Multidisciplinary Cancer Conferences: Exploring Obstacles and Facilitators to Their Implementation

By Nicole J. Look Hong, MD, MSc, Anna R. Gagliardi, MSc, MLS, PhD, Susan E. Bronskill, PhD, Lawrence F. Paszat, MD, FRCPC, MSc, and Frances C. Wright, MD, FRCSC, MEd

Departments of Health Policy Management and Evaluation and Surgery, University of Toronto; Departments of Surgical and Radiation Oncology, Sunnybrook Health Sciences Centre; and Institute for Clinical Evaluative Sciences, Toronto, Ontario, Canada

Abstract

Purpose: Multidisciplinary cancer conferences (MCCs) provide an opportunity for health professionals to discuss diagnosis and treatment options to optimize patient management. The purpose of this study was to explore the barriers and facilitators in implementing MCCs in Canada.

Methods: This exploratory study used qualitative interviews and observation to explore the experiences of implementing MCCs in four hospitals in Ontario, Canada. Interviews were transcribed verbatim and analyzed using standard qualitative research methodology guided by grounded theory principles.

Results: Thirty-seven MCCs for gastrointestinal cancer were

observed across three hospital sites, and 48 interviews were conducted among a range of clinical specialists and administrators. The dominant theme suggested that MCCs can most effectively be implemented if administrators and health professionals see value in MCCs, despite the time and effort required. A number of factors (eg, provincial policy, hospital administrative and clinician support, and an efficient MCC process) influenced whether MCCs were valued.

Conclusion: Variation exists in the enthusiasm of health professionals and the administrative capacity of institutions regarding routine implementation of MCCs. A systematic implementation plan for MCCs is needed involving both cancer care providers and administrators.

Introduction

Modern cancer diagnosis and treatment requires a collaborative, multimodal, and evidence-based approach to optimize patient survival and quality of life. Multidisciplinary cancer conferences (MCCs) represent an opportunity to maximize communication among professionals and facilitate treatment planning. MCCs, or tumor boards, are defined as regularly scheduled multidisciplinary meetings used to prospectively review individual patients with cancer and formulate appropriate management plans using evidence-based multimodal input.¹ Depending on the institution, Wright et al¹ suggest that MCC participants may include representatives from medical oncology, radiation oncology, surgery/surgical oncology, pathology, diagnostic imaging, nursing, nutrition, and social work. The primary function of these conferences is to ensure that all appropriate tests, treatment options, and recommendations are considered for each patient with cancer under discussion.

Research has demonstrated that MCCs can positively impact clinical decision making and thereby directly influence patient care in an array of clinical settings.²⁻⁴ In addition, MCC discussions have been shown to independently predict adherence to clinical practice guidelines⁵ and prompt the creation of treatment algorithms for commonly treated disease entities.⁶ Furthermore, MCC participants have expressed professional benefits, including ongoing education, improved collaboration with colleagues, protection from risk of malpractice, and an auditing mechanism of hospital practices to reduce mortality and morbidity among patients.⁷⁻¹⁰ In sum, MCCs appear to directly facilitate collaboration among health professionals and improve the quality of patient care and teamwork among professionals.

The establishment of MCCs in the hospital setting requires considerable effort by administrators and clinicians to encourage sustained participant interest and patient benefit. Concerted and coordinated efforts to implement and promote MCCs have therefore been undertaken in the United Kingdom,¹¹ Europe,¹²⁻¹⁴ the United States,¹⁵ Asia,¹⁶ and Australia.¹⁷ However, in Australia and the United Kingdom, barriers to routine use of MCCs have been identified, including the need for more protected time for MCCs, variable allocation of coordinators, variability of patient cases, and inconsistent access to cancer specialists and technologic resources.¹⁸⁻²⁵

In Canada, the establishment and use of MCCs had not been previously documented. As such, the need for an organized approach to the implementation, promotion, and monitoring of MCCs was recognized by Cancer Care Ontario, a provincial cancer agency responsible for coordinating and monitoring the quality of cancer care delivery. Meticulously researched standards outlining the structure and function of MCCs were released in June 2006¹ but have not been enforced. A vital step in creating an implementation and monitoring strategy for MCCs is to assess the current challenges to using MCCs in routine cancer care. The primary objective of this study was to characterize and understand barriers and facilitators in implementing MCCs from the perspective of provincial representatives, hospital administrators/MCC organizers, and MCC participants.

