The role of oncology nurse practitioners in current oncology practice and lessons for Australia

Oncology nurse practitioners are a potential solution to meeting the increasing need for cancer care

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Medical oncology is a growing and evolving specialty with active research that is expanding treatment options and improving cancer survivorship.[1] The cancer burden in the ageing Australian population represents a significant public health problem to be addressed. There is a predicted shortage of medical oncologists in Australia, with a survey predicting this shortfall to be in the order of 84 to 156 full-time equivalents by 2014.[2] Action is needed to increase the capacity of services to meet expanding demand.

Oncology nurse practitioners (ONPs) commonly practise alongside oncologists in the United States, Canada and the United Kingdom. ONPs are nurses with a higher level qualification, experienced in the field of oncology and in working within a multidisciplinary team, and practising within a specified practice model of care.[3] In 2010, 625 nurse practitioners in the US held an advanced oncology certified nurse practitioner certificate.[1] In Australia in 2009, of 208 registered nurse practitioners only 4.3% were in the specialties of oncology and palliative care.[4] With only small numbers practising, the role of the ONP in the Australian health service is currently unclear.

In 2010, the Victorian Department of Health launched the Southern Health Oncology Nurse Practitioner Project to tackle the shortage in oncology resources. A steering committee delineated a model of care, with key principles being to fill gaps in current services, use focused expert clinical skills and provide the highest level of evidence-based patient care. The document identified key areas of support, which included education, organisation and mentoring, as well as key risks such as the sustainability of the role and the possibility of ONPs not being able to meet the professional and academic requirements expected. Legislation is also needed to support an extension of the traditional nurse role to allow the ONP position to be feasible in practice.[5]

Our aim in this article is to draw attention to selected illustrative evidence on the role of ONPs and their impact on patient satisfaction and outcomes, and cost-effectiveness.

What we did

We conducted a comprehensive PubMed search to identify relevant articles. Key search terms were "oncology nurse practitioner" and "cancer care". We identified individual studies with a variety of study designs and case reports pertaining to the role of the ONP in practice, professional educational requirements, patient satisfaction and outcome assessments, and cost-effectiveness. The key studies identified are discussed and summarised in the Box.

> "the evidence supports ONPs having a supplementary role in providing adequately supervised oncology services"

What we found

Education of ONPs

To be successful, the role of the ONP needs to be well delineated with appropriate training and support in place. Adequate education has been identified as a problem for ONPs, particularly for those working in rural centres.[10] A survey by the Oncology Nursing Society identified deficits in training and mentorship which highlighted the importance of formal education programs that include developing skills in interpreting and applying research.[1]

Patient outcomes and satisfaction

Long-term follow-up for cancer survivors consumes large amounts of resources. A multicentre randomised controlled trial conducted in Sweden to assess nurse-led telephone and on-demand follow-up of breast cancer patients over 5 years found no difference in patient satisfaction, cancer recurrence or death compared with standard follow-up by a physician.[7] An assessment of nurse-led telephone follow-up on health-related quality of life (HRQoL) outcomes and patient satisfaction in a randomised controlled trial of breast cancer survivors over 12 months after treatment found no difference in HRQoL between the telephone follow-up and standard hospital follow-up, and no statistically significant difference in patient satisfaction.[9] A randomised controlled trial that assessed nurse-led follow-up in patients with lung cancer who had undergone treatment and were being observed for cancer recurrence or disease progression found higher patient satisfaction with nurse-led follow-up. Overall survival was a secondary end point, with no difference reported.[6] High patient satisfaction was also found in a descriptive study at a rural centre in Ireland, with patients preferring the convenience of seeing an ONP closer to home over travelling to a major centre for follow-up.[10]

Cost-effectiveness

An economic evaluation of the study of nurse-led telephone and on-demand follow-up of patients with breast cancer showed that this intervention was significantly cheaper with no difference in patient outcomes. The cost per person-year of follow-up between the groups was €630 per person-year in the physician group compared with €495 per person-year in nurse group.[8]

