

How multidisciplinary are multidisciplinary team meetings in cancer care? An observational study in oncology departments in Flanders, Belgium

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Background: In current cancer care, multidisciplinary team meetings (MDTMs) aim at uniting care professionals from different disciplines to decide upon the best possible treatment plan for the patients based on the available scientific evidence. In Belgium, the multidisciplinary approach is mandatory and formally regulated since 2003. Current research indicates that MDTMs are not always truly multidisciplinary, ie, with a mix of medical as well as paramedical disciplines, and that the medical profession (physicians and medical specialists) tends to dominate the interaction in MDTMs. To ensure that MDTMs can benefit from their diverse membership to achieve their full potential, significant attention should be devoted to the multidisciplinary character of these meetings. The aim of this study is to explore and describe the multidisciplinary character in MDTMs and how it is actually shaped in practice in different Flemish medical oncology departments.

Methods: For this study, we carried out an observational comparative case study. We studied 59 multidisciplinary team meetings at inpatient medical oncology departments in five different Belgian hospitals (academic as well as general) and explored multidisciplinary and how it is actually shaped in practice.

Results: The study is unique in identifying and analyzing three distinct types of MDTMs. The analysis of the three types revealed an inconsistent and, at times, contradictory picture of multidisciplinary team meetings. The findings also align with previous studies arguing that MDTMs in oncology are typically driven by doctors, with limited input of nurses and other nonmedical staff in which decisions are argued on biomedical information and far less consideration of psychosocial aspects.

Conclusion: The concept of a MDTM should not merely be a group of care professionals who work essentially independently and occasionally liaise with one another. Yet, this study has shown a worryingly low awareness of the true character of multidisciplinary, particularly among medical disciplines.

Keywords: medical oncology, multidisciplinary teams, interprofessional care, qualitative research, health services research

Introduction

In current cancer care, multidisciplinary team meetings (MDTMs) aim at uniting care professionals from different disciplines to decide upon the best possible treatment plan for the patients based on the available scientific evidence.^{1,2} In Belgium, the multidisciplinary approach is mandatory and has been formally regulated since 2003.³⁻⁵ Since the introduction of the legal framework, the proportion of cancer patient cases discussed within MDTMs continuously increases in oncology departments.^{6,7}

MDTMs are found to foster adherence to clinical practice guidelines⁸ and can positively influence clinical decision-making.⁹⁻¹⁴ They induce better team performance after

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case discussion,¹⁵ more accurate diagnoses,^{16,17} and increased screening rates for clinical trials.¹⁸ Multidisciplinary teams also reach faster collaborative decisions during their meeting, which avoids delays to treatment.¹⁹ Evidence for the effectiveness of MDTMs in terms of patient outcomes is ambiguous.^{9,20} Some studies found that MDTMs improve patients' quality of life and even survival.^{21,22} Other research found little association of the implementation of MDTMs with patient quality or survival.⁸ These mixed findings can probably be partly explained by the fact that patient outcomes are affected by a wider range of factors not limited to multidisciplinary team management alone.²³

The literature describes tumor boards, multidisciplinary cancer conferences, or multidisciplinary case reviews interchangeably without differentiating purpose and working practices.²⁴ International research also does not pay much attention to the organizational dimension of MDTMs. It can be assumed, however, that organizational embeddedness may impact on the structure of the meeting, membership, approach, purpose, atmosphere, and decision-making processes.²⁴

Further, research does not always distinguish carefully between groups and teams. The concept of a multidisciplinary team should not merely be a group of different care professionals who work essentially independently and occasionally liaise with one another. Teams are defined as two or more professionals interacting dynamically, interdependently, and adaptively toward a common, valued goal.²⁵ Other concerns arise with regard to the concept of multidisciplinarity as there are a few studies indicating that the medical profession (physicians and medical specialists) tends to dominate the interaction in MDTMs.^{26–28}

The aim of this study is to explore and describe the multidisciplinary character in MDTMs and how it is actually shaped in practice in different Flemish medical oncology departments.