Methods

This was an exploratory study using qualitative grounded theory methodology to guide sampling, data collection, data analysis, and data synthesis. Qualitative research methods can

uncover experiences and understandings that quantitative methodology cannot, particularly in the realms of social interaction and behavior. A qualitative approach was important in this study to understand the perceptions and experiences of various individuals involved in MCCs and generate research hypotheses, because no prior framework existed for evaluating MCC implementation in the Canadian context.

Grounded theory methodology was chosen as the particular qualitative approach in this study because it identifies common attitudes and patterns of behavior, known as themes, that lead to the development of a conceptual theory explaining the behaviors studied.^{26,27} The resulting theory of themes typically centers on a dominant theme and is considered grounded because it stems directly from the studied topic.²⁸

Sampling

Four hospital sites were purposively chosen to compare academic (site 1) with community hospitals (sites 2-4) and compare MCCs at different stages of implementation (three hospitals had functioning MCCs, whereas the fourth site had no active MCC). Academic hospitals were defined as hospitals providing facilities for instruction of medical students, as evidenced by a written agreement between the hospital and affiliated university, and hospitals approved for providing postgraduate education.²⁹ Community hospitals encompassed all other sites. Hospital administrators and MCC participants (including potential participants at the fourth site) were initially approached for interviews and asked to suggest subsequent interviewees (ie, snowball sampling).³⁰ Snowball sampling was used to generate additional interviewees until no new information was learned or saturation was reached.^{31,32}

Data Collection

This study compared, or triangulated, data generated from observation of MCCs and interviews with administrators and health care professionals who did and did not participate in MCCs. Ethics approval was obtained from the University of Toronto (Toronto, Ontario, Canada) and the four participating hospitals.

Observation at the three sites with active MCCs was completed by the primary investigator and occurred weekly at site 1 and every 2 weeks at sites 2 and 3. Structured observations recorded MCC attendants, number of patient cases discussed, physical room structure, and available technology. Unstructured observations included participant interactions, decision making and leadership strategies, and barriers and facilitators in MCC function.

Face-to-face semi-structured interviews were conducted by the primary investigator using an interview template but allowing interviewees to expand on arising topics.³³ The template was pilot tested with two surgeons, and transcripts were discussed with members of the research team. Informed consent was obtained from all interviewees. Interviews explored the process of MCC implementation at the individuals' hospitals and perceived barriers and facilitators in MCC function. Interviews

were conducted in English and were audio recorded, anonymized, and transcribed verbatim.

Data Analysis

Data analysis, or coding, was completed concurrently with data collection. Coding was adopted from the framework of grounded theory methodology by Strauss et al.³¹ The goal of coding in grounded theory is to identify common patterns of behavior, or themes. Data was coded by two independent researchers to ensure rigor and discovery of all relevant themes. Themes were generated by comparing interview transcripts and observations to discover common and recurrent ideas (ie, constant comparative analysis).³⁴ Conflicting ideas were clarified through discussion between coders.³⁵ Themes were then grouped into theoretic concepts, which described overarching ideas. Theoretic concepts were then used to create a conceptual theory to describe the implementation of MCCs (ie, thematic analysis). Themes were collated using an Excel spreadsheet.

Data generated from observation field notes were used to garner descriptive MCC characteristics; organizational, clinical, and technical challenges; and interpersonal dynamics. Descriptive variables were tabulated using proportions for each institution and as a total combining all hospitals.

Results

Observation and Interviews

Descriptive variables for MCC structure and discussed patient cases are listed in Tables 1 and 2. Forty-eight interviews were completed over 6 months with provincial representatives, hospital administrators, and MCC participants (including potential participants at site 4) from four hospital sites. Specialty distribution of interviewed MCC participants is outlined in Table 3.

Thematic Analysis

Thematic analysis resulted from concurrent coding of observation and interview transcript data. The goal of the thematic analysis was to create a conceptual theory describing the implementation of MCCs. A high level of agreement among coders was attained.

