OPTIMOC: Optimizing the multidisciplinary oncology consultation at Belgian oncology departments

Melissa De Regge
(Department of Marketing, Innovation and Organization, Ghent University & Strategic Policy Cell, Ghent University Hospital, Ghent, Belgium)

Nadine Boesten (Nadine.boesten@vub.be)
(Department of Health Sciences, Vrije Universiteit Brussels, Brussels, Belgium & Department of Marketing, Innovation and Organization, Ghent University, Ghent, Belgium)

Kristof Eeckloo
(Department of Medicine and Health Sciences, Ghent University & Strategic Policy Cell, Ghent University Hospital, Ghent, Belgium)

Paul Gemmel
(Department of Marketing, Innovation and Organization, Ghent University, Ghent, Belgium)

Mark Leys
(Department of Health Sciences, Vrije Universiteit Brussels, Brussels, Belgium)

Melissa Horlait
(Department of Health Sciences, Vrije Universiteit Brussels, Belgium)

Abstract

With this study we aim to further define the characteristics that optimize efficiency and patient-centred decision-making at Multidisciplinary Oncology Consultation meetings (MOC). A qualitative single explorative case study research was conducted. The data collection involved structured non-participating observations in 15 tumour groups, 45 semi-structured interviews with participants of different tumour groups in three hospitals and document analysis. Improvements in the MOC can be made with regard to the multidisciplinary character of the MOC teams, the organisation and logistics of the MOCs and patient-centred decision-making. We conclude that the efficiency of the MOC can be improved by streamlining cases according to complexity and involving all actors in the discussions, resulting in more patient-centred decision-making.

Keywords: cancer, multidisciplinary oncology consultation, hospital

Introduction

The Multidisciplinary Oncological Consultation (MOC) is a type of Multidisciplinary Team Meeting (MDTM) that is designed as a care process to foster multidisciplinary consultation between care professionals within oncology departments. Although the MOC should facilitate multidisciplinary collaboration, research has shown that current MOCs are inefficient in organisation and time management, do not benefit from input of all disciplines present at the MOC meetings and the preferences and psychosocial needs of the patient are rarely discussed during the meetings (Horlait et al., 2019). A such, there is an urgent need to optimize the current MOC in terms of 1) efficiency, in optimizing the time spent for all participants involved with the MOC and 2) patient-centred decision-making, so that the patient is sufficiently represented during the MOC meetings and his/her psychosocial needs and preferences are considered in planning future treatment and 3) interdisciplinarity, so that the expertise and input of different medical as well as non-medical disciplines are equally valued.

As presented in the operations management literature the product-process matrix for health care (Gemmel et al., 2013) (Figure 1) states that the nature of the service (a structured versus and unstructured health problem) determines the nature of the care process (iterative versus a sequential process). The segmentation of patients into homogenous groups is in line with the idea that the design of the care process should be consistent with the nature of the illness and care (Bohmer, 2009; Christensen et al., 2009; Cook et al., 2014; Lillrank and Liukko, 2004, Porter et al., 2013; van Merode et al., 2004).

