

health

June 2012

Multidisciplinary cancer care

Literature review

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Contents

1. Introduction	1
1.1 Search strategy	1
1.2 Search terms	1
1.3 Appendix	1
2. Best practice models for delivering multidisciplinary care	1
3. Benefits of multidisciplinary care teams	2
3.1 Composition of the multidisciplinary team	2
4. Infrastructure and tools	3
5. Barriers	3
6. Requirements for an effective multidisciplinary team	4
6.1 Leadership	4
6.2 Team dynamics	5
6.3 Administrative support	5
6.4 Allied health and support staff	5
6.5 Protected time	6
6.6 Involvement of the patient	6
7. Novel tools for use in multidisciplinary team meetings	6
7.1 Electronic databases and decision aids	6
7.2 Regulation	7
7.3 Patient-held tools	7
7.4 Assessment tools of multidisciplinary team performance	7
8. Addressing rural/regional issues for multidisciplinary care	8
9. Geriatric oncology	8
10. Medicolegal issues in multidisciplinary teams	9
10.1 Liability	9
10.2 Consent	9
11. Stages of treatment and multidisciplinary teams	10
11.1 Role of primary care providers	10
11.2 Long-term follow up of survivors	11
11.3 Palliative care	11
12. The Victorian experience with multidisciplinary team meetings – an example	11
13. Conclusions	12
13.1 Benefits of multidisciplinary care for patients	12
13.2 Benefits of multidisciplinary team membership for staff	12
13.3 Barriers and solutions to improve multidisciplinary care	12
13.4 International trends	12
Appendix 1: Articles – key themes	14
Appendix 2: Abstracts – key themes	43
References	57

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1. Introduction

The aim of this literature review was to identify current trends and best practice for delivering optimal multidisciplinary care (MDC) for cancer patients. It focuses on articles published since 2005 and is intended to refresh the literature underpinning the department's *Achieving best practice care: a guide to implementing multidisciplinary care policy* (2007).

MDC can be broadly defined as:

... an integrated team approach to health care in which medical and allied health care professionals consider all relevant treatment options and develop collaboratively an individual treatment plan for each patient.¹

1.1 Search strategy

The following databases were searched for relevant literature published from 2005: Pubmed/Medline, Proquest, CINAHL plus, Cochrane Library. Only articles published in English were considered for this review. Grey literature was also sourced from the websites of key organisations delivering cancer services. However, it should be noted that this was not a systematic literature review.

1.2 Search terms

Search terms used were combinations of: multidisciplinary care, multidisciplinary treatment planning, multidisciplinary clinic, multidisciplinary team, interdisciplinary, treatment planning, integrated multidisciplinary care, cancer, oncology, adult, cancer care, haematological malignancy, leukaemia.

1.3 Appendix

The literature were reviewed regarding issues/evidence relevant to the topics/themes for the department's policy and with a view to identifying any new emerging themes.

2. Best practice models for delivering multidisciplinary care

Cancer care can be complex. Due to the large number and range of healthcare providers who may be involved, there is potential for poor communication and poor coordination of care. MDC has been identified as a key enabler in the provision of high-quality treatment and care for cancer patients. It involves a team approach to the treatment planning, care and follow-up of cancer patients. Multidisciplinary teams (MDTs) improve communication, coordination and decision making between healthcare professionals when considering treatment options in consultation with cancer patients. The use of MDTs in cancer care is endorsed internationally, however, uptake varies. MDT practice is quite entrenched in the United Kingdom (UK), Europe, Australia and Canada, as well as in parts of the United States (US); however, it is a less common model of care in Asia.

It has been demonstrated that MDT decisions lead to revisions of cancer diagnoses and of treatment plans in new cancer cases^{2,3,4} with better adherence to evidence-based guidelines.^{5,6,7} Studies have demonstrated that MDTs reduce the time from diagnosis or presentation to the commencement of treatment.^{8,9,10} Patient satisfaction with the operation of MDTs is excellent.^{8,9} There has also been positive endorsement by clinicians who have described MDT meetings as effective mechanisms to coordinate and improve care plans for cancer patients.^{11,12,13}

Multidisciplinary cancer care can be delivered using various models of care. These include multidisciplinary clinics staffed by a mix of different health professionals,² and MDTs that hold

regular meetings to discuss patient care plans prospectively. On the whole, these MDTs and clinics tend to be tumour or organ specific. MDT meetings are usually held weekly, particularly in large metropolitan hospitals. In smaller community hospitals, the MDT meetings may be held fortnightly or monthly. Rural hospitals may be linked to metropolitan cancer centres for regular meetings through teleconference¹⁴ or videoconferencing.

A survey of breast surgeons in Australia and New Zealand conducted in 2006 revealed that 85 per cent of responding surgeons reported participating in at least one fully established MDT.¹⁵ Public sector teams were operationally more consistent and functional than private teams, and rural teams were less well developed than those in metropolitan and regional areas. Private sector teams take a more informal approach, are less likely to discuss all patients, and hold their meetings less frequently.¹⁵

3. Benefits of multidisciplinary care teams

The evidence for improved survival as an impact of multidisciplinary cancer care has not been strong;⁴ however, reduced time to diagnosis and treatment, improved adherence to guidelines, improved inclusion in clinical trials,^{2,9} improved patient satisfaction and improved education and collegiality for members of the MDT,¹³ have all been documented through audits of MDT records and surveys of MDT members.

Recent evidence from a Scottish study has linked substantially greater improvements in breast cancer survival to MDC, over and above improvements expected to occur in the absence of MDC.¹⁶ This is the strongest evidence yet of a significant survival benefit associated with MDC.

Pawlik et al. report that 25 per cent of patients attending an MDC clinic are offered inclusion in clinical trials² and Struwoski reports an increase of 10 per cent in clinical trial inclusion among patients seen at their MDC clinic.¹⁷

Discussion of individual cases by experienced specialists at MDT meetings provides an excellent opportunity for training doctors and nurses.¹⁸ Staff wellbeing has also been noted to have improved through participation in MDT.¹⁹ Team meetings assist in communication and information sharing between members, particularly between hospital-based specialists and primary care providers, which enhances referral and continuing care pathways.¹⁹ Pawlik et al. also note the MDC clinic or 'multidisciplinary team memberships' are effective in disseminating information about support groups.²

3.1 Composition of the multidisciplinary team

Core members of the multidisciplinary cancer team usually include a medical oncologist, surgical oncologist, radiation oncologist, pathologist, radiologist and an MDT coordinator or nurse.¹⁵ Support staff may include specialist nurses, psychologist(s), physiotherapist(s), dietician(s) and other allied health staff as they are required. Palliative care clinicians or nurses may also be involved. The make-up of teams varies depending on the tumour stream and on the health service. Nurse coordinators are often the team members who bring patient information and concerns to the meeting.²¹ Communication links to the patients' primary care providers are important either via teleconference or videoconference facilities during the MDT meeting, or through communication of the consensus treatment decision by the team coordinator or the chair of the meeting. The MDT recommendations are also discussed with each patient by an appropriate member of the care team after the meeting is concluded.^{2,9}

4. Infrastructure and tools

A dedicated meeting room with adequate facilities for the MDT is required. These include projection equipment for displaying medical imaging and pathology slides, as well as secure interactive computer systems.

Teleconference or videoconference facilities are also useful.²⁰ Lamb et al.,²¹ in a systematic review of MDT operation, reported that 30 per cent of colorectal cancer teams in the UK have telemedicine facilities available. They state that telemedicine can improve meeting attendance without negatively affecting care. Telemedicine has been shown to be cost-effective at a rate of 20–30 meetings per year.²¹

5. Barriers

An Australian national audit of MDC conducted in 2006 by the National Breast and Ovarian Cancer Centre (NBOCC) identified that the main barriers to implementing MDC are a lack of time, workforce resources, small caseloads and funding. The survey reported that links to psychology and psychiatry were not established in more than two-thirds of MDT. Up to a third of meetings did not communicate treatment plans to general practitioners (GPs). The report recommended that teams implement systems to ensure that communication with GPs on treatment plans is timely and adequate, given that coordination of care between the hospital and community sectors is essential for good patient care. GPs are ideally placed to assist in providing continuity of care. The authors also recommended implementing specific strategies to improve linkages with non-core specialities.²²

In a qualitative survey conducted by Walsh et al., the following barriers to cancer care coordination were identified: recognising health professional roles and responsibilities; poor transitioning of care; inadequate communication between specialists and primary care; implementing comprehensive MDT meetings; managing scarce resources; and inequitable access to specialist healthcare. Comprehensive MDT meetings were identified as integral to providing coordinated and collaborative care including clarification of roles and responsibilities, and in communication. Interviews with 20 patients and 29 health professionals in New South Wales identified that the barriers to MDT include time constraints, lack of support for meetings, logistical issues, staff shortages and lack of administrative support.²³

Fleissig et al. reported similar barriers to successful MDT in the UK¹⁹ including poor attendance by key staff, scarcity of administrative support, deficient record keeping, communication problems and hierarchical boundaries. They also identified a lack of information at meetings to support decision making to be a problem. Lamb et al. identified the main barrier to attendance as a lack of protected time.²⁴ Unequal participation in decision making was also an issue with nurses reporting that they were marginalised and their contribution of patient-centred information ignored. Lamb et al. state that good leadership is necessary to foster inclusive case discussion.²⁴ A Canadian study conducted by Hong et al. also identified the lack of a dedicated clerk or MDT coordinator as an issue.¹¹ In addition, the lack of availability of a consistent venue, no fixed sessional time, and inconsistent participant interest and attendance were identified as barriers through this study.

6. Requirements for an effective multidisciplinary team

Guidelines for operating an effective MDT have been published in several countries. In the UK, the results of a survey of 2,000 MDT members (published in 2010) have been used to outline the characteristics of an effective MDT.²⁵ The document lists characteristics of the MDT as: infrastructure required for meetings; details of meeting organisation and logistics; requirements for patient-centred decision making; and team governance. The authors state that MDTs need to bring together staff with the necessary knowledge, skills and experience to ensure high-quality diagnoses, treatment and care, and that the MDT meeting is about considering the patient as a whole not just treating the cancer.²⁵

The former Victorian Department of Human Services (now the Department of Health) produced similar guidelines to implementing multidisciplinary care in 2007 to promote the development of MDC and links between MDTs within and between Integrated Cancer Services.¹ Cancer Care Ontario published multidisciplinary cancer conference (MCC) standards in 2006 to guide the development of MCC, taking into account the different circumstances in regional centres and in community hospitals of various sizes.²⁰

Box 1 summarises the published requirements for effective MDT care.

Box 1: Requirements of an effective MDT

- Good leadership
- Engaged core membership
- Good team dynamics
- Administrative support and processes
- Good communication and follow-up
- Guidelines and standards
- Recording and communicating treatment decisions
- Involvement of allied health and support staff
- Protected time
- Appropriate infrastructure
- Involvement of the patient
- Institutional support and funding
- Auditing of clinical activity and regular reporting of results

Some of these components are supported by other studies as illustrated in the following discussion.

6.1 Leadership

Good leadership is integral to the operation of an effective MDT.¹⁹ Lamb et al. revealed some characteristics of a good leader or MDT chair identified through their qualitative research. According to responses, the MDT chair needs to: ensure all voices are heard; facilitate the meeting; keep to time; be well respected; and be able to make a casting decision.²⁴ The National Health Service (NHS) *National cancer action team* document²⁵ lists the following skills as necessary for an MDT chair: meeting management; listening and communication; interpersonal relations; managing disruptive personalities and conflict; negotiating skills; facilitating effective consensual clinical decision making; and time management. Lamb et al. state that effective leadership is necessary to encourage inclusiveness and open discussion, which helps avoid both the marginalisation of team members and poor decision making.²⁴

6.2 Team dynamics

Team dynamics are essential for effective discussion and decision making. The team needs to agree what is acceptable team behaviour including mutual respect and trust, valuing different opinions, an absence of personal agendas, resolution of conflict between team members and encouragement of constructive discussion.²⁵

A team discussion environment needs to be one of equality. Nurses in the UK reported feeling marginalised if their contribution of patient-centred information was ignored.²⁴ Several UK studies have highlighted that nurses play a crucial role in coordinating care, as well as representing the patient's views and psychological aspects of care.²⁴ A survey of Australian MDT members suggests that, in many cases, priority is given to discussions about pathology, radiology and medical history during MDT meetings.²⁷ The nursing and allied health members commented that psychosocial concerns were often neglected in favour of medical information.²⁷

6.3 Administrative support

Administrative support is a key component of good MDT operation (before, during and after meetings) to ensure good organisation and coordination. Fleissig et al. reinforce the need for a dedicated non-clinical support person to coordinate the team. The MDT coordinator arranges meetings, ensures the availability of all necessary information, records decisions about patient management and MDT members' attendance, facilitates communication and coordination between the MDT and other health professionals, and ensures the care decisions are recorded in the patient's case notes.¹⁹

Documentation is an important aspect of MDT meetings. Good documentation facilitates communication of the treatment plan to all team members and to the patient's GP and improves adherence to the plan. Walsh et al. state that an MDT coordinator can assist in timely and complete patient information transfer between specialists and GPs.²³

6.4 Allied health and support staff

A qualitative study of MDT members conducted by Chirgwin et al. identified that, in addition to improved medical care, the psychosocial care of advanced breast cancer patients was enhanced by the MDT. The improvement was thought to be attributable to the attendance of nursing and allied health professionals at the MDT meetings.¹² Other studies have shown that the presence of psychologists and other allied health staff in MDT meetings is often limited¹⁰ despite the existence of clinical practice guidelines highlighting the importance of psychosocial/supportive care for patients with cancer.

