



A Cancer Education Framework for Australian Medical Schools: an Announcement of a New Educational Program

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Accepted: 7 April 2022 / Published online: 28 June 2022
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Abstract

This framework draws upon national and international cancer curricula to identify the essential cancer-related learning outcomes for Australian medical students. The framework incorporates feedback from medical, radiation and surgical oncologists, haematologists, and palliative care physicians on what medical graduates need to know about cancer. The consensus view was that medical students require a basic understanding of the principles of cancer management and the opportunity to see cancer patients in a cancer service unit. The framework assumes that certain knowledge, skills, and attitudes are already embedded in current Australian medical school curricula, presenting instead only the core cancer content in order to provide a clear and concise framework designed to maximise integration within existing curricula.

Keywords Cancer education · Medical curriculum · Curriculum development · Expert review

Aim

To develop a framework to assist medical schools to incorporate cancer education into an existing medical curriculum. The framework aims to provide a minimal set of clinical experiences and learning outcomes, which, if resourced, will provide Australian medical students with a basic understanding of the knowledge and principles underpinning current cancer management.

Background

Currently, half of all Australians will be diagnosed with a cancer by the age of 85 [1, 2]. Whilst cancer is the leading cause of death in Australia [3], increased survivorship

places significant demands on the health system [4]. Studies highlight that Australian medical students are ill-prepared to care for cancer patients upon graduation [5–8]. Additionally, medical students and junior doctors have questioned the quality of their own cancer education [8–12]. The lack of a national medical curriculum results in considerable diversity in cancer teaching and clinical exposure between schools [5, 13]. Nationally, both oncology [14, 15] and palliative care curricula have been developed [16]. However, their influence on Australian medical school curricula remains largely unknown [8, 10].

Development

Consensus development panel evaluation of the Ideal Oncology Curriculum for Australian Medical Schools [15], combined with a review of the current literature on cancer and palliative care education, was undertaken to identify common themes and key areas appropriate for medical students. A draft framework was developed and reviewed by three cancer clinicians, prior to being reviewed by both national and international medical, radiation and surgical oncologists, haematologists, palliative care physicians, and general practitioners. It was agreed that medical students require a fundamental understanding of the principles of cancer management, coupled with exposure to cancer patients in cancer

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service units. Similarly, there was agreement that medical students do not require specialist knowledge, such as drug or radiotherapy dosages.

Knowledge that would be expected in all Australian medical schools (e.g. concepts of incidence and mortality, and evidence-based practice) were excluded to reduce the size of the framework and to optimise its utility and adoption. The framework draws heavily from the Cancer Council Australia's Ideal Oncology Curriculum for Medical Schools [15], and the aforementioned review by cancer clinicians [17]. Other curricula used in the development of this framework include the Palliative Care Curriculum for Undergraduates [16] and the International Summer School 'Oncology for Medical Students' curriculum [18]. Although designed for the Australian

medical schools, an international review of the framework highlighted its applicability to international contexts.

The framework (see below) is comprised of three sections: one focusing on clinical exposure to cancer patients and clinical cancer service units, whilst the other two focus on the principles of cancer management and cancer-specific knowledge. Suggested resources have also been included in the framework, to assist in supporting student learning and which would facilitate the inclusion of the framework as an extracurricular learning opportunity. The resources provide a good starting point and are freely available on the Internet, making them accessible to all schools and students. The full version of the framework document is provided as a supplementary document.

A Cancer Education Framework for Australian Medical Schools

Section One: Clinical Exposure

The five essential cancer clinical experiences

A cancer curriculum should include clinical placements that provide medical students with the five clinical cancer experiences, as outlined in the Cancer Council Australia's Ideal Oncology Curriculum for Medical Schools (15, p.45):

- Talking with and examining people affected by all stages of cancer
- Talking with and examining people affected by all common cancers
- Observing all components of multidisciplinary cancer care
- Seeing shared decision-making between people with cancer and their doctors
- Talking with and examining dying people

Exposure to cancer service units

It is recommended that clinical exposure be provided, where possible, through placements in cancer service units, including medical and radiation oncology, and palliative care.