The dominant theme. The conceptual theory derived from this study centers around the dominant theme of achieving value-for-time balance. This idea summarizes the concept that implementation is more likely to be effective if institutional administrators and health professionals see value in MCCs, despite the time and effort that is required. Interpretations of the value-for-time balance were different for each individual and institution, because they were variably influenced by four sets of factors (policy factors, administrative/organizational factors, MCC structure, and MCC function) and three global modifiers (unique attributes of community hospitals, MCC adjuncts, and provincial standards). Global modifiers do not

Table 1. MCC Participant Observation—Dimensions of MCC Structure

Observation	All Sites (N = 37)	Site 1, Academic (n = 21)	Site 2, Community (n = 8)	Site 3, Community (n = 8)
Frequency		Once per week	Every 2 weeks	Every 2 weeks, alternating GI and breast
Duration of MCC, minutes				
Mean	47.2	43.3	56.5	47.1
Range	15-85	20-62	50-60	15-85
Mean No. of patient cases per MCC	6.4	9.1	5.1	3.0
Mean attendance per MCC*				
Coordinator	0.5	0	1.0	1.0
Chair	1.0	1.0	1.0	1.0
Surgeon	3.7	2.7	6.3	3.8
Medical oncologist	1.9	1.9	0.9	3.0
Radiation oncologist	1.5	2.4	0.9	0
Pathologist	1.9	1.3	4.1	1.0
Radiologist	0.9	1.0	1.5	0
Gastroenterologist	0.8	1.0	1.3	0
Nursing	5.4	7.2	6.3	0.3
Drug company representative	0.7	1.0	0.6	0
Incentive (food or CPD credit)				
No.	28	19	8	1
%	76	90	100	13
Teleconference/videoconference				
No.	4	0	4	0
%	11	0	50	0
Pre-established patient case list				
No.	35	19	8	8
%	95	90	100	100
Starts within 5 minutes of scheduled time				
No.	9	0	8	1
%	24	0	100	13
Scheduled but cancelled at time of MCC				
No.	3	2	0	1
%	8	10	0	13
Radiology pre-reviewed				
No.	31	19	8	0
%	84	90	100	0
Pathology pre-reviewed				
No.	31	15	8	8
%	84	71	100	100
Presence of attendance list				
No.	27	19	8	0
%	73	90	100	0
Recorded minutes				
No.	25	19	6	0
%	68	90	75	0

* Sum of specialist attendance divided by No. of MCCs observed.

Abbreviations: MCC, multidisciplinary cancer conference; CPD, continuing professional development.

directly affect the regular use of MCCs in hospitals but are still contributors to the dominant theme. The conceptual theory is illustrated in Figure 1. Theoretic concepts, their constituent themes, and illustrative quotes are listed in Table 4.

Policy factors. Interviewees were more likely to adopt and implement MCCs if they felt obligated by a provincial mandate. All four hospitals examined in this study had cancer surgery agreements with the government, which grant hospitals addi-

Table 2. MCC Participant Observation—Patient Cases Discussed

Observation	All Sites (N = 237)		Site 1, Academic (n = 172)		Site 2, Community (n = 41)		Site 3, Community (n = 24)	
	No.	%	No.	%	No.	%	No.	%
Presenter								
Surgeon	134	57	90	52	38	93	6	25
Medical oncologist	22	9	22	13	0	0	0	0
Radiation oncologist	47	20	47	27	0	0	0	0
Chair	3	1	3	2	0	0	0	0
Nurse	3	1	3	2	0	0	0	0
Surgical resident/fellow	18	8	3	2	2	5	18	75
Gastroenterologist	3	1	3	2	0	0	0	0
Other	7	3	1	1	1	2	0	0
Anatomic site								
Rectum	71	30	62	36	8	20	1	4
Colon	44	19	32	19	6	15	6	25
Colorectal	16	7	15	9	1	2	0	0
Breast	25	11	2	1	15	37	9	38
Gastric	10	4	6	3	0	0	5	21
Appendix	10	4	7	4	3	7	0	0
Small bowel	4	2	3	2	2	5	0	0
Pancreas	7	3	7	4	0	0	0	0
Anus	4	2	3	2	0	0	1	4
Unknown	9	4	7	4	1	2	1	4
Other	37	16	28	16	5	12	1	4
Decision making, %								
Mention evidence	25.5		17.3		40.5		45.8	
> 1 discipline participating in discussion	100.0		100.0		100.0		100.0	
Prospective	95.4		98.8		85.4		87.5	
Active plan at end of discussion	93.2		95.9		92.7		75.0	

Abbreviation: MCC, multidisciplinary cancer conference.

tional funding with incremental volumes of surgery performed. The establishment of MCCs is one of the initiatives required in cancer surgery agreements, although systematic implementation has not been explicitly addressed or enforced. This is evidenced by the variable existence and functionality of MCCs observed in this study.

