Multidisciplinary team members' views about MDT working:

Results from a survey commissioned by the National Cancer Action Team

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Introduction

This report summarizes the results of an on-line survey commissioned by the National Cancer Action T eam and undertaken by Business Bof fins Ltd. The survey aimed to assess multidisciplinary team (MDT) members' perceptions regarding: what parameters are essential for an effective MDT, how best to measure MDT effectiveness, and what support or tools MDTs may need to become or remain effective.

Development of the survey

The survey questions were designed with input from a steering group consisting of 32 cancer professionals, including representatives from all core disciplines in cancer MDT s. The survey comprised a total of 52 questions: 5 questions assessed the respondents background (professional group, membership of MDT and tumour types); 22 questions were multiple-choice questions assessing team members' perceptions about MDT working; 4 questions were fact-based questions, collecting information about th e current status o f MDT working (e.g. Does your team have a designated MDT coordinator?); and 21 questions were free-text (open) questions.

This report is based upon analysis of responses to 18 of the multiple choice questions regarding team members' perceptions; the 4 facts-based questions; and 3 of the free-text (open) questions, covering the following aspects of MDT working:

1. Domains that are important for effective MDT working

- Structure
  - Membership/attendance
  - Technology (availability and use)
  - Physical environment of the meeting venue
  - Preparation for MDT meetings
  - Organisation/administration during MDT meetings

- Clinical decision-making
  - Case management and clinical decision-making process
  - Teamworking
  - Patient-centred care/coordination of service

- Team governance
  - Leadership
  - Data collection, analysis and audit of outcomes
  - Clinical governance

- Professional development and education of team members
  - Development and training

2. Outcomes from effective MDT working

3. Measuring MDT effectiveness/performance

4. Supporting MDTs to work effectively

The full analyses on which this report is based can be found at **www.ncin.org.uk**

Participants

Invitations to participate in the survey were mailed to MDT members via cancer networks, and in some areas via cancer service managers. In addition routes such as the MDT coordinators forum and the Network Development Programme forum for Informatics were used. Survey recipients were encouraged to circulate the survey broadly amongst MDT members. A link to the survey was also provided on the National Cancer Intelligence Network website. The sampling method (allowing anyone to complete a survey via a variety of different methods) was designed to reach as many team members as possible. The anonymous nature of the survey, designed to encourage responses from all team members, means that the representativeness of participants cannot be determined and thereby the findings cannot be generalised to all cancer MDT members.

Participants were categorised according to professional group and by discipline as follows:

Professional Group	Discipline
Doctors	Surgeons Radiologists Histo-cytopathologists Oncologists (clinical and medical) Haematologists Palliative care specialists Other doctors (e.g. physicians, GP)
Nurses	Clinical nurse specialists Other nurses (e.g. nurse consultants, matrons, ward nurses etc)
Allied Health Professionals	Allied Health Professionals
MDT coordinators	MDT coordinators
Other (admin/clerical and managerial)	Other (admin/clerical and managerial)

Procedure

Surveys were completed on-line between 30 th January and 16 th March 2009. Team members participated on a confidential anonymised basis. Team members who belonged to more than one MDT were instructed to aggregate their experience into one single response where possible.

Analysis

Prior to analysing responses to survey questions, the data were examined to ensure that all team members were correctly classified in terms of the discipline in which they worked, the tumour types covered by any MDT s they attended, and whether or not they were an MDT member. Any responses to questions where 'other' was selected and/or an open text description was provided were examined and re-categorised as appropriate. This procedure also resulted in the creation of some new categories (e.g. a separate discipline grouping for haematologists).

In order to ensure the most robust analysis and interpretation of responses the following rules were applied:

- All analysis presented in this report is based upon the responses from health professionals classified as being MDT members (n=2054). MDT membership was defined as any team members stating that they were either a core or extended member of at least one cancer MDT. One exception to this rule was MDT coordinators who, by definition, were defined as MDT members.

- Analysis of facts-based questions about MDTs was either conducted on a sub-sample of team members that only belonged to one team, or findings are presented for the overall sample but with a reminder that the answers represent aggregate responses across multiple teams for some team members. This is because team members were only able to provide one answer but may have belonged to more than one MDT.

- In the survey, team members were given one combined option for 'not applicable' or 'don't know'. All such responses are therefore treated as 'not applicable' and excluded from analysis.

- The majority of questions offered team members a choice of 4 categories (e.g. strongly agree, agree, disagree, strongly disagree). These response categories were dichotomised in order to simplify data presentation ("strongly agree or agree" compared to "disagree or strongly disagree"). Examination of the data using the original four categories revealed that doctors, on the whole, were less likely to opt for the extreme responses: 'strongly agree' or 'very important', and more likely instead to opt for 'agree' or 'important'.

- Responses were analysed and are presented as follows:
  - overall sample of all MDT members
  - by professional group
  - by discipline
  - by tumour type

  In order to provide the most robust analysis by tumour type, the analysis is based upon a sub-sample of 1339 (65%) of team members who stated that they only work within one tumour type. This sub-sample is inevitably biased by discipline, half of whom are surgeons or clinical nurse specialists. As expected, there were more team members for the common tumour types and very small numbers for some of the less common tumour types. Interpretation of the differences in responses by tumour type is therefore focused only on differences between perceptions of team members who belong to a team in the common tumour types. The data for all tumour types is presented in the full analysis report available as a web appendix.

- The completion rates for individual questions varied. All percentages presented in this report are the proportion of valid responses from the total number of MDT members answering each question. The full analysis including the number of team members who completed each question is available as a web appendix.

- The responses given to all free-text (open) questions will be made available as a web appendix.

Summary of main findings

- 2054 MDT members responded to the survey, of whom 53% were doctors, 26% were nurses and 15% were MDT coordinators.

- Half of respondents were members of only one MDT (51%). MDT membership varied by discipline whereby over half of surgeons, CNS's and MDT coordinators were members of only one team; over half of histo/cytopathologists, radiologists and palliative care specialists were members of 2-3 teams, and over half of oncologists were members of 3-4 teams.

- A total of 1339 (65%) team members worked in teams that covered only one tumour type. 85% of these team members worked in a common tumour type (breast, colorectal, lung, gynae, head and neck, upper GI, urological and haematological).

- There was very high consensus about the domains that are important for effective MDT functioning. At least 78% and up to 99% of team members agreed that each domain listed in Figure 1 was important or very important to MDT functioning.

- There was also very high agreement about the components within each domain that were important for effective MDT functioning. A total of 87 statements relating to the domains in Figure 1 were rated for agreement. Most team members (at least 90%) agreed or strongly agreed with nearly half (43/87) of the individual statements; and the majority (at least 80%) of team members agreed/strongly agreed with 62/87 (71%) of the statements.

Figure 1: Domains important for effective MDT functioning

Structure
Membership & Attendance
Technology (availability and use)
Physical environment of the meeting venue
Preparation for MDT meetings
Organisation/administration during MDT meetings

Clinical Decision Making
Case management and clinical decision-making process
Teamworking
Patient-centred care/co-ordination of service

Team Governance
Leadership
Data collection, analysis and audit of outcomes
Clinical governance

Professional development and education of team members
Development and training

Structure

Membership

- Most team members (95%) belonging to one MDT reported having MDT coordinators, but only 60% reported having data collectors.

Technology

- Most team members (at least 90%) agreed that:
  - MDT meeting rooms should have equipment for projecting and viewing radiology images
  - MDT meeting rooms need facilities for projecting and viewing specimen biopsies
  - Meetings need to have access to retrospective images during the meeting
  - MDTs need to be able to access retrospective pathology reports
  - MDT meeting rooms should be connected to PACS
  - Decisions should be documented in real time on a database or proforma

- Reported access to this technology is variable. Team members reported better provision for projection of radiological imaging than for pathology samples. Only 39% of team members reported always having access to real-time recording of MDT decisions despite most (96%) agreeing that decisions should be documented real-time on a database or proforma.

Physical environment of the meeting venue

- Boardroom-style layout for MDT meetings was felt to best facilitate effective MDT working by most (62%) team members, followed by lecture theatre style (23%). Radiologists and histo/cytopathologists were most likely to opt for theatre style. Some team members acknowledged that boardroom style alone would not be suitable for large teams and that a combination of boardroom and lecture styles would be more appropriate.

Preparation for MDT meetings

- Most team members (at least 90%) agreed that:
  - Time for preparation for MDT meetings should be built into job plans
  - The agenda and patient lists should be circulated prior to the meeting
  - Information about patients to be discussed should be collated and summarised prior to the MDT meeting
  - All case notes/reports/images, past and present, should be available at the meeting

- Most MDT coordinators reported spending more than 90 minutes preparing for each meeting, and over half of radiologists and histo/cytopathologists reported spending at least 60 minutes preparing for each meeting. The majority of other team members reported spending between 0-60 minutes preparing for each meeting.

Organisation/administration during MDT meetings

- Most team members (at least 90%) agreed that:
  - MDT members need allocated protected time to attend meetings
  - Core members should attend for the full meeting and not just for the cases directly relevant to them
  - A minimum dataset of diagnostic information (pathology and radiology) should be presented for each patient
  - Standard pro-forma documentation should be used when electronic databases are not available
  - The relationship between the chair and MDT coordinator is key to ensuring the meeting runs effectively

- 89% of team members agreed that:
  - Prioritisation of the agenda is important so that more time can be spent discussing complex cases
  - Non-core members should be able to attend just to discuss patients in their care

- Views on the timing of MDT meetings varied by professional group. The majority of team members (85%), especially nurses and AHPs agreed that meetings should be held within core working hours. About half of doctors, MDT coordinators and other team members agreed that meetings should not be held during the lunch period, compared to three quarters of nurses (72%) and AHPs (76%).

- The majority (73%) of team members felt that meetings should last up to 2 hours. However, 30% of surgeons, and 39% of MDT coordinators felt that meetings should last 'as long as is required to complete the reviews'.

- A third of team members (36%) felt the optimum number of cases for one meeting was 'up to 15', and a similar proportion (37%) felt the optimum number of cases was '16-25'. Breast cancer team members were least likely to opt for 'up to 15' (8%), compared to between 18% (urological) and 56% (head and neck) of team members from other common tumour types.

