How Best to Teach and Learn About Cancer in Medical Schools

Cancer Council Australia
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INTRODUCTION

Medical schools have a duty to create practitioners that are of an acceptable level to treat the needs of the society. Cancer, the uncontrolled growth of cells in excess of their normal boundaries,\textsuperscript{1,2} is the second most common cause of death in Australia accounting for 3 in every 10 deaths.\textsuperscript{3} In 2014 alone, we saw over 45,000 individuals die from cancer, and over 123,000 new cancer diagnoses.\textsuperscript{4} The most commonly diagnosed cancers in order are prostate, colorectal, breast, melanoma of the skin, and lung cancer.\textsuperscript{3} In 2008-09 the Australian health system spent an estimated $4.5 billion on cancer health care.\textsuperscript{5} These statistics demonstrate the substantial emotional, social and economic burden cancer has in Australia. Therefore, it is important that the medical schools in Australia have a learning program that equips students with the knowledge and skills they need to provide adequate cancer care.\textsuperscript{6}

The Ideal Oncology Curriculum that was developed in 1999 states Five Essential Cancer Clinical Experiences that medical students need before they graduate. They are to talk with and examine people affected by all stages, and all types of common cancers, to talk with and examine dying people, to observe all components of multidisciplinary cancer care, and to see shared decision making between patients and their doctors.\textsuperscript{7}

CURRENT ONCOLOGY TEACHING

Currently, students in Australia undertake 6-8-week inpatient rotational blocks in various specialties of medicine including oncology. Unfortunately, there are a number of problems with this method of learning for medical students, and the Five Essential Cancer Clinical Experiences are not effectively fulfilled.

Block rotations through the hospital restricts the students to brief encounters with various cancer patients in a disjointed manner.\textsuperscript{8,9} Because of this, students often miss out on gaining a comprehensive understanding of the disease as they do not see the linear progression of patients moving through the stages of cancer. They can fail to truly understand the patient’s perspective of their illness, and they don’t get a thorough interaction with the multidisciplinary treatment team. This essay will suggest a switch of teaching style to a longer, patient-centred approach.
which can successfully address the concerns with the current rotational blocks and meet the Five Essential Cancer Clinical Experiences criteria.

**PROPOSED METHOD OF TEACHING**

An integration of the core medical specialties into a year long program. Concurrently the students would each follow one cancer patient over the course of the year. This method will increase understanding of cancer as a disease, of the patient’s perspective, and of the multidisciplinary team.

**COMPREHENSIVE UNDERSTANDING OF THE DISEASE**

**EVIDENCE**

Cancer can have a long and slow progression, from months, to years to a life time. In order to receive a sufficient education in cancer care, students need to talk to and examine people affected by all stages of cancer including early, locally advanced, locally recurrent, and advanced cancer. Following patients over a longer course of time allows students to witness the longitudinal progression of cancer and to view patients in all of the required stages. Current research into the educational success of longitudinal programs across all medical specialities found that students performed at least as well, if not better, than their traditional block rotational peers.

**MECHANISM**

There are many mechanisms underlying the success of the longitudinal placements including the supportive environment created for learning, the increased range of types of disease seen, and the continuity of patient care.

When students are learning in the same environment for a substantial amount of time, supportive relationships develop between students and their educators. Students at the Harvard Medical School on a longitudinal clerkship rated their atmosphere of learning, level of feedback, and mentorship significantly higher than their peers. Students from the
University of Western Australia found their learning became self-directional. When they encountered something unknown they could immediately speak with their supervisors whom they had been learning from all year. These relationships create an environment where students feel safe to ask questions, to engage in open communication, are trusted, and are motivated to take an active role in their own learning. This supportive environment enhances learning and contributes to the increase in education success seen in longitudinal placements.

There are more than one hundred types of cancer, and each cancer can present in different ways. Students under the traditional program are missing out on learning opportunities as it is not possible to expose students to a sufficient amount of disease presentations in a limited 6-8-week block. However, a longer approach substantially increases the amount of relevant patients for students to witness and learn from.

Continuity of patient care is vital to learning the development of progressive diseases, such as cancer. Following patients throughout the course of their disease allows students to comprehensively understand how the biological nature of the condition develops over time and how this relates to the clinical experience.

**PATIENTS VIEW OF THE ILLNESS**

Longitudinal placements allow students to thoroughly understand the patient’s perspective of the illness on a physical, mental and social basis. Research from the Harvard Medical School-Cambridge Integrated Clerkship demonstrates the beneficial effects a longitudinal curriculum can have on the students understanding of patients views. The study involved medical students following two patients for 7 months, one with breast and one with colon cancer, from diagnosis to various forms of treatment and in some cases, patient funerals. The continuity of care allowed the students to gain insight into the patient’s feelings, opinions, and understanding of their cancer, in a way that can’t be experienced through traditional block rotation learning.

Students from the program reported learning “what being sick is like from the patient’s perspective”, “an understanding of the patient’s values, hopes, dreams, and how these interact with her experience of illness”, “an appreciation of the impact on the patient and her family”, “how to deal with both medical and personal aspects of cancer simultaneously” and “how my
patient understands, lives and copes with their cancer”. Students even noted “this would be an incredibly difficult task to accomplish through following him through one hospitalization.”

When students are able to meet with their patient before and after treatment and surgeries, they are able to better understand how the patient perceives the treatment, what worries them, and how they cope with the fear and stress. Humans are so much more than the disease they are inflicted with; understanding how the illness affects patients individually will allow for a significant increase in patient care.

