

The value of multidisciplinary tumor boards in cancer care

Executive summary

Tumor boards provide a collaborative, multidisciplinary approach to cancer care, bringing together oncology, radiology and pathology specialists to aid in decision-making and improve care coordination. In the United States, tumor boards have been taking place for more than 50 years. At first they were relatively limited to large health systems with the necessary resources to facilitate and accommodate the attendance of multiple subspecialists. Today, tumor boards are commonplace even in smaller settings and virtual settings. Their purpose has evolved “from general case meetings into weekly focused gatherings on cancers affecting specific organs, ‘mini-tumor boards,’ and even molecular tumor boards.”¹

Tumor board meetings provide numerous benefits in preventing and diagnosing cancers, planning treatment and evaluating decisions. Research shows physicians frequently modify their treatment decisions based on information discussed with other cancer specialists at

tumor boards. The meetings also have teaching value, providing education to attendees and exposing trainees to real cancer cases.

Tumor boards are commonplace around the world but vary in size, focus (e.g., cancer type) and meeting frequency. All tumor boards, however, require preparation and a structured meeting format to be effective. An optimized workflow can significantly improve the entire process, from collecting, preparing and presenting information to documenting decisions.

This white paper provides background on tumor boards and discusses their value in cancer diagnosis and treatment decisions, focusing on benefits for cancer care teams, patients, institutions and the greater medical community. Other papers in this series from Roche Diagnostics Information Solutions provide an analysis on tumor board workflow challenges and best practices.

The benefits of a multidisciplinary approach to cancer

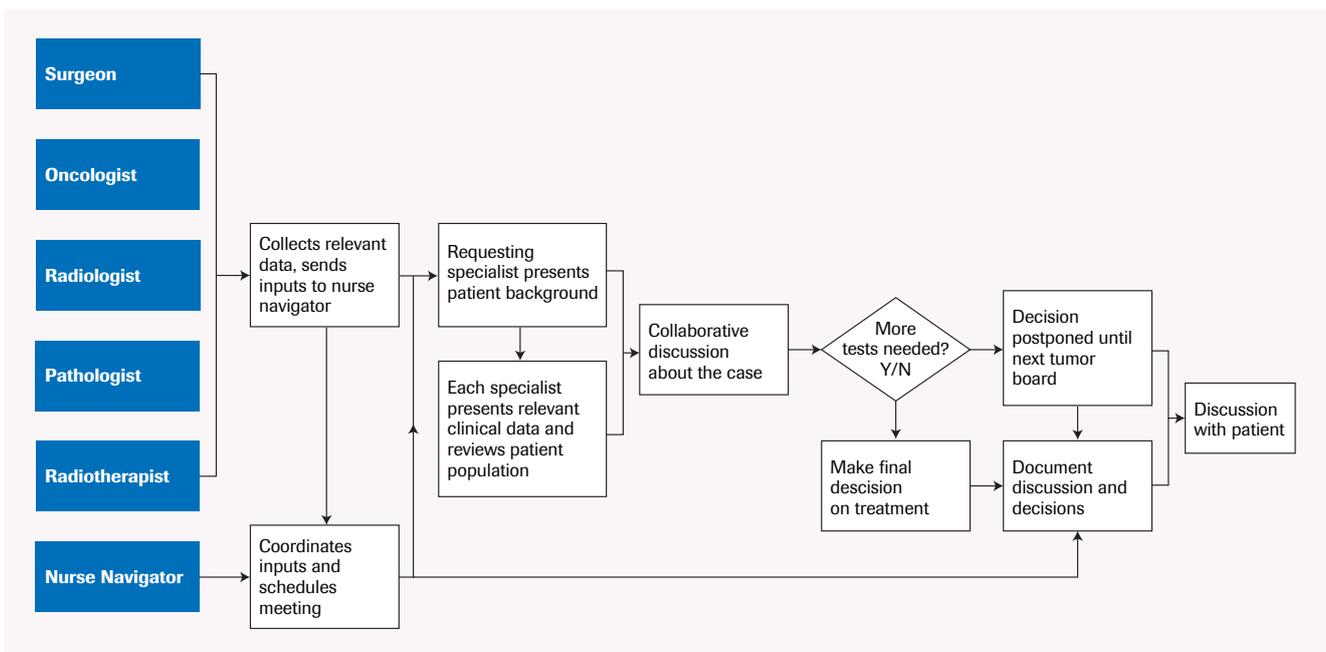
Multidisciplinary tumor board meetings provide the opportunity for physicians and other providers across multiple specialties to collaboratively discuss diagnoses and decide on treatment plans for cancer patients. The primary purpose of every tumor board is to improve patient care and treatment outcomes by achieving consensus among all participating specialists.