Both participants and administrators revealed that it is unclear who should take responsibility for helping to implement MCCs. MCC participants felt that to continuously engage participants, motivation had to take shape either as an incentive for

the clinician or institution to attend MCCs or as a penalty for not attending—the carrot-and-stick approach.

Administrative and organizational factors. Hospital administrators and clinicians both recognized that they had unique and active roles to play in the implementation of MCCs. Hospital administrators provide a milieu of support for prioritizing cancer care in their institutions, and the clinicians provide the practical patient cases to fuel MCC discussion. However, the concurrent administrative and clinical leadership needs to be

Table 3. Interview Participants

Site	Surgeon	Medical Oncologist	Radiation Oncologist	Radiologist	Pathologist	Gastroenterologist	Nurse	Administrator/ Organizer
1	3	3	2	2	2	1	2	4
2	4	2	1	1	2	1	0	3
3	6	2	0	1	2	0	0	1
4	2	1	0	1	1	0	0	2
Total	15	8	3	5	7	2	2	10

Figure 1. Conceptual theory for multidisciplinary cancer conference (MCC) implementation.

complemented by the provision of resources within the hospital to establish and sustain MCCs. These resources encompass manpower to prepare for and attend MCCs (particularly regarding radiologists and pathologists), technologic elements and physical space (ie, videoconferencing equipment to enable discussion with specialists at other hospitals, equipment to display radiologic images), and educated hospital-based technical personnel to provide ongoing support. Lastly, a clerical individual is needed to regularly collate cases. The latter point was illustrated by the more cohesive and efficient MCCs observed at sites 1 and 2, where dedicated clerical individuals were regularly available.

MCC structure. Participants perceived greater value in MCCs when the MCC discussion was efficiently managed. Measures of efficiency included whether the discussion followed a pre-established agenda, was led by one of the attendees, and was targeted at a specific clinical question. In addition, participants were more likely to attend and participate in MCCs if there was a diversity of clinical specialists and patient case topics. This was most prominently illustrated at site 3, where the consistent absence of a radiation oncologist and gastroenterologist resulted in more disjointed discussion and fewer active treatment plans compared with the other two observed sites. Lastly, participants felt that radiologists and pathologists played unique but essential roles regarding MCCs. As such, their involvement must be recognized, encouraged, and expressly nurtured. This was again illustrated at site 3, as the lack of prior review of patient cases by radiologists contributed to more disorganized discussion.

MCC function. Participants felt that interaction between MCC attendants during case discussion was largely unstructured and could be improved if preassigned facilitation and leadership existed. This was illustrated at sites 1 and 2, where consistent leaders were able to facilitate discussion and enable the inclusion of a greater number of patient cases per MCC as compared with site 3. Participants felt that they derived the greatest benefit from MCCs when the opinions of the attendants could be used as an advisory board, without relinquishing the autonomy of the treating physician or patient. Lastly, participants felt that the MCC atmosphere contributed to a sense of multidisciplinary teamwork and synergistic patient care. Participants felt

more knowledgeable about the roles of other colleagues and were more apt to approach them for consultation.

Global modifiers. Three global modifiers were identified in this study as items that influenced MCC implementation without affecting the routine functioning of the meeting. These included the unique attributes of community hospitals (including the frequent absence of certain cancer specialists, such as radiation oncologists), MCC adjuncts (including use of telephone communication and multidisciplinary clinics), and provincial standards (the presence of which often encouraged use of MCCs). Illustrative quotes are listed in Table 4.

Discussion

The goal of this study was to explore the barriers and facilitators in implementing MCCs in four hospitals delivering cancer care. We have demonstrated that the implementation of MCCs is a multifaceted process requiring concerted efforts to recognize institutional barriers and facilitators, the effects of provincial policy, and the needs of individual clinicians.