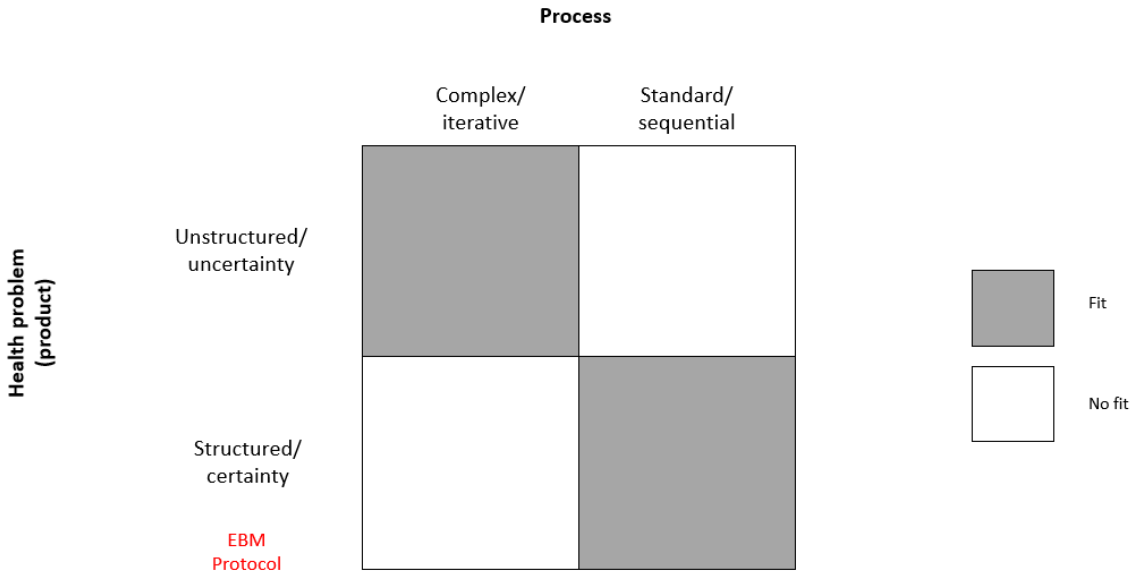

Figure 1 - The Product-Process Matrix in health care, adapted from Gemmel et al. (2013)

In a MOC meeting, structured as well as unstructured health problems are being discussed. Unstructured health problems can occur in for example complex cancer cases, while structured health problems are ´clear-cut´ cases where the patient can be quickly diagnosed

and can be given predictable, reliable and low-cost care, e.g. cancer cases with clear evidence based guidelines and predictable care plans (Bohmer, 2009).

As both types of health problems are discussed during MOC meetings, this can lead to a mixture in processes during an already time constraint meeting. Streamlining cases according to complexity can therefore provide an improvement in efficiency. Literature on optimizing the MOC follows this thought as it suggests that the streamlining of cases by complexity is essential for the optimization of the MOC (Hoinville et al., 2019; Soukup et al., 2020). Furthermore, streamlining cases can facilitate the decision-making process and the involvement of all MOC participants, increasing the multidisciplinary character of the MOC meeting.

The aim of this study is to further define the characteristics that optimize efficiency during MOC meetings by building on the concepts of healthcare operations management and multidisciplinarity.

Methods

A qualitative single exploratory case study design was used. According to Yin (2004) a rationale for a single case study can exist of the representative case. In our research we see the optimization of the MOC meetings as the representative case and the different tumour groups as the unit of analyses.

The data collection involved structured non-participating observations, semi-structured interviews with participants of different tumour groups and document analysis of policy documents, hospital protocols and information brochures. In total 15 tumour groups were observed during several meetings in three different hospitals, one general hospital and 2 academic hospitals. The tumour groups that were observed are digestive-, uro-, gyneaco-, pneumo-, lung-, bone- and soft tissue-, endocrinology, head and neck-, liver-, neurological- and thoracic- oncology. During the observations an insight in communication patterns, interactions between the different participants of the MOC and behaviour was gained, using a predesigned tool, the Multidisciplinary Team-Observational Assessment Rating Scale (MDT-OARS). The tool contains 18 aspects of the characteristics of an effective Multidisciplinary Team (MDT) that can be observed (Taylor et al., 2012).

Forty five semi-structured interviews were conducted with a broad group of participants of the MOC. For the interviews the existing questions of The Characteristics of an Effective Multidisciplinary Team (NCAT, 2010) were used. The interviews were transcribed and analysed by dividing the data in different categories using Nvivo (version 11).

Results

We draw upon the categories of the MDT-OARS to further define the characteristics of the Belgian MOC meeting that consist of: team composition, infrastructure, organisation and logistics, patient-centred decision-making and the MOC policy.

Team composition

Team composition contains subcategories such as the presence of each discipline, leadership style, teamwork and culture and personal development and training. The MDT team typically consists of six to eight disciplines depending per MOC. These include the radiologist, radiotherapist, surgeon, medical oncologist, pathologist, nuclear medic and oncological nurse. There is also a data analyst of the National Cancer Registration present to note the

presence of all members at the MOC. For all MOCs, the presence of the treating specialist is essential to introduce the case of the patient. In case of absence, the MOCs arrange a backup. In none of the observed MOCs did the general practitioner participate, although it was expressed during the interviews that this would be desired.