Regularly conducted in countries worldwide, tumor board meetings typically include medical, surgical and radiation oncologists, radiologists, surgeons, pathologists, nurse navigators, and sometimes other specialists (e.g., geneticists, radiotherapists), primary care physicians, social workers and others. Large academic medical centers and health systems often have many tumor boards (including subspecialty tumor boards dedicated to cancer in a particular organ), while small community hospitals – particularly those in rural areas and other settings where resources are limited –

might conduct tumor boards less frequently or not at all², or via virtual conferencing technology. In the United States and Europe, conducting regular, interdisciplinary care meetings to discuss cancer cases is required for a breast cancer center to maintain accreditation.³

Tumor board meetings generally follow a structured format, with every member contributing his or her own specialized expertise to the discussion. For example, an oncologist and/or surgeon presents a patient's relevant history and summarizes the key points in the patient's case, followed by a radiologist's presentation of imaging and diagnostic tests. A pathologist then presents glass slides or digital images of the tumor's pathology and reviews the histopathology report, making sure those findings are well understood by all disciplines present. Other specialists in attendance (if applicable) present their findings before the entire team discusses the data and determines the individual patient's treatment plan.

Overview of a typical breast cancer tumor board



This workflow diagram provides a general overview of the structure and general workflow associated with a typical tumor board for a breast cancer patient. The specialist who requested for the patient to be discussed begins by presenting patient background and relevant findings. Others in attendance then present their own related findings before the group discussion begins.

Improved diagnostic decision-making:

Increasingly complex cancer care requires a multidisciplinary approach, and regardless of the specific meeting format, an effective tumor board relies on an optimized workflow from collecting and preparing patient data to documenting treatment plans. With various specialists working on a single cancer case, one of the primary benefits of a tumor board is ensuring all diagnostic tests and treatment options for a patient are considered.³ An international survey of American Society of Clinical Oncology (ASCO) members showed that physicians not only rely on tumor boards to finalize diagnoses, but frequently change treatment plans based on information discussed during the meeting. Survey respondents reported changes in surgery type, cancer staging, and pathology findings in breast and colorectal cancer cases.⁴ Overall, 96% of 430 respondents said the benefit to patients is worth the time and effort spent preparing for and participating in tumor boards.

A 2015 study by Foster and colleagues further illustrated how tumor boards influence clinical recommendations. In the study, 19 tumor boards discussed 76 patients with breast disease (43 malignant and 33 benign diagnoses) across six sites in Canada.³ The results revealed changes in the management plans of 31 patients (41%), including avoidance of immediate surgery, change in the type of surgery, non-invasive investigation to invasive/surgical intervention, and detection of a new suspicious lesion. Most of the changes occurred in light of new or clarified diagnostic imaging or histopathology information.³

96%

of physicians surveyed said tumor boards are worthwhile.⁴

68%

said tumor boards frequently or always assist with diagnostic or treatment decisions.⁴

Enhanced care coordination and patient care:

Patients with cancer, especially those with challenging, complex cases, benefit from having a full team of specialists collaborating on their care — a form of second opinion.² This highly specialized, team-based approach also facilitates the open communication necessary for effective care coordination, aiding in appropriate, timely referrals.³ The opportunity to discuss cases and receive advice are two primary reasons for tumor board participation. In the ASCO member survey, 89% of respondents said they attended tumor boards to seek advice on making treatment decisions; 83% said they attended for the sake of participating in the discussions.⁴ In addition, 20% of respondents said tumor boards always helped them make treatment or diagnostic decisions, and 48% said tumor boards often helped them make those decisions. Tumor boards also can serve the function of validating treatment decisions and building consensus for how to manage future patients.³

“ Tumor boards are the right thing to do for patients. Multidisciplinary collaboration is the only way to reach integrated diagnostic and treatment decisions that consider all data and findings from every specialist involved.”