Summary of studies on the role of ONPs and their impact on patient satisfaction, outcomes, and cost-effectiveness

Study, topic and country	Aims	Methods	Results	Evidence level	Key conclusions	Limitations
Nevidjon et al[1] Gaps in learning needs United States	To determine educational gaps identified by practising ONPs	Survey of 104 self-described ONPs	Deficits identified in oncology-specific procedures, chemotherapy competency, and lack of ability to recognise oncological emergencies	IV	Importance of ongoing mentorship in clinical practice as well as the need to formalise education in the areas where deficits were identified	No formal inclusion criteria to take part in the survey
Moore et al[6] Follow-up of lung cancer patients United Kingdom	To assess nurse-led follow-up in patients with lung cancer after completion of treatment	Assessment of nurse-led versus routine hospital follow-up in 203 patients having undergone lung cancer treatment with curative or palliative intent	Nurse-led intervention was associated with better patient satisfaction with no difference in survival rates	II	Nurse-led follow-up is acceptable care for patients, with positive outcomes	Overall survival and progression-free survival were only secondary end points
Koinberg et al[7,8] Long-term follow-up and cancer survivorship Sweden	To assess the effectiveness of follow-up by physicians or nurses in early breast cancer, and to conduct an economic evaluation	Multicentre, randomised study of 264 patients randomly assigned to intervention by a physician with regular clinical review or intervention by a nurse with telephone contact and review on demand	No statistically significant difference in patient satisfaction, cancer recurrence or death. The economic evaluation showed the nursing intervention was 20% cheaper	II	On-demand breast cancer follow-up can be conducted by a nurse with good patient satisfaction and medical safety, with a cost saving allowing reallocation of resources	Not designed to assess survival
Kimman et al[9] Quality of life and patient satisfaction assessments Netherlands	To assess HRQoL outcomes with nurse-led versus hospital follow-up, and to assess patient satisfaction	Multicentre randomised controlled trial with a 2×2 factorial design of 320 patients with early breast cancer randomly assigned to nurse-led telephone follow-up or hospital follow-up with or without education groups	No statistically significant difference in HRQoL or patient satisfaction	II	Nurse-led telephone follow-up of breast cancer patients does not compromise HRQoL or patient satisfaction	Short period of follow-up and not designed to assess survival outcomes
McKenna et al[10] Application to rural services Ireland	To review the role of an ONP in a rural unit with a visiting oncologist	Collection of descriptive information about the ONP, and interviews with patients and staff about the role	The ONP was not prepared for some aspects of the job; patients preferred the convenience of an ONP being available locally and found the environment less threatening	V	Lack of clear role definition creates difficulties, especially where a local mentor is not available. This presents difficulties with quality assurance and patient safety	Patients were offered a choice of being able to see the visiting clinician or the local ONP

HRQoL = health-related quality of life. ONP = oncology nurse practitioner. ◆

Discussion

Specialist nurse practitioners currently work in a range of specialties in Australia, but their role in oncology is currently not well established. This role requires autonomous practice and legislation in place to allow ONPs to have practising privileges beyond the scope of those of a registered nurse.[3] A consistent role definition is needed to allow ONPs to work within their skill set and ensure patient safety. The role needs to be sustainable for the future, with potential threats being the increasing complexity of oncology care and the expansion of knowledge (and consequently, education) that will be required to maintain standards.[1]

The current evidence is predominantly qualitative, and is primarily on the role of ONPs and related issues, such as the need for education and training. This evidence comes from countries in which the ONP role is more established. There is still a shortage of quantitative evidence from well designed studies to determine the true impact of ONPs on reducing workload across the full scope of oncological management, including curative and palliative treatment for patients with a variety of tumour types. Research into the role of ONPs in Australia is currently minimal because of the small numbers of nurses in this emerging specialty. Robust data are needed from further randomised controlled trials, with longer follow-up and harder clinical patient outcome measures, such as overall survival as a primary end point, assessment of quality of care, impact on the workload of physicians and cost-effectiveness.

