

Hitendra R.H. Patel
Tim Mould
Jean V. Joseph
Conor P. Delaney
Editors

Pelvic Cancer Surgery

Modern Breakthroughs
and Future Advances

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To my incredibly supportive and loving family Venita, Maanya and Ishaan – HP

To my loving and supportive family, Mette, Livy and Dan – TM

To my wonderful and supportive family, Johann, Julian and Xavier – JJ

To my wife Clare, for her continuing love, guidance and support – CD

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Part I

**Training and Environment
for Pelvic Surgery**

Improving Multidisciplinary Team Working in Pelvic Oncology

1

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1.1 Introduction

Multidisciplinary teams (MDTs) and MDT meetings to decide treatment options are increasingly becoming the gold standard of care for patients with cancer across the world and in the UK the delivery of cancer care by MDTs has increased from 20 % in 1996 to over 80 % by 2006 [1]. At their best, MDTs can provide a means of bettering decision-making, coordination and communication between healthcare professionals. Recent evidence has even suggested that the benefits of multidisciplinary working in cancer care can also improve patient outcomes [2]. However, some clinicians are unsatisfied at the time and resources taken up with MDT meetings, without seeing significant improvement in patient care.

In 1995, MDT working was introduced in the UK following evidence of variation in the quality of cancer services [1]. In particular there was evidence of discrepancies in access to specialist care, shortfalls in cancer services, a fragmented system of referral to and between specialists, as well as inconsistencies in the frequency of individual treatments, the caseload for particular doctors, and most importantly variation in patient survival. Healthcare professionals worked in teams, but there was little standardization of the organization of services or operating processes, and referrals were made on an ad hoc basis. In the 1990s evidence started to emerge about the benefits of treating patients with a multidisciplinary team approach, rather than treatment by individual clinicians [3]. Furthermore, studies had found

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that patients' surgical outcomes improved when surgeons with higher numbers of cases treated them, and in centers that carried out higher volumes of cases [4]. It was this evidence that the Chief Medical Officers for England and Wales drew on in the Calman-Hine report in 1995 to recommend that cancer care should be delivered by MDTs at specialist cancer centers arranged into site-specific cancer networks [5].

1.2 "A Systems Approach" to MDT Meetings

Recently, the process of decision-making in MDT meetings has been studied scientifically. Over the last 5 years, our team has undertaken a program of research to apply qualitative and quantitative methodologies from existing research in team performance in healthcare, to scientifically measure and improve the quality of teamwork and decision-making in Urology MDT meetings.

Outside of cancer care there has recently been increasing interest and an expanding evidence base on the description, assessment and improvement of

non-technical skills in healthcare, in particular in team working across a diverse range of specialties. The majority of this work has been translated from research in other industries that share the need for reliability with high reliance on human interaction. These industries, including commercial aviation and the military also share the potential for disastrous consequences when communication fails or team leadership is inadequate. The application of this work to healthcare has suggested that factors including the environment, team factors, and an individual's non-technical skills all affect clinical outcomes [6]. Non-technical skills have been grouped into behavioral and cognitive skills. Behavioral skills refer to skills such as teamwork and leadership. Cognitive skills include situational awareness (the awareness of the surgeon to what is happening in the operating room) and decision-making. Decision-making includes the choices the surgeon makes i.e. when to operate, as well as judgements e.g. of risk and are based on the surgeon's experience and personal beliefs. Consideration of these factors alongside traditional indicators of performance such as technical skills and patient factors has given rise to a new 'systems

