery by integrating nursing and medical clinical skills to manage complex patient cases autonomously.<sup>3,6,7</sup> Globally, cancer nursing, like nursing more generally, is facing major challenges to its sustainability and workforce. The World Health Organization, Nursing Now, and the International Council of Nurses highlighted a 5.91 million global nurse-shortage in their State of the World's Nursing report in 2020,<sup>8</sup> largely due to issues with recruitment of nurses into the profession and retention of nurses once qualified. Reports from the United States of America have identified that 17.5% of new registered nurses leave nursing within their first year, and approximately

\* Address correspondence to: Gemma McErlean, University of Wollongong and St George Hospital (SESLHD), 1 Pitt St, Loftus NSW 2232, Australia.  
E-mail address: [gmcerlean@uow.edu.au](mailto:gmcerlean@uow.edu.au) (G. McErlean).

## Layperson Summary

### What we investigated and why

Modern cancer care can only be delivered with a specialized and advanced practice cancer nursing workforce. Globally, cancer nursing, like nursing more generally, is facing major challenges to its sustainability and workforce.

### How we did our research

In Australia the first national cancer plan has been released. The pivotal role that nurses will play in delivering on this plan has been recognized by the federal government who committed \$AUD166 million to Australian cancer nurses.

### What we have found

To recruit and retain novice to advanced practice cancer nurses, it is timely to scope the literature and build a strong and clear career pathway framework for all cancer nurses.

### What it means

Such a framework which reflects the landscape of current cancer care, and the growing diversity of nursing roles is not only needed to address the imminent nursing workforce crisis, but will also support the implementation of the Australian Cancer Plan, and provide a career pathway model that may be adopted internationally, including in low- and middle-income countries.

Evidence has clearly identified well known barriers and facilitators related to the recruitment and retention of cancer nurses.<sup>19-22</sup> Barriers include a lack of understanding about the extent of specialist training required, challenging and hazardous work environments, a lack of job satisfaction, burnout, limited opportunities for leadership and advancement, and lack of recognition of the cancer nurse's role in advocacy and policy development.<sup>19</sup> Additional retention challenges include a lack of transparency and equity in recruitment and promotion,<sup>10</sup> limitations to progressing to full scopes of practice,<sup>20</sup> and limited opportunities for clinical academic pathways.<sup>23</sup> Conversely, facilitators which encourage recruitment and retention of nurses include opportunities for continuing professional development/education, working at full scope of nursing practice, financial security and incentives, career mobility, and team cohesion.<sup>21,22</sup>

One of the main challenges when attempting to standardize professional development and educational pathways in Australia is the range of titles used to describe nursing roles, particularly specialist nursing roles. A national nursing workforce survey conducted in 2016 found that there were more than 30 titles that reflected specialist advanced practice nurses across Australia.<sup>24</sup> Since then, other titles have continued to enter the health care discourse. The recent 2021 cancer nursing workforce survey indicated that there were 57 unique APN titles used across 96 clinical nurse consultant roles and 32 unique titles across 92 specialist nursing roles in Australia.<sup>11</sup> This broad nomenclature not only risks diluting the role of a specialty nurse, but also presents challenges to understanding and establishing the educational and professional pathways required for novice to expert and advanced practice in cancer nursing.

In Australia, the federal government has recognized the social, economic, professional, and health care challenges raised by cancer in the first ever Australian Cancer Plan (ACP), which was released in 2023.<sup>25</sup> This 10-year plan provides a cancer control road map, designed to improve cancer outcomes for all Australians. It is underpinned by six strategic objectives: (1) maximizing cancer prevention and early detection, (2) enhanced consumer experience, (3) world class health systems for optimal care, (4) strong and dynamic foundations, (5) workforce to transform the delivery of cancer care, and (6) achieving equity in cancer outcomes for Aboriginal and Torres Strait Islander people.<sup>25</sup> The pivotal role that cancer nurses play across the cancer trajectory and the part they will play in delivering on the ACP was subsequently recognized by the government which, in November 2023, committed \$AUD166 million (\$USD109 million) to Australian cancer nursing<sup>23</sup>—the largest investment in cancer nursing in history. This funding was provided to support the establishment of an “Australian Cancer Nursing and Navigation Program” which includes four components: (1) a cancer navigation service, (2) an all-cancer nurse service, (3) a child and youth cancer hub, and (4) a specialist telehealth service.<sup>23</sup> This program aims to ensure that all people with cancer have access to high quality and culturally safe care, irrespective of their cancer type, age, or where they live.