In the observed MOCs leadership style varied. Often the leaders of the MOC consisted of medical oncologists. Most of the observed MOCs work with a fixed leader while one works with a rotating leadership as they believe that fixed leadership is vulnerable because of holidays or illness of the MOC leader. As expressed by the interviewees the characteristics of a good leadership style contain a leader who keeps an eye on timing, makes sure everyone contributes equally to the discussions, is able to make decisions in difficult cases, ensures that the documentation and the report of the MOC is clear and should state clearly when the MOC meeting has ended and all cases have been discussed. During one observation, the end of the meeting was not clearly stated by the coordinator resulting in participants leaving the meeting before all cases had been discussed. Furthermore, in one of the observed MOCs the structure of the meeting was lost once the leader answered his phone. Ringing phones composed a highly disturbing factor in all of the observed MOCs, with people getting up and leaving the meeting to answer them. The MOC leader should restrict the use of phones during the meeting. *"I think the constant ringing of telephones is extremely disturbing. I don´t understand that everyone has to be reachable all the time. Everyone needs to silence it or have a back-up because at that moment they are at the MOC." (interview respondent #13 bone- and soft tissue MOC)*

As for teamwork and culture, most of the participants of the MOCs were convinced the MOC is time saving on communication, although the meetings often have a high caseload and too little time. Furthermore, in all but one of the observed MOCs the discussions were mainly dominated by the medical disciplines. Oncological nurses were always present at the MOC, but contributed rarely. Interviewees expressed the importance of the contribution of oncological nurses in terms of patient representation. In the head- and neck-tumour MOC oncological nurses contributed actively to the discussion. In this case the medical disciplines agreed that the oncological nurse is an asset to the team discussions as she will contribute information to the discussions that can only be presented by that discipline. The medical specialists listened to the input and included this input in the case conclusion.

The MOCs are also seen as an opportunity for personal development and training, as medical students were always present and some teams even left the case preparations fully up to medical students in order to train them.

Infrastructure

The second characteristic is the infrastructure of the MOC meeting that consists of subcategories such as the physical environment, technology and amenities. The MOCs are held in large rooms that can seat up to 25 people. The medical disciplines have a seat at the main table with in some cases even assigned seats. Even though the MOCs are held in large rooms, the spaces are often too small because of the observers on the second row, such as medical students. Mostly the rooms were equipped with video-conferencing amenities and contained at least two screens to project medical records as well as medical imaging. One MOC only works with one large screen. Most of the interviewees prefer at least two screens because more information can be projected and compared at once, some even prefer a third

one. Furthermore a Collaborative Healthcare Platform (CoZo) is often used to project imaging of other hospitals, although the program did not always function as desired.

Organisation and logistics

The third observed characteristic consists of the organisation and logistics of the meeting. Subcategories are the planning and preparation of the MOC, the administration during and documentation after the MOC. Treating doctors are responsible to choose patients for the MOC and send in all relevant information to the MOC coordinator. In most MOCs the deadline for sending in this information is at least 24 hours before the start of the MOC. The preparation of the MOCs on average take 15 minutes up to 1,5 hours for the participants. Some interviewees express that there is too little time to prepare the cases properly as the complete MOC list is only send to participants a couple of hours before the start of the MOC. Some treating doctors are unprepared during the MOC as the medical student prepared the file. According to the interviewees this should not happen and sufficient preparation by all participants is necessary for the well-functioning of the meeting. *"The efficiency of the MOC is dependent on the preparation of the MOC. Both the person introducing the case as well as all others should be well prepared. Only then you can reach good collaboration." (interview respondent #22 pneumo MOC).* Only two MOCs work with a template for preparing the cases. Interviewees express the necessity of having clearly defined questions prepared for the start of the MOC and that a template could help with this.

In all MOCs, the patient files are presented by treating doctors. Doctors who are physically present at the meeting usually go first, followed by the doctors joining via video-conference. The data analyst notes the recommendations and advices, cancer registration and the RIZIV (the National Institute for Sickness and Disability Insurance) form. Some MOCs cluster cases for certain specialists who can only be present during a part of the MOC meeting. The MOC coordinator or an assistant of the MOC coordinator documents and formulates decisions in the report. Some of the interviewees express the need for a trained assistant for his task, as according to them coordinating the meeting as well as having to draw up a report at the same time takes away concentration from leading the meeting. The report is checked by the treating physician and then sent to the GP. As for the clinical decision-making process, the MOC is a strong advice and the treating physician discusses the decisions of the MOC with the patient, in which the patient will always have the final word.