Clinical decision-making

Case management and clinical decision-making process

- Most team members (at least 90%) agreed that:
  - MDTs should consider all clinically appropriate treatment options even if they cannot offer/provide them locally
  - A patient's suitability for trials should always be considered
  - Standard treatment protocols for patients should be used whenever possible
  - Formal protocols are needed to manage referral of patient cases between MDTs
  - Care plans should be communicated to other health professionals in the treatment pathway within a locally agreed timeframe
  - MDTs should always be notified if their treatment recommendations are not adopted

- The majority of team members (at least 80%) agreed that:
  - A clinician should be able to bring the case of a private patient to the MDT for discussion at the meeting
  - All patients with recurrence/progressive disease should be discussed by an MDT
  - The MDT as a whole has a role in tracking patients through the care pathway
  - It is not practical for GPs to be involved in MDT discussions about their patients

- Whilst three quarters (75%) of doctors agreed that patients with recurrence/progressive disease should be discussed by an MDT, this compared to between 90-97% of all other professional groups; and whilst less than half of doctors (47%) agreed that oncologists should make treatment decisions on such patients without MDT support; this compares to only 20-28% of team members from the other professional groups agreeing. Oncologists and lung cancer team members were least likely to agree with both statements.

- MDT coordinators were most likely to support the need for specialist palliative care attendance at every meeting (66%), doctors were least likely (36%). By tumour type, lung cancer team members were most likely to agree that attendance was essential at every meeting (69%); and breast (20%) and haematological (21%) cancer team members were least likely to agree.

Teamworking

- Most team members (at least 90%) agreed that:
  - Being an MDT member is not solely confined to attendance at meetings
  - Professional support (i.e. from peers) for MDT working is important
  - Organisational support (i.e. from employers) for MDT working is important

- The majority of team members (at least 80%) agreed that:
  - A good MDT can save you time elsewhere in the period between meetings

- Only three quarters of team members agreed that professional support for MDT working was readily available (77%) and only 60% agreed that organisational support for MDT working was readily available.

- Only 66% of doctors agreed that 'a team can be highly effective irrespective of personalities' compared to between 83-90% of other professional groups. Over half of doctors (54%) and two thirds of MDT coordinators (62%) agreed that 'no amount of training or learning experiences can improve team-working if there are interpersonal problems'.

Patient-centred care/coordination of service

- Most team members (at least 90%) agreed that:
  - Patients should be made aware that an MDT will be advising on their treatment/care
  - Patient demography and co-morbidities should always be considered
  - Patient psychosocial, supportive and palliative care issues should always be considered
  - Patients views should always inform the decision-making process
  - Patient views/preferences should be presented to the MDT meeting by someone who has met the patient

- Only 68% of team members agreed that 'a patient's case should not be discussed unless someone is present who has been involved in assessing the patient'. Doctors were least likely to agree with this (63%), compared to between 75-85% of team members from the other professional groups.

- Very few team members agreed that patients should have the opportunity to attend MDT discussion of their case in principle (17% agreed) or that it was practical for patients to attend MDT discussions of their case (5% agreed).

Team governance

Leadership

- Most team members agreed that 'good leadership is a pre-requisite for effective teamwork within the MDT environment' (98%), and the majority (81%) agreed that 'the same individual should chair the meeting on a regular basis'. However, there was disagreement about who could/should be the leader. The majority of MDT coordinators (74%) and doctors (68%) agreed that 'the MDT chair/lead should be a doctor', compared to only 35% of nurses and 27% of AHPs.

- The majority of team members (77%) agreed that 'the MDT chair/lead should receive specific training to support them in this role'. Although nearly three quarters of doctors agreed with this (72%), this compared to between 77-92% of team members from the other professional groups.

Data collection, analysis and audit of outcomes

- Most team members (at least 90%) agreed that:
  - MDTs should be responsible for collecting key information that directly affects treatment decisions (e.g. staging and co-morbidity)
  - MDTs must collect and use defined national minimum datasets (e.g. cancer registration)
  - Interactive electronic data systems should support MDT meetings
  - MDTs should have processes to review audit data
  - Internal audit should be used to confirm that treatment decisions match current best practice
  - MDTs should be alerted to serious treatment complications or death in treatment
  - MDTs should review treatment recommendations after notification of complications or death in treatment

- Although the majority of team members felt that 'data collection and audit should be managed within MDT resources' (76% agreed), less than a third of team members felt 'data collection and audit can be managed within existing resources' (31%).

Clinical governance

- Most team members (at least 90%) agreed that:
  - There should be agreed guidelines for how an MDT operates, how members work together etc
  - If a patient chooses a treatment that is not in line with MDT recommendations this should be recorded

- 83% of team members agreed that 'a facilitated away-day to review and reflect on MDT strategies to improve performance would be helpful'. Three quarters of doctors agreed with this (76%) compared to between 86-93% of team members from other professional groups.

Professional development and education of team members

Development and training

- Most team members (at least 90%) agreed that:
  - MDTs have an important role in sharing learning and best practice with peers
  - Team working is beneficial to the mental health and wellbeing of members
  - The MDT should contribute to the continuing professional development of all members
  - MDTs provide an opportunity for education and learning for staff in all disciplines

- Only half of team members agreed that 'there should be a formal induction process for every new MDT member' (52%). Nurses were most likely to agree (73%) and doctors were least likely to agree (36%).

- Although 78% of team members agreed that 'all MDT members should receive support to develop and consolidate skills associated with effective team working', only two thirds of doctors agreed with this (66%), compared to 84-96% of team members from other professional groups. Similarly, 80% of team members agreed that 'multi-disciplinary training will support the development of effective MDTs' but only 68% of doctors agreed with this, compared to between 87-97% of team members from the other professional groups.

Outcomes from effective MDT working

- Most team members (at least 90%) agreed that effective MDT working results in:
  - Improved clinical decision-making
  - More coordinated patient care
  - Improvement to overall quality of care
  - Evidence-based treatment decisions
  - Improved treatment

- The majority of team members (at least 80%) agreed that effective MDT working results in:
  - Increase in proportion of patients considered for trials
  - Improved timeliness of tests/treatments
  - Improved survival rates at appropriate intervals

- 79% of team members agreed that effective MDT working results in an increase in proportion of patients staged. However, only 64% agreed that it results in improved patient choice and only 57% agreed that it results in improved patient involvement in treatment decisions.

- Doctors were generally less likely than other professional groups to agree that effective team working resulted in any of these outcomes.

Measuring MDT effectiveness

- The majority of team members agreed that MDTs need tools to support self-assessment/performance appraisal (86%) and that teams need performance measures (85%).

- The majority of team members (80%) stated that MDT effectiveness should be assessed according to improved patient outcomes as defined by 1 year/5 year survival rates. Between 41-50% of team members stated that effectiveness should be measured by improved ratings in patient satisfaction surveys; achievement of national cancer waiting times standards; or by benchmarking against other MDTs/networks. Just over half of nurses (57%) stated that improvement in patient satisfaction was one of the top three indices that should be used to measure MDT effectiveness.

Supporting MDTs to work effectively

- The tools that team members were most likely to want available to support MDTs to work effectively, rated positively by between 51-63% of team members (with an additional 22-32% 'perhaps' wanting these available), were:
  - Written guidance and factsheets
  - Awayday with own team
  - Team training
  - Team assessment tools

- Doctors were generally less likely to answer 'yes' in response to whether they would like any of the support tools, and more likely to answer 'perhaps', compared to the other professional groups.

Responses to open questions

(see Appendix for detailed presentation of results)

What do you think constitutes an effective MDT?

- In total, 1490 (73%) of team members provided an answer to this question.

- Most responses aggregated to at least one of the domains in Figure 1. The most common themes related to membership/attendance and teamwork – having the right people in the team, who turn up, and work well together.

- The only new themes that emerged from this analysis of responses were:
  - having adequate funding/resources (which relates to the membership, technology and physical environment domains); and
  - having managerial support for MDT working.

What qualities make a good MDT chair/leader?

- In total, 915 (45%) of team members responded to this question.

- The most common theme was an attempt to describe the personal qualities of a good MDT chair/lead (80% of responses aggregated to this theme), such as being ' firm' 'strong' 'calm' 'having good communication skills' etc. The second most common theme regarded enforcement of good clinical decision-making and case management.

What one thing would you change to make your MDT more effective?

- In total, 888 (43%) of team members responded to this question.

- Most responses aggregated to at least one of the domains in Figure 1. Responses were well spread between these themes with no overarching theme/s, suggesting that a wide range of support is required by MDT members. The most common themes were:
  - Better preparation for meetings
  - Better technology
  - More time
  - Better attendance at meetings
  - Better teamworking

RESULTS

A: Characteristics of respondents

2054 surveys were received from MDT members (core or extended). Over half of respondents were doctors, a quarter of respondents were nurses and 15% were MDT coordinators (table 1).

Table 1: Professional group of respondents	Frequency	Percent
Doctors	1093	53
Nurses	532	26
AHPs	85	4
MDT coordinators	302	15
Other (admin/managerial)	42	2
Total	**2054**	**100**

According to individual discipline, the largest proportion were clinical nurse specialists (24%) followed by surgeons (16%) and MDT coordinators (15%); table 2.

Table 2: Discipline of respondents	Frequency	Percent
Doctors:		
Surgeon	325	16
Radiologist	127	6
Histo/cytopathologist	126	6
Oncologist (clinical and medical)	164	8
Haematologist	98	5
Other doctor (Physician, GP etc)	188	9
Palliative care specialist	65	3
Nurses:		
Clinical Nurse Specialist	498	24
Nursing (other)	34	2
Allied Health Professional	85	4
MDT coordinator	302	15
Other (admin/clerical and managerial)	42	2
Total	**2054**	**100**

MDT membership

Just over half of respondents were core or extended members of only one MDT (51%), and just over a quarter were core or extended members of two MDTs (27%). A minority of 5% were members of 5 or more MDTs (table 3).

When examined by discipline, over half of the CNSs (62%), AHPs (84%), MDT coordinators (51%), surgeons (62%), haematologists (52%) and 'other doctors' (69%) were members of only one MDT, whereas over half of histopathologists (56%), radiologists (53%) and palliative care specialists (52%) who responded were members of between 2-3 MDTs, and over half of oncologists (54%) were members of between 3–4 MDTs. The minority who were members of 5 or more MDTs were most likely to be histo/cytopathologists (17%), oncologists (17%), other team members (admin/managerial, 17%) or palliative care specialists (14%).

Table 3: How many different MDTs (either for the same or different tumour types) are you a member of?	Frequency	Percent
1	1025	51
2	539	27
3	232	12
4	127	6
5+	96	5

Tumour types

A total of 1339 (65%) team members worked in teams that covered only one tumour type. The distribution by tumour type is shown in table 4.

As expected, the common tumour types (breast, colorectal, lung, gynae, head and neck, upper GI, urological and haematological) are better represented than any of the other tumour types. 85% of team members that worked in only one tumour type were working in one of these common tumour types.   Interpretation of findings according to tumour type is based upon comparing the responses across the common tumour types.

