

The evolving landscape of medical education in oncology

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Abstract

The field of oncology is continuously evolving. The way in which cancer is diagnosed, staged, and managed has changed so much in the last decade, and awareness of the need for a 'personalized medicine' approach to patient management is growing. In the age of 'information overload' and tight time and budgetary restrictions, medical education plays a key role in ensuring that healthcare professionals involved in the care of patients with cancer are informed of the latest treatment advances and shifts in thinking around optimal patient management. The way in which medical education is targeted, designed, and delivered in the oncology setting has had to evolve in line with the changes in the oncology landscape. This article addresses some of the emerging trends in medical education, particularly those that are key drivers of the way in which medical education is executed in the oncology arena. It explores who is now being targeted through medical education, how medical education is being designed and delivered, whether medical education can be delivered strategically, and what impact tighter regulations and budgetary constraints have had on the way in which medical education can be executed.

Keywords: Oncology, Medical education, Adult learning styles, Communication strategy, Accreditation, Compliance

Introduction

The field of oncology is continuously changing. The findings of a single clinical trial have the potential to transform clinical practice and, as a consequence, the *right* treatment approach today may not be the *best* approach for tomorrow. In the age of resource restrictions, where physicians' time is precious, keeping up-to-date with the latest treatment advances can be challenging. UC on the whole, oncologists and other healthcare professionals working with patients with cancer do strive to

keep abreast of the latest data. Compared with other specialties, oncologists are 'early adopters' and are willing to try out novel strategies and technologies in the clinical trial setting that they believe might bring benefit to their patients. Many patients with cancer can often only expect to survive one or two years after diagnosis, and therefore any treatment that can offer an incremental benefit over standard of care, even if that benefit is only a couple of months, is one worth exploring. The combination of these two factors means that oncologists feel compelled to be 'ahead of the curve' with respect to treatment advances. They need to be able to access the information that will allow them to be so in an easily digestible and convenient way, so this learning can take place around time in the clinic.

Furthermore, in the last decade or so, advances in our understanding of the pathogenesis of cancer, as well as the prognostic and predictive markers that can dictate patient outcomes, have led to significant changes in the way in which cancer is diagnosed, staged, and managed. Clearly advances have been more prominent in some cancers than others. The use of tyrosine kinase inhibitors in chronic myeloid leukaemia has, for example, transformed a fatal disease into a chronic, manageable condition. In head and neck cancer, on the other hand, there has been no significant treatment breakthrough in the last 30 years, and researchers are still exploring therapeutic options that might prolong survival in these patients. However, overall, advances in our understanding about how cancer develops have led to an era of 'personalized medicine', in which physicians are presented with the challenge of implementing increasingly complex treatment strategies, and making increasingly complex treatment decisions. Although in the Edwin Smith Surgical papyrus, which dates from the 17th century BC, eight cases of breast cancer are described as being removed with a 'fire drill', these days physicians need to choose the optimal combination of surgery, radiotherapy, chemotherapy, and targeted therapies to offer their patients the best chances of

survival. No one size fits all and, as a result, physicians need to assimilate an enormous amount of evidence in order to make the right treatment decision for the right patient. This can be challenging in the era of ‘information overload’, where an abundance of information often makes the task of filtering out the noise to reveal best practice difficult.

As a result of these challenges, there is an increasing need for medical education that builds on the training offered to physicians in medical school and keeps physicians abreast of the important treatment advances and changes in treatment guidelines. There is also the need to expose them to the latest thinking around what optimal patient management is and how to manage their budgets to ensure that this optimal care can be delivered to their patients consistently. The term ‘medical education’ captures any educational activity that has been designed to maintain, develop, or expand the awareness, understanding, skills, or performance of healthcare professionals. In some cases, this medical education is provided by medical societies, such as the American Society for Clinical Oncology (ASCO) or the European Society for Medical Oncology (ESMO), or by specialty societies, such as the Association of Cancer Physicians (ACP) in the UK. In other cases, this medical education is supported by unrestricted educational grants from pharmaceutical and device companies active in the oncology arena. Although some critics have challenged the objectivity of industry-sponsored educational programmes, the general consensus is that academic medicine and industry cannot operate independently of each other. Both parties play a unique and crucial role in driving the advancement of healthcare through the delivery of educational programmes.

Who are we trying to educate?

