Published in final edited form as:

J Am Coll Radiol. 2017 February ; 14(2): 253–255. doi:10.1016/j.jacr.2016.07.009.

Tumor Board Shadowing for Medical Students as a Means of Early Exposure to Multidisciplinary Oncology Education

Malcolm D. Mattes, MD,

Department of Radiation Oncology, West Virginia University School of Medicine, Morgantown, West Virginia

Robert Gerbo, MD, and

Department of Occupational Medicine, West Virginia University School of Medicine, Morgantown, West Virginia

Richard M. Dattola, MD

Department of Family Medicine, West Virginia University School of Medicine, Morgantown, West Virginia

DESCRIPTION OF THE PROBLEM

Cancer is the second leading cause of death in the United States [1], and although oncologists of several subspecialties take on the principal role in managing patients with cancer, primary care physicians also play a crucial role in cancer outcomes through their role in prevention, screening, early diagnosis, and the management of issues related to long-term survivorship. As such, ensuring a basic understanding of clinical oncology is important for all medical students independent of their future professions. Unfortunately, there is little standardization and a great deal of variability in how clinical oncology is taught to medical students [2]. Furthermore, there are few published data on how first-hand exposure to multidisciplinary education is optimally carried out. The few students who participate in clinical clerkships in oncologic subspecialties may see cancer care only through the eyes of a single specialist, whereas the majority of students who never participate in such clerkships are likely to have an even more limited appreciation for the multidisciplinary decision-making process inherent to caring for patients with cancer.

WHAT WE DID

Tumor board conferences have the potential to provide a unique opportunity for students to learn from a variety of physicians at the same time. However, to our knowledge there is not currently any medical literature describing the utility of tumor board attendance in medical student education. In this pilot study, we introduced a novel tumor board shadowing program into the curriculum for first-year medical students at our institution.

Malcolm D. Mattes, MD: Department of Radiation Oncology, West Virginia University, PO Box 9234, One Medical Center Drive, Morgantown, WV 26506; malcolm.mattes@gmail.com.

The authors have no conflicts of interest related to the material discussed in this article.

The tumor board shadowing experience was incorporated into the physical diagnosis and clinical integration (PDCI) course, which is a longitudinal component of the first-year medical student curriculum at West Virginia University (Morgantown, WV). This course comprises a combination of clinical skills training and shadowing of a variety of physicians in their clinical practice on several occasions for approximately 1 hour per session over the course of the year. Students are not given any choice regarding which type of physician they shadow, with an administrator assigning them to a shadowing experience at random. The tumor board experience was introduced as a new option during the 2015–2016 academic year and was assigned randomly to students in the same manner. Students were assigned to attend a specific tumor board under the mentorship of a specific physician attending that tumor board. The students were instructed to write down three to five questions during the tumor board to discuss with the assigned physician afterward. The physician assignment, as an addition to the tumor board assignment, was considered an integral part of the program to ensure that the students were active participants in their education and had a venue to ask questions about their experience. All medical, surgical, and radiation oncologists at our institution were invited to volunteer as mentors for this program, and those who volunteered were instructed to spend 5 to 10 min after the tumor board answering any questions the students had. Only three tumor boards took place at a time, amenable to the students' schedules: breast, thoracic, and lymphoma/myeloma. Because all of these first-year students had not yet been formally taught any oncology in their curriculum at the time of the tumor board shadowing, they were also encouraged to read two sections from the website www.cancer.org in advance, one on cancer basics and the other on the specific type of cancer most relevant to the tumor board they were attending [3]. The structure of each of the tumor boards involved presentation of the clinical history, radiology, and pathology for new or challenging patients, with subsequent discussion of management.

OUTCOMES

All students who participated in this program completed an electronic survey to provide feedback on their experience. A total of 18 first-year medical students were randomly assigned to tumor board shadowing during the 2015–2016 academic year. The thoracic tumor board was attended by eight students (44%), the breast tumor board by seven students (39%), and the lymphoma/myeloma tumor board by three students (17%). The assigned physicians included a surgical oncologist for seven students (39%), a radiation oncologist for six students (33%), and a medical oncologist for 5 students (28%). Ten students (56%) spent 0 to 5 min with their assigned physicians after the tumor board ended, six students (33%) spent 10 to 15 min, and two students (11%) spent 30 min or more. Twelve students (66%) felt more competent interacting with oncologists after this experience, but only four (22%) felt more competent interacting with patients with cancer. Students were asked to compare the tumor board experience to other shadowing experiences they had as part of the PDCI course using a Likert-type scale ranging from 1 to 5 (1 = much worse, 5 = much better). In comparison with other shadowing assignments, the students most valued the tumor board shadowing program for the exposure it provided to a new field (median rating, 4.0), the educational content (median rating, 3.5), and the organization of the experience (median rating, 3.5). Students' overall experience was comparable with other shadowing assignments

(median rating, 3.0) and the tumor board shadowing experience did not induce any greater interest in pursuing oncology as a career (median rating, 3.0). It should be noted that inspiring greater interest in oncology as a career was not necessarily the objective of the PDCI course, which aims to simply give students a broad exposure to multiple areas of medicine as they develop their clinical skills.