Methods

Study design

This study is part of a larger research project focusing on multidisciplinary collaboration in medical oncology departments and partly aligns with a previously published study protocol.²⁹ For this study, we carried out an observational comparative case study.³⁰ Data were collected by means of nonparticipant observations to obtain an insider view about behavior, communication patterns, and other interactions between participants in real practice to identify the emerging characteristics of multidisciplinary collaboration in oncology meetings. As observers, we did not interfere with the work of the team.^{31–34}

Units of analysis

MDTMs are operationalized as formally organized team meetings where medical (physicians) and nonmedical (non-physicians) disciplines meet (whether physically in one place, by videoconferencing, or by teleconferencing) to discuss patient cases and decide upon patient management. For this study, all types of multidisciplinary meeting arrangements in which patients' cases were discussed in teams were observed.

We focused on inpatient medical oncology departments in five different hospitals in Flanders, Belgium. We included two academic hospitals (with a number of beds varying from 700 to more than 1,000 beds) and three general hospitals (with a number of beds varying from 300 to 900), purposively chosen to obtain a view on multidisciplinary work in general, specialized, and highly specialized facilities. Both academic hospitals have a medical oncology department centralized at one campus with a large oncological care team even including medical trainees. As regards the general hospitals, the medical oncology department was spread over several campuses with a smaller team headed by only one medical oncologist.

Data collection

Two researchers (MH and SD) observed MDTMs individually and independently. Data were collected by audiotaping the meetings and taking field notes during the meetings. The audiotapes of the meetings served as a support for filling observation gaps, clarifying, and validating what was being observed.³⁵ Field notes were taken using a supportive tool with predesigned dimensions such as: 1) goal of the meeting; 2) frequency; 3) duration; 4) composition; 5) active participation of the different team members; 6) team members' role during the meetings; and 7) topics discussed during the meeting. Intermediate reflections and preliminary findings were regularly discussed within the project team during the data collection.³⁶ The template was adapted when new dimensions emerged inductively from the observations.^{37,38}

Data analysis

Data collection and data analysis are integrated in an iterative reflexive process and were concurrent (the iterative cycle of qualitative research).³⁸

The researchers' written field notes from the observations were used as a starting point for the analysis. Preliminary thematic analyses were performed after each observation and used to support the subsequent observations to expand on emerging issues or validate hypotheses within the problem statement. The inductive comparative analysis took form through a process of fine-tuning codes and themes or issues in a process of researcher and data triangulation

and a validation strategy.³⁸ The two researchers (MH and SD) independently coded the data thematically and then discussed and compared emerging categories, subcategories, and interpretations of the findings. In cases of disagreement, data were reviewed by both authors and the project team was consulted.

Ethics approval and informed consent

Ethics approval for this study was given by the central Medical Ethics Commission of the Brussels University Hospital (BUN 143201318799). Additional approval has been obtained from the participating organizations. All data from this study are anonymized and stripped of all sensitive personal and patient identifiers. Additional consent from the participants is obtained. Digital audiofiles are stored on a secured laptop and access to the data is only granted to the project team.

Results

In the selected oncology departments, two general types of MDTMs occur: 1) those to discuss patient cases; and 2) those to discuss organizational aspects or practical arrangements of the department. The latter were excluded for this study.

Overall, 59 MDTMs discussing patient cases were observed and analyzed.

Taxonomy of MDTMs at inpatient medical oncology departments

To obtain an overall picture of all multidisciplinary team activities at inpatient medical oncology departments, we first made a taxonomy of all different types of MDTMs to clarify the commonalities and differences. We observed three types of MDTMs: the multidisciplinary oncology consultation (MOC); the patient ward round; and the ward meeting. We differentiate the characteristics of the meetings according to the following inductively identified dimensions, presented in Table 1.