Tremblay et al. outline a study protocol which will measure the intensity of interdisciplinarity and evaluate the impact of interdisciplinarity in cancer care. The study focuses on local teams being established in all hospitals in Quebec offering oncology services that provide supportive care and treatment to patients attending outpatient clinics for investigations, chemotherapy and follow-up. They state that local teams should include a core of professionals including a nurse navigator, a pharmacist, a medical oncologist, a nutritionist and a social worker or psychologist. The definition of interdisciplinarity the authors use is:

*... a comprehensive initial assessment of a patients' needs from a holistic perspective; formal and regular interdisciplinary meetings to discuss the cases of patients (and relatives) experiencing complex biopsychosocial situations; the development of concerted interdisciplinary intervention plans; the mastery of coordination procedures and tools, both within the teams and with partners upstream and downstream from oncology outpatient clinics; and the implementation of measures to ascertain the quality of the services offered.*²⁶

6.5 Protected time

Having adequate protected time for MDT meetings has been emphasised as important for effective outcomes.^{20,23} This applies not only to the time spent meeting but also to the time required for preparation prior to a meeting. Lamb et al. state that time for the MDT should be formally incorporated into the work plans of MDT members.²⁴ Fleissig et al. maintain there should be enough time at meetings to discuss clinical aspects of all patients before and after first-line treatment and patient eligibility for clinical trials.¹⁹ Meetings should be held at a convenient time and place to encourage regular and full attendance of all members.¹⁹

6.6 Involvement of the patient

Opinions differ on the involvement of the patient in MDT meetings. There is general agreement that patients need to be informed that their case will be discussed at an MDT meeting and MDT treatment decisions should be discussed with patients afterwards.^{20,24}

However, most medical practitioners do not support the inclusion of patients in MDT meetings, citing increased patient anxiety and undermining trust in the doctor–patient relationship as reasons for exclusion.^{27,28}

The Cancer Care Ontario guidelines state that ‘patients or their representatives should not attend the MDT meeting, to ensure unbiased case review’.²⁰ Hammond reports that information given to patients in the context of a multidisciplinary clinic tends to engender confidence because providers give the patient one unified message.¹³

7. Novel tools for use in multidisciplinary team meetings

7.1 Electronic databases and decision aids

There is much support for the use of checklists, proformas and templates during MDT meetings. Electronic databases can be used to capture recommendations during the meeting including the rationale for the decision and any disagreements about the recommendations.²⁵ Standard treatment protocols should be in place and used whenever appropriate. A locally agreed minimum dataset of information about patients to be discussed should be collated and summarised prior to MDT meetings wherever possible. This information includes diagnostic information, clinical information and patient history, as well as views and preferences where known.²⁵ There is also agreement that there should be documented criteria for inclusion of cases in an MDT meeting. In some countries it is mandated by law that all new patients will be discussed at diagnosis, in other countries and centres it may only be the more complex cases.^{28,29}

There have been reports on the use of computer software packages to aid the team clinical decision process.^{30,31} These packages include OncoDoc2 and Adjuvant! Version 5.0. OncoDoc2 is a guideline-based clinical decision support system. The multidisciplinary breast team meeting in Eastern Paris has added local guidelines to the OncoDoc system.^{5,30} Seroussi et al. report that the use of OncoDoc2 in their MDT has increased compliance with national and local guidelines to 93 per cent.³⁰ Adjuvant! software helps health professionals discuss the risks and benefits of additional therapy (usually chemotherapy, hormone therapy or both) after surgery.³² Chan et al. in Hong Kong use Adjuvant! to supplement the treatment decision after a consensus has been reached at a multidisciplinary cancer conference.³¹

In 2007 all cancer centres in Ontario, Canada, began implementing the use of an electronic version of the Edmonton Symptom Assessment Scale (ESAS) at every patient visit to standardise cancer symptom assessment.³³ Bainbridge et al. explored how ESAS was used by multidisciplinary teams, its perceived utility, and barriers to its use by surveying 128 cancer care team members in a regional cancer centre.³³ Despite some clinician resistance to using

the ESAS, standardising symptom assessment appears to help improve interdisciplinary communication and patient care.³³

The Charlson comorbidity score (CCS) takes into account the presence of 19 diseases, weighted on the basis of their association with mortality, to calculate the probability of survival at ten years. Kastner et al. assessed the feasibility of using the CCS by their MDT in planning the treatment of patients with prostate cancer.³⁴ In a study performed retrospectively, they looked at the prognostic accuracy of the CCS for patients offered radical treatment. The study found the CCS to be a statistically significant predictor of survival, following radical treatment for localised prostate cancer, and concluded that because it is easy to calculate, it is feasible for use in the MDT setting when considering treatment options.³⁴

7.2 Regulation

Over a period of six years, laws have been developed to regulate cancer care in Belgium. Seven oncology-specific laws have been put in place, the first defining the multidisciplinary oncology consultation (MOC), and allowing reimbursement for MOC care.³⁵ The law states that the MOC must be chaired by an oncologist and should comprise at least two other clinicians: a medical oncologist and/or a radiation oncologist and/or an oncology surgeon. Almost all innovative and expensive drugs are reimbursed only if all members of the MOC team agree that they would benefit an individual patient.³⁵ The success of this multidisciplinary approach to cancer care is partly attributable to its legal foundation and reimbursement, but also to the willingness of health professionals to accept the value of a multidisciplinary approach. Indirect evidence of the success of this multidisciplinary approach in Belgium is that they have one of the top five survival rates of cancer patients in Europe.³⁵

7.3 Patient-held tools

Strusowski describes the operation of several multidisciplinary cancer clinics and associated multidisciplinary cancer conferences within a large US cancer centre.³⁶ Multidisciplinary care teams provide all patients attending with personal journals that can be used to organise appointments, list medications and laboratory values, and to write down questions for healthcare providers. The journal also includes educational information on cancer treatment and treatment side effects. The journals are for patient use rather than MDT use but they help the patient to navigate the multidisciplinary clinic. Patients who used the journals reported that they were better informed and organised, and felt more in control of their cancer care.³⁶

7.4 Assessment tools of multidisciplinary team performance

As outlined above, team performance is important in MDT but no tools existed for assessment of it. Lamb et al. have developed and piloted an observational assessment tool for use in multidisciplinary cancer teams and they have demonstrated content validity, face validity, feasibility and inter-observer agreement.³⁷ The tool was tested in five MDT meetings across three different hospitals in England by a total of 78 team members. During the course of this study, the lack of standardisation of case discussion and team decision making was noted.³⁷ A further study conducted by the same team assessed the MDT observational tool against an online self-report tool.³⁸ They concluded that MDT members can reliably assess team-working and clinical decision making by the MDT, and that they have a good insight into their own team performance.³⁸

8. Addressing rural/regional issues for multidisciplinary care

Australians in rural and remote areas do not share equitably in the nation's success in cancer survival, with the gap in treatment outcomes increasing relative to the distance from a metropolitan centre. In the report from a national workshop convened by the Clinical Oncological Society of Australia (COSA) and the Cancer Council Australia in 2009 to develop a position on the generic criteria for the allocation of Commonwealth capital grants for regional cancer centres, a key theme was to ensure genuine MDC underpins the service.³⁹ Another theme was to ensure linkages with both metropolitan cancer centres and 'feeder' hospitals are in place or developed.³⁹

Several Australian examples of approaches to delivering MDC in regional areas have been published. The Western Australian Cancer Network (CanNET WA) was established in the Great Southern region of Western Australia to lead improvement in cancer care. The initiatives included a multidisciplinary cancer team, improved access to visiting medical specialists, formal links with tertiary cancer centres, increased primary health involvement in cancer care and increased education in cancer care for local healthcare providers.⁴⁰ Underhill et al. describe a regular multidisciplinary meeting conducted by teleconference between a tertiary metropolitan site in Melbourne and a regional practice in Albury-Wodonga to discuss the cases of patients with haematological malignancies. Outcomes included better coordinated shared care, updated treatment policies and guidelines and increased clinician satisfaction and knowledge. Mentoring allowed the shared care model to increase the level of local care provided to patients.¹⁴

Regional Cancer Centres of Excellence (RCCE) are advocated in Australian regions with a suitable population.²⁸ These centres would provide multidisciplinary care, improve support and educational services and, while being mentored by major metropolitan services, can provide a link to smaller, more remote services. Underhill et al. describe the successful RCCE in Albury-Wodonga, a former outreach facility that now has five resident oncologists, a clinical trials unit, a radiotherapy service and multidisciplinary clinics.⁴¹ The Australian Resource Centre for Healthcare Innovations also report on this Border Cancer Collaboration that was set up with funding from state and Australian governments.⁴² Achievements of the collaboration include: providing cancer care coordination, social work and psychology services; establishing multidisciplinary meetings for breast, gastrointestinal and urological cancers; creating a website as a single source of information about cancer services; and collecting data across the Border region. Cited outcomes include improved services to regional cancer patients and their families and a more efficient use of resources.⁴²

9. Geriatric oncology

Cancer is largely a disease of older adults and in countries with an ageing population there is an increasing need for specialised services to address the needs of older patients with cancer. Older adults often have multiple comorbidities or chronic medical problems such as hypertension, diabetes or arthritis. Lynch et al. describe a pilot project developed to confirm the need for a geriatric oncology program.⁴³ They found that most issues faced by older adult patients were psychosocial in nature and were best addressed through the collaboration of a social worker, the palliative care nurse practitioner and other members of the multidisciplinary team including geriatricians.⁴³

Bordurka et al. describe a situation in the US where changing demographics will lead to massively increased demands for oncology services in the next 20 years.⁴⁴ They maintain there will be insufficient oncologists and geriatricians to meet the expected demand for cancer care, and they suggest a role for primary care providers in following up cancer patients.⁴⁴ The other issue to consider in the treatment of older patients with cancer is that, due to comorbidities, the majority will not be able to tolerate intensive chemotherapy, therefore

alternative strategies have been investigated.^{45,44} Craig and Schiller explain that treating elderly patients with acute leukaemia requires a multidisciplinary approach, taking into account patient characteristics, preferences and comorbidities when developing treatment plans.⁴⁵

The specific needs of geriatric cancer patients may impact on the ideal and/or core membership of MDT meetings.

10. Medicolegal issues in multidisciplinary teams

10.1 Liability

Evans et al. explain that there is little precedent on which to base recommendations about the medicolegal implications of a team approach to cancer care, which suggests a low level of legal risk. They maintain that adequate documentation of MDT processes should limit liability for individual members and it is also likely to improve team practice and lead to the best outcomes for patients.⁴⁶

MDTs have no official legal identity. From a legal perspective, most oncology MDT meetings would be regarded as a formal referral process that gives rise to a duty of care. Each doctor present at an MDT meeting is individually responsible and potentially liable for all decisions within their area of expertise. A doctor need not personally meet the patient nor overtly contribute to the deliberations to attract a duty of care, and hence legal responsibility.⁴⁷ Studdert suggests that it is the duty of each professional involved in an MDT to speak up whenever their expertise is relevant. If information is insufficient to render an informed opinion they should say so.⁴⁸ He also suggests that informed consent and careful documentation of team membership and decisions are particularly important.⁴⁹

