

CHAPTER 1

Multidisciplinary Care

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OVERVIEW

- The multidisciplinary team (MDT) has become a vital part of the cancer patient's management
- The multidisciplinary team meeting (MDTM) should lead to improved decision making for the benefit of the patient
- Multidisciplinary teams will be constituted differently according to the cancer type
- Decisions on cancer treatment intent and modality depend on the cancer stage and patient performance status and fitness
- The MDTM allows for review of pathology and histology specimens in the diagnosis of the patient's cancer
- Cancer waiting time targets have increased the speed at which patients are treated for cancer in the UK

Introduction

Cancer care is complex. The first treatments were either palliation or surgery. During the twentieth century nonsurgical oncology grew exponentially to provide radiotherapy and chemotherapy. In this century we have begun to see an explosion in biological and targeted therapies, as well as technical developments in the delivery of surgery and radiation. This has been accompanied by parallel improvements in imaging and pathology, and an increasing recognition of the roles of advocacy, support and survivorship. In order to deliver best care for a cancer patient, it has become necessary to form teams to provide all the requisite expertise.

Before the early 1990s, only a small proportion of cancer patients benefited from their care being managed by a team of cancer specialists, meaning that care was often not specialist and that staff worked in isolation. Data collection was poor, as was communication between primary and secondary care.

In 1995, the Calman–Hine report recommended a reorganisation of cancer services such that whenever possible, cancer was managed by a multidisciplinary team (MDT). The MDT is defined in the Department of Health (DH)'s *Manual for Cancer Services* as the meeting of a group of professionals at a given time or

place to make decisions regarding treatment options for individual patients. In 2000, Cancer Networks were formed to bring together the providers of cancer care (organisations that deliver cancer services to patients) and the commissioners of cancer care (organisations that plan, purchase and monitor cancer services) in order that they could work together to plan and deliver high-quality cancer services for specific populations. There are currently 28 Cancer Networks in England.

Since 1995, the establishment of MDTs in the UK has been mandated by the requirements of peer review, a process led by the National Cancer Action Team and monitored by Networks. Over 95% cancers are now managed by an MDT.

Common cancers (e.g. breast and lung) are often managed by MDTs based at the local hospital. Rarer cancers (e.g. head and neck) may be referred to a Network specialist MDT based at the cancer centre within the Network. Very rare cancers (e.g. sarcoma) may be managed by a regional MDT serving several Cancer Networks.

The MDT will usually meet on a regular basis to discuss cases at a multidisciplinary team meeting (MDTM). The MDTM requires careful preparation and review of clinical materials before discussion by the wider team. Frequently, members from the wider team will use teleconferencing facilities to join discussions. Supporting a large team and investing in required the infrastructure is expensive; cost estimates range from approximately £90 per patient discussion in a high-volume local breast MDTM to more than double that for a regional specialist head and neck MDTM.

Membership of the MDT is determined by the needs of patients and will vary according to the disease. The MDT is made up of clerical and support staff, core members whose presence is essential to decision making and extended members who will have valuable input into the processes of the MDT and into occasional individual patients. Core members are expected to attend each MDTM (see Table 1.1).

Evidence for MDT working

It has proved difficult to gain evidence for the effectiveness of MDTs due to their universal implementation (preventing control groups) and the concurrent changes in cancer treatment (complicating historical comparisons). Nonetheless, there are data which show improvements in cancer outcomes, including survival, in areas which implemented MDT processes compared to areas which did

Table 1.1 Core and extended members for breast and head and neck cancer MDTs. MDTs will be constituted differently according to the expertise required to give best care for each type of cancer.

	Breast MDT	Head and neck MDT
Common core members		Team secretary MDT coordinator Clinical nurse specialist Pathologist Radiologist Oncologist
Core members	Breast surgeon	ENT surgeons Maxillofacial surgeons Plastic surgeons Restorative dentist Speech and language therapist Senior ward nurse Palliative care specialist Dietitian
Common extended members		Social worker Psychiatrist/clinical psychologist Physiotherapist Occupational therapist
Extended members	GP Palliative care specialist Breast radiographer Plastic surgeon Clinical geneticist/genetics counsellor Lymphoedema specialist Orthopaedic surgeon with expertise in management of bone metastases Neurosurgeon	Anaesthetist with a special interest in head and neck cancer Gastroenterologist Ophthalmologist Pain management specialist Nuclear medicine specialist Therapeutic radiographer Maxillofacial/dental technician Dental hygienist

not. A large retrospective cohort study of nearly 14 000 patients in neighbouring areas in Scotland showed 18% lower breast cancer mortality in the area introducing MDTs (despite a higher mortality prior to MDT working).

