

MEETING PATIENTS' NEEDS

IMPROVING THE EFFECTIVENESS OF
MULTIDISCIPLINARY TEAM MEETINGS
IN CANCER SERVICES



CANCER
RESEARCH
UK

ACKNOWLEDGEMENTS

Cancer Research UK commissioned 2020 Delivery to carry out this study.

We are grateful for the valuable input of our steering group, comprised of Lucy Absolom, Helen Beck, Katie Connor, Alison Evans, Jessica Fray, Diane Gagnon, Rose Gray, Emma Greenwood, James Green, Lucy Ironmonger, Emlyn Samuel, Diana Tait and Cath Taylor. It is particularly worth highlighting the contribution of Diane Gagnon, who ensured that the views of people affected by cancer were represented throughout this research.

We are also very grateful for the contributions of our clinical panel: Peter Cavanagh, Stephen Fenwick, Peter Furness, Marianne Illsley, Peter Kirkbride and Richard Simcock.

We are grateful to all who participated in our surveys, who allowed their MDT meetings to be observed and who took the time to discuss their views with us throughout the project.

The authors of this report are:

Rose Gray
Ben Gordon
Mike Meredith

Thank you to Cath Taylor¹ and James Green² for their expert peer review of the research, and to Alastair Munro and others who provided comments on earlier drafts of the report.

ABOUT CANCER RESEARCH UK

Cancer Research UK is the world's largest independent cancer charity dedicated to saving lives through research. It supports research into all aspects of cancer and this is achieved through the work of over 4,000 scientists, doctors and nurses. In 2015/16, we spent £432 million on research in institutes, hospitals and universities across the UK. We receive no funding from the Government for our research and are dependent on fundraising with the public. Cancer Research UK wants to accelerate progress so that three in four people survive their cancer for 10 years or more by 2034.

For more information on this report, or on our policy research more generally, contact policydepartment@cancer.org.uk

Cancer Research UK is a registered charity in England and Wales (1089464), Scotland (SC041666) and the Isle of Man (1103) www.cancerresearchuk.org

¹ Dr Cath Taylor, Senior Lecturer, Florence Nightingale Faculty of Nursing and Midwifery, Kings College London

² Professor James Green, Consultant Urological Surgeon, Barts Health NHS Trust and Visiting Professor London South Bank University

CONTENTS

LIST OF ACRONYMS	5
LIST OF FIGURES AND TABLES	6
EXECUTIVE SUMMARY	7
1. BACKGROUND	12
2. THERE IS NOT ENOUGH TIME TO DISCUSS THE MORE COMPLEX PATIENTS	21
3. CURRENT MDT MEETING ATTENDANCE IS NOT OPTIMAL	28
4. THE RIGHT INFORMATION IS OFTEN NOT USED TO INFORM IN DISCUSSIONS	31
5. MDTs ARE UNABLE TO FULFIL THEIR SECONDARY ROLES: IN DATA VALIDATION, AUDIT AND EDUCATION	36
6. CONCLUSIONS AND RECOMMENDATIONS	39
APPENDIX 1. METHODOLOGY	41
APPENDIX 2. TEXT OF FIRST SURVEY OF MDT MEMBERS	51
APPENDIX 3. TEXT OF SECOND SURVEY OF MDT MEMBERS	54
APPENDIX 4. TEXT OF SURVEY FOR PEOPLE AFFECTED BY CANCER	65
REFERENCES	68

LIST OF ACRONYMS

CNS	Clinical nurse specialist
LHB	Local Health Boards
MDT	Multidisciplinary team
NICaN	Northern Ireland Cancer Network
NICE	National Institute for Health and Care Excellence
QPI	Quality Performance Indicators
SIGN	Scottish Intercollegiate Guidance Network

LIST OF FIGURES

Figure 1: Relative growth in MDT activity in England compared to growth in staff numbers

Figure 2: Average scores for importance and average compliance of different standards in MDT meetings

Figure 3: Count of patient discussions by duration

Figure 4: Comparing actual MDT discussion length with patients' expectations

Figure 5: The outcome of patient discussions

Figure 6: Receptivity of MDT members to streamlining MDT meetings, across different tumour types

Figure 7: Count of total number of people contributing to each discussion

Figure 8: People affected by cancer's views on MDT discussions

Figure 9: Unit cost of MDT discussion, adjusted for inflation (consumer price index)

Figure 10: Growth in number of MDT discussions and WTE of staffing groups in England, normalised relative to 2011 levels

Figure 11: Respondent numbers by profession/specialty

Figure 12: Respondent numbers by MDT role

Figure 13: Respondent numbers by tumour group of primary MDT

Figure 14: Respondents to follow-up survey, broken down by nation

Figure 15: Respondents to follow-up survey by profession or discipline

Figure 16: Respondents to follow-up survey by tumour site or type

Figure 17: Respondents to follow-up survey by meeting level

LIST OF TABLES

Table 1: Sources on the cost of MDTs

Table 2: Trends in unit and total cost of MDTs 2011/12 to 2014/15

Table 3: Annual Growth Rate in Medical/Surgical and Nursing Staff from 2010 to 2014

Table 4: MDT meetings observed

EXECUTIVE SUMMARY

Around 357,000 people in the UK were diagnosed with cancer in 2014¹. This figure is expected to increase: by 2035 the number of diagnoses each year could reach 500,000². Survival has also increased; Cancer Research UK aims to reach 3 in 4 people surviving their cancer for 10 years or more by 2034.

To ensure that this ambition is realised, effective cancer services in the UK are key.

Central to the UK's cancer services are multidisciplinary teams – MDTs. An MDT is made up of a variety of health professionals involved in treating and caring for patients, such as surgeons, clinicians, nurses and diagnosticians. Each week, the MDT meets to discuss individual patients' cases and make treatment recommendations.

MDT working is considered the gold standard for cancer patient management³, bringing continuity of care and reducing variation in access to treatment – and ultimately improving outcomes for patients. However, the UK's health services have changed significantly since their introduction in 1995.

There is now a timely opportunity to review MDTs and consider new ways of working. Although the challenges in each of the four nations are not identical, there is a common theme: a dramatic increase in demand, with only minor increases in capacity. For example, the cancer strategy for England contained recommendations to streamline MDT working.

The number of patients to be discussed in MDT meetings has grown significantly, as has the complexity of patients; due to an ageing population and the growing number of treatment options available.

However, the way that MDT meetings are organised has not adapted to cope with this increased demand. This has meant that MDT meetings are lasting for several hours, with only a few minutes available to discuss each patient. As a result, these discussions often only involve a few people, and often do not include information such as the patient's preferences, comorbidities or whether the patient is suitable for a clinical trial.

This strain has also impacted how well the MDT can reflect on their decisions, improve their processes and learn.

To reflect the changing nature of cancer care and the increased demand for services, there is a need to refresh the format of MDT meetings to make them work more effectively.

Recognising this, Cancer Research UK commissioned 2020 Delivery to undertake this project.

We do not in any way propose removing or diluting MDT working, or to return to the pre-1990s era of patient care being solely managed by one clinician. We aimed instead to suggest streamlining MDT meetings and improve the quality of discussions, especially for the more complex patients who would benefit the most from the input of the full MDT.

Throughout this research we were struck by the willingness of MDT members to be involved, to share their experiences and to improve their meetings so that they worked better for patients – with an unprecedented 2,300 responses to our first survey and over 1,250 in our second. Our fieldwork covered 624 patient discussions, across 24 MDT meetings in 10 clinical sites.

Solutions will not be the same for every MDT, or every specialty. However, in several areas

there is a need for updated guidance developed on a national level.

This research should therefore be the start of further, in-depth work to implement these recommendations.

There is not enough time to discuss the more complex patients

The mean length of the 624 patient discussions observed in this study was 3.2 minutes, and over half of MDT discussions were less than two minutes long. Meetings could last up to five hours.

It is difficult to imagine that this method of working produces the same quality of discussion for all patients, or that there is always enough time for full discussion of patients with particularly complex cases.

For many tumour sites, certain subgroups of patients now follow very well-established treatment protocols. 74 per cent of MDT members responding to our second survey agreed with the statement that some patients could be streamlined, or reviewed outside of the full MDT meeting. This already happens in some MDTs, but to date there has been no clear national guidance on how this should be managed.

Establishing a 'triage' process to identify patients that should follow these protocolised pathways would reduce the number of discussions happening in the full MDT meeting, allowing more time to discuss the more complex patients.

Recommendation 1: The UK's health services should work with NICE³ and SIGN⁴ to identify where a protocolised treatment pathway could be applied and develop a set of treatment recommendations for each of these, to be implemented across the UK. Every Cancer Alliance or devolved cancer network should develop their own approach based on these central recommendations. These treatment protocols should be reviewed regularly.

Recommendation 2: MDTs for tumour types for which a protocolised approach has been developed should agree and document their approach to administering protocols. This could include a 'pre-MDT triage meeting'. The implementation and outcomes of these protocols should be audited and reviewed by the full MDT in an operational meeting.

Current MDT meeting attendance is not optimal

The growing demands placed on MDTs has a significant impact on MDT members' workloads, who must spend increasing amounts of time preparing for or attending MDT meetings. This is particularly true for pathologists and radiologists. Workforce challenges are wider than MDT working however; the National Audit Office has said that there is a 50,000 shortfall in clinical staff in England alone⁴.

The 24 meetings observed in this study had between 7 and 27 in attendance, with an average of 14. However, the mean number of people contributing to each discussion was only three – with discussions involving just one or two people not uncommon. In some meetings everyone spoke at some point, whereas in others it was always the same few people.

In contrast to this observation, other MDT meetings were unable to finalise any treatment recommendation because certain individuals were not present. This was mostly a result of a

³ National Institute for Health and Care Excellence

⁴ Scottish Intercollegiate Guidelines Network

wider staff shortages.

Attendance guidelines are most strict in England, where MDT attendees are required to attend 66 per cent of meetings. This target is often difficult to reach, meaning that many MDTs fall foul of national assessments and there are delays in patient care.

Amending such guidelines to focus instead on individual specialty cover within a meeting would strike the right balance. This would ensure that the right specialties are represented so as to ensure that discussions can progress, without requiring an unnecessarily large group. MDT members were very supportive of this, with 80 per cent supporting a move to requiring specialty cover⁵. When staff are mandated to attend MDTs, adequate time must be allocated in their job plans for preparation and attendance.

Recommendation 3: National requirements for individual minimum attendance should be reviewed and amended where necessary, with an emphasis on ensuring all required specialties are present at a meeting.

NHS England should run a series of pilots to determine optimal percentage attendance requirements. The success of these pilots should be evaluated and national guidance changed as appropriate.

The right information is often not used to inform in discussions

An MDT's treatment recommendation is only as good as the information it takes into account. MDT discussions must include all relevant information about a patient, so that the patient is given the most appropriate recommendation and can go on to achieve the best outcome possible.

In seven per cent of discussions observed, decisions were deferred due to either missing information (usually diagnostic imaging results) or missing core MDT members. When information was missing, a treatment recommendation could not be made and so they were deferred for discussion at the following meeting, a week later – introducing an unnecessary seven-day delay, which is distressing for the patient and can lengthen their wait to start vital treatment.

We also found that only 14 per cent of discussions included information that did not relate specifically to their tumour, for example the patient's preference, known comorbidities or psychosocial status. Although many expected this to be the role of the clinical nurse specialists, in over 75 per cent of meetings there was no verbal contribution from nurses at all in discussions⁶. Only 25 per cent of the patients we surveyed were satisfied with the amount of information they were able to contribute to the MDT meeting⁷.

This has a demonstrable impact on patient experience, as well as on clinical care: research has found that between 10 and 15 per cent of MDT recommendations are not implemented, the patient preferring more conservative treatment, since the discussion had not considered information such as their comorbidities or their preferences^{5,6}.

Clinical trial recruitment can also be facilitated via MDTs; however we know that there is

⁵ Responses to our second survey of MDT members. Full text of the second survey is available in Appendix 3.

⁶ See Appendix 1 for full methodology.

⁷ See Appendix 4 for text of patient survey.

considerable variation across the UK in how many patients are spoken to about research opportunities. Disappointingly, only eight of the 624 MDT discussions observed mentioned clinical trials at all.

One way of ensuring that all relevant information is considered by the MDT would be to implement a standardised proforma, which would be completed by the clinician referring the patient to the MDT. 54 per cent of MDT members already use some form of proforma, but this is not consistent and there is no national guidance on content. 81 per cent of MDT members felt that using a proforma would have a beneficial impact on meeting efficiency.

Recommendation 4: The UK's health services should lead the development of national proforma templates, to be refined by MDTs. MDTs should require incoming cases and referrals to have a completed proforma with all information ready before discussion at a meeting.

The proforma could include:

- Patient demographics
- Diagnostic information
- Patient fitness and co-morbidities; history of previous malignancies
- Results from a Holistic Needs Assessment, if available
- The patient's preferences (if known)
- The rationale for requiring MDT discussion
- Whether there were known treatment protocols for the specific tumour type
- Whether the patient is suitable for any current clinical trials

The MDT should have the power to bypass this requirement in exceptional circumstances.

MDTs are unable to fulfil their secondary roles: in data validation, audit and education

As well as making treatment recommendations, the MDT plays several other roles: facilitating data validation, ensuring consistency in decision-making, educating team members and managing the pathways of the patients within their care. Discussion amongst steering group members, and responses to our surveys, indicate concern that current pressures have limited these aspects of MDT working.

Since their introduction, the MDT has played a vital role in ensuring timely and accurate data validation. This has been hugely important for auditing services and facilitating information flows to national cancer registries. However, we found the extent to which this happened highly variable. The best example seen in our observations was when information was directly added by an oncologist, and was projected on a screen for the whole MDT to view. Real time data entry reduces errors and provides an immediate opportunity to validate and clarify information.

As a central tenet of cancer services, it is important that MDTs review their own performance and that a culture of continuous improvement is fostered. Less than half (48 per cent) of MDT members felt their MDT has a process in place that is sufficient for improving their effectiveness. The suggestion of holding a regular 'operational' meeting, either quarterly or biannually, was supported by 67 per cent of respondents to our second survey.

Recommendation 5: MDTs should use a database or proforma to enable documentation of recommendations in real time. Ideally this should be projected so that it is visible to team

members; if this is not possible there should be a named clinical individual responsible for ensuring the information is accurate. Hospital Trusts and boards should ensure that MDTs are given sufficient resource to do this.

Recommendation 6: each MDT should ensure that they have a mortality and morbidity process to ensure all adverse outcomes can be discussed by the whole MDT and learned from, rather than discussed in silos. The primary time for this to take place should be a quarterly or biannual operational meeting. Time for quarterly operational meetings should be included in attendees' job plans. There should be oversight from national MDT assessment programmes.

1. BACKGROUND

1.1 CANCER IN THE UK

Around 357,000 people in the UK were diagnosed with cancer in 2014⁷. Research has suggested that by 2035, this number could reach 500,000⁸. This increase is mostly due to an ageing population, but also partly due to lifestyle changes.

More people are surviving their cancer now than ever before, thanks to many factors including earlier diagnosis and improved treatments. However, UK survival remains lower than the best-performing nations, and there is variation across the country⁹.

Well-functioning, high-quality cancer services across the UK are crucial to ensuring that this gap is closed and that the UK can continue to meet the needs of its population.

However, these services are already under considerable pressure. This is evident in performance against national waiting time targets which can act as a barometer for cancer services. In England, the target of 85% of people receiving treatment within 62 days of urgent referral for suspected cancer has now been missed for over two and a half years¹⁰. Whilst not directly comparable, the Scottish target has been missed for over three years¹¹; the Welsh target has been missed for over seven and a half years¹² and Northern Ireland have never met their target¹³.

Before beginning treatment, patients are discussed at a multidisciplinary team (MDT) meeting. In this meeting, a wide range of health professionals meet in order to make recommendations regarding patients' treatment and care. These meetings, and MDT working more broadly, are a central part of cancer services. Because of this, the pressure facing cancer services as a whole is also felt acutely by MDTs and their effectiveness is therefore of great significance.

The 2015 cancer strategy for England¹⁴ described MDTs as the 'gold standard' for cancer patient management. However, recognising the significant challenges faced by MDTs today, the strategy also made several recommendations for change:

“Recommendation 38: NHS England should encourage providers to streamline MDT processes such that specialist time is focused on those cancer cases that don't follow well-established clinical pathways, with other patients being discussed more briefly.

Recommendation 39: NHS England should require MDTs to review a monthly audit report of patients who have died within 30 days of active treatment, to determine whether lessons can be learned about patient safety or avoiding superfluous treatment.

Recommendation 40: The Trust Development Authority, Monitor and NHS England should strongly encourage the establishment of national or regional MDTs for rarer cancers where treatment options are low volume and/or high risk. Clinical Reference Groups will need to play a key role in supporting these.”¹

The most recent Welsh cancer strategy stated that MDTs remain the cornerstone of patient management in secondary care, and set out the intention to enhance their role as vehicles for governance and improvement¹⁵.

1.2 THE GROWTH OF THE MDT

Before the introduction of multidisciplinary team working, a cancer patient's care was often determined solely by one clinician. Care at this time was categorised by non-uniform access to specialist care, disjointed referrals, missed opportunities for adjuvant treatment, and variation – in treatment uptake, caseload for each clinician and ultimately in outcomes for patients¹⁶.

The Calman Hine report for England and Wales¹⁷ (1995) and the equivalent report for Scotland¹⁸ recommended a step-change for how patients should be managed: not by an individual, but by a multidisciplinary team –an MDT. A cornerstone of MDT working was a weekly MDT meeting, where the team would meet to discuss the patients under their care and make recommendations on their treatment plans. As before, the ultimate decision would then be made between the treating clinician and the patient.

MDT working, and the MDT meeting, were intended to ensure consistency and continuity of care, promoting best practice and reducing variation in access to treatment. The meeting also provided a forum for team communication and education, as well as the collection of data for audit and research.