- Dr. Mar Iglesias, Pathologist, Hospital del Mar in Barcelona, Spain

Despite the prevalence of tumor boards across the globe, research into their effects on health outcomes is limited. Kehl and colleagues conducted a study using data from the Cancer Care Outcomes Research and Surveillance Consortium (CanCORS), including a cohort of 4,620 patients with lung or colorectal cancer, and 1,601 physicians. It showed that physician participation in weekly tumor boards was associated with lower mortality rates for patients with extensive-stage small-cell lung cancer and stage IV colorectal cancer.⁵

The impact of tumor boards on quality of care is another area in need of more research. In a high-functioning tumor board where physicians feel they can discuss their

practice habits freely in an open forum, the meeting can serve as a quality review of the care provided in a particular institution.⁶ In large organizations with multiple types of tumor boards taking place often in different locations (i.e., different tumor board meetings for different cancer types), standardizing the workflow across all meetings can help ensure consistent, evidence-based medical care.

Advanced education and research: In addition to improving care for patients, tumor boards have provided educational opportunities since they began more than 50 years ago.⁷ Today, tumor boards continue to contribute to the ongoing education of participants, including fellows, residents in training and others.^{3,6} Trainees who attend tumor boards gain valuable exposure to real cancer cases, the advantages of team-based care and the rationale behind treatment decisions.

Tumor boards also provide a platform for research projects and patient enrollment in clinical trials. The CanCORS study identified a link between physicians'

weekly tumor board participation and their patients' clinical trial participation.⁵ The authors of that study concluded that tumor boards can and often do increase physician awareness, clarity and enthusiasm about clinical trials.

Additional benefits for community hospitals:

Small, community hospitals have the opportunity to realize several benefits from implementing or participating in tumor boards. In these settings, a primary care physician is often responsible for cancer treatment decisions.⁶ However, studies show that access to a team of cancer specialists via a tumor board not only offers the possibility of advanced, comprehensive care, but it also gives the hospital the ability to retain local patients for cancer treatment, resulting in these additional advantages⁶:

- Preserves patients' continuum of care with their trusted primary care physicians;
- Eliminates the burden and costs associated with patients and their families traveling elsewhere for care;
- Increases revenue for hospital.

Conclusion

In hospitals and health systems today, multidisciplinary tumor boards are bringing cancer specialists together to review individual cases and determine personalized treatment plans. Although tumor boards vary in size and type, they tend to follow a general process and meeting format that can be enhanced by a standardized, streamlined workflow from pre-meeting data collection

through post-meeting documentation of decisions and next steps. With the primary goal of improving patient care and continuously building on knowledge and experience for future patients, tumor boards offer a range of diagnostic and care coordination benefits. They also serve as an educational tool and contribute to research for the good of the greater medical community.

References

1. Flaherty, D. "Interdisciplinary Tumor Conferences: A Surgical Oncology Fellow's Review and Perspective." OncoLive, March 21, 2016. www.onclive.com/publications/oncology-fellows/2016/march-2016/interdisciplinary-tumor-conferences
2. El Saghir, Nagi S., et al. "Tumor Boards: Optimizing the Structure and Improving Efficiency of Multidisciplinary Management of Patients with Cancer Worldwide." *Am Soc Clin Oncol Educ Book* 34 (2014): e461-6.
3. Foster, Tianne J., et al. "Effect of Multidisciplinary Case Conferences on Physician Decision Making: Breast Diagnostic Rounds." *Cureus* 8.11 (2016).
4. El Saghir, Nagi S., et al. "Global Practice and Efficiency of Multidisciplinary Tumor Boards: Results of an American Society of Clinical Oncology International Survey." *Journal of Global Oncology* 1.2 (2015): 57-64.
5. Kehl, Kenneth L., et al. "Tumor Board Participation Among Physicians Caring for Patients With Lung or Colorectal Cancer." *Journal of Oncology Practice* 11.3 (2015): e267-e278.
6. Gross, Gary Edward. "The Role of the Tumor Board in a Community Hospital." *CA-A Cancer Journal for Clinicians* 37.2 (1987): 88-92.
7. Patkar, Vivek, et al. "Cancer Multidisciplinary Team Meetings: Evidence, Challenges, and the Role of Clinical Decision Support Technology." *International Journal of Breast Cancer* Vol. 2011 (2011).

Published by:

Diagnostics Information Solutions

Roche Molecular Systems, Inc.
1301 Shoreway Road, Suite 300
Belmont, CA 94002

roche.com