Section Two: Principles of Cancer Management

- Discuss the difference between treatment approaches with curative and palliative intent
- Outline the principles of multidisciplinary management
- Discuss how tumour and patient factors influence the way in which patients are managed
- Describe the role of neo-adjuvant and adjuvant therapy
- Outline the roles of locoregional and systemic therapy

- Outline organ-sparing approaches
- List common oncological emergencies and outline how these are managed
- Discuss the principles of symptom control
- Discuss the role of clinical practice guidelines
- Discuss the role of clinical trials

Principles of Surgery

- Outline the aim of cancer surgery
- Describe the importance of adequate surgical margins
- Discuss general preoperative factors
- Identify common complications of cancer surgery and how these can be managed
- Discuss the risks of tumour spill
- Describe the role of surgery in tumour staging

Principles of Radiation Oncology

- Outline the aim of radiotherapy
- Discuss indications for radiotherapy
- Describe the cellular response to radiotherapy
- Identify the various methods used to deliver radiotherapy
- Discuss why radiotherapy is delivered using fractionated doses
- Identify common side effects of radiotherapy and how they are managed

Principles of Medical Oncology

- Outline the role of medical oncology
- Discuss indications for systemic therapies

- Describe the method of action of systemic agents (i.e. chemotherapy, targeted and hormonal therapies and immunotherapies)
- Identify common side effects of systemic therapy and how they are managed

Principles of Palliative Care

- Outline the role of palliative care
- Discuss common end of life issues
- Discuss the provision of palliative care in various settings
- Discuss the role of other modalities in the palliative setting
- Identify commonly used procedures to relieve symptoms
- Outline the role of the GP in providing palliative care

Section Three: Cancer-specific Knowledge

Local context

- Identify the most commonly occurring cancers in men and women in Australia
- Identify the leading causes of cancer death in men and women in Australia
- Outline the differences in cancer outcomes between Indigenous and non-Indigenous Australians
- Outline the differences in cancer outcomes between urban and rural Australians

Cancer prevention

- Describe methods of primary and secondary prevention
- Differentiate between population-based screening and surveillance

- Discuss the scientific evidence to support population-based methods of screening for cancer
- Identify risk factors for common cancers

Cancer biology

- Outline the concept of carcinogenesis
- Describe dysplasia, carcinoma in situ, invasive cancer
- Describe tumour types
- Identify important familial cancer syndromes
- Discuss hormonal influences and tumour markers for common cancers
- Describe patterns of spread of common cancers
- Describe recurrence patterns of common cancers

Diagnostic process

- Outline the necessity of a histopathological diagnosis
- Discuss staging and grading of tumours
- Describe the prognostic implications of differentiation
- Identify potential cancer presentations

Conclusion

The cancer education framework for Australian medical schools presents a minimal blueprint from which medical schools can develop a basic cancer curriculum within an existing curriculum. The content comprises the key aspects of cancer and palliative care education presented in the current literature and has undergone both national and international review to ensure that the content is relevant to medical graduates regardless of their chosen career path.

Supplementary Information The online version contains supplementary material available at <https://doi.org/10.1007/s13187-022-02173-9>.

- Describe the physical signs of cancer
- Discuss commonly used diagnostic investigations

Patient-centred care

- Discuss the importance of involving patients in the decision making process
- Identify factors that influence patient choices
- Outline the impact of bad news on the patient's ability to process information
- Discuss the psychological impact of screening and diagnostic tests
- Consider the patient's own social context and how a cancer diagnosis will affect the patient, their family and carers
- Discuss the role of cancer support groups
- Outline the role of health professionals in survivorship care
- Identify reliable and accurate sources of information for patients

Funding Open Access funding enabled and organized by CAUL and its Member Institutions

Declarations

Conflict of Interest The authors declare no competing interests.

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