Table 4: Tumour type for MDT members working in one tumour type.	Frequency	Percent
Common tumour types		
Breast	204	15
Colorectal	134	10
Lung	146	11
Gynae	116	9
Head and Neck	109	8
Upper GI	124	9
Urological	134	10
Haematological	174	13
Less common tumour types		
Skin	90	7
Supportive and Palliative Care	46	3
Brain/CNS	30	2
Sarcoma	16	1
Children/Young People	14	1
Endocrine	2	0
Total	1339	100.0
Excluded from analyses according to tumour type		
More than one tumour type	715	
Total	**2054**	

B: Domains that are important for effective MDT functioning

Team members were asked to rate the importance to effective MDT functioning of the domains listed in table 5.

Table 5: The following domains/themes are suggested as being important for effective MDT functioning. Please assess the importance of each domain in turn:	N (valid% - adjusting for missing data)	
	Very important/ Important	Somewhat important/ Not important
Structure		
Membership & Attendance	1932 (99)	22 (1)
Technology (availability and use)	1815 (93)	136 (7)
Physical environment of the meeting venue	1526 (78)	427 (22)
Preparation for MDT meetings	1887 (96)	70 (4)
Organisation/administration during MDT meetings	1904 (98)	44 (2)
Clinical Decision Making		
Case management and clinical decision-making process	1934 (99)	16 (1)
Teamworking	1928 (99)	28 (1)
Patient-centred care/co-ordination of service	1809 (93)	135 (7)
Team Governance		
Leadership	1851 (95)	99 (5)
Data collection, analysis and audit of outcomes	1749 (90)	205 (11)
Clinical governance	1629 (84)	306 (16)
Professional development and education of team members		
Development and training	1512 (78)	433 (22)

At least 78% (and up to 99%) of MDT members rated these domains as very important or important to effective MDT functioning. There were very few differences according to tumour type (across the common tumour types), but there were some differences by professional group and discipline in relation to:

- **Technology (availability and use):** whilst at least 93% of doctors, nurses and MDT coordinators rated this as being very important/important, only 77% of AHPs, and 88% of other (admin/managerial) team members rated this as important/very important to effective MDT functioning. Of the doctors, most (between 90-98%) of each discipline rated this as important/very important except palliative care specialists where only 82% rated it as such.

- **Physical environment of the meeting venue:** At least three quarters of doctors, nurses and MDT coordinators rated this as important/very important to effective MDT functioning. This compared to only 64% of AHPs, and 65% of other (admin/managerial) team members. Of the doctors, radiologists were most likely to rate this as important/very important (83%) and palliative care specialists and oncologists were least likely (73%).

- **Patient-centred care/coordination of service:** Although the majority of doctors (88%) rated this as important/very important, this compared to at least 95% of the other professional groups. Of the doctors, the palliative care specialists were most likely to rate this as important/very important (98%) and radiologists were the least likely (84%). By tumour type, haematological team members were least likely to rate this as important/very important (88%) and breast and head and neck cancer team members were most likely to rate it as important/very important (97%).

- **Clinical governance:** Although the majority of doctors rated this as very important/important (79%), this compared to at least 86% of all other professional groups. This proportion was similar across all of the doctor disciplines (ranging from 76% of oncologists and haematologists to 84% of palliative care specialists).

- **Development and training:** Only 68% of doctors rated this as being important/very important to effective MDT functioning, compared to between 80-91% of other professional groups. Of the doctors, histo/cytopathologists were the least likely to rate this as being important/very important (56%), and palliative care specialists were the most likely (76%).

Structure

Membership and attendance

Table 6: Availability of a designated MDT coordinator and data collector	Yes	No	Don't know/ not applicable
	N%		
Does your MDT have a designated MDT co-ordinator?	969 (95)	41 (4)	10 (1)
Does your MDT have a designated data collector?	605 (60)	274 (27)	132 (13)

Team members were asked whether they had a designated MDT coordinator and whether they had a designated data collector. The analysis of responses to these questions is based upon a sub-sample of team members who stated they were members of only one MDT (n=1025).

Almost all (95%) had a designated MDT coordinator. There was little variation by tumour type, ranging from all of the lung cancer team members (100%) to 94% of gynaecological team members.

Only 60% of team members reported having a designated data collector. 13% stated that they either did not know if they had one, or that it was not applicable. Across the common tumour types, lung cancer team members were the most likely to report having a designated data collector (68%) followed by breast (65%) and urological (65%) team members. Haematological team members were the least likely to report having a data collector (46%).

Technology (availability and use)

Table 7: Team members perceptions about the technology required for effective MDT functioning	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
MDT meeting rooms should have equipment for projecting and viewing radiology images	1780 (100)	3 (0)
MDT meeting rooms need facilities for projecting and viewing specimen biopsies, e.g. projection microscopes	1640 (94)	110 (6)
MDTs need to have access to retrospective images during the meeting	1753 (99)	14 (1)
MDTs need to be able to access retrospective pathology reports	1728 (98)	40 (2)
MDT meeting rooms should be connected to PACS	1748 (99)	10 (1)
Decisions should be documented in real time on a database or proforma	1669 (96)	77 (4)
Documented decisions should be projected for members to view	1310 (81)	315 (19)

Most team members (between 94-100%) agreed that MDT meeting rooms should have equipment for projecting and viewing radiological images and specimen biopsies; need to have access to retrospective images and pathology reports during the meeting; should be connected to PACS; and that decisions should be documented in real time on a database or proforma. There was less consensus about whether:

• Documented decisions should be projected for members to view: Nurses (87%) and AHPs (86%) were the most likely to agree with this, compared to around three quarters of doctors (79%), MDT coordinators (75%) and other team members (76%). Of the doctors, the radiologists were the most likely to agree with this (87%) and haematologists were least likely to agree (72%). There was little variation by tumour type but amongst the most common tumour types, head and neck team members were the most likely to agree (86%) and colorectal team members the least likely to agree (73%).

Table 8: Does your MDT have access to the following technology?	N (valid% - adjusting for missing data)			
	Always	Sometimes	Never	Not required
Projection for radiology images	1532 (86)	158 (9)	53 (3)	35 (2)
Projection for pathology samples	1320 (74)	264 (15)	145 (8)	46 (3)
PACS connectivity	1405 (81)	214 (12)	96 (6)	22 (1)
Video-conferencing facilities	768 (45)	420 (25)	321 (19)	184 (11)
Real-time recording of treatment proposals to database	649 (39)	286 (17)	674 (41)	43 (3)
Projection of treatment decisions so all members can view them	409 (24)	245 (14)	955 (56)	90 (5)

Team members were asked whether their MDT had access to the technologies listed in table 8. All team members were included in this analysis and thereby responses for some members represent an aggregate response across more than one team that they belong to. The results indicate that access to technology is variable.

- Projection for radiology images: The majority (86%) of team members stated they always had access to projection for radiology images, but a minority of 12% only sometimes or never had this access. Nearly all lung cancer team members stated they always had access (99%). Haematological team members (78%) and head and neck team members (82%) were the least likely to always have access.

- Projection for pathology samples: Less than three quarters of team members reported always having facilities for projecting pathology samples. Lung cancer team members were the least likely to report always having access (67%) and gynaecological cancer team members the most likely to always have access (87%)

- PACS connectivity: the majority of team members always had access to PACS (81%) although by common tumour type this varied from only 76% of haematological team members always having access, to 96% of lung cancer team members always having access.

- Video-conferencing facilities: Less than half of team members always had access to video-conferencing facilities (45%); a quarter only sometimes had access (25%). Breast (23%) and lung (35%) cancer team members were the least likely to report always having access; and head and neck (62%) and haematological (62%) were the most likely to report always having access.

- Real-time recording of treatment proposals to database: Only 39% of team members stated they were able to record treatment proposals to a database real-time. Gynaecological team members were the most likely to report having access to this technology (55%) and head and neck (36%) and urological (36%) team members were the least likely to report having access.

- Projection of treatment decisions so all members can view them: Less than a quarter of team members were always able to project treatment decisions (24%). Head and neck cancer team members were the least likely to have access to this technology (20%) and colorectal (32%) and gynaecological (32%) team members were the most likely to have access.

Physical environment of the meeting venue

Table 9: What style of room layout best facilitates effective MDT working?	Frequency	Percent
Boardroom style (seating in horseshoe/circle with or without a table)	1039	62
Theatre style (seating in rows)	386	23
Cabaret style (seating around separate groups of tables)	16	1
Layout is unimportant	184	11
Other - mixed - boardroom and theatre (large teams) - comments regarding facilities rather than other suggestions	23 29	1 2

The majority of team members stated that boardroom style best facilitates effective team working (62%), although a considerable minority of around a quarter of team members felt that theatre style was best (23%). A small proportion of team members specified that boardroom would only work in a small team and that for larger teams a mixture of boardroom at the front for the core team, and theatre style for other team members would work best. 11% of team members stated that layout was unimportant, but in free-text comments the majority made comments about visibility/audibility of each other and images (e.g. "as long as you can see/hear each other"); or that it was the members and their conduct with each other that mattered more (e.g. "the members are vital, not the room'' or "what is important is the conduct of the members ie allowing a single discussion to which another one can voice opinion/question etc. Not permit other conversations/discussions to take place".

There was little variation in response by professional groups, although the proportion opting for 'boardroom style' was slightly lower in doctors (57%) and MDT coordinators (62%) compared to all other groups (69-76%). Amongst the doctors, palliative care specialists were the most likely to opt for boardroom style (81%) and histo/cytopathologists (46%) and radiologists (50%) were least likely.

There was little variation across the common tumour types. Between 56-65% of team members opted for boardroom style. Nearly a third of breast cancer team members (32%) opted for theatre style, compared to 19% of colorectal team members and around a quarter of team members across the other common tumour types.

Preparation for MDT meetings

Table 10: Team members perceptions about preparation for MDT meetings	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
Preparation time for MDT meetings should be recognised in job plans	1821 (97)	48 (3)
All MDT core members need to do some preparation prior to the meeting	1519 (81)	357 (19)
The agenda and patient lists should be circulated prior to the meeting	1782 (96)	83 (5)
Case summaries should be circulated prior to the meeting	1082 (62)	677 (39)
Information about patients to be discussed should be collated and summarised prior to the MDT meeting	1763 (94)	106 (6)
Late additions to the agenda should not be allowed unless clinically urgent	1359 (73)	504 (27)
All case notes/reports/images, past and present, should be available at the meeting	1769 (95)	93 (5)

Most team members (at least 94%) agreed that preparation time for MDT meetings should be recognised in job plans, that the agenda and patient lists should be circulated prior to the meeting, that information about patients to be discussed should be collated and summarised prior to the MDT meeting, and that all case notes/reports/images, past and present, should be available at the meeting (table 10). There was less consensus about whether:

• All MDT core members need to do some preparation prior to the meeting: Only three quarters of doctors agreed with this (76%), compared to between 86-97% of team members from the other professional groups. Histo/cytopathologists (91%), radiologists (87%) and haematologists (91%) were most likely to agree with this; oncologists (64%), surgeons (70%) and other doctors (70%) were least likely to agree.