This approach was enshrined in England's Cancer Plan in 2000 and was rapidly adopted across the UK¹⁹. For example, the proportion of patients in England managed by an MDT rose from under 20 per cent in 1994 to over 80 per cent in 2004²⁰. MDT working was officially included in national guidance that year, which stated that all patients newly diagnosed with cancer in England should be discussed at an MDT meeting.

MDTs are now well established across the UK. Membership typically includes surgeons, radiologists, pathologists, medical and clinical oncologists, specialist nurses, an administrative co-ordinator and others⁸, with different membership requirements for different tumour types. These are used across the UK for all cancer types as well as some other conditions, for example diabetes, stroke and coronary heart disease. MDTs are mandated to discuss newly-diagnosed patients. Some MDTs have been established to care for those with metastatic or recurrent disease, but this practice is not widespread.

A similar approach is taken by Australia and Canada, while other countries such as Germany and the USA use tumour boards. The primary function of tumour boards is usually retrospective review rather than treatment planning; the meeting contains fewer members of staff and fewer, more complex patients.

1.2.1 BENEFITS OF MDTs

Given the widespread use of MDTs and the complex nature of healthcare systems, it is extremely difficult to robustly assess the impact of introducing MDT working. However, there is some limited observational evidence to link decision-making through MDT working to improved survival for some cancer types²¹²²²³²⁴²⁵²⁶²⁷

However, a literature review published in 2012 found that MDTs often led to changes in diagnoses and treatment plan, but evidence demonstrating a direct impact on patient outcomes was less strong²⁸.

It has been argued that since there is still variation in treatment uptake, MDTs have not been

⁸ For example dieticians, palliative care specialists and radiographers

entirely successful in their aim of reducing variation²⁹. There is still significant variation in surgical activity, for example: the proportion of people diagnosed with lung cancer who are treated surgically varies between 2 and 45 per cent across different hospitals³⁰.

However, it is important to note that MDT working has benefits that reach further than the treatment recommendation. MDTs are widely recognised as being important forums for team-building, education and fostering a collegiate atmosphere. In a national survey of MDT members conducted by the National Cancer Action Team in 2009, 90 per cent of respondents felt that working as part of an MDT was beneficial to their mental health and 81 per cent felt that it increased job satisfaction³¹.

1.3 NATIONAL POLICY AND GUIDANCE ON MDTs

National requirements for MDTs vary across the four UK nations, as do processes for their assessment, although there are some elements of similarity.

ENGLAND

The first national guidance was introduced in 2004 in England's Manual for Cancer Services³², which stated that all newly-diagnosed patients should be discussed at an MDT meeting. English MDTs are now assessed annually through Peer Review, which is managed by NHS England's Quality Surveillance Team. Several standards are in place relating to membership, attendance, minimum workloads, review processes, as well as requirements for locally-agreed clinical guidelines and patient pathways. Further guidance for MDTs is published by NICE, in the form of site-specific Improving Outcomes Guidance which defines the role, functions and membership of the MDT³³.

The latest Peer Review publication made the following observation³⁴:

“There is a general trend of increasing workload for MDTs without increasing capacity resulting in not all cases being discussed and potentially compromising patient pathways of care”.

Some MDTs scored very high levels of compliance, with 40 per cent achieving compliance with over 90 per cent of measures. However, 35 per cent of MDTs assessed were classed either as a 'serious concern' or 'immediate risk' to patients or staff. The key issues leading to these classifications were:

- A lack of functional Cancer of Unknown Primary teams and robust pathways
- Lack of Clinical Nurse Specialist (CNS) resource and cover
- MDTs who do not meet minimum numbers requirements for surgical treatments (as defined in Improving Outcomes Guidance)
- A number of core team members not fulfilling the minimum 66 per cent attendance.

SCOTLAND

In Scotland, Managed Clinical Networks guide the formation and networking of MDTs. The Scottish Intercollegiate Guidance Network (SIGN), which is part of Health Improvement Scotland, develops evidence-based clinical practice guidelines. These are similar to the Improving Outcomes Guidance developed by NICE in England. Site-specific guidance mandates discussion at MDT; the precise guidance varies based on tumour type. MDTs are also assessed on the proportion of patients discussed prior to starting treatments, some are also held accountable for patient outcomes such as treatment-related mortality. This level of

assessment is less extensive than in England.

A number of quality performance indicators (QPIs) have also been developed, in collaboration with Regional Cancer Networks³⁵, which were launched in 2012³⁶. NHS Boards report against these QPIs annually as part of a mandatory programme. The Information Services Division (ISD) has a rolling programme of publishing three tumour-specific reports each year³⁷ and in future, reports will cover data for a three-year period so trends can be seen. Although influential, it is difficult to monitor progress using the QPI programme given the infrequent reporting and limited amounts of data reported.

National reports for melanoma³⁸ and head and neck³⁹ cancers were published this year, covering patients diagnosed between 2014 and 2015. These include assessment at Health Board level of the proportion of patients discussed at an MDT meeting before starting definitive treatment, amongst other standards for diagnosis and treatment.

Scotland's latest cancer strategy, published in 2016, made several references to MDTs; highlighting the importance of the MDTs engaging with people with cancer, their carers and families⁴⁰. The strategy also referenced the need to capture data from MDT discussions across Scotland.

WALES

As in England, the concept of MDT working in Wales was introduced in the Calman Hine report in 1995⁴¹. National Cancer Standards for Wales were first published in 2005, offering guidelines on different elements of care, including MDTs⁴². Unlike in England, these guidelines are not prescriptive on minimum attendance requirements for individuals, but do recommend which specialists should be members of the MDT. Local Health Boards (LHBs) self-report their compliance with these standards in annual reports.

MDTs in Wales are also assessed by the All Wales Peer Review programme, led by the Healthcare Inspectorate Wales. This programme has been in place since 2012⁴³. Each year, the programme reviews all MDTs in a small number of cancer types. For example, in 2015 all urological cancer MDTs were reviewed. The latest report⁴⁴ praised the MDTs for developing 'innovative pathways' and utilising Clinical Nurse Specialists as patients' key workers, but also raised concerns. These were predominantly focused on management issues and staffing. Lack of input from the full range of specialties was a concern in all LHBs. The Peer Review process is considered to be a valuable driver of improvement for Welsh cancer services.

The most recent Welsh cancer strategy stated that MDTs remain the cornerstone of patient management in secondary care, and set out the intention to enhance their role as vehicles for governance and improvement⁴⁵. The Wales Cancer Network have an ongoing programme of work intending to improve the effectiveness of Welsh MDTs and have been developing an 'MDT Charter', which will set out characteristics of effective MDTs in Wales and is due to be published imminently.

NORTHERN IRELAND

MDTs in Northern Ireland are assessed in clinical audits, managed by the Northern Ireland Cancer Registry. The current audit system has been in place since 2006 and covers ten cancer sites, with assessment running in phases as in Scotland.

Northern Ireland is currently undertaking a three-year programme of work of Peer Review for cancer services⁴⁶. Services for haematology, sarcoma, endocrine-thyroid and upper gastrointestinal cancers are scheduled for peer review in 2016. Findings are published annually by the Northern Ireland Cancer Network (NICaN). Services assessed in 2014 were also assessed in 2010, so some comparisons can be made. The 2014 findings broadly suggest a lack of progress; with no specialism found to be consistently implementing best practice⁴⁷.

The overview report for 2015 found that the majority of MDTs had below 50 per cent compliance with indicators⁴⁸; there were specific concerns raised about services where specialist treatment had been centralised, such as brain and central nervous system cancer. Furthermore, reviewers found that some patients were being treated outside established pathways. It is generally felt that the Peer Review process has made a positive impact on services and is strengthening transparency by improving the amount of performance data available to providers and commissioners⁴⁹.

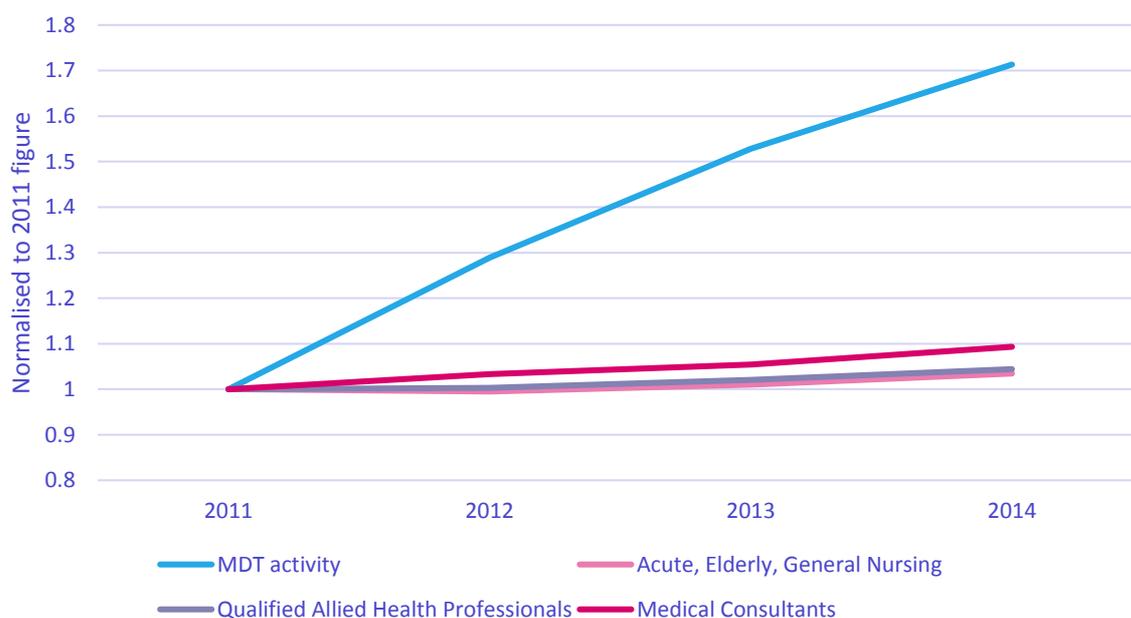
1.4 MDT WORKING IN 2016

The health system in 2016 is very different to how it was in 1995. Furthermore, the number of patient discussions had within an MDT meeting each year has increased. For instance, data collected by the Department of Health in England, which is the most robust on this topic, reports that 1.4 million patient discussions took place in MDTs throughout 2014/15, an increase of approximately 20 per cent each year since 2011⁵⁰. Over the same period, the growth in overall staff numbers of those who attend MDTs has been much slower (Figure 1).

Recruitment for certain clinical positions has also become challenging, with an estimated 50,000 shortfall in NHS clinical staff in England in 2014⁵¹. Cancer Research UK research, recently published, expands on this in relation to imaging, endoscopy and pathology capacity⁵². As a result, MDT meetings and their attendees are under considerably increased pressure.

It has been noted that this pressure disproportionately affects certain professions; namely non-surgical specialties, most notably medical and clinical oncologists, pathologists and radiologists who are often core members of multiple MDTs⁵³.

FIGURE 1: RELATIVE GROWTH IN NUMBER OF MDT DISCUSSIONS IN ENGLAND COMPARED TO GROWTH IN STAFF NUMBERS⁵⁴



Throughout this period the total cost of MDT meetings in England increased from £88 million to £159 million⁵⁵. This increase is mostly due to the staff time required; meetings are incredibly resource-intensive, often involving 15 or more staff attending weekly meetings lasting several hours.

Since the staff numbers have remained the same, the total time spent by each staff member either preparing for or attending MDT meetings has increased dramatically over the past five years.

MDT members interviewed in this study reported that since there are so many more patient discussions to be had in each meeting, the amount of time available for each has reduced considerably. This means that in order to reach all patients on the list, discussions cannot be as in-depth as always required and can feel rushed. Strain is also evident in compliance with national guidelines, as previously discussed.

Some of this increased activity can be attributed to clinical factors. For example, patients and their treatment pathways have become more complex over recent years. As the population ages and cancer survival increases, more people are being diagnosed with multiple other complicating comorbidities or a history of previous malignancy. These factors complicate decision-making significantly and these patients are therefore likely to require more frequent and lengthy discussion at MDTs. The arrival of new treatment options has a similar effect, with more teams involved in delivering cancer care. This complexity is likely to be exacerbated in the future, as more cancer diagnoses are projected and new treatment modalities – such as immunotherapy – enter widespread clinical practice.

However, there are also cultural factors contributing to the increased role of MDTs. MDT meetings were introduced to facilitate multidisciplinary input into a treatment recommendation, in order to produce the best possible outcome for the patients within their

care. We have heard concern amongst some senior clinicians⁹ that MDT meetings are increasingly being considered the primary vehicle for patient management, with every clinical decision being made within the meeting. Especially for those clinicians who have never worked outside of an MDT, the MDT meeting can be relied upon as a ‘rubber stamp’ to ratify each treatment decision. Again, this becomes more likely as complexity increases.

In essence, MDT meetings have somewhat been a victim of their own success – becoming such an integral part of cancer services that discussion outside of the meeting has been compromised. As a result, many more patients are listed. This has had the effect that discussions must be shorter, with fewer people able to contribute and less information taken into account. This has widespread implications for the appropriateness of the MDTs treatment recommendations and can lead to delays in treatment for patients¹⁰. This strain also impacts the ability of the attendees to learn from the discussion.

1.5 AIMS AND SCOPE OF OUR WORK

In light of the challenges discussed, we saw the need for a comprehensive assessment of the current situation – to gauge the opinion of those who attend MDTs and to understand the depth of the challenges they face. We aimed to find solutions that would improve the way that MDT meetings work, improving the quality of discussion and of their treatment recommendations, especially for those patients who most strongly benefit from the multidisciplinary discussion. This study makes a number of recommendations, including those that aim to relieve some of the pressure currently facing multidisciplinary teams.

⁹ Discussions as part of research steering group and feedback from survey of MDT members

¹⁰ Evidence from surveys and fieldwork; full results presented in section 3

Some excellent work has already been done to understand how MDTs function and the factors that underpin their success. One such piece of work is “The Characteristics of an Effective MDT”⁵⁶, published in 2010, which set aspirations for MDTs focused on the qualitative aspects of good team working, and was based on a survey of over 2,000 MDT members. This work covered the following areas and set out the following characteristics of a well-functioning MDT:

- **The Team:** Relevant disciplines should be represented, with dedicated time in their job plans, including a clinician who has met each of the patients being discussed. There should be a culture of teamwork, with strong leadership and a focus on personal development and training.
- **Infrastructure:** There should be an appropriate physical environment, with seats for all team members and good lines of sight. There should be appropriate technology for presenting information (and video-conferencing where required).
- **Meeting organisation and logistics:** A locally-agreed minimum dataset should be presented for each patient. There should be an understanding of the level of preparation required from each attendee, and clear mechanisms for the communication of recommendations to patients. The agenda should be organised logically to make best use of attendees’ time, and ensuring enough time is allocated for patients with complex needs.
- **Patient-centred clinical decision-making:** There should be clear local guidelines regarding standard treatment protocols, as well as if and when patients with advanced or recurrent disease should be discussed. The patient’s views and wishes should be presented and respected, and teams should consider all clinically appropriate treatments, even those that cannot be offered locally.
- **Team governance:** The team should be supported with adequate funding and recognition from the employer. There should be clear local guidelines regarding MDT working, and an annual (or more frequent) review process.

Adherence to these aspirations is not nationally required or assessed and compliance has been observed to vary greatly, with the lowest levels of compliance in the domains of patient-centeredness and prioritisation of complex cases⁵⁷. The aim of this project is not to repeat this work, but to recommend changes that would facilitate the guidelines being implemented consistently across the UK, by streamlining the MDT meeting and ensuring that the original aims of MDT working can be fulfilled.

Our report specifically explores the streamlining of MDTs, but considers other aspects of MDT working in order to make recommendations that can be used to improve MDT meeting effectiveness for all MDTs in all nations of the UK. Further work to explore the specific challenges facing rarer cancer MDTs is ongoing and led by Cancer52, an alliance of 90 charities working in the field of rare and less common cancers.

Many Trusts and networks are also working on improving MDT meetings and are developing new ways of working. We hope that this report will present a balanced overview of the situation across the UK and be a lever for change at a national level.

1.5.1 METHODOLOGY

This study began with desk research, including reviews on MDT guidance, past research on MDT effectiveness and evidence of the pressures faced by MDTs.

Two surveys of MDT members were carried out. The first was intended to identify key issues facing MDTs and received an unprecedented level of interest, gaining 2,294 responses. The second survey, which was used to test emerging recommendations, gained 1,258 responses. We also ran a survey of people affected by cancer, which gained 48 responses.

Fieldwork for this study involved observational audits of MDT meetings, based on an existing MDT measurement tool¹¹ and interviews of MDT members. Over the course of the project, the team visited 10 sites and 24 MDT meetings, covering 624 individual patient discussions.

A full breakdown of methodology can be found in Appendix 1.

¹¹ A tool was developed based on existing observational audit tools: MDT-MOT (Green Cross Medical Ltd) and MDT-MODE (Lamb et al); see Appendix 1 for full methodology

2. THERE IS NOT ENOUGH TIME TO DISCUSS THE MORE COMPLEX PATIENTS

The number of patient discussions happening at MDT meetings has grown considerably over the past few years, yet workforce capacity has not. As seen in section 1.5, the Department of Health in England recorded an increase of approximately 20 per cent each year in MDT activity between 2011 and 2015⁵⁸. Some of this increase can be attributed to increased cancer incidence and increased patient complexity. However, some of this increase is likely due to a growing perception among some clinicians of the MDT meeting being the only vehicle for decision-making and an over-reliance on the weekly MDT meeting.