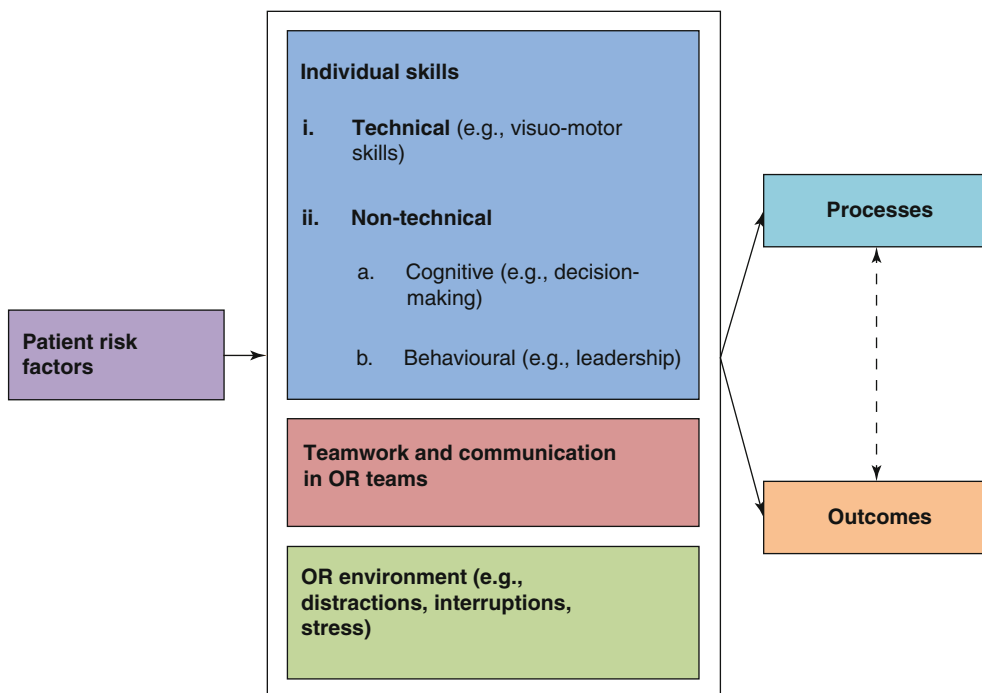


Fig. 1.1 The systems approach to surgical performance (Adapted from Undre et al. [6])

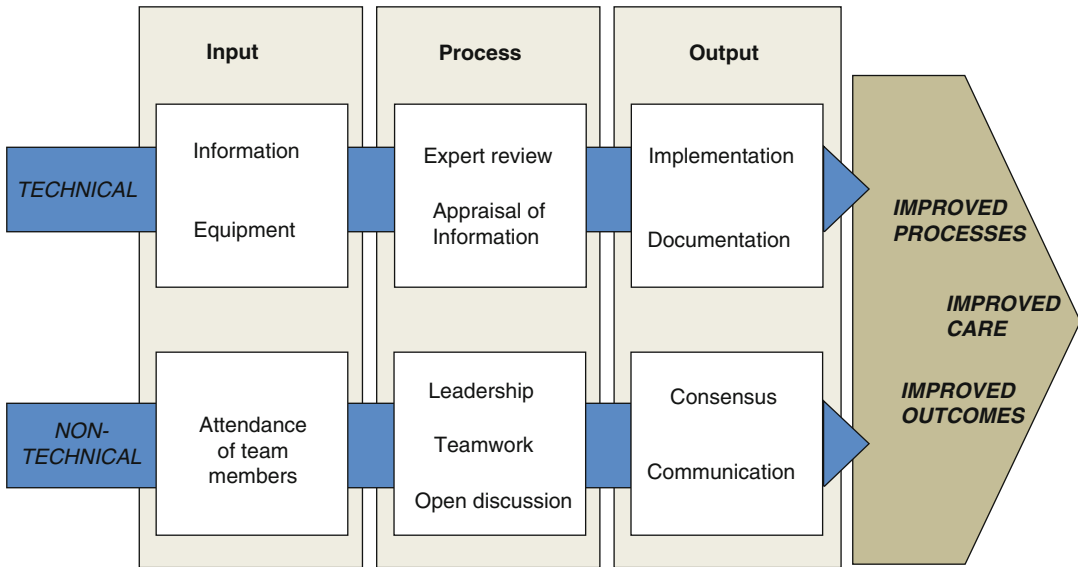


Fig. 1.2 A systems approach to decision-making in MDT meetings. ‘Technical’ refers to organizational factors and clinical skills. ‘Non-technical’ refers to team skills (Adapted from Lamb et al. [8])

approach’ to performance in healthcare (Fig. 1.1). Within healthcare, research on team skills was pioneered in surgery and anesthesia and has since been adapted to other many other specialities including emergency medicine. Work to improve team performance has been achieved using a variety of qualitative and quantitative methodologies that has led to the development of robust, validated tools for team assessment and feedback and simulation-based training. A significant portion of this research has been carried out in urological surgery [7].

The evidence for decision-making in MDT meetings covers many different aspects of the MDT meeting across a range of specialities [8]. Several studies have found that MDTs make a difference to the outcome of care management decisions, compared with the decisions of individual clinicians. However, decisions in MDT meetings cannot always be reached, often due to the lack of clinical information. Furthermore, MDT decisions are not always implemented, because information relating to the patients’ clinical state or their comorbid conditions is sometimes insufficient. In particular, patient’s preferences are not taken into account when such decisions are made. Studies suggest that high-quality, feasible decisions also require support from good leadership,

protected time for team-members to prepare prior to the meeting and adequate organizational facilities. The roles played by different team members within the MDT are varied, with typically lower importance placed on the input of nurses, who have skills in understanding patient’s psychosocial issues and choices for treatment.