MDT working also appears to increase work-related satisfaction in the team, as well as clinical trial recruitment.

Having a broader range of professional opinions available seems likely to benefit a patient. Teams are likely to generate higher-quality solutions and to have a wider sense of ‘ownership’ of the eventual decision. There are however problems inherent in the team decision-making process: it may be dominated by individuals, or the team may be susceptible to ‘groupthink’ (defined as a deterioration in mental efficiency and moral judgement as a result of in-group pressure). Psychologists have also described ‘risky shift’, in which the decision made carries higher risk than that made by individuals, as the group feels reduced accountability.

A survey of over 2000 MDT members conducted by the National Cancer Action Team in the UK concluded that the most important aspects of MDT effectiveness were leadership, communication between members and time for preparation.

Databases

The MDT is the perfect forum in which to capture detailed disease data. These give epidemiological data and highlight regional and local variations in disease presentation and treatments. Many MDTs will use purpose-built data information systems such as the Somerset data system (developed by health care staff in Somerset) and commercial systems (e.g. InfoFlex).

In addition to these local databases, MDTs in England are mandated to supply information to various national cancer audits, including LUCADA (for lung cancer), DAHNO (for head and neck cancer) and the National Colorectal Audit.

Cancer waiting times

Patients may be referred directly to an MDT by primary care doctors who suspect cancer. Facilitating this process, there are agreed key symptoms/signs listed on referral pro formas in order to help triage (see Table 1.2). Patients referred to secondary care and subsequently found to have cancer should be ‘fast tracked’ into the MDT. Patients may also enter the MDT system as a result of participation in national screening programs for breast, colorectal and cervical cancers.

In 2000, the NHS introduced cancer waiting times which specified that patients with suspected breast cancer should be seen within 2 weeks of referral. These waiting times have been expanded such that in 2011 there is now a comprehensive set for all cancers (see Figure 1.1). An MDT has an administrator (sometimes referred to as a ‘patient pathway coordinator’) who tracks and reports these wait times nationally. Studies of MDTs show that they reduce cancer wait times.

In the UK, over 95% of people are now seen by a specialist within 2 weeks of an urgent GP referral for suspected cancer and over 98% of people treated receive their first definitive treatment within 31 days of receiving their diagnosis.

Treatment intent

A fundamental principle of treatment selection is deciding the intent of treatment. The MDT will use information on staging and patient

Table 1.2 Examples of referral pro formas used in primary care, detailing symptoms that may lead to suspicion of cancer (lung and upper gastrointestinal (GI) cancer shown).

Lung	Upper GI
Persistent haemoptysis in smoker or ex-smoker >40 years	Dysphagia
Unexplained or persistent symptoms (>3 weeks): - cough - wheeze - weight loss	Persistent vomiting and weight loss
Breathlessness	Unexplained iron-deficiency anaemia
Chest/shoulder pain	Unexplained weight loss
	Unexplained abdominal pain and weight loss
	Upper abdominal mass
	Obstructive jaundice

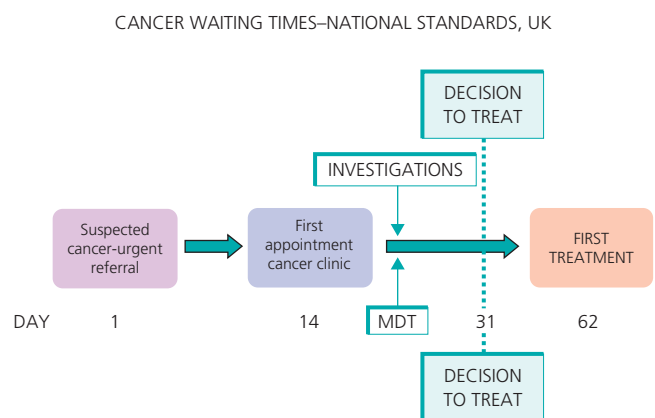


Figure 1.1 National cancer waiting times and the cancer care pathway. Updated version of the national cancer waiting times originally set out in the NHS Cancer Action Plan (2000). There are three national cancer waiting time standards designed to reduce waiting times between referral and diagnosis and between diagnosis and treatment: (1) 2-week wait rule – all patients with an urgent GP referral for suspected cancer should wait not more than 14 days between referral (Day 1) and assessment by a hospital specialist (Day 14); (2) 62-day standard – all patients referred under the 2-week wait rule should be assessed and have treatment initiated within 62 days; (3) 31-day standard – cancer patients should wait no more than 31 days to receive their treatment from the date the treatment decision is made, regardless of their referral priority. The initial MDTM discussion (and necessary investigations) usually takes place between the patient’s first assessment in clinic and the date their treatment decision is made. However, there is no mandatory date for the MDTM.

fitness to determine whether treatment will be radical (aimed at cancer cure) or palliative (aimed at symptom control and/or life extension). ‘Adjuvant therapy’ is a term derived from the Latin *adjuvans*, ‘to help’, and describes treatment given as an addition to radical therapy. Neoadjuvant treatment (usually chemotherapy) is given before planned radical therapy.