“More of our patients are getting older, frailer with multiple morbidities and have families often under pressure trying to look after them. This makes decisions more complex.” (Skin Physician)

“Far too many routine decisions are made at MDT [meetings]. We are intelligent, highly trained professionals, but now have been trained to be unable to make a decision.” (Physician)

2.1. THE BIGGEST ISSUE FACING MDT MEMBERS IS A LACK OF TIME

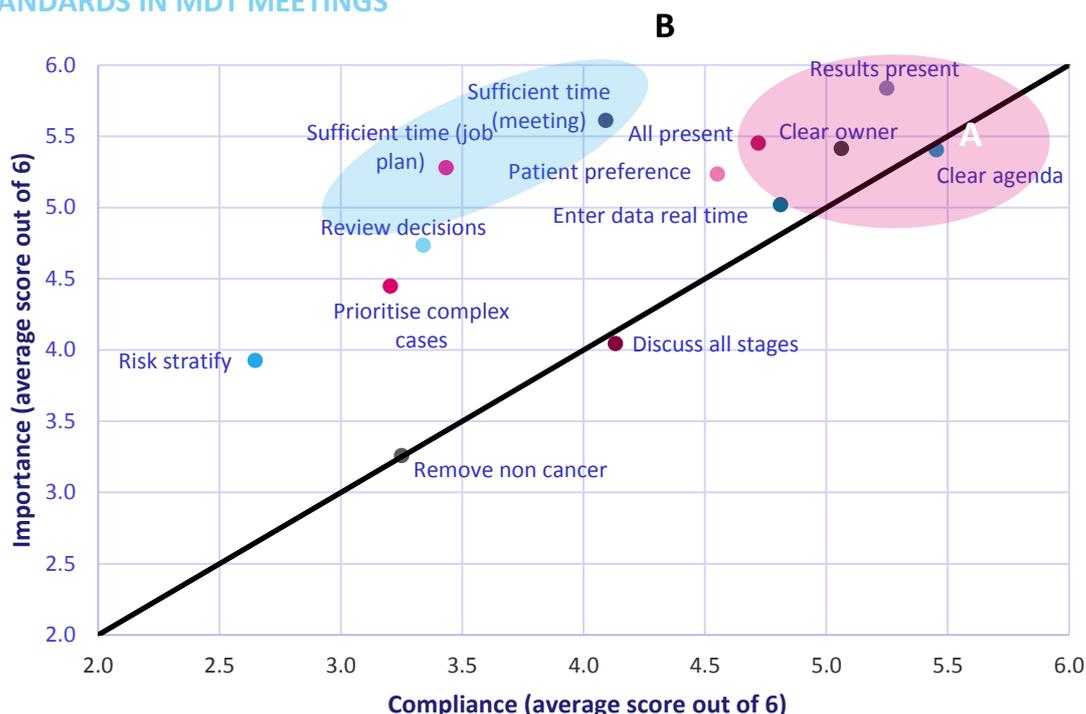
As more and more discussions are had at MDT meetings, discussions become shorter and meetings become rushed – with MDT members not feeling like they have enough time in the meeting. This was reflected in the responses to our first survey and showed clearly that having enough time for discussions was important – but rarely happens.

“The format has not changed in over seven years but the numbers discussed has increased”

- a colorectal clinical nurse specialist

Respondents were asked to rate the extent to which their MDTs achieved a certain standard, and then how important they thought that standard was. Full text of this survey can be found in Appendix 2. Figure 2 shows the average scores for importance versus average compliance plotted for each statement:

FIGURE 2: AVERAGE SCORES FOR IMPORTANCE AND COMPLIANCE FOR DIFFERENT STANDARDS IN MDT MEETINGS



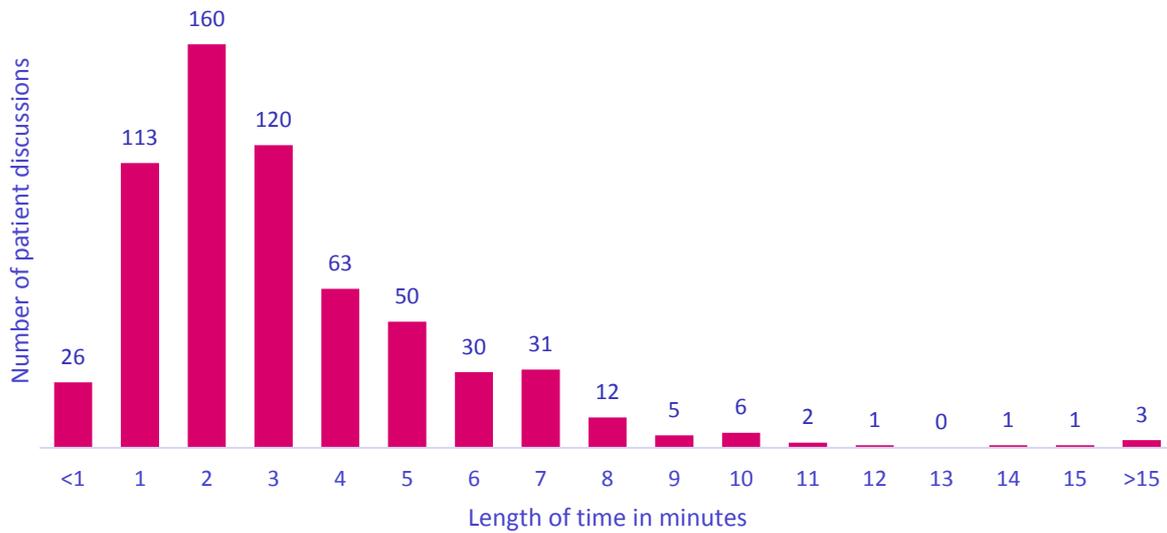
Section A shows standards that MDT members feel are important, and feel that their MDT achieves successfully. Section B shows standards that are considered important, but are not being achieved. A clear finding was that the two factors with the greatest discrepancy between importance and compliance related to having sufficient time: time allocated in job plans to prepare for the meeting, and within the meeting itself.

This pattern was seen for all tumour types, although there was some variation. Those who regularly attend skin cancer MDTs rated the highest discrepancies between importance and compliance for all factors. For example, “having enough time to discuss patients in adequate detail” was the second most important factor, but was rated 10th for compliance. The reason for this is not immediately clear from the data, though past research has suggested that dermatology services in secondary care are under particularly high pressure⁵⁹. Respondents regularly attending head and neck MDT meetings reported the lowest discrepancies.

2.1.1 ALMOST HALF OF MDT DISCUSSIONS OBSERVED WERE LESS THAN TWO MINUTES LONG

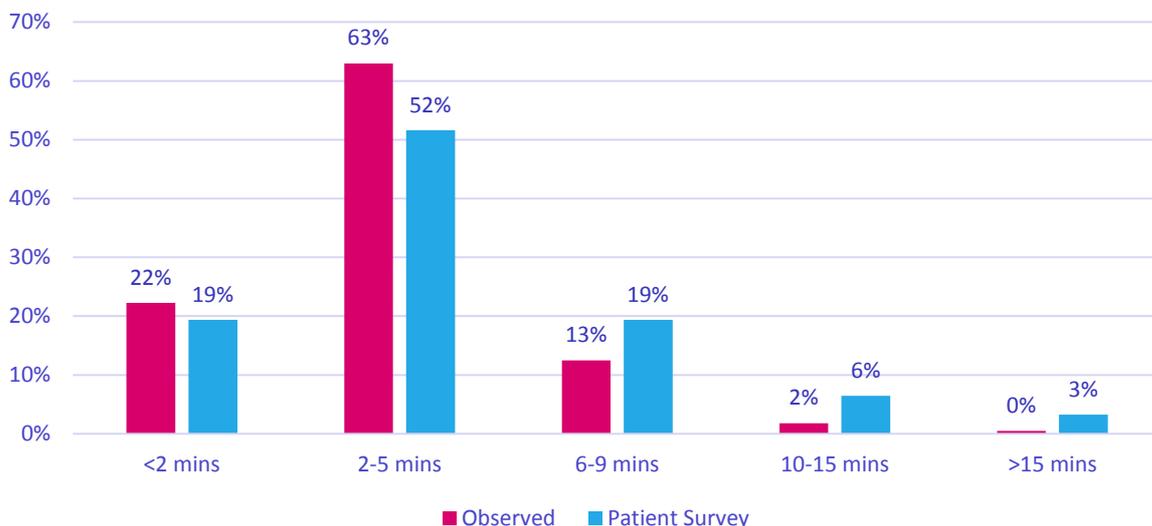
This theme was explored further through our observations of MDT meetings, which found that the mean length of a patient discussion was 3.2 minutes. This was highly variable between the MDT meetings observed; the meeting with the lowest mean time had an average discussion length of 1.9 minutes; whereas the longest was 6.3 minutes per patient. As evident in Figure 3, almost half of all patient discussions (48 per cent) lasted two minutes or less.

FIGURE 3: COUNT OF PATIENT DISCUSSIONS BY DURATION



In our survey of people affected by cancer¹², respondents were asked to estimate how long they believed the discussion of each case in an MDT meeting would take. As shown in Figure 4, estimates showed a similar profile to the actual discussion times observed in the field work; although wider ranges were provided in the survey (for example 2-5 minutes). In general, patients expected that discussions would be longer than they were: 28 per cent of patients expected that a discussion would last longer than six minutes whereas in practice, only 15 per cent of discussions lasted longer than five minutes.

FIGURE 4: COMPARING ACTUAL MDT DISCUSSION LENGTH WITH PATIENTS' EXPECTATIONS



Although two minutes may be sufficient for those patients whose treatment follows well-established clinical protocols, it is unlikely to allow the in-depth, truly multidisciplinary MDT

¹² Full text of this survey is available in Appendix 4

discussion required by many others.

“More time needs to be available for discussion of these [complex] patients at the MDT [meeting], currently there are too many patients for the time available. These are life changing decisions being made about a patient and their future state, and is discussed in a few minutes.” (Head and Neck Radiographer)

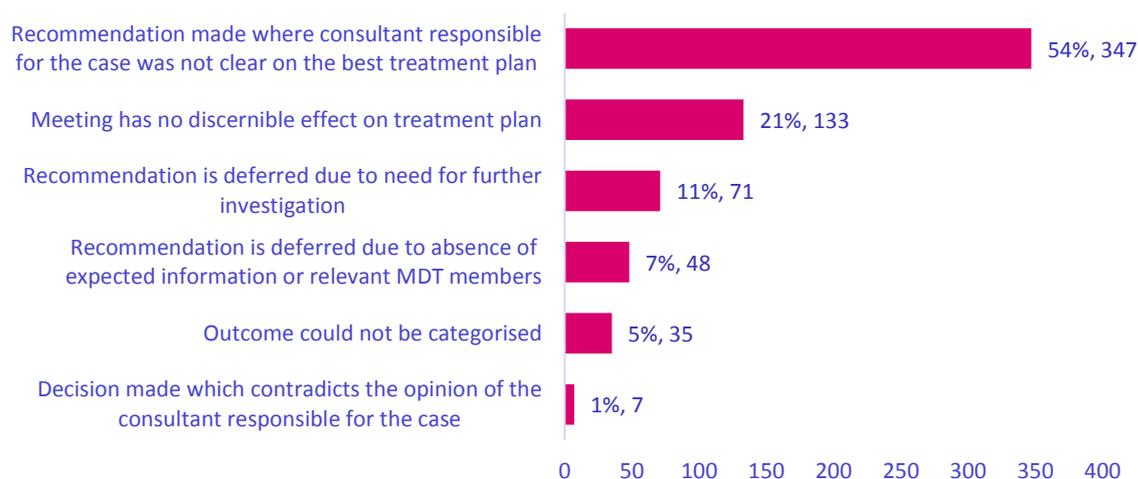
There could be several explanations for so many short discussions: for example, they could have all been very straightforward cases which did not require much discussion, or there could simply be so many patients on the list that no more time could be allocated. Either way, especially in meetings that can last as long as five hours, this pattern does not seem like an optimal way of working – for MDT members, or for the patients being discussed.

“Sometimes we discuss up to 70 patients. This is after a whole day of clinics and we don't finish until gone 19.00. Would you want to be number 70?” (Upper GI MDT Coordinator)

Our MDT observation tool also captured the impact of the discussion, for example whether it led to a changed treatment plan. Interestingly, shorter discussions were more likely to be associated with an outcome that did not change the initial treatment suggestion. Of the 133 discussions observed (21 per cent of the total) that were categorised as having no discernible impact on the treatment plan, 96 per cent lasted two minutes or less.

The outcome of the MDT discussions observed was also recorded, with five possible categories as outlined in Figure 5 below. The most accurate measure of a discussion's effectiveness would be whether the treatment recommendation was followed by the treating clinician, however this was not possible to measure through this research. Our observational tool, which was based on an existing tool used to assess MDTs¹³, focused solely on the discussions observed during the MDT meeting.

FIGURE 5: THE OUTCOME OF PATIENT DISCUSSIONS



Although the length of some discussions will have been constrained by time pressure, it is possible that some of the particularly straightforward short discussions could have taken

¹³ See Appendix X for full methodology

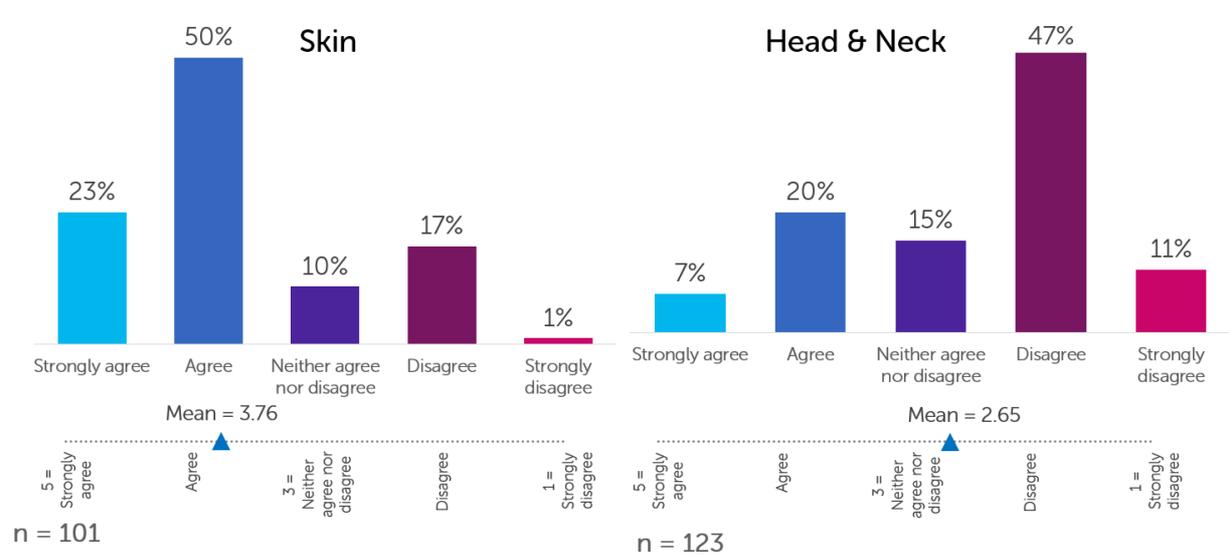
place in a different forum. The MDT meeting could be streamlined by taking some of those straightforward discussions into a different forum, so that the MDT has more time available to discuss the more complex patients.

2.2 STREAMLINING MDT DISCUSSIONS

Streamlining MDT meetings could allow more time for discussion of the more complex patients. MDT members largely supported this idea, with 74 per cent of respondents to our second survey feeling that some patients could be streamlined or reviewed outside of the MDT meeting. It is important to make clear that this would not mean that streamlined patients are not discussed and reviewed by a team, but that they would not be reviewed by the *full* MDT.

There was understandably some variation across tumour sites, however, with 89 per cent of skin MDT members agreeing, and just 43 per cent of Cancer of Unknown Primary MDT members. This can largely be explained by considering which tumour sites have well-established protocols developed – such as skin – and which do not. On average, respondents felt that 31 per cent of cases could be resolved outside of the meeting, although again this varied across tumour sites (from breast, 37.8 per cent, to Cancer of Unknown Primary, 12.2 per cent – see Figure 6).

FIGURE 6: RECEPTIVITY OF MDT MEMBERS TO STREAMLINING MDT MEETINGS, ACROSS DIFFERENT TUMOUR TYPES



“The system is top heavy and many skin patients can be dealt with almost automatically as the pathway is well defined and there is no reason to delay for an MDT opinion.” (Skin Physician)

“The streamlining procedure may work for other sites but for Head and Neck cases there are no straightforward cases as such and each case needs to be reviewed as an individual.” (Head and Neck Radiographer)

Our survey also found that some MDTs are already streamlining their meetings to some

extent, for example only reviewing particular skin cancers at the full MDT meeting.

“We already streamline to a certain extent, and organising an MDT into post resection, bowel cancer screening patients, early rectal cancer, anal cancer, polyps for EMR etc. allows certain groups to attend certain bits of a 3 hour MDT. We are also discussing complex pelvic cases at the end when urology and gynaecology are free to join us. The system works well.” (Colorectal Surgeon)

“We do a weekly 'mini' MDT between MDT lead, CNS and coordinator to review potential breaches, identify patients for discussion on the next MDT and review any interim results and act on them. We have had only 1 or 2 breaches since implementing this a year ago. The quality of MDT discussions has improved. This is probably not feasible in a large centre.” (Lung Physician)

The approach taken, if any, would therefore naturally vary based on the MDT in question – the complexity or rarity of the patients within their care, for example, or whether or not they were a specialist cancer centre and were taking referrals from other Trusts.

For some MDTs, an intermediate meeting could be established to triage cases in advance of the main meeting. Those patients whose treatment follows well-established clinical protocols would follow the best practice treatment pathway, with all others still discussed at the full MDT meeting. This proposal was supported by 63 per cent of MDT members.

This would allow more time to discuss the more complex patients, with the more straightforward cases progressing to treatment. 69 per cent of MDT members felt that this would allow such cases to be progressed more quickly. However, it is clear that this process must be closely monitored and evaluated: MDT members felt strongly that the MDT should audit this process (90 per cent agree).

This triage meeting would mean that the treating clinician would still be able to seek guidance and approval from their colleagues, but would involve a smaller group than the full MDT. This is an important distinction: MDT members opposed the idea of allowing clinicians to entirely bypass the MDT process (31 per cent agree; the lowest level of agreement with any statement tested). There was also fairly low agreement with the idea that patients could enter protocolised pathways without being discussed at a meeting at all (45 per cent). Although this may represent additional work for those members, the significant time saved in the meeting and relaxed attendance requirements would lead to an overall net reduction in staff time spent discussing these patients.