Table 1 Taxonomy of different types of MDTMs at inpatient medical oncology departments

		MOC	Patient ward rounds	Ward meeting
Participants	Medical disciplines	Internal hospital members: MOC coordinator, physicians from different medical subdisciplines (medical oncology, surgical oncology, pathology, nuclear medicine, radiology, medical internist(s) of the affected organ(s)), medical trainee(s) External to hospital members: general practitioner	Oncologist, medical trainee(s)	Oncologist(s), medical trainee(s)
	Paramedical disciplines	Nurse specialist(s), psychologist	(Head) nurse, pharmacist, nurse administrator	(Head) nurse, psychologist(s), social worker(s), nutritionist(s), palliative care specialist nurse(s), physiotherapist
	Other professions	Data manager		
Aim		To discuss patient cases and recommend an evidence-based treatment plan for each individual patient	To discuss the patient's daily condition, physical functioning, or problems, review available test results to evaluate the plan of care, including cancer treatments, and tentative discharge plans to coordinate the plan of care among the different care professionals	To discuss the overall patient cases of the hospitalized patients
Timing		Weekly/fortnightly	Daily	Weekly
Topics discussed		Age and gender of patient, diagnosis, tumor-staging based on clinical and diagnostic information, comorbidities, prior treatment(s)	Patients' physical condition, patients' daily functioning, complications or problems, medication (changes), progress of the treatment plan, mental well-being, or psychological issues	Medical information such as patients' medical history, diagnosis reasons for admission, physical functioning, nonmedical information such as psychosocial characteristics
Decision-making process		Information exchange and decision-making	Information exchange and decision-making	Information exchange, deliberation, and decision-making

Abbreviation: MDTM, multidisciplinary team meeting; MOC, multidisciplinary oncology consultation.

The multidisciplinary oncology consultation

The MOC is the only formal, legally regulated type of MDTM within the Belgian oncology context. It includes a financial incentive for the participating physicians. This type of MDTM was created in 2003 to foster multidisciplinary consultation between care professionals within oncology departments and to ensure a systematic transparent approach across all institutions. A MOC is requested by the treating physician (usually the general practitioner or organ specialist of the hospital). The MOC is legally described as a meeting per individual patient but because of organizational convenience these are clustered in a collective meeting moment for all patients at stake, generally per tumor group, known as “MOC meetings.” Most of the MOC meetings are organized weekly; for some tumor groups with fewer patients, they are fortnightly. The aim of the MOC meetings is to agree within the team on the diagnosis and to recommend a treatment plan (grounded in evidence) for each individual patient.

Belgian law states that the MOC must be chaired by a (medical) MOC coordinator (preferably with specific oncological competence) with participation of at least four different medical specialists (eg, radiotherapy, surgery, organ specialism, or pathology) who belong to the hospital staff (intra-muros participants) and one extra-muros participant (eg, the general practitioner or the treating physician of the patient if he/she is not part of the hospital team).

For all departments, the MOC meetings were primarily attended by hospital physicians from several medical sub-disciplines and by an oncology nurse specialist(s). Medical trainees also participated in academic hospitals. In one general hospital an external general practitioner physically participated, in some other cases the general practitioner participated via videoconference. In another general hospital, a social worker attended the meeting. In two academic departments a data manager always participated for regulative reasons. The law makes the data manager responsible for the information flow between the hospitals and the Belgian Cancer Registry to evaluate the adherence to clinical guidelines as well as to assess the implementation of the MOC decisions. In only one academic hospital, a psychologist attended the meetings. The size of the group in MOC meetings varied widely by tumor group but also by hospital. Generally, the group of participants was deemed to be larger in the academic hospitals.

The routine of the MOC meetings can be disentangled into a phase of information exchange followed by a decision-making process on the treatment plan of the patient. First,

the physicians predominantly report and discuss medical information. Mainly, medical information and almost always the patient’s age and gender are shared. In most cases, the “requesting physician” briefly presents the patient’s medical case with diagnostic information (pathology and nuclear medicine) and clinical information (including comorbidities and prior treatments). Very few psychosocial characteristics of the patient were reported. In some cases, the patient’s general state of well-being was mentioned.

After the information-sharing phase, a decision-making process takes form on further diagnostic procedures and on treatment recommendations, grounded in evidence-based clinical guidelines available per hospital. For all hospitals, decisions were made either by the coordinator of the meeting or the head physician of the subspecialty, or jointly by all attending physicians.