While this investment is significant and much needed, it is arguable that it will fail to achieve the objectives hoped for unless the more fundamental workforce challenges facing cancer nursing are addressed and ameliorated. More specifically, unless there is urgent development plans and support strategies to grow and maintain the workforce needed for cancer control, including novice cancer nurses to APNs, this ambition may fall short in providing optimal or equitable care for patients with cancer.<sup>26</sup> It is timely to build robust and transparent career pathways for all cancer nurses. Such pathways will not only support their professional growth and increase job satisfaction and the likelihood that they will remain in the profession, but also contribute greatly to the provision of high-quality cancer care, engagement in impactful research and leadership initiatives, and most importantly, improve outcomes for people with cancer.

33% leave within 2 years.<sup>9</sup> A similar experience is being shown in Australia, with data modeling predicting a shortage of over 100,000 nurses by next year (2025) alone.<sup>10</sup> Cancer nursing as a specialty is not immune to these growing concerns. In 2021, Bradford et al<sup>11</sup> confirmed an imminent “care crisis” in cancer nursing in Australia through a nationwide survey of the cancer nursing workforce. Direct reports from cancer nurses indicated that approximately 60% intended to leave the profession within the next decade, with many of these being highly experienced APNs.<sup>11</sup>

There is, therefore, an urgent need to improve not only recruitment but also retention of cancer nurses but also those who can function in APN roles. APNs play a pivot clinical leadership role which encompasses the coaching/mentoring of nursing students and staff, promoting the use of evidence-based practices, and contributing to and/or leading quality improvement and research activities. These activities are not only instrumental for promoting optimal work environments for nurses, but importantly, facilitate recruitment and retention of nurses.<sup>12</sup> Addressing this workforce shortfall is not only a professional imperative, but more importantly a public one, as many patients across all age groups and of all cancer types are continuing to report a range of unmet supportive care needs, including during and after the COVID-19<sup>11-16</sup> pandemic.

## Focusing on Cancer Specialist Nurses

The International Council of Nurses together with the World Health Organization have long recognized that scope of practice, minimum standards for education and practice, and maintenance of clinical competence must be set and defined in nursing specialties.<sup>17</sup> The absence of a nationally agreed framework for nursing specialties has been identified as one of the barriers preventing the progression of specialties in terms of recruitment, retention, and recognition.<sup>10,18</sup>

## Developing a National Career Pathway for Cancer Nurses in Australia

In the 2000s, the national professional development framework for cancer nursing, as part of the National Cancer Nursing Education Project (EdCaN) was developed.<sup>25</sup> The EdCaN competency framework has historically provided a guide for the development of the cancer nursing workforce in Australia through a framework and a set of capabilities outlining the role expectations of nurses working in cancer control.<sup>27</sup> This important work has formed the foundation of many cancer nursing frameworks internationally including in New Zealand, Canada, and Europe.<sup>28-30</sup> Since this time cancer control and health care priorities in Australia, as they have internationally, have evolved particularly in terms of treatment mode and modality, models of care, and digital technologies.<sup>31,32</sup> Therefore, a revised framework which reflects the landscape of contemporary cancer care, and the growing diversity of nursing roles is not only needed to address the imminent nursing workforce crisis, but will also support the implementation of the ACP, and provide a career pathway model that may be adopted internationally, including in low- and middle-income countries.<sup>33,34</sup>

Nursing leadership within the Cancer Nursing Society of Australia (CNSA) has commenced scoping work to build on the seminal EdCaN framework.<sup>27</sup> This work is formative and pivotal to guide any future development of a comprehensive framework for all cancer nurses which can detail clear pathways to specialized cancer nursing roles and address known workforce concerns. A contemporary cancer nursing framework, purpose-designed to support all aspects of cancer nurses career development from novice to advanced practice is a serious omission in the current cancer care landscape. Additionally, what is also missing from extant cancer nursing career pathways and frameworks is the inclusion of pathways which support navigating through research, academic, education, and management or executive roles.<sup>35</sup> Although cancer nurses are most visible in direct patient care, their role can have them functioning at multiple levels of both direct and nondirect patient care across the entire cancer trajectory.<sup>36</sup> In cancer care, many frameworks are focused on subspecialist and advanced practice roles with little guidance regarding what the professional pathway from novice to expert and advanced practice should entail.

A new Australian cancer nursing framework which is inclusive of all cancer nursing roles, has the potential to provide all nurses with the education, capability development, and opportunity to work as specialized cancer nurses and APNs in providing direct patient care, or to contribute to cancer care through positions in education, research, or academia, including as nurse clinician scientists. This type of framework will also allow for equity in opportunity for development and promotion, increased opportunities for adequate remuneration for skills and education, and acknowledgement of expertise more broadly in the interprofessional cancer team.