The most important things students cited that they learned were a greater appreciation for the multi-disciplinary aspects of oncology (14 students) and how the diagnostic process works (two students). The most useful part of the experience to the students included seeing the interaction of the different physicians (six students), sitting with the physicians afterward and asking questions (five students), reviewing imaging and pathology (five students), and listening to the case presentations (four students). The least useful part of the experience was not understanding all of the discussion and terminology at this point in their education (six students) and not spending enough time with the assigned physicians afterward (four students).

Our findings have helped elucidate ways to improve the program in future years. We believe that ideally this experience should take place concurrently with the oncology coursework, so that students have more background knowledge to appreciate the details of the discussion. Unfortunately, because of scheduling constraints this was not considered feasible at our institution, so we attempted to provide some introductory online materials meant for the lay public as a substitute. However, these materials seem to have been insufficient for several students, so instead, this year we have developed a more directed self-study module to introduce students to the vocabulary and basic concepts they will be exposed to. We will also ask faculty members to try to spend a few minutes with the students both before and after the tumor board to provide both an in-person introduction and debriefing.

In summary, we have demonstrated that a tumor board shadowing experience is feasible and well received by first-year medical students. The primary benefits included exposing students to a new area of medicine, helping them feel more comfortable interacting with oncologists, and giving them a better understanding of multidisciplinary care. Although other institutions have described multidisciplinary education as a key objective to their oncology curricula, this was generally achieved through lectures led by a variety of oncologists rather than through firsthand exposure to a multidisciplinary conference [4–10]. Although the optimal strategy for teaching multidisciplinary education is unknown, seeing how physicians interact in a real-world environment may be more meaningful to students and provide a meaningful complement to lectures. Although there were no direct patient encounters as part of this experience, it nevertheless seems to be viewed at least as well as other more traditional shadowing assignments that were more common throughout the rest of the year. We aim to continue collecting data on this program at our institution and hopefully expand it to more advanced medical students and to other institutions as well.

Acknowledgments

The authors thank Barbara Doyle, Gina Roman, and Sandra Malone for their administrative support, as well as all of the physicians and students who participated in this experience.

References

1. American Cancer Society. [Accessed June 4, 2016] Cancer facts and figures. Available at: <http://www.cancer.org/research/cancerfactsstatistics/cancerfactsfigures2016/>
2. Mattes MD, Patel KR, Burt LM, Hirsch AE. A nationwide medical student assessment of oncology education. *J Cancer Educ.* 2016; 31:679–86. [PubMed: 26123764]
3. American Cancer Society. [Accessed June 4, 2016] Learn about cancer. Available at: <http://www.cancer.org/cancer>
4. Gaffan J, Dacre J, Jones A. Educating undergraduate medical students about oncology: a literature review. *J Clin Oncol.* 2006; 24:1932–9. [PubMed: 16622269]
5. Tattersall MH, Langlands AO, Smith W, et al. Undergraduate education about cancer. A survey of clinical oncologists and clinicians responsible for cancer teaching in Australian medical schools. *Eur J Cancer.* 1993; 29a:1639–42. [PubMed: 8217375]
6. Oncology Education Committee. Ideal oncology curriculum for medical schools. Sydney: Cancer Council Australia; 2007.
7. Pavlidis N, Gatzemeier W, Popescu R, et al. The masterclass of the European School of Oncology: the “key educational event” of the school. *Eur J Cancer.* 2010; 46:2159–65. [PubMed: 20609578]
8. Pavlidis N, Vermorken JB, Stahel R, et al. Undergraduate training in oncology: an ESO continuing challenge for medical students. *Surg Oncol.* 2012; 21:15–21. [PubMed: 20708925]
9. DeNunzio NJ, Joseph L, Handal R, et al. Devising the optimal preclinical oncology curriculum for undergraduate medical students in the United States. *J Cancer Educ.* 2013; 28:228–36. [PubMed: 23681770]
10. Kwan JY, Nyhof-Young J, Catton P, Giuliani ME. Mapping the future: towards oncology curriculum reform in undergraduate medical education at a Canadian medical school. *Int J Radiat Oncol Biol Phys.* 2015; 91:669–77. [PubMed: 25583687]