Historically, physicians have been the primary target for medical education; however, the changing healthcare environment means that other important targets are emerging, such as specialist nurses, pharmacists, patients, carers, and even payors. Pharmaceutical and device companies are therefore increasingly investing resources into delivering medical education to these new target groups. This is particularly relevant in the field of oncology. Specialist nurses play a key role in patient management in many countries, and are often in the best position to monitor and manage side effects. Pharmacists often play a key role in determining the treatments that can be prescribed, as well as

taking a more practical role in reconstituting drugs for intravenous administration. Patients are encouraged to take an active role in making the decisions about their treatment, and carers often need advice on how to best support the patient during and after treatment. And finally, payors influence what treatments are available to a particular patient. All these different groups of stakeholders need to be educated in order for a treatment advance or shift in thinking to emerge in clinical practice.

Educational programmes that help patients understand, either directly or through their nurses or carers, their diagnosis, treatment options, possible side effects, and the importance of treatment adherence are valuable tools that can enhance the partnership between healthcare professionals and patients and thus promote better care and outcomes. Traditional channels used to communicate with physicians, such as peer-reviewed publications and scientific symposia at key congresses, are not appropriate for nurses, patients, or their carers. These traditional approaches have therefore been accompanied by more innovative approaches that reach out to these wider target audiences, such as electronic side-effect management toolkits for nurses and support websites or information booklets for patients and carers. An effective medical education programme evaluates which stakeholders influence treatment decisions, and targets specific educational messages to these stakeholders through the most appropriate communication channels.

In recent years, we have also seen an increased focus on the role of the multidisciplinary team in decision-making. In oncology, effective treatment strategies often require close collaboration between different specialties, and thus different mind-sets. The management of prostate cancer, for example, is traditionally led by urologists, as surgical and hormonal treatments have long been the mainstay of treatment. However, with the launch of new chemotherapy regimens offering survival benefits in patients with hormone-refractory prostate cancer, it is becoming increasingly important to involve oncologists at the earliest possible stage. This ensures that the treatment plan devised incorporates surgery, hormonal therapy, chemotherapy, and supportive care strategies, where appropriate. Medical education can play a key role in facilitating dialogue between these different specialties, creating opportunities for discussion on common issues and challenges. In this way, sometimes medical education is merely about bringing people together so they learn from each other.

Are all learners the same?

The delivery of effective medical education should be guided by a number of key principles, and these must be borne in mind when developing medical education programmes in the field of oncology. Firstly, learners must acknowledge that they need to learn, and to clearly understand what they are going to learn, in order to benefit from training. The training must therefore be designed with clearly stated and relevant objectives, so that the learners can understand what they need to learn, how the education/training addresses these needs, and how the training will benefit them. Secondly, learning cannot be purely didactic in nature, it must also allow the learner to experience what is being taught. Effective medical education should therefore comprise a practical element that allows learners to practice what they have learnt. Finally, medical education needs to take into account the different ways in which people learn and their preferences with respect to how they want to learn.

Generally speaking, the greatest pull for a learner to attend an educational event is the topics that are going to be covered, and who will be speaking about these topics. Key thought leaders (KTLs) remain the most effective way to deliver education to job-in physicians. As a result, the first thing to consider when developing an education programme is who your audience is most likely to want to learn from, and then involve these key individuals, wherever possible, in delivering the education. There are a number of ways, however, that learners differ. A deeper understanding of the different adult learning styles, and the design of medical educational programmes that address these different learning styles, is another key way in which the delivery of medical education has evolved over recent years.

In 1986, Honey and Mumford proposed that there were four main adult learning styles: activist, reflector, theorist, and pragmatist. An activist likes new experiences and ideas, and enjoys collaborative group learning. A reflector likes considering different perspectives, and enjoys listening to others. A theorist likes step-by-step analytical approaches, and enjoys testing learned ideas by applying them to practical situations. A pragmatist likes ideas with immediate applicability, and enjoys hands-on testing and practice. Any medical education programme must therefore speak to these different types of learning and incorporate a mixture of plenary presentations, case-study-based discussions, practical 'hands-on' sessions, and interactive breakout workshops. A recent standalone event supported by an educational grant by a pharmaceutical

company marketing a number of oncology products, for example, used a mixture of keynote plenary presentations by KTLs to provide an overview of the disease area and treatment landscape, breakout workshops to address clinical challenges, case-study-based discussions to identify the most appropriate treatment strategy in hard-to-treat patients, and interactive keypad voting throughout the event to assess attendee opinions and how these opinions changed as a result of the educational programme. By providing this variety in the way in which medical education is delivered, the attendees are more likely to retain the educational messages inherent in the programme.

Crucial to the success of any educational activity is also the skill of the educator. In a setting in which peer-to-peer education is the most effective way of delivering education, often educational programmes need to be implemented by KTLs who have a varying level of experience as educators. An important step in the preparation for the educational activity is therefore training the trainer. Not only is it important to involve the trainers at the outset, when the programme is being developed, so that they can input into the educational objectives of the activity, it is also crucial that they are provided with guidance on how to best present or facilitate particular sessions, so the overall programme is as impactful as possible. Clearly, linking this guidance with the educational content of the activity can help to deliver any necessary training to the trainer in a setting in which they are more likely to be receptive to it.