Where there was any uncertainty or disagreement on how to proceed, the patient would progress to the full MDT as usual. The triage meeting could also be bypassed in exceptional cases; an idea which was supported by 72 per cent of MDT members.

“There is always a risk with streamlining that because the case is not heard not all the details comes to light. The pre-screening process would therefore need to be rigorous and should probably be tested before going ahead wholesale.” (Palliative Care Consultant)

Protocols should be developed nationally, but should be flexible enough to allow cancer networks and MDTs to ensure they are most appropriate for their patient populations. The percentage of patients placed on protocolised pathways would naturally vary between tumour sites and Trusts.

Including this triage meeting would be most appropriate for high-volume tumour sites, where well-established treatment protocols have been developed. When asked whether they would support such a triage meeting being implemented for their specific MDT, MDT members had very mixed views – as would be expected. For example, 68 per cent of urology MDT members supported this, compared to just 24 per cent of those attending Cancer of Unknown Primary MDTs.

“Our particular MDT could do with streamlining. We endlessly and fruitlessly consider ways of doing so, some central good practice guidance would be invaluable.” (Breast Oncologist)

“I am certain you could save valuable (and expensive) time to direct more time to cases that require it and ensure the decisions made at the end of an MDT remain robust (difficult sometimes after 4 hours!)” (Breast Oncologist)

Recommendation 1: The UKs health services should work with NICE¹⁴ and SIGN¹⁵ to identify where a protocolised treatment pathway could be applied and develop a set of treatment recommendations for each of these, to be implemented across the UK. Every Cancer Alliance or devolved cancer network should develop their own approach based on these central recommendations. These treatment protocols should be reviewed regularly.

Recommendation 2: MDTs for tumour types for which a protocolised approach has been developed should agree and document their approach to administering protocols. This could include a ‘pre-MDT triage meeting’. The implementation and outcomes of these protocols should be audited and reviewed by the full MDT in an operational meeting.

¹⁴ National Institute for Health and Care Excellence

¹⁵ Scottish Intercollegiate Guidelines Network

3. CURRENT MDT MEETING ATTENDANCE IS NOT OPTIMAL

Again owing to the growing discrepancy between demand and capacity, those attending MDTs are under increasing pressure. Many health professionals spend an increasing amount of time preparing for or attending MDTs, and less time is available for direct patient care.

The value of the MDT meeting comes from having the different specialties represented and able to participate in discussion. This must absolutely be maintained, but our research has suggested that the current patterns of attendance could be improved.

The MDTs observed in this study had between 7 and 27 members of staff in attendance, with an average of 14. Our observations of MDT meetings included measurement of the number of people verbally participating in each patient discussion. Despite the large numbers often in attendance, as Figure 7 shows the number contributing to each discussion was small: three on average. Discussions involving just one or two people were not uncommon (16 per cent in total).

FIGURE 7: COUNT OF TOTAL NUMBER OF PEOPLE CONTRIBUTING TO EACH DISCUSSION



This was variable between meetings: in some meetings, everyone in the room contributed at some point whereas in others, many people in the room (or linked in via videoconference) did not contribute at all.

It is important to note that those who did not verbally contribute may have contributed in other ways; for example, they may have later cared for the patient, or may benefit from listening to the discussion. However, it is clear that their presence was not necessary for decision-making.

In contrast, some MDT meetings observed during the research were unable to finalise their treatment recommendations because certain members were not there. In one MDT meeting the list of patients discussed was considerably longer than usual, because a radiologist had been away for two weeks and so several cases had been deferred. In other meetings,

recommendations could not be made because nobody was there who had met the patient and could provide certain information.

There is therefore an interesting split between some MDT meetings who have many more people there than is necessary, and MDT meetings where decisions cannot be made because the right people are not there. This issue could be addressed through altering national guidelines for attendance.

Guidelines for attendance vary across the UK. They are most strict in England, where MDT members must attend 66 per cent of meetings. This target is particularly difficult for those who work across multiple clinical sites, or attend many different MDTs; for example, radiologists and pathologists. Many MDTs have fallen foul of Peer Review assessments because of difficulty meeting these targets.

“I do not attend 66 per cent of meetings as currently there are 3 CNS's within our organisation and this would be an inappropriate use of resources if we were to all attend.” (Upper GI Clinical Nurse Specialist)

3.1 MOVING TO SPECIALTY COVER

A reliance on individual attendance means that there can either be too many, or not enough, members of staff present at an MDT meeting – which produces the findings highlighted above. A move away from individual targets, and towards specialty cover – or quoracy – could help ensure more consistent attendance, maintaining the quality of discussion without compromising the timeliness of decision-making.

MDT members were very supportive of this, with 80 per cent supporting a move to requiring specialty cover. This was particularly supported by radiologists, many of whom cited wider issues of staff shortages.

“In properly functioning and communicating teams, it is sufficient to ensure that, in my case, a radiologist is always present. This does not detract from the advantage of us both being present when possible.” (Breast Radiologist)

“Current MDT can last 2+ hours. I still have no allowance in job plan for any of this and cannot stay for more than 1 hour of meeting due to clinical commitments. With half the substantive Radiology consultant staff in post at my hospital, the pressure is on direct clinical care, rather than MDT.” (Lung Radiologist)

“If cover to reach quoracy is important we need appropriate funding and numbers, particularly of radiologists and pathologists and CNS. Most do not even have MDT allocated to their job plans never mind cover.” (Gynaecology MDT Chair)

While defining a new minimum attendance figure is beyond the scope of this work, we would recommend that this should not be enforced nationally: teams should be able to develop their own expected levels of attendance, and should have time in their job plans to be flexible in doing so. Many respondents to our survey hugely valued MDT meetings for their role in providing continuity of care and in education.

“I think regular attendance of individual core members (rather than just specialty representation) is important because it allows for comparison of opinions with the way other specialty team members interpret situations, and allows increased access to specialist cases which improves background knowledge.” (Gynaecology Radiologist)

Case study: moving to specialty cover

A Foundation Trust in the North of England conducted an observational study of 20 MDT meetings and interviewed MDT Chairs. The average consultant staffing cost of MDTs equated to circa £2.6 million per year across the Trust. MDTs in the Trust have been under significant pressure in terms of their capacity, which is complicated by difficulty recruiting radiology, pathology and oncology positions.

When interviewed, MDT Chairs felt that quoracy was the most important factor for ensuring effective discussion and a good clinical outcome. They felt that this could be maintained with a reduction in attending staff, without compromising the quality of MDT discussion, effectively increasing clinical resource for direct care. This was modelled for one large MDT; it was felt that it was possible to release six PAs (programmed activity, equivalent to three full days) of consultant time per week per MDT, equivalent to 258 PAs (129 full days) per year, without compromising care.

Recommendation 3: National requirements for individual minimum attendance should be reviewed and amended where necessary, with an emphasis on ensuring all required specialties are present at a meeting.

NHS England should run a series of pilots to determine optimal percentage attendance requirements. The success of these pilots should be evaluated and national guidance changed as appropriate.

4. THE RIGHT INFORMATION IS OFTEN NOT USED TO INFORM IN DISCUSSIONS

An MDT's treatment recommendation is only as good as the information it takes into account. It is therefore vital that MDT discussions include all relevant information about a patient – including the results of diagnostic tests, pathology and patient-centred information such as their preferences or psychosocial status.

4.1 MISSING CLINICAL INFORMATION

In seven per cent of discussions observed, decisions were deferred due to either missing information (usually diagnostic imaging results) or missing members. When information was missing, a treatment recommendation could not be made and so they were deferred for discussion at the following meeting, a week later.

“Discussing the cases without all required investigations and holistic information frequently adds delay.” (Upper GI radiologist)

This effectively introduces a seven-day delay into that patient's pathway, postponing treatment and causing the patient unnecessary distress. This means that in some cases, MDT meetings can be a bottleneck for cancer services. This can be seen when looking at waiting time breaches – cases of which often occur in a seven-day pattern.

4.2 MISSING PATIENT-CENTERED INFORMATION

In many cases, information about the patient that does not relate specifically to their tumour is pivotal in planning their treatment. However, this information is often not included in discussions: just 14 per cent of discussions observed involved such information.

This is part of a broader issue, relating to patient experience and patient-centred care. This is central to the NHS Constitution, in the form of the principle “no decision about me without me”. The 2015 cancer strategy for England echoed this aim, setting an ambition to put patient experience on a par with clinical effectiveness.

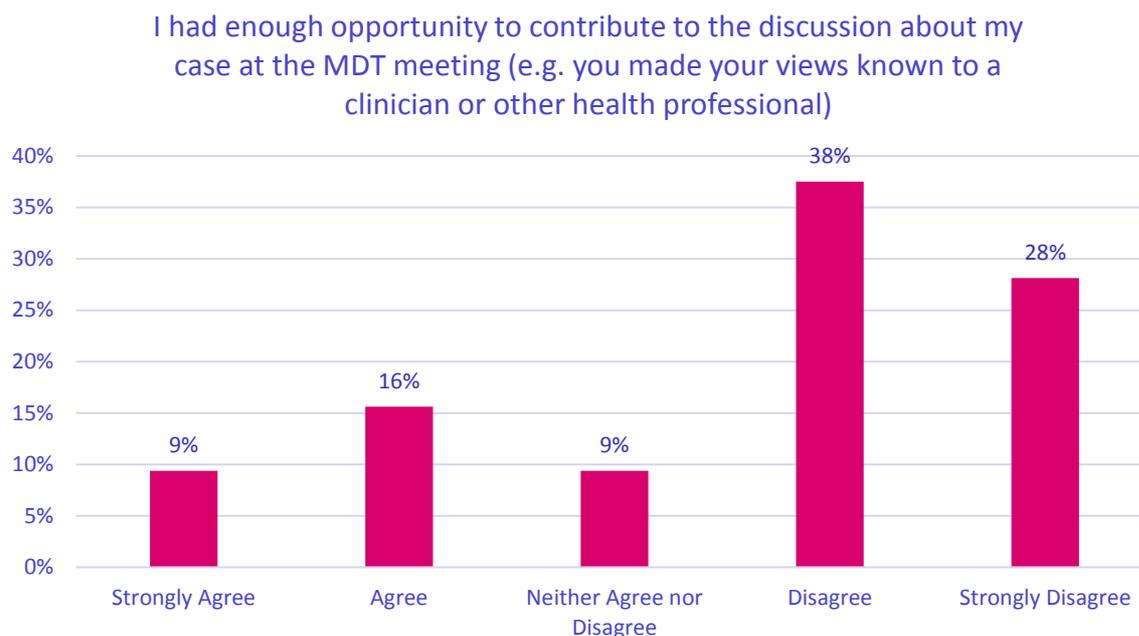
However, this principle has not been embedded in MDTs: past research has found that patients generally have limited opportunities to input into or influence MDT discussions, and that they are often given limited information about MDT meetings. This was confirmed by our survey of people affected by cancer: although 77 per cent were aware that their case would be discussed at an MDT meeting, many felt that the level of communication was inadequate.

“I was told by my consultant after my diagnosis that there would be an MDT. I heard nothing further.” (Patient)

“A registrar told me 'my case would be discussed by the MDT' without explaining what that meant, or what would happen next and when I questioned her further, she said they would be in touch. They weren't!” (Patient)

As shown in Figure 8, just 25 per cent were satisfied with the amount of information they were able to contribute to the meeting.

FIGURE 8: PEOPLE AFFECTED BY CANCER'S VIEWS ON MDT DISCUSSIONS



Only 28 per cent knew who would be taking other information about them to the meeting, such as their treatment preferences. This was a key theme of the ‘Characteristics of an effective MDT’ work, which has not been uniformly implemented. Full text of this survey is available in Appendix 4.

Our interviews of MDT attendees found that Clinical Nurse Specialists (CNS) were generally regarded to be the most qualified to provide this information. However, in over 75 per cent of the meetings observed, nurses did not speak at all. Several factors contribute to this. The 2013/14 National Report by NHS England highlighted that CNS staffing levels, workload and cover remains a national issue, having a significant effect on the care patients receive and their experience at significant points on the pathway. Research has also shown that, in some cases, nurses and other allied health professionals feel marginalised and report that their contribution of patient-centred information is ignored⁶⁰.

“I am a very keen member of our MDT, and sometimes as an allied health professional we are not given enough credit for our professional knowledge to be encouraged to comment. I do comment and ask, and sometimes the environment isn’t that open...”(Allied health professional, head and neck MDT)

The inclusion of patient-centred information can also have a significant impact on clinical care, and taking such information into account in an MDT discussion maximises the chance of the recommendation being appropriate for that patient. Past research has found that between 10 and 15 per cent of MDT recommendations are not implemented, the patient preferring more conservative treatment, since the discussion had not considered information such as their comorbidities or their preferences^{61,62}.

There was strong support from MDT members responding to our survey for including such information. 81 per cent agreed that the more information available about a patient (e.g. social, psychological, supportive care needs) in the meeting, the more likely the recommendations were to be implemented, and less likely to require re-discussion. 77 per

cent felt that information from a Holistic Needs Assessment (HNA) should be fed in if available, although MDT members were clear that delaying discussion for the sole purpose of carrying out an HNA would not be proportionate.

“HNA, co-morbidity etc. would help inform some of my decisions, but may not be that relevant for many of the 70-odd patients we discuss each week... It may be a pre-defined sub group (SACT decisions required, or more complex surgery) where these data may influence decisions.”(Breast Oncologist)

4.3 CLINICAL TRIALS

Clinical trial recruitment currently relies on the treating clinician being aware of available trials, so recruitment can be *ad hoc*. Although not the only mechanism, the MDT discussion could be used as a checkpoint for ensuring that patients were informed of clinical trials they are eligible for and are able to make an informed choice about their involvement. However, just 8 out of 624 patient discussions observed referenced clinical trials.

In the most recent Cancer Patient Experience Surveys, 29 per cent of patients in Wales⁶³, 28 per cent in England⁶⁴, 22 per cent in Scotland⁶⁵ and 18 per cent in Northern Ireland⁶⁶ reported that they had discussed taking part in cancer research with their clinician. In England the percentage ranged from 39 per cent in the top fifth of Trusts, compared to just 18 per cent in the bottom fifth. Across all nations there is considerable variation between tumour types. Developing better, kinder treatments and improving care relies on research, so it is vital that more patients are offered the opportunity to be involved.

Considering the variation in clinical trials uptake, there is a strong argument for a more robust process for checking whether a patient is suitable for a clinical trial. MDT meetings are well placed to support this process.

4.4 A MDT PROFORMA

The issues above highlight a common theme: the right information is not always being used in MDT discussions. One solution to this is to require those referring patients to the MDT to complete a proforma, which would contain all relevant information and would ensure that all patients are ready for discussion.

54 per cent of MDT members surveyed already used some form of checklist or proforma to inform referrals to their MDT meeting, but this is not done consistently. 81 per cent of MDT members surveyed felt that a proforma would have a beneficial impact on meeting efficiency¹⁶.

“We currently use a proforma and it does save time also means if the clinician cannot be actually at the MDT meeting, another clinician can pick this up and discuss them, thus meaning patient is not rolled over the next week’s MDT.” (Haematology MDT Coordinator)

¹⁶ Strongly agree: 35%, agree: 46% (See Appendix 1 for full methodology and Appendix 3 for the text of the second survey)

Case study: proforma

A large Foundation Trust in the Midlands has been working with MDT Leads to put in place a new process for accepting referrals to the Trust. This is designed to streamline the process of referral, ensuring that when peripheral Trusts refer patients they are truly ready for MDT discussion – so have all the appropriate diagnostic work and results ready.

To enable this, each MDT has developed a proforma to be completed before the Trust accepts the referral. This contains information about the patient, the referring Trust and clinician, as well as diagnostic information and other relevant clinical information (which varies based on the cancer type). It also contains a field for the question to be discussed by the MDT. An example of such a proforma is provided below. When complete, the proforma is emailed to a standard inbox which is maintained by the MDT coordinator.

Using such a proforma helps to structure MDT discussion, ensure the relevant information is used consistently and ensure that referring Trusts follow the same pathway – reducing variation in care. The proforma is also useful for managing patients' pathways in relation to treatment targets: as well as containing a field for the patient's target treatment date, referring Trusts are given a date within the 62-day pathway by which they should refer the patient. This ensures that there is sufficient time remaining to carry out the remaining investigations and begin treatment.

In the example listed above, cancer referrals to the Trust are only accepted once the proforma has been completed. This reduces delays and eases the workload of the MDT coordinator who would otherwise have to chase missing information in advance of the meeting.

“The use of proformas for listing for MDT would be most beneficial. Some MDT's require the non-medical administration staff to be responsible for a great amount of clinical information to be transferred from the notes onto the MDT lists, which not only takes up so much time, but includes risk as admin staff are not clinically trained. Casenotes are available at all meetings.” (MDT coordinator)

The proforma also provides useful structure for the discussion itself; in the majority of observed discussions the presenting clinician did not present a clear question to the MDT for discussion, but presented the case and the group collectively decided a course of action. Although in some cases the course of action would be unclear, a suggested plan would help to focus the discussion.

Rather than simply being an additional form to fill out, the proforma should be designed so as to have a meaningful impact on the quality of that discussion. This is especially important for ensuring continuity of care when patients are being treated by multiple Trusts or providers, for example where the MDT is a specialist MDT covering multiple hospital sites, and ensures that the recommendation made is as appropriate as possible.

A proforma can also impact on wider patient care, by ensuring all information is stored together in one place. The 2015 Cancer Strategy for England⁶⁷ found that clinicians estimate between 10 and 20 per cent of investigations or appointments are repeated because they cannot access scans or pathology reports. The strategy also recommended that all consenting patients should be able to access all test results and communications online by 2020; a proforma could be a useful step towards implementing this.

MDT members felt that the MDT coordinator should be responsible for checking that this has been completed (78 per cent agree), rather than the MDT lead or chair (26 per cent agree). If a patient is not discussed because the right information was not present, this should be recorded in order to inform audits and process improvements (90 per cent agree). As with protocolisation, the referring clinician should have the ability to bypass this requirement in exceptional circumstances and treatment should not be delayed because a proforma was incomplete. Responses to our survey indicated very variable experiences with such proformas; buy-in and usability are both key. MDT Chairs and Leads should take a key role in communicating the importance of this.