• Case summaries should be circulated prior to the meeting: Only just over half of doctors agreed with this (56%), compared to between 68-74% of other team members. Of the doctors, radiologists were most likely to agree with this (79%) followed by histo/cytopathologists (65%) compared to about half of the team members within the other doctor disciplines. Head and neck cancer team members were most likely to agree with this (77%), and breast (50%), colorectal (50%) and lung cancer (54%) MDT members were least likely to agree.

- Late additions to the agenda should not be allowed unless clinically urgent: MDT coordinators were most likely to agree with this (86%) compared to between 68-76% of the other professional groups. Of the doctors, radiologists (90%) and histo/cytopathologists (87%) were the most likely to agree with this. 'Other doctors' (56%) and surgeons (64%) were the least likely to agree with this. Responses varied by tumour type from 61% of colorectal and 63% of lung cancer team members agreeing with this, to 82% urological and 78% haematological team members agreeing.

Time spent preparing for MDT Meetings

Table 11: If you are an MDT member, how much time do you spend on preparation for each meeting?	Frequency	Percent
none	155	9
less than 30 minutes	622	35
between 30-60 minutes	467	26
between 60-90 minutes	178	10
more than 90 minutes	355	20

All team members were included in this analysis and thereby responses for some members who belong to more than one MDT represent an aggregating of their experience across more than one team. Responses to this question were varied. A third (35%) of team members stated they spent <30mins preparing for each meeting, and a quarter (26%) spent 30-60mins. Interestingly, 99 team members rated the question as being not applicable to them, despite defining themselves as a core or extended team member.

MDT coordinators reported spending the most time preparing for meetings (90% spend >90mins preparing for each meeting). Over half of radiologists and histo/cytopathologists report spending at least 60mins preparing for each meeting. The majority of other disciplines were most likely to report spending between 0-60mins preparing for each meeting. There was some variation by tumour type. Over a quarter (27%) of upper GI team members reported spending more than 90 minutes preparing. This compares to only 10% of haematological team members spending more than 90 minutes preparing. At the other end of the spectrum, 17% of urological team members reported spending no time preparing for meetings, compared to only 4% of gynaecological cancer team members.

Organisation/administration during meetings

Table 12: Team members perceptions about organisation and administration during MDT meetings	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
MDT members need allocated protected time (including travel time) to attend meetings	1797 (98)	40 (2)
Core members should attend for the full meeting and not just for the cases directly relevant to them	1695 (91)	163 (9)
Non-core members should be able to attend just to discuss patients in their care	1616 (89)	203 (11)
Meetings should not take place outside core hours	1551 (85)	281 (15)
Meetings should not take place during the lunch period	1018 (57)	780 (43)
Prioritisation of agenda is important so that more time can be spent discussing complex cases	1610 (89)	202 (11)
Cases should be grouped on the agenda, e.g. new case, follow-up, by complexity, by tumour type etc	1354 (78)	389 (22)
A minimum dataset of diagnostic information (pathology and radiology) should be presented for each patient	1712 (94)	104 (6)
Standard pro-forma documentation should be used when electronic databases are not available	1697 (96)	66 (4)
The relationship between the Chair and the MDT coordinator is key to ensuring the meeting runs effectively	1653 (93)	132 (7)

Most team members (at least 89%) agreed with 7 of the 10 statements in table 12. There was less consensus about whether:

• Meetings should not take place outside core hours: Nurses (92%) and AHPs (91%) were most likely to agree with this, compared to 78% of MDT coordinators, 83% of doctors and 73% of other team members (admin/managerial). Of the doctors, haematologists (93%) and palliative care specialists (92%) were most likely to agree, and oncologists (78%), and histo/cytopathologists (79%) were the least likely to agree. There was little variation by tumour type, ranging from 93% of haematological team members agreeing, to 83% of gynaecological team members agreeing.

- Meetings should not take place during the lunch period: AHPs were the most likely to agree with this (76%) followed by nurses (72%). Only half of doctors (51%) and less than half of MDT coordinators (46%) and 'other' team members (49%) agreed with this. Of the doctors, oncologists (38%) and histo/cytopathologists (41%) were the least likely to agree, and surgeons (62%) and haematologists (59%) were the most likely to agree.

- Cases should be grouped on the agenda: Around three quarters of doctors (78%), nurses (78%) and MDT coordinators (73%) agreed with this. Of the doctors, palliative care specialists were most likely to agree with this (91%) and other doctors (70%) and surgeons (73%) were least likely to agree. The responses varied by tumour type from 60% of lung cancer MDT members agreeing, to 73% of breast cancer MDT members agreeing.

Maximum length of MDT meeting

Table 13: What is the maximum length of time an MDT should last?	Frequency	Percent
up to one hour	294	16
60-90 mins	660	36
90-120 mins	390	21
up to 3 hours	90	5
as long as is required to complete the reviews	415	22

Responses to this question were varied. Around a third (36%) of team members stated a meeting should last 60-90 minutes, but a fifth (21%) said it should last 90-120 minutes, and a similar proportion (22%) stated it should last 'as long as is required to complete reviews'. MDT coordinators were the least likely to opt for 'up to one hour' (5% compared to at least 14% of other professional groups). Surgeons and MDT coordinators were most likely to opt for 'as long as is required' (30% of surgeons and 39% of MDT coordinators). By tumour type, the majority of responses for most common tumour types were split between '60-90 minutes' and 'as long as is required to complete the reviews'. However, a third of team members from urological (35%) and haematological (31%) teams selected 90-120 minutes.

Optimum number of cases discussed in each meeting

Table 14: What is the optimum number of cases your MDT can discuss during the course of a single meeting?	Frequency	Percent
up to 15	623	36
16-25	646	37
26-35	298	17
36-45	103	6
more than 45	71	4

A third of team members (37%) stated the optimum number of cases their MDT could discuss in a single meeting was 16-25, but an equal proportion (36%) stated that the optimum cases was 'up to 15'. Responses were similar across all professional groups except MDT coordinators who were most likely to opt for one of the larger categories (36-45 or more than 45): 19% of MDT coordinators opted for one of these two options, compared to a maximum of 10% of the other professional groups. By tumour group, only 8% of breast cancer MDT members opted for 'up to 15', compared to between 18% (urological) and 56% (head and neck) of other tumour types. Between a quarter and a third of breast and urological MDT members opted for 26-35 cases, compared to only around 10-15% of the other common tumour types.

Clinical decision-making

Case management and clinical decision-making

Table 15: Team members perceptions about case management and clinical decision-making	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
MDTs should consider all clinically appropriate treatment options even if they cannot offer/provide them locally	1689 (99)	25 (2)
A patient's suitability for trials should always be considered	1635 (98)	35 (2)
Standard treatment protocols for patients should be used whenever possible	1571 (94)	98 (6)
Formal protocols are needed to manage referral of patient cases between MDTs	1523 (92)	142 (9)
A clinician should be able to bring the case of a private patient to the MDT for discussion at the meeting	1394 (87)	216 (13)
All patients with recurrence/progressive disease should be discussed by an MDT	1391 (83)	291 (17)
Oncologists should not make treatment decisions on patients with recurrence/progressive disease without MDT support	975 (62)	598 (38)
Care plans should be communicated to other health professionals in the treatment pathway within a locally agreed timeframe	1667 (99)	26 (2)
MDTs should always be notified if their treatment recommendations are not adopted	1475 (90)	167 (10)
Requests for tests and treatments should be booked during the MDT	1103 (68)	531 (33)
The MDT as a whole has a role in tracking patients through the care pathway	1318 (81)	318 (19)
The MDT coordinator should be solely responsible for tracking patients through the care pathway	667 (42)	935 (58)
Specialist palliative care attendance is not needed if there are agreed mechanisms for the MDT to access/contact the specialist palliative care team for advice when needed	1253 (75)	420 (25)
Specialist palliative care representation is essential at every MDT meeting	702 (43)	923 (57)
In principle, GPs should be involved in MDT discussions about their patients	836 (54)	709 (46)
It is practical for GPs to be involved in MDT discussions about their patients	181 (12)	1368 (88)

The majority of team members (at least 80%) agreed/strongly agreed with 9 out of the 16 statements (table 15). There was less agreement about whether:

- **A clinician should be able to bring the case of a private patient to the MDT for discussion at the meeting:** Doctors were most likely to agree with this (92%), followed by nurses (85%) and AHPs (84%). This compares to only 68% of MDT coordinators agreeing. Of the doctors, surgeons were most likely to agree (97%) and haematologists were least likely to agree (84%). Responses also varied by tumour type from 92% of colorectal cancer team members agreeing, to 79% of urological team members agreeing.

- **All patients with recurrence/progressive disease should be discussed by an MDT:** Only three quarters of doctors agreed with this (75%) compared to between 90-97% of other professional groups. Of the doctors, oncologists were least likely to agree with this (33%) compared to between 73-90% of all other doctor disciplines. By tumour type, lung cancer team members were least likely to agree with this (67%) compared to between 79-98% of team members from all other common tumour types.

- **Oncologists should not make treatment decisions on patients with recurrence/progressive disease without MDT support:** Only half of doctors agreed with this (53%) compared to 72-80% of other professional groups. Oncologists were the least likely to agree (14%), and surgeons were most likely to agree (71%). Only 40% of lung MDT members agreed, compared to at least 61% of team members from the other common tumour types. 92% of head and neck MDT members agreed.

- **MDTs should always be notified if their treatment recommendations are not adopted:** Although 86% of doctors agreed with this, this compares to at least 94% of all other professional groups. Of the doctors, oncologists (73%) were least likely to agree, and palliative care specialists were most likely to agree (96%), followed by radiologists (90%). Urological team members were the least likely to agree (82%), and head and neck team members were the most likely to agree (99%).

- **Requests for tests and treatments should be booked during the MDT:** MDT coordinators were most likely to agree with this (79%) and doctors were least likely to agree (64%). Of the doctors, only a third of haematologists agreed with this (32%), compared to at least 59% of all other doctor disciplines. Surgeons were the most likely to agree (73%). By tumour type, haematological MDT members were the least likely to agree (33%) compared to between 79% (upper GI) and 67% (breast) for all other tumour types.