## Conclusion

It is well established that cancer nurses and APNs are critical to the delivery of high-quality, accessible, safe, and affordable cancer care globally.<sup>37</sup> Specialized cancer nurses and APNs with a strong foundation in the pillars of nursing practice (clinical, leadership, education, and research) are essential to optimize patient outcomes, create increased cost-efficiencies through innovative models of care delivery, and can further leverage interprofessional collaboration in cancer care.<sup>38</sup> To address these existing shortcomings in cancer control, Australian cancer nurses, including APNs, and cancer nurses and APNs globally, need an evidence-informed consensus driven framework to harmonize clinical, educational, and career pathways leading to specialization, advanced practice, promotion, and equitable and accessible education.

## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## CRedit authorship contribution statement

**Gemma McErlean:** Writing – original draft, Conceptualization.  
**Catherine Paterson:** Writing – original draft, Conceptualization.  
**Carla Thamm:** Writing – original draft, Conceptualization.

## Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Acknowledgments

All authors contributed to, reviewed, and approved the final version of the manuscript for submission, as per ICMJE guidelines.

## References

1. Ferlay J, Colombet M, Soerjomataram I, et al. Cancer statistics for the year 2020: an overview. *Int J Cancer*. 2021;149:778–789. <https://doi.org/10.1002/ijc.33588>.
2. World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. 2020. <https://www.who.int/publications/i/item/9789240003279>.
3. World Health Organization. Global cancer observatory. International agency for research on cancer. World Health Organization. 2020. <https://gco.iarc.fr/en>.
4. Schober M, Lehwaldt D, Rogers M, et al. Guidelines on advanced practice nursing. 2020. [https://www.icn.ch/system/files/documents/2020-04/ICN\\_APN%20Report\\_EN\\_WEB.pdf](https://www.icn.ch/system/files/documents/2020-04/ICN_APN%20Report_EN_WEB.pdf).
5. Challinor J. Global oncology nursing recruitment and retention: a SWOT analysis. *Semin Oncol Nurs*. 2023;39(1): 151361.
6. Chan RJ, Paterson C, Yates P, Knowles R, Bradford N. The growth and development of oncology nursing in Australia: the past, present and the future. *Ann Palliat Med*. 2023;12(5):986–991.
7. Bryant-Lukosius D, Cosby R, Bakker D, et al. *Effective Use of Advanced Practice Nurses in the Delivery of Adult Cancer Services in Ontario*. Toronto (ON): Cancer Care Ontario: Program in Evidence-based Care Guideline; 2015.
8. Bryant-Lukosius D, Carter N, Reid K, et al. The clinical effectiveness and cost-effectiveness of clinical nurse specialist-led hospital to home transitional care: a systematic review. *J Eval Clin Pract*. 2015;21(5):763–781.
9. World Health Organization. State of the world's nursing 2020: investing in education, jobs and leadership. 2020. <https://www.who.int/publications/i/item/9789240003279>.
10. Kovner CT, Brewer CS, Fatehi F, Jun J. What does nurse turnover rate mean and what is the rate? *Policy Polit Nurs Pract*. 2014;15(3-4):64–71.
11. Mason J. Review of Australian government health workforce programs. 2013. <https://efaidnbmnnnibpcjpcgclcfndmkaj/https://aarpn.com/wp-content/uploads/2022/10/Review-of-Australian-Government-Health-Workforce-Programs-2013.pdf>.
12. Bradford N, Moore E, Taylor K, et al. The cancer nursing workforce in Australia: a national survey exploring determinants of job satisfaction. *BMC Nurs*. 2023;22(1):461.
13. Chief Nursing and Midwifery Officers Australia. Advanced nursing practice—guidelines for the Australian context. 2021. <https://efaidnbmnnnibpcjpcgclcfndmkaj/https://www.health.gov.au/sites/default/files/documents/2020/10/advanced-nursing-practice-guidelines-for-the-australian-context.pdf>.
14. Paterson C, Toohy K, Bacon R, Kavanagh PS, Roberts C. What are the unmet supportive care needs of people affected by cancer: an umbrella systematic review. *Semin Oncol Nurs*. 2023;39(3): 151353.
15. Paterson C, Kavanagh P, Bacon R, et al. To understand the experiences, needs, and preferences for supportive care, among children and adolescents (0–19 years) diagnosed with cancer: a systematic review of qualitative studies. *J Cancer Surviv*. 2023;1–25.
16. Kenis I, Theys S, Daem M, et al. Experiences of patients with cancer and their relatives confronted with COVID-19 related delay or change in care: a qualitative study. *J Adv Nurs*. 2022;78(12):4150–4164.
17. World Health Organization. A regional guide to the development of nursing specialist practice. 2020. <https://efaidnbmnnnibpcjpcgclcfndmkaj/https://applications.emro.who.int/docs/WHOEMNUR432E-eng.pdf>.
18. Legge H, Toohy K, Kavanagh P, Paterson C. The unmet supportive care needs of people affected by cancer during the COVID-19 pandemic: an integrative review. *J Cancer Surviv*. 2023;17(4):1036–1056.