“My guess is that unless disciplined, people will not use proformas effectively. Clearly technology could help, dragging in demographic details, perhaps some investigation details and drop-down boxes would all help...” (Breast Oncologist)

The contents of this proforma were also tested with MDT members; imaging and pathology results were widely viewed as the most important aspects for inclusion, although there was strong support for all elements tested (including patient fitness, comorbidities, history of previous malignancies and patient wishes). The fields may vary considerably by MDT; some fields should be mandatory and others optional so that they do not become an overly bureaucratic burden.

Recommendation 4: The UK’s health services should lead the development of national proforma templates, to be refined by MDTs. MDTs should require incoming cases and referrals to have a completed proforma with all information ready before discussion at a meeting.

The proforma could include:

- **Patient demographics**
- **Diagnostic information**
- **Patient fitness and co-morbidities; history of previous malignancies**
- **Results from a Holistic Needs Assessment, if available**
- **The patient’s preferences (if known)**
- **The rationale for requiring MDT discussion**
- **Whether there were known treatment protocols for the specific tumour type**
- **Whether the patient is suitable for any current clinical trials**

The MDT should have the power to bypass this requirement in exceptional circumstances.

5. MDTs ARE UNABLE TO FULFIL THEIR SECONDARY ROLES: IN DATA VALIDATION, AUDIT AND EDUCATION

As well as making treatment recommendations, the MDT meeting plays several other roles: facilitating data validation, ensuring consistency in decision-making, educating team members and managing the pathways of the patients within their care. Discussion amongst steering group members, and responses to our surveys, indicate concern that current pressures have limited these aspects of MDT working.

“The MDT is an educational and communication tool for the team delivering the service and developing trainees. However, the top priority must be to ensure that all appropriate patients are discussed.” (Paediatric Oncologist)

“I don't think we should be dismissive of the importance of ‘collegiality’. It's essential to building a cohesive high performing team. There is such a thing as ‘too much discussion’, but there is also such a thing as too little.” (Lung Pathologist)

Many of these issues have been explored previously through the ‘Characteristics of an Effective MDT’⁶⁸ work. Although we did not explicitly look at these issues, we found that many of the areas of best practice identified in this work had been implemented to varying degrees. For example:

- **The Team:** the team working culture varied greatly, from collegiate and interactive to passive and tense, and some meetings dominated by a single individual.
- **Infrastructure:** approximately half of the meetings observed employed ‘theatre’-style seating, making it difficult for all members to engage in conversations. Video conferencing facilities were often effective, but on some occasions presented difficulties, with some sites unable to see or hear other teams or view radiology images.
- **Patient-centred decision-making:** the patients’ views and wishes were only presented or discussed in a minority of cases.
- **Team governance:** Levels of distraction were often high, with pagers and mobile phones ringing during discussions. On five occasions, a phone was answered during the meeting.

5.1 DATA VALIDATION

Since their introduction, the MDT has played a vital role in ensuring timely and accurate data validation. This has been hugely important for auditing services and facilitating information flows to national cancer registries.

In England, MDTs are responsible for coordinating data entry into the Cancer Outcomes and Services Dataset – the primary source of secondary care data for cancer patients in England. Scotland’s latest cancer strategy⁶⁹ included a commitment to re-engineer and extend national data flows to create a dynamic national cancer registration service, focused on improving outcomes. MDT meetings are seen as a key part of this, as the hub of the clinical decision-making process, and play a strong role in validating the data collected as part of treatment and care. In Wales, MDTs enter data into the All Wales Datasets.

For some cases, the MDT meeting is so central to this process that for those patients not discussed by the MDT – such as people diagnosed with secondary breast cancer – data is often not collected at all. This has contributed to a highly variable national picture of secondary cancer. This has been particularly problematic for secondary breast cancer and has led to a significant underestimate of the number of people living with the disease⁷⁰.

“Good Documentation of MDT discussion and outcome is imperative if clinician is not present at MDT meeting but seeing patient. In my experience and from local audit the quality of documentation is poor. There is no benchmark for this and it should be considered.” (Urology Surgeon)

Live data capture was recommended in the ‘Characteristics of an Effective MDT’ but the extent to which this has been implemented is variable. The best example seen in our observations was when information was directly added by an oncologist, and was projected on a screen for the whole MDT to view. However, in another team example the MDT coordinator wrote information on a piece of paper, transcribed it later that day, emailed it to the team for comment or correction and then entered it onto the database, leaving room for errors in recall and relying on members to check accuracy outside the meeting, when back in busy clinical practice. Real time data entry reduces errors and provides an immediate opportunity to validate and clarify information.

It should be noted that IT systems are an important factor in how well this works. Different IT systems have different capabilities and it can be very difficult to secure updates; there are often substantial costs associated. Such issues are outside the scope of our research, but should be looked at on a national level in order to ensure a consistent and effective approach.

“Improvements in clinical information systems that allow data entry in real time without holding up the meeting would increase the time available for the educational and training aspects that are currently squeezed through time constraints.” (Paediatric Oncologist)

Recommendation 5: MDTs should use a database or proforma to enable documentation of recommendations in real time. Ideally this should be projected so that it is visible to team members; if this is not possible there should be a named clinical individual responsible for ensuring the information is accurate. Hospital Trusts and boards should ensure that MDTs are given sufficient resource to do this.

5.2 AUDIT AND IMPROVEMENT

As a central tenet of cancer services, it is important that MDTs review their own performance and that a culture of continuous improvement is fostered. Less than half (48 per cent) of MDT members felt their MDT has a process in place that is sufficient for improving their effectiveness.

“There is no opportunity to learn from cases that have not gone well or where errors have been made. The main aim is to get the patient discussed (apparently irrespective of the quality of that discussion)” (Upper GI Radiologist)

Although many members of the MDT may attend specialist meetings to discuss mortality and morbidity, at present there is no established multidisciplinary forum for doing so. This means

that such discussions take place within silos and do not take account of the whole pathway and the relative role of different interventions in patients' outcomes.

"We would benefit from regular MDTM effectiveness discussions, as tends to be more ad hoc currently as well as at the annual AGM." (Lung Physician)

A formal process for auditing outcomes of patients discussed or treated by the MDT would help ensure that the value of multidisciplinary working would be widened beyond the treatment discussion and importantly would promote patient safety as any concerning results would be raised and discussed.

We therefore recommend that MDTs hold a regular 'operational' meeting, either quarterly or biannually, during which a number of clinical outcome indicators are reviewed and discussed. This was supported by 67 per cent of respondents to the follow-up survey¹⁷.

These meetings could include discussion of:

- Analysis of patients under the care of the MDT that have missed waiting times targets
- 30-day mortality following active treatment
- Uptake into clinical trials

"30 day mortality should be discussed but time pressure within MDT is such that separate time would need to be found to have those discussions" (Upper GI Oncologist)

In addition to the formal operational meetings, the time saved by streamlining the MDT would allow more additional information to be discussed during the MDT meeting. Most notably, this should involve discussion of where patients are within their referral to treatment pathways.

Recommendation 6: each MDT should ensure that they have a mortality and morbidity process to ensure all adverse outcomes can be discussed by the whole MDT and learned from, rather than discussed in silos. The primary time for this to take place should be a quarterly or biannual operational meeting. Time for quarterly operational meetings should be included in attendees' job plans. There should be oversight from national MDT assessment programmes.

¹⁷ 19% strongly agree; 48% agree. Follow-up survey (see Appendix X)

6. CONCLUSIONS AND RECOMMENDATIONS

Throughout this research we were struck by the willingness of MDT members to be involved, to share their experiences and to improve the effectiveness of their MDTs. Since its introduction in the 1990s MDT working has been incredibly valued by members of MDTs and remains incredibly valuable, both to patients and the staff who attend the meetings.

However, the current way of working for MDTs is no longer optimal. The number of patients has increased, as has their complexity – yet the number of staff attending MDTs has not, in any significant number. This has resulted in MDT meetings that last for several hours, running through numerous patients in a few minutes each. These constraints mean that discussions can often involve only a few members of staff, and take into account limited information, for example not including discussion of the patient’s preferences or whether there are any suitable clinical trials. There has also been an effect on how well the MDT meeting can continuously improve its processes and decision-making, and how much those who attend can learn from being present.

The challenges in each of the four nations are not identical, but the increasing disparity between demand and capacity is a common theme. In the absence of vast increases in staffing numbers, there must be ways of improving the efficiency of MDTs, in order to make them work more effectively for patients. We have proposed a number of recommendations aiming to streamline MDT meeting processes, while retaining the value of multidisciplinary discussion. We have recommended ways to improve the quality of discussions, especially for the more complex patients who would benefit the most.

Solutions will not be the same for every MDT, or every specialty. However, there are several areas which would benefit from guidance developed on a national level. This research should be the start of further, in-depth work to implement these recommendations.

Recommendation 1: The UKs health services should work with NICE¹⁸ and SIGN¹⁹ to identify where a protocolised treatment pathway could be applied and develop a set of treatment recommendations for each of these, to be implemented across the UK. Every Cancer Alliance or devolved cancer network should develop their own approach based on these central recommendations. These treatment protocols should be reviewed regularly.

Recommendation 2: MDTs for tumour types for which a protocolised approach has been developed should agree and document their approach to administering protocols. This could include a ‘pre-MDT triage meeting’. The implementation and outcomes of these protocols should be audited and reviewed by the full MDT in an operational meeting.

Recommendation 3: National requirements for individual minimum attendance should be reviewed and amended where necessary, with an emphasis on ensuring all required

¹⁸ National Institute for Health and Care Excellence

¹⁹ Scottish Intercollegiate Guidelines Network

specialties are present at a meeting.

NHS England should run a series of pilots to determine new percentage attendance requirements. The success of these pilots should be evaluated and national guidance changed as appropriate.

Recommendation 4: The UK's health services should lead the development of national proforma templates, to be refined by MDTs. MDTs should require incoming cases and referrals to have a completed proforma with all information ready before discussion at a meeting.

The proforma could include:

- Patient demographics
- Diagnostic information
- Patient fitness and co-morbidities; history of previous malignancies
- Results from a Holistic Needs Assessment, if available
- The patient's preferences (if known)
- The rationale for requiring MDT discussion
- Whether there were known treatment protocols for the specific tumour type
- Whether the patient is suitable for any current clinical trials

The MDT should have the power to bypass this requirement in exceptional circumstances.

Recommendation 5: MDTs should use a database or proforma to enable documentation of recommendations in real time. Ideally this should be projected so that it is visible to team members; if this is not possible there should be a named clinical individual responsible for ensuring the information is accurate. Hospital Trusts and boards should ensure that MDTs are given sufficient resource to do this.

Recommendation 6: each MDT should ensure that they have a mortality and morbidity process to ensure all adverse outcomes can be discussed by the whole MDT and learned from, rather than discussed in silos. The primary time for this to take place should be a quarterly or biannual operational meeting. Time for quarterly operational meetings should be included in attendees' job plans. There should be oversight from national MDT assessment programmes.

APPENDIX 1. METHODOLOGY

This study began with desk research, including reviews on MDT guidance, past research on MDT effectiveness and evidence of the pressures faced by MDTs.

Two surveys of MDT members were carried out. The first was intended to identify key issues facing MDTs and received an unprecedented level of interest, gaining 2,294 responses. Full results from this survey are available in Appendix 1.

Fieldwork for this study involved observational audits of MDT meetings, based on an existing MDT measurement tool²⁰ and interviews of MDT members. Over the course of the project, the team visited 10 sites and 24 MDT meetings, covering 624 individual patient discussions.

A survey was issued to patients, in order to gather their views and opinions on MDT working; this gained 48 responses. Questions from this survey are included in Appendix 3.

Following evidence gathered through the first survey and fieldwork, a second survey of MDT members was developed. The intention of this survey was to assist with the refinement of emerging recommendations. Respondents were presented with a series of questions and were asked to indicate their level of agreement, and were able to add free text comments. This survey received 1,258 responses from across the UK. The list of questions from this survey is included in Appendix 4.

Over the course of the project, our work was informed by two groups. A project steering group, established by Cancer Research UK, provided valuable insight and challenge throughout. This group was comprised of employees of Cancer Research UK, clinicians, academics and a patient representative. The steering group met approximately every six weeks, and provided input remotely between meetings. In addition to the steering group, the project team were informed by a panel of clinical advisors who engaged with the material on a regular basis. The input of these two groups has added a great amount of depth and detail to this report.

COSTING OF MDTs

A review of the literature on MDT costings gave a number of different figures for MDT costs as a result of different approaches for approximating meeting costs (Table 1). In general, the cost of an MDT discussion is somewhere in the region of £100.

TABLE 1: SOURCES ON THE COST OF MDTs

Author	Date	Title and link	Conclusion	Notes
Department of Health	2015	Reference Costs	£111 / MDT discussion (varies by tumour site)	National data set

²⁰ A tool was developed based on existing observational audit tools: MDT-MOT (Green Cross Medical Ltd) and MDT-MODE (Lamb et al)

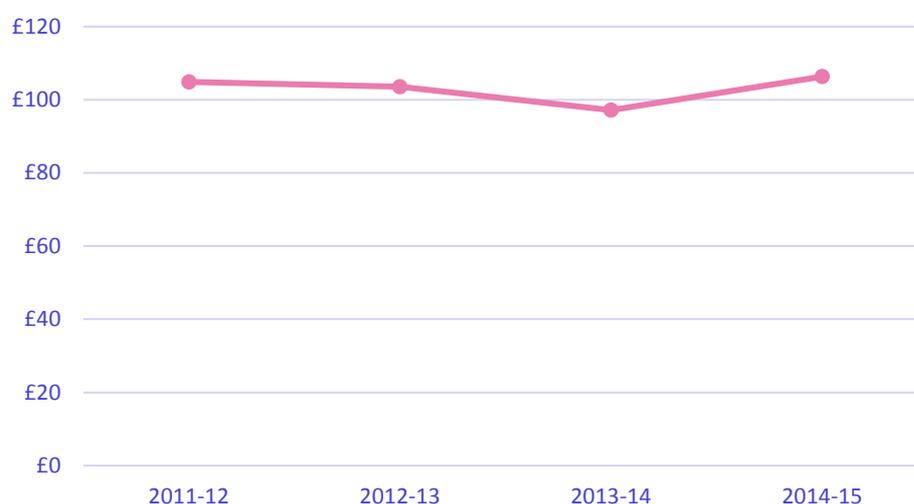
Munro, A. J.	2015	MDT Meetings in Cancer – An idea whose time has gone	£121.25 / MDT discussion (based on 4 discussions / patient)	Basic analysis drawn from Reference Costs
Kerr, J. D. <i>et al.</i> (eds)	2016	Oxford Textbook of Oncology	£87.41 / management plan	
Fosker, C. J. <i>et al.</i>	2010	Multidisciplinary team working in cancer: what is the evidence?	£36.60 / MDT discussion	Salary cost of attendees only, data from one hospital
Fader, D. J. <i>et al.</i>	1998	The multidisciplinary melanoma clinic: A cost outcomes analysis of specialty care	\$1600 saving/patient from totality of MDT pathway	Based on one US hospital

In order to view how costs have changed, we chose the Reference Costs approach on the grounds that it:

- Is based on an assured national dataset
- Captures the full costs of MDT decisions
- Allows year-on-year comparisons.

Looking at reference cost figures, the unit cost of an MDT discussion is currently £111, and this has not materially changed since 2011/12, after inflation is taken into account.

FIGURE 9: UNIT COST OF MDT DISCUSSION, ADJUSTED FOR INFLATION (CONSUMER PRICE INDEX)



There is some variation in cost based on specialty group, but no group is more than about 20% above or below the mean. The maximum cost per discussion was £132.95, for colorectal cancer, and the minimum was £91.84, for breast cancer.

The total cost of MDTs has risen rapidly, from £88 million in 2011/12 to £159 million in 2014/15, driven by a rapid rise in activity (Table 2).

TABLE 2: TRENDS IN UNIT AND TOTAL COST OF MDTs 2011/12 TO 2014/15

Year	2011/12	2012/13	2013/14	2014/15
Activity (patient discussions)	837,359	1,079,297	1,279,567	1,434,580
Total cost	£87,803,877	£114,442,713	£129,594,360	£158,847,907
Annual cost growth, compared to 2011/12 levels	-	30.3%	13.2%	22.6%

Over a similar time period, the growth in overall numbers of key staff members has been much slower (Table 3):

TABLE 3: ANNUAL GROWTH RATE IN MEDICAL/SURGICAL AND NURSING STAFF FROM 2010 TO 2014^{21,22}

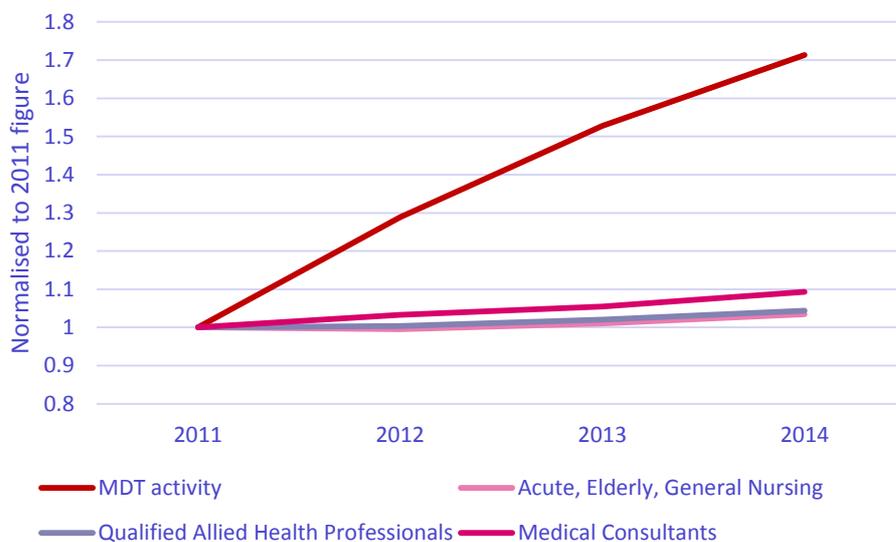
Specialty		Compound Annual Growth Rate (based on 2010-2014)
Medical	Cardiothoracic surgery	2.12%
	Clinical oncology	4.18%
	Clinical radiology	2.80%
	Dermatology	2.21%
	Gastroenterology	5.76%
	General surgery	0.78%
	Haematology	3.12%
	Histopathology	0.43%
	Medical oncology	2.20%
	Neurosurgery	3.71%
	Nuclear medicine	-3.16%
	Palliative medicine	5.00%
	Plastic surgery	2.09%
	Respiratory medicine	6.78%
Urology	2.91%	
Nursing	Acute, Elderly & General	0.77%
	Paediatric Nursing	0.16%

Demand (number of patient discussions) has been increasing at a much greater rate than capacity (numbers of selected staffing groups). This is shown in Figure 10, where demand (MDT discussions) and capacity (staffing levels) have been normalised to 2011 levels.