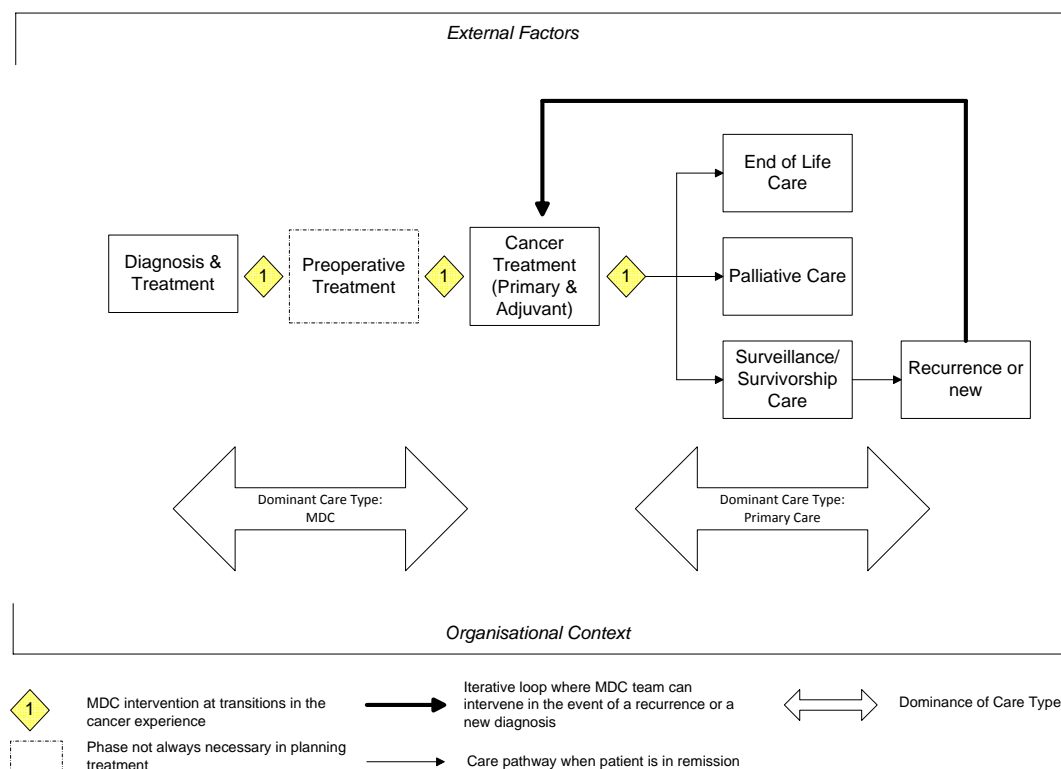
10.2 Consent

There is general agreement that patients need to understand how the MDT operates and that their case will be considered by a team of professionals.²⁵ Consent may be verbal or written. In the former case the verbal consent discussion should be noted in the patient's medical record.⁴⁶ Patients are generally supportive of their cases being discussed at an MDT meeting and report a positive experience generally with multidisciplinary care.^{9,49, 50}

11. Stages of treatment and multidisciplinary teams

There are three possible transition stages in the cancer care continuum where MDT intervention may be required. At these transition points, MDT composition may change as different care issues become more or less dominant. The three stages are: diagnosis and treatment decision; ongoing treatment and care; and transition back to work, long-term follow-up or to palliative care.⁵¹ These stages are identified in Figure 1, which was conceived by Fennel et al. The first stage requires the participation of both primary and speciality care providers including allied health and support staff. The second stage requires primarily medical oncology specialists, with some input from primary care, and the third stage may require greater involvement of primary care providers and non-medical specialists.⁵¹

Figure 1: Multidisciplinary treatment intervention across transitions in cancer care



11.1 Role of primary care providers

Of growing importance is the involvement of primary care providers during active cancer treatment, as oral chemotherapeutic and hormonal agents are developed and inpatient stays for surgery shorten. GPs have a role in managing acute toxicities related to treatment. Physiotherapists, occupational therapists, community nurses, psychologists, counsellors, social workers and nutritionists also have a role in helping patients manage the symptoms, emotional consequences and impact on daily life.⁵² Jiwa et al. suggest the formation of primary care hubs for cancer care, with greater involvement of professionals in the community and the GP closely involved.⁵² In an editorial, Weller and Harris add that we need to develop new, genuinely integrated models of care that address the important priorities of cancer patients including the availability of care close to home, timely management of symptoms, early detection of relapse and comprehensive psychosocial support.⁵³

Breast care nurses (BCN) work with women who have breast cancer within a multi-professional environment providing a range of interventions including support, information,

patient advocacy and general liaison among the various members of the healthcare team. A Cochrane review assessed the effectiveness of BCN interventions on quality-of-life outcomes for women with breast cancer. The review found limited evidence to identify the components of the BCN role that impact on a women's quality of life, but the authors acknowledge that the nature of their work, provided within a multi-professional team, serves to complement the team as a whole rather than highlighting the impact of the BCN alone.⁵⁴

11.2 Long-term follow up of survivors

A Cochrane study evaluated the effectiveness of interventions aimed at assisting cancer patients to return to work. Results suggested that multidisciplinary interventions involving physical, psychological and vocational components led to higher return-to-work rates of cancer patients than care as usual, while quality of life was similar.⁵⁵

The number of long-term survivors of autologous blood and bone marrow transplantation (ABMT) is increasing. Schimmer et al. described a multidisciplinary long-term follow-up clinic for survivors of ABMT following lymphoma, leukaemia, myeloma or breast cancer. Patients were very satisfied (85 per cent) with the clinic model. An economic analysis estimated that the cost per patient visit was \$440, which was considered to be inexpensive.⁵⁶ Amato et al. describe a community model of care for ABMT patients where psycho-oncology can assist the MDT to provide cost-effective, high-quality care in the patient's own community.⁵⁷

11.3 Palliative care

Delivering palliative care involves managing physical and psychosocial symptoms and requires a team of people. Spruyt explains that a multidisciplinary palliative care team may be real or virtual where communication is the key to ensuring the patient is adequately supported.⁵⁸ Coordination of such teamwork is critical. Strategies to assist professionals to share information and better coordinate care include the use of teleconferencing and MDT meetings.⁵⁸

12. The Victorian experience with multidisciplinary team meetings – an example

The Southern Melbourne Integrated Cancer Service (SMICS) MDT Pilot Project was commenced in July 2008 as part of a continuum of care project to enhance existing MDTs and facilitate the establishment of new MDTs throughout the SMICS catchment. MDT project officers were appointed at each health service to provide high-level administrative support to cancer-related MDTs and assist with the coordination of MDT meetings. Meeting terms of reference and protocols were created. An evaluation framework was drafted using a program logic approach. An agreed MDT minimum dataset was developed and implemented across the three health services.⁵⁹ A survey of MDT members showed they were largely supportive of MDTs and the MDT tools developed.⁵⁹ Over time, further project reports have demonstrated that membership of MDTs continues to grow. A survey of GPs found they were happy with the correspondence they received from MDTs and 65 per cent indicated they did not want to participate in MDT discussions directly but were agreeable to providing information to MDTs as required and receive treatment plans from MDTs.⁶⁰ The results of the MDT pilot project reported by SMICS support the findings of the overseas studies reviewed in this document.

13. Conclusions

13.1 Benefits of multidisciplinary care for patients

As outlined above, the benefits of MDC for cancer patients may include reduced time to diagnosis and treatment, improved adherence to guidelines, and improved consideration for inclusion in clinical trials. There is also increased access to knowledge about support groups. It is difficult to demonstrate improved survival as a consequence of MDC⁴ as there are many confounding factors including improvements in treatment protocols over time; however one recent study provides clear evidence of improved survival in breast cancer patients.¹⁶

Improved patient satisfaction with MDC has been identified in a number of studies. Patients reported feeling that a team of experts is caring for them and that there is better coordination of their care.¹³

13.2 Benefits of multidisciplinary team membership for staff

Benefits for MDT members include improved communication, education and collegiality.^{13,18} In a study by Bellardita et al., interviews with MDT members revealed that they feel advantaged by working in MDTs in terms of the transfer of important and accurate information regarding the disease and its treatment. Clinicians also reported that MDTs enabled them to optimise the quantity and quality of information provided to patients and their families, which leads to benefits for patients.⁶¹ Discussion of individual cases by experienced specialists at MDT meetings provides an excellent opportunity for training doctors and nurses.^{18,28} In a UK survey of MDT members, 90 per cent agreed that working in an MDT is beneficial to the wellbeing of members and 81 per cent agreed there is improved job satisfaction.⁵⁰

13.3 Barriers and solutions to improve multidisciplinary care

The key barriers to effective MDC that have been identified in a number of studies include a lack of protected time, a lack of administrative support, poor documentation and insufficient inclusion of or communication with support staff and primary care providers. These barriers can be overcome with institutional support of MDTs, good leadership, adequate infrastructure and a willingness of all MDT members to be inclusive and respectful of input from all members of the care team. These contributions will help provide the best-quality cancer care for patients.

Makary reminds readers that while MDTs are appealing to many providers and patients, the possibility of higher utilisation of services should also be considered.⁶² He states that efforts should be made to improve efficiency and provide optimal care through the collective wisdom of a large team, while being vigilant to avoid overutilisation of services without an associated patient benefit.⁶²

13.4 International trends

Internationally, the trend seems to be the increased use of mandatory guidelines or legislation to ensure that cancer care is multidisciplinary. In Belgium, France and the Netherlands the use of MDTs is mandated and the make-up of the multidisciplinary team is clearly defined.^{6,35,63} The French cancer plan of 2003–2007 mandates that the management of all cancer patients should be discussed in MDT meetings.⁶ Six main quality criteria for MDTs have been outlined including that medical decisions must be based on clinical practice guidelines whenever possible, and that MDT recommendations must be communicated to the patient, documented in the patient's medical record, and periodically evaluated.⁶

The UK, Canada and Australia all have national or state-defined guidelines for the use of MDTs in cancer care.^{20,25, 1} In the UK, the use of MDTs is an accredited measure of cancer care.¹⁹ Saini et al. report that 65 per cent of the respondents to their breast cancer care survey in eastern Europe, 63 per cent from western Europe, 35 per cent from Asia and 25 per cent from South America declared that MDTs were a mandatory part of breast cancer care in their country.²⁸ The increased use of MDC in cancer brings a range of benefits to cancer patients and to members of MDTs and leads to improved outcomes for cancer patients.

Appendix 1: Articles – key themes

Authors	Issues	Title	Ref	Key	Themes						Barriers and solutions
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	
Bjegovich-Weidman M, Haid M, Kumar S et al. (US)	Benefits of a community-based lung cancer multidisciplinary clinic include: <ul style="list-style-type: none"> significant improvements in quality of care, patient satisfaction and retention of patients time from diagnosis to treatment reduced from 24 days to a mean of 18 days work-up and care met National Comprehensive Cancer Network (NCCN) guidelines and patients had access to clinical trials. 	Establishing a community-based lung cancer MD clinic as part of a large integrated healthcare system: Aurora Health Care	J Oncol Practice 2010; 6(6):e27–e30	QI Qt	MDC clinic				Lung	✓	
Carey M, Sanson-Fisher R, Lofti-Jam K, Schofield P, Aranda S (Aust)	Review examining whether or not increased attention on MDC in cancer has been underpinned by an increase in methodological vigorous intervention research in the field. The proportion of data-based papers did not increase over time.	Multidisciplinary care in cancer: do the current research outputs help?	E J Cancer Care 2010;19:434–441	R							Need to focus on rigorous intervention research
Chan WF, Cheung PSY, Epstein RJ, Mak J (Hong Kong)	First hospital implementing MDC in Hong Kong. The multidisciplinary approach represents an efficient, cost-effective way to care for women with breast cancer and allows treatment by various specialists working and communicating with each other. Multidisciplinary teamwork is essential for optimising decision making about adjuvant treatment interventions in breast cancer patients.	Multidisciplinary approach to the management of breast cancer in Hong Kong	World J Surg 2006; 30:2095–2100	Qt	✓	Co-chairs breast surgeon and medical oncologist, pathologists, radiation and medical oncologists, breast care nurses and clinical risk assessment.	✓	Adjuvant! Version 5.0 software	Breast	✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Coory M, Gkolia P, Yang IA, Bowman RV, Fong KM (Aust)	Systematic review to evaluate and critically appraise the effectiveness of MDTs for lung cancer. Limited evidence linking MDTs with improved lung cancer survival. Evidence of the effect of MDTs for changing patient management was stronger than the effect on survival.	Systematic review of multidisciplinary teams in the management of lung cancer	Lung Cancer 2008; 60:14–21	R	✓		✓		Lung		Resources required for admin support, lack of specialists in non-tertiary care hospitals, difficulty specialists have in finding time to attend
Du CZ, Li J, Cai Y, Sun YS, Xue WC, Gu J (China)	Evaluation of the effect of MDT treatment modality on outcomes of patients with gastrointestinal malignancy in China. The treatment strategy was altered after discussions at MDT meetings in 76.8% of gastric cancer patients and in 58.3% of colorectal cancer patients before their operation. The MDT group receiving neo-adjuvant therapy had a higher five-year overall survival rate than the control group (77.2% vs 69.8%, p = 0.049).	Effect of multidisciplinary team treatment on outcomes of patients with gastrointestinal malignancy	World J of Gastroenterol 2011; 17(15):213-218	Qt	✓	Surgeon, medical oncologist, radiation oncologist, radiologist, pathologist specialised nurses	✓		GI malignancy	✓	Insufficient admin support, organisational problems and time-consuming meetings led to incomplete attendance
Fleissig A, Jenkins V, Catt S, Fallowfield L (UK)	Review of the requirements for and the barriers to a successful MDT. Research showing the effectiveness of the MDT working is scarce.	Multidisciplinary teams in cancer care: Are they effective in the UK?	Lancet Oncol 2006; 7:935–943	R	✓		✓	✓		✓	Poor attendance by key staff, scarcity of admin support, poor information at meetings, deficient record keeping, communication problems, hierarchical boundaries