Value-for-Time Balance

The dominant theme identified in this study is the achievement of a perceived value-for-time balance. The implementation of MCCs depends on administrators and health professionals perceiving value in MCCs, given the effort and time involved. This theme is echoed in the health care literature explaining implementation of new processes. To evaluate an organizational health care framework for implementation of new processes, Helfrich et al³⁸ explored four case studies that involved implementation of new processes by multiple organizational members. The framework of Helfrich et al recognized the influence of managerial support, financial resources, organizational implementation policies, and the presence of a champion. However, the most important element of this framework was the implementation climate, defined as a shared perception that the new process is perceived as a priority and promoted, supported, and rewarded.^{39,40} The framework of Helfrich et al and its components are congruent with results from this study. MCC participants felt that the organization and function of MCCs needed to be efficient, effectively managed, and supported by

Table 4. Interview Quotes Illustrating Conceptual Ideas Contributing to Implementation of MCCs

Theme	Quote
Policy factors	
Part of provincial plan	"I think it [MCCs] was something that we sort of wanted to do, but I think the actual impetus was the wait times strategy and the recommendations from Cancer Care Ontario and all the sort of more formalized academic and clinical bodies that sort of said that you know, when you're doing large volume of cancer cases, you should probably be doing rounds like that."—Surgeon 3, site 2
Strategies to encourage MCC implementation	"There are no carrots and sticks right now for tumor boards. When that does occur at hospital levels, administrations will be all over it."—Surgeon 5, site 3
Administrative and organizational factors	
Concurrent administrative and clinical leadership	<p>"So cancer is one of our key strategic foci. We've pulled all the multiple disparate services that were spread out, but part of cancer, all together under a single program . . . at the same time, we focused on new cancer surgery."—Hospital administrator 2, site 2</p> <p>"I think it has to be driven by a physician leader that, you know, really sees this as an important thing and, you know, engages with the other physicians and organizes it."—Radiologist 1, site 4</p>
Additional workload	"To re-review cases done within the hospital . . . billing doesn't allow that because it's considered . . . one group rebilling the same work. So I think it should be Ministry of Health or Cancer Care Ontario—if cases meet certain criteria, they should consider a way of how to compensate physicians for more time."—Radiologist 1, site 2
Institutional resources needed	"Because it's multidisciplinary—in other words, it crosses the department of surgery, department of medicine, department of pathology, and even diagnostic imaging—when it comes to offering resources, ie, money for some clerical help, organizational help, and that kind of thing, it's not clear as to who takes ownership and therefore who pays."—Surgeon 6, site 3
MCC structure	
Efficient management of cases	<p>"So I think that it's making sure there's a true clinical question and that this is the forum that it needs to go to."—Nurse 1, site 1</p> <p>"I think we have to meet and decide who would be a leader and discuss how long we're going to spend on each case . . . you have to be able to have someone cut that off to move onto the next."—Surgeon 4, site 3</p>
Strategies to encourage attendance	"I think it's good to have diversity in terms of the people that come, and so I'd like to see different people participate, especially the people that we don't know as well."—Surgeon 3, site 2
Unique role of radiology and pathology	"They look at their slides, and they look at their films, but their contribution, I think, they perceive is low. . . . But I think their input is valuable . . . the more you ask them for their input, the more they'll realize how much they're wanted."—Surgeon 5, site 3
MCC function	
Leadership of MCC discussion	"I'm not really sure who's supposed to be the leader . . . probably wouldn't hurt to have a facilitator in terms of asking the right questions. I think now its kind of a free for all."—Medical oncologist 1, site 3
Taking responsibility	"The tumor board is there to help augment and sharpen your decisions, but it doesn't in any way, in my mind, take away ultimate responsibility for decisions taken or actions taken."—Surgeon 1, site 1
Cohesion, collegiality, and collaboration	<p>"It's an important part to practicing as a group—evolving a sense of community and appreciation of what everyone does."—Surgeon 2, site 2</p> <p>"We function as one group . . . I feel a stronger bond to the gastrointestinal group than I do to some of my other medical oncology colleagues. . . . The MCC enhances collegiality and communication."—Medical oncologist 1, site 1</p>
Global modifiers	
Unique attributes of community hospitals	<p>"I just didn't find there was enough critical mass of people that know what they were talking about . . . to make it [MCCs] worthwhile. . . . You don't want the blind leading the blind."—Medical oncologist 1, site 4</p> <p>"I find that the format of our tumor board here, it's very different than the format that I attend at [site 1] in the way of teaching for the residents and fellows."—Medical oncologist 1, site 3</p>
MCC adjuncts	"Most of us share our clinics base with one of the other sub-specialties, and I think that provides for immediate discussion . . . they have different roles, I think. . . . It's less comprehensive to [discuss patients] within the clinic, obviously."—Medical oncologist 2, site 1
Provincial standards	<p>"I've been using it [the standards] to try to twist the arm of our administrators to say, 'This is what is considered standard,' and this is what sort of the minimal requirements—now we need some help."—Surgeon 6, site 3</p> <p>"It's sort of dragging a child crying to the dentist. . . . They're [the standards] good for us, and we know it's good for us, but it's painful It's a bit of a more make-work type of thing."—Surgeon 3, site 2</p>

Abbreviation: MCC, multidisciplinary cancer conference.

provincial and hospital administration to be a valuable use of time. This concept is difficult to quantify and measure, because it is a dynamic idea that varies between organizations and also over time. However, if provincial organizations and hospitals can recognize the multiple contributors to the implementation climate in the context of MCCs, strategies may be fashioned to systematically address these issues in a timely way.