²¹ NHS Hospital & Community Health Service (HCHS) monthly workforce statistics - Provisional Statistics, HSCIC

²² NHS Hospital and Community Health Services Non-Medical Workforce Census, HSCIC

FIGURE 10: GROWTH IN NUMBER OF MDT DISCUSSIONS AND WTE OF STAFFING GROUPS IN ENGLAND, NORMALISED RELATIVE TO 2011 LEVELS²³



FIRST SURVEY OF MDT MEMBERS

OVERVIEW

The research began with a survey of MDT attendees, in order to provide evidence of the current situation facing MDTs across the UK. In this survey, respondents were asked to rate the importance of standards to be met by MDTs, and then to rate how compliant they felt their MDT was with those standards. Respondents were also asked how their MDT could be improved. The full survey questionnaire is found in Appendix 1.

The survey was disseminated to MDT members in the UK, gathering responses from all four nations. We were helped in distributing the survey by a number of organisations, including:

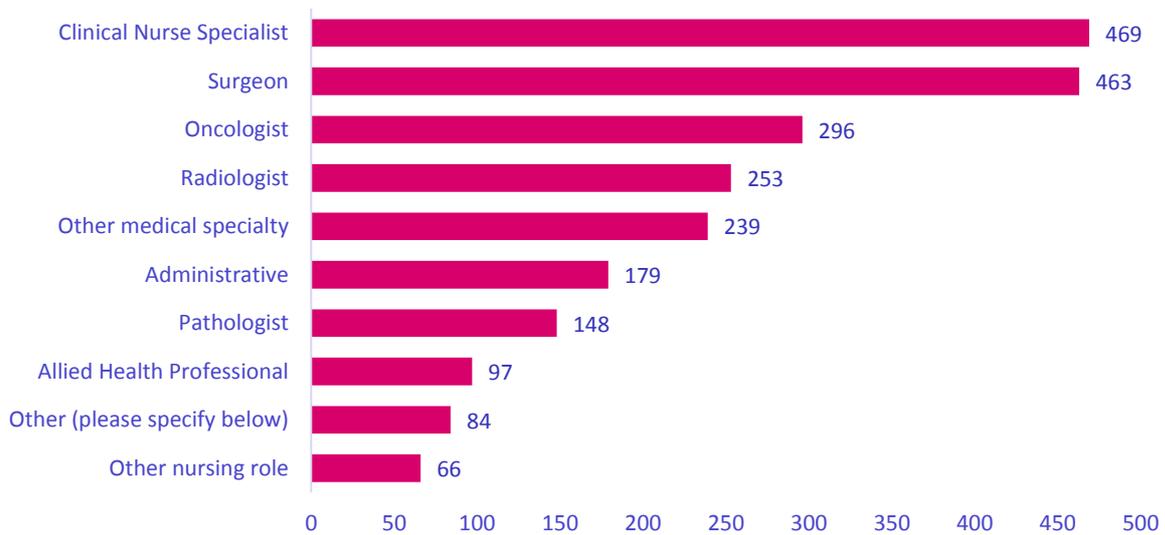
- Royal College of Radiologists
- Royal College of Pathologists
- Royal College of Physicians and Surgeons in Glasgow
- Association of Cancer Physicians
- Royal College of Surgeons in Edinburgh
- Royal College of Surgeons in England

²³ Health and Social Care Information Centre, NHS Hospital and Community Health Services Non-Medical Workforce Census and NHS Workforce Statistics in England, accessed February 2016

RESPONSE LEVEL

A total of 2,294 responses were received, covering England, Northern Ireland, Scotland and Wales. There was representation from a full range of professions/specialties, MDT roles and tumour groups (Figure 11 -13).

FIGURE 11: RESPONDENT NUMBERS BY PROFESSION/SPECIALTY



The majority of respondents in the 'Other medical specialty' and 'Other' categories were physicians from the different relevant specialties, as there was not a specific option for physicians in the survey.

FIGURE 12: RESPONDENT NUMBERS BY MDT ROLE

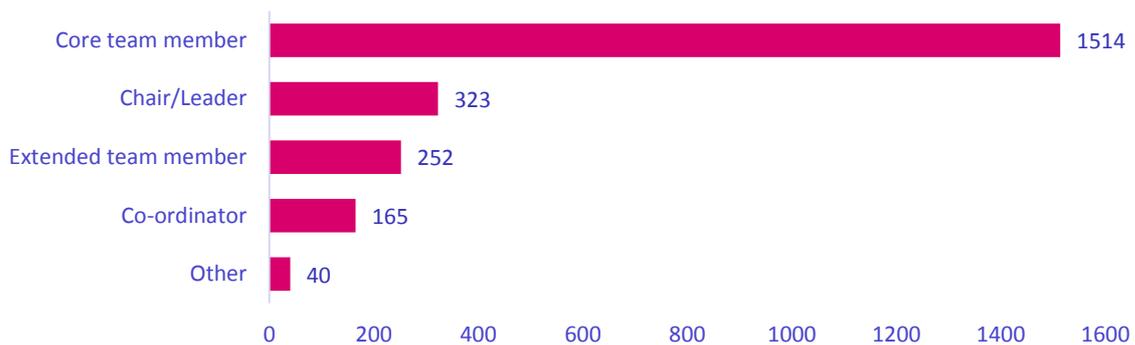
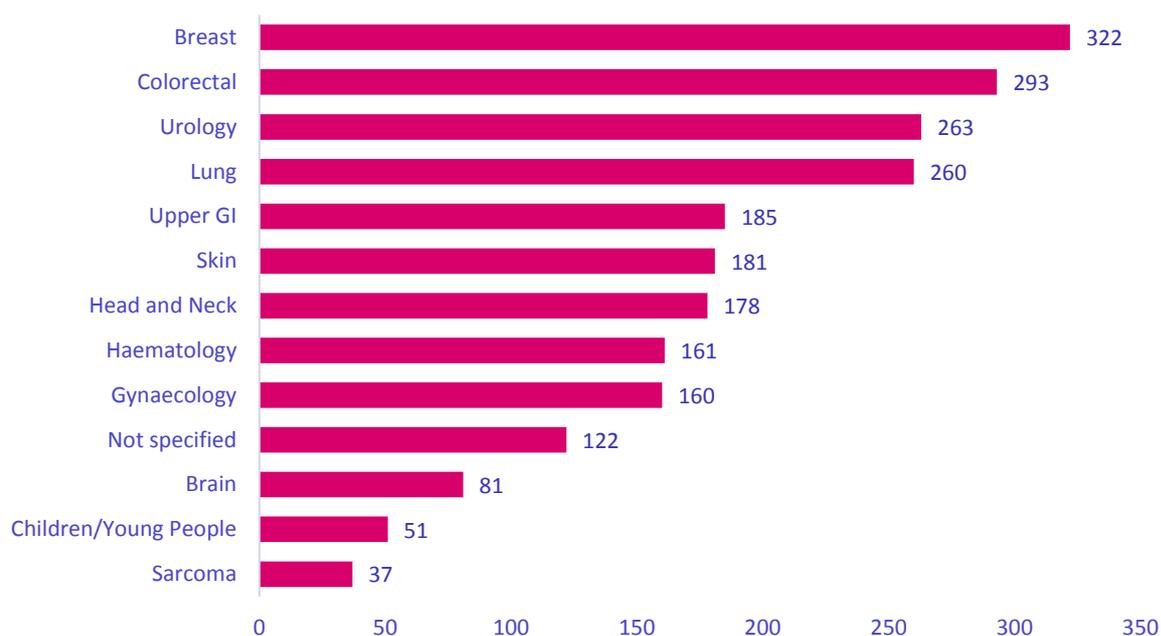


FIGURE 13: RESPONDENT NUMBERS BY TUMOUR GROUP OF PRIMARY MDT



FINDINGS FROM MDT OBSERVATIONS

Fieldwork was carried out across ten Trusts to observe the effectiveness of MDTs and interview clinicians and administrative staff involved.

SAMPLE

A sample of sites to be visited was selected using a number of different characteristics to ensure wide coverage:

- England, Northern Ireland, Scotland and Wales represented
- Cancer centres and cancer units represented
- Range of different meeting levels – local, regional, super-regional
- Metropolitan and District General Hospital sites

Where visits could not be arranged with the selected site, alternative sites were selected with similar characteristics. Unfortunately it was not possible to arrange a visit to a location in Wales, although sites in Scotland and Northern Ireland were visited. In total, 10 sites were visited – to avoid associating any teams with the observations from the report, these sites are not named. Within each site between two and four MDTs were covered, with focus placed on attending both high- and low-volume tumour types.

In total, these observations covered 624 patient discussions with 11 tumour types and in 10 Trusts. The meetings observed are as follows:

TABLE 4: MDT MEETINGS OBSERVED

Tumour Site	Number of meetings observed
Urology	6
Lung	4
Breast	3
Colorectal	2
Gynaecology	2
Haematology	2
Cancer, Unknown Primary	1
Head & Neck	1
Sarcoma	1
Specialist Bladder	1
Upper Gastrointestinal	1

DATA GATHERING

Data was gathered by observing MDT meetings and interviewing MDT members. Interviews were carried out with MDT leads, co-ordinators and other members.

Observations were recorded using an instrument based on the ‘MDT-MOT’ developed by Green Cross Medical Ltd, and the ‘MDT-MODE’ created by Lamb et al. (2011).⁷¹ The instrument was refined and added to through consultation with the clinical panel, to reflect the particular requirements of the project; for example, we added an assessment of team dynamics.

Observations were made for the meeting overall, and specifically for each patient discussion. Elements observed per-patient discussion included:

- Length of time
- Number of people verbally contributing
- Whether diagnostic information had been reviewed in advance of the meeting
- Whether information on the patient’s preference, condition or co-morbidities was discussed
- The outcome of the discussion, specifically whether the MDT discussion had an impact on the treatment recommendation. There were five possible categories for this:
 - A – Meeting has no discernible effect on treatment plan – aligned with original consultant suggestion/recommendation
 - B – Recommendation made where consultant responsible did not initially state, or was not clear on, the treatment recommendation
 - C – Recommendation made which contradicts the initial opinion of the consultant responsible for the case
 - D1 – Recommendation is deferred due to absence of expected information or relevant MDT members

- D2 – Recommendation is deferred due to the need for further investigation. Although producing some illuminating findings, several caveats must be in place for these categories. For example, in reference to option A, an unchanged treatment plan could be either because the discussion was unhelpful or in fact because the original plan was entirely appropriate.

In many cases, the presenting clinician did not offer a suggested plan. This could be for several reasons, for example the clinician being unclear on what should be done, or the clinician withholding their recommendation so as not to bias the MDT discussion.

SURVEY OF PEOPLE AFFECTED BY CANCER

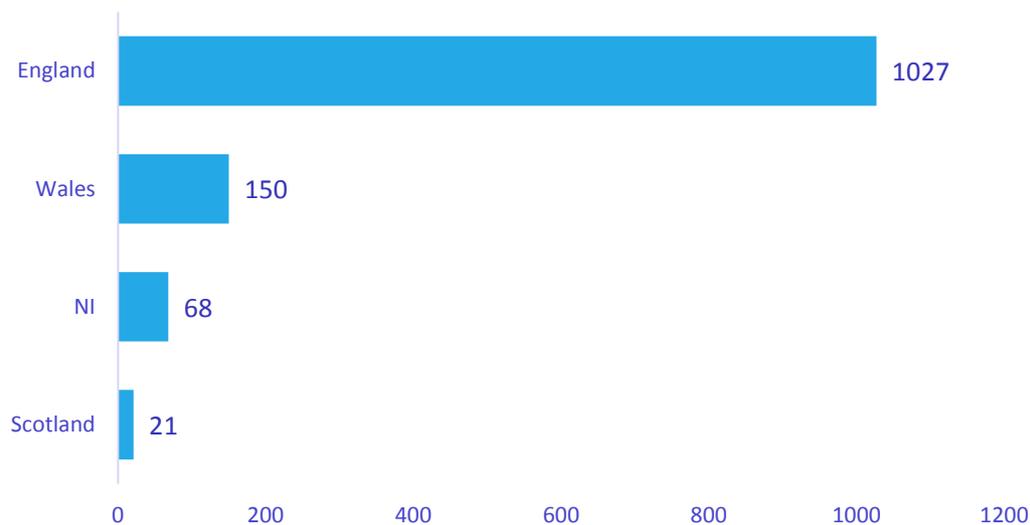
The survey issued to patients as part of this project investigated patient awareness of the MDT process. This survey was disseminated through Cancer Research UK’s patient network. 48 people affected by cancer completed the survey.

SECOND SURVEY OF MDT MEMBERS

As recommendations were being developed for the report, they were tested in a follow-up survey of MDT members issued in a similar manner to the initial survey. The majority of the questions in this survey asked respondents to rate the level to which they agreed with a given statement.

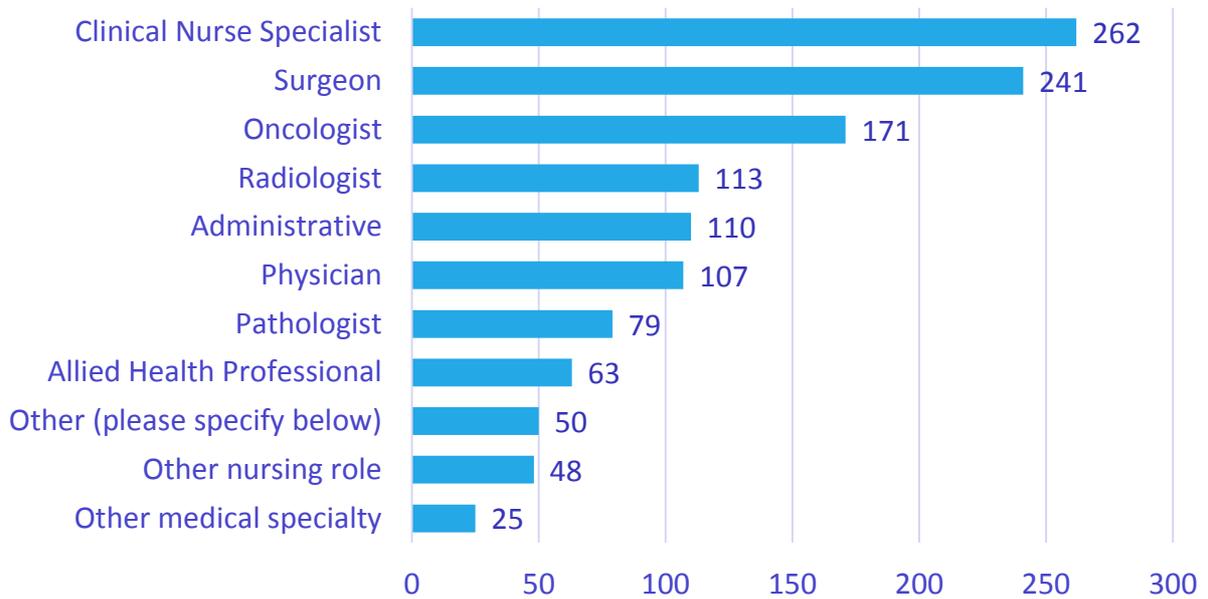
The survey received 1,258 responses from across the UK. As shown in Figure 14, responses from Wales and Northern Ireland were greater than proportionally representative forming 12% and 5% of the total respectively. Uptake in Scotland was lower than desired, with only 21 respondents in Scotland completing the survey.