19. Evans N. New nursing roadmap launched for cancer nurses. <https://journals.rcni.com/cancer-nursing-practice/careers/new-nursing-roadmap-launched-for-cancer-nurses-cnp.22.4.14.s5/abs>.
20. Challinor JM, Alqudimat MR, Teixeira TO, Oldenmenger WH. Oncology nursing workforce: challenges, solutions, and future strategies. *Lancet Oncol*. 2020;21(12):e564–e574.
21. Birks M, Davis J, Smithson J, Lindsay D. Enablers and barriers to registered nurses expanding their scope of practice in Australia: a cross-sectional study. *Policy Polit Nurs Pract*. 2019;20(3):145–152.
22. Campbell KA, Van Borek N, Marcellus L, et al. “The hardest job you will ever love”: nurse recruitment, retention, and turnover in the nurse-family partnership program in British Columbia, Canada. *PLoS One*. 2020;15(9): e0237028.
23. Gavine A, Carson M, Eccles J, Whitford HM. Barriers and facilitators to recruiting and retaining men on pre-registration nursing programmes in Western countries: a systemised rapid review. *Nurse Educ Today*. 2020;88: 104368.
24. Paterson C, Strickland K. The experiences of clinical academic nurses: a meta-aggregation. *Semin Oncol Nurs*. 2023;39(1): 151364.
25. Gardner G, Duffield C, Doubrovsky A, Adams M. Identifying advanced practice: a national survey of a nursing workforce. *Int J Nurs Stud*. 2016;55:60–70.
26. Cancer Australia, 2023. Australian Cancer Plan, Cancer Australia, Surry Hills, NSW. Available at: <https://www.canceraustralia.gov.au/australian-cancer-plan>. Accessed February 14, 2024.
27. Potter L, Taylor V. Securing future cancer care. *Br J Nurs*. 2022;31(5):S3.
28. Aranda S, Yates P. *A National Professional Development Framework for Cancer Nursing*. Canberra, Australia: The National Cancer Nursing Education Project (EdCaN), Cancer Australia; 2009.
29. New Zealand Nurses Organisation. Building of knowledge and skills for cancer nursing. 2014;(22/-9/2023). [https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nzno.org.nz/Portals/0/Files/Documents/Groups/Cancer%20Nurses/2015-01-28%20KSFCN\\_2014\\_FINAL5.pdf](https://efaidnbmnnnibpcajpcglclefindmkaj/https://www.nzno.org.nz/Portals/0/Files/Documents/Groups/Cancer%20Nurses/2015-01-28%20KSFCN_2014_FINAL5.pdf).
30. CANO Nursing Knowledge and Practice Framework and Toolkit for Cancer Care (2019). @Canadian Association of Nurses in Oncology, Association canadienne des infirmières en oncologie (CANO ACIO) 2019. [https://efaidnbmnnnibpcajpcglclefindmkaj/https://cdn.ymaws.com/www.cano-acio.ca/resource/resmgr/files/CANO-FrameworkEng\\_Web.pdf](https://efaidnbmnnnibpcajpcglclefindmkaj/https://cdn.ymaws.com/www.cano-acio.ca/resource/resmgr/files/CANO-FrameworkEng_Web.pdf).
31. EONS Cancer Nursing Education Framework (2022). ©European Oncology Nursing Society (EONS) 2022. <https://cancernurse.eu/education/cancer-nursing-education-framework/>.
32. Shelley D, Bail K, Davis D, Paterson C. Oncology nurses' experiences of using health information systems (HIS) in the delivery of cancer care in a range of care settings: a systematic integrative review. *Semin Oncol Nurs*. 2024. In print.
33. Dowling M, Efstathiou N, Drury A, et al. Cancer nursing research priorities: a rapid review. *Eur J Oncol Nurs*. 2023;63: 102272.
34. Young A, Samadi M. The global power of oncology nurses in low-and middle-income countries. *Asia Pac J Oncol Nurs*. 2022;9(3):131.
35. Bryant-Lukosius D, Valaitis R, Martin-Misener R, et al. Advanced practice nursing: a strategy for achieving universal health coverage and universal access to health. *Rev Latino Am Enferm*. 2017;25:e2826. <https://doi.org/10.1590/1518-8345.1677.2826>.
36. Walsh CM, Rickard CM, Charles KR, Ball D, Schults JA. Insights into the barriers and enablers faced by nurse/midwife clinician researchers in Australia. *Collegian*. 2023;30(6):843–850.
37. Young AM, Charalambous A, Owen RI, et al. Essential oncology nursing care along the cancer continuum. *Lancet Oncol*. 2020;21(12):e555–e563.
38. Bryant-Lukosius D, Jokiniemi K, Martin-Misener R, et al. Clarifying the contributions of specialized nursing roles in Canada: results of a national study. In *Panel presentation*. Canadian Nurses Association. 2018.