How has the digital era impacted on medical education?

The use of digital media is also becoming much more commonplace in medical education. Increasingly healthcare professionals, particularly younger physicians, are turning to the Internet in order to remain informed on recent treatment advances or changes in treatment guidelines. As such, the Internet is becoming an important way of connecting with and engaging healthcare professionals. Oncologists who, like most healthcare professionals, have substantial constraints on their time, and restrictions on financial support to attend congresses, are no longer able to attend every congress or read every important medical journal. In response, not only are scientific symposia run at these congresses increasingly also broadcast as webcasts and/or podcasts, but numerous online services have also sprung up that attempt to summarize the findings of recent research in an easily

digestible format. This trend has been further strengthened by the explosion, in recent years, in the use of Smartphones and tablet PCs in the medical setting. Physicians now receive updates via RSS feeds delivered to their phones, browse journals via iPhone/iPad applications, and have access to online textbooks and other resources at the patient's bedside.

In addition to offering physicians a convenient way of accessing education, the digital delivery of medical education also has other advantages. Firstly, in the digital environment, it is easy to collect information about the individuals taking part in the training – their experience, awareness of certain topics, and opinions on controversial issues. This can provide invaluable information about educational needs, as well as allowing the educator to map out how opinions are changed, if at all, as a result of the educational programme. Monitoring the online activity following a digital educational event can give an indication of the 'stickiness' of the educational programme, tracking how the educational messages are being received and how they shape opinion in the long run. Secondly, digital education creates a forum in which the individuals taking part in the training event can discuss the topics at hand either during or after the event. It also allows them to forward the link to the training to their colleagues or post it online through social media platforms. Medscape remains one of the most popular online resources for medical information and their oncology section (<http://www.medscape.com/oncology>), for example, offers healthcare professionals access to numerous continuing medical education (CME) accredited educational modules on oncology topics and allows them to email a link to the module to a colleague or share it via Facebook™ and Twitter™.

Furthermore, in recognition of the fact that physicians prefer to learn from their peers, numerous healthcare sites are now offering social networking, discussion forums, blogs, and other interactive features, all of which encourage dialogue and create vibrant online communities in which physicians can share their expertise. In many cases, therefore, medical education is now not solely about delivering education in the traditional settings of faculty-led scientific symposia and other standalone educational events, but also about providing online forums in which physicians can take the lead in driving medical advancement by sharing opinions, posting case studies, and debating controversial issues.

Patients too are increasingly looking to the Internet for information about their disease and

possible treatments. The concept of the 'informed patient' is commonplace in modern healthcare. It is particularly prominent in oncology, where the diversity in different treatment strategies, with different risk-benefit ratios, calls for a greater contribution from patients in guiding the way in which their disease is managed. The abundance of health-related websites has necessitated the need for tighter control over the content of these websites, and organizations, such as the Health On the Net (HON) Foundation, are at the forefront of the drive to improve the quality and transparency of health information posted online. In oncology, patient and carer support websites can be important tools that empower patients and their carers to become more involved in the management of their disease. Some of the best websites now offer patients forums to share their experiences, gain from the insights and experiences of other so-called 'expert patients', and download useful tools, such as treatment diaries and information leaflets. Furthermore, a deeper understanding of patient segmentation has also allowed website developers to tailor online experiences to specific users; targeted educational messages can be delivered to specific, identified patient segments, thereby maximizing the benefit of the information in the eyes of the patient.

How much can we allow education to be defined by strategy?

Given the breadth of different audiences being targeted through medical education activities in oncology, and the variety of different communication vehicles through which medical education is delivered, it is becoming increasingly important to ensure that the *right* educational messages are delivered to the *right* audience through the most appropriate communication channel. Designing impactful educational messages depends on gaining an in-depth understanding of what physicians currently think about a particular topic, as well as what, as educators, you would like them to eventually think about the topic. Educational messages should aim to bridge this gap between current and desired thinking, shifting healthcare professionals' mind-sets, so they can recognize unmet needs, understand the place of novel management approaches, and implement changes in patient management.

As mentioned before, medical education is both provided by medical societies and supported by unrestricted educational grants from pharmaceutical and device companies. In the case of the latter, the delivered medical education must

address the educational needs within the field in the context of the commercial strategy and vision for the products marketed or being developed within that company. This means that the educational messages delivered through industry-sponsored educational events need to be driven by a clear and robust communication strategy. This strategy should underpin all the medical educational activities for a particular product. The importance of strategic communications is especially evident in oncology. Given their mechanisms of action, many new agents are concurrently investigated for numerous different oncology indications. As the strategic considerations for these agents likely differ from one indication to the next, the educational messages must be tailored to the indication, addressing the particular issues and unmet needs of that indication and the likely different target audiences involved. Yet, at the same time, it is also important that all educational messages for a particular agent are aligned, and that the messages developed for one indication do not contradict or undermine the impact of messages in another.