Importance of Organizational Leadership

This study demonstrates that one of the most important aspects of MCC implementation is the influence of administrative/organizational factors in providing leadership for MCC initiation and sustainability. The importance of the organizational context surrounding the implementation of clinical initiatives is prominent in the literature. New ideas are more likely to be implemented if their perceived benefits are aligned with the interests, values, structure, and resources of an organization.⁴⁰⁻⁴⁴ In a study examining the implementation of beta blockers after myocardial infarction, physicians, nurses, administrative leaders, and managers indicated that the factors associated with the greatest increase in drug use included the presence of shared goals within the institution, administrative support, physician leadership, and data feedback.⁴⁵ Administrative support, noted as the most important factor in performance improvement, encompassed an organizational philosophy for ongoing quality improvement and the procurement of needed resources.

In the context of MCCs, interviewees emphasized the importance of provincial policy organizations in providing a mandate to have MCCs in cancer care and the need for leadership jointly at the administrative and participant levels to support a culture philosophically and financially supportive of MCC implementation. Although the literature indicates that these various levels are intimately connected and interdependent, it is unclear how to facilitate efficient and effective communication between individuals and their managerial and policy counterparts. An implementation strategy that is continually respectful and inclusive of the needs of all health professionals who regularly use MCCs may breed a culture of shared accountability, acceptance, and ongoing enthusiasm.

Limitations

This study focused on MCCs that discussed patients with gastrointestinal cancers. Consequently, the results of this study may not be widely generalizable to all types of MCCs (eg, breast cancer MCCs). However, many core specialists (eg, surgeons, medical oncologists, radiation oncologists) attend multiple MCCs, so we postulate that findings would be similar.

The recognition of the authors' positions as physicians and participants in MCCs is acknowledged as a potential bias. This was tempered by the keeping of a journal of assumptions and expectations throughout data collection and the use of multiple coders for data interpretation.

Conclusions and Implications for Practice and Research

The findings of this study suggest that implementation of MCCs is a complex and multifaceted process involving not only optimization of physical, financial, and personnel resources but also an understanding of the interpersonal dynamics that govern teamwork, leadership, and collective decision making. MCC implementation strategies must be concurrently directed at the policy, administrative/organizational, and participant levels. Research is now needed to elucidate appropriate outcomes to measure the implementation of MCCs and determine the usefulness of MCCs in comparison with other forms of multidisciplinary communication. In addition, cost implications and interdependence between elements of policy, structure, and function should be investigated. Targeted audits of these outcomes will determine the ultimate progress and sustainability of MCCs.

Accepted for publication on December 3, 2009.

Acknowledgment

This research was supported by an operating grant from Colon Cancer Canada.

Authors' Disclosures of Potential Conflicts of Interest

Although all authors completed the disclosure declaration, the following author(s) indicated a financial or other interest that is relevant to the subject matter under consideration in this article. Certain relationships marked with a "U" are those for which no compensation was received; those relationships marked with a "C" were compensated. For a detailed description of the disclosure categories, or for more information about ASCO's conflict of interest policy, please refer to the Author Disclosure Declaration and the Disclosures of Potential Conflicts of Interest section in Information for Contributors.