Trainees participated in the exchange of medical information but did not play a prominent role in the decision-making process.

In none of the meetings did the nonmedical disciplines contribute actively to the provision of information or to the decision-making process.

Patient ward rounds

The patient ward round is a daily core activity in the observed departments. The primary aim of the ward rounds is to provide a daily occasion for the care team to review and integrate information as a group for the daily follow-up of the patients. They are usually conducted in the morning.

Mostly, the patient ward round is prepared in the nursing room or in a separate available space. Next, the multidisciplinary ward round team travels from bed to bed to review patient progress. The team updates itself on each patient’s condition through discussion and chart review, and decides upon the patient’s plan for the day.

In all general hospitals, the oncologist leads the rounds with a (head) nurse in attendance. In the academic hospitals, medical trainees conducted the patient ward rounds, sometimes under the supervision of the senior oncologists. In one department, a pharmacist and a data manager participated during the patient ward rounds. The size of the group of participants depended on the number of disciplines participating, varying from a minimum of three participants to a maximum of five.

The ward rounds begin with the (head) nurse presenting the most pertinent details of the patient and any recent changes (complications, medication changes, progress of the treatment plans). In some cases, the mental well-being

or psychological issues were reported. Patients' reflections and considerations were collected at the bedside.

Decisions on the daily functioning of the patient were made by the oncologist or the medical trainee leading the patient rounds. Decisions regarding changes of the overall treatment plan of the patient were not observed during these rounds.

Ward meetings

Ward meetings are organized to discuss the hospitalized patient cases with all representatives of the care team. Multiple medical and nonmedical disciplines (such as oncologists, medical trainees, (head) nurse(s), psychologists, social workers, nutritionists, and palliative care specialists) attend this meeting. In one department, a physiotherapist also attends the meeting. The size of the group was generally larger compared to the previous types of meetings.

All attendees actively provide input from the perspective of their discipline. The goal of the ward meetings is to ensure that the multidisciplinary team collectively works toward a common care plan, addresses potential barriers to the patient's care plan, and prepares an eventual discharge.

Medical information provided by medical professions was frequently complemented with nonmedical information such as psychosocial characteristics (occupation, family situation or social context, disease understanding or compliance, and mental resilience) by other professions. This additional information impacts on the decision-making process of a treatment plan as we observed that decisions were adapted based on nonmedical information. In these meetings more time was spent on multidisciplinary deliberation, in which medical records were supplemented with psychosocial information on the patients and their personal preferences with regard to possible treatment plans were discussed among all attendees.

Analysis of the multidisciplinary nature of MDTMs at inpatient medical oncology departments

In all departments, MOC meetings were more formally and procedurally organized following a fixed, sequential pattern of: 1) case presentation initiated by the requesting physician or by the MOC coordinator; 2) provision of additional information from the pathologist, radiologist, or other physicians who had been involved in the diagnostic activities; 3) discussion of the possible treatment options; and 4) decision-making (with consolidation by the MOC coordinator).

Considerable time during the MOC meetings was spent on tumor-staging, involving highly medical jargon. Demographic aspects such as age and gender were mentioned usually as a means to introduce the patient. Patient treatment preferences were rarely discussed, let alone taken into account in the subsequent decision-making process.

A few nonmedical disciplines (psychologists and oncology nurse specialists) attend the MOC meeting; however, they had little or no input during the discussions.

In the other types of MDTMs the atmosphere and approach was more informal and meetings were less structured, yet dynamic.

In other MDTMs, we observed a more equal participation of medical as well as nonmedical disciplines. Especially during the ward meetings, a broad range of nonmedical disciplines was present, ie, nurses, psychologists, social workers, nutritionists, palliative care nurses, and physiotherapists. Medical information was complemented with psychosocial aspects such as occupation of the patients, family situation or social context, disease understanding or compliance, mental resilience, and patients' care or treatment preferences. The palliative care nurses frequently mentioned the patients' end-of-life preferences and actively took up the leading role in introducing the subject of palliative care.