This array of factors that can potentially impede the quality of decision-making is complex and difficult to understand as a whole. In order to better understand and assess decision-making in MDT meetings we took the systems approach as described above and applied it to the evidence for decision-making in MDT meetings [8]. By applying this approach we were able to develop a model of the factors that affect decision-making (Fig. 1.2). This model has provided a useful framework that we have used to systematically study the quality of teamwork and decision-making in MDT meetings.

1.3 Assessing Decision-Making in MDT Meetings

With a better understanding of MDT decision-making and the aspects that are important to high quality performance, we set out to construct a



Metric for the Observation of Decision-making



			Information							Discussion							OUTCOME	
#	Site	post	Hx	X-ray	Path	Psy/soc/	comorbid	Patient view	Chair	Surg	Phys	Oncolo	Nurse	Radiolo	Histopath	MDTC	Y/D/N	Free text
1																		
2																		
3																		
4																		
5																		

History	5	Fluent, comprehensive case history	Psycho-social	5	Comprehensive first-hand knowledge of patients' personal circumstances, social and psychological issues.
	3	Partial case history		3	Vague first-hand knowledge or good second-hand knowledge of personal circumstances, social and psychological issues.
	1	No patient case history		1	No knowledge of personal circumstances, social and psychological issues.
x-ray	5	Radiological images	Co-morbidity	5	Comprehensive first-hand knowledge of past medical history and performance status
	3	Radiological information from a report/account		3	Vague first-hand knowledge, or good second-hand knowledge of past medical history or performance status
	1	No provision of radiological information		1	No knowledge of past medical history or performance status
Pathology	5	Histopathological information from pathologist	Patient's views	5	Comprehensive first-hand knowledge of patient's wishes or opinions regarding treatment
	3	Histopathological information from a report/account		3	Vague first-hand knowledge, or good second-hand knowledge of patient's wishes or opinions regarding treatment
	1	No provision of Histopathological information		1	No knowledge of patient's wishes or opinions regarding treatment
Chair	5	Good leadership enhanced team discussion and decision making	Members	5	Clear contribution of speciality.
	3	Leadership neither enhanced or impeded team discussion and decision making		3	Contribution inarticulate or vague
	1	Poor/inadequate leadership impeded team discussion and decision making		1	No contribution
Point	Pre Rx	Pre treatment	Decision	Y	Clear treatment decision
	Post Rx	Post treatment		N	No decision/Decision deferred
	R	Recurrence/surveillance			

Fig. 1.3 Figure displaying MDT-MODE used to score behaviors during MDT meetings—including information provision and team-member contribution. Observed behaviors are compared to and scored against examples of

behaviors of varying quality (Copyright 2013 Imperial College London. Accessed from http://www1.imperial.ac.uk/medicine/about/institutes/patientsafety/servicequality/cpsq_publications/resources_tools/mdt/)

tool for the scientific assessment of MDT decision-making. In order to improve something, you first must be able to measure it. Using the principles of the observational assessment of team working from other areas of healthcare and other industries, along with evidence from the literature and our own research, we developed an observational tool, MDT-MODE to assess behaviors and information presentation in MDT meetings (Fig. 1.3). MDT-MODE was tested for inter-rater reliability, assessors' learning curves, and cross-validated against MDT members' own self-assessment. Presentation of a patient's case history, radiological, and pathological information, information on psychosocial aspects and the patient's comorbidities and their own views were assessed, as well as ratings of the MDT Chair's

effectiveness, and contribution to decision-making of the different MDT members, including urologists, oncologists, radiologists, pathologists, Clinical Nurse Specialists and MDT Coordinators. Whether a treatment decision was reached for each case, meeting characteristics including the number and profession of team members in attendance, number of cases discussed per meeting and start and end times of the meeting were also recorded.

This assessment tool was piloted with eight MDTs over 500 cases. Good reliability and learning curves were obtained in the assessment of MDT performance (median reliability coefficient = 0.71) [9]. Positive correlations were found between observational and self-assessments of MDTs (Spearman's $Rho = 0.66-0.91$; $P_s < 0.05$)—thus