There are multiple factors which influence treatment selection (see Box 1.1).

Box 1.1 Factors influencing treatment selection by the MDT

- Age.
- Stage/extent of disease.
- Prognosis.
- Functional status.
- Comorbidities/general health.
- Performance score.
- Previous treatments.
- Whether primary is known.
- Magnitude of treatment (e.g. intensive long-course chemotherapy or difficult surgery).
- Fitness for surgery/anaesthesia.
- Likelihood of complications.
- Ability to rehabilitate after treatment.

Staging

The MDT will use review of radiological imaging (see Chapter 2) to help establish the disease stage using an agreed staging system

(Tumour/Node/Metastasis (TNM) or American Joint Committee on Cancer (AJCC)). The MDT radiologist will have organ-specific imaging expertise and will be able to direct the most appropriate imaging sequence. The team will also have a histopathologist as a key core member, who will review biopsy and excision specimens, the pathology being crucial to the correct diagnosis. As with radiology, the pathologist will have disease-specific expertise and will be able to guide specialist immunohistochemistry to assist diagnosis. Increasingly, the specialist MDT pathologist will be involved after diagnosis in establishing whether specific molecular markers of treatment sensitivity are present (e.g. HER-2 status in breast cancer, KRAS mutations in colorectal cancer, BRAF mutation in melanoma). After diagnosis and following radical surgery, the pathologist will liaise with the operating surgical team at the MDTM to review the excised disease and establish risks for recurrence in order to assist the oncologists in planning adjuvant treatments.

Patient assessments

Along with the correct diagnosis and staging of the disease, an accurate assessment of the patient’s fitness is required. The most useful and simple patient assessment is the performance status score. The Karnofsky (Table 1.3) and the ECOG/WHO/Zubrod (Table 1.4) scores are 10- and 5-point systems respectively which summarise a patient’s global health and ability. The ECOG/WHO/Zubrod score was developed in 1982. Despite its simplicity, it has very high predictive and prognostic value in evaluating a patient’s likely response in almost all cancers. It is good practice to record the performance score of each patient.

More complex patient assessment tools are available, particularly for the elderly cancer patient (see Chapter 13).

What makes an effective MDT

An MDT makes treatment recommendations rather than decisions (which require dialogue with the patient). An effective MDT will do this best when membership consists of the correct specialists and there is appropriate time to prepare. The effective

Table 1.3 Karnofsky Performance Status score.

Rating	Meaning
100%	Normal, no complaints, no signs of disease
90%	Capable of normal activity, few symptoms or signs of disease
80%	Normal activity with some difficulty, some symptoms or signs
70%	Caring for self, not capable of normal activity or work
60%	Requiring some help, can take care of most personal requirements
50%	Requires help often, requires frequent medical care
40%	Disabled, requires special care and help
30%	Severely disabled, hospital admission indicated but no risk of death
20%	Very ill, urgently requiring admission, requires supportive measures or treatment
10%	Moribund, rapidly progressive fatal disease processes
0%	Death

Table 1.4 ECOG/WHO/Zubrod performance status score.

Grade	Meaning
0	Fully active, able to carry on all pre-disease performance without restriction
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g. light house work, office work
2	Ambulatory and capable of self-care but unable to carry out any work activities, up and about more than 50% of waking hours
3	Capable of only limited self-care, confined to bed or chair more than 50% of waking hours
4	Completely disabled, cannot carry out any self-care, totally confined to bed or chair
5	Dead

MDT will communicate well with its members but also with primary and secondary care. Adherence to guidance should be

high, as should recruitment to clinical trials. Improved outcomes for the patient and better satisfaction for the staff should be the outcome.

Further reading

National Cancer Action Team (n.d.) Ensuring better treatment: multi-disciplinary team development, <http://ncat.nhs.uk/our-work/ensuring-better-treatment/multi-disciplinary-team-development#> (last accessed 8 March 2013).

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