- **The MDT as a whole has a role in tracking patients through the care pathway:** Three quarters of doctors (75%) and other team members (admin/managerial: 77%) agreed with this, compared to 87% of nurses and 91% of MDT coordinators. Of the doctors, haematologists were the least likely to agree (63%) and radiologists (82%) and palliative care specialists (82%) were the most likely to agree. By tumour type, haematological (73%) and urological (73%) team members were the least likely to agree, compared to 89% of breast cancer team members.

- **The MDT coordinator should be solely responsible for tracking patients through the care pathway:** There was little variation by professional group: between 40-46% agreed with this, except for 'other team members' (admin/managerial) where only 23% agreed. There was little variation by discipline for the doctors. By tumour type, agreement varied from 32% of colorectal team members agreeing to 55% of gynaecological team members agreeing.

- Specialist palliative care attendance is not needed if there are agreed mechanisms for the MDT to access/contact the specialist palliative care team for advice when needed: Around three quarters of each professional group agreed with this, ranging from 68% of MDT coordinators to 79% of nurses. Of the doctors, haematologists were the most likely to agree (94%), compared to only 55% of palliative care specialists and between 64-78% of the other doctor disciplines. Nearly all breast cancer team members agreed with this (94%) compared to only just over half of lung cancer team members (57%).

- Specialist palliative care representation is essential at every MDT meeting: Only just over a third of doctors agreed with this (36%), compared to 46% of nurses and 66% of MDT coordinators. Of the doctors, haematologists were the least likely to agree (13%), compared to between 32% (oncologists) and 49% (palliative care specialists) of the other doctor disciplines. Only 20% of breast cancer team members, and 21% of haematological cancer team members agreed with this, compared to 69% of lung cancer MDT members.

- In principle, GPs should be involved in MDT discussions about their patients: Only half of doctors (48%) and MDT coordinators (50%) agreed with this, compared to between 59-67% of other professional groups. Of the doctors, palliative care specialists were most likely to agree (87%), compared to between 34% (haematologists) and 54% (other doctors) of all the other doctor disciplines. By tumour type, breast (36%) and haematological (38%) cancer team members were the least likely to agree compared to between 50% (upper GI) and 63% (gynaecological) of team members from other common tumour types.

- It is practical for GPs to be involved in MDT discussions about their patients: Very few team members agreed with this, ranging from 22% of MDT coordinators, to only 7% of doctors, and 6% of AHPs. Of the doctors, the least likely to agree were haematologists (3%), oncologists, (3%) and radiologists (4%). Histo/cytopathologists were the most likely to agree (11%). There was little variation by tumour type, from 16% of Upper GI team members agreeing, to 7% of haematological, and 8% of breast cancer team members agreeing.

Teamworking

Table 16: Team members perceptions about team-working	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
Being an MDT member is not solely confined to attendance at meetings	1572 (96)	66 (4)
A good MDT can save you time elsewhere in the period between meetings	1390 (88)	192 (12)
A team can be highly effective irrespective of personalities	1200 (74)	419 (26)
Professional support (i.e. from peers) for MDT working is important	1614 (99)	20 (1)
Professional support is readily available	1197 (77)	361 (23)
Organisational support (i.e. from employers) for MDT working is important	1608 (98)	41 (3)
Organisational support is readily available	941 (60)	631 (40)
No amount of training or learning experiences can improve team working if there are interpersonal problems	828 (53)	737 (47)

Most team members (at least 96%) agreed that being an MDT member is not solely confined to attendance at meetings, and that professional (peer) and organisation (employer) support for MDT working are important. There was less consensus about whether:

• A good MDT can save you time elsewhere in the period between meetings: Whilst the majority of doctors agreed with this (81%), this compared to between 93-100% of other professional groups. Of the doctors, haematologists (64%) and histo/cytopathologists (69%) were the least likely to agree, and surgeons (89%) and palliative care specialists (93%) were the most likely to agree. Whereas only three quarters of haematological team members agreed with this (74%), between 88-94% of team members from all the other common tumour types agreed with this.

• A team can be highly effective irrespective of personalities: Only 66% of doctors agreed with this, compared to between 83-90% of the other professional groups. Of the doctors, palliative care specialists were most likely to agree (75%) and haematologists were least likely to agree (53%) followed by histo/cytopathologists (60%). Responses varied by tumour type with Upper GI team members being most likely to agree (83%) and haematological team members being least likely to agree (64%).

- **Professional support is readily available:** There was little variation by professional group but doctors were least likely to agree (75%), and other team members (admin/managerial: 85%) and MDT coordinators (83%) were most likely to agree. Of the doctors, palliative care specialists were most likely to agree (83%) and oncologists were least likely to agree (67%). There was little variation by tumour type: colorectal cancer team members were most likely to agree (82%), and lung cancer team members were least likely to agree (72%).

- **Organisational support is readily available:** Only half of doctors (52%) and 65% of nurses agreed with this. This compares to between 73-89% of the other professional groups. Of the doctors, palliative care specialists were most likely to agree (64%), compared to between 46-58% of the other doctor disciplines. Gynaecological team members were the most likely to agree with this (75%), and breast cancer teams were the least likely to agree (55%).

- **No amount of training or learning experiences can improve team-working if there are interpersonal problems:** MDT coordinators were the most likely to agree with this (62%) followed by doctors (54%). 'Other' team members (admin/managerial) were the least likely to agree (40%). Of the doctors, histo/cytopathologists were the most likely to agree (64%), and palliative care specialists were least likely to agree (39%). Gynaecological team members were the most likely to agree (62%) and head and neck (44%) and lung (46%) were the least likely to agree.

Patient-centred care/coordination of service

Table 17: Team members perceptions about patient-centred care/coordination of service	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
Patients should be made aware that an MDT will be advising on their treatment/care	1612 (96)	75 (4)
A named individual at the MDT should take responsibility for identifying a key worker for the patient	1362 (88)	194 (13)
A patient's case should not be discussed unless someone is present who has been involved in assessing the patient	1138 (68)	537 (32)
Patient demography and co-morbidities should always be considered	1678 (99)	14 (1)
Patient psychosocial, supportive and palliative care issues should always be considered	1660 (98)	31 (2)
Patient views should always inform the decision-making process	1592 (95)	86 (5)
Patient views/preferences should be presented to the MDT meeting by someone who has met the patient	1606 (95)	85 (5)
In principle, patients should have the opportunity to attend MDT discussion of their case	275 (17)	1317 (83)
It is practical for patients to attend MDT discussions of their case	73 (5)	1537 (96)

There was very high agreement (95%+) between team members for most of the statements in table 17. There was less consensus about whether:

- A named individual at the MDT should take responsibility for identifying a key worker for the patient: The majority of team members agreed with this, ranging from 82% of 'other team members' and 85% of doctors, to 93% of nurses. Of the doctors, haematologists were the least likely to agree (80%), and palliative care specialists were the most likely to agree (91%). Responses varied by tumour type from 77% of breast cancer team members agreeing to 92% of head and neck cancer team members agreeing.

- **A patient's case should not be discussed unless someone is present who has been involved in assessing the patient:** Only 63% of doctors agreed with this, compared to three quarters of the other professional groups, and 85% of AHPs. Of the doctors, surgeons were the least likely to agree (53%) and haematologists were the most likely to agree (84%). Responses varied by tumour type from 83% of haematological and 82% of head and neck cancer team members agreeing, to only 57% of gynaecological team members agreeing.

- **In principle, patients should have the opportunity to attend MDT discussion of their case:** The majority of team members disagreed with this across all professional groups. Doctors (14%) and MDT coordinators (15%) were the least likely to agree, and AHPs (33%) were the most likely to agree. Amongst the doctors, radiologists (6%) and haematologists (8%) were the least likely to agree, and palliative care specialists (39%) and other doctors (22%) were the most likely to agree. Haematological team members were the least likely to agree (11%), and head and neck cancer team members were the most likely to agree (28%).

Team Governance

Leadership

Table 18: Team members perceptions about leadership	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	**Disagree/ Strongly disagree**
Good leadership is a pre-requisite for effective teamwork within the MDT environment	1668 (98)	27 (2)
The same individual should chair the MDT meeting on a regular basis	1353 (81)	311 (19)
Any core member of the MDT could be the chair/lead	1127 (68)	523 (32)
The chair/MDT lead should be a doctor	935 (58)	675 (42)
The MDT chair/lead individual should receive specific training to support them in this role	1197 (77)	355 (23)

Although 98% of team members agreed that good leadership was a pre-requisite for effective teamwork, there was less consensus about whether:

- The same individual should chair the MDT meeting on a regular basis: Doctors were least likely to agree (78%) and AHPs were the most likely to agree (88%). Of the doctors, palliative care specialists were the least likely to agree (72%), and other doctors (86%) and oncologists (83%) were the most likely to agree. By tumour type, responses varied from 92% of head and neck team members agreeing to 72% of haematological and 74% of breast cancer MDT members.

- Any core member of the MDT could be the chair/lead: MDT coordinators were least likely to agree with this (51%), followed by doctors (66%). AHPs were most likely to agree (83%). Of the doctors, histo/cytopathologists were least likely to agree (49%), and palliative care specialists were most likely to agree (82%). There was little variation by tumour type: from 64% of gynaecological team members to 77% of head and neck team members.

- The chair/MDT lead should be a doctor: MDT coordinators were most likely to agree with this (74%) followed by doctors (68%). AHPs (27%) and nurses (35%) were least likely to agree. Of the doctors, only 29% of palliative care specialists agreed with this, compared to between 63% (surgeons and haematologists) and 85% (histo/cytopathologists) of other doctor disciplines. Gynaecological team members were most likely to agree (63%) and head and neck team members were least likely to agree (45%).

- The MDT chair/lead individual should receive specific training to support them in this role: Doctors were least likely to agree with this (72%), compared to 77% of MDT coordinators and between 86%-92% of other professional groups. Of the doctors, palliative care specialists were most likely to agree (91%) and haematologists least likely to agree (62%). Head and neck team members were most likely to agree (88%) and lung cancer team members were least likely to agree (69%).