Patient-centred decision-making

A fourth characteristic is patient-centred decision-making. During the MOC both clear-cut as complex cases are discussed. With clear-cut cases, the advice to be formulated during the MOC is usually clear. In none of the MOCs cases are streamlined according to complexity. Participants express that it could be interesting to cluster cases according to complexity and streamline the planning of the MOC accordingly. Psychosocial needs of the patients are rarely discussed. Participants agree that the oncological nurse or the GP can play an essential role in this. The role of the nurse is in all but one observed MOC passive, whilst GP´s were never present in any of the MOCs. Participants think a reason for this absence are barriers in logistics and time management. *`One of the things that is still an issue, is the absence of the GP. We are already discussing this for years on how we will be able to improve this. One of the disadvantages is that you lose information from the home front of the patient, where you*

cannot interpret the familial background, so the result is that you start looking at every patient with a standard routine.` (interview respondent #39 digestive MOC)

MOC Policy

The last characteristic of an efficient functioning MOC according to the MDT-OARS is the MOC policy. In our interviews, participants express the need for more time, facilities and extra staff for the MOC who can help with preparation and documentation afterwards. Furthermore, the sharing of knowledge between MDTs via EHealth platforms is mentioned as an opportunity for cooperation between different hospitals, although participants express the feeling of ongoing competition between hospitals.

Discussion

Our observations and interviews indicate that the Belgian MOCs can benefit from an intervention that enhances efficiency and patient-centred decision-making. Following Soukup et al. (2020) the clustering of cases according to complexity could be a possible solution to increase efficiency (Soukup et al., 2020).

Each kind of service needs a different approach (Christensen et al., 2009). In the case of the MOC, this entails tailoring the approach to the nature of illness and care but above all, tailoring care to the needs of the patient. Drawing upon product-process matrix for health care (Figure 1) the MOC would benefit from adopting a mixed approach with on the one hand, a standard approach for the clear-cut cases with structured health problems and on the other hand, a customized approach for complex cases with unstructured health problems. By making this division, cases can be clustered into homogenous groups which leads to more predictable and manageable patterns in clear-cut cases, whilst leaving more time for complex cases to be discussed (Bredenhoff et al., 2011; Cook et al., 2014; Kumar et al., 2011).

Soukup et al. (2020) developed the MeDiC tool specifically for multidisciplinary team meetings in oncology. The purpose of the tool is to streamline cases according to clinical complexity and prepare and reorganise the MOC meetings accordingly. While the MeDiC tool is used before the MOC would take place, the MDT-QulC tool (Lamb et al., 2014) provides a structured manner to support the discussion and decision-making processes during multidisciplinary team meetings. The tool is made up of a checklist to act as an aide memoire for the MOC coordinator to structure referral documentation and the recording of multidisciplinary team outcomes. The MDT-QulC tool might provide the participants of the MOC, in particular the MOC coordinator, with an aid for increasing the multidisciplinary character of the meeting. It can facilitate the active participation of for example oncological nurses as spokespersons for patients, as they can play an important role in the MDT discussions (Wallace et al., 2019). The role of the GP in MOC´s can be facilitated by removing current barriers in logistics and time management and ensuring a smooth information flow (Pype et al., 2017).

The combination of the two tools can create sufficient time for discussing complex cases by organizing the cases in a streamlined manner with the MeDiC and ensure the input of all disciplines by using the QulC.

In a follow up study we aim to further explore and test the feasibility and adaptability of the before mentioned tools to the Belgian MOC. By increasing the efficiency of the MOC through concepts of healthcare operations management and combining those with concepts

of multidisciplinarity that can stimulate patient-centred decision-making, we hope to optimize the MOC meetings.

Conclusion

With this study we aimed to further define the characteristics of a well-functioning MOC meeting. We found that MOC meetings in Belgian oncology departments could benefit from an intervention that enhances efficiency and patient-centred decision-making.

There is a need to increase the efficiency of the meetings by for example streamlining cases according to complexity. Furthermore, the multidisciplinary character of the MOC needs to be enhanced by giving room for input by other disciplines rather than the strictly medical ones. In order to make the MOC more efficient and increase patient-centred decision-making we aim to test and roll out an intervention that could increase both, reducing time pressure on the MOC meetings and ensuring that medical as well as non-medical disciplines are represented and are given space to contribute to the MOC on behalf of the patient.

References

Beech R, Vissers J. (2005) *Health Operations Management: Patient Flow Logistics In Health Care*, NY: Routledge, New York.

Bohmer R. (2009*) Designing Care: Aligning the Nature and Management of Health Care*, Harvard Business School press, Boston, Massachusetts.

Bredenhoff E, Van Lent WAM, van Harten WH (2010) Exploring types of focused factories in hospital care: a multiple case study. *BMC Health Services Research,* 10, pp. 154.

Cook D, Thompson J, Habermann E, Visscher S, Dearani J, Roger V, Borah B (2014) From 'solution shop' model to 'focused factory' in hospital surgery: increasing care value and predictability. *Health Affairs (Millwood*) 33(5): pp. 746-755.