Employment or Leadership Position: None **Consultant or Advisory Role:** Frances C. Wright, Cancer Care Ontario (C) **Stock Ownership:** None **Honoraria:** None **Research Funding:** None **Expert Testimony:** None **Other Remuneration:** None

Author Contributions

Conception and design: Nicole J. Look Hong, Anna R. Gagliardi, Lawrence F. Paszat, Frances C. Wright

Collection and assembly of data: Nicole J. Look Hong, Anna R. Gagliardi, Frances C. Wright

Data analysis and interpretation: Nicole J. Look Hong, Anna R. Gagliardi, Susan E. Bronskill, Lawrence F. Paszat, Frances C. Wright

Manuscript writing: Nicole J. Look Hong, Anna R. Gagliardi, Susan E. Bronskill, Lawrence F. Paszat, Frances C. Wright

Final approval of manuscript: Nicole J. Look Hong, Anna R. Gagliardi, Susan E. Bronskill, Lawrence F. Paszat, Frances C. Wright

Corresponding author: Nicole J. Look Hong, c/o Frances C. Wright, Edmund Odette Cancer Centre, Sunnybrook Health Sciences Centre, Department of Surgical Oncology, Room T2-016, 2075 Bayview Ave, Toronto, Ontario, M4N 3M5, Canada; e-mail: n.lookhong@utoronto.ca.