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	
Hong NJL, Wright FC, Gagliardi AR, Brown P, Dobrow MJ (Canada)	Survey results of administrators, clinicians and surgeons regarding the prevalence and perceived benefits of MDCC: <ul style="list-style-type: none"> 74% of respondents were aware of MDCCs within their region. 58% were regular participants or acknowledged participation of cancer providers in their institution. 85% of administrators, 94% of medical oncologists and 92% radiation oncologists had positive responses regarding MDCCs being effective mechanisms to coordinate and improve care plans for patients. 	Multidisciplinary cancer conferences: exploring the attitudes of cancer care providers and administrators	J Interprofessional Care 2009; 23(6):599–610	QI	✓	✓	✓				Lack of a dedicated clerk or coordinator, unavailability of a consistent venue, no fixed sessional time, variable and inconsistent participant interest and attendance
Hong NJL, Wright FC, Gagliardi AR, Paszat LF (Canada)	Examines the relationship between multidisciplinary care and patient survival – a review of 21 studies. Due to methodological limitations, the review is unable to assert a causal relationship between multidisciplinary care and patient survival. A common definition of MDC is first required.	Examining the potential relationship between multidisciplinary cancer care and patient survival: an international lit. review	J Surg Oncol 2010; 102:125–134	R	✓		✓				Lack of a common definition of multidisciplinary care and lack of RDTs to compare survival advantage with usual care
Houssami N, Sainsbury R (UK)	Systematic review of studies of multidisciplinary breast cancer care and survival benefit. Insufficient evidence to support a survival benefit with use of MDC. Weak evidence that MDC may alter treatment; however, some evidence that time to treatment from diagnosis is reduced in MDC.	Breast cancer: multidisciplinary care and clinical outcomes	Eur J Cancer 2006; 42:2480–2491	R	✓		✓		Breast	✓	Few studies have formally evaluated MDC in relation to clinical outcomes

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Jiwa M, Saunders C, Thompson SC, Rosenwax LK et al. (Aust)	The article states that many cancer patients are disadvantaged by a lack of care coordination. Greater integration of care is required through an MDT of professionals, peer support groups and primary health practitioners functioning within a care hub. This could offer better practical and psychosocial care for patients and their families.	Timely cancer diagnosis and management as a chronic condition: opportunities for primary care	MJA 2008 189(2):78–82	D	MDT Care hub	Primary care providers, OTs, physios, counsellors, social workers, nutritionists and cancer specialists	✓	Teleconference and videoconference			
Kesson EM, Allardice GM, George WD, Burns HJG, Morrison DS (UK)	The article reports a retrospective, comparative, non-randomised interventional cohort study to describe the impact of MDC on survival in women with breast cancer. Results: <ul style="list-style-type: none"> • Pre-intervention breast cancer mortality in the intervention (MDT) group was 11 per cent higher than non-intervention group (HR 1.11, 95 per cent CI 1-1.20) • Post-intervention breast cancer mortality in the intervention (MDT) group was 18 per cent lower than the non-intervention group (HR 0.82, 95 per cent CI 0.74-0.91) 	Effects of MDT working on breast cancer survival: retrospective comparative interventional cohort study of 13,722 women	BMJ 2012; 344:e2718	Qt	MDC				Breast	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Lamb BW, Brown KF, Nagpal K, Vincent C, Green JSA, Sevdalis N (UK)	Covers quality of care management decisions by MDTs, citing six studies that showed changed care management by MDTs improved: <ul style="list-style-type: none"> definitive care decision reached – 48–73% of times not all decisions of MDTs implemented MDT decisions driven by clinician members, nurses views often ignored only 4% of MDTs involve patients 30% have telemed facilities – cost effective at 20–30 meetings per year 	Quality of care management decisions by multidisciplinary teams: a systematic review	Ann Surg Oncol 2011; 18:2116–2125	R			✓	Telemed 30% available Cost effective at 20–30 meetings per year		✓	Lack of time, lack of adequate information including imaging, staging, pathways and comorbidities
Litton G, Kane D, Clay G, Kruger P, Belnap T, Parkinson B (US)	Development of a community hospital-based multidisciplinary cancer clinic providing coordinated and comprehensive treatment planning in a single visit. Satisfaction with the clinic is high – 98% of patients rated overall experience as ‘excellent’. Clinicians gave the clinic high marks – improving communication, building patient confidence and increasing efficiency.	Multidisciplinary cancer care with a patient and physician satisfaction focus	J Oncol Practice 2010; 6(6):e35–e37	QI	MDC clinic and MDT meeting	✓	✓	Summary emailed to referring clinician/s/primary care provider		✓	
Lynch MP, Marcone D, Kagan SH (US)	Pilot project to confirm the need for a geriatric oncology program. Many older adults have comorbidities compounded by the oncology diagnosis and psychosocial issues. Many older adults’ needs are psychosocial in nature and not easily identified by clinicians.	Developing a multidisciplinary geriatric oncology program in a community cancer center	Clin J Oncol Nursing 2007; 11(6):929–933	Qt +D	MDT	✓	✓		Lung	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Marsh CJ, Boulton M, Wang JX, Maddern GJ, Roder DM, Kollias J (Aust)	A questionnaire was sent to the RACS Section of Breast Surgery in December 2006. Most (85%) responding surgeons reported participating in at least one fully established MDC team. Public sector teams were operationally more consistent and functional than private teams, and rural teams were less well developed than those in metro and regional areas.	National Breast Cancer Audit: the use of multidisciplinary care teams by breast surgeons in Australia and New Zealand	MJA 7 April 2008; 188(7):385–388	QI	✓	Surgery, medical oncology, radiation oncology, pathology, radiology and nursing (supportive care)	✓	Communication framework; protocols for deciding which patients require discussion	Breast	✓	Public vs private Rural vs metro/regional
Pawlik TM, Laheru D, Hruban RH, Coleman J et al. (US)	Impact of a MDC clinic: <ul style="list-style-type: none"> 48/203 (23.6%) patients had a change in their recommended management based on a clinical review by an MDT. MDC clinic able to effectively disseminate knowledge about support groups, familial registries and clinical trials. 	Evaluating the impact of a single-day multidisciplinary clinic on the management of pancreatic cancer	Ann Surg Oncol 2008; 15(8):2081–2088	QI	MDT clinic and MDT meeting		✓		Pancreatic	✓	
Prades J, Borrás JM (Spain)	Qualitative interview study of 39 members of MDTs. The effectiveness of MDC interventions is dependent on the organisational context in which cancer is delivered. The key factor is communication and team trust. Admin support is important. There is also a role for clinical coordinators and nurse case managers.	Multidisciplinary cancer care in Spain, or when the function creates the organ: qualitative interview study	BMC Public Health 2011;11:141	QI	✓		✓	Electronic clinical record to record decisions			Existence of different gateways for patients, variability in development and use of clinical protocols and guidelines, recording of decisions of MDTs

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Pruthi S, Brandt KR, Degnim AC, Goetz MP et al. (US)	A multidisciplinary team approach that involves a spectrum of breast experts is necessary to provide optimal care to patients. This team includes medical oncologists, breast radiologists, breast pathologists, surgical breast specialists, radiation oncologists, geneticists and primary care clinicians. Patients are seeking a multidisciplinary approach to treatment.	A multidisciplinary approach to the management of breast cancer. Part 1: Prevention and diagnosis	Mayo Clin Proc 2007; 82(8):999–1012	D	✓	✓	✓		Breast	✓	
Rajasekaran Ab, Silvey D, Leung B et al. (UK)	Effect of a multidisciplinary lung investigation day on a rapid access lung service: <ul style="list-style-type: none"> Reduction in number of bronchoscopies performed. Reduced time from presentation to MDT meeting for definitive management plan discussion. Patient feedback survey indicates it reduces anxiety by enabling rapid access to investigations. 	Effect of a multidisciplinary lung investigation day on a rapid access lung cancer service	Postgrad Med J 2006; 82:414–416	Qt QI	Lung investigation day + MDT clinic + meeting				Lung	✓	
Seroussi B, Bouaud J, Gligorov J, Uzan S (France)	Measurement of the use of a clinical decision support system – OncoDoc2 in MDT meetings. The MDT meeting decision compliance rate with the reference guideline was significantly higher with the use of OncoDoc2 than without, increasing from 79% to 93%. MDT decision analysis showed that missing steps in treatment plans were the main cause of noncompliance before the use of the software. This cause was drastically reduced with the use of the software in meetings.	Supporting multidisciplinary staff meetings for guideline based breast cancer management: a study with OncoDoc2	AMIA 2007 symposium proceedings: 656–660	Qt	MDT meetings		✓	OncoDoc2 software – clinical decision support system and clinical guidelines		✓	

Authors	Issues	Title	Ref	Key	Themes						Barriers and solutions
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	
Strusowski P (US)	Helen F Graham Cancer Centre houses 14 multidisciplinary centres with designated hours each week. The primary role of cancer care coordinators (oncology nurses) is care and support of individual patients. Satisfaction among patients, their families and clinicians very high. Staff retention high. Timely referrals to specialists and support services. Number of patients enrolled in clinical trials increased by 10%.	A multidisciplinary model for cancer care management	Oncol Nursing Forum 2006; 33(4):697–700	D	✓	Clinician team, Oncology nurses, Social worker, health psychologist, genetic counsellor, financial assistant, registered dietician	✓	Patient journals used to organise appointments, list meds, keep track of lab results, write down questions for care providers		✓	Initial – territorial issues – CCC not taking over nurse and clinician roles but complementing them Lack of clarity of MDT member roles – time spent discussing, refining and documenting
Van Belle S (Belgium)	Belgian health authorities have created the multidisciplinary oncology consultation (MOC) to organise and reimburse the multidisciplinary approach. At MOC a patient's case is discussed and a strategic plan is developed for diagnosis, treatment and follow-up. Legal requirements, reimbursement and the willingness of the medical community to accept the concept are key to the success of this approach. Survival outcomes for cancer patients in Belgium are among the top 5 in Europe.	How to implement the multidisciplinary approach in prostate cancer management: the Belgian model	BJU Int 2008; 101(suppl 2):2–4	D	MDT	The law states that the chair must be an oncologist and at least two other members must include a medical oncologist and/or radiation oncologist and/or surgeon	✓	Legislation on MOC operation; reimbursement of cost of all innovative and expensive drugs must be through agreement of the MOC	Prostate	✓	High cost

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Walsh J, Harrison JD, Young JM, Butow PN, Solomon MJ, Masya L (Aust)	Barriers to cancer care coordination were identified via a qualitative study to be: recognising health professional roles and responsibilities; transitioning of care (falling through the cracks); inadequate communication between specialist and primary care; implementing comprehensive MDT meetings; managing scarce resources; and inequitable access to health services.	What are the current barriers to effective cancer care co-ordination? A qualitative study	BMC Health Service Research 2010; 10:132	QI							Potential solutions to barriers – introduction of MDT coordinator, proformas and electronic information transfer, joint protocols and service agreements – between public and private
Wheless SA, McKinney KA, Zanation AM (US)	120 patients presenting at an MDT head and neck tumour board: <ul style="list-style-type: none"> 27% of patients had some change in tumour diagnosis, stage or treatment plan. Change in treatment was significantly more common in cases of malignancy. Changes in treatment were noted to be largely escalations in management, adding multi-modality care. 	A prospective study of the clinical impact of a multidisciplinary head and neck tumour board	Otolaryngol Head Neck Surg 2010; 143(5):650–654	Qt	Weekly MDT conference	✓	✓	Teleconference	Head and neck tumours	✓	
Wulff CN, Thygesen M, Sondergaard J, Vedsted P (Denmark)	Review of RCTs examining case management (CM) as a method for optimising cancer care pathways. CM includes multidisciplinary care, care coordination and in-person meetings between patients and case managers. Due to a scarcity of papers (7), significant heterogeneity of CM interventions and effects studied and methodological inadequacies, no conclusions on the effects of CM in cancer patient care can be made.	Case management used to optimize cancer care pathways: a systematic review	BMC Health Services Research 2008; 8:227	R	✓						Weak definitions of CM