Organizational factors affecting the different MDTMs

One of our key observations, seldom described in other research, is that the content of what is being discussed during the different types of MDTMs is interdependent. Outcomes of one type of MDTM were often included in the discussion of other meetings. In some cases, treatment plans decided upon during the MOC meeting were modified during the ward meeting when additional nonmedical information was added to the discussion.

Academic hospitals provide an educational environment for medical trainees to acquire hands-on clinical experience during their training. Through a process of graduated responsibility – whereby trainees are expected to take on increased responsibility as they acquire greater competence – medical trainees are an additional layer of care professionals creating additional differentiation in the organization of care. In academic hospitals, more care professionals (from the same discipline) are involved in the different MDTMs, albeit with differentiated training levels. This higher organizational complexity seems to affect the information-exchange process

during the meetings. We observed that the patients' information was more fragmented as more trainees were present since they all separately added particular input to the information-sharing process. Moreover, MDTMs equally serve as a learning opportunity for the attending trainees whereby clinical results or possible treatment options were more extensively discussed and diagnostic dilemmas explored, very often referring to the scientific background of decisions and recent medical literature. This had a particular impact on the MOC meetings being reduced to an exclusively medical-focused meeting.

The presence of medical trainees also impacts the composition of MDTMs both in terms of quantity as well as for the division of tasks. In the observed academic departments, the daily patient ward rounds were fully delegated to the medical trainees (although still under the supervision of the senior physicians). As a consequence, sufficient time (more than in the other hospitals) was foreseen to conduct the rounds. In the nonacademic departments, all types of meetings are planned on top of the busy work schedule of the oncologists. As a result, for example, MOC meetings were often scheduled outside the core working hours such as early in the morning or late in the evening. Physicians attending these meetings seemed rather hasty to handle the patient cases, reducing the time spent on patient discussions and limiting the (kind of) information being shared during the discussions.

Administrative support, equipment, and facilities for the meetings differ between the academic and nonacademic hospitals. In the academic hospitals, every MOC meeting was attended by a data manager monitoring the patient cases discussed and providing technical support for the equipment for videoconferencing and projecting patient data. In none of the cases, however, did these actively contribute to the meetings.

Discussion

Multidisciplinary teams are considered the golden standard for cancer patient management and care.^{5,20–22,39} Comprehensive reforms were necessary to install and facilitate multidisciplinary care and have been completed in the organizational structure of healthcare delivery for oncology patients around the world,^{22,40–43} as in Belgium.^{3,4} These changes transformed healthcare services formerly based on individual physicians' decision-making into institutionally supported team-based approaches to treatment and care.^{21,44,45}

To date, few articles have studied in real life how multidisciplinary in cancer patient management and care may take form. In the present study, we studied 59 MDTMs at

inpatient medical oncology departments in five different Belgian hospitals (academic as well as general) and explored multidisciplinary.

First, this study is unique in identifying and analyzing three distinct types of MDTMs: the MOC; the patient ward round; and the ward meeting. The analysis of the three types revealed an inconsistent and, at times, contradictory picture of MDTMs. In particular for the MOC meetings, the only formally regulated (and financed) type of MDTM, this study has shown a worryingly low awareness of the true character of multidisciplinary, particularly among medical disciplines. The legal framework may have had a positive impact on the implementation of the multidisciplinary approach in Belgian oncology,⁷ but the intentions of the policy-makers are not fully met or at least not as recommended in the guidelines for multidisciplinary cancer care.^{3,5} The rather "procedural" approach in the MOC meetings and the organizational choice of pooling of MOCs at particular moments (weekly or fortnightly) reduces the meeting to a routine of collecting biomedical information and staging of the disease to ground treatment decisions in available guidelines. Hence, the legal obligation to install MOC meetings has enhanced multidisciplinary but seems to have the unintended consequence that organizational practices induce routinization and dominance in biomedical terms more than an in-depth deliberation of the patients' cases in all aspects including psychosocial information.