Data collection, analysis and audit of outcomes

Table 19: Team members perceptions about data collection, analysis and audit of outcomes	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
MDTs should be responsible for collecting key information that directly affects treatment decisions (e.g. staging and co-morbidity)	1551 (97)	47 (3)
MDTs must collect and use defined national minimum datasets (e.g. cancer registration)	1491 (96)	63 (4)
MDTs have a role in the management of cancer waits	1348 (86)	224 (14)
Interactive electronic data systems should support MDT meetings	1464 (97)	51 (3)
MDTs should have processes to review audit data	1502 (96)	61 (4)
Internal audit should be used to confirm that treatment decisions match current best practice	1506 (97)	43 (3)
MDTs should be alerted to serious treatment complications or death in treatment	1527 (96)	65 (4)
MDTs should review treatment recommendations after notification of complications or death in treatment	1392 (93)	132 (9)
Data collection and audit should be managed within MDT resources	1121 (76)	362 (24)
Data collection and audit can be managed within existing MDT resources	442 (31)	992 (69)

Most team members (at least 93%) agreed with most of the statements in table 19. There was less consensus about whether:

- MDTs have a role in the management of cancer waits: Doctors were least likely to agree with this (79%), compared to between 93-97% of the other professional groups. Of the doctors, palliative care specialists were the most likely to agree (93%), and haematologists were the least likely (68%). There was little variation in responses to this by tumour type although haematology team members were the least likely to agree (76%) compared to between 82-94% of team members from the other common tumour types agreeing.

- Data collection and audit should be managed within MDT resources: Doctors were the least likely to agree with this (71%), compared to 83% of nurses, 82% of MDT coordinators. Of the doctors, there was little variation in response by discipline, from 67% of radiologists and haematologists, to 74% of other doctors (e.g. physicians/GPs). There was little variation by tumour type: from 70% of haematological team members agreeing, to 83% of urological team members agreeing.

- Data collection and audit can be managed within existing MDT resources: MDT coordinators were most likely to agree with this (59%), followed by nurses (43%). Doctors were least likely to agree (20%). Amongst the doctors there was little variation by discipline, from 15% of histo/cytopathologists and radiologists agreeing, to 24% of other doctors agreeing. There was also little difference by tumour type, from 28% of haematological team members agreeing, to 38% of colorectal team members agreeing.

Clinical Governance

Table 20: Team members perceptions about clinical governance	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
There should be agreed guidelines for how an MDT operates, how members work together etc.	1439 (90)	158 (10)
MDT members that are not employees of the host organisation should have honorary contracts	904 (81)	209 (19)
Majority agreement of a treatment recommendation is acceptable	1332 (89)	160 (11)
Accepting the legal responsibility of the treating clinician, MDTs should be accountable for treatment recommendations	1317 (88)	175 (12)
If a patient chooses a treatment that is not in line with MDT recommendations this should be recorded	1584 (99)	21 (1)
MDT decisions should be benchmarked against those of similar MDTs	1236 (88)	172 (12)
A facilitated away-day to review and reflect on MDT strategies to improve performance would be helpful	1186 (83)	250 (17)

The majority of team members (at least 88%) agreed with 5 of the 7 statements in table 20. There was less consensus about whether:

- MDT members that are not employees of the host organisation should have honorary contracts: There was little variation by professional group, from 80% of doctors agreeing, to 85% of nurses agreeing. Amongst the doctors, this ranged from 65% of haematologists to 98% of palliative care specialists agreeing. There was some variation in responses by tumour type. Only 69% of haematological team members agreed with this, compared to 91% of head and neck team members.

- A facilitated away-day to review and reflect on MDT strategies to improve performance would be helpful: Three quarters of doctors agreed with this (76%), but this compared to between 86-93% of other professional groups. Of the doctors, most palliative care specialists agreed (96%) compared to around two thirds of haematologists (64%) and histo/cytopathologists (65%). By tumour type, haematological team members were least likely to agree (67%), compared to between 81-90% of team members from all other common tumour types.

Professional development and education of team members

Development and Training

Table 21: Team members perceptions about development and training	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
There should be a formal induction process for every new MDT member	799 (52)	740 (48)
All MDT members should receive support to develop and consolidate skills associated with effective team working	1213 (78)	341 (22)
Multi-disciplinary training will support the development of effective MDTs	1186 (80)	305 (21)
MDTs have an important role in sharing learning and best practice with peers	1590 (97)	43 (3)
Team working is beneficial to the mental health and wellbeing of members	1369 (90)	156 (10)
Being an MDT member improves job satisfaction	1233 (81)	287 (19)
The MDT should contribute to the continuing professional development of all members	1497 (95)	82 (5)
MDTs provide an opportunity for education and learning for staff in all disciplines	1539 (95)	80 (5)

Most team members (at least 90%) agreed that team working is beneficial to the mental health and wellbeing of members; that the MDT should contribute to the continuing professional development of all members; that MDTs do provide an opportunity for education and learning for staff in all disciplines and that MDTs have an important role in sharing learning and best practice with peers. There was less consensus about whether:

- There should be a formal induction process for every new MDT member: Only half of all MDT members agreed with this (52%). Only just over a third of doctors agreed with this (36%), compared to well over two thirds of nurses (73%) and MDT coordinators (78%). Of the doctors, palliative care specialists were the most likely to agree (64%), compared to between 27% (oncologists) and 38% (radiologists) of all other doctor disciplines. There was some variation by tumour type from 61% of Upper GI and head and neck cancer MDT members agreeing, to only 48% of lung and 49% of colorectal MDT members agreeing.

- **All MDT members should receive support to develop and consolidate skills associated with effective team working:** Whilst two thirds of doctors agreed with this (66%), this compared to 84%-96% of all other professional groups. Of the doctors, palliative care specialists were the most likely to agree (87%), compared to between 63-66% of the other doctor disciplines. Responses varied by tumour type from 70% of haematological team members agreeing, to 84% of breast, colorectal and head and neck cancer team members agreeing.

- **Multidisciplinary training will support the development of effective MDTs:** Only 68% of doctors agreed with this, compared to between 87-97% of all other professional groups. Of the doctors, haematologists were the least likely to agree (57%), and palliative care specialists were most likely to agree (89%), followed by radiologists (76%). Haematological team members were least likely to agree (69%), compared to between 76% (lung) to 89% (head and neck) of team members from other tumour types.

- **Being an MDT member improves job satisfaction:** Doctors were slightly less likely to agree with this than other team members: 78% of doctors agreed, compared to between 84% (nurses) and 97% (AHPs) of other professional groups. Of the doctors, haematologists were least likely to agree (62%) and palliative care specialists (86%), radiologists (85%) and histo/cytopathologists (84%) were most likely to agree. Responses varied by tumour type from 69% of haematological team members agreeing, to 87% of gynaecological and head and neck team members agreeing.

Outcomes from effective MDT working

Table 22: Effective MDT working results in:	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
Improved clinical decision making	1878 (97)	52 (3)
More coordinated patient care	1854 (96)	73 (4)
Improvement to overall quality of care	1788 (94)	106 (6)
Evidence-based treatment decisions	1779 (93)	125 (7)
Improved treatment	1627 (90)	182 (10)
Increase in proportion of patients considered for trials	1502 (86)	241 (14)
Improved timeliness of tests/treatments	1566 (83)	329 (17)
Improved survival rates at appropriate intervals	1038 (80)	265 (20)
Increase in proportion of patients staged	1360 (79)	372 (22)
Improved patient choice	1130 (64)	638 (36)
Improved patient involvement in treatment decisions	761 (44)	990 (57)

Most team members (at least 90%) agreed that effective MDT working results in improved clinical decision-making, more-coordinated patient care, improvement to overall quality of care, evidence-based treatment decisions, and improved treatment. There was less consensus about whether effective MDT working resulted in:

- Increase in proportion of patients considered for trials: 84% of doctors agreed with this, compared to 89% of nurses and 91% of MDT coordinators. Only 81% of other team members (admin/managerial) agreed with this. Of the doctors, haematologists were the least likely to agree (73%) compared to 91% of radiologists and 90% of histo/cytopathologists. Responses varied by tumour type from 78% of haematological team members agreeing to 93% of urological team members agreeing.

- Improved timeliness of tests/treatments: Only three quarters of doctors agreed with this, compared to 92% nurses, 99% AHPs, and 97% of MDT coordinators. Of the doctors, haematologists were least likely to agree (44%) compared to between 72% (histo/cytopathologists) and 81% (radiologists) of other doctor disciplines. Only 58% of haematological team members agreed with this, compared to between 84% (urological) and 90% (head and neck) team members from other tumour types.

- **Improved survival rates at appropriate intervals:** 70% of doctors agreed with this, compared to between 82-96% of team members from the other professional groups. Of the doctors, haematologists were least likely to agree (44%) and histo/cytopathologists were most likely to agree (86%). Responses varied by tumour type from 58% of haematological team members agreeing, to 91% of head and neck cancer team members.

- **Increase in the proportion of patients staged:** 72% of doctors agreed with this, compared to 82% nurses, and 93% of AHPs and MDT coordinators. Of the doctors, less than half of haematologists agreed (42%), compared to between 68% (surgeons) and 90% (palliative care specialists) of other doctor disciplines. Responses varied by tumour type from only just over half of haematological team members (53%) to 95% of head and neck cancer team members, and 93% of lung cancer team members.

- **Improved patient choice:** Less than half of doctors agreed with this (46%), compared to between 82-88% of team members from the other professional groups. Of the doctors, haematologists were least likely to agree (23%) compared to between 41% (surgeons) and 59% (palliative care specialists) of the other doctor disciplines. Less than half of haematological team members agreed with this (41%), compared to between 65% (gynaecological) and 76% (breast) team members from other common tumour types.

- **Improved patient involvement in treatment decisions:** Only just over a third of doctors agreed with this (37%), compared to between 65-83% of team members from other professional groups. Of the doctors, only 13% of haematologists agreed with this, compared to between 31% (oncologists) and 51% (radiologists) of other doctor disciplines. Responses varied by tumour type from only a third (34%) of haematological team members agreeing, to 73% of breast and 71% of head and neck cancer team members agreeing.

Measuring MDT effectiveness/performance

Table 23: Team members perceptions about measuring MDT effectiveness/performance	N (valid% - adjusting for missing data)	
	Strongly agree/ Agree	Disagree/ Strongly disagree
MDTs need tools to support self-assessment and performance appraisal	1236 (86)	202 (14)
MDTs need performance measures	1230 (85)	222 (15)

The majority (86%) of all team members agreed with the need for tools to support self-assessment and performance appraisal. Whilst 80% of doctors agreed with this, this compared to between 87% and 95% of team members from the other professional groups. There was little variation between the different doctor disciplines, from 73% of histo/cytopathologists agreeing, to 88% of palliative care specialists. According to tumour type, haematological (79%) and breast (82%) were the least likely to agree with this, and head and neck (93%) and urological (91%) were the most likely to agree.

Across all team members, 85% agreed that MDTs need performance measures. Doctors were least likely to agree (77%), compared to between 83-96% of team members from other professional groups. There was little variation by discipline within the doctors, from 69% of histo/cytopathologists agreeing, to 81% of 'other doctors' (physicians, GPs etc) and 80% of radiologists. There was also little variation by tumour type across the most common tumour types but haematological team members were least likely to agree (80%) and Upper GI (92%) and head and neck (91%) team members were most likely to agree.