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Medicolegal											
Au-Yeung GH, Aly A, Bui A, Vermeltfoort CM, Davis I (Aust)	MDT meeting records for patients discussed at the Austin Health urology-oncology, upper GI and colorectal cancer MDTs were reviewed. Consensus recommendations were compared with treatment plans. Overall concordance was 76%. Excluding records where data were unavailable, concordance was 95%, with discordance due to new clinical information, comorbidities or performance status and patient choice.	Uptake of oncology multidisciplinary meeting recommendations	MJA 2012; 196(1):36–37	MDT meetings	Qt		✓		Uro-oncology, upper GI, colorectal	✓	Documentation of MTC discussion and consensus decisions required for communication to patients and clinicians
Bainbridge D, Seow H, Sussman J, Pond G, Martelli-Reid L, Herbert C, Evans W (Canada)	The Edmonton Symptom Assessment System (ESAS) is a validated measure of symptom burden that has been adopted by Ontario's cancer centres to assess patients with cancer. The majority of nurses (89%), clinicians (55%), and other providers (57%) reported referring to the ESAS in clinics either 'always' or 'most of the time'. Although most nurses and allied health professions found the ESAS to enhance patient care, help patients to articulate their symptom issues, and facilitate follow-up with patients with past symptom issues, only about half of the clinicians agreed with these statements.	Multidisciplinary healthcare professionals' perceptions of the use and utility of a symptom assessment system for oncology patients	J Oncol Practice Jan 2011; 7(1):19–23	Qt QI	MDC clinic	General oncologist, medical oncologist, radiation oncologist, surgical oncologist, advanced practice nurse, registered nurse, oncology nurse, social worker, dietician, chaplain	✓	Symptom assessment system (ESAS)	Breast, GI, genitourinary, lung, gynae, head and neck	✓	Some clinician resistance to the use of the ESAS
Baldwin LM, Taplin SH, Friedman H, Moe R (US)	Patients who received multidisciplinary care were more likely to undergo BCSR/mastectomy compared with BCS alone. Preoperative consultation with a radiation oncologist was associated with greater use of BCSR.	Access to multidisciplinary cancer care	Cancer 2004; 100(4):701–709	Qt	MDT		✓		Breast	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Bellardita L, Donegani S, Spatuzzi AL, Valdagni R (Italy)	Qualitative observational study of MDT vs one-on-one care. Clinicians appear to recognise the value of the MDT in terms of effective communication with patients but feel that other aspects of relationship-building are hindered in a multidisciplinary setting. Organisational and teamwork issues need to be addressed to optimise the implementation of a multidisciplinary approach.	Multidisciplinary versus one-on-one setting: a qualitative study of clinicians' perceptions of their relationship with patients with prostate cancer	J Oncol Practice Jan 2011; 7(1):e1–e5	QI	MD clinic and MDT meeting	Urologist, radiation oncologist, medical oncologist, psychologist	✓		Prostate		Relationships between team members should be improved, more institutional resources should be made available, organisational and coordination skills should be enhanced
Bodurka DC, Huang M, Sun CC (US)	Review of the Bunnell, Shulman article. Due to the ageing population the demand for oncology services will dramatically increase in the next 20 years, burdening the healthcare system. There is a lack of oncologists and geriatricians. Solution: Routine follow-up via primary care providers – include into clinical care team.	Caring for cancer patients in the future: a perfect storm on the horizon?	Oncology 2010; 24(14):1351–1352	Comment	✓						
Caudron A, Chaby G, Dadban A, Andrejak C, Dhaille F, Bagot M, Lok C (France)	The French High Authority of Health and the National Cancer Institute have established guidelines to standardise MDM concerning cancer care. Retrospective study of all skin tumours discussed at MDM at Amiens Univ Hospital in 2006–07 to look at adherence to guidelines. Almost half (45.7%) of MDMs had at least three different specialists present. Patients were present in 49.4% of discussions and 88% of the MDMs recommendations were implemented. More than 94% of these decisions were according to the guidelines.	Multidisciplinary team meetings in oncology: first analysis of benefits and evaluation of activity in a dermatology unit in France	Eur J Dermatol 2010; 20(6):778–784	Qt	MDT meetings	Specialists from at least three different medical disciplines (such as oncology, surgery and radiotherapy)	✓		Dermatology	✓	Lack of time for clinicians to attend

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Chirgwin J, Craike M, Gray C, Watty K, Mileshekin L, Livingston PM (Aust)	Questionnaires answered by staff of MDTs used to assess the contribution of the advanced breast cancer MDMs to patient care and clinical outcomes. Three-quarters (73%) answered (27 staff). Overall, clinicians found MDTs valuable, that they improved performance in patient care and logistics. Evidence of benefits in three areas: clinical outcomes, care processes and team member outcomes.	Does multidisciplinary care enhance the management of advanced breast cancer? Evaluation of advanced breast cancer MDT meetings	J Oncol Practice 2010; 6(6):294–300	QI	MDT meetings	Medical and radiation oncologists, palliative care, registrars breast care nurses, research and palliative care nurses, allied health clinicians – social workers and psychologists	✓		Breast	✓	
Conron M, Phuah S, Steinfert D, Dabscheck E, Wright G, Hart D (Aust)	Analysis of 431 patients referred to a lung cancer multidisciplinary clinic. Within MDC, patients receive timely diagnosis, staging and treatment according to evidence-based guideline recommendations. Patients managed through a lung cancer multidisciplinary clinic are processed rapidly and are more likely to receive tissue confirmation of malignancy and active treatment than patients managed through traditional services.	Analysis of multidisciplinary lung cancer practice	Intern Med J 2007; 37(1):18–25	Qt	MD clinic and MDT meeting	Respiratory and palliative care clinicians, medical and radiation oncologists, thoracic surgeons, anatomical pathologist, radiologist, lung cancer nurse consultant	✓	International guidelines Data collection	Lung	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Devitt B, Philip J, McLaclan SA (Aust)	Focus groups to look at attitudes to MDMs among health professionals. All participants (23) believed the primary objective of the MDM was to develop an individualised treatment plan. The MDM provided opportunities to improve communication, efficiency and education as well as enhance professional relationships. Medical information was prioritised ahead of psychosocial details, with allied health professionals describing difficulty contributing to MDM discussion. Patient attendance at MDMs was opposed by health professionals due to concerns about the patients' ability to cope with information and the effect of their presence on decision making.	Team dynamics, decision making, and attitudes towards multidisciplinary cancer meetings: health professionals' perspectives	J Oncol Practice 2010; 6(6):e17–e20	QI	MDM	Medical and allied health	✓			✓	Deficiencies in communication treatment plan; documentation; psychosocial concerns of patients often neglected
Evans DB, Crane CH, Charnsangave JC, Wolff RA (US)	The specific results presented by Pawlik et al. are translatable to other less experienced centres if definitions and templates were to be developed and uniformly applied to the care of patients with pancreatic cancer.	The added value of multidisciplinary care for patients with pancreatic cancer	Ann Surg Oncol 2008; 15(8):2078–2080	D	✓			Staging system, CT template, treatment schema	Pancreas	✓	Leadership and group dynamics

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Evans AC, Zorbas HM, Keaney MA, Sighom MA, Goodwin HE, Peterson JC (Aust)	Concerns about medicolegal implications of a multidisciplinary approach to cancer care may act as a barrier to the implementation of best practice approaches. MDT meetings have a low level of risk – improved documentation and transparency in their approach will assist in limiting liability for individual health professionals and health services. Input into treatment recommendations represents a formal doctor–patient relationship and liability for advice given. Name and discipline of team members contributing should be recorded. Any dissensions should be recorded.	Medicolegal implications of a multidisciplinary approach to cancer care: consensus recommendations from a national workshop	MJA 2008; 188(7):401–404	D	✓		✓	Record keeping. Proformas and templates recommended			
Fennell ML, Das IP, Clauser S, Petrelli N, Salner A (US)	Review of different MDT structures and impact on quality of treatment care. Outlines differences between cancer conferences and MDC treatment teams, real vs virtual teams, the issue of location of coordination and impact on the cancer model of care continuum. Discusses team composition, processes and dynamics. Recommends the role of primary care particularly following active treatment vs the role of the team in the diagnostic and treatment phase. Proposes a framework for the complex inter-relationships influencing MDT performance and patient outcomes.	The organisation of multidisciplinary care teams: modelling internal and external influences on cancer care quality	J National Cancer Institute Monogr 2010; 40:72–81	R	MDC teams and meetings	Medical oncology, radiation oncology, surgical oncology, cancer site specialist, primary care and nursing and psychologist, social worker, nutritionists, clergy	✓			✓	Setting, organisation culture, professionals with different financial incentives, team dynamics

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					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Forrest LM, McMillan DC, McArdles CS (UK – Scot)	Comparison of care and survival pre and post MDT. In 2001, 23% of patients received chemo vs 7% in 1997. In 2001, 44% of patients received palliative care only compared with 58% of patients in 1997. Median survival in 2001 was 6.6 months; in 1997 it was 3.2 months.	An evaluation of the impact of the multidisciplinary team, in a single centre, on treatment and survival in patients with inoperable non-small-cell lung cancer	Br J Cancer 2005; 93(9)977–978	Qt	MDT	Two respiratory clinicians, two surgeons, medical oncologist, clinical oncologist, palliative care clinician, radiologist, specialist respiratory nurse	✓		Lung	✓	
Gagliardi AR, Wright FC, Davis D, McLeod RS, Urbach DR (Canada)	General surgeons mailed a questionnaire to solicit information needs, information seeking, key challenges and suggested solutions. They reported using a wide range of information sources but they may not address the complex needs of many cancer patients. Decision making is challenged by informational and logistical issues related to the coordination of MDC. Limitations in system capacity may contribute to variable guideline compliance.	Challenges in multidisciplinary cancer care among general surgeons in Canada	BMC medical informatics and decision making	QI				Videoco nferenci ng			Barriers to diagnosing and staging cancer, lack of operative resources, barriers to coordinating MDC

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Gany F, Ramirez J, Nierodzick ML, MNish T, Lobach I, Leng J (US)	This study investigates the impact of a multilingual MDT targeting social and economic determinants of cancer treatment adherence among at-risk Hispanic immigrants. At the core of the intervention is the trained bilingual portal access facilitator, who assesses needs and synchronises an individualised set of transdisciplinary services for each patient. Most patients reported that financial, social and logistical support would help them attend their appointments for cancer care and treatment.	Cancer Portal Project: A multidisciplinary approach to cancer care among Hispanic patients	J Oncol Practice 2011; 7(1):31–38	Qt QI	MDC clinic, MDC portal service access facilitator		✓			✓	Socioeconomic barriers – lack of insurance, treatment and medication costs, lack of childcare and transportation; language barriers overcome by bilingual facilitators
Greene FL (US)	Editorial commenting on the operation of the ideal MDC conference – discussion of treatment options supported by evidence-based reports and staging. Appropriate clinical trails should be reviewed. Ideally conferences should be organ based.	The need for assessment and reassessment of the hospital cancer conference	Ann Surg Oncol 2009; 16:2673–2674	Comment	✓	Should incorporate all practitioners who have a stake in that patient's care	✓				
Hammond DB (US)	Covers the challenges and rewards of an MDC clinic. The rewards include increased patient satisfaction, opportunities for a beneficial exchange of ideas and information, and a branded image of excellence for the hospital. There must be a champion or champions for the process. All important stakeholders need to be brought on board.	Multidisciplinary cancer care in a community hospital setting: challenges and rewards	J Oncol Practice 2010; 6(6):281–283	D	MDC clinic		✓			✓	Clinician time, political rivalries, which disciplines to involve, which patients to present, how the is patient involved, one person to summarise conclusions

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Hudak JL, McLeod DG, Brassell SA, Gant DA et al. (US)	A traditional clinical centre transformed into a multidisciplinary clinic. Providers rotate to patient's rooms. The clinic was a success – comments from patients and clinicians were positive. Increased participation in clinical research.	The design and implementation of a multidisciplinary prostate cancer clinic	Urologic Nursing 2007; 27(6):491–498	D QI	MDC clinic +MDT meetings	Surgeon, radiation oncologist, psychologist, nurse educator, clinic coordinator	✓		Prostate	Enhanced quality care; patients and providers satisfied and system efficiency	
Jacobson JO (US)	MDC can be defined as a deliberately designed system that creates a common communication platform among different providers of cancer care, enabling complex decision making and resulting in a tailored individual management plan.	Multidisciplinary cancer management: a systems-based approach to deliver complex care	J Oncol Practice 2010; 6(6):274–275	Comment	MDT		✓			✓	
Kastnet C, Armitage J, Kimble A, Rawal J, Carter PG, Venn S (UK)	The comorbidity score (CS) was found to be a statistically significant predictor of survival following radical treatment for localised prostate cancer. The CS is easy to calculate and therefore feasible to use in the MDT setting.	The Charlson comorbidity score: a superior comorbidity assessment tool for the prostate cancer multidisciplinary meeting	Prostate Cancer and Prostatic Diseases 2006; 9:270–274	Qt	MDT meeting		✓	Comorbidity score used in treatment planning	Prostate	✓	
Lamb BW, Sevdalis N, Arora S, Pinto A, Vincent C, Green JSA (UK)	Non-attendance at MDMs was associated with not having protected time to attend. Good leadership was necessary to foster inclusive case discussion. Improved case selection and working in a more structured way are possible improvements. Discussion environment is not one of equality. Nurses in particular thought they were marginalised and their contribution of patient-centred information was ignored.	Teamwork and team decision-making at multidisciplinary cancer conferences: barriers, facilitators and opportunities for improvement	Worlds J Surg 2011; 35:1970–1976	MDT meetings	QI		✓			✓	Lack of protected time, unequal participation in decision making, case selection, improved IT and videoconferencing, better attendance