With a predicted deficit of medical oncologists in Australia, early action is required to tackle this problem.[2] We propose that ONPs have a role in making up this shortfall. Experience overseas can help guide how this specialist service can be used in practice in our health services. Cancer care provided by ONPs has been proven to score highly on patient satisfaction and quality-of-life measures. There is also evidence to support ONPs providing routine follow-up of cancer survivors.[7,9] At this stage, the evidence supports ONPs having a supplementary role in providing adequately supervised oncology services. Other suggested areas where ONPs could reduce the burden of workload on medical staff include facilitating the new referral process, providing patients with rapid access to clinics when required, ordering tests, and providing chemotherapy education and symptom management.[4,5] In addition, ONPs could have a role in improving provision of services to rural centres, aiming to improve outcomes in country patients with the assistance of visiting oncologists.[10] However, appropriate support and education is required.

The Oncology Nursing Society in the US is taking a lead in attempting to standardise the role. They provide education, and are working collaboratively with other organisations to provide resources to develop the

workforce appropriately. The society has introduced the Advanced Oncology Certified Nurse Practitioner examination to provide recognised accreditation and promote standardisation.[1]

There are potential barriers to the further development of the ONP role in Australia. These include the current need for clear role definition with consistent educational requirements across the states, a lack of a Medicare provider number, no authority to prescribe under the Pharmaceutical Benefits Scheme and lack of organisational support. These problems need to be tackled on a political and professional level to allow the success of this evolving role and ensure it can be sustainable in the future.[4] To move in a constructive direction, ONPs should be recognised as providing a new level of care in the current organisation of oncology services.[3]

Increasing the use of ONP services in Australian health care is one strategy for meeting the increasing need for cancer care. To take this role forward, a clear national model of care needs to be established to define the role, and the current legislative framework of nurse practitioner practice needs to be reviewed with a specific focus on oncology. In addition, educational standards and professional board registration needs to be established to ensure quality patient care.

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1 Nevidjon B, Rieger P, Miller Murphy C, et al. Filling the gap: development of the oncology nurse. *J Oncol Pract* 2010; 6: 2-7.
2 Blinman PL, Grimison P, Barton MB, et al. The shortage of medical oncologists: the Australian Medical Oncologist Workforce Study. *Med J Aust* 2012; 196: 58-61.
3 Gardner GE. Issues in nurse practitioner developments in Australia. *Cancer Forum* 2004; 28: 132-134.
4 Middleton S, Gardner A, Gardner G, Della PR. The status of Australian nurse practitioners: the second national census. *Aust Health Rev* 2011; 35: 448-454.
5 Bauer S; Southern Health Oncology Nurse Practitioner Project. Southern Health Oncology Nurse Practitioner Model of Care report. Melbourne: Victorian Department of Health Nurse Policy Branch, 2010.
6 Moore S, Corner J, Haviland J, et al. Nurse led follow up and conventional medical follow up in management of patients with lung cancer: randomised trial. *BMJ* 2002; 325: 1145.
7 Koinberg IL, Fridlund B, Engholm GB, Holmberg L. Nurse-led follow-up on demand or by a physician after breast cancer surgery: a randomised study. *Eur J Oncol Nurs* 2004; 8: 109-117.
8 Koinberg I, Engholm GB, Genell A, Holmberg L. A health economic evaluation of follow-up after breast cancer surgery: results of an rct study. *Acta Oncol* 2009; 48: 99-104.
9 Kimman ML, Dirksen CD, Voogd AC, et al. Nurse-led telephone follow-up and an educational group programme after breast cancer treatment: results of a 2×2 randomised controlled trial. *Eur J Cancer* 2011; 47: 1027-1036.
10 McKenna H, McCann S, McCaughan E, Keeney S. The role of an outreach oncology nurse practitioner: a case study evaluation. *Eur J Oncol Nurs* 2004; 8: 66-77. ❑