Christensen CM, Grossman JH, Hwang J (2009). *The Innovator's Prescription. A disruptive Solution for Health Care.* McGraw-Hill, New York.

Dubois, C., De Schutter, H., Leroy, R., Stordeur, S., De Gendt, C., Schillemans, V., Vrijens, F. (2018). Multidisciplinary work in oncology: Population-based 62 analysis for seven invasive tumours. *European journal of cancer care*, 27(2), p.e12822.

Gemmel, P., Van Looy B., Van Dierendonck R., (2013) *Service Management: An integrated approach*. England: Pearson, Harlow.

Hoinville L, Taylor C, Zasada M et al. (2019), Improving the effectiveness of cancer multidisciplinary team meetings: analysis of a national survey of MDT members' opinions about streamlining patient discussions. *BMJ Open Quality*, 8(2):e000631. Consulted 25 March 2021 via https://doi.org/10.1136/bmjoq-2019-000631

Horlait M, Baes S, Dhaene S, Van Belle S, Leys M. (2019), How multidisciplinary are multidisciplinary team meetings in cancer care? An observational study in oncology departments in Flanders, Belgium, *Journal of Multidisciplinary Healthcare*, Vol. 12, pp.159–167.

Kumar S, Ghildayal NS, Shah RN (2011) Examining quality and efficiency of the US healthcare system, *International Journal of Health Care Quality Assurance*, 24(5): pp. 366-388

Lamb BW, Taylor C, Lamb JN, Strickland SL, Vincent C, Green JSA, et al. (2013), Facilitators and Barriers to Teamworking and Patient Centredness in Multidisciplinary Cancer Teams: Findings of a National Study, *Annals of Surgical Oncology*, 20, pp. 1408–1416.

Lamb BW, Sevdalis N, Arora S, Pinto A, Vincent C, Green JSA (2013), Teamwork and Team Decision-making at Multidisciplinary Cancer Conferences: Barriers, Facilitators, and Opportunities for Improvement, *World Journal of Surgery*, 35: pp. 1970–1976.

Lamb BW, Jalil RT, Sevdalis N, Vincent C, Green JSA. (2014), Strategies to improve the efficiency and utility of multidisciplinary team meetings in urology cancer care: a survey study, *BMC Health Services Research*, 201, Vol. 14, No. 377, pp. 1-7.

National Cancer Action Team (2010). The Characteristics of an Effective Multidisciplinary Team (MDT). Consulted on 23 March 2021 via http://www.ncin.org.uk/view?rid=136

NVivo qualitative data analysis software; QSR International Pty Ltd. Version 12, 2018

Porter ME, Pabo EA, Lee TH (2013), Analysis & commentary. Redesigning Primary Care: A Strategic Vision To Improve Value By Organizing Around Patients' Needs, *Health Affairs*, Vol. 32, No. 3, pp. 516-525.

Pype, P., Mertens, F., Belche, J., Duchesnes, C., Kohn, L., Sercu, M. and Deveugele, M., (2017), Experiences of hospital-based multidisciplinary team meetings in oncology: an interview study among participating general practitioners. *European Journal of General Practice*, *23*(1), pp.156-164.

Soukup T, Morbi, A, Lamb BW, Gandamihardja T A, Hogben K, Noyes K & Green, JS (2020) A measure of case complexity for streamlining workflow in multidisciplinary tumor boards: Mixed methods development and early validation of the MeDiC tool, *Cancer Medicine*, pp. 5143-5154.

Taylor, C., Brown, K., Lamb, B., Harris, J., Sevdalis, N., & Green, J. S. (2012). Developing and testing TEAM (Team Evaluation and Assessment Measure), a self-assessment tool to improve cancer multidisciplinary teamwork. *Annals of surgical oncology*, Vol. 19, No.13, pp. 4019-4027.

Vrijens, F., Kohn, L., Dubois, C., Leroy, R., Vinck, I. & Stordeur, S. (2015b, February 17th) 10 jaar multidisciplinaire oncologische consulten: balans en vooruitzichten – Synthese. Brussel: *Federaal Kenniscentrum voor de Gezondheidszorg (KCE*). 2015. KCE Reports
239As.

Wallace, I., Barratt, H., Harvey, S. and Raine, R., (2019), The impact of Clinical Nurse Specialists on the decision making process in cancer multidisciplinary team meetings: A qualitative study. *European Journal of Oncology Nursing*, *43*, p.101674.