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Lamb BW, Sevdalis N, Mostafid H, Vincent C, Green JSA (UK)	Assessment of the quality of information presented and MDT members' contributions to decision making via expert observation and self-reporting. Case histories and radiology information rated the highest quality of the information presented; patients' views, comorbidities and psychological issues rated the lowest. Contribution to decision making: surgeons and oncologists rated the highest, nurses and MDT coordinators rated the lowest, with others in between.	Quality improvement in multidisciplinary cancer teams: an investigation of teamwork and clinical decision making and cross-validation of assessment	Ann Surg Oncol 2011; 18(13):3535–3543	MDT meetings	QI	Surgeons oncologists, radiologists, pathologists, nurses and MDT coordinators	✓	Observational tool for MDT performance assessment		✓	Ambivalent attitudes of healthcare professionals, lack of standardised process for clinical decision making by MDTs, no requirements for minimum datasets
Lamb BW, Sevdalis N, Taylor C, Vincent C, Green JSA (UK)	Survey of 2000 MDT members reveals a strong consensus between MDT members from different tumour types (on infrastructure, team characteristics and governance), while also identifying areas that require a more tailored approach, such as clinical decision-making process, preparation for and organisation of MDT meetings. Haematology MDT members were outliers in relation to clinical decision making.	Multidisciplinary team working across different tumour types: analysis of a national survey	Ann Oncol 2012; 23(5):1293–1300	MDT meetings	QI	Surgeon, radiologist, pathologist, oncologist, other doctors, clinical nurse specialist, allied health, MDT coordinator	✓		Breast, gynae, colorectal, upper GI, urological, head and neck, haematological and lung	✓	
Lamb BW, Wong HWL, Vincent C, Green JSA, Sevdalis N (UK)	An observational tool was developed to assess performance in MDTs. Contributions of surgeons, the chair's effectiveness and the presentation of case history and radiologic information was rated above average. Contributions of histopathologists and clinical nurse specialists were rated below average, and others average.	Teamwork and team performance in multidisciplinary cancer teams: development and evaluation of an observational assessment tool	BMJ Qual Sat 2011; 20:849–856	QI	BMT	MDT chair, surgeon, oncologist, radiologist, histopathologist, clinical nurse specialist	✓	Observational tool to assess performance	Urology	✓	Effective leadership, proper imaging, histopathology information, patient preferences; no structures or standardised methods for conducting a case discussion, no requirements for minimum datasets

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
McConigley R, Platt V, Holloway K, Smith J (Aust – WA)	CanNET WA was established in the Great Southern region of WA to lead improvement in cancer care. The initiatives included a multidisciplinary cancer team, improved access to visiting medical specialists, formal links with tertiary cancer centres, increased primary health involvement in cancer care and increased education in cancer care for local healthcare providers. Consumers had greater choice of treatment options and more involvement in decisions. Improvements in care coordination reported and improved links with tertiary centres.	Quality improvement report. Developing a sustainable model of rural cancer care: the West Australian Cancer Network project	Aust J Rural Health 2011;19:324–328	QI	MDT	General surgeons, medical oncologist, radiation oncologist, social worker, clinicians, cancer coordinator, dietician, breast cancer nurse, referring GPs, palliative care coordinator, MDT coordinator	✓	CPD framework for staff		✓	
Makary MA (US)	Editorial discussing the possibility of higher utilisation when a patient is seen by a group of specialists.	Multidisciplinary teams and clinics: better care or just more care?	Ann Surg Oncol 2011; 18:2105–2106	Comment	✓		✓				Cost is a barrier. The potential for overservicing needs to be addressed by adherence to standards and guidelines for care
Mazzaferro V, Majno P (Italy)	Multidisciplinary discussions between specialists provide the best setting in which opinions, ideas and experience can be challenged, with evidence from large case series of individual case studies. The most important advantage of MDMs is the opportunity to give appropriate weight to features specific to individual cases.	Principles for the best multidisciplinary meetings	The Lancet Oncol 2011; 12:323–325	Opinion	MDT meetings		✓			✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Obias VJ, Reynolds HL (US)	Weekly meetings of the GI tumour board discuss all malignancies. Consensus built on care plan. The conference provides an outstanding format for the discussion of difficult management dilemmas, and allows for creative discussion of the options available for therapy. This interactive format presents excellent educational opportunities for staff, fellows and residents, as well as medical and nursing students.	Multidisciplinary teams in the management of rectal cancer	Clin Colon Rectal Surg 2007; 20:143–147	D	MDT and meeting	Colorectal surgeons, general surgeons, hepatobiliary surgeons, gastroenterologist, medical oncologist, radiation oncologist, radiologist, pathologist, geneticists, social workers, oncologist and surgical nurses, stomal therapists, team coordinator	✓		Rectal	✓	Attracting all practitioners to the table to 'buy in' to the concept can be challenging; difficult as hospital systems expand with multiple satellite facilities
Ponte PR, Gross AH, Winer E, Connaughton MJ, Hassinger J (US)	Interdisciplinary collaboration in which decision making and accountability are shared by members of different disciplines, is a central feature of oncology clinical practice, but it rarely is built into the governance and management structures that oversee oncology clinics. Collaboration and coordination across all 12 disease centres (including gynae, breast and GI) are promoted through the Multidisciplinary Clinical Services Committee (MCSC).	Implementing an interdisciplinary governance model in a comprehensive cancer center	Oncol Nurs Forum 2007; 34(3):611–616	D	MDT	Each disease centre is overseen by interdisciplinary team – clinical clinician director, nurse program leader and program administrator	✓			✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Rusby JE, Gough J, Harris PA, MacNeill FA (UK)	Assessment of an oncoplastic MDT – allows lively but open discussion, consensus gathering and shared decision making: <ul style="list-style-type: none"> • standardisation of care • streamlined patient pathways, development of procedure-specific consent forms and standardisation of eight photographic views • increased trial recruitment. 	Oncoplastic multidisciplinary meetings: a necessity or luxury?	Ann R Coll Surg Engl 2011; 93:273–274	D	MDT meeting	Seven consultant surgeons (oncoplastic, plastic), breast care nurse, 10 surgical trainees	✓	Video-linking across two sites	Breast	✓	
Saini KS, Taylor C, Ramirez AJ, Palmieri C et al. (Belgium)	Survey of participants in MDTs in 30 countries. In all, 65% of respondents in Eastern Europe, 63% in western Europe, 35% in Asia and 25% in South America stated that the MDT was a mandatory part of breast cancer care in their country. Almost all European respondents (90%) said their MDT met weekly, compared with only half of respondents in Asia. Most respondents reported that MDTs result in improved clinical decision making (97%), improved overall quality of treatment (93%), more coordinated patient care (91%) and evidence-based treatment decisions (91%).	Role of the multidisciplinary team in breast cancer management	Ann Oncol 2012; 23(4):853–859	QI	MDT meetings	Medical oncologist (95%), surgical oncologist (95%), radiation oncologist (90%), pathologist (84%), radiologist (73%) and specialist nurse (49%)	✓	Telemedicine, mini MDTs	Breast	✓	77% respondents – no national or regional guidelines for MDT functioning

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Sidhom MA, Poulsen MG (Aust)	The MDT has no official legal identity. Each doctor present at an MDT meeting is individually responsible and potentially liable for all decisions within their area of expertise. A doctor need not personally meet the patient nor overtly contribute to the deliberations to attract a duty of care and hence legal responsibility.	Multidisciplinary care in oncology: medicolegal implications of group decisions	Lancet Oncol 2006; 7:951–954	D	✓		✓				If a doctor feels their opinion has been ignored or they disagree with the final decision they should ensure they formally dissent and it is recorded
Song P, Wu Q, Huang Y (China)	While noting the success of MDT models in other countries, the authors note the barriers to implementation in China including the medical care insurance system, hospital management approach, personnel framework and 'whether to tell patients their actual condition and how they can express their will'. West China Hospital in Sichuan has had success with a colorectal MDT demonstrating reduced days in hospital in the perioperative period, a higher rate of cancer resection, and a lower cancer recurrence rate in 5–10-month follow-up.	Multidisciplinary team and team oncology medicine research and development in China	BioScience Trends 2010; 4(4):151–160	D	MDT made up of data-based team, follow up team, nursing team and public team		✓		Colorectal	✓	Constructing an MDT model that conforms to the national condition. 'In the transitional phase of the medical model and in the context of China's medical reform, how can the MDT model be constructed with Chinese characteristics?'
Spruyt O (Aust – Peter Mac)	Delivery of palliative care is often complex and always involves a group of people, the team gathered around the patient and those who are close to them. Effective communication and functional responsive systems of care are essential if palliative care is to be delivered in a timely and competent way.	Team networking in palliative care	Ind J Pall Care 2011; (suppl)s17–s19	R	✓	✓			Palliative care		

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Studdert DM (Aust)	Liability of members of an MDT – assume responsibilities to the patient. Professional responsibilities entail joining in wherever your expertise is relevant. If information is insufficient to render an informed decision, say so. Informed consent, careful documentation of team membership and resolutions are all important.	Can liability rules keep pace with best practice? The case of multidisciplinary cancer care	MJA 2008; 188(7):380–381	Comment	✓		✓				
Swellegrebel HAM, Peters EG, Cats A, Visser O et al. (Netherlands)	Evaluation of the value of MDTs on rectal cancer patients. Dutch rectal cancer treatment guidelines recommend discussing all patients in an MDT meeting. This study shows only 55% discussed in MDT; those with higher risk and advanced stage of disease. Standardised staging (MRI and histology) in all rectal patients will lead to improvement of treatment and create opportunities for feedback to the MDT.	Multidisciplinary discussion and management of rectal cancer: A population-based study	World J Surg 2011; 35:2125–2133	Qt	MDT	Oncology surgeon, radiation oncologist, medical oncologist, radiologist, pathologistspecialised nurse	✓		Rectal	✓	Possible lack of documentation, poor staging information
Taylor C, Munro AJ, Glynne-Jones R, Griffith C, Trevatt P, Richards M, Ramirez AJ (UK)	MDTs have been implemented in cancer care systems throughout much of Europe, the US and Australia, without any clear evidence for their effectiveness. Evidence is growing that MDTs are associated with improved clinical decision making, clinical outcomes, patient experience and improving the working lives of team members.	Multidisciplinary team working in cancer: What is the evidence?	BMJ 2010; 340:743–745	D QI	MDT		✓			✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Tremblay D, Roberge D, Cazale L, Touati N, Maunsell E, Latreille J, Lemaire J (Canada)	Study protocol for a study in Quebec Canada of interdisciplinary (ID) cancer care. Questionnaires will be used to measure the impact of ID care on patients and professionals. The study will measure to what extent ID care is linked to quality of care and meets the complex and varied needs of cancer patients. It will determine to what extent ID teamwork facilitates the work of professionals. Target study population: 65 oncology outpatient clinic care teams in Quebec.	Evaluation of the impact of interdisciplinarity in cancer care	BMC Health Services Research 2011; 11:144	QI	MDT	Pivot nurse (nurse navigator), pharmacist, medical oncologist, nutritionist, social worker or psychologist	✓			✓	Pilot study identified as important: team composition, frequency of meetings, clinico-admin responsibility, shared philosophy of care, coordinated mechanisms and tools, quality of care evaluation activities
Underhill CR, Goldstein D, Grogan PB (Aust)	Regional Cancer Centres of Excellence (RCCEs) work. Example: Albury-Wodonga saw an increase in patients treated locally from 150 to 750, including an eightfold increase in chemo day treatments, establishment of MDC clinics and more than 10% of patients in clinical trials.	Inequity in rural cancer survival in Australia is not an insurmountable problem	MJA 2006; 185(9):479–480	Comment	MDC clinic and MDT meeting		✓			✓	Attracting specialists to rural areas
Vinod SK, Sighom MA, Delaney GP (Aust)	Study assessed whether MDT meetings follow guidelines in the treatment of lung cancer. Overall concordance with guideline treatment was 71% (239/335 cases) on multivariate analysis, age greater than 70 years, ECOG performance status of two or higher, and stage III NSCLC were associated with the MDT not recommending guideline treatment. The primary reasons for this were clinician decision (39%), comorbidity (25%), and technical factors (22%).	Do multidisciplinary meetings follow guideline-based care?	J Oncol Practice 2010; 6(6):276–281	Qt	MDT	Respiratory clinicians, cardiothoracic surgeon, medical and radiation oncologists, palliative care clinicians, PET clinician, radiologist, lung cancer nurse	✓		Lung	✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Weller DP, Harris MF (Aust)	Ideally cancer should be provided by teams, supported by a network of services. Concepts of MDT and managed clinical cancer have been widely advocated but the place of primary care within these teams has remained poorly defined and highly variable. Need to develop new models of care including care close to home, early detection of recurrences, and comprehensive psychosocial support.	Cancer care: what role for the general practitioner?	MJA 2008; 189(2):59–60	Comment	MDT	Involve GPs	✓			✓	
Wulff CN, Thygesen M, Sondergaard J, Vedsted P (Denmark)	Summary of outcomes, results and validity components of the published RCTs examining CM as a method for optimising cancer care pathways.	Case Management used to optimize cancer care pathways: a systematic review	BMC Health Services Research 2008; 8:227	R	CM, MDT		✓	Models, manuals, assessment tool, checklist		✓	
Zorbas H, Barraclough B, Rainbird K, Luxford K, Redman S (Aust)	NHMRC guidelines recommend that women with breast cancer should have access to the full range of multidisciplinary treatment options. A national MDC demonstration project commenced in 2000 to investigate the implementation of a flexible approach to MDC. Principles: team, communication, access to full range of therapies, standards of care, involvement of the patients.	Multidisciplinary care for women with early breast cancer in the Australian context: What does it mean?	MJA 2003; 179:528–531	D QI	MDT, MDC		✓		Breast	✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Cochrane Library											
Aubin M, Giguere A, Verreault R, Fitch MI, Kazanjian A (Canada)	Many authors have recognised the lack of continuity in the services needed by patients throughout their trajectory of care as one of the main problems of cancer care. The US Institute of Medicine recommends that patients completing primary cancer treatment be given a comprehensive cancer care summary and follow-up care plan to optimise the continuity and coordination of their care. Optimum elements and levels of involvement of various specialists and primary care providers need to be determined.	Interventions to improve continuity of care in the follow-up of patients with cancer (protocol)	The Cochrane Library 2009, Issue 1	R	Interdisciplinary case conference, care standards and so on						
Cruikshank S, Kennedy C, Lockhart K, Dosser I, Dallas L (UK)	Breast care nurses (BCNs) work within a multi-professional environment providing a range of interventions including support, information, patient advocacy and general liaison among the various members of the healthcare team. The review found limited evidence to identify the components of the BCNs role that impact on a women's quality of life but acknowledge that the nature of their work, provided within a multi-professional team, serves to complement the team as a whole rather than highlighting the impact of BCNs alone.	Specialist breast care nurses for supportive care of women with breast cancer (review)	The Cochrane Library 2008, Issue 4	R	MDC MDT		✓			✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
De Boer AGEM, Taskila T, Tamminga SJ, Frings_Dresen MHW, Feuerstein M, Verbeek JH (Netherlands)	Moderate-quality evidence shows that cancer patients experience more return-to-work benefits from multidisciplinary intervention compared with usual care. Results suggest that multidisciplinary interventions involving physical, psychological and vocational components led to higher return-to-work rates of cancer patients than care as usual, while quality of life was similar.	Interventions to enhance return-to-work for cancer patients (review)	The Cochrane Library 2009, Issue 1	R	MDT		✓			✓	
Miscellaneous literature											
Aust Resource Centre for Healthcare Innovations (ARCHI) (Aust)	The Border Cancer Collaboration (BCC) has been successful in establishing a multidisciplinary approach to cancer treatment and support for patients' families and carers for the Albury-Wodonga region. Achievements of the project include: provision of cancer care coordination, social work and psychology services; establishment of MDMs for breast, GI and urological cancers; creation of a website as a single location for information about cancer services; and collection of data across the Border region. Outcomes include improved services to cancer patients and their families and a more efficient use of resources.	Improving cross-border cancer care coordination	www.archi.net.au (viewed 5 Jan 2012)		MDC, MDT meetings	New cancer care coordinator positions and breast care nurse. Two staff allocated to support the admin and function of the MDT meetings	✓			✓	50% of clinicians indicated cross-border issues impacted on their practice