FIGURE 14: RESPONDENTS TO FOLLOW-UP SURVEY, BROKEN DOWN BY NATION



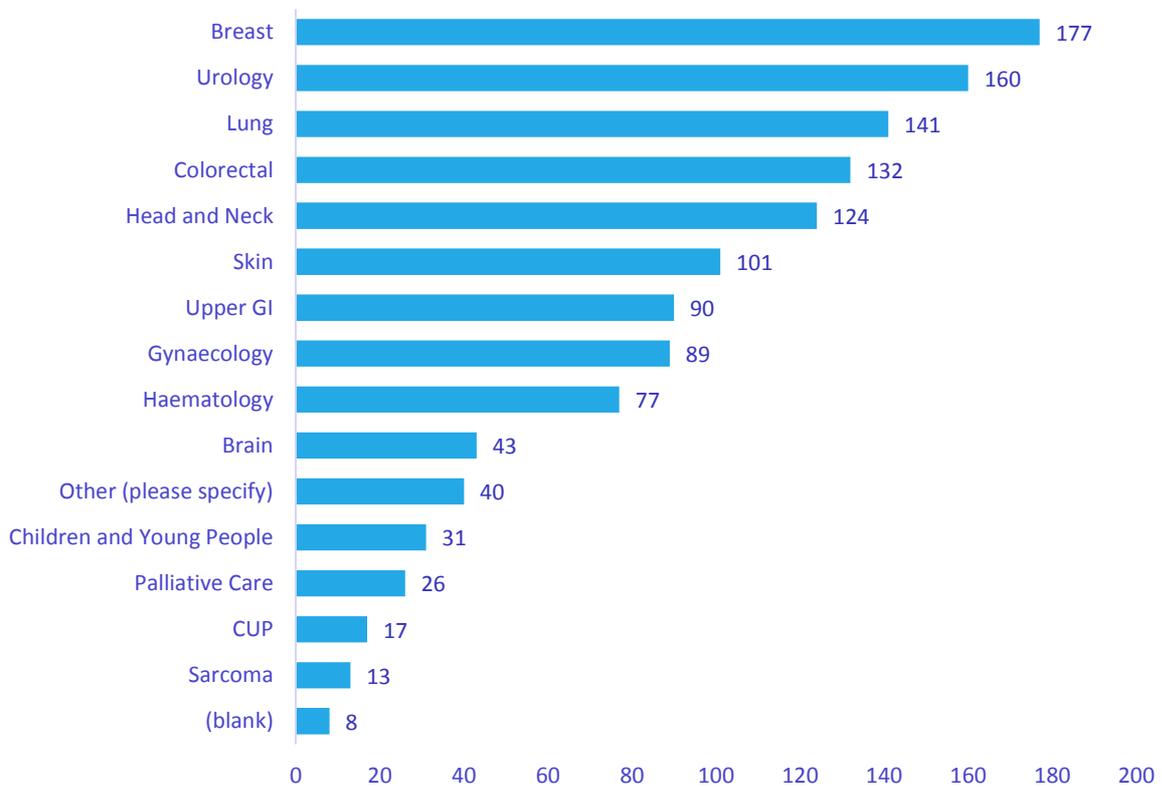
The survey was completed by respondents from a range of professions and disciplines:

FIGURE 15: RESPONDENTS TO FOLLOW-UP SURVEY BY PROFESSION OR DISCIPLINE



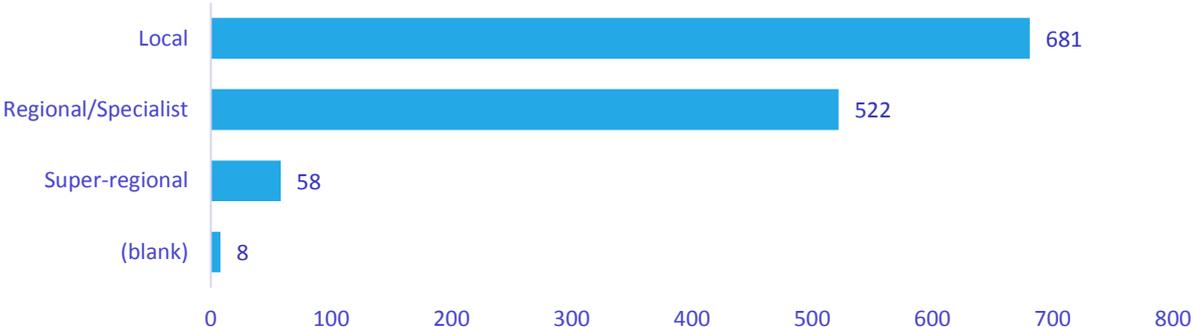
As with the initial survey, the follow-up survey reached a variety of teams for different tumour sites. The greatest input came from the four most common tumours in the UK:

FIGURE 16: RESPONDENTS TO FOLLOW-UP SURVEY BY TUMOUR SITE OR TYPE



In order to ensure that any recommendations made were relevant for all MDT types, respondents were asked to state the level of their MDT. As would be expected, the majority of respondents were from local MDTs, but a significant number were members of regional or super-regional MDTs:

FIGURE 17: RESPONDENTS TO FOLLOW-UP SURVEY BY MEETING LEVEL



APPENDIX 2. TEXT OF FIRST SURVEY OF MDT MEMBERS

Cancer Research UK is conducting research into how multidisciplinary teams (MDT) in cancer care operate across the UK, and in particular MDT meetings. There is generally strong support for the principles of the MDT but an acknowledgement that the current model, coupled with the growing workload, make it increasingly difficult to adhere to best practice. Working with teams across the UK, we'd like to understand this in more detail, and to develop alternative ways of working.

This work will consist of a number of different approaches, including literature research, data analysis and field work. We would also like to survey a wide group of MDT members throughout the project. The short survey contained here forms the first part – the initial questions on current practice (relating to the 'Characteristics of an effective MDT') and suggested recommendations with regard to MDTs. Following field work and further research, we will issue a **follow up survey** to gather views on MDT recommendations made by the teams. Please note, while some of these questions are specifically geared towards MDT meetings, **where possible answer in reference to the MDT as a whole, not just in meetings**

Please complete in as much detail as possible. In order to achieve as wide coverage as possible, please pass this on to any relevant colleagues.

We will run this survey until the field work is complete: responses will be extracted on at **12pm on Friday 26th February**. Contributions after this point are still welcomed, but will not inform the follow-up survey. The follow up survey is likely to be issued around March.

1. Please describe your role within an MDT

- Chair/Leader
- Co-ordinator
- Core team member
- Extended team member
- Other (please specify below)

2. Please select your profession or specialty

- Oncologist
- Surgeon
- Radiologist
- Pathologist
- Clinical Nurse Specialist
- Allied Health Professional
- Administrative
- Other medical specialty
- Other nursing role
- Other (please specify below)

If you are a member of multiple MDTs, please complete this survey for one selected MDT, and use the drop down menus below to indicate which MDT this is for.

Of course, please feel free to complete the survey multiple times for several MDTs

3. Please select the relevant category for the MDT in question from the drop-down list

4. Please select the tumour site for the MDT in question from the drop-down list

5. Please answer the below questions on compliance for the named MDT, and your opinion on the importance of these areas

	To what extent does the MDT...	In your opinion, how important is that it that MDTs...
Stratify patients based on risk, as opposed to discussing all new patients		
Prioritise more complex cases		
Incorporate a discussion on patient preference into decision making		
Have imaging, pathology etc. results present for patient discussions		
Review or audit decisions made by the team		
Discuss 14 day pathway patients if investigations do not show cancer (in order to remove them from the pathway)		
Discuss patients at all stages in the pathway (rather than only when staging information is available)		
Enter patient details into the database in real time		
Have all required members present		
Have sufficient time to discuss patients in adequate detail		
Have a clear agenda which is circulated in advance of the meeting		
Have a clear meeting owner who takes charge of discussions		
Have sufficient time allocated for preparation in your job plan		

1

6. Please comment on any of the above areas, or any other relevant area

7. What, if anything, prevents this MDT from achieving the highest standards of patient care?

8. What steps would you recommend to improve the effectiveness of this MDT?

9. Can you suggest areas of good practice shown by your MDT that you think should be adopted more widely? Please indicate if you would like to be contacted regarding this as part of this project

10. Please enter your email address for the second part of the survey to be sent to you

APPENDIX 3. TEXT OF SECOND SURVEY OF MDT MEMBERS

1. Overview

This survey forms part of a Cancer Research UK project into improving the effectiveness of cancer multidisciplinary teams (MDTs), and specifically MDT meetings. Our initial survey (which you may have completed in February/March) aimed to understand the challenges facing MDTs and the barriers to running effective meetings. In addition to the first survey, we have been undertaking observations of MDTs and interviewing MDT members across the UK.

Having reflected on some of the challenges, this follow up survey is designed to test some recommendations and potential new practices which would differ from current guidance. The statements and ideas included below have been generated over the course of the project in consultation with a wide range of individuals involved in the delivery of care to patients. There is no requirement to have completed the initial survey in order to share your views in this survey.

In order to achieve as wide coverage as possible, please share this link with any relevant colleagues. Please complete this survey by 6th May.

If you are a member of multiple MDTs, please complete this survey for one selected MDT, and use the drop down menus below to indicate which MDT this is for. Of course, please feel free to complete the survey multiple times for several MDTs

1. Please describe your role within an MDT

- Chair/Leader
- Co-ordinator
- Core team member
- Extended team member
- Other (please specify below)

2. Please select your profession or specialty

- Oncologist
- Surgeon
- Radiologist
- Pathologist
- Physician
- Clinical Nurse Specialist
- Allied Health Professional
- Administrative
- Other medical specialty
- Other nursing role
- Other (please specify below)

Text:

3. Please select your location in the UK (this information will be used to measure the spread of responses across the UK)

4. Please select the relevant category for the MDT you are providing information about from the drop-down list

5. Please select the tumour site for the MDT in question from the drop-down list

6. Please select the level of the MDT from the drop-down list

Other (please specify)

7. If you would like to be sent a copy of the final report, please enter your email address in the box:

For many of the below statements, please rate the extent to which you agree with them. Some statements apply to cancer MDTs in general, and others are specific to individual teams. Where relevant, please answer specifically for the MDT you have selected above. Each statement should be viewed in isolation from any previous or subsequent statement.

8. Attendance

Strongly Disagree to
Strongly Agree, or N/A

There should be requirements for specialty cover at the meeting, rather than individual member attendance

Individual MDTs should set quoracy requirements themselves, rather than these being centrally mandated

A cancer network should define quoracy for video-conferenced networked MDTs

The MDT selected above should have palliative care representation at the meeting

The MDT selected above should work closely with palliative care, but not require attendance at the meeting

There should be no limit to the number of meeting attendees

The MDT lead should have the ability to impose a limit on the number of people attending the meeting

Attendance levels could be lower than peer review guidance if correct clinical governance (e.g. auditing process) was in place

Please add any further comments on attendance:

Streamlining MDT discussion – as mentioned in the Achieving World-class Cancer Outcomes for

England: “NHS England should encourage providers to streamline MDT processes such that specialist time is focused on those cancer cases that don’t follow well-established clinical pathways, with other patients being discussed more briefly.” We are interested in testing this approach across the UK.

One approach to this could lead to some patients receiving treatment recommendations from a different forum. Naturally, this would require safeguards to be in place to ensure patient care and to provide sufficient time in roles/job plans. Where streaming refers to patients being placed on different pathways, Some patients would be discussed at the meeting, and others would receive treatment recommendations in from a different forum. This may allow some the more complex patients to benefit from a longer discussion within the meeting forum whilst more simple patients could possibly be progressed more quickly

9. Streamlining MDT discussion

Strongly Disagree to
Strongly Agree, or N/A

The MDT I selected above would benefit from some form of streamlining

For the MDT selected above, some patients should be discussed by a smaller team, rather than requiring discussion by the full MDT

For the MDT selected above, some patients should be placed on protocolised treatment pathways and are not needed to be discussed at the meeting at all

The streamlining of patient discussions should be performed in advance of the main MDT meeting in order to decide which patients should be discussed at the meeting, and which should receive a protocolised treatment plan

This approach of streamlining patient discussions could allow more straightforward cases to be progressed more quickly, rather than waiting for the weekly meeting

If patients followed treatment protocols or had recommendations made by a smaller team, the full MDT reviewing a selection of these patients would provide sufficient governance of this process

Please add any further comments on streamlining MDT discussions:

Ensuring Patients Are Ready for Discussion at the MDM – where ready refers to all patients having all diagnostic information present

10. Ensuring Patients are Ready for Discussion at the MDM

Strongly Disagree to
Strongly Agree, or N/A

Information from a patients’ holistic needs assessment, if possible/available, should be fed into the MDT discussion

Strongly Disagree to
Strongly Agree, or N/A

The more information we have about the patient (e.g. their social, psychological, supportive care needs) in the meeting, the more likely the recommendations are going to be implemented, and less likely to require re-discussion

The use of a proforma to ensure all necessary information on a patient is available before the MDT meetings would have a beneficial impact on the meeting efficiency

Such a proforma would not introduce additional or unnecessary delays in individual patient pathways

If the purpose of the MDT discussion is to recommend treatment, it is still worthwhile to discuss the patient at the MDT meeting even when the diagnostic information is not present or the patient does not have a full diagnosis

Please add any further comments on ensuring patients are ready for discussion

11. Non-case discussion benefits of MDTs

Strongly Disagree to
Strongly Agree, or N/A

MDT meetings should review non-treatment recommendation components, including cancer target breaches and 30 day mortality

We should hold a quarterly operational meeting to review elements of the MDT meeting

We have a process in place which is sufficient for improving the effectiveness of our MDT

Reducing the number of patients discussed, and therefore increasing the depth of discussion, would allow MDT meetings to be more useful for education and training purposes

Please add any further comments on non-case discussion benefits:

12. If you are a member of more than one MDT, would the answers you have given for the single chosen MDT have differed in relation to your other MDTs?

- Yes
- No
- If yes, in what way(s)?

13. Please add any overall comments:

The following pages contain specific questions about each of the 4 sections covered above

End of Page 1

2. Attendance

Current guidance requires MDT core members to attend 66% of meetings. This is difficult to achieve in some cases, and one possible alternative is a move to quoracy - where the requirement is that there is coverage of a particular specialty, rather than attendance by individuals.

14. Please select the percentage of meetings that a core member should attend. If you believe the current guidance should not be changed, please select "No change"

15. Please rate the extent to which you agree with the following statements. The figure of 25% attendance has been used as an example for the purposes of this question

Strongly Disagree to
Strongly Agree, or N/A

You can be an active member of an MDT while attending 25% of the meetings

The 25% of meetings to be attended should be spread throughout the year, to prevent 'de-skilling' due to not attending an MDT meeting for an extended period of time

As a clinician, I would be comfortable meeting with a patient despite not having been present for their MDT discussion

If my attendance requirement for MDTs was reduced, I would be able to spend more time with patients

16. Please add any comments relating to Attendance:

End of Page 2

3. Streamlining MDT Discussions

17. Do you agree with the idea that some patients could be streamlined or reviewed outside of the meeting?

Yes

No

18. If yes - For the MDT selected on the first page:

What percentage of patients do you feel could be resolved outside of the meeting - for example, through clearly defined treatment protocols and review by a smaller group?

0% 10% 20% 30% 40% 50% 60% 70% 80% 90% 100%

Comment:

In order to improve processes to make more time for complex cases in the MDT Meeting

Please look at the following 12 factors and please rate how the following items contribute to making a discussion more complex or whether they make deciding a treatment option more difficult.

If you are unsure whether a factor is important, another way to think about it is: if these factors don't exist - does that make a case discussion or choosing a treatment option any easier?

19. Factors that increase complexity

1 – Does not add any complexity to 5 – Adds a significant amount of complexity

Medical: Patient discussed in the meeting has unusual or rare tumour type

Medical: Patient has a poor performance status (i.e., they are frail and/or need assistance with care/mobility)

Medical: Patient has significant drug history (e.g., polypharmacy)

Medical: Patient has significant physical co-morbidity (e.g. diabetes, congestive heart failure, kidney or vascular disease, immunocompromised or suppressed).

Surgical: Patient has a significant past surgical history (e.g. relevant previous surgeries that may affect surgical options)

Psychological/Cognitive: Patient has a significant mental health or cognitive co-morbidity (e.g. they are sanctioned under the Mental Health Act, have schizophrenia, dementia from stroke or Alzheimer's disease)

Treatment: Patient has treatment failure (i.e., there is cancer progression despite current treatment)

Treatment: Patient experienced treatment toxicity and/or contraindications to standard treatment

Treatment: There is a conflict of opinion regarding the best treatment option for a patient

Treatment: Guidelines/pathway do not account for patients' specific

1 – Does not add any complexity to 5 – Adds a significant amount of complexity

situation, (i.e. exceptional case)

Social and Behavioural: Patient has lifestyle risks for the success of treatment, such as for example smoking, excess weight, alcohol/drug abuse

Social and Behavioural: Patient has socio-economic issues, such as for example, they are a sole parent with young children, there is a lack of social, family and/or financial support and/or housing issues

Other criterion not mentioned above:

20. Please rate the extent to which you agree with this statement: "A streamlined approach to treatment options is more relevant to newly diagnosed tumours than to recurrent tumours or those that have failed therapy"

- Strongly Disagree
- Disagree
- Neither Agree nor Disagree
- Agree
- Strongly Agree

The clinician who refers the patient can decide if the patient is sufficiently complex to require discussion with the full MDT. The pre-MDT could act to make recommendations for patients deemed straightforward and to ensure diagnostic information is ready by the full MDT discussion. This pre-MDT would be factored into the job plans and roles of the relevant staff

21. Please rate the extent to which you agree with the following statements about the above model

Strongly Disagree to
Strongly Agree

The clinician referring the patient to the MDT should be able to bypass the pre-MDT and refer straight to the full MDT

The clinician should be able to make treatment recommendations directly for newly diagnosed patients, without referring to either the full MDT or pre-MDT

Patient cases that are placed on a protocolised pathway should be made available to audit by the MDT

The treatment protocols followed by the pre-MDT should be designed by a national body

Strongly Disagree to
Strongly Agree

The treatment protocols followed by the pre-MDT should be designed at a local level, based on recommendations made at a national level

The treatment protocols followed by the pre-MDT should be designed at a network level, based on recommendations made at a national level

Comment:

22. Please indicate the people you feel should be present at the pre-MDT

Approximate numbers

Physician

Surgeon

Oncologist

Radiologist

Pathologist

CNS

Other (please specify)

23. Please add any further comments about streamlining MDT discussions:

End of Page 3

4. Ensuring Patients are Ready for Discussion

A proforma could be used to ensure that all patients discussed at the MDT have sufficient information present for recommendations to be made.

24. Do you currently use any form of checklist or proforma to inform referrals to your MDT?

- Yes
- No

25. Please rate the extent to which you agree with the following statements about the above model

Strongly Disagree to
Strongly Agree

If a proforma were to be used prior to referral to the MDT, the MDT co-ordinator should be responsible for checking that this is completed

Strongly Disagree to
Strongly Agree

If a proforma were to be used prior to referral to the MDT, the MDT lead/chair should be responsible for checking that this is completed

If a patient is not added to the MDT list because of the required information not being present, this should be recorded in order to inform improvements to internal processes

Comment:

26. If a proforma were to be used, please rate the importance of the following criteria to be included

1 – Not very important
to 5 – Very important

Patient Wishes

Patient Fitness / Frailty

Co-morbidity

Imaging

Pathology

History of previous malignancy

Other criterion not mentioned above:

27. Please add any further comments about ensuring patients are ready for MDT discussion

End of Page 4

5. Non-case discussion benefits of MDTs

We believe that there are non-patient case benefits for MDTs – improving the quality of discussion will allow these to increase.