DOI: 10.1200/JOP.091085

References

1. Wright FC, De Vito C, Langer B, et al: Multidisciplinary cancer conferences: A systematic review and development of practice standards. *Eur J Cancer* 43:1002-1010, 2007
2. Chang JH, Vines E, Bertsch H, et al: The impact of a multidisciplinary breast cancer center on recommendations for patient management: The University of Pennsylvania experience. *Cancer* 91:1231-1237, 2001
3. Burton S, Brown G, Daniels IR, et al: MRI directed multidisciplinary team preoperative treatment strategy: The way to eliminate positive circumferential margins? *Br J Cancer* 94:351-357, 2006
4. Newman EA, Guest AB, Helvie MA, et al: Changes in surgical management resulting from case review at a breast cancer multidisciplinary tumor board. *Cancer* 107:2346-2351, 2006
5. Abraham NS, Gossey JT, Davila JA, et al: Receipt of recommended therapy by patients with advanced colorectal cancer. *Am J Gastroenterol* 101:1320-1328, 2006
6. Lutterbach J, Pagenstecher A, Spreer J, et al: The brain tumor board: Lessons to be learned from an interdisciplinary conference. *Onkologie* 28:22-26, 2005
7. Smith DE, Davis S, Polissar L: The hospital cancer program: Its impact on care of the rural cancer patient. *Am Surg* 45:730-737, 1979
8. Scholnik AP, Arnold DJ, Gordon DC, et al: A new mechanism for physician participation in a tumor board. *Prog Clin Biol Res* 216:337-343, 1986
9. Radecki SE, Nyquist JG, Gates JD, et al: Educational characteristics of tumor conferences in teaching and non-teaching hospitals. *J Cancer Educ* 9:204-216, 1995
10. Nyquist JG, Radecki SE, Gates JD, et al: An educational intervention to improve hospital tumor conferences. *J Cancer Educ* 10:71-77, 1995
11. Department of Health, National Health Service: Topic 2A: The generic multidisciplinary team (MDT), in *Manual for Cancer Services 2004*. London, United Kingdom, Department of Health Publications, 2004
12. Blamey R, Cataliotti L: The requirements of a specialist breast unit. *Eur J Cancer* 36:2288-2293, 2000
13. Van Belle S: How to implement the multidisciplinary approach in prostate cancer management: The Belgian model. *BJU Int* 101:2-4, 2008 (suppl 2)
14. Lehmann K, Guller U, Bugnon S, et al: Interdisciplinary tumour boards in Switzerland: Quo vadis? *Swiss Med Wkly* 138:123-127, 2008
15. American College of Surgeons, Commission on Cancer: *Cancer Program Standards*. Chicago, IL, American College of Surgeons, 2004
16. Chan WF, Cheung PS, Epstein RJ, et al: Multidisciplinary approach to the management of breast cancer in Hong Kong. *World J Surg* 30:2095-2100, 2006
17. National Breast Cancer Centre: *Multidisciplinary Meetings for Cancer Care: A Guide for Health Service Providers*. Camperdown, New South Wales, Australia, National Breast Cancer Centre, 2005
18. Lomas J, Haynes RB: A taxonomy and critical review of tested strategies for the application of clinical practice recommendations: From "official" to "individual" clinical policy. *Am J Prev Med* 4:77-94, 1988 (suppl 4); discussion 95-97
19. Lomas J, Anderson GM, Domnick-Pierre K, et al: Do practice guidelines guide practice? The effect of a consensus statement on the practice of physicians. *N Engl J Med* 321:1306-1311, 1989
20. Jenkins VA, Fallowfield LJ, Poole K: Are members of multidisciplinary teams in breast cancer aware of each other's informational roles? *Qual Health Care* 10:70-75, 2001
21. Kim R, Toge T: Multidisciplinary approach to cancer treatment: A model for breast cancer treatment at the M. D. Anderson Cancer Center. *Int J Clin Oncol* 9:356-363, 2004
22. Macaskill EJ, Thrush S, Walker EM, et al: Surgeons' views on multi-disciplinary breast meetings. *Eur J Cancer* 42:905-908, 2006
23. Forman WB, Haykus W: Tumor conference: The role of continuing medical education. *J Contin Educ Health Prof* 8:267-270, 1988
24. National Breast Cancer Centre: *Making Multidisciplinary Care a Reality: A National Breast Cancer Centre Forum Series*. Camperdown, New South Wales, Australia, National Breast Cancer Centre, 2006
25. Kane B, Luz S, O'Brain DS, et al: Multidisciplinary team meetings and their impact on workflow in radiology and pathology departments. *BMC Med* 5:15, 2007
26. Glaser BG: *Doing Grounded Theory: Issues and Discussions*. Mill Valley, CA, Sociology Press, 1998
27. Morse JM: *Qualitative health research*. London, United Kingdom, Sage Publications, 1994
28. Strauss A, Corbin J: *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA, Sage Publications, 1990
29. Ministry of Health and Long-Term Care: *Health services in your community: Public Hospitals Act—Regulation 964, amended to O. Reg. 321/01: Classification of hospitals*. <http://www.health.gov.on.ca/english/public/contact/hosp/hospcode.html>
30. Auerbach CF, Silverstein LB: *Qualitative Data: An Introduction to Coding and Analysis* (ed 1). New York, NY, New York University Press, 2003
31. Strauss A, Corbin J: *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (ed 2). Thousand Oaks, CA, Sage Publications, 1998
32. Glaser B: *Theoretical Sensitivity*. Mill Valley, CA, Sociology Press, 1978
33. Holstein JA, Gubrium GF: *Interviewing: New Lenses, New Concerns*. Thousand Oaks, CA, Sage Publications, 2003
34. Schwandt TA: *Dictionary of Qualitative Inquiry*. Thousand Oaks, CA, Sage Publications, 2001
35. Guba EG, Lincoln YS: Competing paradigms in qualitative research, in Denzin NK, Lincoln YS (eds): *Handbook of Qualitative Research*. Thousand Oaks, CA, Sage Publications, 1994, pp 105-117
36. Strubert-Speziale H, Carpenter DR: *Qualitative Research in Nursing: Advancing the Humanistic Imperative* (ed 4). Philadelphia, PA, Lipincott Williams and Wilkins, 2007
37. Morse JM, Richards L: *Read Me First for a User's Guide to Qualitative Methods*. Thousand Oaks, CA, Sage Publications, 2002
38. Helfrich CD, Weiner BJ, McKinney MM, et al: Determinants of implementation effectiveness: Adapting a framework for complex innovations. *Med Care Res Rev* 64:279-303, 2007
39. Klein KJ, Conn AB, Sorra JS: The organizational dynamics of computerized technology implementation: A review of the empirical literature, in Gomez-Mejia L, Lawless M (eds): *Advances in Global High-Technology Management*. Greenwich, CT, JAL, 1995
40. Greenhalgh T, Robert G, Macfarlane F, et al: Diffusion of innovations in service organizations: Systematic review and recommendations. *Milbank Q* 82:581-629, 2004
41. Denis JL, Hebert Y, Langley A, et al: Explaining diffusion patterns for complex health care innovations. *Health Care Manage Rev* 27:60-73, 2002
42. Rycroft-Malone J, Harvey G, Kitson A, et al: Getting evidence into practice: Ingredients for change. *Nurs Stand* 16:38-43, 2002
43. Fleuren M, Wierffink K, Paulussen T: Determinants of innovation within health care organizations: Literature review and Delphi study. *Int J Qual Health Care* 16:107-123, 2004
44. Iles V, Sutherland K: *Organizational Change: A Review for Health Care Managers, Professionals and Researchers*. London, United Kingdom, National Coordinating Centre for National Health Service Service Delivery and Organisation Research and Development, 2001
45. Bradley EH, Holmboe ES, Mattern JA, et al: A qualitative study of increasing beta-blocker use after myocardial infarction: Why do some hospitals succeed? *JAMA* 285:2604-2611, 2001