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Clinical Oncological Society of Australia (COSA) and Cancer Council Australia (Aust)	COSA and the Cancer Council national workshop in August 2009 aimed to develop an independent cancer sector position on generic criteria for the allocation of Commonwealth capital grants for regional cancer centres. One key theme was to ensure genuine multidisciplinary care underpins the service. Another theme was to ensure linkages with both metropolitan cancer centres and 'feeder' hospitals are developed.	A way forward for regional cancer centres – independent expert recommendations	http://www.cancer.org.au/policy/Publications/A_way_forward_for_regional_cancer_centres.htm (viewed Jan 2012)	Workshop Report Aug 2009	MDT		✓	Telemedicine, video and teleconferencing equipment, facilities for improving referral pathways, patient monitoring and follow-up			Distance to care
Grey Literature											
Wild W. Southern Melbourne Integrated Cancer Service (Aust)	GP feedback to the pilot was positive: <ul style="list-style-type: none"> 91% of GPs indicated they received information within one week of the MDT. 65% of GPs did not wish to participate in MDT discussions directly; receiving correspondence regarding MDT recommendations was sufficient. 	SMICS MDT pilot project update: GP survey results	June 2010	QI	MDT						

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/tools	Tumour	Impact on quality/education	Barriers and solutions
Wild W. Southern Melbourne Integrated Cancer Service (Aust)	MDT Pilot project – MDT project officers appointed at each health service, meeting terms of reference, protocols and minimum dataset developed. Documentation of treatment MDT plans increased at The Alfred (14–88%) and Southern Health (26–87%). A survey of MDT members showed support for MDTs.	Cancer Service Improvement Project Continuum of Care Project: MDT pilot project progress report	August 2009	Qt	MDT			Virtual meeting technology implementation in progress; patient information brochure developed			

Key

CM = case management

D = descriptive paper

Qt = quantitative study

QI= qualitative study

ID = interdisciplinary

MDC = multidisciplinary care

MDCC = multidisciplinary cancer conference

MDM = multidisciplinary meetings

MDT = multidisciplinary team

R = review article

RACS = Royal Australian College of Surgeons

Appendix 2: Abstracts – key themes

Authors	Issues	Title	Ref	Key	Themes						Barriers
					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	
Amato JJ, Williams M, Green berg C, Bar M, Lo S Tepler I (US)	Autologous bone marrow transplantation for haematological malignancies and solid tumours administered at a community hospital with cost-effective, high-quality care in a more personal environment. Psycho-oncology can assist the MDT.	Psychological support to an autologous bone marrow transplant unit in a community hospital: a pilot experience	Psychooncology 1998; 7(2):121–125	D	MDT		✓		Haem	✓	
Borneman T, Koczywas M, Cristea M, Reckamp K, Ferrell B (US)	A quality of life (QOL) pilot study revealed that patients with lung cancer have multiple QOL concerns and that an interdisciplinary palliative care approach was feasible to address these complex, multidimensional patient needs.	An interdisciplinary care approach for integration of palliative care in lung cancer	Clin Lung Cancer 2008; 9(6):352–360	QI	MDT		✓		Lung	✓	
Boxer MM, Vinod SK, Shafiq J, Duggan KJ (Aust)	MDT discussion was associated with better receipt of chemo treatment, which potentially may improve quality of life for patients with lung cancer. It does not, however, improve survival.	Do multidisciplinary team meetings make a difference in the management of lung cancer?	Cancer 2011; 117(22):5112–5120	Qt	MDT meetings		✓		Lung	✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Brennan ME, Butow P, Marven M, Spillane AJ, Boyle FM (Aust)	Twenty women across Australia participated in semi-structured telephone interviews. All continued to attend follow-up visits with a specialist oncologist and reported a high level of satisfaction with care. Participants described a strong reliance on their specialist but were open to an increased role for their primary care clinician. Communication between MDT members was perceived as an ongoing problem and there was enthusiasm for a patient-held written survivorship care plan to address this, and to meet information needs.	Survivorship care after breast cancer treatment: experiences and preferences of Australian women	Breast 2011; 20(3):271–277	QI	MDC, MDT		✓		Breast	✓	
Brennan M, Spillane A (Aust)	Breast clinicians are well-trained, highly valuable team members of the multidisciplinary breast team with a skillset that may enhance patient care at all stages from diagnosis to treatment to follow-up.	The evolving role of the breast physician in the multidisciplinary breast team	ANZ J Surg 2007; 77(10):846–849	D	MDT		✓			✓	
Bruera E, Michaud M, Vigano A, Neumann CM, Watanabe S, Hanson J (US)	Retrospective study looking at referrals to a multidisciplinary symptom control clinic (SCC). Work of the SCC results in long-term effectiveness in symptom control and high levels of patient satisfaction. The SCC allows for better integration of care between a cancer centre and community-based clinicians and nurses. It also allows patients access to multiple disciplines that are not available outside tertiary centres.	Multidisciplinary symptom control clinic in a cancer center: a retrospective study	Support Care Cancer 2001; 9(3):162–168	QI	MDT clinic	Clinician, nurse, pharmacist, psychiatrist, social work, rehab, nutrition, respiratory, pastoral care workers	✓			✓	

Authors	Issues	Title	Ref	Key	Themes						Barriers
					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	
Cabrera R, Nelson DR (US)	Early diagnosis and definitive treatment remains the key to positive long-term outcomes in hepatocellular carcinoma. A multidisciplinary approach is critical to successful management.	Review article: the management of hepatocellular carcinoma	Aliment Pharmacol Ther 2010; 31(4):461–476	R	MDC			Barcelona clinic liver cancer staging system	Liver		
Choy ET, Chiu A, Butow P, Young J, Spillane A (Aust)	A pilot study was conducted to assess the feasibility and acceptability of directly involving patients diagnosed with breast cancer in MDC clinic discussions and treatment planning. The intervention was highly valued by most of the participating patients, and acceptable to and welcomed by most health professionals in the MDT.	A pilot study to evaluate the impact of involving breast cancer patients in the multidisciplinary discussion of their disease and treatment plan	Breast 2007; 16(2):178–189	QI	MD clinic and MDT meetings		✓		Breast	✓	
Conron M, Phuah S, Steinfert D, Dabscheck E, Wright G, Hart D (Aust)	Analysis of 431 patients referred to a lung cancer multidisciplinary clinic. There, patients receive timely diagnosis, staging and treatment according to evidence-based guideline recommendations.	Analysis of multidisciplinary lung cancer practice	Intern Med J, 2007; 37(1):18–25	Qt	MD clinic				Lung	✓	
Federman N, Bernthal N, Eilber FC, Tap WD (US)	Patients with suspected or confirmed osteosarcoma should be evaluated and treated in a comprehensive cancer centre within a multidisciplinary sarcoma program. Successful treatment involved proper diagnosis, neoadjuvant and adjuvant multi-agent chemo and aggressive surgery with an emphasis towards limb-preserving procedures.	The multidisciplinary management of osteosarcoma	Curr Treat Options Oncol 2009; 10(1-2):82–93	Opinion	MDT	Paed, medical and radiation oncologists, musculoskeletal pathologists and radiologists	✓			✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrast ructur e/ tools	Tumour	Impact on quality/ education	Barriers
Friedland PL, Bozic B, Dewar J, Kuan R, Meyer C, Phillips M (Aust)	Comparisons on management and outcomes made between MDT and non-MDT patients. Stage IV MDT patients had significantly improved five-year survival compared with non-MDT patients and more synchronous chemotherapy and radiotherapy.	Impact of multidisciplinary team management in head and neck cancer patients	Br J Cancer 2011; 104(8):1246–1248	Qt	MDT clinic and meeting		✓		Head and neck	✓	
Goolam-Hossen T, Metcalfe C, Cameron A, Rocos B, Falk S, Blazeby JM (UK)	Examination of whether changes in MDT treatment decisions after the meeting led to a delay in the start of treatment. Significant delays in starting treatment occur if team management recommendations are not implemented. Decisions change due to comorbidity, new clinical information or patient choice. Effort and resources are required to ensure information is present at meetings to allow comprehensive patient-centred decisions to be made and implemented.	Waiting times for cancer treatment: the impact of multi-disciplinary team meetings	Behaviour and Info Technol 2011; 30(4):467–471	Qt	MDT meeting		✓		Head and neck	✓	
Graves KD, Arnold SM, Love CL, Kirsh KL, Moore PG, Passik SD (US)	Screening for distress in cancer patients is recommended by the National Comprehensive Cancer Network. Patients from an MDC lung cancer clinic asked to complete a distress thermometer, an associated problem symptom list and two questions on receiving help for symptoms. Distress at a clinically significant level was reported by 61.6%. Screening for distress in an MDC clinic is feasible and a significant number of patients can be expected to meet clinical criteria for distress.	Distress screening in a multidisciplinary lung cancer clinic: prevalence and predictors of clinically significant distress	Lung Cancer 2007; 55(2):215–224	Qt	MD clinic				Lung	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Humphries GM (UK)	There is growing literature confirming the importance of many psychological issues that impact on patients with head and neck cancer. There is therefore an argument that a psychologist should feature as a full member of the multidisciplinary team. Activities include formal assessment of psych features of the patient and carer, interpretation of data on distress and quality of life, design and implementation of interventions and supervisory support for the work pressure experienced by the MDT.	The missing member of the head and neck multidisciplinary team: the psychologist. Why we need them	Curr Opin Otolaryngol Head Neck Surg 2008;16(2):108–112	R	MDT	Include psychologist	✓			✓	
Knowles G, Sherwood L, Dunlop MG, Dean G, Jodrell D, McLean C, Preston E (UK)	Pilot study looking at a follow-up program for colorectal cancer led by nurse specialists from an MDT. There was a smoother pathway of follow-up care, improved quality of life and acceptance among both patients and clinicians alike.	Developing and piloting a nurse-led model of follow-up in the multidisciplinary management of colorectal cancer	Eur J Oncol Nurs 2007; 11(3):212–223	QI	MDT		✓			✓	
Komatsu H, Nakayama K, Togari T, Suzuki K et al. (Japan)	Integrated patient-based information and regular MDTs that include viewpoints from different professionals improve patients' perceptions of comprehensive breast cancer care.	Information sharing and case conference among the multidisciplinary team improve patients' perceptions of care	Open Nurs J 2011;5:79–85	QI	MDT meeting		✓			✓	