The strategic delivery of educational messages needs, of course, to be done with sensitivity. Physicians involved in delivering educational programmes, as faculty members, need to be given the freedom to express their own opinions, and highlight what they believe the audience needs to know. Transparency is key. It is therefore crucial that these faculty members are involved from the outset, in terms of defining the educational objectives of a particular activity and discussing the most appropriate way of achieving these objectives.

What can we do, and what can we not do?

As the means through which to deliver medical education have become more inventive and diverse, and the healthcare audiences targeted broader, those designing and implementing medical education programmes face some significant challenges. Tighter control over the format, content, and delivery of medical education means that special care must be taken to ensure that all medical education initiatives are designed in line with the codex requirements of the country in which they are being delivered. Not only is there a need to create 'fair and balanced' educational programmes, it is also crucial that appropriate measures are taken to ensure that there is full transparency with regard to industry sponsorship and author/speaker conflicts of interest.

Perceptions of bias in industry-sponsored medical education have led to an increasing importance of the bodies that govern and regulate CME or continuing professional development (CPD), such as the Accreditation Council for Continuing Medical Education (ACCME). ACCME's mission is:

the identification, development, and promotion of standards for quality CME utilised by physicians in their maintenance of competence and incorporation of new knowledge to improve quality medical care for patients and their communities.

By providing accreditation for medical education programmes, bodies such as ACCME address concerns over objectivity and independence of these educational programmes from commercial goals, and ensure that medical education is delivered in an environment free from brand promotion. However, it is important to note that non-accredited medical education can still be of very high quality. Strict Codes of Conduct defined by bodies, such as the International Pharmaceutical Congress Advisory Association (IPCAA), European Federation of Pharmaceutical Industries and Associations (EFPIA), and the Association of the British Pharmaceutical Industry (ABPI) mean that all major pharmaceutical and device companies have entire medical and legal teams dedicated to ensuring that all of their sponsored medical education activities are fully compliant, fair balanced, and non-promotional in nature.

What should we do as educational grants shrink?

In our current global economic crisis, many pharmaceutical and device companies are finding that their budgets for medical education have been cut dramatically. As a consequence, there is increasing pressure to deliver medical education in a cost-effective manner, and to demonstrate return on investment for these educational activities. In many cases, it is now a requirement to demonstrate the success of a medical education initiative by assessing outcomes against pre-specified key performance indicators, thereby determining whether the objectives of the initiative have been met, and whether the money has been 'well spent'.

Budget restraints also mean that medical education agencies need to become more creative in the way in which they deliver medical education. In order to spare the expense of flying out physicians to a standalone educational events, as well as reducing the demands on the physicians' time, medical

education is now often delivered online. While virtual meetings will never be able to completely replace face-to-face meetings, as most people get much more out of a real meeting versus a virtual one, they can deliver educational messages to a much wider audience and allow this audience to take control over when and where they learn.

Conclusions

In summary, medical education plays a crucial role in the field of oncology, providing invaluable educational resources that aim to further medical advancement and optimize patient care and outcomes. Effective medical education acknowledges that numerous healthcare professionals are involved in patient care and that, therefore, educational messages need to be delivered to nurses and pharmacists, as well as physicians. It also takes into account the fact that the collaborative working between different medical disciplines is critical to effective patient care, and provides forums for dialogue between these different specialties. Effective medical

education also acknowledges that different people like to learn in different ways and therefore attempts to deliver the education in a variety of different format to speak to these differences. It also depends on the delivery of well-thought-out educational messages that speak to the educational needs of the audience and precipitate shifts in thinking that drive forward medical advancement. Effective medical education also acknowledges that many healthcare professionals can no longer attend one-off educational events and want to access educational resources online, wherever they have a spare moment. The challenges posed by tighter restrictions on the way in which medical education is being delivered, and the budgets available, means that it is becoming increasingly important to think creatively when devising medical educational initiatives. They must target the *right* messages to the *right* audience, but should do so in an unbiased and balanced manner. And, most importantly, they must never lose sight of the ultimate goal of medical education – to drive improvements in patient care.

Author information

Shanida Nataraja has, over the last 11 years, had the opportunity to work on a wide range of different medical education, medical communications, public relations and marketing activities in oncology. She is now Editorial and Scientific Director at AXON Communications, where she provides high science, strategic and editorial input into a number of key oncology accounts.