The Achieving World-class Cancer Outcomes (England) document contains ‘Recommendation 39: NHS England should require MDTs to review a monthly audit report of patients who have died within 30 days of active treatment, to determine whether lessons can be learned about patient safety or avoiding superfluous treatment.’ We are considering responses from all of the UK for this section.

28. Please rate the extent to which you agree with the following statements

Strongly Disagree to
Strongly Agree

An audit report of patients who have died within 30 days of active treatment should be reviewed during the MDT meeting on a monthly basis

An audit report of patients who have died within 30 days of active treatment should be reviewed by the MDT, but not in the regular meeting

29. Please rank the main non-case related benefits for MDTs in order of preference:

- Collegiality - working with colleagues from other areas
- Education - learning more about your own specialty
- Education - learning about other specialties
- Improved communication between oncology professionals and patients
- Improved Continuity of Care between Oncology Professionals
- Research - recruitment into trials, data collection
- Training - gaining experience in meeting participation etc.

Please provide other benefits not covered above:

30. Does the MDT save you time elsewhere in your role?

- Yes
- No, it does not save or cost time outside of the meeting
- No, it takes up time outside of meeting

31. If yes, in which areas? (More than one may be selected)

- Administration
- Audit
- Collation of results
- Coordination of care
- Decreases time of consultation later
- Discussion
- Education
- Planning care
- Record keeping
- Referrals
- Research
- Teamworking (cohesiveness of team)
- Other not covered above:

32. If yes, please estimate how much time you save per hour of meeting:

33. If you answered that it takes up time outside of the meeting (Q30), in which areas? (More than one may be selected)

- Administration

- Audit
- Collation of results
- Coordination of care
- Discussion
- Education
- Increases time of consultation later
- Planning care
- Preparation for the meeting
- Record keeping
- Referrals
- Research
- Other not covered above:

34. If you answered that it takes up time (Q30), please estimate how much additional time per hour of the meeting:

35. Please add any further comments about non-case discussion benefits of MDTs

Done

APPENDIX 4. TEXT OF SURVEY FOR PEOPLE AFFECTED BY CANCER

Cancer Research UK's Policy Development Team are working on a piece of research into the performance of multidisciplinary team (MDT) meetings in NHS cancer services.

Every patient is discussed at an MDT meeting – and some several times – by a range of people including doctors, nurses, radiologists and pathologists. Patients' cases are discussed and the team recommends the best course of action (for example the treatment they should have) to the doctor treating the patient.

We'd like to understand more about how much patients are told about the MDT - we understand from past discussions that many patients haven't been told much at all. We'd also like to know how much you would like to know about how decisions are made regarding your care, so that we can try and change things for the better.

We'd like to use these results to inform our research project. We are hoping that our project will result in the NHS making changes to how these meetings are run, so that patient care can be improved. We'd also like to consider how we ourselves could help inform patients about multidisciplinary team meetings, which we believe are such an important part of cancer care.

Please answer as openly as possible.

1. Before you read the information above, were you aware that a healthcare team was looking after you, as opposed to just your consultant?

- Yes
- No

2. Were you aware that your case would be discussed at a multidisciplinary team (MDT) meeting?

- Yes
- No

3. If yes, how? (More than 1 can be selected)

- I was given written information (booklet / letter)
- This was explained to me verbally/face to face
- Electronically (via the internet, website etc)
- I already knew about MDTs

End of Page 1

Page 2 - to be completed if answer to Q1 is Yes

4. Were you made aware of who would be taking your views/details of your circumstances/details of your wishes etc. to the MDT meeting?

- Yes
- No

If yes, who?:

5. Please indicate your level of agreement with the following statements

Strongly
Disagree to
Strongly Agree

I had enough opportunity to contribute to the discussion about my case at the MDT meeting (e.g. you made your views known to a clinician or other health professional)

I understood what was discussed at the meeting

I was satisfied with the way in which the outcome was communicated to me and how much detail I received

End of Page 2

Please answer the below questions based on the information at the start of this survey

6. Do you think your case should be discussed at an MDT meeting each time that your treatment changes?

- Yes
- No
- Not sure

7. Do you think it is important to have a person at the meeting that has met you?

- Yes, it is important
- As long as they have all the information about me, it isn't that important
- No

8. How much time do you think is spent discussing each patient on average at each meeting?

- Under two minutes
- Two to five minutes
- Six to nine minutes
- Ten to fifteen minutes
- More than fifteen minutes
- Don't know

9. Please indicate your level of agreement with the following statements

Strongly
Disagree to
Strongly Agree

At the meeting if somebody disagrees with the rest of the team's final treatment option – for example they think an additional treatment would be an option but the rest don't, I would like to be told

If my case followed clear treatment guidelines and standard treatment is available, I would rather this was discussed by the full multidisciplinary team – even if this meant waiting longer for treatment

Strongly
Disagree to
Strongly Agree

If my case followed clear treatment guidelines and standard treatment is available, I don't need to be discussed at the MDT meeting before I start my treatment

10. Please add any additional comments:

Optional Demographic Information

11. Please select the gender with which you identify

- Male
- Female
- Prefer not to say
- Other (please specify)

12. Please select the year of your birth from the drop-down menu

13. Please select the year of your cancer diagnosis from the dropdown menu

14. Please enter the type of cancer with which you were diagnosed

15. Please select the highest level of qualification you have attained

- No qualification
- Vocational and other qualifications at level 1 and below
- GCSE, O-level, vocational level 2 or equivalent
- A-levels, vocational level 3 or equivalent
- University or college qualification below degree level
- Bachelor's degree or equivalent
- Post-graduate qualification

16. Please select your ethnic group from the options below

- White - English, Welsh, Scottish, Northern Irish, British, Irish or any other White background
- Asian/Asian British - Indian, Pakistani, Bangladeshi, Chinese or any other Asian background
- Black/African/Caribbean/Black British - or any other Black/African/Caribbean background
- Mixed/Multiple Ethnic groups - White and Black Caribbean, White and Black African, White and Asian or any other mixed/multiple ethnic background
- Other ethnic group - Arab, any other ethnic group

Done

REFERENCES

- ¹ Cancer Research UK (2016), Cancer Research UK. <http://bit.ly/2gKAOxa> (Accessed December 2016)
- ² Smittenaar, C.R., Petersen, K.A., Stewart, K. and Moitt, N. "Cancer incidence and mortality projections in the UK until 2035". *British Journal of Cancer*, **2016**. 115, p1147-1155. <http://go.nature.com/2fxmfdB> (Accessed November 2016)
- ³ Independent Cancer Taskforce. 2015. Achieving World-Class Cancer Outcomes: A Strategy for England 2015-2020. London: Independent Cancer Taskforce. <http://bit.ly/1ldwf5W> (Accessed November 2016)
- ⁴ National Audit Office, 2016. *Managing the supply of NHS clinical staff in England*. <http://bit.ly/2fjEdCh> (Accessed November 2016)
- ⁵ Blazeby, J.M. et al (2006), Analysis of clinical decision-making in multidisciplinary cancer teams. *Ann Oncol* **17**: pp.457-60. <http://bit.ly/2gcZ2yz> (Accessed November 2016)
- ⁶ Wood, J.J. et al (2008), An evaluation of treatment decisions at a colorectal cancer multidisciplinary team. *Colorectal Dis.* **10**: pp.769-72. <http://bit.ly/2fjHHEK> (Accessed November 2016)
- ⁷ Cancer Research UK (2016), Cancer Research UK. <http://bit.ly/2gKAOxa> (Accessed December 2016)
- ⁸ Ibid.
- ⁹ Coleman, M.P. et al., "Cancer survival in Australia, Canada, Denmark, Norway, Sweden and the UK, 1995-2007 (the International Cancer Benchmarking Partnership): an analysis of population-based cancer registry data". *The Lancet*, 2001. 377(9760): p. 127-138. <http://bit.ly/2eXRIJn> (Accessed November 2016)
- ¹⁰ Cancer waiting times (2016), NHS England. <http://bit.ly/2cbZzxD> (Accessed December 2016)
- ¹¹ Cancer waiting times (2016), ISD Scotland <http://bit.ly/2hp8z8o> (Accessed December 2016)
- ¹² Cancer waiting times (2016), StatsWales. <http://bit.ly/2hr4i1h> (Accessed December 2016)
- ¹³ [Cancer waiting times \(2016\), Department of Health Northern Ireland. http://bit.ly/2hB0UV2](http://bit.ly/2hB0UV2) (Accessed December 2016)
- ¹⁴ Ibid.
- ¹⁵ Wales Cancer Network and Welsh Government (2016). Cancer Delivery Plan for Wales 2016-20: the highest standard of care for everyone with cancer. <http://bit.ly/2gC1ke1> (Accessed November 2016)
- ¹⁶ The Characteristics of an Effective Multidisciplinary Team (MDT) (February 2010), National Cancer Action Team. <http://bit.ly/2fjEtRC> (Accessed November 2016)
- ¹⁷ Calman, K. and Hine, D. (1995) A policy framework for commissioning cancer services: a report by the expert advisory group on cancer to the chief medical officers of England and Wales. London: Department of Health. <http://bit.ly/1SCvLrz> (Accessed November 2016)
- ¹⁸ Scottish Cancer Co-ordinating and Advisory Committee (1996) Commissioning Cancer Services in Scotland: report to the Chief Medical Officer, SDOH. Edinburgh: The Scottish Office. <http://bit.ly/2geaZnl> (Accessed November 2016)
- ¹⁹ Department of Health (2000) "The NHS Cancer Plan: a plan for investment, a plan for reform". <http://bit.ly/2g5qD7w> (Accessed December 2016)
- ²⁰ Griffith, C. and Thurner, J. (2004) United Kingdom National Health Service, Cancer Services Collaborative "Improvement Partnership": redesign of cancer services – a national approach. *European Journal of Surgical Oncology*, **30**, Suppl 1: pp. 1–86. <http://bit.ly/2gauzmO> (Accessed November 2016)
- ²¹ Kesson, E.M. et al. (2012) Effects of multidisciplinary team working on breast cancer survival: retrospective, comparative, interventional cohort study of 13 722 women. *British Medical Journal*, **344**: p. e2718
- ²² Morris, E., Haward, R. A., Gilthorpe, M. S., Craigs, C., Forman, D. (2006) The impact of the Calman-Hine report on the processes and outcomes of care for Yorkshire's colorectal cancer patients. *British Journal of Cancer*, **95**: pp. 979-85
- ²³ Birchall, M., Bailey, D., King, P. (2004) South West Cancer Intelligence Service Head and Neck Tumour Panel. Effect of process standards on survival of patients with head and neck cancer in the south and west of England. *British Journal of Cancer*, **91**: pp. 1477-81
- ²⁴ Coory, M., Gkolia, P., Yang, I., Bowman, R. and Fong, K. (2008) Systematic review of multidisciplinary teams in the management of lung cancer. *Lung Cancer*, **60**: pp. 14-21
- ²⁵ Bydder, S., Nowak, A., Marionm K., Phillips, M and Atun, R. (2009) The impact of case discussion at a multidisciplinary team meeting on the treatment of survival of patients with inoperable non-small cell lung cancer. *Internal Medicine Journal*, **39**: pp. 838–841
- ²⁶ Junor, E., Hole, D. and Gillis, C. (1994) Management of ovarian cancer: referral to a multidisciplinary team

matters. *British Journal of Cancer*, **70**: pp. 363–370

²⁷ Stephens, M. R., Lewis, W. G., Brewster, A. E., *et al.* (2006) Multidisciplinary team management is associated with improved outcomes after surgery for esophageal cancer. *Diseases of the Esophagus*, **19**: pp. 164–171

²⁸ Croke, J. M. and El-Sayed, S., (2012) Multidisciplinary management of cancer patients: chasing a shadow or real value? An overview of the literature. *Current Oncology*, **19**(4): pp. e232-238. <http://bit.ly/2fjFpWk> (Accessed November 2016)

²⁹ Munro, A.J., (2015) 'Multidisciplinary Team Meetings in Cancer Care: An Idea Whose Time has Gone?', *Clinical Oncology*, **19**: pp 728-731. <http://bit.ly/2guOOMB> (Accessed November 2016)

³⁰ National Lung Cancer Audit, 2014, Royal College of Physicians. <http://bit.ly/1XOD33d> (Accessed November 2016)

³¹ Taylor, C. and Ramirez, A. (2009) Multidisciplinary team members' views about MDT working: Results from a survey commissioned by the National Cancer Action Team. <http://bit.ly/2eY3x2a> (Accessed November 2016)

³² Manual for Cancer Services, National Peer Review Programme, accessed November 2016

³³ Such as: 'Haematological cancers: improving outcomes', NICE, May 2016. <http://bit.ly/2gaBFrm> (Accessed November 2016)

³⁴ Cancer Services 2013/14, National Cancer Peer Review

³⁵ Healthcare Improvement Scotland. Cancer Quality Performance Indicators (QPIs). <http://bit.ly/2bqCYIV> (Accessed November 2016)

³⁶ The Scottish Government. National Cancer Quality Programme. <http://bit.ly/2bIXEoh>; (Accessed September 2016)

³⁷ For example <http://bit.ly/2dqQjLm> (Accessed October 2016)

³⁸ *ibid.*

³⁹ <http://bit.ly/2deLK3n> (Accessed October 2016)

⁴⁰ 'Beating Cancer: Ambition and Action', Scottish Government, March 2016 <http://bit.ly/2fhsBMP> (Accessed November 2016)

⁴¹ *ibid.*

⁴² NHS Wales (2005) National Standards for Urological Cancer Services 2005. <http://bit.ly/2gawcRx> (Accessed September 2016).

⁴³ Cancer NSAG Urological Cancers Group (2015) Peer Review of Urological Cancer Services in Wales: All Wales Summary Report 2015. <http://bit.ly/2fjGSvO> (Accessed June 2016)

⁴⁴ *ibid.*

⁴⁵ Wales Cancer Network and Welsh Government (2016). Cancer Delivery Plan for Wales 2016-20: the highest standard of care for everyone with cancer. <http://bit.ly/2gC1ke1> (Accessed November 2016)

⁴⁶ Northern Ireland Cancer Network (n.d.) National Peer Review Programme. <http://bit.ly/28MBWx3> (Accessed September 2016)

⁴⁷ Northern Ireland Cancer Network (2015) National Peer Review Report: Northern Ireland 2014 – an overview of the findings from the 2014 National Peer Review of Cancer Services in Northern Ireland. <http://bit.ly/28MBWx3>, (Accessed September 2016)

⁴⁸ Northern Ireland Cancer Network (2015) National Peer Review Report: Northern Ireland 2015 – an overview of findings from the 2015 National Peer Review of Cancer Services in Northern Ireland. <http://bit.ly/28MBWx3> (Accessed 25/07/2016).

⁴⁹ Cancer Research UK (2016) 'Where Next for Cancer Services in Ireland? An evaluation of priorities to improve patient care.' <http://bit.ly/2deDH6W>. (Accessed September 2016).

⁵⁰ NHS reference costs, Department of Health; downloaded January 2016

⁵¹ *ibid.*

⁵² Cancer Research UK (2015) 'Scoping the Future: an evaluation of endoscopy capacity across the NHS in England', <http://bit.ly/2ggzphu> (Accessed December 2016). Cancer Research UK (2015) 'Horizon Scanning: an evaluation of imaging capacity across the NHS in England', <http://bit.ly/2gYHZzE> (Accessed December 2016).

Cancer Research UK (2016) 'Testing Times to Come? An evaluation of pathology capacity across the UK', <http://bit.ly/2fo5r7J> (Accessed December 2016).

⁵³ *ibid.*

⁵⁴ NHS Hospital & Community Health Service (HCHS) monthly workforce statistics - Provisional Statistics, HSCIC NHS Hospital and Community Health Services Non-Medical Workforce Census, HSCIC Health and Social Care Information Centre, NHS Hospital and Community Health Services Non-Medical Workforce Census and NHS Workforce Statistics in England, accessed February 2016

⁵⁵ NHS reference costs, Department of Health; downloaded January 2016

⁵⁶ *ibid.*

-
- ⁵⁷ Taylor, C. *et al.*, (2012) Measuring the quality of MDT working: an observational approach'. *BMC Cancer*, **12**: p.202. <http://bit.ly/2geiR8b> (Accessed November 2016)
- ⁵⁸ *ibid.*
- ⁵⁹ The King's Fund (2014) 'How can dermatology services meet current and future patient needs, while ensuring quality of care is not compromised and access is equitable across the UK?' <http://bit.ly/2guQq93> (Accessed September 2016)
- ⁶⁰ Lamb, B.W. *et al.* (2011) Teamwork and Team Decision-making at Multidisciplinary Cancer Conferences: Barriers, Facilitators and Opportunities for Improvement, *World J Surg*, **35**: pp. 1970–1976. <http://bit.ly/2gekjr4> (Accessed November 2016)
- ⁶¹ *ibid.*
- ⁶² *ibid.*
- ⁶³ Quality Health (2014). Welsh Cancer Patient Experience Survey, Welsh Government <http://bit.ly/2fhjuMa> (Accessed November 2016)
- ⁶⁴ Quality Health (2015). National Cancer Patient Experience Survey, NHS England <http://bit.ly/29Dur8M> (Accessed November 2016)
- ⁶⁵ Scottish Government (2016) Scottish Cancer Patient Experience Survey, Scottish Government <http://bit.ly/1XwyKJj> (Accessed November 2016)
- ⁶⁶ Quality Health (2015) Northern Ireland Cancer Patient Experience Survey, Public Health Agency <http://bit.ly/234i8TN> (Accessed November 2016)
- ⁶⁷ *ibid.*
- ⁶⁸ *ibid.*
- ⁶⁹ *ibid.*
- ⁷⁰ Breast Cancer Care 'Who's Counting?' Campaign; information available at <http://bit.ly/2guTxxY> (Accessed October 2016)
- ⁷¹ Lamb, B.W. *et al.* (2011) Teamwork and team performance in multidisciplinary cancer teams: development and evaluation of an observational assessment tool. *BMJ Quality & Safety*, **20**: pp. 849-856