Table 24: ways of measuring effectiveness/ performance: overall and by professional group	Overall Sample	Professional group				
		Doctors	Nurses	AHPs	MDT coordinators	Other
		% rating in top three				
Improved patient outcomes as defined by 1 year/5 year survival rates	1248 (80)	81	80	82	79	83
Improved ratings in patient satisfaction surveys	771 (50)	45	57	67	50	43
National cancer waiting times standards are achieved	712 (46)	34	57	44	75	60
Increased percentage of patients recommended for trials	446 (29)	37	18	14	22	17
Improvement in job satisfaction indices of MDT members	307 (20)	22	16	21	18	17
Benchmarking against other MDTs/networks	631 (41)	44	41	44	22	47
Reduction in percentage of MDT treatment recommendations not adopted	403 (26)	27	25	26	21	30

Team members were asked to rate according to importance the top three ways to measure the effectiveness of an MDT from the list provided above. In total, 1554 (76%) of team members answered this question of whom 1248 (80%) stated that 'improved patient outcomes as defined by 1 year/5 year survival rates' was in the top three (56% rated this as the most important outcome).

Half of team members (50%) stated that improved ratings in patient satisfaction surveys was important, and nearly half stated that achieving national cancer waiting times standards (46%) or benchmarking against other MDTs/networks (41%) was important. There was less consensus about the other outcomes, but each was ranked in the top three by at least a fifth of team members.

There was broad consensus across the professional groups regarding the importance of 'improved patient outcomes as defined by 1/5 year survival rates'; 'improvement in job satisfaction indices of MDT members'; and 'reduction in percentage of MDT treatment recommendations not adopted'. There was less consensus about the importance of the following outcomes:

- **Improved ratings in patient satisfaction surveys:** Two thirds of AHPs (67%) and 57% of nurses ranked this in their top three, compared to only 43% of 'other' team members (admin/managerial) and 45% of doctors. Of the doctors, only 29% of haematologists, and 30% of oncologists ranked this in their top three, compared to between 41% (histo/cytopathologists) and 67% (palliative care specialists) of other doctor disciplines. By tumour type, responses varied from only 39% of breast cancer team members ranking this in the top three, to 70% of lung cancer team members.

- **National cancer waiting times standards are achieved:** Only a third of doctors ranked this in their top three (34%) compared to three quarters of MDT coordinators (75%). Of the doctors, surgeons and palliative care specialists were the least likely to rank this in their top three (29%), and other doctors (physicians, GPs etc) were the most likely (41%). Breast cancer team members were least likely to rank this in their top three (39%) and upper GI were most likely (60%).

- **Increased percentage of patients recommended for trials:** Doctors were the most likely to rate this in their top three (37%), compared to between 14-22% of team members from the other professional groups. Of the doctors, palliative care specialists were least likely to rank this in their top three (14%) and haematologists were most likely (64%) followed by oncologists (53%). By tumour type, responses varied from only 10% of head and neck cancer team members ranking this in their top three, to 44% of haematological cancer team members.

- **Benchmarking against other MDTs/networks:** Only 22% of MDT coordinators ranked this in their top three, compared to between 41-47% of team members from other professional groups. There was little variation by discipline or tumour type.

Supporting MDTs to work effectively

Table 25: Team members perceptions on the tools required to support MDTs to work effectively	N (valid% - adjusting for missing data)		
	Yes	Perhaps	No
Written guidance and factsheets	960 (63)	337 (22)	221 (15)
Awayday with own team	889 (59)	357 (24)	267 (18)
Team training	853 (57)	393 (26)	249 (17)
Team assessment tools	727 (51)	453 (32)	255 (18)
Workshops (not necessarily with own team)	688 (47)	478 (33)	303 (21)
E-learning packages	533 (37)	507 (35)	401 (28)
Training videos/DVDs	414 (29)	572 (40)	446 (31)
On-line discussion forum	313 (23)	502 (37)	556 (41)
Personal psychometric testing	173 (14)	397 (32)	685 (55)

Team members were asked to indicate all support tools or mechanisms they would like to have available. Across all team members, 63% of team members reported that they would like to have 'written guidance and factsheet' available, and a similar proportion said they would like an away day with their own team or team training. In addition, approximately a quarter of team members said they would 'perhaps' like these tools available. Personal psychometric testing received the least support with only 14% of team members stating they would like this available.

There were differences in responses by professional group, discipline and tumour type as follows:

- Written guidance and factsheets: MDT coordinators were the most likely to want this available (79% said yes, only 4% said no). Doctors were the least likely to want it available (55% yes, 21% no). Of the doctors, palliative care specialists were the most likely to want this available (74% said yes, 11% said no); oncologists were the least likely to want this available (only 37% said yes, 28% said no). There was very little variation in responses by tumour type.

- Awayday with own team: Doctors were least likely to want this available (55% yes, 24% saying no), compared to between 61-66% of other professional groups saying yes and 9-16% saying no. Palliative care specialists were most likely to want this available (72% saying yes, only 8% saying no) followed by oncologists (63% saying yes, 21% saying no). Other doctors (physicians, GPs etc) were the least likely to want this available (45% saying yes, 36% saying no). Responses by tumour type varied from 46% haematological team members saying yes (31% saying no), to 71% of head and neck team members saying yes (10% saying no) and 70% of colorectal team members saying yes (13% saying no).

- Team training: MDT coordinators, AHPs and nurses were the most likely to want this available (68-69% saying yes, only 7-8% saying no). Doctors were the least likely to want this available (48% saying yes, 24% saying no). Approximately a quarter of each group stated that they 'perhaps' wanted this available. Of the doctors, palliative care specialists were the most likely to want team training available (65% saying yes, 7% saying no), and histo/cytopatholgoists and radiologists were the least likely to want it available (40-42% saying yes, 25-32% saying no). Responses varied by tumour type from 49% of haematological team members saying yes (24% no), to 68% of head and neck members saying yes (8% no), and 64% or urological team members saying yes (4% no).

- Team assessment tools: AHPs were most likely to want these available (65% said yes, 8% said no). Doctors were least likely to want these available (43% said yes, 25% said no). Of the doctors, palliative care specialists were the most likely to want team assessment tools available (62% said yes, 8% said no), and oncologists were the least likely to want them available (33% said yes, 32% said no). There was little variation by tumour type, from 46% of colorectal team members and 47% of gynae, urological and haematological team members saying yes (14-26% saying no), to 63% of upper GI team members saying yes (10% saying no).

- Workshops (not necessarily with own team): MDT coordinators were the most likely to want these available (64% yes, 10% no), doctors were the least likely to want them available (41% yes, 28% no). Of the doctors, palliative care specialists were the most likely to want them available (57% yes, 13% no) and histo/cytopathologists were the least likely to want them (31% yes, 33% no). Colorectal team members were the most likely to want these (58% yes, 22% no), and haematological team members were the least likely to want them (39% yes, 27% no).

- E-learning packages: "Other" team members (admin/managerial) were the most likely to want this available (57% saying yes, 13% saying no). Doctors were the least likely to want this available (31% yes, 36% no). Of the doctors, the oncologists were least likely to want this available (22% yes, 38% no), and the radiologists and other doctors were the most likely to want this available (36% saying yes, 26% of radiologists and 34% of other doctors saying no). There was little variation by tumour type.

- Training videos/DVDs: A considerable proportion of team members across all professional groups, disciplines and tumour types stated that they would 'perhaps' like this to be available. Doctors and 'other' (admin/managerial) team members were the least likely to vote for this option (26% said yes, 38% said no) and AHPs were the most likely (39% said yes, only 14% said no). Of the doctors, surgeons were most in favour of this (36% said yes, although a similar proportion of 35% said no), and histo/cytopathologists and oncologists were the least likely to support this (17/18% said yes, 47/41% said no respectively). Responses did not vary considerably by tumour type. Breast cancer team members were the most likely to say yes (39% yes, 25% no) compared to 24% of lung cancer team members saying yes (33% no).

- On-line discussion forum: AHPs were the most likely to want these available 40% yes, 14% no) and doctors were the least likely (18% yes, 51% no).   Of the doctors, surgeons were the most likely to want these available (22% yes 46% no) and palliative care specialists were the least likely to want them (11% yes, 53% no).   Breast cancer team members were the most likely to want these available (29% yes, 40% no), and haematological team members were the least likely to want these available (15% yes, 47% no).

- Personal psychometric testing: AHPs were the most likely to want this available but only 19% said yes (38% no). Nurses were the least likely to want this available (11% yes, 47% no). Of the doctors, 'other doctors' and haematologists were the least likely to want this available (8-10% saying yes, 62-69% saying no); surgeons and palliative care specialists were the most likely to want this available (18-19% yes, 36% palliative care specialists saying no, 55% surgeons saying no). By tumour type, haematological team members were least likely to want this available (8% saying yes, 67% saying no), and upper GI and breast cancer team members were the most likely to want it available (18-19% saying yes, 47-51% saying no).

Appendix: Analysis report of three open questions contained within the MDT survey

Introduction

This report summarizes the results from the analysis of three open questions contained within an on-line survey commissioned by the National Cancer Action Team and undertaken by Business Boffins Ltd.

The development of the survey, participants and procedures are described in the full report.

Method

The survey contained a total of 21 free-text (open) questions. Three of these were selected for their specific relevance/importance:

- Q10: *What do you think constitutes an effective MDT?*

- Q36: *What qualities make a good MDT chair/leader?*

- Q40: *What one thing would you change to make your MDT more effective?*

Analysis

All responses were read and the main themes were collated and described within a framework. Each response was coded against the resulting framework and entered onto a statistical database for descriptive analysis (SPSS - Statistical Package for Social Sciences).

Respondents provided answers that ranged from one word (e.g. teamwork) to several paragraphs of text. Each response was coded according to the themes to which it related and could therefore be associated with a number of different themes.

What do you think constitutes an effective MDT?

In total, 1490 (73%) of team members provided an answer to this question. The majority of those who responded were doctors and nurses (table A1).

Table A1: Respondents to Q10 by professional group

Responded to Q10?		Professional Group					
		Doctors	Nurses	AHPs	MDT coordinators	Other(admin/ managerial)	Total
No	**Count**	320	130	19	87	8	564
	%	56.7%	23.0%	3.4%	15.4%	1.4%	100.0%
Yes	**Count**	773	402	66	215	34	1490
	%	51.9%	27.0%	4.4%	14.4%	2.3%	100.0%
Total	**Count**	1093	532	85	302	42	2054
	%	53.2%	25.9%	4.1%	14.7%	2.0%	100.0%

The findings are presented in Table A2. Most responses fitted within the framework of domains important for effective teamworking and instead of offering any new insights they provided more detail about the aspects of each domain that were important. The most popular themes related to membership/attendance and teamwork – having the right people in the team, who turn up, and work well together.