Longitudinal placements align with one of the founding principles of medicine: the ability to help people. Forming a student-patient relationship provides a strong motivator for learning. Getting to know a patient and appreciating them as a person, augments the desire in students to provide help. This then, serves as a motivator for learning because the more the students know, the more they can do for their patients.

Another advantage of the longitudinal approach is the knowledge of how disease affects not only the patient, but also their family. Students who had been on a longitudinal program reported feeling better prepared than their peers at involving the patient and their family in aspects of the decision making process. Cancer is predominantly a disease of older people, as incidence rates of most cancers increase with age. Therefore, knowing how to appropriately interact with families who may be the appointed decision makers for the patient is essential. Additionally, understanding and supporting the family through the process of caring for their loved one is equally as important.

UNDERSTANDING OF THE MULTIDISCIPLINARY TREATMENT TEAM

Longitudinal placements allow students to experience all of the health professionals involved with the treatment of cancer.

WHAT IS A MULTIDISCIPLINARY TREATMENT TEAM?

In Australia we have a health care system composed of public and private sectors across urban and rural areas. Cancer care involves everything from population screening, to diagnosis, treatment, rehabilitation, and palliative care. Treatment often involves a combination of
therapies including surgery, medication, radiotherapy, and chemotherapy. Cancer care can be delivered in a wide range of methods and settings. Each aspect of care is interrelated and should not be viewed in isolation.

The National Service Improvement Framework for Cancer stated that:

“a more coordinated approach to cancer is required which enables networked integrated services to be provided within a patient-centered and multidisciplinary framework.”

A multidisciplinary treatment team approach to cancer care involves many medical and allied health professionals collaborating to create a personalized treatment plan that will give the patient the best possible outcome. Research has shown that a multidisciplinary team provides benefits including improved patient care, decreased wait time between diagnosis and treatment, a reduction in the duplication of health services, decreased cost, better referral pathways, more opportunities for the patient to be involved in decision making, and ultimately a decrease in patient mortality and an increase in quality of life.

CONCERNS WITH BLOCK ROTATIONS

Due to the short nature of traditional block rotations, students do not get to witness all of the various forms of treatment for their patients, or interact with and understand the many medical and allied health professionals that are involved.

THE LONGITUDINAL APPROACH AND THE MULTIDISCIPLINARY TEAM

It is essential for medical students, our future doctors, to understand the multidisciplinary team approach to ensure optimal care is provided for the patient. Collaboration with cancer patients over an extended period of time allows students to experience more, if not all, of the health professionals involved with the treatment of cancer. This enables students to understand how treatment regimes are designed, how the team of people affect the patient, and how this results in better outcomes for patients.

In the previously mentioned Harvard Medical School-Cambridge Integrated Clerkship, students encountered between four to six different specialists and disciplines for each patient. Students reported being able to appreciate the difference between the view and mindset of the
generalist and the specialist, how each specialist focused on different parts of the patient’s illness, and were inspired to learn about associated aspects of medicine.  

The Ideal Oncology Curriculum states that it is essential that medical students observe all components of multidisciplinary cancer care including people preparing for, undergoing and recovering from surgery, radiation therapy, chemotherapy and other types of care.  

Switching into a longitudinal program could ensure this experience is achieved by all students.

**FEASIBILITY**

Benefits aside, there are some valid concerns surrounding this method of teaching. The issues raised within the research include site variability, types of students, and the cost.

**VARIABILITY**

There can be enormous variability between the placement sites due to differences within the hospitals, their staff, and their methods. Students at both Flinders University and the Northern Ontario School of medicine reported variation between placement sites. This diversification can be seen positively and negatively. While variation can be desirable when the outcomes are equal across students, there is a prospect that the variation could lead to inequitable education opportunities. If a longitudinal program was to become part of every medical schools’ curriculum, the sites would need to become standardised in a way that allows all students to achieve the core learning objectives, whilst allowing the site flexibility to teach in a way that they see appropriate.

**TYPES OF STUDENTS**

A second concern with learning in a longitudinal program is simply that it does not suit all students. Highly motivated, well organised, self-directed learners may be better suited to this style of teaching. Students have reported feeling that they needed more structure, and in the longitudinal environment they felt they were ‘floundering’. Additionally, there will be some students who do not engage well with their supervisor, which in a 6-8 week block is manageable, but may become problematic in the long term. The reverse is also true as students may prove to be difficult in the view of the supervisor.
There are two points to consider in rebuttal to this concern. Firstly, even though this model may exacerbate these issues, it is likely that they would arise in any setting. As it is a personal problem, the longitudinal nature of the program is not the cause of the concern. Secondly, we need to consider what type of people we are training to become our future doctors. Self-direction, motivation and amicability are all characteristics that are well regarded in medical students. Should we be inhibiting a better learning environment simply to cater for those without these admirable characteristics?

COST

Another concern with a longitudinal program is the potential costs. For example, the budget for the Harvard Medical School integrated clerkship was an additional $60,000 on top of the normal block rotational costs. Currently there is little data which compares the cost of longitudinal and traditional placements with the outcomes each produces. To understand whether a longitudinal placement is cost effective when potential improved patient outcomes are considered, a cost-benefit analysis would need to be performed.

CONCLUSION

When observing the current cancer morbidity and mortality statistics, the possibility of a world without cancer seems all but impossible. But, whilst we wait for the cure to be discovered, we need to keep improving our health care system from better screening, to earlier diagnosis, faster treatment, and ultimately better prepared health professionals. For now, we must ensure our medical students grow into pertinent doctors by transitioning into an improved, integrated, and longitudinal method of learning. Refining the teaching of medical students is the next step in the unceasing fight against cancer.
REFERENCES