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					Model of care	MDT make-up	MDT meetings	Infrast ructur e/ tools	Tumour	Impact on quality/ education	Barriers
Kupad R, Kim W, Rathmell WK, Godley P et al. (US)	Prospective study of the MDT approach to urological malignancies in which 38% had a change in diagnosis or treatment and 10% required further analysis. An MDT approach affects the diagnostic and management decisions in a significant number of patients with a newly diagnosed urologic malignancy.	A multidisciplinary approach to the management of urologic malignancies: does it influence diagnostic and treatment decisions?	Urol Oncol 2011; 29(4):378–382	Qt	MDT meeting		✓		Urologic – prostate, bladder, kidney, testes	✓	
Kuroki L, Stuckey A, Hirway P, Raker CA, Bandera CA et al. (US)	Of 1213 gynae oncology case presentations reviewed the tumour board (TB) recommended 358 (30%) were eligible for trials of which 87 enrolled (24%). Compared with other types of TB recommendations, those involving trials were discussed less frequently at post-TB patient visits. Patients identified by the TB were 2.5 times as likely to enrol in a clinical trial. Interventions that facilitate trial discussions during post-TB meetings are needed to improve trial participation.	Addressing clinical trials: can the multidisciplinary tumor board improve participation? A study from an academic women's cancer program	Gynecol Oncol 2010; 116(3):295–300	Qt	Tumour Board +MDT meeting		✓		Gynae oncology	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Lamb BW, Sevdalis N, Mostafid H, Vincent C, Green JSA (UK)	Assessment of the quality of information presented and MDT members' contributions to decision making via expert observation and self-reporting. Case histories and radiology information rated the highest quality of the information presented, patients' views, comorbidities and psychological issues rated the lowest. Contribution to decision making: surgeons and oncologists rated the highest, nurses and MDT coordinators rated the lowest, with others in between.	Quality improvement in multidisciplinary cancer teams: an investigation of teamwork and clinical decision making and cross-validation of assessment	Ann Surg Oncol 2011; 18(13):3535–3543	QI	MDT meetings	Surgeons oncologists , radiologists , pathologists, nurses and MDT coordinators	✓			✓	
Lamb BW, Sevdalis N, Taylor C, Vincent C, Green JSA (UK)	Survey of MDT members reveals strong consensus between MDT members from different tumour types (on infrastructure, team characteristics and governance), while also identifying areas that require a more tailored approach, such as a clinical decision-making process, preparation for and organisation of MDT meetings. Haematology MDT members were outliers in relations to clinical decision making.	Multidisciplinary team working across different tumour types: analysis of a national survey	Ann Oncol 2012; 23(5):1293–1300	QI	MDT meetings		✓		Breast, gynae, colorectal , upper GI, urological , head and neck, haematological and lung	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Leib A, Cieza A, Tschiesner U (Switzerland)	The International Classification of Functioning, Disability and Health Core set for head and neck cancer (ICF-HNC) is an application of the ICF and guides multidisciplinary cancer follow-up and rehabilitation. The validity of the ICF-HNC was supported by clinician perspectives. This study supports the need for a MDT. The aspects of functioning that are not treated by clinicians should be addressed by timely involvement of other health professions.	Perspective of physicians within a multidisciplinary team: content validation of the comprehensive ICF core set for head and neck cancer	Head and Neck 2011:doi:10.1002/hed.21844	QI	MDT		✓		Head and neck	✓	
McNair AGK, Choh CTP, Metcalfe C, Littlejohns D et al. (UK)	This study demonstrated that a trial recommendation by an MDT significantly increased trial screening rates and improved trial recruitment.	Maximising recruitment into RCTs: the role of multidisciplinary cancer teams	Eur J Cancer 2008; 44(17):2623–2626	Qt	MDT meetings		✓			✓	
Morales R, Cuadrado A, Noguera JF, Dolz C et al. (Spain)	Analysis of the MDC approach. Technological development and coordination of efforts in MDTs offer an accurate evaluation of tumour involvement, and may reduce the number of laparotomies without tumour resection. Systemic and multimodal treatment in pancreatic cancer – progressive increase in respectability and survival rates.	Multidisciplinary approach and multimodal therapy in resected pancreatic cancer: observational study	Rev Esp Enferm Dig 2011; 103(1):5–12	D	MDT		✓		Pancreas	✓	

Authors	Issues	Title	Ref	Key	Themes						
					Model of care	MDT make-up	MDT meetings	Infrast ructur e/ tools	Tumour	Impact on quality/ education	Barriers
Newman EA, Guest AB, Helvie MA et al. (US)	A review of medical records of 149 patients referred to a multidisciplinary breast cancer conference. Second evaluation of patients led to changes in recommendations for surgery in 77/149 (52%) patients. An MDT review can provide patients with useful additional information when making difficult treatment decisions.	Changes in surgical management resulting from case review at a breast cancer multidisciplinary tumor board	Cancer 2006; 107(10):2346–2351	Qt	MDT meeting		✓		Breast	✓	
Osarogiagbon RU, Phelps G, McFarlane J, Bankole O (US)	Deviation from multidisciplinary recommendations may be associated with significantly worse outcomes in patients (shorter survival) discussed in a multidisciplinary thoracic oncology conference.	Causes and consequences of deviation from multidisciplinary care in thoracic oncology	J Thorac Oncol 2011; 6(3):510–516	Qt	MDT meeting		✓		Lung	✓	
Palmer G, Martling A, Cedermarck B, Holm T (Sweden)	Comparison of care of rectal cancer with MDT teams and without. Preoperative radiological staging in patients with locally advanced primary rectal cancer and discussion at an MDT meeting increases the proportion of patients receiving neoadjuvant treatment and increases five-year survival.	Preoperative tumour staging with multidisciplinary team assessment improves the outcome in locally advanced primary rectal cancer	Colorectal Dis 2011; 13(12):1361–1369	Qt	MDT Meeting		✓		Rectal	✓	
Riedel RF, Wang X, McCormack M, Toloza E, Montana GS, Schreiber G, Kelley MJ (US)	Comparison of timeliness of diagnosis and treatment between a multidisciplinary thoracic oncology clinic and the period after it closed during which a weekly MDT meeting continued. No significant difference was noted.	Impact of a multidisciplinary thoracic clinic on the timeliness of care	J Thorac Oncol 2006; 1(7):692–696	Qt	MD clinic vs MDT meeting		✓		Lung	No change	

Authors	Issues	Title	Ref	Key	Themes						Barriers
					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	
Ruol A, Castoro C, Portale G et al. (Italy)	Earlier diagnosis, a multidisciplinary approach and refinements in surgical technique and preoperative care have led to a significant reduction in postoperative mortality rate and improved long-term survival among patients with oesophageal cancer.	Trends in management and prognosis for esophageal cancer surgery: 25 years of experience at a single institution	Arch Surg 2009; 144(3):247–254	Qt	MDT		✓		Oesophagus	✓	
Starmer H, Sanguineti G, Marur S, Gourin CG (US)	Patients evaluated initially through the multidisciplinary clinic had more speech-language-pathology (SLP) visits than those who did not participate in the clinic.	Multidisciplinary head and neck cancer clinic and adherence with speech pathology	Laryngoscope 2011; 121(10):2131–2135	Qt	MDC clinic		✓		Oropharyngeal cancer	✓	
Terret C, Zulian GB, Naiem A, Alibrand G (France)	The care of elderly cancer patients is fundamentally interdisciplinary. Communication and collaboration between geriatricians/primary care providers and oncologists represent key features of effective care in geriatric oncology. The combination of the disease-orientated approach of oncologists and the patient-orientated approach of geriatricians is the best way to better serve this specific population.	Multidisciplinary approach to the geriatric oncology patient	J Clin Oncol 2007;25 (14):1876–1881	D	MDC	Oncologists, geriatricians	✓			✓	
Walker MS, Ristvedt SL, Haughey BH (US)	Satisfaction with treatment is an important early indicator of medical outcome for cancer patients. Patients surveyed on care and support in a multidisciplinary clinic. Results suggest that patient satisfaction may be enhanced when hospital staff attend to and provide for the psychosocial needs arising from a diagnosis of cancer.	Patient care in multidisciplinary cancer clinics: Does attention to psychosocial needs predict patient satisfaction?	Psychooncology 2003; 12(3):291–300	QI	MD clinic					✓	

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					Model of care	MDT make-up	MDT meetings	Infrast ructur e/ tools	Tumour	Impact on quality/ education	Barriers
Whelan JM, Griffith CD, Archer T (UK)	Survey of MDTs in England. The majority of core members of the breast MDT attend weekly meetings, although attendance by medical oncologists and reconstructive breast surgeons is limited. Of the 134 MDTs surveyed, 79 discuss every cancer patient and 118 also discuss private patients; 27 teams record the outcome of the MDT electronically, 32 teams book surgery, 16 radiotherapy and 15 book chemo from the meeting.	Breast cancer multi-disciplinary teams in England: much achieved but still more to be done	Breast 2006; 15(1):119–122	Qt	MDT meetings		✓			✓	Three MDTs had a radiologist present at the MDT meetings and three didn't.
Wilcoxon H, Luxford K, Saunders C, Peterson J, Zorbas H (Aust)	A survey of 155 hospitals on the status of their MDTs. Two-thirds of hospitals surveyed did not have an MDT. Of those with a team, one-third of patients were not informed about the discussion of their case by the team, half gave no consent and, for a quarter, the treatment plan was not noted in their records. MDC is not being implemented in line with best practice or applied consistently across Australia.	Multidisciplinary cancer care in Australia: a national audit highlights gaps in care and medicolegal risk for clinicians	Asia Pac J Clin Oncol 2011; 7(1):34–40	QI	MDT meetings		✓		Breast, gynae, lung, prostate, colorectal	✓	
Wood JJ, Metcalfe C, Paes A, Sylvester P, Durdley P et al. (UK)	MDT treatment-decision quality analysed. The vast majority of colorectal decisions were implemented and when decisions changed, it mostly related to patient factors. Analysis of the implementation of team decisions is an informative process to monitor the quality of MDT decision making.	An evaluation of treatment decisions at a colorectal cancer multidisciplinary team	Colorectal Dis 2008; 10(8):769–772	D	MDT meetings		✓		Colorectal	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Wright FC, Lookhong N, Urbach D, Davis D, McLeod RS, Gagliardi AR (Canada)	A questionnaire was sent to general surgeons in Canada regarding MDTs. Of the 57 hospitals 29 had MDTs, including all academic hospitals, and 22 (of 50) community hospitals. MDT meetings occurred weekly at academic centres and biweekly or monthly at others. Surgeons perceived that MDTs helped them to incorporate MDC options into their patient care plans, improved collegiality and provided an opportunity for professional development.	Multidisciplinary cancer conferences: identifying opportunities to promote implementation	Ann Surg Oncol 2009; 16(10):2731–2737	QI	MDT meetings		✓			✓	
Haematology malignancies											
Craig CM, Schiller GJ (US)	Treating elderly patients with acute myelogenous leukaemia (AML) requires an organised multidisciplinary approach, taking into account individual patient characteristics, preferences and comorbidities when formulating treatment plans.	Acute myeloid leukemia in the elderly: conventional and novel treatment approaches	Blood Rev 2008; 22(4):221–234	D	MDC				Haem	✓	

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					Model of care	MDT make-up	MDT meetings	Infrast ructur e/ tools	Tumour	Impact on quality/ education	Barriers
Santos FR, Kozasa EH, Chauffaille ML, Colleoni GW, Leite JR (Brazil)	There is a high incidence of intrusion, avoidance, anxiety and depression in patients with haematological malignancies. Multidisciplinary staff are important to complement the treatment of these patients, including psychosocial assistance.	Psychosocial adaptation and quality of life among Brazilian patients with different haematological malignancies	J Psychosom Res 2006; 60(5):505–511	QI	MDC		✓	Hospit al anxiety and depres sion scale (HADS), Impact of Event Scale (IES), EORT C QOL questi onnair e	Haem		
Schimmer AD, Dranitsaris G, Ali V, Falconer M, Keating A (Canada)	The number of long-term survivors of autologous blood and marrow transplantation (ABMT) is increasing. A multidisciplinary long-term follow-up clinic for survivors of ABMT is operating well with 85% patient satisfaction and is inexpensive on economic analysis.	The autologous blood and marrow transplant long-term follow-up clinic: a model of care for following and treating survivors of autotransplant	Support Care Cancer 2002; 10(3):247–752	D	MDC clinic				Haem	✓	

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					Model of care	MDT make-up	MDT meetings	Infrastructure/ tools	Tumour	Impact on quality/ education	Barriers
Underhill C, Koschel A, Szer J, Steer C, Clark K, Grigg A et al. (Aust)	A regular MDM was conducted by teleconference between a tertiary metro site and a regional practice to discuss cases of patients with haematological malignancies. Information from team meetings was recorded to capture adherence to process and clinician outcomes. An educational program was developed. Outcomes included better coordinated care, updated treatment policies and guidelines, and increased clinician satisfaction and knowledge.	Mentoring in the management of haematological malignancies	Asia Pac J Clin Oncol 2010; 6(1):28–34	D	MDT meetings		✓	Teleconference	Haem	✓	

Key

MDC = multidisciplinary care

MDM = multidisciplinary meeting

MDT = multidisciplinary team

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