These findings with regard to multidisciplinary align with previous studies arguing that MDTMs in oncology are typically driven by doctors, with limited input from nurses and other nonmedical staff (such as, eg, psychologists).^{46,47} Given the limited input from nursing or psychosocial professionals it becomes clear that information related to patient preferences and psychosocial aspects is discussed far less compared to biomedical information and was rarely taken into account when making treatment recommendations.^{16,27,48} These patterns are potentially problematic for MDTMs.⁴⁹ To ensure that MDTMs can benefit from their diverse membership to achieve their full potential, significant attention should be devoted to the multidisciplinary character of these meetings. It has also been found in other types of healthcare teams that nurses are less confident about speaking up during ward round discussions, are reluctant to contribute to discussions,⁵⁰ and tend only to contribute in response to direct questions from medical staff.⁵¹ In these studies, status hierarchy is pointed out as a determinant for this phenomenon – meaning that the existence of (perceived) status hierarchies within healthcare

teams may affect meeting participants' expectations of one another, being translated into inequalities in interaction and opportunities to participate among the different team members.^{52–55} We argue that more attention should be devoted to the participation of psychologists during the MDTMs. This professional group is underrepresented in the international literature, possibly because they are not consequently considered core members of MDTMs. Our findings, however, show that in addition to the nurses, psychologists may have a dedicated role during the meetings as they can potentially bridge the gap between higher and lower status members of the team, becoming an “additional mechanism” to enhance the uptake of psychosocial aspects and patient preferences in treatment decisions.^{49,56}

This study also shows that the different types of MDTMs are interdependent moments which all contribute in a particular way to the framing of the overall “patient story.” In that way, our findings support the idea that multidisciplinary should not be studied as one-shot moments, but as a process of information exchange and reflection throughout various types of meetings involving different care professionals. At the same time, much more research will be needed on how this interdependency of meetings truly contributes to an integral appreciation of the oncological patient trajectory.

To the best of our knowledge, this is the first in-depth empirical study on the multidisciplinary character of multidisciplinary meetings in oncology. Notwithstanding the added value of this type of empirical research, an important methodological limitation of this study needs to be considered. We performed a purposive sampling of inpatient medical oncology departments within two academic hospitals and three nonacademic hospitals in one country, limiting the generalizability of the results for broader organizational contexts and health systems. Further research is needed to discover whether our findings are applicable across cancer care departments nationally and internationally, and replication of the main findings is needed before firm conclusions can be drawn. The risk of subjectivity should be considered in the context of other limitations as the two authors (MH and SD) individually and independently observed the MDTMs. However, the field notes were taken during the observations using a supportive tool with predesigned dimensions. After each observation session, a debriefing with the project team was organized, enhancing the permeability of the researchers' understanding of the data gathered and developing awareness of possible preconceptions. Moreover, previous studies in the UK and other countries also using observational methods

have arrived at similar conclusions, thereby lending validity to these results.^{16,44,47,56,57}

Conclusion

The concept of a MDTM should not merely be a group of care professionals who work essentially independently and occasionally liaise with one another. Understanding the complex interrelationships between internal and external factors affecting MDTMs is challenging but indispensable to better understand and consequently improve the effectiveness. In particular, more empirical studies are needed to reveal the true reasons why these meetings fail to fully integrate all disciplines. Also, more empirical evidence to understand how team composition, hospital culture, and organizational or environmental factors can either directly affect MDTM performance or serve as key mediators or moderators to its success is needed. Lastly, we believe that these findings can be used as a basis for designing and implementing acceptable and thus implementable interventions aiming to enhance the input of psychosocial information and overcome the lack of patient preferences. In particular, tools such as decision aid checklists may be pivotal to ensure that MDTMs can benefit from their diverse membership to achieve their full potential.

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Author contributions

MH, SD, SB, SVB and ML had substantial contributions to the conception and design of the study. MH and SD performed data collection, MH, SD, SB and ML performed the analysis and interpretation of the data. All authors took part in drafting the article or revising it critically for important intellectual content, gave final approval of the version to be published, and agreed to be accountable for all aspects of the work.

Disclosure

The authors report no conflicts of interest in this work.

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