A key theme that ran across many of the domains was 'time' – that adequate time was given to meetings; that the timing and length of meetings was appropriate; that there is dedicated time in job plans for preparation and attendance at meetings; and that an effective MDT would make timely and comprehensive referrals. The only 'new' domains related to having adequate funding/resources (which relates to the membership, technology and physical environment domains); and having managerial support.

Some differences of opinion were apparent in relation to membership in terms of who should be a member/attend meetings. Some respondents stated that everyone should attend for the whole meeting, whereas others stated that meetings should be limited to a maximum of 4-5 core members (as few as possible). There was also a difference of opinion about which cases should be discussed by MDTs with some respondents stating that complex cases should be given priority, and others stating that teams who reviewed all cases were effective.

Table A2: Categorisation of responses to the question 'What do you think constitutes an effective MDT?' (example responses in blue)	Percentage
Membership/Attendance Having a full complement of team members (particularly the need for designated MDT coordinators/data collectors); having clear roles and responsibilities; having cross-cover arrangements; punctuality/prompt attendance; members being full engaged and committed to MDT working	48%
Preparation for meetings Having comprehensive agenda circulated prior to meeting; protocols to ensure all patients that should be discussed are discussed; good coordination before meetings	31%
Organisation/administration during meetings Concise presentation of cases and consistency in presentation; good coordination during and after meetings.	19%
Physical environment of meeting venue Having a regular venue with easy access; provision of refreshments; fresh air	2%
Technology Having interactive systems that can produce letters as well as data collection; having technical support as well as the relevant equipment; having real time data collection	12%
Case management and clinical decision-making process Consistency, structured and efficient decision-making; robust annotation of decisions with clear concise treatment plan recorded; consensus; adherence to protocols and guidelines; action after meetings and implementation of decision with clear lines of responsibility and communication to all concerned	27%
Patient-centred care/coordination of service Presented concisely by someone who knows the patient; good communication with patient and relatives; good coordination of patient pathway (e.g. coordinating investigations and treatment to reduce attendances); having an effective referral system	10%
Leadership Having an effective/strong leader/chair; focussed discussions that are relevant; good time-keeper that makes best use of available time; values and includes everyone; clear articulation of decision.	16%
Teamworking Good communication with each other (and with other teams); non-hierarchical open discussion; respectful; willingness to challenge and be challenged; non-threatening environment; participation as equals	51%

Table A2 (Cont): Categorisation of responses to the question 'What do you think constitutes an effective MDT?' (example responses in blue)	Percentage
Development and training Development of junior members; inclusion of interesting cases to teach all members; everyone should be up to date with reading and evidence base.	2%
Data collection, analysis and audit of outcomes Data collection integral to the meeting; live data collection (e.g. Somerset data registry)	14%
Clinical governance Process for informing team if treatment plans are changed; clear operational policies that are regularly evaluated; adverse events analysed; feedback given to team; regular review of MDT to identify areas for improvement and good practice; consideration of patients for trial entry; robust methods for following up decisions (clerical and medical actions); having clear aims and objectives for the MDT and terms of reference	7%
Adequate funding/resources Having sufficient people, time, equipment/facilities; financial backing for facilities by management	1%
Managerial support Organisational recognition and support; good relationships with managers; managers/cancer services supporting MDT working	1%

What qualities make a good MDT chair/leader?

In total, 915 (45%) of team members responded to this question. Doctors and nurses were the most likely to respond (table A3).

Table A3: Respondents to Q36 by professional group

Responded to Q36?		Professional Group					
		Doctors	Nurses	AHPs	MDT coordinators	Other(admin/ managerial)	Total
No	**Count**	620	262	51	181	25	1139
	%	54.4%	23.0%	4.5%	15.9%	2.2%	100.0%
Yes	**Count**	473	270	34	121	17	915
	%	51.7%	29.5%	3.7%	13.2%	1.9%	100.0%
Total	**Count**	1093	532	85	302	42	2054
	%	53.2%	25.9%	4.1%	14.7%	2.0%	100.0%

Most responses aggregated to at least one of the themes in table A4. A small minority (1%) of team members gave a negative response such as "I do not support this role" or "not needed in a properly functioning MDT". 23 (3%) of team members answered 'all of the above' in response to this question, referring to the previous question where respondents were asked to rate the top three of the following tasks in terms of their importance:

• Ensure clear shared objectives for the team

• Ensure full participation of all MDT members/professional groups in decision making

• Ensure the contributions of all MDT members are equally acknowledged and valued

• Promote patient-centred management decisions

• Promote evidence-based management decisions

• Promote good communications between team members

• Summarize understanding and agreement on each case managed

Of the themes in table A4, the most common was a description of the personal qualities of a good MDT chair/lead. 80% of team members who responded to this question attempted to describe an aspect of the leader's personal qualities that made him/her a good leader. The second most common theme regarded enforcement of good clinical decision-making and case management.

Table A4: Categorisation of responses to the question 'What qualities make a good MDT chair/leader' (example responses in blue)	Percentage
Expertise (knowledge/experience) Knowledge of subject area, local politics, patients and treatments, patient pathway, roles of team members; clinical credibility; clinical skills	23%
Commitment to MDT process and role of leader Clarity of purpose of MDT; promotes MDT within organisation; enthusiasm for MDT process; clarity of vision	5%
Perception by others Approachable; affable; good rapport with colleagues; inspires others and has their confidence and trust; respected by colleagues; commands confidence; recognised expert; good role model; authority	18%
Personal qualities Firm; assertive; strong; confident; fair; decisive; tactful/diplomatic; calm; flexible; focussed; non judgemental; good at directing; good communication skills; good management skills; good interpersonal skills; good spokesman; good listener; negotiation skills; ability to constructively challenge; good timekeeper; team player; makes people feel valued/respected; able to motivate others; not easily manipulated; able to give and take constructive feedback; consistency; able to deal with conflict; willing to compromise	80%
Objectivity Impartiality; lack of bias towards own treatment modality; integrity; not part of decision-making team (not leading on care of patient being discussed); able to stand aside if too close to difficult decision	2%
Enforcement of structural domains of MDT working Ensures attendance; ensures preparation; ensures all team members know their roles within the meeting and following the meeting; organised	12%
Enforcement of good clinical decision-making and case management Good timekeeping/punctuality; promotes clear presentation of each case and full discussion; ability to coordinate input from several sources and collate information to give a clear plan of action; able to prioritise complex cases; ensure decision reached and recorded for each patient; able to ask for consensus before decision; inclusive; not allowing dysfunctional behaviour/bullying	36%
Enforcement of decisions Acting on decisions made; facilitate agreed outcome; establish how decision gets to the patient	1%
Team governance Regular meetings to discuss issues within MDT; ensure MDT is working to peer review standards and audit against standards regularly; evidence-based practice; ensure safe process; passion for quality; identifying audits and ensuring they are carried out; prepare business cases for high cost/new therapies which MDT have identified as necessary; ensure data collection criteria are fulfilled	2%
Patient centred Has the patients' best interests in mind throughout; holistic approach; ensuring all are heard, especially the patient advocate; ensure all aspects of patient care are discussed	4%
Professional development Creates a learning environment; educator; willing to keep up skills of chairmanship and learn	0%

What one thing would you change to make your MDT more effective?

In total, 888 (43%) of team members responded to this question. The majority of team members who responded were doctors and nurses (table A5).

Table A5: Respondents to Q40 by professional group

Responded to Q40?		Professional Group					
		Doctors	Nurses	AHPs	MDT coordinators	Other(admin/ managerial)	Total
No	Count	618	273	55	193	27	1166
	%	53.0%	23.4%	4.7%	16.6%	2.3%	100.0%
Yes	Count	475	259	30	109	15	888
	%	53.5%	29.2%	3.4%	12.3%	1.7%	100.0%
Total	Count	1093	532	85	302	42	2054
	%	53.2%	25.9%	4.1%	14.7%	2.0%	100.0%

A small proportion (4%) stated that their team worked well at the moment and they would not change anything. 6 respondents (1%) used this open question to give a negative response about MDT working. Most other responses aggregated to at least one of the themes in table A6. Responses were well spread between these themes with no overarching theme/s. The most common themes were:

• Better preparation for meetings

• Better technology

• More time

• Better attendance at meetings

• Better teamworking

Table A6: Categorisation of responses to the question 'What one thing would you change to make your MDT more effective?' (example responses in blue)	Percentage
Membership MDT coordinator/admin support; oncologist; radiologist/pathologist; size of team should be smaller/larger; clarification of roles and responsibilities	9%
Attendance Punctuality/prompt attendance; attendance for whole meeting and every meeting	11%
Preparation for meetings Getting patient lists in timely manner; faster pathology turnaround; only discussing patients when all results available	12%
Organisation/administration during meetings More focussed clear discussion; fewer cases	6%
Physical environment of meeting venue Less crowded; air conditioning; better acoustics; provision of refreshments	7%
Technology Access to investigations; live data recording; IT support; better video-conferencing; live projection of decision	13%
Case management and clinical decision-making process Clear documentation of outcomes in notes; better communication of outcomes; keeping to the point	4%
Patient-centred care/coordination of service Presented by someone who has met patient; discussing the person, not just their treatment	2%
Leadership Strong leadership; better chairmanship; more decisiveness	8%
Teamworking Inclusive; cooperation of team members; valuing non-medics role and contribution; respect; less arguing/bickering; not so medically led; better communication between team members	11%
Development and training Whole team training; specific training for MDT coordinators and leaders; use of meeting as educational opportunity; development of junior team members	3%
Data collection, analysis and audit of outcomes Improved data collection; auditing of outcomes; live data collection and reporting	2%
Clinical governance Change in treatment plans should be brought back to MDT; more frequent business/development meetings; agreed protocols	1%

Table A6 (Cont): Categorisation of responses to the question 'What one thing would you change to make your MDT more effective?' (example responses in blue)	Percentage
Adequate funding/resources Having adequate/more funding and/or resources (NB many responses regarding membership and technology could also be counted as requests for more funding/resources)	1%
Managerial support Organisational recognition and support	1%
Time A More time	12%
longer meetings; more meetings; more time for preparation of cases; more time for data entry	
B Protected time in job plans	4%
time for meeting attendance and preparation in job plans	
C Timely meetings, decision-making, and outcomes	2%
meetings start and finish on time; decisions/outcomes sent/communicated quickly; more timely discussion; better timekeeping in meetings	
D Timing of meetings	2%
in working day; not at lunchtime; specific length; fit around clinics	